

# Ø30 Series

## Control Units



## ø30 ø30 Series Control Units (Selection Guide)

| Function | Emergency Stop Switch                                                                                                                                                  | Pushbutton                                                                                                                                                             |                           |                                                                                                                                                                        |                           |                                                                                                                                                                          |                             |                                                                                                                                                                            |                             |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Category | Pushlock Turn Reset                                                                                                                                                    | Flush                                                                                                                                                                  |                           | Extended                                                                                                                                                               |                           | Extended with Half Shroud                                                                                                                                                |                             | Extended with Full Shroud                                                                                                                                                  |                             |
|          |                                                                                                                                                                        | Momentary/Maintained                                                                                                                                                   |                           |                                                                                                                                                                        |                           |                                                                                                                                                                          |                             |                                                                                                                                                                            |                             |
| Shape    | <br> | <br> |                           | <br> |                           | <br> |                             | <br> |                             |
| Type     | HN1E                                                                                                                                                                   | ABN1<br>AON1                                                                                                                                                           | (Diecast)<br>ABD1<br>AOD1 | ABN2<br>AON2                                                                                                                                                           | (Diecast)<br>ABD2<br>AOD2 | ABN2G<br>AON2G                                                                                                                                                           | (Diecast)<br>ABGD2<br>AOGD2 | ABN2F<br>AON2F                                                                                                                                                             | (Diecast)<br>ABFD2<br>AOFD2 |
| Page     | 6                                                                                                                                                                      | 13                                                                                                                                                                     | 69                        | 13                                                                                                                                                                     | 69                        | 13                                                                                                                                                                       | 69                          | 13                                                                                                                                                                         | 69                          |

| Function | Pushbutton                                                                                                                                                                                                                                                  |                           |                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                                                                                                             |                   |                                                                                                                                                                                                                                                                 |                    |                                                                                                                                                                                                                                                                   |                    |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Category | Mushroom                                                                                                                                                                                                                                                    |                           | Mushroom with Full Shroud                                                                                                                                                                                                                                   |                             | Palm Mushroom                                                                                                                                                                                                                                               |                   | Jumbo Mushroom with Shallow Shroud                                                                                                                                                                                                                              |                    | Jumbo Mushroom with Deep Shroud                                                                                                                                                                                                                                   |                    |
|          | Momentary/Maintained                                                                                                                                                                                                                                        |                           |                                                                                                                                                                                                                                                             |                             | Momentary                                                                                                                                                                                                                                                   |                   |                                                                                                                                                                                                                                                                 |                    |                                                                                                                                                                                                                                                                   |                    |
| Shape    |                                                                                                                                                                           |                           |                                                                                                                                                                           |                             |                                                                                                                                                                           |                   |                                                                                                                                                                              |                    |                                                                                                                                                                               |                    |
|          |    |                           |    |                             |    |                   |    |                    |    |                    |
| Type     | ABN3<br>AON3                                                                                                                                                                                                                                                | (Diecast)<br>ABD3<br>AOD3 | ABN3G                                                                                                                                                                                                                                                       | (Diecast)<br>ABGD3<br>AOGD3 | ABN4                                                                                                                                                                                                                                                        | (Diecast)<br>ABD4 | ABN4G                                                                                                                                                                                                                                                           | (Diecast)<br>ABGD4 | ABN4F                                                                                                                                                                                                                                                             | (Diecast)<br>ABFD4 |
| Page     | 14                                                                                                                                                                                                                                                          | 70                        | 14                                                                                                                                                                                                                                                          | 70                          | 14                                                                                                                                                                                                                                                          | 70                | 14                                                                                                                                                                                                                                                              | 70                 | 14                                                                                                                                                                                                                                                                | 70                 |

| Function | Pushbutton                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                   |                                                                                                                                                                           |                                                                                                                                                                             |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Square Flush                                                                                                                                                                                                                                                | Square Extended                                                                                                                                                                                                                                             | Mushroom Pushlock<br>Turn Reset                                                                                                                                         |                   | Mushroom Pushlock<br>Key Reset                                                                                                                                            | Jumbo Mushroom<br>Pushlock Key Reset                                                                                                                                        |
|          | Momentary                                                                                                                                                                                                                                                   | Momentary                                                                                                                                                                                                                                                   |                                                                                                                                                                         |                   |                                                                                                                                                                           |                                                                                                                                                                             |
| Shape    |                                                                                                                                                                          |                                                                                                                                                                          |                                                                                      |                   |                                                                                       |                                                                                        |
|          |    |    |   |                   |   |   |
| Type     | UBQN1                                                                                                                                                                                                                                                       | UBQN2                                                                                                                                                                                                                                                       | AVN3                                                                                                                                                                    | (Diecast)<br>AVD3 | ABN3K                                                                                                                                                                     | ABN4K                                                                                                                                                                       |
| Page     | 14                                                                                                                                                                                                                                                          | 14                                                                                                                                                                                                                                                          | 15                                                                                                                                                                      | 71                | 15                                                                                                                                                                        | 15                                                                                                                                                                          |

| Function | Pushbutton                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                      |                   |    |  |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----|--|
| Category | Mushroom Push Turn Lock                                                                                                                                                                                                                                                                                                                            | Key ON/OFF Lock                                                                                                                                                                                                                                                                                                                                    | Toggle Lever                                                                                                                                                                                                                                                                                                                                       | Mushroom Pull                                                                                                                                                                                                                                                                                                                                           | Mushroom Push-Pull                                                                                                                                                                                                                                                   |                   |    |  |
| Shape    | <br>   | <br>   | <br>   | <br>   | <br>  |                   |    |  |
| Type     | AJN3<br>(Diecast)<br>AJD3                                                                                                                                                                                                                                                                                                                          | ABN5                                                                                                                                                                                                                                                                                                                                               | ATN4                                                                                                                                                                                                                                                                                                                                               | ATN23<br>(Diecast)<br>AZD3                                                                                                                                                                                                                                                                                                                              | ATN21<br>ATN22                                                                                                                                                                                                                                                       | (Diecast)<br>AYD3 |    |  |
| Page     | 15                                                                                                                                                                                                                                                                                                                                                 | 71                                                                                                                                                                                                                                                                                                                                                 | 15                                                                                                                                                                                                                                                                                                                                                 | 16                                                                                                                                                                                                                                                                                                                                                      | 71                                                                                                                                                                                                                                                                   | 16                | 71 |  |

# ø30 series Control Units (Selection Guide) **ø30**

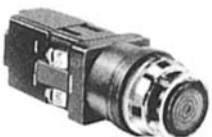
| Function | Pushbutton                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                            | Twin Maintained Pushbutton                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Pin Lock                                                                                                                                                                                                                                                                                                                                   | Square Twin Momentary                                                                                                                                                                                                                                                                                                                      | Square Twin Maintained                                                                                                                                                                                                                                                                                                                     | Flush                                                                                                                                                                                                                                                                                                                                             | Mushroom                                                                                                                                                                                                                                                                                                                                           |
| Shape    | <br>   | <br>   | <br>   | <br>   | <br>   |
| Type     | ABN8P (Diecast) ABD8P                                                                                                                                                                                                                                                                                                                      | UWQN1                                                                                                                                                                                                                                                                                                                                      | UWQN2                                                                                                                                                                                                                                                                                                                                      | ABBN11                                                                                                                                                                                                                                                                                                                                            | ABBN33                                                                                                                                                                                                                                                                                                                                             |
| Page     | 16 71                                                                                                                                                                                                                                                                                                                                      | 17                                                                                                                                                                                                                                                                                                                                         | 17                                                                                                                                                                                                                                                                                                                                         | 17                                                                                                                                                                                                                                                                                                                                                | 17                                                                                                                                                                                                                                                                                                                                                 |

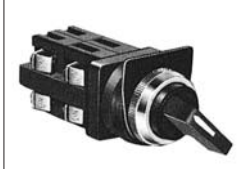
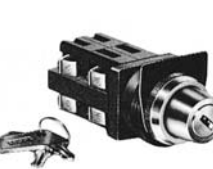
| Function | Pilot Light (LED)                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                            | Pilot Light (Incandescent)                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Dome                                                                                                                                                                                                                                                                                                                                       | Square                                                                                                                                                                                                                                                                                                                                     | Rectangular (Marking)                                                                                                                                                                                                                                                                                                                      | Dome (1W)                                                                                                                                                                                                                                                                                                                                         | Dome (2W)                                                                                                                                                                                                                                                                                                                                          |
| Shape    | <br>   | <br>   | <br>   | <br>   | <br>   |
| Type     | APN1 APNE1 (Diecast) APD1 APDE1                                                                                                                                                                                                                                                                                                            | UPQN3B                                                                                                                                                                                                                                                                                                                                     | UPQN4 UPQNE4                                                                                                                                                                                                                                                                                                                               | APN1 (Diecast) APD1                                                                                                                                                                                                                                                                                                                               | APN1 APNE1 (Diecast) APD1 APDE1                                                                                                                                                                                                                                                                                                                    |
| Page     | 18 72                                                                                                                                                                                                                                                                                                                                      | 19                                                                                                                                                                                                                                                                                                                                         | 19                                                                                                                                                                                                                                                                                                                                         | 19 72                                                                                                                                                                                                                                                                                                                                             | 18 72                                                                                                                                                                                                                                                                                                                                              |

| Function | Pilot Light (Incandescent)                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                    | Illuminated Pushbutton (LED)                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                            |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Rectangular (Marking) (1W/2W)                                                                                                                                                                                                                                                                                                                      | Square Flush (1W)                                                                                                                                                                                                                                                                                                                                  | Dome Push-to-Check                                                                                                                                                                                                                                                                                                                                 | Extended Momentary/Maintained                                                                                                                                                                                                                                                                                                                             | Extended with Half Shroud                                                                                                                                                                                                                                                                                                                                  |
| Shape    | <br>   | <br>   | <br>   | <br>   | <br>   |
| Type     | UPQN4 UPQNE4                                                                                                                                                                                                                                                                                                                                       | UPQN3B                                                                                                                                                                                                                                                                                                                                             | APN1*P                                                                                                                                                                                                                                                                                                                                             | ALN2 ALNE2 AOLN2 AOLNE2 (Diecast) ALD2 AOLD2                                                                                                                                                                                                                                                                                                              | ALGN2 ALGNE2 AOLGN2 AOLGNE2                                                                                                                                                                                                                                                                                                                                |
| Page     | 19                                                                                                                                                                                                                                                                                                                                                 | 19                                                                                                                                                                                                                                                                                                                                                 | 21                                                                                                                                                                                                                                                                                                                                                 | 22 73                                                                                                                                                                                                                                                                                                                                                     | 24                                                                                                                                                                                                                                                                                                                                                         |

| Function | Illuminated Pushbutton (LED)                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                           | (Incandescent)                                                                                                                                                                                                                                                                                                                                             |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Extended with Full Shroud Momentary/Maintained                                                                                                                                                                                                                                                                                                     | Mushroom                                                                                                                                                                                                                                                                                                                                           | Mushroom Pushlock Turn Reset                                                                                                                                                                                                                                   | Mushroom Push Turn Lock                                                                                                                                                                                                                                                                                                                                   | Extended Momentary/Maintained                                                                                                                                                                                                                                                                                                                              |
| Shape    | <br>   | <br>   | <br>  | <br>   | <br>   |
| Type     | ALFN2 ALFNE2 AOLFNE2 (Diecast) ALFD2 AOLFDE2                                                                                                                                                                                                                                                                                                       | ALN3 ALNE3 AOLN3 AOLD3 (Diecast) ALD3 AOLD3                                                                                                                                                                                                                                                                                                        | AVLN3 AVLNE3 (Diecast) AVLDE3                                                                                                                                                                                                                                  | AJLN3                                                                                                                                                                                                                                                                                                                                                     | ALN ALNE AOLN AOLD2 (Diecast) ALD2 AOLD2                                                                                                                                                                                                                                                                                                                   |
| Page     | 26 74                                                                                                                                                                                                                                                                                                                                              | 28 75                                                                                                                                                                                                                                                                                                                                              | 31 76                                                                                                                                                                                                                                                          | 31                                                                                                                                                                                                                                                                                                                                                        | 23 73                                                                                                                                                                                                                                                                                                                                                      |

## ø30 ø30 series Control Units (Selection Guide)

| Function | Illuminated Pushbutton (Incandescent)                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                            |                              |                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Extended with Half Shroud                                                                                                                                                                                                                                                                                                                  | Extended with Full Shroud                                                                                                                                                                                                                                                                                                                  |                              | Square Flush                                                                                                                                                                                                                                                                                                                               | Rectangular                                                                                                                                                                                                                                                                                                                                      | Turn Lock                                                                                                                                                                                                                                                                                                                                          |
|          | Momentary                                                                                                                                                                                                                                                                                                                                  | Momentary/Maintained                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                                                                                                                                                                                                                                                            | Momentary/Maintained                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |
| Shape    | <br>   | <br>   |                              | <br>   | <br>   | <br>   |
| Type     | ALN*G<br>ALNE3G3                                                                                                                                                                                                                                                                                                                           | ALN*F<br>ALNE3F3<br>AOLN*F<br>AOLNE3F3                                                                                                                                                                                                                                                                                                     | (Diecast)<br>ALFD2<br>AOLFD2 | ULQN<br>UOLQN                                                                                                                                                                                                                                                                                                                              | ULQN*B<br>UOLQN*B                                                                                                                                                                                                                                                                                                                                | ALN*L                                                                                                                                                                                                                                                                                                                                              |
| Page     | 25                                                                                                                                                                                                                                                                                                                                         | 27                                                                                                                                                                                                                                                                                                                                         | 74                           | 29                                                                                                                                                                                                                                                                                                                                         | 29                                                                                                                                                                                                                                                                                                                                               | 30                                                                                                                                                                                                                                                                                                                                                 |

| Function | Illuminated Pushbutton (Incandescent)                                                                                                                                   |                              |                                                                                                                                                                                                                                                             | Selector Switch                                                                                                                                                                                                                                             |                  |                                                                                                                                                                                                                                                                |                    |                                                                                                                                                                                                                                                                   |                    |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Category | Mushroom Pushlock Turn Reset                                                                                                                                            |                              | Mushroom Push Turn Lock                                                                                                                                                                                                                                     | Knob                                                                                                                                                                                                                                                        |                  | Lever                                                                                                                                                                                                                                                          |                    | Key                                                                                                                                                                                                                                                               |                    |
| Shape    |                                                                                       |                              |                                                                                                                                                                           |                                                                                                                                                                           |                  |                                                                                                                                                                             |                    |                                                                                                                                                                               |                    |
|          |   |                              |    |    |                  |    |                    |    |                    |
| Type     | AVLN3<br>AVLNE3                                                                                                                                                         | (Diecast)<br>AVLD3<br>AVLDE3 | AJLN3                                                                                                                                                                                                                                                       | ASN<br>ASTN                                                                                                                                                                                                                                                 | (Diecast)<br>ASD | ASN*L<br>ASTN*L                                                                                                                                                                                                                                                | (Diecast)<br>ASD*L | ASN*K<br>ASTN*K                                                                                                                                                                                                                                                   | (Diecast)<br>ASD*K |
| Page     | 32                                                                                                                                                                      | 76                           | 32                                                                                                                                                                                                                                                          | 33/37                                                                                                                                                                                                                                                       | 77               | 34/38                                                                                                                                                                                                                                                          | 78                 | 35/39                                                                                                                                                                                                                                                             | 79                 |

| Function | Illuminated Selector Switch (LED)                                                                                                                                                                                                                           |                   | Illuminated Selector Switch (Incandescent)                                                                                                                                                                                                                  |                   | Selector Pushbutton                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                                                                                                  |                     | Mono-Lever Switch                                                                                                                                                           |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Knob                                                                                                                                                                                                                                                        |                   | Knob                                                                                                                                                                                                                                                        |                   | Ring                                                                                                                                                                                                                                                        |                    | Lever                                                                                                                                                                                                                                                            |                     | Standard                                                                                                                                                                    |
| Shape    |                                                                                                                                                                          |                   |                                                                                                                                                                          |                   |                                                                                                                                                                          |                    |                                                                                                                                                                              |                     |                                                                                        |
|          |    |                   |    |                   |    |                    |    |                     |   |
| Type     | ASLN                                                                                                                                                                                                                                                        | (Diecast)<br>ASLD | ASLN                                                                                                                                                                                                                                                        | (Diecast)<br>ASLD | ABN                                                                                                                                                                                                                                                         | (Diecast)<br>ASBD2 | ABN*L                                                                                                                                                                                                                                                            | (Diecast)<br>ASBD2L | ARN<br>ARNS                                                                                                                                                                 |
| Page     | 40                                                                                                                                                                                                                                                          | 80                | 40                                                                                                                                                                                                                                                          | 80                | 42                                                                                                                                                                                                                                                          | 82                 | 42                                                                                                                                                                                                                                                               | 82                  | 44                                                                                                                                                                          |

| Function | Mono-Lever Switch                                                                                                                                                       |                                                                                                                                                                         | Cam Switch                                                                                                                                                              |                                                                                                                                                                            |                                                                                                                                                                             |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Interlocking                                                                                                                                                            |                                                                                                                                                                         | Knob                                                                                                                                                                    | Key                                                                                                                                                                        | Maintained/<br>Spring Return                                                                                                                                                |
| Shape    |                                                                                      |                                                                                      |                                                                                      |                                                                                        |                                                                                        |
|          |   |   |   |   |   |
| Type     | ARNL                                                                                                                                                                    | ACSNO<br>ACSSO                                                                                                                                                          | ACSNK<br>ACSSK                                                                                                                                                          | UCSQO                                                                                                                                                                      | UCSQM                                                                                                                                                                       |
| Page     | 44                                                                                                                                                                      | 47                                                                                                                                                                      | 47                                                                                                                                                                      | 47                                                                                                                                                                         | 47                                                                                                                                                                          |

# ø30 HN Series Emergency Stop Switches

## Emergency Stop Switches (Unibody Type) Specifications

### Contact Ratings

|                                |             |                        |      |      |       |
|--------------------------------|-------------|------------------------|------|------|-------|
| Rated Insulation Voltage (Ui)  |             | 250V                   |      |      |       |
| Rated Thermal Current (Ith)    |             | 10A                    |      |      |       |
| Rated Operational Voltage (Ue) |             | 24V                    | 110V | 220V |       |
| Rated Operational Current      | AC 50/60 Hz | Resistive Load (AC-12) | 6A   | 3A   | 3A    |
|                                |             | Inductive Load (AC-15) | 6A   | 3A   | 3A    |
|                                | DC          | Resistive Load (DC-12) | 6A   | 2A   | 1A    |
|                                |             | Inductive Load (DC-13) | 1.5A | 0.3A | 0.15A |

Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1). Minimum applicable load (reference value): 3V AC/DC, 5 mA (Applicable range may vary with operating conditions and load types.)

### LED Lamp Ratings

| Unit Rated Operating Voltage | LED Lamp |                |               |
|------------------------------|----------|----------------|---------------|
|                              | Type No. | Rated Voltage  | Rated Current |
| 24V AC/DC                    | LSTD-2R  | 24V AC/DC ±10% | 10 mA         |

### Incandescent Lamp Ratings

| Unit Rated Operating Voltage | Incandescent Lamp |          |
|------------------------------|-------------------|----------|
|                              | Type No.          | Wattage  |
| 24V AC/DC                    | LS-3              | 1W (30V) |

### Specifications

|                       |                                                                         |
|-----------------------|-------------------------------------------------------------------------|
| Operating Temperature | –25 to +60°C (no freezing)<br>Illuminated units: –25 to +55°C           |
| Storage Temperature   | –40 to +80°C                                                            |
| Operating Humidity    | 45 to 85% RH (no condensation)                                          |
| Contact Resistance    | 50 mΩ maximum (initial value)                                           |
| Insulation Resistance | 100 MΩ minimum (500V DC megger)                                         |
| Dielectric Strength   | Between live and dead metal parts                                       |
|                       | Contacts: 2,500V AC, 1 minute<br>Illuminated parts: 1,000V AC, 1 minute |
| Vibration Resistance  | Damage limits: 60 m/s <sup>2</sup>                                      |
|                       | Operating extremes: 5 to 55 Hz, amplitude 0.5 mm                        |
| Shock Resistance      | Damage limits: 1,000 m/s <sup>2</sup>                                   |
|                       | Operating extremes: 100 m/s <sup>2</sup>                                |
| Operating Frequency   | 900 operations/h                                                        |
| Life                  | Mechanical: 250,000 operations minimum                                  |
|                       | Electrical: 100,000 operations minimum                                  |
| Degree of Protection  | IP65                                                                    |
| Terminal Style        | M3.5 screw                                                              |

### Applicable Standards and Approvals

| Safety Standards | File No. or Organization   |
|------------------|----------------------------|
| UL508            | UL Listing File No. E55996 |
| CSA C22.2 No. 14 | c-UL (File No. E55996)     |
| EN60947-5-5      | DEMKO approved             |

## Pushlock Turn Reset Switches (Unibody Type)

| Shape                                                                                                                                                                      | Contact | Type No.    | Button Color |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|--------------|
| <br> | 1NO-1NC | HN1E-BV411R | Red only     |
|                                                                                                                                                                            | 2NC     | HN1E-BV402R |              |

- When pressed, the button is held depressed. The button is released by turning clockwise.
- Terminal cover HW-VL7 is supplied with the switch.

## Illuminated Pushlock Turn Reset Switches (Unibody Type)

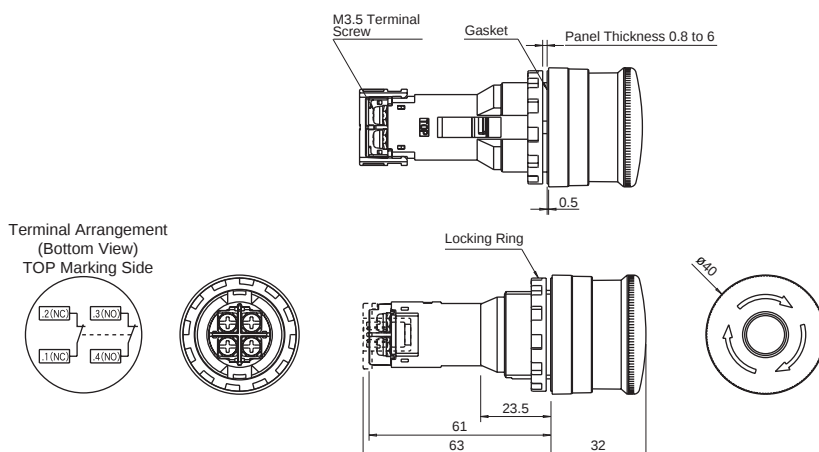
| Shape                                                                                                                                                                      | Lamp         | Contact | Type No.      | Lens Color |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|---------------|------------|
| <br> | Without Lamp | 1NO-1NC | HN1E-LV411Q0R | Red only   |
|                                                                                                                                                                            |              | 2NC     | HN1E-LV402Q0R |            |

- When pressed, the button is held depressed. The button is released by turning clockwise.
- The illuminated pushlock turn reset switch does not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- Terminal cover HW-VL7 is supplied with the switch.

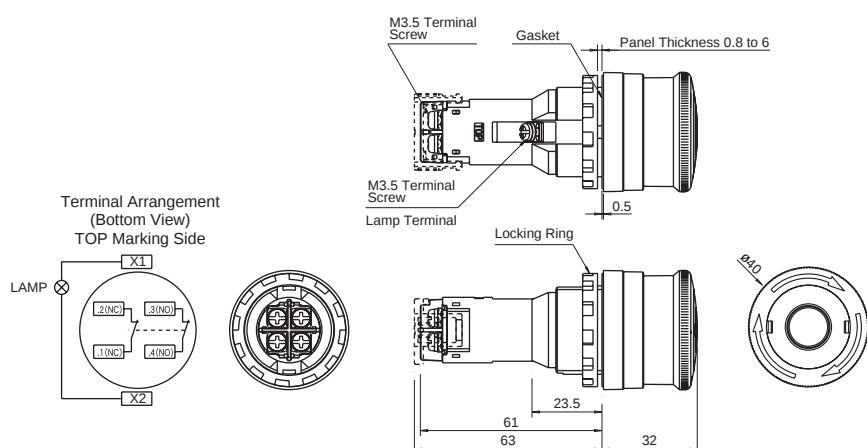
## ø30 HN Series Emergency Stop Switches

## Dimensions

- HN1E-BV4



- HN1E-LV4



All dimensions in mm.

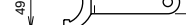
## Replacement Parts

| Name           | Type No. | Ordering Type No. | Package Quantity | Remarks                                                                                                                        |
|----------------|----------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Terminal Cover | HW-VL7   | HW-VL7PN10        | 10               | Used on HN1E emergency stop switches for preventing electrical shocks.<br>The HW-VL7 terminal cover is supplied with the HN1E. |

## Nameplates

| Shape                                                                               | Type No. | Legend         | Package Quantity | Remarks                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|----------|----------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | HNAV-0   | (blank)        | 1                | Background: Yellow<br>Legend: Black<br>Applicable panel thickness:<br>0.8 to 4.5 mm<br><br>Material: Polyamide<br>Legend "EMERGENCY STOP"<br>is indicated outside a $\varnothing 44$ mm circle. |
|                                                                                     | HNAV-27  | EMERGENCY STOP |                  |                                                                                                                                                                                                 |

## Accessory

| Shape                                                                               | Material | Type No. | Package Quantity | Remarks                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------|----------|----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Metal    | TWST-T1  | 1                | <ul style="list-style-type: none"> <li>• Used for tightening the locking nut.</li> <li>• Tighten the locking nut to a torque of 2.0 to 2.5 N·m.</li> </ul>  |

# ø30 ø30 Series Control Units

## Heavy duty control units offer both variety and reliability Endures harsh environments

- Degree of protection: IP65
- UL, CSA approved, and EN compliant.

| Safety Standards |                                                                                   | File No. or Organization                                                          |
|------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| UL               |  | UL Listing<br>File No. E68961                                                     |
| CSA              |  | File No. LR21451                                                                  |
| EN               | EN60947-5-1                                                                       |  |



## Specifications and Ratings

### Contact Ratings

|                               |                                         |                          |
|-------------------------------|-----------------------------------------|--------------------------|
| Pushbuttons                   | Contact Block                           | Type BS/BST (ø30 series) |
| Illuminated Pushbuttons       | Rated Insulation Voltage                | 600V                     |
| Selector Switches             | Rated Continuous Current                | 10A                      |
| Illuminated Selector Switches | Contact Ratings by Utilization Category | AC-15 (A600)             |
| Selector Pushbuttons          | IEC 60947-5-1                           | DC-13 (P600)             |

### Characteristics

#### • Contact Ratings by Utilization Category

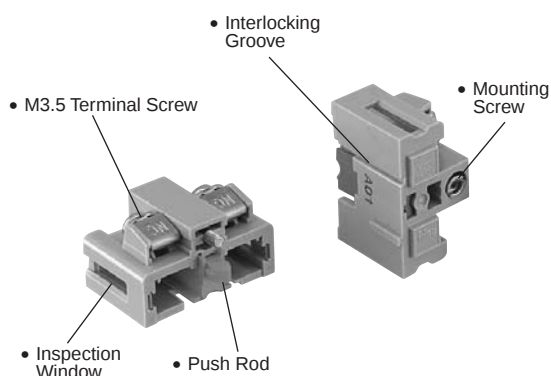
| Operational Voltage |             |                                                        | 24V | 48V | 50V | 110V | 220V | 440V |
|---------------------|-------------|--------------------------------------------------------|-----|-----|-----|------|------|------|
| Operational Current | AC 50/60 Hz | AC-12 Control of resistive loads and solid state loads | 10A | —   | 10A | 10A  | 6A   | 2A   |
|                     |             | AC-15 Control of electromagnetic loads (> 72 VA)       | 10A | —   | 7A  | 5A   | 3A   | 1A   |
|                     | DC          | DC-12 Control of resistive loads and solid state loads | 10A | 5A  | —   | 2.2A | 1.1A | —    |
|                     |             | DC-13 Control of electromagnets                        | 5A  | 2A  | —   | 1.1A | 0.6A | —    |

Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1).

Minimum applicable load: 3V AC/DC, 5 mA (applicable range may vary with operating conditions and load types)

For mono-levers and cam switches, see pages 43 and 46.

### BS (BST) Contact Block



#### • Contact Block Types

| Contact  |     | Single-pole Contact Block Type                                                      |                                                                                       |                                                                                       |                                                                                       |
|----------|-----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|          |     |  |  |  |  |
| Type     | BS  | BS010E                                                                              | BS001E                                                                                | BS010SE                                                                               | BS001SE                                                                               |
|          | BST | BST010                                                                              | BST001                                                                                | BST010S                                                                               | BST001S                                                                               |
| Push Rod |     | Green                                                                               | Red                                                                                   | Black                                                                                 | White                                                                                 |

BST contact blocks are used for the following control units and are not interchangeable with BS contact blocks.  
(The BS housing is dark gray and the BST housing is light gray.)

- Pushlock turn reset and push turn lock switches
- LED illuminated pushbuttons
- LED/incandescent illuminated selector switches
- All models of diecast zinc housing control units

- Durable nylon 66 housing has a high resistance against alkalis.
- Silver contacts.
- Up to four blocks in two layers can be mounted onto each operator.

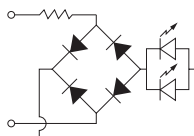
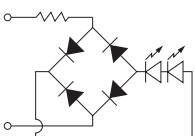
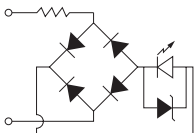
## LED Illuminated Unit Specifications

| Unit                                                                 | Color Code ②                                                                         | Input Type      | Operating Voltage                                                                                                                      | LED Lamp  |          |                |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------------|
|                                                                      |                                                                                      |                 |                                                                                                                                        | Lamp Base | Type No. | Voltage        |
| Pilot Light<br>Illuminated Pushbutton<br>Illuminated Selector Switch | A: amber<br>G: green<br>PW: pure white<br>R: red<br>S: blue<br>W: white<br>Y: yellow | Full Voltage    | 6V AC/DC                                                                                                                               | BA9S/13   | LSTD-6②  | 6V AC/DC ±10%  |
|                                                                      |                                                                                      |                 | 12V AC/DC                                                                                                                              |           | LSTD-1②  | 12V AC/DC ±10% |
|                                                                      |                                                                                      |                 | 24V AC/DC                                                                                                                              |           | LSTD-2②  | 24V AC/DC ±10% |
|                                                                      |                                                                                      |                 | 6V AC/DC                                                                                                                               | E12/15    | LETD-6②  | 6V AC/DC ±10%  |
|                                                                      |                                                                                      |                 | 12V AC/DC                                                                                                                              |           | LETD-8②  | 12V AC/DC ±10% |
|                                                                      |                                                                                      |                 | 24V AC/DC                                                                                                                              |           | LETD-2②  | 24V AC/DC ±10% |
|                                                                      |                                                                                      | Transformer     | 100/110V AC/DC<br>115V AC/DC<br>120V AC/DC<br>200/220V AC/DC<br>230V AC/DC<br>240V AC/DC<br>380V AC/DC<br>400/440V AC/DC<br>(50/60 Hz) | BA9S/13   | LSTD-6②  | 6V AC/DC ±10%  |
|                                                                      |                                                                                      |                 |                                                                                                                                        | E12/15    | LETD-6②  |                |
|                                                                      |                                                                                      |                 |                                                                                                                                        |           |          |                |
|                                                                      |                                                                                      |                 |                                                                                                                                        |           |          |                |
|                                                                      |                                                                                      | DC-DC Converter | 110V DC                                                                                                                                | BA9S/13   | LSTD-6②  | 6V AC/DC ±10%  |
|                                                                      |                                                                                      |                 |                                                                                                                                        | E12/15    | LETD-6②  |                |

## Incandescent Illuminated Unit Specifications

| Unit                                                                 | Color Code ②                                                       | Input Type   | Operating Voltage                                                                                                                                    | Incandescent Lamp |          |           |
|----------------------------------------------------------------------|--------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|-----------|
|                                                                      |                                                                    |              |                                                                                                                                                      | Lamp Base         | Type No. | Rating    |
| Pilot Light<br>Illuminated Pushbutton<br>Illuminated Selector Switch | A: amber<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white | Full Voltage | 6V AC/DC                                                                                                                                             | BA9S/13           | LS-6     | 1W (6.3V) |
|                                                                      |                                                                    |              | 12V AC/DC                                                                                                                                            |                   | LS-8     | 1W (18V)  |
|                                                                      |                                                                    |              | 24V AC/DC                                                                                                                                            |                   | LS-3     | 1W (30V)  |
|                                                                      |                                                                    |              | 6V AC/DC                                                                                                                                             | E12/15            | LE-6     | 2W (6.3V) |
|                                                                      |                                                                    |              | 12V AC/DC                                                                                                                                            |                   | LE-8     | 2W (18V)  |
|                                                                      |                                                                    |              | 24V AC/DC                                                                                                                                            |                   | LE-3     | 12W (30V) |
|                                                                      |                                                                    | Transformer  | 100/110V AC/DC<br>115V AC/DC<br>120V AC/DC<br>200/220V AC/DC<br>230V AC/DC<br>240V AC/DC<br>380V AC/DC<br>400/440V AC/DC<br>480V AC/DC<br>(50/60 Hz) | BA9S/13           | LS-6     | 1W (6.3V) |
|                                                                      |                                                                    |              |                                                                                                                                                      | E12/15            | LE-8     | 2W (18V)  |
|                                                                      |                                                                    |              |                                                                                                                                                      |                   |          |           |
|                                                                      |                                                                    |              |                                                                                                                                                      |                   |          |           |

## LED Lamp Ratings (LSTD Type)

| Type No.               |                                                                                     | LSTD-6②                                                                                                   | LSTD-1②                                                                                                                                                                                                                                                                                                 | LSTD-2②        |
|------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Lamp Base              |                                                                                     | BA9S/13                                                                                                   |                                                                                                                                                                                                                                                                                                         |                |
| Rated Voltage          |                                                                                     | 6V AC/DC                                                                                                  | 12V AC/DC                                                                                                                                                                                                                                                                                               | 24V AC/DC      |
| Voltage Range          |                                                                                     | 6V AC/DC ±10%                                                                                             | 12V AC/DC ±10%                                                                                                                                                                                                                                                                                          | 24V AC/DC ±10% |
| Current Draw           | AC                                                                                  | A, R, W, Y: 17 mA<br>G, PW, S: 8 mA                                                                       | 11 mA                                                                                                                                                                                                                                                                                                   | 11 mA          |
|                        | DC                                                                                  | A, R, W, Y: 14 mA<br>G, PW, S: 5.5 mA                                                                     | 10 mA                                                                                                                                                                                                                                                                                                   | 10 mA          |
| Color Code ②           |                                                                                     | A (amber), G (green), PW (pure white), R (red), S (blue), W (white), Y (yellow)                           |                                                                                                                                                                                                                                                                                                         |                |
| Lamp Base Color        |                                                                                     | Same as illumination color                                                                                |                                                                                                                                                                                                                                                                                                         |                |
| Voltage Marking        |                                                                                     | Die stamped on the base                                                                                   |                                                                                                                                                                                                                                                                                                         |                |
| Life (reference value) |                                                                                     | Approx. 50,000 hours<br>(The luminance is reduced to 50% the initial intensity when used on complete DC.) |                                                                                                                                                                                                                                                                                                         |                |
| Internal Circuit       | A, R, W, Y                                                                          |                                                                                                           | A, R, W, Y                                                                                                                                                                                                                                                                                              |                |
|                        |  |                                                                                                           |                                                                                                                                                                                                                     |                |
|                        | G, PW, S                                                                            |                                                                                                           |                                                                                                                                                                                                                                                                                                         |                |
|                        |                                                                                     |                        |  LED Chip<br> Protection Diode<br> Zener Diode |                |

### LED Lamp Ratings (LETD Type)

| Type No.               |            | LETD-6②                                                                                                   | LETD-8②        | LETD-2②        |
|------------------------|------------|-----------------------------------------------------------------------------------------------------------|----------------|----------------|
| Lamp Base              |            | E12/15                                                                                                    |                |                |
| Rated Voltage          |            | 6V AC/DC                                                                                                  | 12V AC/DC      | 24V AC/DC      |
| Voltage Range          |            | 6V AC/DC ±10%                                                                                             | 12V AC/DC ±10% | 24V AC/DC ±10% |
| Current Draw           | AC         | A, R, W, Y: 17 mA<br>G, S: 8 mA                                                                           | 7 mA           | 11 mA          |
|                        | DC         | A, R, W, Y: 14 mA<br>G, S: 5.5 mA                                                                         | 6.5 mA         | 10 mA          |
| Color Code ②           |            | A (amber), G (green), R (red), S (blue), W (white), Y (yellow)                                            |                |                |
| Lamp Base Color        |            | Same as illumination color                                                                                |                |                |
| Voltage Marking        |            | Die stamped on the base                                                                                   |                |                |
| Life (reference value) |            | Approx. 50,000 hours<br>(The luminance is reduced to 50% the initial intensity when used on complete DC.) |                |                |
| Internal Circuit       | A, R, W, Y |                                                                                                           | A, R, W, Y     |                |
|                        |            |                                                                                                           |                |                |
|                        | G, S       |                                                                                                           | G, S           |                |
|                        |            |                                                                                                           |                |                |

### Incandescent Lamp Ratings (LS Type)

| Type No.               | LS-6                                                                       | LS-8      | LS-2      | LS-3      |
|------------------------|----------------------------------------------------------------------------|-----------|-----------|-----------|
| Lamp Base              | BA9S/13                                                                    |           |           |           |
| Rated Voltage          | 6V AC/DC                                                                   | 12V AC/DC | 18V AC/DC | 24V AC/DC |
| Wattage                | 1W (6.3V)                                                                  | 1W (18V)  | 1W (24V)  | 1W (30V)  |
| Voltage Marking        | Die stamped on the base                                                    |           |           |           |
| Life (reference value) | Approx. 1,000 hours minimum<br>(mean value when used on the rated voltage) |           |           |           |

### Incandescent Lamp Ratings (LE Type)

| Type No.               | LE-6                                                                       | LE-8      | LE-2      | LE-3      |
|------------------------|----------------------------------------------------------------------------|-----------|-----------|-----------|
| Lamp Base              | E12/15                                                                     |           |           |           |
| Rated Voltage          | 6V AC/DC                                                                   | 12V AC/DC | 18V AC/DC | 24V AC/DC |
| Wattage                | 2W (6.3V)                                                                  | 2W (18V)  | 2W (24V)  | 2W (30V)  |
| Voltage Marking        | Die stamped on the base                                                    |           |           |           |
| Life (reference value) | Approx. 1,000 hours minimum<br>(mean value when used on the rated voltage) |           |           |           |

## Specifications

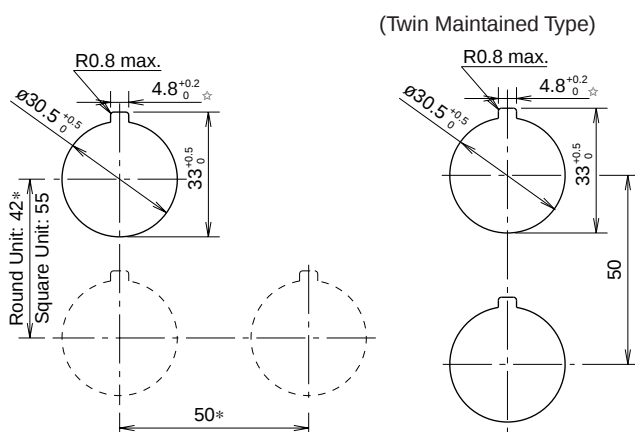
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature                   | -25 to +50°C (no freezing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Operating Humidity                      | 45 to 85% RH (no condensation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Contact Resistance                      | 50 mΩ maximum (initial value)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Insulation Resistance                   | 100 MΩ minimum (500V DC megger)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dielectric Strength                     | Between live and dead metal parts: 2,500V AC, 1 minute<br>(Full voltage type and pilot lights: 2,000V AC, 1 minute)                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Vibration Resistance                    | Operating extremes: 5 to 55 Hz, amplitude 0.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Shock Resistance                        | Damage limits: 1,000 m/s <sup>2</sup><br>Operating extremes: 100 m/s <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mechanical Life<br>(minimum operations) | Pushbuttons<br>Momentary: 5,000,000<br>Maintained: 500,000<br>Illuminated pushbuttons<br>Momentary: 2,500,000<br>Maintained: 500,000<br>Selector switches: 500,000<br>Key selector switches: 500,000<br>Illuminated selector switches: 500,000<br>Selector pushbuttons: 250,000<br>Mono-lever switches: 500,000<br>(Interlocking type): 250,000<br>Pushlock turn reset 500,000<br>Mushroom push-pull switch<br>Two contact blocks: 500,000<br>Four contact blocks: 200,000                                                                                           |
| Electrical Life<br>(minimum operations) | Pushbuttons: 500,000 *1<br>Illuminated pushbuttons: 500,000 *1<br>Selector switches: 500,000 *2<br>Key selector switches: 500,000 *2<br>Illuminated selector switches: 500,000 *2<br>Selector pushbuttons: 250,000 *2<br>Mono-lever switches: 500,000 *3<br>(Interlocking type): 250,000 *3<br>*1 Switching frequency 1,800 operations/h, duty ratio 40%<br>*2 Switching frequency 1,200 operations/h, duty ratio 40%<br>*3 Switching frequency 900 operations/h, duty ratio 40%<br>*4 Switching frequency 900 operations/h for square twin or twin maintained types |

## Degree of Protection

| Type No. | Unit                                                                                                                                             | NEMA ICS 6-110                      | IEC 60529 |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------|
| A****    | Pushbuttons, pilot lights, illuminated pushbuttons, selector switches, selector pushbuttons, mono-lever switches, and cam switches (ACSNO/ACSSO) | Type 1, 2, 3, 3R, (3S), 4, 5, 12,13 | IP65      |
|          | Illuminated selector switches, key pushbuttons, key reset pushbuttons, key cam switches, and key selector switches                               | Type 1, 2, 3, 3R, 5, 12, 13         | IP54      |
| U****    | Square pushbuttons, square pilot lights, and cam switches (UC)                                                                                   | Type 1, 2                           | IP40      |

Note: (3S) of NEMA ICS 6-110 applies to the pilot lights with round lens.

## Mounting Hole Layout



\*The minimum mounting centers are applicable to switches with one layer of contact blocks (two contact blocks). When two layers of contact blocks (four contact blocks) are mounted, determine the minimum mounting centers in consideration of convenience for wiring.

- Mushroom with shroud: 50 mm minimum
- Jumbo mushroom: 67 mm minimum
- Jumbo mushroom with shroud: 76 mm minimum
- Square twin: 55 mm minimum
- Selector switch with lever: 50 mm minimum

☆ The 4.8 mm recess is for preventing rotation and is not necessary when the nameplate or anti-rotation ring is not used.

Note: For mounting hole layout of pushbuttons, mono-lever switches, and cam switches, see each section.

## Ordering Information

### Standard Units

- Specify an operator or lens color code in the Type No.
- Black, green, and red buttons are included with flush push-buttons.
- Full voltage type illuminated units are not supplied with a lamp. Order LED or incandescent lamps separately. Transformer and DC-DC converter type illuminated units contain an LED or incandescent lamp.
- Terminal covers, nameplates, and accessories are ordered separately.

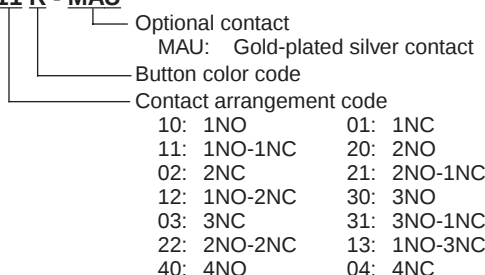
### Terminal Cover

- When a terminal cover is required, order an applicable terminal cover referring to page 55.

The Type No. development charts shown below can be used to specify control units other than those listed on the following pages. Gold-plated silver contacts are also available.

### ø30 Series Pushbuttons

#### ABN2 11 R - MAU

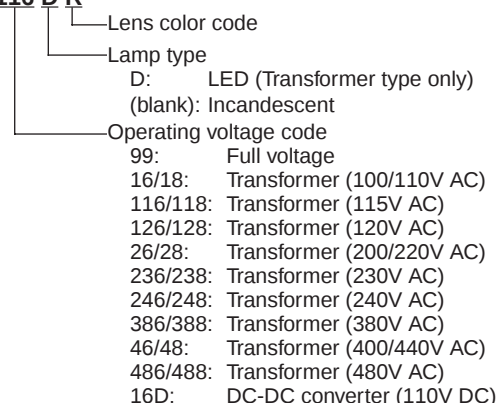


Note:

- Mushroom pull type ATN23 can have a maximum of two contact blocks.
- Mushroom push-pull return type ATN22 cannot have only NO or only NC contacts.
- No other contact configurations are available for square twin type UWQN1 than those specified in this catalog.

### ø30 Series Pilot Lights

#### APN1 116 D R

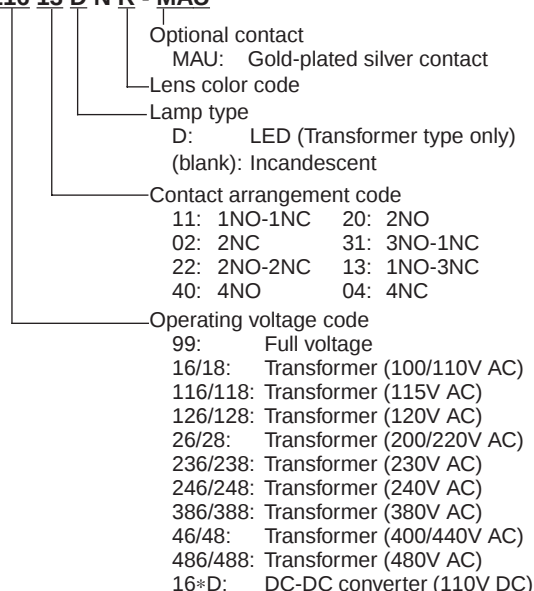


Note:

- Full voltage type is not supplied with a lamp.
- Transformer and DC-DC converter types contain an LED lamp (LSTD-6② or LETD-6②) or incandescent lamp (LS-6, 1W or LE-8, 2W).
- LED lamps cannot be used on 480V AC transformers.
- DC-DC converter is available with LED lamps only.
- Operating voltage codes 18, 118, 128, 28, 238, 248, 388, 48, and 488 are available for incandescent types only.

### ø30 Series Illuminated Pushbuttons

#### ALFN2 116 13 D N R - MAU



Note:

- Illuminated pushbuttons cannot have an odd number of contact blocks, such as 1NO, 1NC, 3NO, 2NO-1NC, 1NO-2NC, and 3NC.
- Transformer and DC-DC converter types contain an LED lamp (LSTD-6② or LETD-6②) or incandescent lamp (LS-6, 1W or LE-8, 2W).
- LED lamps cannot be used on 480V AC transformers.
- DC-DC converter is available with LED lamps only.
- Operating voltage codes 18, 118, 128, 28, 238, 248, 388, 48, and 488 are available for incandescent types only.

## ø30 ø30 Series Control Units (Ordering Information)

### ø30 Series Selector Switch

ASN 2 L 11 - MAU

- Optional contact  
MAU: Gold-plated silver contact
- Contact arrangement code
- Operator type  
(blank): Knob  
L: Lever
- Number of positions

### ø30 Series Key Selector Switch

ASN 2 K 20 B - MAU

- Optional contact  
MAU: Gold-plated silver contact
- Key removable position code
- 2-position
  - Maintained  
(blank): Removable in all positions  
B: Removable in left only  
C: Removable in right only
  - Spring return from right  
(blank): Removable in left only
  - Spring return from left  
(blank): Removable in right only
- 3-position
  - Maintained  
(blank): Removable in all positions  
B: Removable in left and center  
C: Removable in right and center  
D: Removable in center only  
E: Removable in right and left  
G: Removable in left only  
H: Removable in right only
  - Spring return from right  
(blank): Removable in left and center  
D: Removable in center only  
G: Removable in left only
  - Spring return from left  
(blank): Removable in right and center  
D: Removable in center only  
H: Removable in right only
  - Spring return two-way  
(blank): Removable in center only
- Contact arrangement code
- Number of positions

Note:

- The key cannot be removed in the return position.

### ø30 Series Illuminated Selector Switch

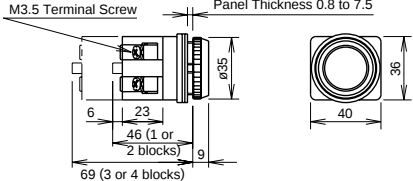
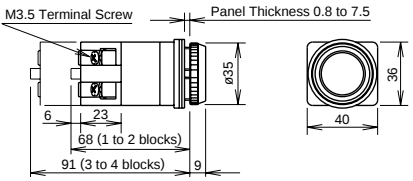
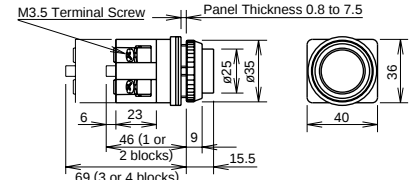
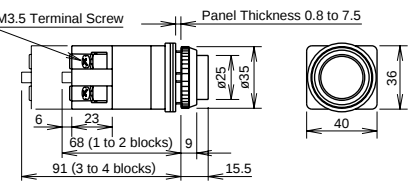
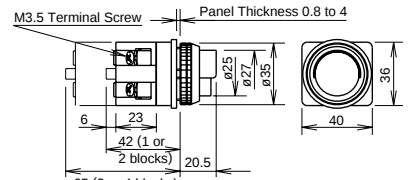
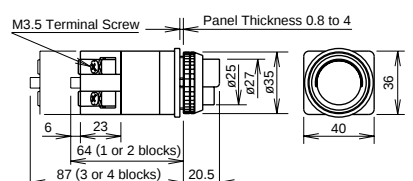
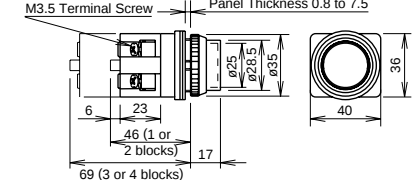
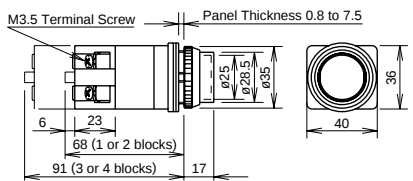
ASLN 2 16 22 D N R - MAU

- Optional contact  
MAU: Gold-plated silver contact
- Lens color code
- Lamp type  
D: LED (Transformer type only)  
(blank): Incandescent
- Contact arrangement code
- Operating voltage code
  - 99: Full voltage
  - 16: Transformer (100/110V AC)
  - 156: Transformer (115V AC)
  - 136: Transformer (120V AC)
  - 26: Transformer (200/220V AC)
  - 236: Transformer (230V AC)
  - 256: Transformer (240V AC)
  - 386: Transformer (380V AC)
  - 46: Transformer (400/440V AC)
  - 486: Transformer (480V AC)
- Number of positions

Note:

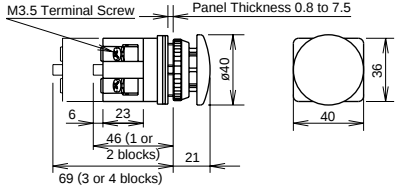
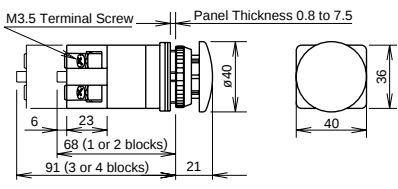
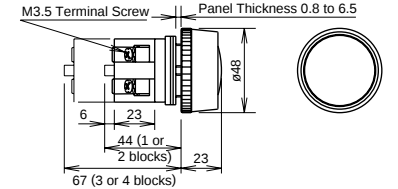
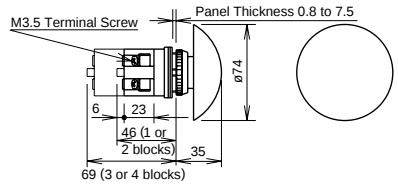
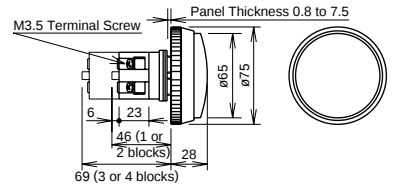
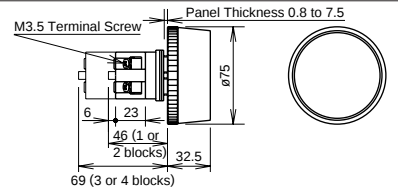
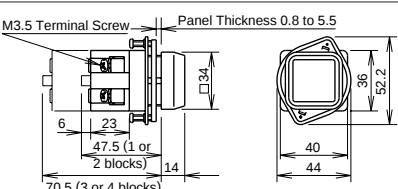
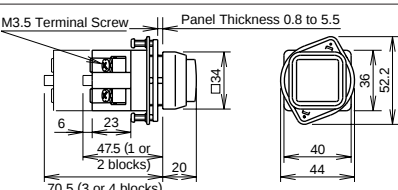
- Full voltage type is not supplied with a lamp.
- Transformer type contain an LED lamp (LSTD-6②) or incandescent lamp (LS-6, 1W).
- LED lamps cannot be used on 480VAC transformers.

**Flush / Extended / Extended w/Half Shroud / Extended w/Full Shroud Types**

| Shape                                                                                                                                                                                                                                                                                                                                                                                    | Operation Type | Contact | Type No. | ① Button Color Code                                                    | Dimensions (mm)                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|----------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Flush<br>ABN1<br><br>                                | Momentary      | 1NO     | ABN110①  | Black (B), green (G), and red (R) buttons are supplied with each unit. |    |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | ABN101①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | ABN111①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | ABN120①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | ABN102①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | ABN122①  |                                                                        |                                                                                       |
| Flush<br>AON1<br><br>                                | Maintained     | 1NO     | AON110①  | Specify Y or W when a yellow or white button is required.              |    |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | AON101①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | AON111①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | AON120①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | AON102①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | AON122①  |                                                                        |                                                                                       |
| Extended<br>ABN2<br><br>                             | Momentary      | 1NO     | ABN210①  |                                                                        |    |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | ABN201①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | ABN211①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | ABN220①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | ABN202①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | ABN222①  |                                                                        |                                                                                       |
| Extended<br>AON2<br><br>                      | Maintained     | 1NO     | AON210①  |                                                                        |   |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | AON201①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | AON211①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | AON220①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | AON202①  |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | AON222①  |                                                                        |                                                                                       |
| Extended with Half Shroud<br>ABN2G<br><br>   | Momentary      | 1NO     | ABN2G10① | Specify a button color code in place of ① in the Type No.              |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | ABN2G01① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | ABN2G11① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | ABN2G20① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | ABN2G02① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | ABN2G22① |                                                                        |                                                                                       |
| Extended with Half Shroud<br>AON2G<br><br>   | Maintained     | 1NO     | AON2G10① | B: black<br>G: green<br>R: red<br>W: white<br>Y: yellow                |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | AON2G01① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | AON2G11① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | AON2G20① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | AON2G02① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | AON2G22① |                                                                        |                                                                                       |
| Extended with Full Shroud<br>ABN2F<br><br>   | Momentary      | 1NO     | ABN2F10① |                                                                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | ABN2F01① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | ABN2F11① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | ABN2F20① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | ABN2F02① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | ABN2F22① |                                                                        |                                                                                       |
| Extended with Full Shroud<br>AON2F<br><br>   | Maintained     | 1NO     | AON2F10① |                                                                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NC     | AON2F01① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 1NO-1NC | AON2F11① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO     | AON2F20① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NC     | AON2F02① |                                                                        |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                          |                | 2NO-2NC | AON2F22① |                                                                        |                                                                                       |

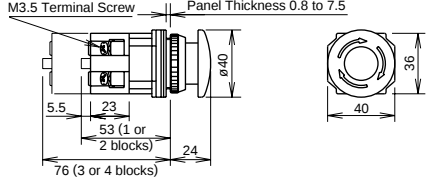
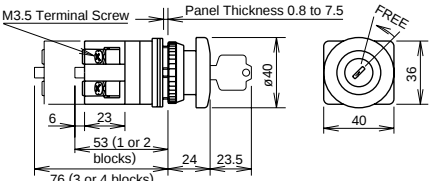
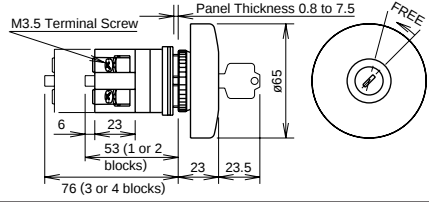
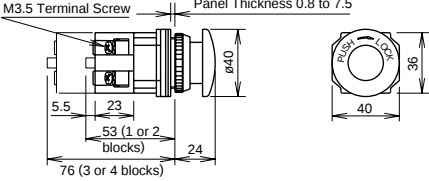
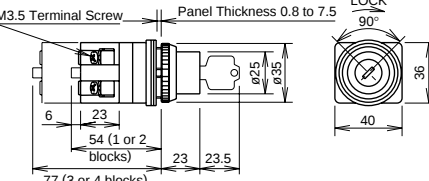
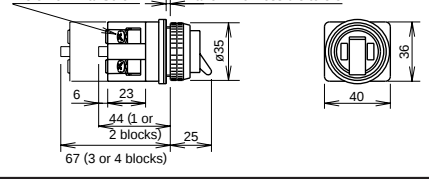
- Round bezel and shroud (metal): Chrome-plated
- Other contact arrangements and gold-plated silver contacts are also available. See page 11.

**Mushroom / Jumbo Mushroom / Square Flush / Square Extended Types**

| Shape                                                                                                                                                                                                                                                                                                                                                                                                 | Operation Type | Contact | Type No. | ① Button Color Code                                     | Dimensions (mm)                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|----------|---------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Mushroom ABN3</b><br><br>                                      | Momentary      | 1NO     | ABN310①  | B: black<br>G: green<br>R: red<br>W: white<br>Y: yellow |    |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | ABN301①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | ABN311①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | ABN320①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | ABN302①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | ABN322①  |                                                         |                                                                                       |
| <b>Mushroom AON3</b><br><br>                                      | Maintained     | 1NO     | AON310①  | B: black<br>G: green<br>R: red<br>W: white<br>Y: yellow |    |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | AON301①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | AON311①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | AON320①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | AON302①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | AON322①  |                                                         |                                                                                       |
| <b>Mushroom with Full Shroud ABN3G</b><br><br>                    | Momentary      | 1NO     | ABN3G10① |                                                         |    |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | ABN3G01① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | ABN3G11① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | ABN3G20① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | ABN3G02① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | ABN3G22① |                                                         |                                                                                       |
| <b>Palm Mushroom ABN4</b><br><br>                          | Momentary      | 1NO     | ABN410①  |                                                         |   |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | ABN401①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | ABN411①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | ABN420①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | ABN402①  |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | ABN422①  |                                                         |                                                                                       |
| <b>Jumbo Mushroom with Shallow Shroud ABN4G</b><br><br>   | Momentary      | 1NO     | ABN4G10① | B: black<br>G: green<br>R: red                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | ABN4G01① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | ABN4G11① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | ABN4G20① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | ABN4G02① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | ABN4G22① |                                                         |                                                                                       |
| <b>Jumbo Mushroom with Deep Shroud ABN4F</b><br><br>      | Momentary      | 1NO     | ABN4F10① |                                                         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | ABN4F01① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | ABN4F11① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | ABN4F20① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | ABN4F02① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | ABN4F22① |                                                         |                                                                                       |
| <b>Square Flush UBQN1</b><br><br>                         | Momentary      | 1NO     | UBQN110① | B: black<br>G: green<br>R: red<br>Y: yellow             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | UBQN101① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | UBQN111① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | UBQN120① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | UBQN102① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | UBQN122① |                                                         |                                                                                       |
| <b>Square Extended UBQN2</b><br><br>                      | Momentary      | 1NO     | UBQN210① | B: black<br>G: green<br>R: red<br>Y: yellow             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NC     | UBQN201① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 1NO-1NC | UBQN211① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO     | UBQN220① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NC     | UBQN202① |                                                         |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                       |                | 2NO-2NC | UBQN222① |                                                         |                                                                                       |

- Specify a button color code in place of ① in the Type No.
- Round bezel and shroud (metal): Chrome-plated
- Other contact arrangements and gold-plated silver contacts are also available. See page 11.

**Pushlock Turn Reset / Pushlock Key Reset / Push Turn Lock /  
Key ON/OFF Lock / Toggle Lever Types**

| Shape                                                                                                                                                                                                                                                                                                                                                                                        | Contact | Type No. | ① Button Color Code                         | Dimensions (mm)                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|---------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Mushroom Pushlock Turn Reset</b><br>AVN3<br><br>                                                                                       | 1NO     | AVN310N① | R: red<br>Y: yellow                         |    |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NC     | AVN301N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NO-1NC | AVN311N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO     | AVN320N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NC     | AVN302N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO-2NC | AVN322N① |                                             |                                                                                      |
| <b>Mushroom Pushlock Key Reset</b><br>ABN3K<br><br>                                                                                       | 1NO     | ABN3K10① | B: black<br>G: green<br>R: red<br>Y: yellow |    |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NC     | ABN3K01① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NO-1NC | ABN3K11① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO     | ABN3K20① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NC     | ABN3K02① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO-2NC | ABN3K22① |                                             |                                                                                      |
| <b>Jumbo Mushroom Pushlock Key Reset</b><br>ABN4K<br><br>                                                                               | 1NO     | ABN4K10① | B: black<br>G: green<br>R: red              |    |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NC     | ABN4K01① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NO-1NC | ABN4K11① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO     | ABN4K20① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NC     | ABN4K02① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO-2NC | ABN4K22① |                                             |                                                                                      |
| <b>Mushroom Push Turn Lock</b><br>AJN3<br><br>   | 1NO     | AJN310N① | B: black<br>G: green<br>R: red<br>Y: yellow |  |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NC     | AJN301N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NO-1NC | AJN311N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO     | AJN320N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NC     | AJN302N① |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO-2NC | AJN322N① |                                             |                                                                                      |
| <b>Key ON/OFF Lock</b><br>ABN5<br><br>           | 1NO     | ABN510   | —                                           |  |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NC     | ABN501   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NO-1NC | ABN511   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO     | ABN520   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NC     | ABN502   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO-2NC | ABN522   |                                             |                                                                                      |
| <b>Toggle Lever</b><br>ATN4<br><br>              | 1NO     | ATN410   | Lever: black                                |  |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NC     | ATN401   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 1NO-1NC | ATN411   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO     | ATN420   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NC     | ATN402   |                                             |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                              | 2NO-2NC | ATN422   |                                             |                                                                                      |

• Specify a button color code in place of ① in the Type No.

• Round bezel (metal): Chrome-plated

• Cylinder (metal): Chrome-plated

• Other contact arrangements and gold-plated silver contacts are also available. See page 11.

• **Pushlock Turn Reset:** Button is maintained when pressed and is reset when turned clockwise. Red buttons only.

Note: AVN3 pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use the HN1E series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).

• **Pushlock Key Reset:** Button is maintained when pressed and is reset with a key. Key is removable from both depressed and reset positions. Two keys are supplied.

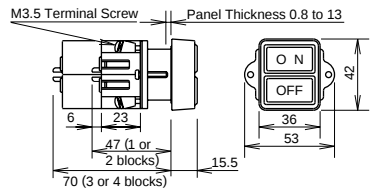
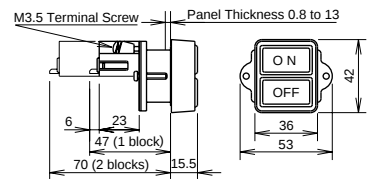
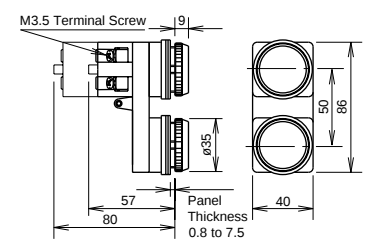
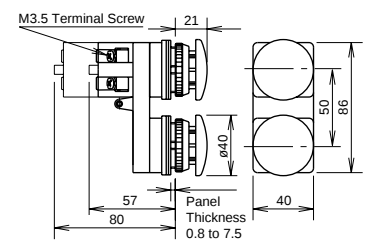
• **Push Turn Lock:** Button is locked when turned clockwise in the depressed position and is reset when turned counterclockwise.

• **Key ON/OFF Lock:** Button can be locked in both depressed and reset positions.

• **Toggle Lever:** ON and OFF are indicated on the cap.



## Square Twin / Twin Maintained Types

| Shape                                                                                                                                                                     | Contact    |               | Type No.  | Button Color                                                                                                                           | Dimensions (mm)                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Square Twin (Momentary)</b><br>UWQN1<br><br><br>UL LISTED SP CE                       | <b>ON</b>  | <b>OFF</b>    |           | ON: Black<br>OFF: Red                                                                                                                  |    |
|                                                                                                                                                                           | 1NO        | 1NO           | UWQN11010 |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NO        | 1NC           | UWQN11001 |                                                                                                                                        |                                                                                       |
| <b>Square Twin (Maintained)</b><br>UWQN2<br><br><br>UL LISTED SP CE                      | <b>ON</b>  | <b>OFF</b>    |           | ON: Black<br>OFF: Red                                                                                                                  |    |
|                                                                                                                                                                           | 1NO        | —             | UWQN21000 |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NC        | —             | UWQN20100 |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NO-1NC    | —             | UWQN21100 |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 2NO        | —             | UWQN22000 |                                                                                                                                        |                                                                                       |
| <b>Flush Twin Maintained</b><br>ABBN11<br><br><br>UL LISTED SP CE                       | <b>Top</b> | <b>Bottom</b> |           | Black (B), green (G), and red (R) buttons are supplied with each unit.<br><br>Other color buttons are separately ordered. See page 61. |   |
|                                                                                                                                                                           | 1NO        | —             | ABBN1110  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NC        | —             | ABBN1101  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NO-1NC    | —             | ABBN1111  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 2NO        | —             | ABBN1120  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 2NC        | —             | ABBN1102  |                                                                                                                                        |                                                                                       |
| <b>Mushroom Twin Maintained (Without buttons)</b><br>ABBN33<br><br><br>UL LISTED SP CE | <b>Top</b> | <b>Bottom</b> |           | Order buttons separately. See page 61.                                                                                                 |  |
|                                                                                                                                                                           | 1NO        | —             | ABBN3310  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NC        | —             | ABBN3301  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 1NO-1NC    | —             | ABBN3311  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 2NO        | —             | ABBN3320  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 2NC        | —             | ABBN3302  |                                                                                                                                        |                                                                                       |
|                                                                                                                                                                           | 2NO-2NC    | —             | ABBN3322  |                                                                                                                                        |                                                                                       |

- Round bezel (metal): Chrome-plated
- Other contact arrangements and gold-plated silver contacts are also available. See page 11.
- **Square Twin (Momentary):** Two independent momentary switches are contained in one unit, each operated by ON or OFF button. With the ø30 adapter removed from the sleeve, the unit can mount in a ø25.5mm mounting hole for the ø25 series.
- **Square Twin (Maintained):** The contact operates when ON button is pressed and is maintained in the depressed position. The button is reset by pressing the OFF button.
- **Twin Maintained:** The contact operates when the top button is pressed and is maintained in the depressed position. The button is reset by pressing the bottom button.  
Different combinations of flush, extended buttons, and colors are available (ABN1B-\*, ABN2B-\*). See page 61.  
Mushroom buttons for the ABBN33 are ordered separately. Specify the color code (ABN3B-\*). See page 61.

# ø30 ø30 Series Pilot Lights

## Dome Types

| Shape                                                                                                                                                                                                                                                                                                                                                                                                                        | Lamp         | Input Type       | Lamp Receptacle | Type No.    | ② Lens/LED Color Code                                                                       | Applicable Lamp |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|-----------------|-------------|---------------------------------------------------------------------------------------------|-----------------|
|  <br>   | Without Lamp | Full Voltage     | BA9S            | APN199②     | A: amber<br>C: clear<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white<br>Y: yellow | LSTD<br>LS (1W) |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                  | E12             | APNE199②    |                                                                                             | LETD<br>LE (2W) |
|                                                                                                                                                                                                                                                                                                                                                                                                                              | LED          | Transformer      | BA9S            | APN1③DN②    | A: amber<br>G: green                                                                        | LSTD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                  | E12             | APNE1③DN②   | PW: pure white**<br>R: red                                                                  | LETD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |              | DC-DC Converter* | BA9S            | APN116DDN②  | S: blue                                                                                     | LSTD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                  | E12             | APNE116DDN② | W: white<br>Y: yellow                                                                       | LETD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                                                                              | Incandescent | Transformer      | BA9S            | APN1③②      | C: clear<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white                          | LS-6 (1W)       |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                  | E12             | APN1③②      |                                                                                             | LE-8 (2W)       |

### • Operating Voltage Code

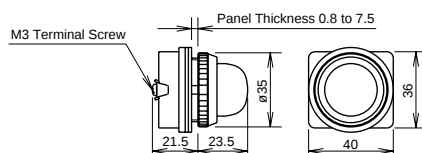
Specify an operating voltage code in place of ③ in the Type No.

| ③ Operating Voltage Code                                                 |                                   |
|--------------------------------------------------------------------------|-----------------------------------|
| LED Transformer BA9S and E12 Types<br>Incandescent Transformer BA9S Type | Incandescent Transformer E12 Type |
| 16: 100/110V AC                                                          | 18: 100/110V AC                   |
| 116: 115V AC                                                             | 118: 115V AC                      |
| 126: 120V AC                                                             | 128: 120V AC                      |
| 26: 200/220V AC                                                          | 28: 200/220V AC                   |
| 236: 230V AC                                                             | 238: 230V AC                      |
| 246: 240V AC                                                             | 248: 240V AC                      |
| 386: 380V AC                                                             | 388: 380V AC                      |
| 46: 400/440V AC                                                          | 48: 400/440V AC                   |
| 486: 480V AC (incandescent only)                                         | 488: 480V AC                      |

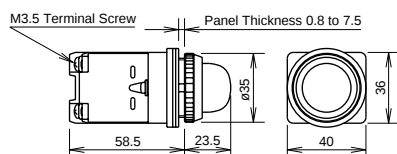
- Specify a lens/LED color code in place of ② in the Type No. Use the white lens (W) for LED pure white illumination.
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer and DC-DC converter types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).
- \* DC-DC converter types are not approved by UL and CSA, and not CE compliant (operating voltage 90 to 140V DC).
- \*\* Pure white is available for BA9S lamp base types only.

## Dimensions

### • Full Voltage Type



- Transformer Type
- DC-DC Converter Type



All dimensions in mm.

## Square / Rectangular (Marking) Types

| Shape                                                                                                                                                                                                                                                                                                                                                                                                       | Lamp                                                                                                                                                                                                                                                                                                                                                                                             | Input Type       | Lamp Receptacle | Type No.    | ② Lens/LED Color Code                                                                       | Applicable Lamp                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Square<br>UPQN3B<br><br><br><br>                                        | Without Lamp                                                                                                                                                                                                                                                                                                                                                                                     | Full Voltage     | BA9S            | UPQN3B99②   | A: amber<br>C: clear<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white<br>Y: yellow | LSTD<br>LS (1W)                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                             | LED                                                                                                                                                                                                                                                                                                                                                                                              | Transformer      | BA9S            | UPQN3B③D②   | A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow                          | LSTD-6②                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                  | DC-DC Converter* | BA9S            | UPQN3B16DD② |                                                                                             | LSTD-6②                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                             | Incandescent                                                                                                                                                                                                                                                                                                                                                                                     | Transformer      | BA9S            | UPQN3B③②    | C: clear<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white                          | LS-6 (1W)                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                             | Rectangular (Marking Type)<br>UPQN4<br><br><br><br>   | Without Lamp     | Full Voltage    | BA9S        | UPQN499②                                                                                    | A: amber<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white<br>Y: yellow |
| LED                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                  | Transformer      | BA9S            | UPQN4③D②    | A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow                          | LSTD-6②                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                  | DC-DC Converter* | BA9S            | UPQN416DD②  |                                                                                             | LSTD-6②                                                                         |
| Incandescent                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                  | Transformer      | BA9S            | UPQN4③②     | G: green<br>O: orange<br>R: red<br>S: blue<br>W: white                                      | LS-6 (1W)                                                                       |
| Rectangular (Marking Type)<br>UPQNE4<br>UPQN4<br><br><br><br>   |                                                                                                                                                                                                                                                                                                                                                                                                  | Without Lamp     | Full Voltage    | E12         | UPQNE499②                                                                                   | A: amber<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white<br>Y: yellow |
|                                                                                                                                                                                                                                                                                                                                                                                                             | LED                                                                                                                                                                                                                                                                                                                                                                                              | Transformer      | E12             | UPQNE4③D②   | A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow                          | LETD-6②                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                  | DC-DC Converter* | E12             | UPQNE416DD② |                                                                                             | LETD-6②                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                             | Incandescent                                                                                                                                                                                                                                                                                                                                                                                     | Transformer      | E12             | UPQN4③②     | G: green<br>O: orange<br>R: red<br>S: blue<br>W: white                                      | LE-8 (2W)                                                                       |

# ø30 ø30 Series Pilot Lights

## • Operating Voltage Code

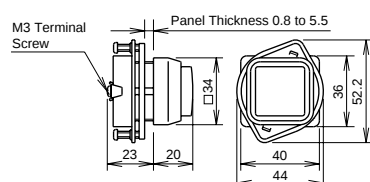
Specify an operating voltage code in place of ③ in the Type No.

| ③ Operating Voltage Code                                                 |                                   |
|--------------------------------------------------------------------------|-----------------------------------|
| LED Transformer BA9S and E12 Types<br>Incandescent Transformer BA9S Type | Incandescent Transformer E12 Type |
| 16: 100/110V AC                                                          | 18: 100/110V AC                   |
| 116: 115V AC                                                             | 118: 115V AC                      |
| 126: 120V AC                                                             | 128: 120V AC                      |
| 26: 200/220V AC                                                          | 28: 200/220V AC                   |
| 236: 230V AC                                                             | 238: 230V AC                      |
| 246: 240V AC                                                             | 248: 240V AC                      |
| 386: 380V AC                                                             | 388: 380V AC                      |
| 46: 400/440V AC                                                          | 48: 400/440V AC                   |
| 486: 480V AC (incandescent only)                                         | 488: 480V AC                      |

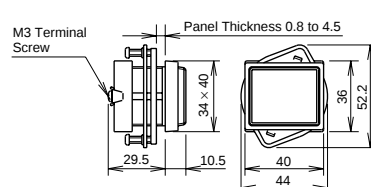
- Specify a lens/LED color code in place of ② in the Type No.
- On the rectangular marking type, a clear lens and a color marking plate are used for white illumination.
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer and DC-DC converter types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).
- Marking plate for the rectangular marking type: 24 × 30 mm, 2 mm thick
- \* DC-DC converter types are not approved by UL and CSA, and not CE compliant (operating voltage 90 to 140V DC).

## Dimensions

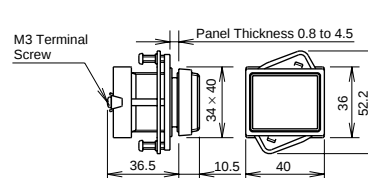
### • Square Full Voltage Type UPQN3B



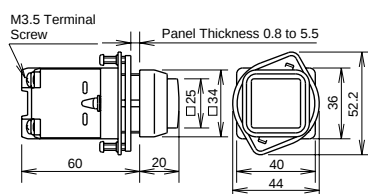
### • Rectangular Full Voltage Type UPQN4



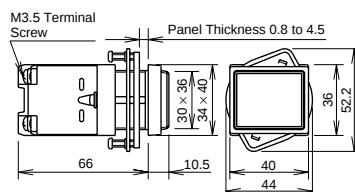
### • Rectangular Full Voltage Type UPQNE4



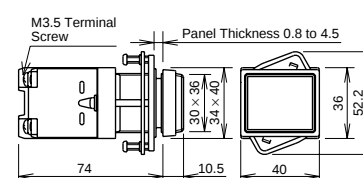
### • Square Transformer Type • Square DC-DC Converter Type UPQN3B



### • Rectangular Transformer Type • Rectangular DC-DC Converter Type UPQN4



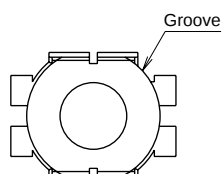
### • Rectangular Transformer Type • Rectangular DC-DC Converter Type UPQNE4



All dimensions in mm.

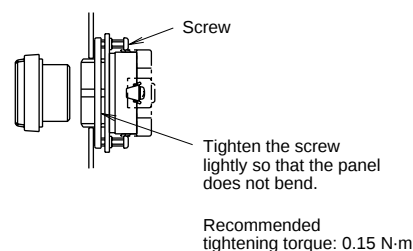
## • Reflector

1. The lamp housing of the square type LED illuminated pilot lights has a built-in reflector.
2. Make sure that the reflector does not fall off when removing the lens or marking plate.
3. When replacing the LED lamp of UPQNE4 (rectangular) type, use a lamp holder tool (OR-55).
4. To remove the reflector, insert a flat screwdriver inside the groove of the reflector and lightly push out.



## • Panel Mounting

1. Tighten the square ring to the operator and position the ring correctly.
2. Lightly tighten the screw to secure the pilot light onto the panel.



| Incandescent                                                                                                 |              | Push-to-Check Types (1W) |                 |          |                                                                    |                 |
|--------------------------------------------------------------------------------------------------------------|--------------|--------------------------|-----------------|----------|--------------------------------------------------------------------|-----------------|
| Shape                                                                                                        | Lamp         | Input Type               | Lamp Receptacle | Type No. | ② Lens/LED Color Code                                              | Applicable Lamp |
| Push-to-Check<br>APN1*P<br> | Without Lamp | Full Voltage             | BA9S            | APN199P② | C: clear<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white | LS (1W)         |
|                                                                                                              | Incandescent | Transformer              | BA9S            | APN1③P②  |                                                                    | LS-6 (1W)       |

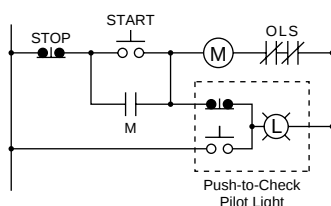
### • Operating Voltage Code

Specify an operating voltage code in place of ③ in the Type No.

| ③ Operating Voltage Code |             |
|--------------------------|-------------|
| 16:                      | 100/110V AC |
| 116:                     | 115V AC     |
| 126:                     | 120V AC     |
| 26:                      | 200/220V AC |
| 236:                     | 230V AC     |
| 246:                     | 240V AC     |
| 386:                     | 380V AC     |
| 46:                      | 400/440V AC |
| 486:                     | 480V AC     |

- Specify a lens color code in place of ② in the Type No.
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
- Transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC).

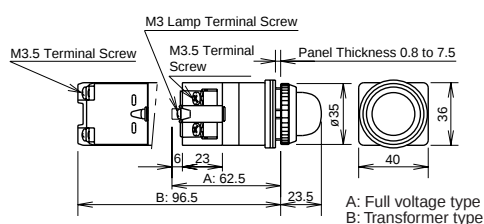
### Circuit Example



Note: The lamp of push-to-check pilot light is not connected to the contact terminal. To connect, refer to the diagram on the left.

### Dimensions

- Push-to-Check  
APN1\*P



All dimensions in mm.

# ø30 ø30 Series Illuminated Pushbuttons

| LED                                                                                                                                     |                 | Round Extended Illuminated Pushbuttons |              |              |         |               |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------|--------------|--------------|---------|---------------|-----------------|
| Shape                                                                                                                                   | Lamp Receptacle | Operation Type                         | Lamp         | Input Type   | Contact | Type No.      | Applicable Lamp |
| Round Extended<br>ALN2<br>AOLN2<br>ALNE2<br>AOLNE2<br> | BA9S            | Momentary                              | Without Lamp | Full Voltage | 1NO-1NC | ALN29911DN②   | LSTD            |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | ALN29920DN②   |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | ALN29902DN②   |                 |
|                                                                                                                                         |                 |                                        | LED          | Transformer  | 1NO-1NC | ALN2③11DN②    | LSTD-6②         |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | ALN2③20DN②    |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | ALN2③02DN②    |                 |
|                                                                                                                                         |                 | Maintained                             | Without Lamp | Full Voltage | 1NO-1NC | AOLN29911DN②  | LSTD            |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | AOLN29920DN②  |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | AOLN29902DN②  |                 |
|                                                                                                                                         |                 |                                        | LED          | Transformer  | 1NO-1NC | AOLN2③11DN②   | LSTD-6②         |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | AOLN2③20DN②   |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | AOLN2③02DN②   |                 |
|                                                                                                                                         | E12             | Momentary                              | Without Lamp | Full Voltage | 1NO-1NC | ALNE29911DN②  | LETD            |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | ALNE29920DN②  |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | ALNE29902DN②  |                 |
|                                                                                                                                         |                 |                                        | LED          | Transformer  | 1NO-1NC | ALNE2③11DN②   | LETD-6②         |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | ALNE2③20DN②   |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | ALNE2③02DN②   |                 |
|                                                                                                                                         |                 | Maintained                             | Without Lamp | Full Voltage | 1NO-1NC | AOLNE29911DN② | LETD            |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | AOLNE29920DN② |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | AOLNE29902DN② |                 |
|                                                                                                                                         |                 |                                        | LED          | Transformer  | 1NO-1NC | AOLNE2③11DN②  | LETD-6②         |
|                                                                                                                                         |                 |                                        |              |              | 2NO     | AOLNE2③20DN②  |                 |
|                                                                                                                                         |                 |                                        |              |              | 2NC     | AOLNE2③02DN②  |                 |

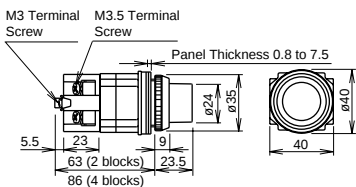
## • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                                                                 | ③ Operating Voltage Code                                                                                                              |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| LED Illuminated Type                                                                                  | LED Transformer BA9S and E12 Types                                                                                                    |
| Specify a lens/LED color code in place of ② in the Type No.                                           | Specify an operating voltage code in place of ③ in the Type No.                                                                       |
| A: amber<br>G: green<br>PW: pure white (BA9S type only)<br>R: red<br>S: blue<br>W: white<br>Y: yellow | 16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC |
| Use the white lens (W) for LED pure white illumination.                                               |                                                                                                                                       |

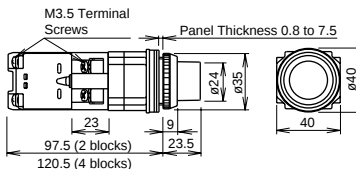
- Full voltage types do not contain a lamp. Order LED lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).

## Dimensions

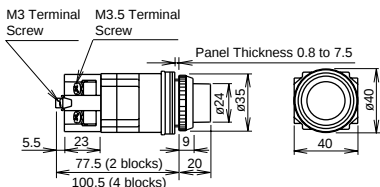
### • ALN2/AOLN2 BA9S/Full Voltage



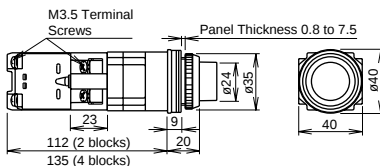
### • ALN2/AOLN2 BA9S/Transformer



### • ALNE2/AOLNE2 E12/Full Voltage



### • ALNE2/AOLNE2 E12/Transformer



All dimensions in mm.

## Incandescent

## Round Extended Illuminated Pushbuttons

| Shape                                                                                                                                                                                                                                                                                                                                                                                                        | Lamp Receptacle | Operation Type | Lamp         | Input Type   | Contact | Type No.   | Applicable Lamp |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------|--------------|---------|------------|-----------------|
| Round Extended<br>ALN<br>ALNE<br><br><br><br>AOLN<br>AOLNE<br><br><br> | BA9S            | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALN9911②   | LS (1W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | ALN9920②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | ALN9902②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Incandescent   | Transformer  |              | 1NO-1NC | ALN③11②    | LS-6            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | ALN③20②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | ALN③02②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              | E12             | Maintained     | Without Lamp | Full Voltage | 1NO-1NC | AOLN9911②  | LS (1W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | AOLN9920②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | AOLN9902②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Incandescent   | Transformer  |              | 1NO-1NC | AOLN③11②   | LS-6            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | AOLN③20②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | AOLN③02②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALNE9911②  | LE (2W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | ALNE9920②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | ALNE9902②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                | Incandescent | Transformer  | 1NO-1NC | ALN③11②    | LE-8            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | ALN③20②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | ALN③02②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Maintained     | Without Lamp | Full Voltage | 1NO-1NC | AOLNE9911② | LE (2W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | AOLNE9920② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | AOLNE9902② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                | Incandescent | Transformer  | 1NO-1NC | AOLN③11②   | LE-8            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NO     | AOLN③20②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |              |              | 2NC     | AOLN③02②   |                 |

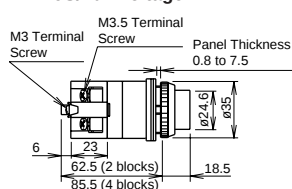
### • Color Code and Operating Voltage Code

| ② Lens Color Code                                       |  | ③ Operating Voltage Code                                        |                                   |
|---------------------------------------------------------|--|-----------------------------------------------------------------|-----------------------------------|
| Incandescent Illuminated Type                           |  | Incandescent Transformer BA9S Type                              | Incandescent Transformer E12 Type |
| Specify a lens color code in place of ② in the Type No. |  | Specify an operating voltage code in place of ③ in the Type No. |                                   |
| C: clear                                                |  | 16: 100/110V AC                                                 | 18: 100/110V AC                   |
| G: green                                                |  | 116: 115V AC                                                    | 118: 115V AC                      |
| O: orange                                               |  | 126: 120V AC                                                    | 128: 120V AC                      |
| R: red                                                  |  | 26: 200/220V AC                                                 | 28: 200/220V AC                   |
| S: blue                                                 |  | 236: 230V AC                                                    | 238: 230V AC                      |
| W: white                                                |  | 246: 240V AC                                                    | 248: 240V AC                      |
|                                                         |  | 386: 380V AC                                                    | 388: 380V AC                      |
|                                                         |  | 46: 400/440V AC                                                 | 48: 400/440V AC                   |
|                                                         |  | 486: 480V AC                                                    | 488: 480V AC                      |

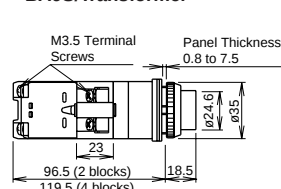
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).

### Dimensions

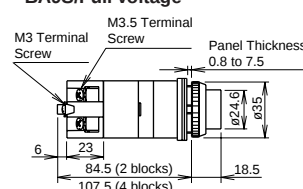
#### • ALN Momentary BA9S/Full Voltage



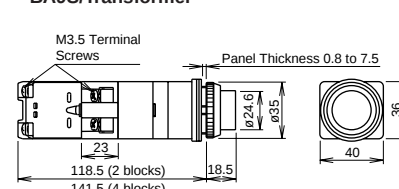
#### • ALN Momentary BA9S/Transformer



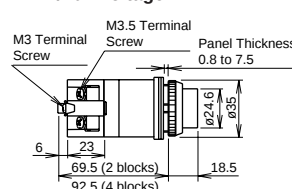
#### • AOLN Maintained BA9S/Full Voltage



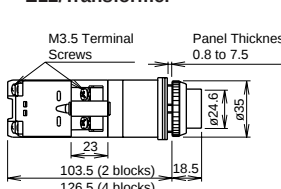
#### • AOLN Maintained BA9S/Transformer



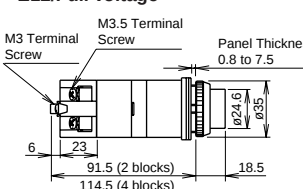
#### • ALNE Momentary E12/Full Voltage



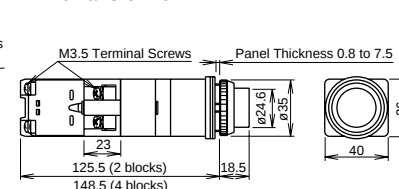
#### • ALNE Momentary E12/Transformer



#### • AOLNE Maintained E12/Full Voltage



#### • AOLNE Maintained E12/Transformer



|     |                                                         |
|-----|---------------------------------------------------------|
| LED | Round Extended with Half Shroud Illuminated Pushbuttons |
|-----|---------------------------------------------------------|

| Shape                                                                                                                                                                                          | Lamp Receptacle | Operation Type | Lamp         | Input Type     | Contact | Type No.      | Applicable Lamp |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------|----------------|---------|---------------|-----------------|
| <div>Round Extended</div> <div>ALGN2</div> <div>AOLGN2</div> <div>ALGNE2</div> <div>AOLGNE2</div> <div></div> | BA9S            | Momentary      | Without Lamp | Full Voltage   | 1NO-1NC | ALGN29911DN②  | LSTD            |
|                                                                                                                                                                                                |                 |                |              |                | 2NO     | ALGN29920DN②  |                 |
|                                                                                                                                                                                                |                 |                |              |                | 2NC     | ALGN29902DN②  |                 |
|                                                                                                                                                                                                |                 |                | LED          | Transformer    | 1NO-1NC | ALGN2③11DN②   | LSTD-6②         |
|                                                                                                                                                                                                |                 |                |              |                | 2NO     | ALGN2③20DN②   |                 |
|                                                                                                                                                                                                |                 |                |              |                | 2NC     | ALGN2③02DN②   |                 |
|                                                                                                                                                                                                |                 | Maintained     | Without Lamp | Full Voltage   | 1NO-1NC | AOLGN29911DN② | LSTD            |
|                                                                                                                                                                                                |                 |                |              |                | 2NO     | AOLGN29920DN② |                 |
|                                                                                                                                                                                                |                 |                |              |                | 2NC     | AOLGN29902DN② |                 |
|                                                                                                                                                                                                |                 |                | LED          | Transformer    | 1NO-1NC | AOLGN2③11DN②  | LSTD-6②         |
|                                                                                                                                                                                                |                 |                |              |                | 2NO     | AOLGN2③20DN②  |                 |
|                                                                                                                                                                                                |                 |                |              |                | 2NC     | AOLGN2③02DN②  |                 |
|                                                                                                                                                                                                | E12             | Momentary      | Without Lamp | Full Voltage   | 1NO-1NC | ALGNE29911DN② | LETD            |
|                                                                                                                                                                                                |                 |                |              |                | 2NO     | ALGNE29920DN② |                 |
|                                                                                                                                                                                                |                 |                |              |                | 2NC     | ALGNE29902DN② |                 |
|                                                                                                                                                                                                |                 |                | LED          | Transformer    | 1NO-1NC | ALGNE2③11DN②  | LETD-6②         |
|                                                                                                                                                                                                |                 |                |              |                | 2NO     | ALGNE2③20DN②  |                 |
|                                                                                                                                                                                                |                 |                |              |                | 2NC     | ALGNE2③02DN②  |                 |
| Maintained                                                                                                                                                                                     | Without Lamp    | Full Voltage   | 1NO-1NC      | AOLGNE29911DN② | LETD    |               |                 |
|                                                                                                                                                                                                |                 |                | 2NO          | AOLGNE29920DN② |         |               |                 |
|                                                                                                                                                                                                |                 |                | 2NC          | AOLGNE29902DN② |         |               |                 |
|                                                                                                                                                                                                | LED             | Transformer    | 1NO-1NC      | AOLGNE2③11DN②  | LETD-6② |               |                 |
|                                                                                                                                                                                                |                 |                | 2NO          | AOLGNE2③20DN②  |         |               |                 |
|                                                                                                                                                                                                |                 |                | 2NC          | AOLGNE2③02DN②  |         |               |                 |



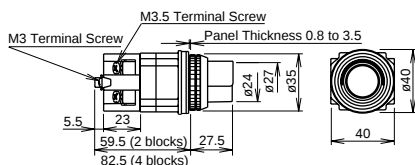
### • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                       |                             | ③ Operating Voltage Code                                        |             |
|-------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------|-------------|
| LED Illuminated Type                                        |                             | LED Transformer BA9S and E12 Types                              |             |
| Specify a lens/LED color code in place of ② in the Type No. |                             | Specify an operating voltage code in place of ③ in the Type No. |             |
| A:                                                          | amber                       | 16:                                                             | 100/110V AC |
| G:                                                          | green                       | 116:                                                            | 115V AC     |
| PW:                                                         | pure white (BA9S type only) | 126:                                                            | 120V AC     |
| R:                                                          | red                         | 26:                                                             | 200/220V AC |
| S:                                                          | blue                        | 236:                                                            | 230V AC     |
| W:                                                          | white                       | 246:                                                            | 240V AC     |
| Y:                                                          | yellow                      | 386:                                                            | 380V AC     |
| Use the white lens (W) for LED pure white illumination.     |                             | 46:                                                             | 400/440V AC |

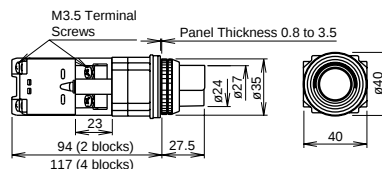
- Full voltage types do not contain a lamp. Order LED lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp: LSTD-62 or LETD-62 (rated voltage 6V AC/DC).

## Dimensions

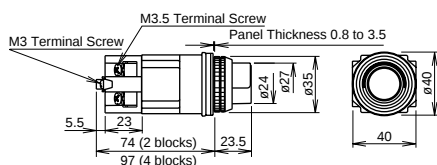
- **ALGN2/AOLGN2**  
**BA9S/Full Voltage**



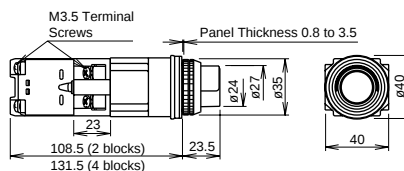
- ALGN2/AOLGN2  
BA9S/Transformer



- **ALGNE2/AOLGNE2**  
E12/Full Voltage



- **ALGNE2/AOLGNE2**  
**E12/Transformer**



All dimensions in mm.

## Incandescent Round Extended with Half Shroud Illuminated Pushbuttons

| Shape                                                                                                                  | Lamp Receptacle | Operation Type | Lamp         | Input Type   | Contact | Type No.   | Applicable Lamp |
|------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------|--------------|---------|------------|-----------------|
| Round Extended<br>ALN*G<br>ALNE*G<br> | BA9S            | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALN9G911②  | LS (1W)         |
|                                                                                                                        |                 |                |              |              | 2NO     | ALN9G920②  |                 |
|                                                                                                                        |                 |                |              |              | 2NC     | ALN9G902②  |                 |
|                                                                                                                        |                 | Incandescent   | Transformer  |              | 1NO-1NC | ALN③11②    | LS-6            |
|                                                                                                                        |                 |                |              |              | 2NO     | ALN③20②    |                 |
|                                                                                                                        |                 |                |              |              | 2NC     | ALN③02②    |                 |
|                                                                                                                        | E12             | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALNE9G911② | LE (2W)         |
|                                                                                                                        |                 |                |              |              | 2NO     | ALNE9G920② |                 |
|                                                                                                                        |                 |                |              |              | 2NC     | ALNE9G902② |                 |
|                                                                                                                        |                 | Incandescent   | Transformer  |              | 1NO-1NC | ALN③11②    | LE-8            |
|                                                                                                                        |                 |                |              |              | 2NO     | ALN③20②    |                 |
|                                                                                                                        |                 |                |              |              | 2NC     | ALN③02②    |                 |

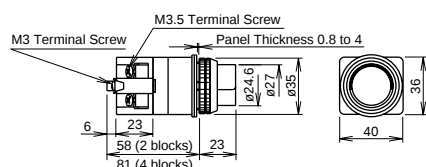
### • Color Code and Operating Voltage Code

| ② Lens Color Code                                                  | ③ Operating Voltage Code                                                                                                                                       |                                                                                                                                                                |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Incandescent Illuminated Type                                      | Incandescent Transformer BA9S Type                                                                                                                             | Incandescent Transformer E12 Type                                                                                                                              |
| Specify a lens color code in place of ② in the Type No.            | Specify an operating voltage code in place of ③ in the Type No.                                                                                                |                                                                                                                                                                |
| C: clear<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white | 1G6: 100/110V AC<br>11G6: 115V AC<br>12G6: 120V AC<br>2G6: 200/220V AC<br>23G6: 230V AC<br>24G6: 240V AC<br>38G6: 380V AC<br>4G6: 400/440V AC<br>48G6: 480V AC | 1G8: 100/110V AC<br>11G8: 115V AC<br>12G8: 120V AC<br>2G8: 200/220V AC<br>23G8: 230V AC<br>24G8: 240V AC<br>38G8: 380V AC<br>4G8: 400/440V AC<br>48G8: 480V AC |

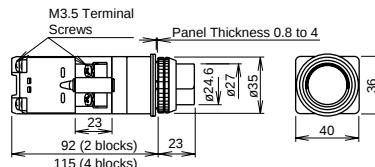
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).

## Dimensions

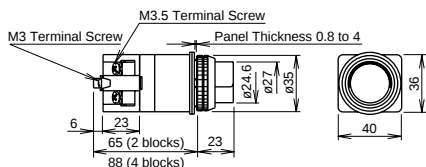
### • ALN\*G Momentary BA9S/Full Voltage



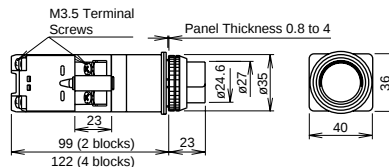
### • ALN\*G Momentary BA9S/Transformer



### • ALNE\*G Momentary E16/Full Voltage



### • ALNE\*G Momentary E16/Transformer



All dimensions in mm.

# ø30 ø30 Series Illuminated Pushbuttons

| LED                                                                                                                                          |                 | Round Extended with Full Shroud Illuminated Pushbuttons |              |              |         |                |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------|--------------|--------------|---------|----------------|-----------------|
| Shape                                                                                                                                        | Lamp Receptacle | Operation Type                                          | Lamp         | Input Type   | Contact | Type No.       | Applicable Lamp |
| Round Extended<br>ALFN2<br>AOLFNE2<br>ALFNE2<br>AOLFNE2<br> | BA9S            | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | ALFN29911DN②   | LSTD            |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALFN29920DN②   |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALFN29902DN②   |                 |
|                                                                                                                                              |                 | LED                                                     | LED          | Transformer  | 1NO-1NC | ALFN2③11DN②    | LSTD-6②         |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALFN2③20DN②    |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALFN2③02DN②    |                 |
|                                                                                                                                              | E12             | Maintained                                              | Without Lamp | Full Voltage | 1NO-1NC | AOLFNE29911DN② | LSTD            |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLFNE29920DN② |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLFNE29902DN② |                 |
|                                                                                                                                              |                 | LED                                                     | LED          | Transformer  | 1NO-1NC | AOLFNE2③11DN②  | LSTD-6②         |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLFNE2③20DN②  |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLFNE2③02DN②  |                 |
|                                                                                                                                              |                 | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | ALFNE29911DN②  | LETD            |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALFNE29920DN②  |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALFNE29902DN②  |                 |
|                                                                                                                                              |                 | LED                                                     | LED          | Transformer  | 1NO-1NC | ALFNE2③11DN②   | LETD-6②         |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALFNE2③20DN②   |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALFNE2③02DN②   |                 |
|                                                                                                                                              |                 | Maintained                                              | Without Lamp | Full Voltage | 1NO-1NC | AOLFNE29911DN② | LETD            |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLFNE29920DN② |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLFNE29902DN② |                 |
|                                                                                                                                              |                 | LED                                                     | LED          | Transformer  | 1NO-1NC | AOLFNE2③11DN②  | LETD-6②         |
|                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLFNE2③20DN②  |                 |
|                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLFNE2③02DN②  |                 |

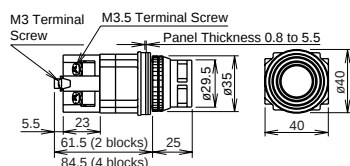
## • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                                                                 | ③ Operating Voltage Code                                                                                                              |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| LED Illuminated Type                                                                                  | LED Transformer BA9S and E12 Types                                                                                                    |
| Specify a lens/LED color code in place of ② in the Type No.                                           | Specify an operating voltage code in place of ③ in the Type No.                                                                       |
| A: amber<br>G: green<br>PW: pure white (BA9S type only)<br>R: red<br>S: blue<br>W: white<br>Y: yellow | 16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC |
| Use the white lens (W) for LED pure white illumination.                                               |                                                                                                                                       |

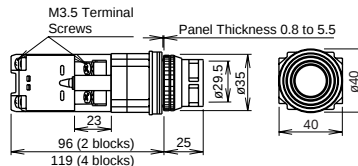
- Full voltage types do not contain a lamp. Order LED lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).

## Dimensions

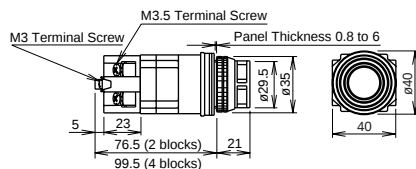
### • ALFN2/AOLFNE2 BA9S/Full Voltage



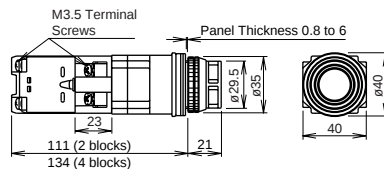
### • ALFN2/AOLFNE2 BA9S/Transformer



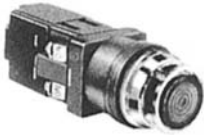
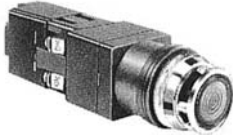
### • ALFNE2/AOLFNE2 E12/Full Voltage



### • ALFNE2/AOLFNE2 E12/Transformer



All dimensions in mm.

| Incandescent                                                                                                                                                                                                                                                                                                                                                                                                 |                 | Round Extended with Full Shroud Illuminated Pushbuttons |              |              |         |             |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------|--------------|--------------|---------|-------------|-----------------|
| Shape                                                                                                                                                                                                                                                                                                                                                                                                        | Lamp Receptacle | Operation Type                                          | Lamp         | Input Type   | Contact | Type No.    | Applicable Lamp |
| Round Extended<br>ALN*F<br>ALNE*F<br><br><br>AOLN*F<br>AOLNE*F<br><br> | BA9S            | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | ALN9F911②   | LS (1W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALN9F920②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALN9F902②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Incandescent                                            | Transformer  |              | 1NO-1NC | ALN③11②     | LS-6            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALN③20②     |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALN③02②     |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              | E12             | Maintained                                              | Without Lamp | Full Voltage | 1NO-1NC | AOLN9F911②  | LS (1W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLN9F920②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLN9F902②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Incandescent                                            | Transformer  |              | 1NO-1NC | AOLN③11②    | LS-6            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLN③20②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLN③02②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | ALNE9F911②  | LE (2W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALNE9F920②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALNE9F902②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Incandescent                                            | Transformer  |              | 1NO-1NC | ALN③11②     | LE-8            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | ALN③20②     |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | ALN③02②     |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Maintained                                              | Without Lamp | Full Voltage | 1NO-1NC | AOLNE9F911② | LE (2W)         |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLNE9F920② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLNE9F902② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Incandescent                                            | Transformer  |              | 1NO-1NC | AOLN③11②    | LE-8            |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NO     | AOLN③20②    |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                         |              |              | 2NC     | AOLN③02②    |                 |

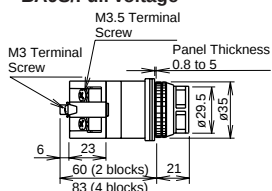
### • Color Code and Operating Voltage Code

| ② Lens Color Code                                       |  | ③ Operating Voltage Code                                        |                                   |
|---------------------------------------------------------|--|-----------------------------------------------------------------|-----------------------------------|
| Incandescent Illuminated Type                           |  | Incandescent Transformer BA9S Type                              | Incandescent Transformer E12 Type |
| Specify a lens color code in place of ② in the Type No. |  | Specify an operating voltage code in place of ③ in the Type No. |                                   |
| C: clear                                                |  | 1F6: 100/110V AC                                                | 1F8: 100/110V AC                  |
| G: green                                                |  | 11F6: 115V AC                                                   | 11F8: 115V AC                     |
| O: orange                                               |  | 12F6: 120V AC                                                   | 12F8: 120V AC                     |
| R: red                                                  |  | 2F6: 200/220V AC                                                | 2F8: 200/220V AC                  |
| S: blue                                                 |  | 23F6: 230V AC                                                   | 23F8: 230V AC                     |
| W: white                                                |  | 24F6: 240V AC                                                   | 24F8: 240V AC                     |
|                                                         |  | 38F6: 380V AC                                                   | 38F8: 380V AC                     |
|                                                         |  | 4F6: 400/440V AC                                                | 4F8: 400/440V AC                  |
|                                                         |  | 48F6: 480V AC                                                   | 48F8: 480V AC                     |

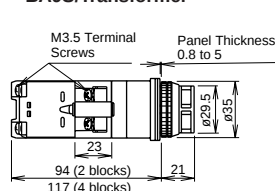
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).

### Dimensions

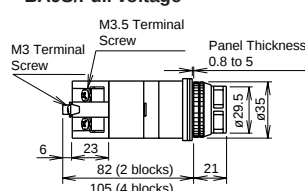
#### • ALN\*F Momentary BA9S/Full Voltage



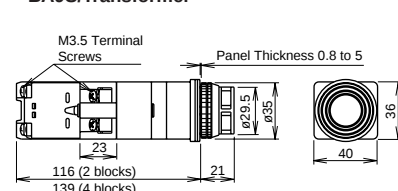
#### • ALN\*F Momentary BA9S/Transformer



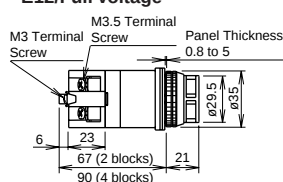
#### • AOLN\*F Maintained BA9S/Full Voltage



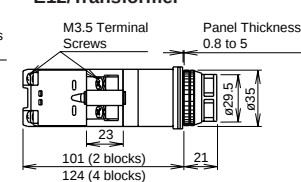
#### • AOLN\*F Maintained BA9S/Transformer



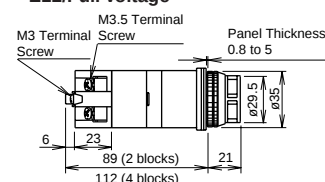
#### • ALNE\*F Momentary E12/Full Voltage



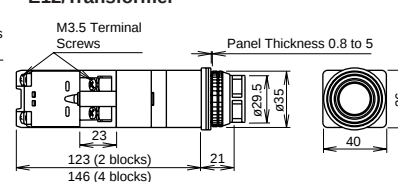
#### • ALN\*F Momentary E12/Transformer



#### • AOLNE\*F Maintained E12/Full Voltage



#### • AOLN\*F Maintained E12/Transformer



**Ø30**

| LED                                                                                                                                                                                      |                 | Mushroom (ø40) Illuminated Pushbuttons |              |               |         |              |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------|--------------|---------------|---------|--------------|-----------------|
| Shape                                                                                                                                                                                    | Lamp Receptacle | Operation Type                         | Lamp         | Input Type    | Contact | Type No.     | Applicable Lamp |
| <div>ø40 Mushroom</div> <div>ALN3</div> <div>AOLN3</div> <div>ALNE3</div> <div>AOLNE3</div> <div></div> | BA9S            | Momentary                              | Without Lamp | Full Voltage  | 1NO-1NC | ALN39911DN②  | LSTD            |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NO     | ALN39920DN②  |                 |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NC     | ALN39902DN②  |                 |
|                                                                                                                                                                                          |                 |                                        | LED          | Transformer   | 1NO-1NC | ALN3③11DN②   | LSTD-6②         |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NO     | ALN3③20DN②   |                 |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NC     | ALN3③02DN②   |                 |
|                                                                                                                                                                                          |                 | Maintained                             | Without Lamp | Full Voltage  | 1NO-1NC | AOLN39911DN② | LSTD            |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NO     | AOLN39920DN② |                 |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NC     | AOLN39902DN② |                 |
|                                                                                                                                                                                          | E12             | Momentary                              | Without Lamp | Full Voltage  | 1NO-1NC | ALNE39911DN② | LETD            |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NO     | ALNE39920DN② |                 |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NC     | ALNE39902DN② |                 |
|                                                                                                                                                                                          |                 |                                        | LED          | Transformer   | 1NO-1NC | ALNE3③11DN②  | LETD-6②         |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NO     | ALNE3③20DN②  |                 |
|                                                                                                                                                                                          |                 |                                        |              |               | 2NC     | ALNE3③02DN②  |                 |
| Maintained                                                                                                                                                                               | Without Lamp    | Full Voltage                           | 1NO-1NC      | AOLNE39911DN② | LETD    |              |                 |
|                                                                                                                                                                                          |                 |                                        | 2NO          | AOLNE39920DN② |         |              |                 |
|                                                                                                                                                                                          |                 |                                        | 2NC          | AOLNE39902DN② |         |              |                 |
|                                                                                                                                                                                          | LED             | Transformer                            | 1NO-1NC      | AOLNE3③11DN②  | LETD-6② |              |                 |
|                                                                                                                                                                                          |                 |                                        | 2NO          | AOLNE3③20DN②  |         |              |                 |
|                                                                                                                                                                                          |                 |                                        | 2NC          | AOLNE3③02DN②  |         |              |                 |



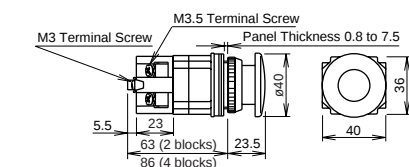
### • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                       |        | ③ Operating Voltage Code                                        |             |
|-------------------------------------------------------------|--------|-----------------------------------------------------------------|-------------|
| LED Illuminated Type                                        |        | LED Transformer BA9S and E12 Types                              |             |
| Specify a lens/LED color code in place of ② in the Type No. |        | Specify an operating voltage code in place of ③ in the Type No. |             |
| A:                                                          | amber  | 16:                                                             | 100/110V AC |
| G:                                                          | green  | 116:                                                            | 115V AC     |
| R:                                                          | red    | 126:                                                            | 120V AC     |
| S:                                                          | blue   | 26:                                                             | 200/220V AC |
| W:                                                          | white  | 236:                                                            | 230V AC     |
| Y:                                                          | yellow | 246:                                                            | 240V AC     |
|                                                             |        | 386:                                                            | 380V AC     |
|                                                             |        | 46:                                                             | 400/440V AC |

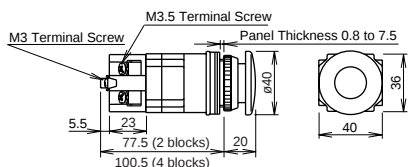
- Full voltage types do not contain a lamp. Order LED lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).

## Dimensions

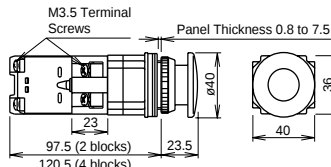
- ALN3/AOLN3  
BA9S/Full Voltage



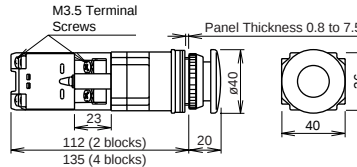
- ALNE3/AOLNE3  
E12/Full Voltage



- ALN3/AOLN3  
BA9S/Transformer



- ALNE3/AOLNE3  
E12/Transformer



All dimensions in mm.

| Incandescent                                                                                                                                                                                                               |                 | Square and Rectangular Extended Illuminated Pushbuttons |              |              |         |             |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------|--------------|--------------|---------|-------------|-----------------|
| Shape                                                                                                                                                                                                                      | Lamp Receptacle | Operation Type                                          | Lamp         | Input Type   | Contact | Type No.    | Applicable Lamp |
| Square Extended<br>ULQN<br><br><br>UOLQN                 | BA9S            | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | ULQN9911②   | LS (1W)         |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NO     | ULQN9920②   |                 |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NC     | ULQN9902②   |                 |
|                                                                                                                                                                                                                            |                 | Maintained                                              | Incandescent | Transformer  | 1NO-1NC | ULQN③11②    | LS-6            |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NO     | ULQN③20②    |                 |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NC     | ULQN③02②    |                 |
| Rectangular (Marking Type)<br>ULQN*B<br><br><br>UOLQN*B | BA9S            | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | ULQN9B911②  | LS (1W)         |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NO     | ULQN9B920②  |                 |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NC     | ULQN9B902②  |                 |
|                                                                                                                                                                                                                            |                 | Maintained                                              | Incandescent | Transformer  | 1NO-1NC | ULQN③11②    | LS-6            |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NO     | ULQN③20②    |                 |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NC     | ULQN③02②    |                 |
|                                                                                                                                                                                                                            |                 | Momentary                                               | Without Lamp | Full Voltage | 1NO-1NC | UOLQN9B911② | LS (1W)         |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NO     | UOLQN9B920② |                 |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NC     | UOLQN9B902② |                 |
|                                                                                                                                                                                                                            |                 | Maintained                                              | Incandescent | Transformer  | 1NO-1NC | UOLQN③11②   | LS-6            |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NO     | UOLQN③20②   |                 |
|                                                                                                                                                                                                                            |                 |                                                         |              |              | 2NC     | UOLQN③02②   |                 |

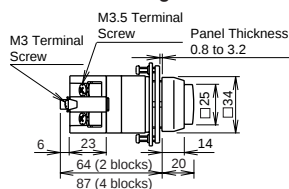
## • Color Code and Operating Voltage Code

| ② Lens Color Code                                                                                                                                                                                         | ③ Operating Voltage Code                                                                                                                                                                                                 |                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Incandescent Illuminated Type                                                                                                                                                                             | Incandescent Transformer Square Extended Type                                                                                                                                                                            | Incandescent Transformer Rectangular Marking Type                                                                                                              |
| Specify a lens color code in place of ② in the Type No.<br>C: clear (square type only)<br>G: green<br>O: orange<br>R: red<br>S: blue<br>W: white<br>Clear lens is not available for the rectangular type. | Specify an operating voltage code in place of ③ in the Type No.<br>16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC | 1B6: 100/110V AC<br>11B6: 115V AC<br>12B6: 120V AC<br>2B6: 200/220V AC<br>23B6: 230V AC<br>24B6: 240V AC<br>38B6: 380V AC<br>4B6: 400/440V AC<br>48B6: 480V AC |

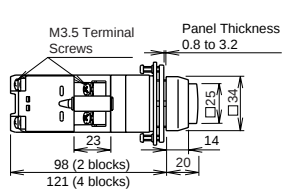
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC).

## Dimensions

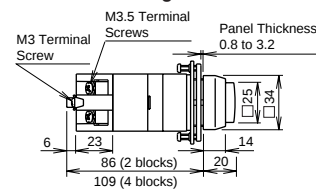
### • ULQN Momentary BA9S/Full Voltage



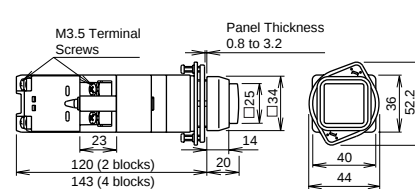
### • ULQN Momentary BA9S/Transformer



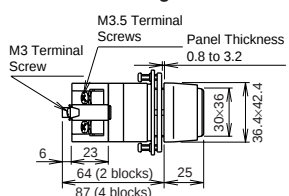
### • UOLQN Maintained BA9S/Full Voltage



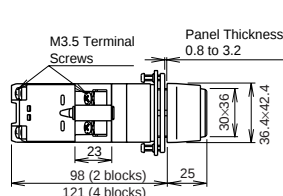
### • UOLQN Maintained BA9S/Transformer



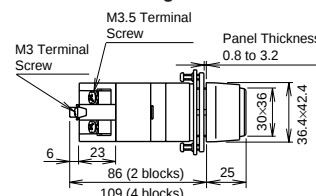
### • ULQN\*B Momentary BA9S/Full Voltage



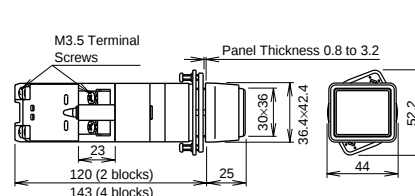
### • ULQN\*B Momentary BA9S/Transformer



### • UOLQN\*B Maintained BA9S/Full Voltage



### • UOLQN\*B Maintained BA9S/Transformer



**Ø30**

**Ø30**

## Push Turn Lock Switches

UL LISTED CSA C E

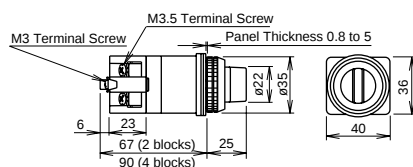
- **Color Code and Operating Voltage Code**

1L6: 100/110V AC  
11L6: 115V AC  
12L6: 120V AC  
2L6: 200/220V AC  
23L6: 230V AC  
24L6: 240V AC  
38L6: 380V AC  
4L6: 400/440V AC  
48L6: 480V AC

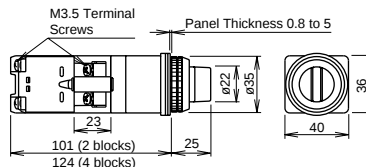
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC).
- **Push Turn Lock:** Knob is maintained when turned clockwise in the depressed position and is reset when turned counterclockwise.

## Dimensions

- **ALN\*L**  
**BA9S/Full Voltage**



- ALN\*L  
BA9S/Transformer



All dimensions in mm.

| LED                                                                                                                                                                                                                                  |                 | Pushlock Turn Reset / Push Turn Lock Types |              |              |         |               |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------|--------------|--------------|---------|---------------|-----------------|
| Shape                                                                                                                                                                                                                                | Lamp Receptacle | Operation Type                             | Lamp         | Input Type   | Contact | Type No.      | Applicable Lamp |
| ø40 Mushroom<br>Pushlock Turn Reset<br>AVLN3<br>AVLNE3<br><br><br> | BA9S            | Pushlock Turn Reset                        | Without Lamp | Full Voltage | 1NO-1NC | AVLN39911DNR  | LSTD            |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NO     | AVLN39920DNR  |                 |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NC     | AVLN39902DNR  |                 |
|                                                                                                                                                                                                                                      |                 |                                            | LED          | Transformer  | 1NO-1NC | AVLN3③11DNR   | LSTD-6②         |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NO     | AVLN3③20DNR   |                 |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NC     | AVLN3③02DNR   |                 |
|                                                                                                                                                                                                                                      | E12             | Pushlock Turn Reset                        | Without Lamp | Full Voltage | 1NO-1NC | AVLNE39911DNR | LETD            |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NO     | AVLNE39920DNR |                 |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NC     | AVLNE39902DNR |                 |
|                                                                                                                                                                                                                                      |                 |                                            | LED          | Transformer  | 1NO-1NC | AVLNE3③11DNR  | LETD-6②         |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NO     | AVLNE3③20DNR  |                 |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NC     | AVLNE3③02DNR  |                 |
| ø40 Mushroom<br>Push Turn Lock<br>AJLN3<br><br><br>               | BA9S            | Push Turn Lock                             | Without Lamp | Full Voltage | 1NO-1NC | AJLN39911DN②  | LSTD            |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NO     | AJLN39920DN②  |                 |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NC     | AJLN39902DN②  |                 |
|                                                                                                                                                                                                                                      |                 |                                            | LED          | Transformer  | 1NO-1NC | AJLN3③11DN②   | LSTD-6②         |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NO     | AJLN3③20DN②   |                 |
|                                                                                                                                                                                                                                      |                 |                                            |              |              | 2NC     | AJLN3③02DN②   |                 |

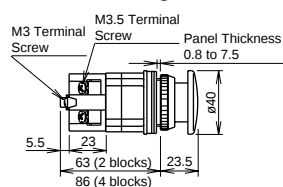
## • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                       | ③ Operating Voltage Code                                                                                                              |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| LED Illuminated Type                                        | LED Transformer BA9S Types                                                                                                            |
| Specify a lens/LED color code in place of ② in the Type No. | Specify an operating voltage code in place of ③ in the Type No.                                                                       |
| A: amber<br>G: green<br>R: red<br>W: white<br>Y: yellow     | 16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC |

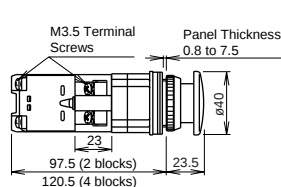
- Full voltage types do not contain a lamp. Order LED lamps separately. For lamps, see page 63.
  - LED illuminated transformer types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).
  - **Pushlock Turn Reset:** Lens is maintained when pressed and is reset when turned clockwise. Red lens only.
- Note: AVLN3 and AVLNE3 pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use the HN1E series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).
- **Push Turn Lock:** Lens is maintained when turned clockwise in the depressed position and is reset when turned counterclockwise.

## Dimensions

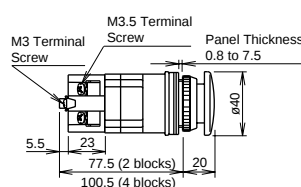
### • AVLN3 BA9S/Full Voltage



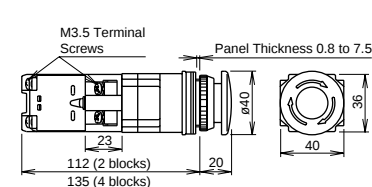
### • AVLN3 BA9S/Transformer



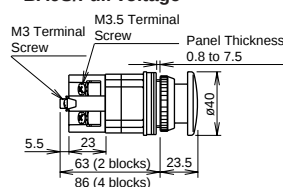
### • AVLNE3 E12/Full Voltage



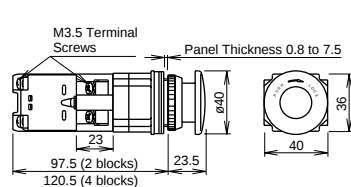
### • AVLNE3 E12/Transformer



### • AJLN3 BA9S/Full Voltage



### • AJLN3 BA9S/Transformer



All dimensions in mm.

## ø30 Series Illuminated Pushbuttons

UL LISTED CSA CE

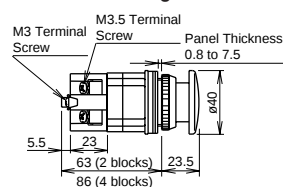
• **Color Code and Operating Voltage Code**

| ② Lens Color Code                                       |                                                                 | ③ Operating Voltage Code          |  |
|---------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------|--|
| Incandescent Illuminated Type                           | Incandescent Transformer BA9S Type                              | Incandescent Transformer E12 Type |  |
| Specify a lens color code in place of ② in the Type No. | Specify an operating voltage code in place of ③ in the Type No. |                                   |  |
| G: green                                                | 16: 100/110V AC                                                 | 18: 100/110V AC                   |  |
| O: orange                                               | 116: 115V AC                                                    | 118: 115V AC                      |  |
| R: red                                                  | 126: 120V AC                                                    | 128: 120V AC                      |  |
|                                                         | 26: 200/220V AC                                                 | 28: 200/220V AC                   |  |
|                                                         | 236: 230V AC                                                    | 238: 230V AC                      |  |
|                                                         | 246: 240V AC                                                    | 248: 240V AC                      |  |
|                                                         | 386: 380V AC                                                    | 388: 380V AC                      |  |
|                                                         | 46: 400/440V AC                                                 | 48: 400/440V AC                   |  |
|                                                         | 486: 480V AC                                                    | 488: 480V AC                      |  |

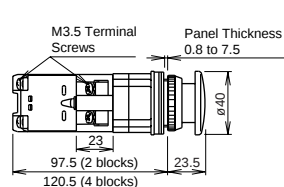
- Full voltage types do not contain a lamp. Order incandescent lamps separately. For lamps, see page 63.
  - Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).
  - **Pushlock Turn Reset:** Lens is maintained when pressed and is reset when turned clockwise. Red lens only.
- Note: AVNL3 and AVNLE3 pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use the HN1E series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).
- **Push Turn Lock:** Lens is maintained when turned clockwise in the depressed position and is reset when turned counterclockwise.

## Dimensions

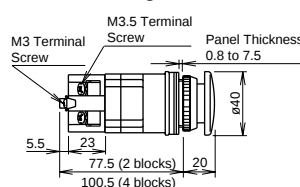
- **AVLN3**  
BA9S/Full Voltage



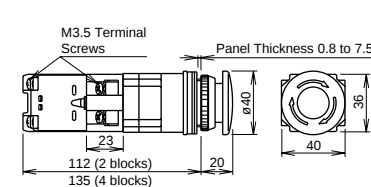
- AVLN3  
BA9S/Transformer



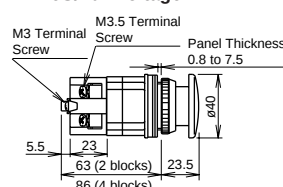
- **AVLNE3**  
E12/Full Voltage



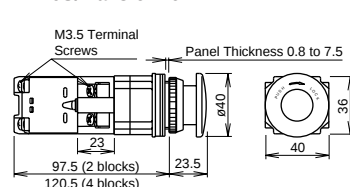
- AVLNE3  
E12/Transformer



- **AJLN3**  
**BA9S/Full Voltage**



- AJLN3  
BA9S/Transformer



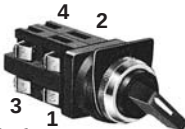
All dimensions in mm.

## ASN Selector Switches (Knob Operator Type)

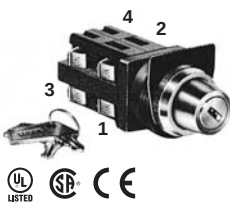
| No. of Positions | Shape                     |                   |       | ASN                                                                               |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|------------------|---------------------------|-------------------|-------|-----------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|--|
|                  | Contact Arrangement Chart |                   |       |  |   | <ul style="list-style-type: none"><li>• Knob: Black</li><li>• Round bezel (metal): Chrome-plated</li><li>• Units marked with ★ differ in shape. See page 36 for dimensions.</li><li>• Nameplates are ordered separately.</li></ul> |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
| 90° 2-position   | Contact Code (ASN)        | Contact Block     |       | Operator Position                                                                 |   |                                                                                                                                                                                                                                    | Maintained                                                                          | Spring Return from Right                                                            | Maintained                                                                            | Spring Return from Left                                                               |                          |  |
|                  |                           | Mounting Position | Type  | L                                                                                 | R |                                                                                                                                                                                                                                    |    |    |    |    |                          |  |
|                  | 10<br>(1NO)               | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                    | ASN310                                                                              | ASN410                                                                              | —                                                                                     | —                                                                                     |                          |  |
|                  |                           | 2                 | Dummy |                                                                                   |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                    | ASN311                                                                              | ASN411                                                                              |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 20<br>(2NO)               | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                    | ASN320                                                                              | ASN420                                                                              |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                    | ASN322                                                                              | ASN422                                                                              |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S<br>(1NO-1NC)           | 1                 | NO    |                                                                                   | ■ |                                                                                                                                                                                                                                    | ASN37S                                                                              | ASN47S                                                                              |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ■                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 10<br>(1NO)               | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    | —                                                                                   | —                                                                                   | ASN3010                                                                               | ASN4010                                                                               |                          |  |
|                  |                           | 2                 | Dummy |                                                                                   |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     | ASN3011                                                                               | ASN4011                                                                               |                          |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     | ASN3020                                                                               | ASN4020                                                                               |                          |  |
|                  |                           | 2                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     | ASN3022                                                                               | ASN4022                                                                               |                          |  |
|                  | 20<br>(2NO)               | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     | ASN307S                                                                               | ASN407S                                                                               |                          |  |
|                  |                           | 2                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S<br>(1NO-1NC)           | 1                 | NO    | ■                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ■                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
| 45° 3-position   | Contact Code (ASN)        | Contact Block     |       | Operator Position                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     | Maintained                                                                          | Spring Return from Left                                                               | Maintained                                                                            | Spring Return from Right |  |
|                  |                           | Mounting Position | Type  | L                                                                                 | C | R                                                                                                                                                                                                                                  |  |  |  |  |                          |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   | ●                                                                                                                                                                                                                                  | ASN111                                                                              | ASN211                                                                              | —                                                                                     | —                                                                                     |                          |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    | ASN122                                                                              | ASN222                                                                              |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 5S<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    | ASN15S ★                                                                            | ASN25S ★                                                                            |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NO    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NC    |                                                                                   |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S<br>(2NC)               | 1                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  | ASN17S ★                                                                            | ASN27S ★                                                                            |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 8S<br>(4NC)               | 1                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  | ASN18S ★                                                                            | ASN28S ★                                                                            |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    | —                                                                                   | —                                                                                   | ASN1011                                                                               | ASN2011                                                                               |                          |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     | ASN1022                                                                               | ASN2022                                                                               |                          |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     | ASN105S ★                                                                             | ASN205S ★                                                                             |                          |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     | ASN107S ★                                                                             | ASN207S ★                                                                             |                          |  |
|                  |                           | 3                 | NO    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     | ASN108S ★                                                                             | ASN208S ★                                                                             |                          |  |
|                  |                           | 4                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 5S<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S<br>(2NC)               | 1                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 8S<br>(4NC)               | 1                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC    | ■                                                                                 |   | ■                                                                                                                                                                                                                                  |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |

# ø30 ø30 series Selector Switches

## ASN Selector Switches (Lever Operator Type)

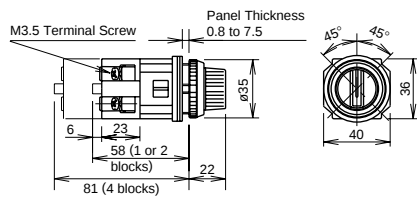
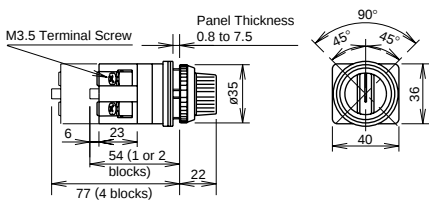
| No. of Positions | Shape                     |                   |       | ASN*L                                                                             |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|------------------|---------------------------|-------------------|-------|-----------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|--|
|                  | Contact Arrangement Chart |                   |       |  |   | <ul style="list-style-type: none"><li>• Lever: Black</li><li>• Round bezel (metal): Chrome-plated</li><li>• Units marked with ★ differ in shape. See page 36 for dimensions.</li><li>• Nameplates are ordered separately.</li></ul> |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
| 90° 2-position   | Contact Code (ASN)        | Contact Block     |       | Operator Position                                                                 |   |                                                                                                                                                                                                                                     | Maintained                                                                          | Spring Return from Right                                                            | Maintained                                                                            | Spring Return from Left                                                               |  |  |
|                  |                           | Mounting Position | Type  | L                                                                                 | R |                                                                                                                                                                                                                                     |    |    |    |    |  |  |
|                  | 10<br>(1NO)               | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN3L10                                                                             | ASN4L10                                                                             | —                                                                                     | —                                                                                     |  |  |
|                  |                           | 2                 | Dummy |                                                                                   |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN3L11                                                                             | ASN4L11                                                                             |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 20<br>(2NO)               | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN3L20                                                                             | ASN4L20                                                                             |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN3L22                                                                             | ASN4L22                                                                             |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 3                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 7S<br>(1NO-1NC)           | 1                 | NO    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN3L7S                                                                             | ASN4L7S                                                                             |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 10<br>(1NO)               | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     | —                                                                                   | —                                                                                   | ASN30L10                                                                              | ASN40L10                                                                              |  |  |
|                  |                           | 2                 | Dummy |                                                                                   |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     | ASN30L11                                                                              | ASN40L11                                                                              |  |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     | ASN30L20                                                                              | ASN40L20                                                                              |  |  |
|                  |                           | 2                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     | ASN30L22                                                                              | ASN40L22                                                                              |  |  |
|                  | 20<br>(2NO)               | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     | ASN30L7S                                                                              | ASN40L7S                                                                              |  |  |
|                  |                           | 2                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 3                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 7S<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
| 45° 3-position   | Contact Code (ASN)        | Contact Block     |       | Operator Position                                                                 |   |                                                                                                                                                                                                                                     | Maintained                                                                          | Spring Return from Left                                                             | Maintained                                                                            | Spring Return from Right                                                              |  |  |
|                  |                           | Mounting Position | Type  | L                                                                                 | C | R                                                                                                                                                                                                                                   |  |  |  |  |  |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     | ASN1L11                                                                             | ASN2L11                                                                             | —                                                                                     | —                                                                                     |  |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     | ASN1L22                                                                             | ASN2L22                                                                             |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 3                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 5S<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     | ASN1L5S ★                                                                           | ASN2L5S ★                                                                           |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NO    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 3                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 7S<br>(2NC)               | 1                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN1L7S ★                                                                           | ASN2L7S ★                                                                           |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 8S<br>(4NC)               | 1                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     | ASN1L8S ★                                                                           | ASN2L8S ★                                                                           |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 3                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     | —                                                                                   | —                                                                                   | ASN10L11                                                                              | ASN20L11                                                                              |  |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     | ASN10L22                                                                              | ASN20L22                                                                              |  |  |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     | ASN10L5S ★                                                                            | ASN20L5S ★                                                                            |  |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     | ASN10L7S ★                                                                            | ASN20L7S ★                                                                            |  |  |
|                  |                           | 3                 | NO    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     | ASN10L8S ★                                                                            | ASN20L8S ★                                                                            |  |  |
|                  | 5S<br>(2NO-2NC)           | 1                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 2                 | NC    |                                                                                   |   | ●                                                                                                                                                                                                                                   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  |                           | 3                 | NO    | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 7S<br>(2NC)               | 1                 | NC    |                                                                                   | ● |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
| 2                |                           | NC                | ●     |                                                                                   |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
| 8S<br>(4NC)      | 1                         | NC                |       | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 2                         | NC                |       | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 3                         | NC                |       | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
| 4                | 1                         | NC                |       | ●                                                                                 |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |
|                  | 2                         | NC                | ●     |                                                                                   |   |                                                                                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |

## ASN Key Selector Switches

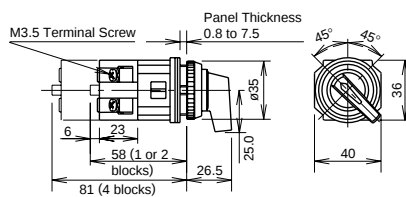
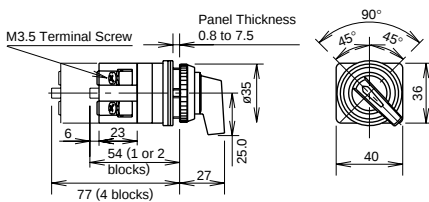
| No. of Positions | Shape                     |                   | ASN*K                                                                             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|------------------|---------------------------|-------------------|-----------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|--|
|                  | Contact Arrangement Chart |                   |  |                   | <ul style="list-style-type: none"><li>• Cylinder: Chrome-plated</li><li>• Round bezel (metal): Chrome-plated</li><li>• On the spring-retained types, the keys can be released only from the maintained position. On the maintained types, the key can be released from every position. Key retained positions are also available. See page 12.</li><li>• Key selector switch is supplied with two standard keys. Two different keys are available upon request.</li><li>• Nameplates are ordered separately.</li></ul> |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
| 90° 2-position   | Contact Code (ASN)        | Contact Block     |                                                                                   | Operator Position |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | Maintained                                                                          | Spring Return from Right                                                            | Maintained                                                                            | Spring Return from Left                                                               |                          |  |
|                  |                           | Mounting Position | Type                                                                              | L                 | R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |    |    |    |    |                          |  |
|                  | 10 (1NO)                  | 1                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   | ASN3K10                                                                             | ASN4K10                                                                             | —                                                                                     | —                                                                                     |                          |  |
|                  |                           | 2                 | Dummy                                                                             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 11 (1NO-1NC)              | 1                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   | ASN3K11                                                                             | ASN4K11                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 20 (2NO)                  | 1                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   | ASN3K20                                                                             | ASN4K20                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 22 (2NO-2NC)              | 1                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   | ASN3K22                                                                             | ASN4K22                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S (1NO-1NC)              | 1                 | NO                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   | ASN3K7S                                                                             | ASN4K7S                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 10 (1NO)                  | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | —                                                                                   | —                                                                                   | ASN30K10                                                                              | ASN40K10                                                                              |                          |  |
|                  |                           | 2                 | Dummy                                                                             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     | ASN30K11                                                                              | ASN40K11                                                                              |                          |  |
|                  | 11 (1NO-1NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     | ASN30K20                                                                              | ASN40K20                                                                              |                          |  |
|                  |                           | 2                 | NC                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                     |                                                                                     | ASN30K22                                                                              | ASN40K22                                                                              |                          |  |
|                  | 20 (2NO)                  | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     | ASN30K7S                                                                              | ASN40K7S                                                                              |                          |  |
|                  |                           | 2                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 22 (2NO-2NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S (1NO-1NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
| 45° 3-position   | Contact Code (ASN)        | Contact Block     |                                                                                   | Operator Position |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     | Maintained                                                                          | Spring Return from Left                                                               | Maintained                                                                            | Spring Return from Right |  |
|                  |                           | Mounting Position | Type                                                                              | L                 | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | R |  |  |  |  |                          |  |
|                  | 11 (1NO-1NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | ASN1K11                                                                             | ASN2K11                                                                             | —                                                                                     | —                                                                                     |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 22 (2NO-2NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | ASN1K22                                                                             | ASN2K22                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 5S (1NO-1NC) (1NO-1NC)    | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | ASN1K5S                                                                             | ASN2K5S                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S (1NO-1NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | ASN1K7S                                                                             | ASN2K7S                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 8S (2NO-2NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | ASN1K8S                                                                             | ASN2K8S                                                                             |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 4                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 11 (1NO-1NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   | —                                                                                   | —                                                                                   | ASN10K11                                                                              | ASN20K11                                                                              |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     | ASN10K22                                                                              | ASN20K22                                                                              |                          |  |
|                  | 22 (2NO-2NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     | ASN10K5S                                                                              | ASN20K5S                                                                              |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     | ASN10K7S                                                                              | ASN20K7S                                                                              |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     | ASN10K8S                                                                              | ASN20K8S                                                                              |                          |  |
|                  | 5S (1NO-1NC) (1NO-1NC)    | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 7S (1NO-1NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  | 8S (2NO-2NC)              | 1                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 2                 | NC                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | • |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |
|                  |                           | 3                 | NO                                                                                | •                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                          |  |

**Ø30**

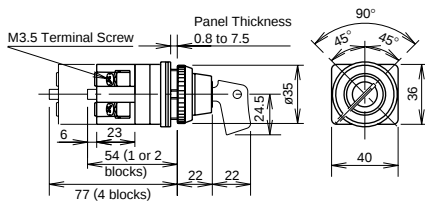
- Knob Operator Type



- **Lever Operator Type**

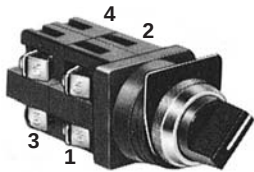


- **Key Selector Type**



All dimensions in mm.

### • Contact Block Mounting Position and Contact Arrangement Chart



|   |    | Left | Center | Right |                     |
|---|----|------|--------|-------|---------------------|
|   |    | L    | C      | R     | ← Operator Position |
| 1 | NO | •    |        |       |                     |
| 2 | NO |      |        | •     |                     |
| 3 | NC |      |        | ▬     |                     |
| 4 | NC | ▬    |        |       |                     |

## ASTN Selector Switches (Knob Operator Type)

| No. of Positions | Shape                     |                   |      |                   |   |   | ASTN                                                                              |                                                                                   | ● Knob operator: Black<br>● Round bezel (metal): Chrome-plated                      |                                                                                     |   |          |          |
|------------------|---------------------------|-------------------|------|-------------------|---|---|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|----------|----------|
|                  | Contact Arrangement Chart |                   |      |                   |   |   |  |  |    |    |   |          |          |
| 90° 2-position   | Contact Code (ASTN)       | Contact Block     |      | Operator Position |   |   | Maintained                                                                        | Spring Return from Right                                                          | —                                                                                   | —                                                                                   |   |          |          |
|                  |                           | Mounting Position | Type | L                 | R |   |  |  | —                                                                                   | —                                                                                   |   |          |          |
|                  | 11<br>(1NO-1NC)           | 1                 | NO   |                   | ● |   | ASTN3211                                                                          | ASTN4211                                                                          | —                                                                                   | —                                                                                   |   |          |          |
|                  |                           | 2                 | NC   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 22<br>(2NO-2NC)   | 1    | NO                |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | ● | ASTN3222 | ASTN4222 |
|                  |                           |                   | 2    | NO                |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | ● |          |          |
| 3                | NC                        |                   | ●    |                   |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
| 4                | NC                        |                   | ●    |                   |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
| 45° 3-position   | Contact Code (ASTN)       | Contact Block     |      | Operator Position |   |   | Maintained                                                                        | Spring Return from Left                                                           | Spring Return from Right                                                            | Spring Return Two-way                                                               |   |          |          |
|                  |                           | Mounting Position | Type | L                 | C | R |  |  |  |  |   |          |          |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | ●                 |   |   | ASTN1122                                                                          | ASTN2122                                                                          | ASTN20122                                                                           | ASTN5122                                                                            |   |          |          |
|                  |                           | 2                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 3                 | NC   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 4                 | NC   | ●                 |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | ●                 |   | ● | ASTN1222                                                                          | ASTN2222                                                                          | ASTN20222                                                                           | ASTN5222                                                                            |   |          |          |
|                  |                           | 2                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 3                 | NC   |                   | ● |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 4                 | NC   | ●                 |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 40<br>(4NC)               | 1                 | NO   | ●                 |   |   | ASTN1340                                                                          | —                                                                                 | —                                                                                   | —                                                                                   |   |          |          |
|                  |                           | 2                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 3                 | NO   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 4                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | ●                 |   |   | ASTN1422                                                                          | —                                                                                 | ASTN20422                                                                           | —                                                                                   |   |          |          |
|                  |                           | 2                 | NC   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 3                 | NC   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 4                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 20<br>(2NO)               | 1                 | NO   |                   |   | ● | ASTN1520                                                                          | —                                                                                 | ASTN20520                                                                           | —                                                                                   |   |          |          |
|                  |                           | 2                 | NO   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 40<br>(4NO)               | 1                 | NO   |                   |   | ● | ASTN1540                                                                          | —                                                                                 | ASTN20540                                                                           | —                                                                                   |   |          |          |
|                  |                           | 2                 | NO   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 3                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 4                 | NO   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 11<br>(1NO-1NC)           | 1                 | NC   |                   | ● |   | ASTN1611                                                                          | —                                                                                 | —                                                                                   | —                                                                                   |   |          |          |
|                  |                           | 2                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 22<br>(2NO-2NC)           | 1                 | NC   |                   | ● |   | ASTN1622                                                                          | —                                                                                 | —                                                                                   | —                                                                                   |   |          |          |
|                  |                           | 2                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 3                 | NC   |                   | ● |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  |                           | 4                 | NO   |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |
|                  | 11<br>(1NO-1NC)           | 1                 | NO   | ●                 |   |   | —                                                                                 | —                                                                                 | —                                                                                   | ASTN5111                                                                            |   |          |          |
|                  |                           | 2                 | NC   | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |   |          |          |

### Notes:

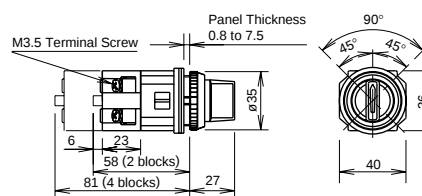
1. The operator of the 2-way spring return unit may slightly deviate from the center position.
2. Turn the operator to each position accurately.

### • Contact Block Mounting Position and Contact Arrangement Chart



|   |    | Left | Center | Right |                   |
|---|----|------|--------|-------|-------------------|
|   |    | L    | C      | R     | Operator Position |
| 1 | NO | •    |        |       |                   |
| 2 | NO |      |        | •     |                   |
| 3 | NC |      | •      |       |                   |
| 4 | NC | •    |        |       |                   |

### • Dimensions



## ASTN Selector Switches (Lever Operator Type)

| No. of Positions | Shape                     |                   |      |                   |   |           | ASTN*<br>L                                                                        |                                                                                   | ASTN*<br>R                                                                                                                                                                                             |                                                                                     |           |
|------------------|---------------------------|-------------------|------|-------------------|---|-----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|
|                  | Contact Arrangement Chart |                   |      |                   |   |           |  |                                                                                   |  <ul style="list-style-type: none"><li>• Lever operator: Black</li><li>• Round bezel (metal): Chrome-plated</li></ul> |                                                                                     |           |
| 90° 2-position   | Contact Code (ASTN)       | Contact Block     |      | Operator Position |   |           | Maintained                                                                        | Spring Return from Right                                                          | —                                                                                                                                                                                                      | —                                                                                   |           |
|                  |                           | Mounting Position | Type | L                 | R |           |  |  | —                                                                                                                                                                                                      | —                                                                                   |           |
|                  | 11<br>(1NO-1NC)           | 1                 | NO   |                   |   | •         | ASTN32L11                                                                         | ASTN42L11                                                                         | —                                                                                                                                                                                                      | —                                                                                   |           |
|                  |                           | 2                 | NC   | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 22<br>(2NO-2NC)   | 1    | NO                |   |           | •                                                                                 | ASTN32L22                                                                         |                                                                                                                                                                                                        |                                                                                     | ASTN42L22 |
|                  |                           |                   | 2    | NO                |   |           | •                                                                                 |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
| 3                | NC                        |                   | •    |                   |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
| 4                | NC                        |                   | •    |                   |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
| 45° 3-position   | Contact Code (ASTN)       | Contact Block     |      | Operator Position |   |           | Maintained                                                                        | Spring Return from Left                                                           | Spring Return from Right                                                                                                                                                                               | Spring Return Two-way                                                               |           |
|                  |                           | Mounting Position | Type | L                 | C | R         |  |  |                                                                                                                     |  |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | •                 |   |           | ASTN11L22                                                                         | ASTN21L22                                                                         | ASTN201L22                                                                                                                                                                                             | ASTN51L22                                                                           |           |
|                  |                           | 2                 | NO   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 3                 | NC   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 4                 | NC   | •                 |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | •                 |   |           | ASTN12L22                                                                         | ASTN22L22                                                                         | ASTN202L22                                                                                                                                                                                             | ASTN52L22                                                                           |           |
|                  |                           | 2                 | NO   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 3                 | NC   |                   | • |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 4                 | NC   | •                 |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 40<br>(4NC)               | 1                 | NO   | •                 |   |           | ASTN13L40                                                                         | —                                                                                 | —                                                                                                                                                                                                      | —                                                                                   |           |
|                  |                           | 2                 | NO   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 3                 | NO   | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 4                 | NO   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | •                 |   |           | ASTN14L22                                                                         | —                                                                                 | ASTN204L22                                                                                                                                                                                             | —                                                                                   |           |
|                  |                           | 2                 | NC   | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 3                 | NC   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 4                 | NO   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 20<br>(2NO)               | 1                 | NO   |                   |   | •         | ASTN15L20                                                                         | —                                                                                 | ASTN205L20                                                                                                                                                                                             | —                                                                                   |           |
|                  |                           | 2                 | NO   | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 40<br>(4NO)               | 1                 | NO   |                   |   | •         | ASTN15L40                                                                         | —                                                                                 | ASTN205L40                                                                                                                                                                                             | —                                                                                   |           |
|                  |                           | 2                 | NO   | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 3                 | NO   |                   |   | •         |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  |                           | 4                 | NO   | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
| 11<br>(1NO-1NC)  | 1                         | NC                |      | •                 |   | ASTN16L11 | —                                                                                 | —                                                                                 | —                                                                                                                                                                                                      |                                                                                     |           |
|                  | 2                         | NO                |      |                   | • |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
| 22<br>(2NO-2NC)  | 1                         | NC                |      | •                 |   | ASTN16L22 | —                                                                                 | —                                                                                 | —                                                                                                                                                                                                      |                                                                                     |           |
|                  | 2                         | NO                |      |                   | • |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 3                         | NC                |      | •                 |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
|                  | 4                         | NO                |      |                   | • |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |
| 11<br>(1NO-1NC)  | 1                         | NO                | •    |                   |   | —         | —                                                                                 | —                                                                                 | ASTN51L11                                                                                                                                                                                              |                                                                                     |           |
|                  | 2                         | NC                | •    |                   |   |           |                                                                                   |                                                                                   |                                                                                                                                                                                                        |                                                                                     |           |

Notes:

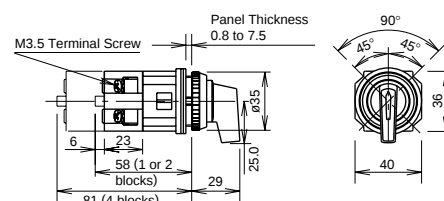
1. The operator of the 2-way spring return unit may slightly deviate from the center position.
2. Turn the operator to each position accurately.

- **Contact Block Mounting Position and Contact Arrangement Chart**



|   |    | Left | Center | Right |                   |
|---|----|------|--------|-------|-------------------|
|   |    | L    | C      | R     | Operator Position |
| 1 | NO | ●    |        |       |                   |
| 2 | NO |      |        | ●     |                   |
| 3 | NC |      | ■■■■   |       |                   |
| 4 | NC | ■■■■ |        |       |                   |

- **Dimensions**



## ASTN Key Selector Switches

| No. of Positions | Shape                     |                   |      |                   |   | ASTN*K                                                                            |                                                                                   |  <ul style="list-style-type: none"><li>• Cylinder: Chrome-plated</li><li>• Round bezel (metal): Chrome-plated</li><li>• On the spring-retained types, the keys can be released only from the maintained position.</li><li>• On the maintained types, the key can be released from every position. Key retained positions are also available. See page 12.</li></ul> |                                                                                     |                                                                                     |           |
|------------------|---------------------------|-------------------|------|-------------------|---|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|
|                  | Contact Arrangement Chart |                   |      |                   |   |  |  |                                                                                                                                                                                                                                                                                                                                                                     |    |                                                                                     |           |
| 90° 2-position   | Contact Code (ASTN)       | Contact Block     |      | Operator Position |   | Maintained                                                                        | Spring Return from Right                                                          | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   |                                                                                     |           |
|                  |                           | Mounting Position | Type | L                 | R |  |  | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   |                                                                                     |           |
|                  | 11<br>(1NO-1NC)           | 1                 | NO   |                   | ● | ASTN32K11                                                                         | ASTN42K11                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   |                                                                                     |           |
|                  |                           | 2                 | NC   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 22<br>(2NO-2NC)   | 1    | NO                |   | ●                                                                                 | ASTN32K22                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     | ASTN42K22 |
|                  |                           |                   | 2    | NO                |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
| 3                | NC                        |                   | ●    |                   |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
| 4                | NC                        |                   | ●    |                   |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
| 45° 3-position   | Contact Code (ASTN)       | Contact Block     |      | Operator Position |   | Maintained                                                                        | Spring Return from Left                                                           | Spring Return from Right                                                                                                                                                                                                                                                                                                                                                                                                                             | Spring Return Two-way                                                               |                                                                                     |           |
|                  |                           | Mounting Position | Type | L                 | C | R                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                     |  |  |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | ●                 |   |                                                                                   | ASTN11K22                                                                         | ASTN21K22                                                                                                                                                                                                                                                                                                                                                                                                                                            | ASTN201K22                                                                          | ASTN51K22                                                                           |           |
|                  |                           | 2                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 3                 | NC   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 4                 | NC   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | ●                 |   |                                                                                   | ASTN12K22                                                                         | ASTN22K22                                                                                                                                                                                                                                                                                                                                                                                                                                            | ASTN202K22                                                                          | ASTN52K22                                                                           |           |
|                  |                           | 2                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 3                 | NC   |                   | ● |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 4                 | NC   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 40<br>(4NC)               | 1                 | NO   | ●                 |   |                                                                                   | ASTN13K40                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   | —                                                                                   |           |
|                  |                           | 2                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 3                 | NO   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 4                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NO   | ●                 |   |                                                                                   | ASTN14K22                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ASTN204K22                                                                          | —                                                                                   |           |
|                  |                           | 2                 | NC   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 3                 | NC   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 4                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 20<br>(2NO)               | 1                 | NO   |                   |   | ●                                                                                 | ASTN15K20                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ASTN205K20                                                                          | —                                                                                   |           |
|                  |                           | 2                 | NO   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 40<br>(4NO)               | 1                 | NO   |                   |   | ●                                                                                 | ASTN15K40                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ASTN205K40                                                                          | —                                                                                   |           |
|                  |                           | 2                 | NO   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 3                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 4                 | NO   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 11<br>(1NO-1NC)           | 1                 | NC   |                   |   | ●                                                                                 | ASTN16K11                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   | —                                                                                   |           |
|                  |                           | 2                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 22<br>(2NO-2NC)           | 1                 | NC   |                   |   | ●                                                                                 | ASTN16K22                                                                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   | —                                                                                   |           |
|                  |                           | 2                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 3                 | NC   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  |                           | 4                 | NO   |                   |   | ●                                                                                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |
|                  | 11<br>(1NO-1NC)           | 1                 | NO   | ●                 |   |                                                                                   | —                                                                                 | —                                                                                                                                                                                                                                                                                                                                                                                                                                                    | —                                                                                   | ASTN51K11                                                                           |           |
|                  |                           | 2                 | NC   | ●                 |   |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                     |           |

### Notes:

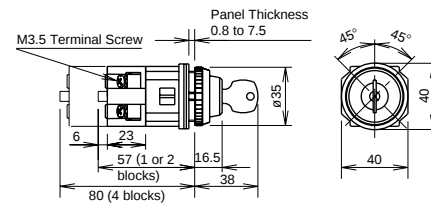
1. The operator of the 2-way spring return unit may slightly deviate from the center position.
2. Turn the operator to each position accurately.

### • Contact Block Mounting Position and Contact Arrangement Chart



|   |    | Left | Center | Right |                   |
|---|----|------|--------|-------|-------------------|
|   |    | L    | C      | R     | Operator Position |
| 1 | NO | ●    |        |       |                   |
| 2 | NO |      |        | ●     |                   |
| 3 | NC |      |        | ●     |                   |
| 4 | NC | ●    |        |       |                   |

### • Dimensions



**Ø30**

## Illuminated Selector Switches

## 90° 2-position

| Shape                     |                   |      |                   |              | ASLN (Base BA9S)                                                                                                                                                                                                                                                                                                                           |              |                                                                                   |                                                                                     |                                                                                     |
|---------------------------|-------------------|------|-------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Contact Arrangement Chart |                   |      |                   |              | <br>   |              |                                                                                   |                                                                                     |                                                                                     |
| Contact Code              | Contact Block     |      | Operator Position |              | Lamp                                                                                                                                                                                                                                                                                                                                       | Input Type   |  |  |  |
|                           | Mounting Position | Type | L                 | R            |                                                                                                                                                                                                                                                                                                                                            |              |                                                                                   |                                                                                     |                                                                                     |
| 11<br>(1NO-1NC)           | 1                 | NO   |                   | ●            | Without Lamp                                                                                                                                                                                                                                                                                                                               | Full Voltage | ASLN29911N②                                                                       | ASLN219911N②                                                                        | ASLN229911N② *                                                                      |
|                           | 2                 | NC   | ●                 |              | LED                                                                                                                                                                                                                                                                                                                                        | Transformer  | ASLN2③11DN②                                                                       | ASLN21③11DN②                                                                        | ASLN22③11DN② *                                                                      |
|                           |                   |      |                   |              | Incandescent                                                                                                                                                                                                                                                                                                                               | Transformer  | ASLN2③11N②                                                                        | ASLN21③11N②                                                                         | ASLN22③11N② *                                                                       |
| 20<br>(2NO)               | 1                 | NO   |                   | ●            | Without Lamp                                                                                                                                                                                                                                                                                                                               | Full Voltage | ASLN29920N②                                                                       | ASLN219920N②                                                                        | ASLN229920N② *                                                                      |
|                           | 2                 | NO   |                   | ●            | LED                                                                                                                                                                                                                                                                                                                                        | Transformer  | ASLN2③20DN②                                                                       | ASLN21③20DN②                                                                        | ASLN22③20DN② *                                                                      |
|                           |                   |      |                   |              | Incandescent                                                                                                                                                                                                                                                                                                                               | Transformer  | ASLN2③20N②                                                                        | ASLN21③20N②                                                                         | ASLN22③20N② *                                                                       |
| 22<br>(2NO-2NC)           | 1                 | NO   |                   | ●            | Without Lamp                                                                                                                                                                                                                                                                                                                               | Full Voltage | ASLN29922N②                                                                       | ASLN219922N②                                                                        | ASLN229922N② *                                                                      |
|                           | 2                 | NO   | ●                 |              |                                                                                                                                                                                                                                                                                                                                            |              |                                                                                   |                                                                                     |                                                                                     |
|                           | 3                 | NC   |                   | ●            | LED                                                                                                                                                                                                                                                                                                                                        | Transformer  | ASLN2③22DN②                                                                       | ASLN21③22DN②                                                                        | ASLN22③22DN② *                                                                      |
|                           | 4                 | NC   | ●                 |              |                                                                                                                                                                                                                                                                                                                                            |              |                                                                                   |                                                                                     |                                                                                     |
|                           |                   |      |                   | Incandescent | Transformer                                                                                                                                                                                                                                                                                                                                | ASLN2③22N②   | ASLN21③22N②                                                                       | ASLN22③22N② *                                                                       |                                                                                     |

### • Color Code and Operating Voltage Code

| LED Illuminated Type                                                                                                                  | Incandescent Illuminated Type                                                                                        | ③ Operating Voltage Code                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ② Lens/LED Color Code                                                                                                                 | ② Lens Color Code                                                                                                    |                                                                                                                                                                                                                                                  |
| Specify a lens/LED color code in place of ② in the Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow | Specify a lens color code in place of ② in the Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white | Specify an operating voltage code in place of ③ in the Type No.<br><br>16: 100/110V AC<br>156: 115V AC<br>136: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>256: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) |

- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer type contains an LED lamp (LSTD-6②, rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC).
- On the 2-position selector switches marked with \* above, the contact operation is reversed as follows.

[Example]

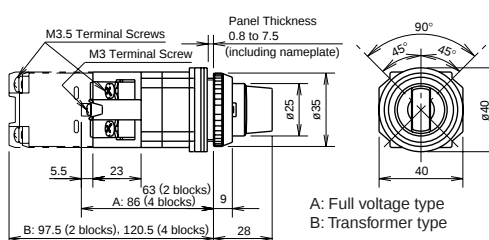


- **Contact Block Mounting Position and Contact Arrangement Chart**



|   |    | Left<br>L | Right<br>R | Operator<br>Position |
|---|----|-----------|------------|----------------------|
| 1 | NO |           | ●          |                      |
| 2 | NO | ●         |            |                      |
| 3 | NC |           | ●          |                      |
| 4 | NC | ●         |            |                      |

- **Dimensions**



## Illuminated Selector Switches

### 45° 3-position

| Contact Code    | Contact Block     |      | Operator Position |   |   | Lamp Input Type           | Maintained  | Spring Return from Right | Spring Return from left | Spring Return Two-way |
|-----------------|-------------------|------|-------------------|---|---|---------------------------|-------------|--------------------------|-------------------------|-----------------------|
|                 | Mounting Position | Type | L                 | C | R |                           | L C R       | L C R                    | L C R                   | L C R                 |
| 20<br>(2NO)     | 1                 | NO   | ●                 |   |   | Without Lamp Full Voltage | ASLN39920N② | ASLN319920N②             | ASLN329920N②            | ASLN339920N②          |
|                 | 2                 | NO   |                   |   | ● | LED Transformer           | ASLN3③20DN② | ASLN31③20DN②             | ASLN32③20DN②            | ASLN33③20DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLN3③20N②  | ASLN31③20N②              | ASLN32③20N②             | ASLN33③20N②           |
| 02<br>(2NC)     | 1                 | NC   |                   | ■ |   | Without Lamp Full Voltage | ASLN39902N② | ASLN319902N②             | ASLN329902N②            | ASLN339902N②          |
|                 | 2                 | NC   |                   | ■ |   | LED Transformer           | ASLN3③02DN② | ASLN31③02DN②             | ASLN32③02DN②            | ASLN33③02DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLN3③02N②  | ASLN31③02N②              | ASLN32③02N②             | ASLN33③02N②           |
| 22<br>(2NO-2NC) | 1                 | NO   | ●                 |   |   | Without Lamp Full Voltage | ASLN39922N② | ASLN319922N②             | ASLN329922N②            | ASLN339922N②          |
|                 | 2                 | NO   |                   |   | ● | Without Lamp Full Voltage | ASLN39922N② | ASLN319922N②             | ASLN329922N②            | ASLN339922N②          |
|                 | 3                 | NC   |                   | ■ |   | LED Transformer           | ASLN3③22DN② | ASLN31③22DN②             | ASLN32③22DN②            | ASLN33③22DN②          |
|                 | 4                 | NC   |                   | ■ |   | LED Transformer           | ASLN3③22DN② | ASLN31③22DN②             | ASLN32③22DN②            | ASLN33③22DN②          |
| 40<br>(4NO)     | 1                 | NO   | ●                 |   |   | Without Lamp Full Voltage | ASLN39940N② | ASLN319940N②             | ASLN329940N②            | ASLN339940N②          |
|                 | 2                 | NO   |                   |   | ● | Without Lamp Full Voltage | ASLN39940N② | ASLN319940N②             | ASLN329940N②            | ASLN339940N②          |
|                 | 3                 | NO   | ●                 |   |   | LED Transformer           | ASLN3③40DN② | ASLN31③40DN②             | ASLN32③40DN②            | ASLN33③40DN②          |
|                 | 4                 | NO   |                   |   | ● | LED Transformer           | ASLN3③40DN② | ASLN31③40DN②             | ASLN32③40DN②            | ASLN33③40DN②          |
| 04<br>(4NC)     | 1                 | NC   |                   | ■ |   | Without Lamp Full Voltage | ASLN39904N② | ASLN319904N②             | ASLN329904N②            | ASLN339904N②          |
|                 | 2                 | NC   |                   | ■ |   | Without Lamp Full Voltage | ASLN39904N② | ASLN319904N②             | ASLN329904N②            | ASLN339904N②          |
|                 | 3                 | NC   |                   | ■ |   | LED Transformer           | ASLN3③04DN② | ASLN31③04DN②             | ASLN32③04DN②            | ASLN33③04DN②          |
|                 | 4                 | NC   |                   | ■ |   | LED Transformer           | ASLN3③04DN② | ASLN31③04DN②             | ASLN32③04DN②            | ASLN33③04DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLN3③04N②  | ASLN31③04N②              | ASLN32③04N②             | ASLN33③04N②           |

### • Color Code and Operating Voltage Code

| LED Illuminated Type                                                                                                                  | Incandescent Illuminated Type                                                                                        | ③ Operating Voltage Code                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ② Lens/LED Color Code                                                                                                                 | ② Lens Color Code                                                                                                    |                                                                                                                                                                                                                                                  |
| Specify a lens/LED color code in place of ② in the Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow | Specify a lens color code in place of ② in the Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white | Specify an operating voltage code in place of ③ in the Type No.<br><br>16: 100/110V AC<br>156: 115V AC<br>136: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>256: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) |

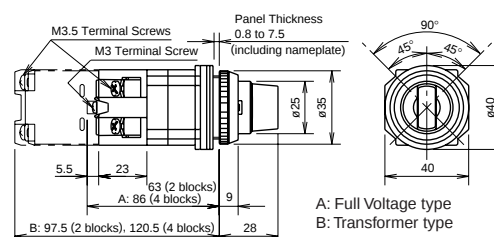
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp (LSTD-6②, rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC).

### • Contact Block Mounting Position and Contact Arrangement Chart



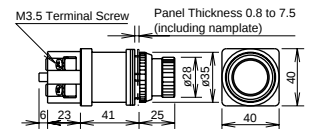
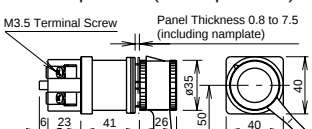
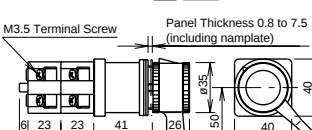
|   | Left | Center | Right | Operator Position |
|---|------|--------|-------|-------------------|
| 1 | NO   | ●      |       |                   |
| 2 | NO   |        | ●     |                   |
| 3 | NC   |        | ■     |                   |
| 4 | NC   | ■      |       |                   |

### • Dimensions



# ø30 ø30 Series Selector Pushbuttons

## Ring Operator Type / Lever Operator Type Selector Pushbuttons

| Shape                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Contact Code    | Circuit Code | Contact Block |         | Ring/Lever        |         |          |           | Ring Operator | Lever Operator | ① Button Color Code                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|---------------|---------|-------------------|---------|----------|-----------|---------------|----------------|---------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              |               |         |                   |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              |               |         | Mounting Position | Type    | Normal   | Push      | Normal        | Push           |                                             |
| <div>ABN</div> <div></div> <div></div> <div>Ring Operator (90° 2-position)</div> <div></div> <div></div> <div></div> <div>Lever Operator (90° 2-position)</div> <div></div> <div></div> | 11<br>(1NO-1NC) | A            | 1             | NO      |                   | ●       |          |           | ABN6111①      | ABN6L111①      | B: black<br>G: green<br>R: red<br>Y: yellow |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2             | NC      | ●                 |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | I            | 1             | NC      | ●                 |         |          |           | ABN6411①      | ABN6L411①      |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2             | NO      |                   | ●       | ■        |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | G            | 1             | NO      |                   | Blocked |          | ●         | ABN9111①      | ABN9L111①      |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2             | NC      | ●                 |         | ●        |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20<br>(2NO)     | D            | 1             | NO      |                   | ●       |          |           | ABN7120①      |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2             | NO      |                   |         |          | ●         |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 22<br>(2NO-2NC) | B            | 1             | NC      | ●                 |         |          |           | ABN6122①      | ABN6L122①      |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2             | NC      | ●                 |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 3             | NO      |                   | ●       |          | ●         |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 4             | NO      |                   | ●       |          | ●         |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | C            | 1             | NC      | ●                 |         |          |           | ABN6222①      | ABN6L222①      |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 2             | NC      | ■                 |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 3             | NO      |                   | ●       |          | ●         |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |              | 4             | NO      |                   |         |          | ●         |               |                |                                             |
| I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | 1            | NC            | ●       |                   |         |          | ABN6422①  | ABN6L422①     |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 2            | NC            | ●       |                   |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 3            | NO            |         | ●                 | ■       |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 4            | NO            |         | ●                 | ■       |          |           |               |                |                                             |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | 1            | NC            | ●       |                   | ■       |          | ABN7122①  | ABN7L122①     |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 2            | NC            | ■       |                   | ●       |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 3            | NO            |         | ●                 |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 4            | NO            |         |                   |         | ●        |           |               |                |                                             |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | 1            | NC            |         |                   | ■       |          | ABN7222①  | ABN7L222①     |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 2            | NC            | ■       |                   |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 3            | NO            |         | ●                 |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | 4            | NO            |         |                   |         | ●        |           |               |                |                                             |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1               | NC           |               |         | ●                 |         | ABN7322① | ABN7L322① |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2               | NC           | ●             |         |                   |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3               | NO           |               | ●       |                   |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4               | NO           |               |         |                   | ●       |          |           |               |                |                                             |
| H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1               | NC           | ●             |         | ●                 |         | ABN9122① | ABN9L122① |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2               | NC           | ●             | Blocked | ●                 |         |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3               | NO           |               |         |                   | ●       |          |           |               |                |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4               | NO           |               |         |                   | ●       |          |           |               |                |                                             |

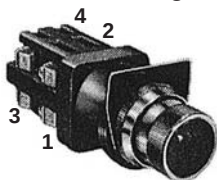
• Specify a button color code in place of ① in the Type No.

• Ring/Lever (metal): Chrome-plated

### Notes

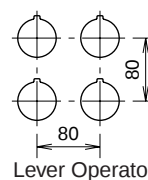
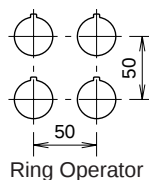
- Circuit Codes A, B, C, and I: When the ring or lever operator is turned, the button is pushed in.
- Circuit Codes E and F: The right and left NC contact blocks on circuit code E or F may overlap each other while turning the ring or lever operator. The NO and NC contact blocks on circuit code F may overlap each other while pressing the button.
- Circuit Codes G and H: The pushbutton does not operate when the ring or lever operator is turned to the left position.
- When using the selector pushbutton, do not turn the ring or lever operator with the pushbutton depressed. Otherwise, damage or failure may be caused.

### • Contact Block Mounting Position and Contact Arrangement Chart



|   | Normal | Push |
|---|--------|------|
| 1 | ●      |      |
| 2 | ●      |      |
| 3 |        | ●    |
| 4 |        | ●    |

### • Mounting Hole Layout



# ø30 ARN/ARNS series Mono-lever Switches

## Single lever offers up to four directions of control

Mono-lever switches operate in four directions using a single lever. Switch contacts are actuated in the direction in which the lever is pushed, enabling quick and accurate control in any desired direction. Ideal for machine tools and industrial machines. The lever action can be maintained or spring-returned in any combination.

Also available with interlock mechanism to prevent inadvertent actuation.



## Specifications and Ratings

### Contact Ratings

|                                                          |                              |
|----------------------------------------------------------|------------------------------|
| Contact Block                                            | Type BR                      |
| Rated Insulation Voltage                                 | 600V                         |
| Rated Continuous Current                                 | 10A                          |
| Contact Ratings by Utilization Category<br>IEC 60947-5-1 | AC-15 (A600)<br>DC-13 (P600) |

### Characteristics

#### • Contact Ratings by Utilization Category

| Operational Voltage |                |                                                        | 24V | 48V | 50V | 110V | 220V | 440V |
|---------------------|----------------|--------------------------------------------------------|-----|-----|-----|------|------|------|
| Operational Current | AC<br>50/60 Hz | AC-12 Control of resistive loads and solid state loads | 10A | —   | 10A | 10A  | 6A   | 2A   |
|                     |                | AC-15 Control of electromagnetic loads (> 72 VA)       | 10A | —   | 7A  | 5A   | 3A   | 1A   |
|                     | DC             | DC-12 Control of resistive loads and solid state loads | 10A | 5A  | —   | 2.2A | 1.1A | —    |
|                     |                | DC-13 Control of electromagnets                        | 4A  | 2A  | —   | 1.1A | 0.6A | —    |

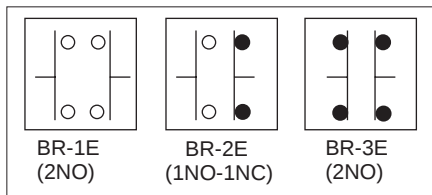
Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1).

### Specifications

|                       |                                                                                                                                                     |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact Arrangement   | Double-break slow action<br>Each contact block contains two independent contacts (2NO, 1NO-1NC, or 2NC)<br>Up to four contact blocks can be mounted |
| Insulation Resistance | 100 MΩ minimum (500V DC megger)                                                                                                                     |
| Dielectric Strength   | Between live and dead parts: 2,500V AC, 1 minute                                                                                                    |
| Mechanical Life       | 500,000 operations minimum                                                                                                                          |
| Electrical Life       | (Interlocking type: 250,000 operations minimum)                                                                                                     |
| Operating Temperature | −25 to +50°C (no freezing)                                                                                                                          |
| Operating Humidity    | 45 to 85% RH (no condensation)                                                                                                                      |
| Lever Knob            | Black                                                                                                                                               |

### BR Contact Block

The contact block is made of nylon resin. Each contact block contains two pairs of double-break silver contacts. There are three types as shown in the diagram below and up to four contact blocks can be mounted in any direction. A wide variety of circuits allows diverse combinations of control.

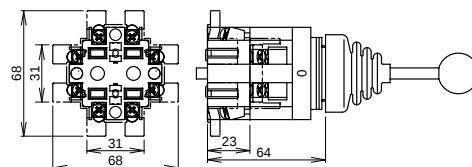
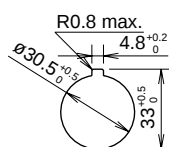


### Control Mechanism

When the operator lever is pushed to about 30° in each direction from the neutral position, the contact in that direction activates. The lever can operate in two, three, or four directions, and combinations of maintained or spring-return from any position are possible.

| Operator Type                                                                                                                                       | Position                           | Lever Action  | Type No.      | Dimensions (mm)                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------|---------------|--------------------------------------------------------------------------------------|
|                                                                    | 2-position<br>(Up-Down)            | Maintained    | ARN2-1010-④B  |   |
|                                                                                                                                                     |                                    | Spring return | ARN2-2020-④B  |                                                                                      |
|                                                                                                                                                     | 2-position<br>(Left-Right)         | Maintained    | ARN2-0101-④B  |                                                                                      |
|                                                                                                                                                     |                                    | Spring return | ARN2-0202-④B  |                                                                                      |
|                                                                                                                                                     | 4-position<br>(Up-Down-Left-Right) | Maintained    | ARN4-1111-④B  |                                                                                      |
|                                                                                                                                                     |                                    | Spring return | ARN4-2222-④B  |                                                                                      |
|                                                                    | 2-position<br>(Up-Down)            | Maintained    | ARNS2-1010-④B |   |
|                                                                                                                                                     |                                    | Spring return | ARNS2-2020-④B |                                                                                      |
|                                                                                                                                                     | 2-position<br>(Left-Right)         | Maintained    | ARNS2-0101-④B |                                                                                      |
|                                                                                                                                                     |                                    | Spring return | ARNS2-0202-④B |                                                                                      |
|                                                                                                                                                     | 4-position<br>(Up-Down-Left-Right) | Maintained    | ARNS4-1111-④B |                                                                                      |
|                                                                                                                                                     |                                    | Spring return | ARNS4-2222-④B |                                                                                      |
|  <p>The operator lever is locked only in the center position.</p> | 2-position<br>(Up-Down)            | Maintained    | ARNL2-1010-④B |  |
|                                                                                                                                                     |                                    | Spring return | ARNL2-2020-④B |                                                                                      |
|                                                                                                                                                     | 2-position<br>(Left-Right)         | Maintained    | ARNL2-0101-④B |                                                                                      |
|                                                                                                                                                     |                                    | Spring return | ARNL2-0202-④B |                                                                                      |
|                                                                                                                                                     | 4-position<br>(Up-Down-Left-Right) | Maintained    | ARNL4-1111-④B |                                                                                      |
|                                                                                                                                                     |                                    | Spring return | ARNL4-2222-④B |                                                                                      |

- 
- A diagram of a 6DOF robot arm. The arm is shown in a side profile, with a base and a gripper. A coordinate system is centered on the gripper, with axes labeled 'Up', 'Down', 'Left', and 'Right'.



[Example] <sup>①</sup>ARN <sup>②</sup>4 - <sup>③</sup>1012 - <sup>④</sup>20 00 02 11 - <sup>⑤</sup>B  
Up Right Down Left

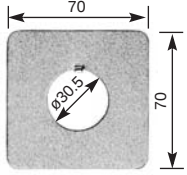
| ① Type              | ② No. of Contact Blocks                                 | ③ Lever Action                                                                                   | ④ Contact Arrangement                                                                                                   | ⑤ Lever Knob Color |
|---------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------|
| ARN<br>ARNS<br>ARNL | 1: 1 block<br>2: 2 blocks<br>3: 3 blocks<br>4: 4 blocks | Order of Entry:<br>Up→Right→<br>Down→Left<br><br>1: Maintained<br>2: Spring return<br>0: Blocked | Order of Entry:<br>Up→Right→<br>Down→Left<br><br>10: 1NO<br>01: 1NC<br>11: 1NO-1NC<br>20: 2NO<br>02: 2NC<br>00: Blocked | B: black           |

| Contact Block Position | Terminal No. | Direction of Lever Operation                                                         |                                                                                       |                                                                                       |                                                                                       | Terminal No. | Contact Block Type |
|------------------------|--------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|--------------------|
|                        |              |  |  |  |  |              |                    |
|                        |              | Lever Operation Mode<br>1: Maintained<br>2: Spring return<br>0: Blocked              |                                                                                       |                                                                                       |                                                                                       |              |                    |
|                        |              | 1                                                                                    | 0                                                                                     | 1                                                                                     | 2                                                                                     |              |                    |
| 1                      | 1            | NO                                                                                   | –                                                                                     | –                                                                                     | –                                                                                     | 2            | BR-2E              |
|                        | 3            | –                                                                                    | –                                                                                     | NC                                                                                    | –                                                                                     | 4            |                    |
| 2                      | 5            | –                                                                                    | NO *                                                                                  | –                                                                                     | –                                                                                     | 6            | BR-1E              |
|                        | 7            | –                                                                                    | –                                                                                     | –                                                                                     | NO                                                                                    | 8            |                    |
| 3                      | 9            | NO                                                                                   | –                                                                                     | –                                                                                     | –                                                                                     | 10           | BR-2E              |
|                        | 11           | –                                                                                    | –                                                                                     | NC                                                                                    | –                                                                                     | 12           |                    |
| 4                      | 13           | –                                                                                    | NC *                                                                                  | –                                                                                     | –                                                                                     | 14           | BR-3E              |
|                        | 15           | –                                                                                    | –                                                                                     | –                                                                                     | NC                                                                                    | 16           |                    |

[Example] ARN4-1012-20000211-B-**U**

# ARN/ARNS Series Mono-lever Switches ø30

## Accessories and Maintenance Parts

| Shape                       | Specification                                                                       | Type No. | Ordering Type No. | Package Quantity | Description                                                                                                                                                                                              |
|-----------------------------|-------------------------------------------------------------------------------------|----------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nameplate                   |    | MLO      | MLO               | 1                | Chrome-plated brass (matte surface)                                                                                                                                                                      |
|                             |                                                                                     |          | MLOPN10           | 10               |                                                                                                                                                                                                          |
| Terminal Cover              |    | ARN-VL2  | ARN-VL2           | 1                | <ul style="list-style-type: none"> <li>Terminal covers are ordered separately. When ordering, specify the Type No. and the required quantity.</li> <li>Order 2 pieces for each contact block.</li> </ul> |
| Contact Block (BR Type)     |    | BR-1E    | BR-1E             | 1                | • 2NO contact                                                                                                                                                                                            |
|                             |                                                                                     | BR-2E    | BR-2E             | 1                | • 1NO-1NC contact                                                                                                                                                                                        |
|                             |                                                                                     | BR-3E    | BR-3E             | 1                | • 2NC contact                                                                                                                                                                                            |
| Bellows                     |    | ARN-BL   | ARN-BL            | 1                | • For ARN/ARNS (Locking ring not included)                                                                                                                                                               |
| Bellows (Interlocking Type) |  | ARNL-BL  | ARNL-BL           | 1                | • For ARNL (Locking ring not included)                                                                                                                                                                   |
| Knob                        |  | ARNB-①   | ARNB-①            | 1                | Specify a color code in place of ①.<br>B (black), G (green), R (red)<br>• For ARN/ARNS                                                                                                                   |

# ø30/ø25 CS Series Cam Switches

## 76 standard circuits to choose from

- Wide variety of heavy-duty oiltight cam switches
- Operators available up to 12 positions
- Switches made with a double-pole contact block
- Contact blocks rated at 600V, 10A
- Ideal for ammeter/voltmeter applications
- UL listed and CSA approved



## Specifications and Ratings

### Contact Ratings

|                                                          |                              |
|----------------------------------------------------------|------------------------------|
| Rated Insulation Voltage                                 | 600V                         |
| Rated Continuous Current                                 | 10A                          |
| Contact Ratings by Utilization Category<br>IEC 60947-5-1 | AC-15 (A600)<br>DC-13 (P600) |

### Characteristics

#### • Contact Ratings by Utilization Category

| Operational Voltage    |                |                                                        | 24V | 110V | 220V  | 440V |
|------------------------|----------------|--------------------------------------------------------|-----|------|-------|------|
| Operational<br>Current | AC<br>50/60 Hz | AC-12 Control of resistive loads and solid state loads | —   | 10A  | 6A    | 2A   |
|                        |                | AC-15 Control of electromagnetic loads (> 72 VA)       | —   | 5A   | 3A    | 1A   |
|                        | DC             | DC-12 Control of resistive loads and solid state loads | 8A  | 3A   | 1A    | 0.4A |
|                        |                | DC-13 Control of electromagnets                        | 5A  | 1.2A | 0.45A | 0.2A |

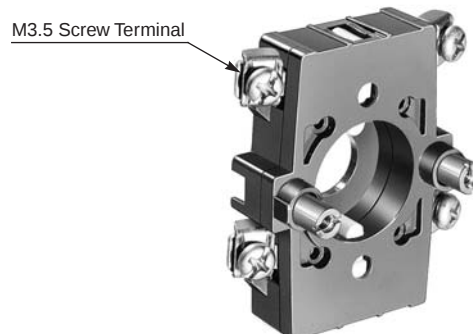
Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1).

### Specifications

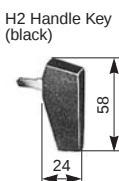
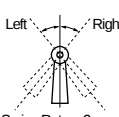
|                       |                                                                                                                              |               |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------|---------------|
| Contact Arrangement   | Double-break slow action contacts<br>Two contacts in one deck<br>Up to 6 decks available (Spring-return type: Up to 3 decks) |               |
| Operation             | Maintained                                                                                                                   | Spring return |
| Angle                 | 30°, 45°, 60°, 90°                                                                                                           | 45°           |
| Operator Positions    | 2 to 12                                                                                                                      | 2, 3, 4       |
| Insulation Resistance | 100 MΩ (500V DC megger)                                                                                                      |               |
| Dielectric Strength   | 2500V AC, 1 minute (between live and dead parts)                                                                             |               |
| Mechanical Life       | 1 to 3 decks: 500,000 operations<br>4 to 6 decks: 200,000 operations                                                         |               |
| Electrical Life       | 500,000 operations minimum                                                                                                   |               |
| Operating Temperature | -20 to +50°C (no freezing)                                                                                                   |               |

### CBS Contact Block

The CBS contact block contains two poles of double-break contacts. The contacts are operated by a cam designed to perform a required contact operation. Up to six contact blocks can be mounted on a maintained-action operator base, and up to three contact blocks on a spring return operator base.



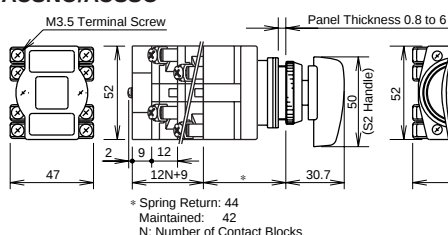
## Types

| ① Type     |                 | ② Contact Block Decks                                                                                              | ③ Positions                                                                                                                                                                                                                                               | ④ Angle                                                                                                       | ⑤ Spring Return                                                 | ⑥ Handle                                                                              | ⑦ Contact Arrangement                                                                             | Name-plate                                                                              |
|------------|-----------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| ø30 Series | ø25 Series      |                                                                                                                    |                                                                                                                                                                                                                                                           |                                                                                                               |                                                                 |                                                                                       |                                                                                                   |                                                                                         |
| ACSNO      | ACSSO           | <br>(Photo: ACSNO with Y2 handle) | Maintained:<br>1 to 6 decks<br>Spring return:<br>1 to 3 decks                                                                                                                                                                                             | Maintained:<br>2 to 12 positions<br>Spring return:<br>2 to 4 positions                                        | Maintained:<br>30°, 45°, 60°, 90°<br>Spring return:<br>45° only | Spring return<br>from right<br>Spring return<br>from left<br>Spring return<br>two-way | Y2, S2, P2,<br>F2, 25S2<br>(25S2 is for<br>ACSSO only)<br>(one speci-<br>fied handle<br>supplied) | See<br>page 56.<br>(ordered<br>sepa-<br>rately)                                         |
| ACS NK     | ACSSK           |                                                                                                                    | <br>Standard Key (2 keys supplied)                                                                                                                                       | <br>H2 Handle Key<br>(black) | Maintained:<br>1 to 6 decks<br>Spring return:<br>1 to 3 decks   | Maintained:<br>2 to 8 positions<br>Spring return:<br>2 to 4 positions                 | Maintained:<br>45°, 90°<br>Spring return:<br>45° only                                             |                                                                                         |
| UCSQO      | (Enclosed Type) | <br>(Photo: With Y2 handle)      |                                                                                                                                                                                                                                                           |                                                                                                               | Maintained:<br>1 to 6 decks<br>Spring return:<br>1 to 3 decks   | Maintained:<br>2 to 12 positions<br>Spring return:<br>2 to 4 positions                | Maintained:<br>30°, 45°, 60°, 90°<br>Spring return:<br>45° only                                   | Spring return<br>from right<br>Spring return<br>from left<br>Spring return<br>two-way   |
| UCSQM      | (Enclosed Type) |                                                                                                                    | <br>Indicator<br>Left: Green<br>Right: Red<br><br>Left Right<br>Spring Return 2-way | Spring return:<br>1 to 3 decks                                                                                | Spring return:<br>3 positions                                   | Spring return:<br>45° only                                                            | Spring return<br>two-way                                                                          | C1007<br>C1008<br>C1009<br>C1010<br>C1018<br>C2006<br>C2007<br>C2021<br>See<br>page 51. |

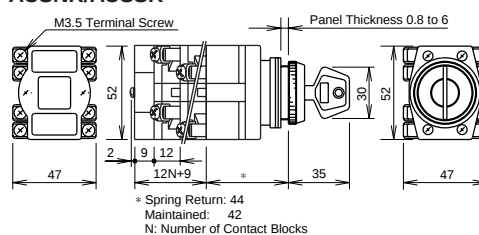
• For handles and accessories, see page 49.

## Dimensions

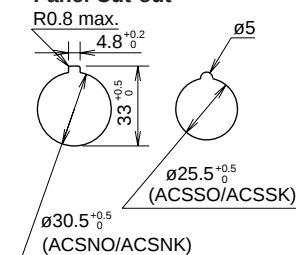
### ACSNO/ACSSO



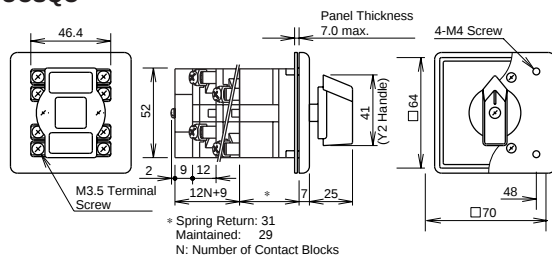
### ACS NK/ACSSK



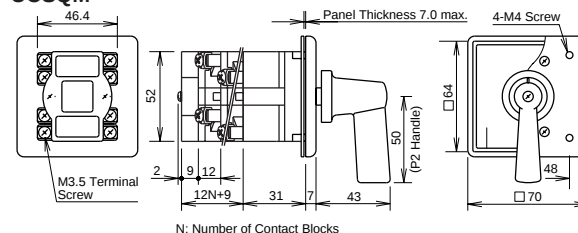
### • Panel Cut-out



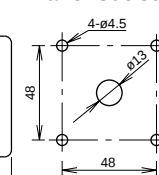
### UCSQO



### UCSQM



### • Panel Cut-out



All dimensions in mm.

# ø30/ø25 CS Series Cam Switches

## Ordering Information

When ordering, specify items ① through ⑦ as the designation example below.

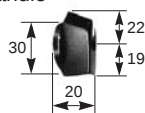
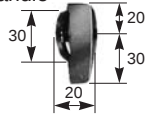
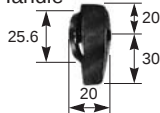
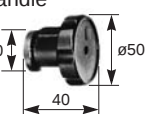
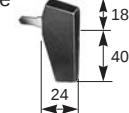
| ①                                   | ②                   |                                         | ③            |                                                                | ④     |                                                                    | ⑤             |                               | ⑥                                          | ⑦                                                                                                                 |
|-------------------------------------|---------------------|-----------------------------------------|--------------|----------------------------------------------------------------|-------|--------------------------------------------------------------------|---------------|-------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Type                                | Contact Block Decks |                                         | Positions    |                                                                | Angle |                                                                    | Spring Return |                               | Handle                                     | Circuit No.                                                                                                       |
| ①                                   | ②                   |                                         | ③            |                                                                | ④     |                                                                    | ⑤             |                               | ⑥                                          | ⑦                                                                                                                 |
|                                     | Decks               | Code                                    | Positions    | Code                                                           | Angle | Code                                                               | Return        | Code                          |                                            |                                                                                                                   |
| ACSNO                               | 1 deck              | 1                                       | 2 positions  | 2                                                              | 30°   | 3                                                                  | Spring return | RO                            | (Code)<br>Y2, S2, P2,<br>F2, H2,<br>25S2   | For standard contact<br>arrangements, use des-<br>ignation code on pages<br>51 to 53.                             |
| ACSNK                               | 2 decks             | 2                                       | 3 positions  | 3                                                              | 45°   | 4                                                                  | from left     |                               |                                            |                                                                                                                   |
| ACSSO                               | 3 decks             | 3                                       | 4 positions  | 4                                                              | 60°   | 6                                                                  | Spring return | OR                            |                                            |                                                                                                                   |
| ACSSK                               | 4 decks             | 4                                       | 5 positions  | 5                                                              | 90°   | 9                                                                  | from right    |                               |                                            |                                                                                                                   |
| UCSQO                               | 5 decks             | 5                                       | 6 positions  | 6                                                              |       |                                                                    | Spring return | RR                            |                                            |                                                                                                                   |
| UCSQM                               | 6 decks             | 6                                       | 7 positions  | 7                                                              |       |                                                                    | two-way       |                               | (Color)<br>B: Black<br>See table<br>below. | For custom contact<br>arrangements, use the<br>Custom Contact<br>Arrangement Specifica-<br>tion Sheet on page 54. |
|                                     |                     |                                         | 8 positions  | 8                                                              |       |                                                                    |               |                               |                                            |                                                                                                                   |
|                                     |                     |                                         | 9 positions  | 9                                                              |       |                                                                    |               |                               |                                            |                                                                                                                   |
|                                     |                     |                                         | 10 positions | 10                                                             |       |                                                                    |               |                               |                                            |                                                                                                                   |
|                                     |                     |                                         | 11 positions | 11                                                             |       |                                                                    |               |                               |                                            |                                                                                                                   |
|                                     |                     |                                         | 12 positions | 12                                                             |       |                                                                    |               |                               |                                            |                                                                                                                   |
| Spring return:<br>1 to 3 decks only |                     | Spring return:<br>2 to 4 positions only |              | ACSNO/ACSSK:<br>45° and 90° only<br>Spring return:<br>45° only |       | Spring return code is<br>required only for spring<br>return types. |               | 25S2 is for<br>ACSSO<br>only. |                                            |                                                                                                                   |

### • Designation Example

**UCSQO - 2 3 4 RR - S2B - C2006**

- When a special contact arrangement is required, specify the contact arrangement using the Custom Contact Arrangement Specification Sheet on page 54.
- A specified handle is attached.
- Accessories such as nameplates and jumpers are separately ordered.
- The key of the key operated cam switch is removable from every position. Specify other key removable configurations if required.

### • Handle Designation Code

| Shape                                                                                                | Code | Color    | Applicable Cam Switch   |
|------------------------------------------------------------------------------------------------------|------|----------|-------------------------|
| ø30 Y Handle<br>  | Y2   |          | ACSNO<br>UCSQO<br>UCSQM |
| ø30 S Handle<br> | S2   |          |                         |
| ø25 S Handle<br> | 25S2 |          | ACSSO                   |
| ø30 P Handle<br> | P2   | B: black | ACSNO<br>UCSQO<br>UCSQM |
| ø30 F Handle<br> | F2   |          |                         |
| Key Handle<br>   | H2   |          | ACSNK<br>ACSSK          |

### • Spring Return Operation

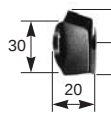
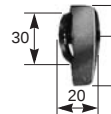
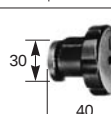
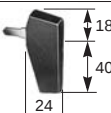
Available combinations of operator positions, angles, and return directions are listed in the table below.

| Positions               | 2-position                                                                          |                                                                                     | 3-position                                                                          |                                                                                      |                                                                                       | 4-position                                                                            |                                                                                       | 3-position                                                                            |
|-------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                         | From Left                                                                           | From Right                                                                          | From Left                                                                           | From Right                                                                           | Two-way                                                                               | From Left                                                                             | From Right                                                                            | Two-way                                                                               |
| Return Direction        |  |  |  |  |  |  |  |  |
| ③ ④ ⑤ Codes             | 24RO                                                                                | 24OR                                                                                | 34RO                                                                                | 34OR                                                                                 | 34RR                                                                                  | 44RO                                                                                  | 44OR                                                                                  | 34RR                                                                                  |
| Applicable Cam Switches | ACSNO, ACSSO, ACSNK, ACSSK, UCSQO                                                   |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       | UCSQM                                                                                 |
| Contact Block Decks     | 1 to 3 decks                                                                        |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |

Note: Maintained types do not require spring return code ⑤.

## Accessories and Replacement Parts

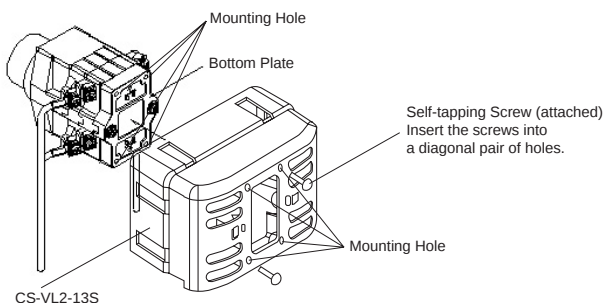
| Shape                                                                                                                                                                                                                                                                        | Material | Type No.   | Ordering Type No. | Package Quantity | Remarks                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|-------------------|------------------|--------------------------------------------------------------------------------------------------|
| <b>Jumper</b><br><br>CJ-1<br>CJ-2                                                                                                                                                           | Metal    | CJ-1       | CJ-1PN10          | 10               | For connecting terminals of adjoining contact blocks                                             |
|                                                                                                                                                                                                                                                                              |          | CJ-2       | CJ-2PN10          | 10               | For connecting terminals of the same contact block                                               |
| <b>Rubber Boot</b><br>                                                                                     | Rubber   | CR-1       | CR-1              | 1                | For preventing ingress of dust into the contact blocks<br>Not applicable for the UCSQO and UCSQM |
| <b>Terminal Cover</b><br><br>CS-VL2-13S <br>CS-VL2-46S<br>Supplied with 2 self-tapping screws for mounting | Plastic  | CS-VL2-13S | CS-VL2-13S        | 1                | For 1 to 3 decks of contact blocks                                                               |
|                                                                                                                                                                                                                                                                              |          | CS-VL2-46S | CS-VL2-46S        | 1                | For 4 to 6 decks of contact blocks                                                               |

| Shape                                                                                                      | Material (Color)                           | Type No.     | Ordering Type No. | Package Quantity |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|-------------------|------------------|
| <b>ø30 Y Handle</b><br>  | Plastic (Black)                            | CSH-YB       | CSH-YB            | 1                |
| <b>ø30 S Handle</b><br> | Plastic (Black)                            | CSH-SB       | CSH-SB            | 1                |
| <b>ø25 S Handle</b><br> | Plastic (Black)                            | CSH-25SB     | CSH-25SB          | 1                |
| <b>ø30 P Handle</b><br> | Plastic (Black)                            | CSH-PB       | CSH-PB            | 1                |
| <b>ø30 F Handle</b><br> | Plastic (Black)                            | CSH-FB       | CSH-FB            | 1                |
| <b>Key Handle</b><br>   | Plastic (Black)                            | CSH-H2B      | CSH-H2B           | 1                |
| <b>Handle Shaft</b><br> | Plastic                                    | CS-HF2C      | CS-HF2CPN05       | 5                |
| <b>Handle Screw</b><br> | For Y, ø30 S, and ø25 S handles<br>M3 × 12 | CS-SCW-M3-12 | CS-SCW-M3-12PN10  | 10               |
| <b>Handle Screw</b><br> | For P and F handles<br>M3 × 25             | CS-SCW-M3-25 | CS-SCW-M3-25PN10  | 10               |

# CS Series Cam Switches

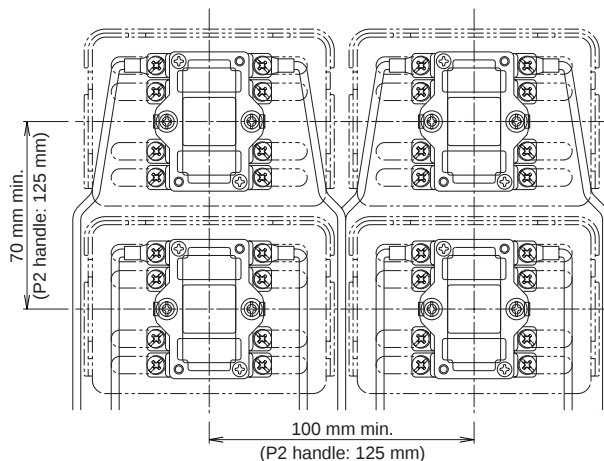
## Installing the Terminal Cover for the CS series Cam Switches

- Complete wiring before installing the terminal cover on the bottom plate of the contact block.
- The terminal cover has six holes. Of the four round holes at four corners, use two diagonal pair of holes to install the terminal cover. Either pair can be used.
- Insert the attached self-tapping screws into the pair of holes and tighten the screws to a torque of 0.8 to 1.0 N·m.
- For 1 through 3 decks of contact blocks, use terminal cover CS-VL2-13S.
- For 4 through 6 decks of contact blocks, use terminal cover CS-VL2-46S.
- The CS-VL2-46S consists of the CS-VL2-13S and a terminal cover for the fourth through sixth decks. Combine the two parts together as shown. Note that once combined, the two parts cannot be separated.

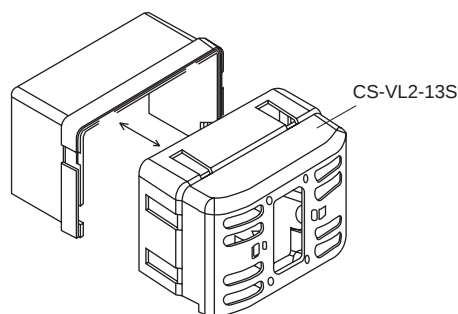


**For 1 through 3 decks of contact blocks (CS-VL2-13S)**

## Minimum Mounting Centers for Installing the Terminal Cover

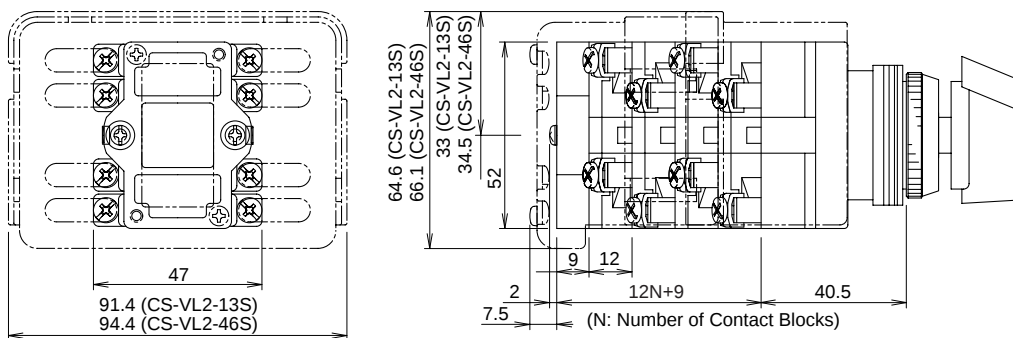


- Although the minimum mounting centers are 100 mm horizontally and 70 mm vertically, determine the mounting centers in consideration of convenience of wiring. For the P2 handle, the minimum mounting centers are 125 mm horizontally and vertically.



**For 4 through 6 decks of contact blocks (CS-VL2-46S)**

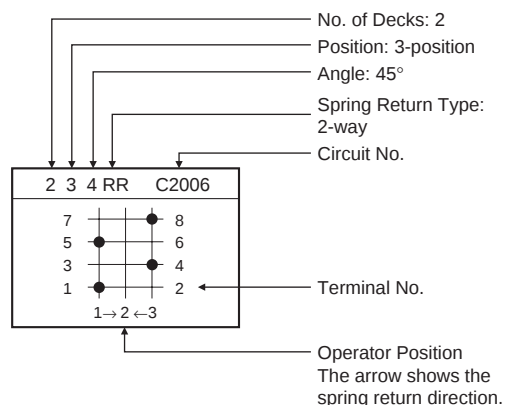
## Terminal Cover Dimensions



All dimensions in mm.

## Standard Contact Arrangements

- The following table lists 76 standard contact arrangements for easy designation of required cam switch operation.
- When other contact arrangements are required, specify the number of contact block decks, operator positions, angles, and contact operation using the Custom Contact Arrangement Specification Sheet on page 54.



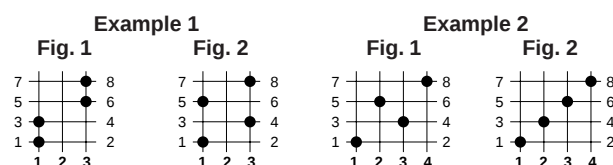
| Symbol | Contact Operation                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ●      | Contacts closed.                                                                                                                                                         |
| —      | Contacts remain closed between two operator positions.                                                                                                                   |
|        | Overlapping Contacts<br>Contacts of different decks are both closed at one point while the handle is turned to the next position.                                        |
| ○      | Residual Contacts<br>When the handle is returned to the center, the contacts remain closed. The contacts are opened when the handle is turned to the opposite direction. |

### Listing Order of the Table

The 76 standard contact arrangements are listed in the order of the circuit number.

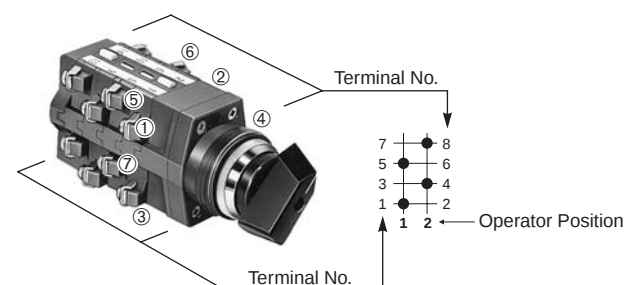
### Same Circuits

Shown in the following examples, circuits of Fig. 1 and Fig. 2 have the same functions. When ordering, examine the standard contact arrangements. Your requirements may be satisfied simply by changing external wiring of the standard contact arrangements.



### Terminal Numbers

The terminal numbers on the contact blocks correspond with the numbers shown in the chart as shown below.



| Standard Contact Arrangement Chart |                |                |                |                |
|------------------------------------|----------------|----------------|----------------|----------------|
| 1 2 9 C1001                        | 1 2 9 C1002    | 1 2 4 OR C1003 | 1 2 4 OR C1004 | 1 3 4 C1005    |
|                                    |                |                |                |                |
| 1 3 4 C1006                        | 1 3 4 RR C1007 | 1 3 4 RR C1008 | 1 3 4 RR C1009 | 1 3 4 RR C1010 |
|                                    |                |                |                |                |
| 1 4 4 C1011                        | 1 2 9 C1013    | 1 2 9 C1014    | 1 2 4 OR C1015 | 1 3 4 C1016    |
|                                    |                |                |                |                |
| 1 2 4 C1017                        | 1 3 4 RR C1018 | 1 2 6 C1019    |                |                |
|                                    |                |                |                |                |
| 2 2 9 C2001                        | 2 2 9 C2002    | 2 3 4 C2003    | 2 3 4 C2004    | 2 3 4 C2005    |
|                                    |                |                |                |                |

# ø30/ø25 CS series Cam Switches

|                       |                       |                       |                    |                    |
|-----------------------|-----------------------|-----------------------|--------------------|--------------------|
| <p>2 3 4 RR C2006</p> | <p>2 3 4 RR C2007</p> | <p>2 4 4 C2008</p>    | <p>2 4 4 C2009</p> | <p>2 4 9 C2011</p> |
| <p>2 2 9 C2014</p>    | <p>2 2 9 C2015</p>    | <p>2 3 4 C2016</p>    | <p>2 3 4 C2017</p> | <p>2 3 4 C2018</p> |
| <p>2 3 4 C2019</p>    | <p>2 3 4 C2020</p>    | <p>2 3 4 RR C2021</p> | <p>2 4 4 C2022</p> | <p>2 3 3 C2023</p> |
| <p>2 3 3 C2024</p>    | <p>2 4 3 C2025</p>    | <p>2 5 3 C2027</p>    | <p>2 3 6 C2028</p> | <p>2 3 6 C2029</p> |
| <p>3 2 9 C3001</p>    | <p>3 3 4 C3002</p>    | <p>3 5 4 C3003</p>    | <p>3 6 4 C3004</p> | <p>3 3 4 C3005</p> |
| <p>3 4 9 C3008</p>    | <p>3 4 9 C3009</p>    | <p>3 2 9 C3010</p>    | <p>3 3 4 C3011</p> | <p>3 4 4 C3012</p> |
| <p>3 6 3 C3013</p>    | <p>3 3 6 C3014</p>    | <p>3 6 6 C3015</p>    | <p>3 5 3 C3016</p> | <p>3 4 4 C3017</p> |
| <p>3 3 6 C3018</p>    | <p>3 3 6 C3019</p>    | <p>4 4 4 C4001</p>    | <p>4 8 4 C4002</p> | <p>4 4 9 C4003</p> |
| <p>4 2 4 C4004</p>    | <p>4 2 9 C4005</p>    | <p>4 2 9 C4006</p>    | <p>4 4 9 C4007</p> | <p>4 3 4 C4008</p> |

|                        |                        |                        |                         |
|------------------------|------------------------|------------------------|-------------------------|
| <b>4 5 4 C4009</b><br> | <b>5 3 4 C5001</b><br> | <b>6 4 4 C6001</b><br> | <b>6 12 3 C6002</b><br> |
| <b>6 4 9 C6003</b><br> | <b>6 9 3 C6004</b><br> | <b>6 6 6 C6005</b><br> | <b>6 6 4 C6006</b><br>  |

## Application Examples (Voltmeter and Ammeter Circuits)

|                                                           |                                                         |                                                           |
|-----------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|
| <b>1 2 6 C1019 (ammeter switching, 1CT circuit)</b><br>   | <b>2 3 6 C2029 (ammeter switching, 2CT circuit)</b><br> | <b>2 4 9 C2011 (ammeter switching, 2CT circuit)</b><br>   |
| <b>2 4 4 C2022 (voltmeter switching, 3PT circuit)</b><br> | <b>3 3 6 C3019 (ammeter switching, 3CT circuit)</b><br> | <b>3 4 9 C3008 (voltmeter switching, 2PT circuit)</b><br> |
| <b>3 4 9 C3009 (voltmeter switching, 3PT circuit)</b><br> | <b>4 4 9 C4003 (ammeter switching, 3CT circuit)</b><br> | <b>4 4 9 C4007 (ammeter switching, 2CT circuit)</b><br>   |
| <b>6 4 9 C6003 (ammeter switching, 3CT circuit)</b><br>   |                                                         |                                                           |

## Custom Contact Arrangement Specification Sheet

• The preceding pages provide 76 standard contact arrangements. When other contact arrangements are required, specify the number of contact block decks, operator positions, angles, and contact operation using the Custom Contact Arrangement Specification Sheet shown below.

• For available number of contact blocks and operator positions, see the Ordering Information on page 48.

### 1. Specify operator positions

Indicate the operator positions starting at the first position. When spring return operation is required, mark an arrow between two operator positions to indicate the spring return direction.

|               |   |   |   |   |   |   |
|---------------|---|---|---|---|---|---|
| Deck 2        | 7 | ○ | ○ | ○ | ● | ○ |
|               | 5 | ○ | ■ |   |   | ○ |
| Deck 1        | 3 | ○ | ● | ○ | ○ | ○ |
|               | 1 | ● | ○ | ○ | ○ | ○ |
| Angle         |   |   |   |   |   |   |
| Positions     |   | 1 | 2 | 3 | 4 | 5 |
| Spring Return |   |   |   |   |   |   |

### 2. Specify contact operation at each operator position

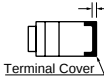
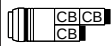
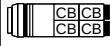
Indicate the required operation of all contacts at each operator position using the following symbols.

| Symbol | Contact Operation                                                                                                                                                                                          |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ●      | Contacts closed.                                                                                                                                                                                           |
| ■      | Contacts remain closed between two operator positions.                                                                                                                                                     |
|        | Overlapping Contacts<br>Contacts of different decks are both closed at one point while the handle is turned to the next position. Overlapping contacts are not available for handle angles of 30° and 45°. |
| ○●     | Residual Contacts<br>When the handle is returned to the center, the contacts remain closed. The contacts are opened when the handle is turned to the opposite direction.                                   |

• One deck of contact block contains two poles of contacts and four terminals. When the handle is made to turn 180° or more, special attention is needed. Since one cam operates the two poles of contacts on opposite positions, the same contact operation repeats on the other pole of contacts when the handle is turned 180°. When different contact operation is needed for handle angles of 180° or more, use another deck of contact block.

| CS Series Cam Switch Custom Contact Arrangement Specification Sheet        |              |                           |   |   |   |   |   |   |   |   |    |                 |    |              |
|----------------------------------------------------------------------------|--------------|---------------------------|---|---|---|---|---|---|---|---|----|-----------------|----|--------------|
| Type No.: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]                  |              |                           |   |   |   |   |   |   |   |   |    | Quantity: _____ |    |              |
| ① Type    ② Decks    ③ Positions    ④ Angle    ⑤ Spring Return    ⑥ Handle |              |                           |   |   |   |   |   |   |   |   |    |                 |    |              |
| Deck                                                                       | Terminal No. | Contact Arrangement Chart |   |   |   |   |   |   |   |   |    |                 |    | Terminal No. |
| Deck 6                                                                     | 23           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 24           |
|                                                                            | 21           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 22           |
| Deck 5                                                                     | 19           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 20           |
|                                                                            | 17           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 18           |
| Deck 4                                                                     | 15           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 16           |
|                                                                            | 13           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 14           |
| Deck 3                                                                     | 11           | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 12           |
|                                                                            | 9            | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 10           |
| Deck 2                                                                     | 7            | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 8            |
|                                                                            | 5            | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 6            |
| Deck 1                                                                     | 3            | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 4            |
|                                                                            | 1            | ○                         | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○  | ○               | ○  | 2            |
| Angle                                                                      |              |                           |   |   |   |   |   |   |   |   |    |                 |    |              |
| Positions                                                                  |              | 1                         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11              | 12 |              |
| Spring Return                                                              |              |                           |   |   |   |   |   |   |   |   |    |                 |    |              |

## Accessories

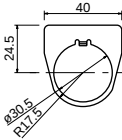
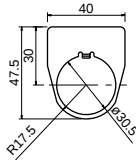
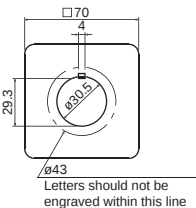
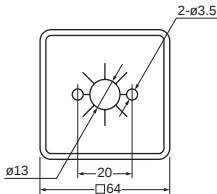
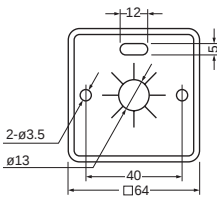
| Terminal Cover                                                                                                                                                                                                                                                          |                                                                                                         | N-VL2                                                                                            | N-VL3                                                                                            | N-VL4                                                                                             | APN-PVL                                                                                          | APD-PVL                                                                                          | Use of terminal covers increases the depth by the dimensions below.                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| ø30 Series Control Unit                                                                                                                                                                                                                                                 |                                                                                                         | <br>38.4H × 22W | <br>38H × 30.4W | <br>38.4H × 24W | <br>38H × 46W | <br>37H × 44W |  |
| Pilot Light<br>APN, APNE, UPQN, UPQNE                                                                                                                                                                                                                                   | Full Voltage                                                                                            |                                                                                                  |                                                                                                  |                                                                                                   | X                                                                                                |                                                                                                  | +5.0 mm                                                                             |
| Pilot Light<br>APD, APDE                                                                                                                                                                                                                                                |                                                                                                         |                                                                                                  |                                                                                                  |                                                                                                   |                                                                                                  | X                                                                                                | +5.2 mm                                                                             |
| Pilot Light<br>APN, APNE, APD, APDE,<br>UPQN, UPQNE                                                                                                                                                                                                                     | Transformer<br>DC-DC Converter                                                                          |                                                                                                  | X                                                                                                |                                                                                                   |                                                                                                  |                                                                                                  | +2.7 mm                                                                             |
| Pushbutton<br>ABN, ABD, AON, AOD, AVN,<br>ABGD, AJN, ABFD, ATN,<br>AOFD, UBQN, AVD, UOQN,<br>AJD, UWQN, AZD, ABBN,<br>AYD, ABBS (ø25)<br><br>Selector Switch<br>ASN, ASD, ASTN<br><br>Selector Pushbutton<br>ABN, ASBD                                                  | 1 contact block<br>   | X                                                                                                |                                                                                                  |                                                                                                   |                                                                                                  |                                                                                                  | +0 mm                                                                               |
|                                                                                                                                                                                                                                                                         | 2 contact blocks<br> | X<br>2 pieces                                                                                    |                                                                                                  |                                                                                                   |                                                                                                  |                                                                                                  |                                                                                     |
|                                                                                                                                                                                                                                                                         | 3 contact blocks<br> | X<br>2 pieces                                                                                    |                                                                                                  |                                                                                                   |                                                                                                  |                                                                                                  |                                                                                     |
|                                                                                                                                                                                                                                                                         | 4 contact blocks<br> | X<br>2 pieces                                                                                    |                                                                                                  |                                                                                                   |                                                                                                  |                                                                                                  |                                                                                     |
| Illuminated Pushbutton<br>ALN, ALD, ALNE, ALDE,<br>AOLN, AOLD, AOLNE,<br>AOLDE, ALGN, ALGD,<br>ALGNE, ALGDE, AOLGN,<br>AOLGDE, ALFN, ALFD,<br>ALFNE, ALFDE, AOLFNE,<br>AOLFD, AOLFNE, AOLFDE,<br>AVLN, AVLDE, AVLNE, AVLDE,<br>AJLN, AJLD, AJLNE, AJLDE,<br>ULQN, UOLQN | Full Voltage                                                                                            |                                                                                                  |                                                                                                  | X<br>2 pieces                                                                                     |                                                                                                  |                                                                                                  | +4.5 mm                                                                             |
|                                                                                                                                                                                                                                                                         | Transformer<br>DC-DC Converter                                                                          |                                                                                                  | X                                                                                                |                                                                                                   |                                                                                                  |                                                                                                  | +1.5 mm                                                                             |
| Illuminated Selector Switch<br>ASLN, ASLD                                                                                                                                                                                                                               |                                                                                                         |                                                                                                  |                                                                                                  |                                                                                                   |                                                                                                  |                                                                                                  |                                                                                     |
| Push-to-Check Pilot Light<br>APN1**P                                                                                                                                                                                                                                    |                                                                                                         |                                                                                                  |                                                                                                  |                                                                                                   |                                                                                                  |                                                                                                  |                                                                                     |

### • Ordering Terminal Covers

When ordering terminal covers, specify the Type No. and the quantity.

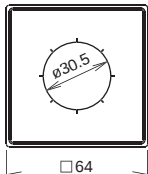
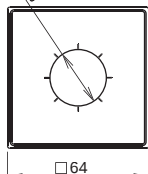
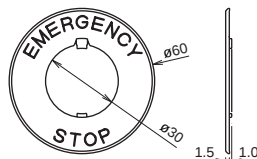
## ø30 ø30 Series Accessories and Replacement Parts

### Nameplates

| Type | Legend                                       | Material                                                       | Type No. | Ordering Type No. | Package Quantity | Dimensions (mm)                                                                                                                                                         | Applicable Unit        |
|------|----------------------------------------------|----------------------------------------------------------------|----------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| NA   | Blank                                        | Aluminium<br>1.2 mm thick<br>White letters on black background | NA-0     | NA-0              | 1                |                                                                                      | ø30 Control Unit       |
|      |                                              |                                                                |          | NA-0PN10          | 10               |                                                                                                                                                                         |                        |
|      | With Legend                                  |                                                                | NA-*     | NA-*              | 1                |                                                                                                                                                                         |                        |
|      |                                              |                                                                |          | NA-*PN10          | 10               |                                                                                                                                                                         |                        |
| NALO | Blank                                        | Aluminium<br>1.2 mm thick<br>Black                             | NALO     | NALO              | 1                |                                                                                      |                        |
|      |                                              |                                                                |          | NALOPN10          | 10               |                                                                                                                                                                         |                        |
| MLO  | Blank                                        | Brass<br>(chrome-plated)<br>1.0 mm thick<br>Matte              | MLO      | MLO               | 1                |                                                                                     | ARN/ARNS<br>Mono-Lever |
|      |                                              |                                                                |          | MLOPN10           | 10               |                                                                                                                                                                         |                        |
| CQ   | Blank                                        | Aluminium<br>0.5 mm thick<br>White letters on black background | CQ-0     | CQ-0              | 1                | <ul style="list-style-type: none"><li>• With adhesive tapes on the back</li></ul>  | UCSQO<br>Cam Switch    |
|      |                                              |                                                                |          | CQ-0PN10          | 10               |                                                                                                                                                                         |                        |
|      | With Legend<br>(Legend Codes 31 and 53 only) |                                                                | CQ-*     | CQ-*              | 1                |                                                                                                                                                                         |                        |
|      |                                              |                                                                |          | CQ-*PN10          | 10               |                                                                                                                                                                         |                        |
| CQM  | Blank                                        | Aluminium<br>0.5 mm thick<br>White letters on black background | CQM-0    | CQM-0             | 1                | <ul style="list-style-type: none"><li>• With adhesive tapes on the back</li></ul>  | UCSQM<br>Cam Switch    |
|      |                                              |                                                                |          | CQM-0PN10         | 10               |                                                                                                                                                                         |                        |
|      | With Legend<br>(Legend Code 31 only)         |                                                                | CQM-*    | CQM-*             | 1                |                                                                                                                                                                         |                        |
|      |                                              |                                                                |          | CQM-*PN10         | 10               |                                                                                                                                                                         |                        |

• Specify a legend code in place of \* in the Ordering Type No.

## Nameplates

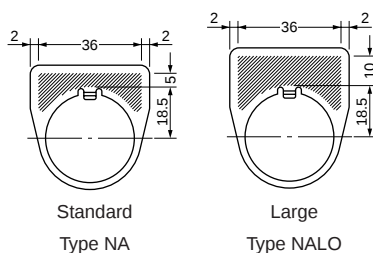
| Type | Legend                                            | Material                                                       | Type No. | Ordering Type No. | Package Quantity | Dimensions (mm)                                                                                                                                                          | Applicable Unit                                          |
|------|---------------------------------------------------|----------------------------------------------------------------|----------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| CQN  | Blank                                             | Aluminium<br>0.5 mm thick<br>White letters on black background | CQN-0    | CQN-0             | 1                | <div>• With adhesive tapes on the back</div> <div></div>                              | ACSNO, ACSNK<br>Cam Switches<br>ø30 mm Selector Switches |
|      |                                                   |                                                                |          | CQN-0PN10         | 10               |                                                                                                                                                                          |                                                          |
|      | With Legend<br>(Legend Codes 31, 35, and 53 only) |                                                                | CQN-*    | CQN-*             | 1                |                                                                                                                                                                          |                                                          |
|      |                                                   |                                                                |          | CQN-*PN10         | 10               |                                                                                                                                                                          |                                                          |
| CQS  | Blank                                             | Aluminium<br>0.5 mm thick<br>White letters on black background | CQS-0    | CQS-0             | 1                | <div>• With adhesive tapes on the back</div> <div></div>                             | ACSSO, ACSSK<br>Cam Switches<br>ø25 mm Selector Switches |
|      |                                                   |                                                                |          | CQS-0PN10         | 10               |                                                                                                                                                                          |                                                          |
|      | With Legend<br>(Legend Code 53 only)              |                                                                | CQS-*    | CQS-*             | 1                |                                                                                                                                                                          |                                                          |
|      |                                                   |                                                                |          | CQS-*PN10         | 10               |                                                                                                                                                                          |                                                          |
| HNAV | Blank                                             | Polyamide<br>Black letters on yellow back-ground               | HNAV-0   | HNAV-0            | 1                | <div></div> <div>Legend "EMERGENCY STOP" is indicated outside a ø44mm circle.</div> | HN1E ø30 mm series<br>Emergency Stop Switches            |
|      | EMERGENCY                                         |                                                                | HNAV-27  | HNAV-27           | 1                |                                                                                                                                                                          |                                                          |

• Specify a legend code in place of \* in the Ordering Type No.

## Legends

| Code | Legend        |
|------|---------------|
| 0    | (blank)       |
| 1    | ON            |
| 2    | OFF           |
| 3    | START         |
| 4    | STOP          |
| 31   | OFF-ON        |
| 35   | HAND-AUTO     |
| 53   | HAND-OFF-AUTO |

## Shape and Engraving Area



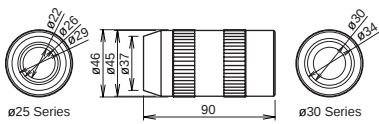
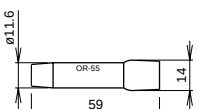
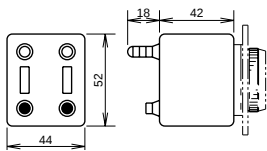
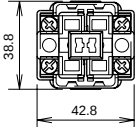
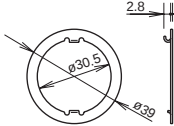
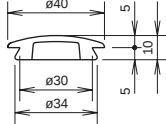
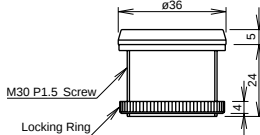
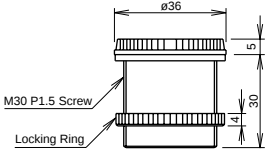
## Example

| Shape    | Engraving Area |       | Max. No. of Lines | No. of Letters on 1 Line |
|----------|----------------|-------|-------------------|--------------------------|
|          | Height         | Width |                   |                          |
| Standard | 5              | 36    | 1                 | 14                       |
| Large    | 10             | 36    | 2                 | 14                       |

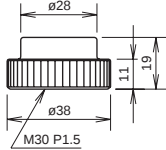
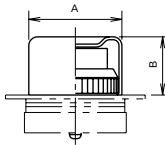
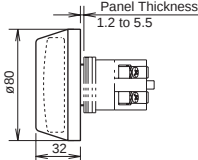
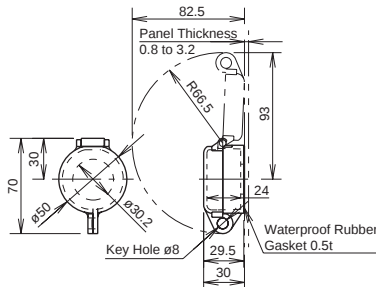
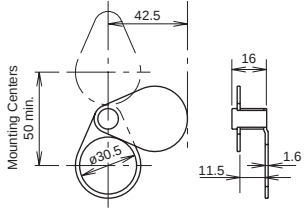
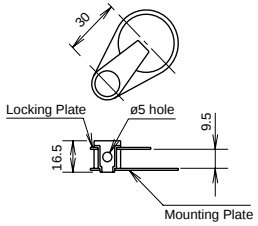
• The above example is when the letter is 4 mm tall.

**Ø30**

| Accessories |
|-------------|
|-------------|

| Shape                                                                                                                                                                      | Material                      | Type No. | Ordering Type No. | Package Quantity | Dimensions (mm)                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Locking Ring Wrench</b><br>                                                            | Rubber                        | OR-12    | OR-12             | 1                | <ul style="list-style-type: none"> <li>Used to tighten the locking ring when installing the <math>\varnothing 30</math> or <math>\varnothing 25</math> switch onto a panel.</li> </ul>                                            |
| <b>Lamp Holder Tool</b><br>                                                               | Rubber                        | OR-55    | OR-55             | 1                | <ul style="list-style-type: none"> <li>Used to install and remove the LED/incandescent lamps. See page 64.</li> </ul>                                                                                                             |
| <b>Contact Rubber Boot</b><br>For momentary 1 layer of contact blocks (2 contact blocks)  | Rubber (nitril) (black)       | OC-99    | OC-99             | 1                | <ul style="list-style-type: none"> <li>Rubber boot used to prevent oil and dirt from entering into the contact block.</li> <li>Temperature range: -5 to +60°C</li> <li>Cannot be used for zinc diecast control units.</li> </ul>  |
| <b>Contact Rubber Boot</b><br>                                                          | Rubber (translucent)          | OC-90    | OC-90             | 1                | <ul style="list-style-type: none"> <li>Applicable to AVN3 and AJN3.</li> <li>Applicable to <math>\varnothing 30</math> diecast zinc pushbuttons and selector switches.</li> </ul>                                               |
|                                                                                                                                                                            |                               | OC-290   | OC-290            | 1                |                                                                                                                                                                                                                                                                                                                      |
| <b>Anti-rotation Ring</b><br>                                                           | Metal                         | OGL-11   | OGL-11PN10        | 10               | <ul style="list-style-type: none"> <li>Used to prevent the operator from turning. Generally used when using no nameplates on selector switches and selector pushbuttons. See page 64.</li> </ul>                                |
| <b>Rubber Mounting Hole Plug</b><br>                                                    | Rubber (black)                | OB-13B   | OB-13BPN05        | 5                | <ul style="list-style-type: none"> <li>Used to plug unused <math>\varnothing 30</math>mm mounting holes.</li> <li>Gray also available. Ordering Type No.: OB-13PN05</li> </ul>                                                  |
| <b>Plastic Mounting Hole Plug</b><br>                                                   | Plastic (gray)                | OBP-11   | OBP-11            | 1                | <ul style="list-style-type: none"> <li>Tightening torque: 1.2 N·m.</li> <li>Degree of protection: IP65</li> </ul>                                                                                                               |
| <b>Metallic Mounting Hole Plug</b><br>                                                  | Metal (diecast) (zinc-plated) | OB-11    | OB-11             | 1                | <ul style="list-style-type: none"> <li>Tightening torque: 1.2 N·m.</li> <li>Degree of protection: IP65</li> </ul>                                                                                                               |

## Accessories

| Shape                                                                                                                                     |                          | Material                            | Type No. |        | Ordering Type No. | Package Quantity                                                                                                                                  | Dimensions (mm)                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|----------|--------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|--------|----|----|--------|----|----|
| <div>Button Cover for Extended Pushbuttons</div>         |                          | Rubber (nitril)                     | Color    | Type   | —                 | —                                                                                                                                                 | <ul style="list-style-type: none"><li>• Metallic bezels covered with a rubber boot to enhance waterproof characteristics.</li><li>• Button is not included. Applicable to extended pushbuttons only.</li></ul>  |   |   |        |    |    |        |    |    |
|                                                                                                                                           |                          |                                     | Black    | OC-11B | OC-11B            | 1                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
|                                                                                                                                           |                          |                                     | Green    | OC-11R | OC-11R            |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
|                                                                                                                                           |                          |                                     | Red      | OC-11G | OC-11G            |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
|                                                                                                                                           |                          |                                     | Yellow   | OC-11Y | OC-11Y            |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
| <div>Pushbutton Clear Boot</div>                         | For flush pushbuttons    | Rubber (EPDM)                       | OC-121   |        | OC-121            | 1                                                                                                                                                 | <ul style="list-style-type: none"><li>• Used to cover and protect pushbuttons where units are subject to water splash. Not suitable for outdoor use or where the units are subject to oil splash.</li></ul>     |   |   |        |    |    |        |    |    |
|                                                                                                                                           | For extended pushbuttons |                                     | OC-122   |        | OC-122            | 1                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
|                                                                                                                                           |                          |                                     |          |        |                   | <table><tr><td></td><td>A</td><td>B</td></tr><tr><td>OC-121</td><td>37</td><td>16</td></tr><tr><td>OC-122</td><td>37</td><td>16</td></tr></table> |                                                                                                                                                                                                                                                                                                    | A | B | OC-121 | 37 | 16 | OC-122 | 37 | 16 |
|                                                                                                                                           | A                        | B                                   |          |        |                   |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
| OC-121                                                                                                                                    | 37                       | 16                                  |          |        |                   |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
| OC-122                                                                                                                                    | 37                       | 16                                  |          |        |                   |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                    |   |   |        |    |    |        |    |    |
| <div>Dust-proof Rubber Cover for Jumbo Mushrooms</div>  |                          | Rubber (nitril) black               | OC-4GN   |        | OC-4GN            | 1                                                                                                                                                 | <ul style="list-style-type: none"><li>• Used for ABN4G pushbuttons.</li></ul>                                                                                                                                  |   |   |        |    |    |        |    |    |
| <div>Padlock Cover</div>                               |                          | Polyarylate (gasket: nitril rubber) | OL-KL1   |        | OL-KL1            | 1                                                                                                                                                 | <ul style="list-style-type: none"><li>• Used to protect pushbuttons, illuminated pushbuttons, and selector switches (knob operator).</li></ul>                                                                |   |   |        |    |    |        |    |    |
| <div>Metal Protector</div>                             |                          | Metal (zinc-plated)                 | OL-C     |        | OL-C              | 1                                                                                                                                                 | <ul style="list-style-type: none"><li>• Used to protect flush pushbuttons from inadvertent operation.</li><li>• Can be easily attached using the locking ring.</li></ul>                                      |   |   |        |    |    |        |    |    |
| <div>Locking Attachment</div>                          |                          | Metal (zinc-plated)                 | OL-H     |        | OL-H              | 1                                                                                                                                                 | <ul style="list-style-type: none"><li>• Used to lock an extended pushbutton in the depressed position.</li><li>• Can be easily attached using the locking ring.</li></ul>                                     |   |   |        |    |    |        |    |    |

## ø30 ø30 Series Accessories and Replacement Parts

### Maintenance Parts

| Shape                                                                                                                                  | Specification         | Type No. | Ordering Type No. | Package Quantity | Remarks                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Metallic Bezel<br>                                    | Metal (chrome-plated) | OG-11    | OG-11PN02         | 2                |                                                                                                                                                                                                                                                                                                                                                                                     |
| Plastic Bezel<br>                                     | Plastic               | OGP-11*  | OGP-11*PN02       | 2                | Specify a color code in place of *.<br>B (black), G (green), R (red), W (white), Y (yellow)                                                                                                                                                                                                                                                                                         |
| Clear Plastic Bezel for Flush Pushbuttons<br>         | Clear Plastic         | OGP-13   | OGP-13PN02        | 2                | <ul style="list-style-type: none"> <li>• Clear plastic bezel and full shroud.</li> <li>• OGP-1411 cannot be used with LED illumination units and diecast units.</li> </ul>                                                                                                                                                                                                          |
| Clear Plastic Bezel for Extended Pushbuttons<br>      |                       | OGP-14   | OGP-14PN02        | 2                |                                                                                                                                                                                                                                                                                                                                                                                     |
| Clear Plastic Bezel for Illuminated Pushbuttons<br> |                       | OGP-1411 | OGP-1411          | 1                |                                                                                                                                                                                                                                                                                                                                                                                     |
| Clear Button Cover<br>                              | Clear Plastic         | ABN1B-C  | ABN1B-CPN05       | 5                | <ul style="list-style-type: none"> <li>• Used on flush and extended pushbuttons to indicate a mark or a symbol engraved on the marking plate. The clear button cover holds the marking plate. The ø30 series marking chip can only be used on the ABN1 and AON1.</li> <li>• Specify a color code in place of *.<br/>B (black), G (green), R (red), W (white), Y (yellow)</li> </ul> |
| Marking Plate<br>                                   | Plastic               | TN-0*    | TN-0*PN10         | 10               |                                                                                                                                                                                                                                                                                                                                                                                     |

## Maintenance Parts

| Shape | Description                            | Material | Type No.    | Ordering Type No. | Package Quantity | Color                                                                                                                                                                           |                                                                                                                                                                                                                           |
|-------|----------------------------------------|----------|-------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | 1NO contact                            |          | BS010E      | BS010E            | 1                | • Push rod color: Green                                                                                                                                                         |                                                                                                                                                                                                                           |
|       | 1NC contact                            |          | BS001E      | BS001E            | 1                | • Push rod color: Red                                                                                                                                                           |                                                                                                                                                                                                                           |
|       | EM contact (early make)                |          | BS010SE     | BS010SE           | 1                | • Push rod color: Black                                                                                                                                                         |                                                                                                                                                                                                                           |
|       | LB contact (late break)                |          | BS001SE     | BS001SE           | 1                | • Push rod color: White                                                                                                                                                         |                                                                                                                                                                                                                           |
|       | 1NO contact                            |          | BST010      | BST010            | 1                | • Push rod color: Green                                                                                                                                                         | Applicable Units:<br>• Pushlock Turn Reset<br>• Push Turn Lock<br>• LED Illuminated Pushbutton<br>• LED Illuminated Selector Switch<br>• Incandescent Illuminated Selector Switch<br>• All ø30 Diecast Zinc Control Units |
|       | 1NC contact                            |          | BST001      | BST001            | 1                | • Push rod color: Red                                                                                                                                                           |                                                                                                                                                                                                                           |
|       | EM contact (early make)                |          | BST010S     | BST010S           | 1                | • Push rod color: Black                                                                                                                                                         |                                                                                                                                                                                                                           |
|       | LB contact (late break)                |          | BST001S     | BST001S           | 1                | • Push rod color: White                                                                                                                                                         |                                                                                                                                                                                                                           |
|       | Used for APN(E)1                       | Plastic  | APN106LN-②  | APN106LN-②PN05    | 5                | A (amber), C (clear), G (green), R (red), S (blue), W (white), Y (yellow)<br>• Use the white (W) lens for pure white illumination                                               |                                                                                                                                                                                                                           |
|       | Used for UPQNE4 U(O)LQN*B              |          | UPQN406L-②  | UPQN406L-②PN05    | 5                | C (clear), G (green), R (red), S (blue)<br>• Use the clear (C) lens for white illumination.                                                                                     |                                                                                                                                                                                                                           |
|       |                                        |          | UPQN406LD-② | UPQN406LD-②PN05   |                  | A (amber), Y (yellow)<br>• Use the amber (A) lens for orange illumination.                                                                                                      |                                                                                                                                                                                                                           |
|       | Used for UPQN3B U(O)LQN                |          | ULQN06L-②   | ULQN06L-②PN05     | 5                | C (clear), G (green), R (red), S (blue)                                                                                                                                         |                                                                                                                                                                                                                           |
|       |                                        |          | UPQN06LD-②  | UPQN06LD-②PN05    |                  | A (amber), W (white), Y (yellow)<br>• Use the amber (A) lens for orange illumination.                                                                                           |                                                                                                                                                                                                                           |
|       | Used for ALN, AOLN (LED)               | Plastic  | ALN2L-②     | ALN2L-②PN05       | 5                | G (green), R (red), S (blue)                                                                                                                                                    |                                                                                                                                                                                                                           |
|       |                                        |          | ALN2LD-②    | ALN2LD-②PN05      | 5                | A (amber), W (white), Y (yellow)<br>• Use the white (W) lens for pure white illumination                                                                                        |                                                                                                                                                                                                                           |
|       | Used for ALN, AOLN (incandescent) (1W) |          | ALN06L-②    | ALN06L-②PN05      | 5                | C (clear), G (green), R (red), S (blue)                                                                                                                                         |                                                                                                                                                                                                                           |
|       |                                        |          | ALN06LD-②   | ALN06LD-②PN05     | 5                | A (amber), W (white)<br>• Use the amber (A) lens for orange illumination.                                                                                                       |                                                                                                                                                                                                                           |
|       | Used for ALN, AOLN (incandescent) (2W) |          | ALN08L-②    | ALN08L-②PN05      | 5                | C (clear), G (green), R (red), S (blue)                                                                                                                                         |                                                                                                                                                                                                                           |
|       |                                        |          | ALN08LD-②   | ALN08LD-②PN05     | 5                | A (amber), W (white)<br>• Use the amber (A) lens for orange illumination.                                                                                                       |                                                                                                                                                                                                                           |
|       | Flush                                  | Plastic  | ABN1B-①     | ABN1B-①PN05       | 5                | G (green), R (red), Y (yellow)<br>Above colors are used for ø30 control units (dark colored operator units).<br>For black, use black buttons from light colored operator units. |                                                                                                                                                                                                                           |
|       | Extended                               |          | ABN2B-①     | ABN2B-①PN05       | 5                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |
|       | Mushroom                               |          | ABN3B-①     | ABN3B-①PN02       | 2                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |
|       | Flush                                  |          | ABN1BN-①    | ABN1BN-①PN05      | 5                | B (black), G (green), R (red), S (blue), Y (yellow), W (white)<br>Above colors are used for ø30 diecast zinc control units (light colored operator units).                      |                                                                                                                                                                                                                           |
|       | Extended                               |          | ABN2BN-①    | ABN2BN-①PN05      | 5                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |
|       | Mushroom                               |          | ABN3BN-①    | ABN3BN-①PN02      | 2                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |
|       | ① Mushroom (ABN4)                      | Plastic  | ABN4B-①     | ABN4B-①           | 1                | B (black), G (green), R (red), Y (yellow)                                                                                                                                       |                                                                                                                                                                                                                           |
|       | ② Mushroom (ABN4G/ABN4F)               |          | ABN4GB-①    | ABN4GB-①          | 1                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |
|       | ③ Square Flush (UBQN1)                 |          | UBQN1B-①    | UBQN1B-①PN02      | 2                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |
|       | ④ Square Extended (UBQN2)              |          | UBQN2B-①    | UBQN2B-①PN02      | 2                |                                                                                                                                                                                 |                                                                                                                                                                                                                           |

Note: Specify a button color code or lens color code in place of ① or ② in the Ordering Type No.

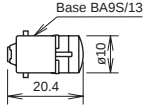
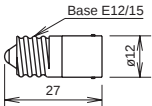
**Ø30**

## Maintenance Parts

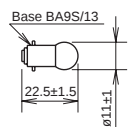
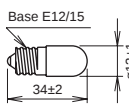
| Shape                                                                                                             | Description                                 | Material | Type No.     | Ordering Type No. | Package Quantity                  | Remarks                                                   |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------|--------------|-------------------|-----------------------------------|-----------------------------------------------------------|
| Lens<br>                         | For ø40 pushlock turn reset pushbuttons     |          | AVLN3L-R     | AVLN3L-RPN02      | 2                                 |                                                           |
| Marking Plate<br>                | For UPQN4                                   | Plastic  | UPQN406N-W   | UPQN406N-WPN05    | 5                                 |                                                           |
| Spare Key<br>                    | ASN*K                                       | Metal    | ASN-SK-24401 | ASN-SK-24401PN02  | 2                                 | • Applicable to ABN3K, ABN4K, ABN5                        |
| Rubber Washer (3.0mm thick)<br>  |                                             | Rubber   | OW-12        | OW-12PN10         | 10                                |                                                           |
| Rubber Washer (1.5mm thick)<br> |                                             | Rubber   | OW-11        | OW-11PN10         | 10                                |                                                           |
| Shroud<br>                     | ❶ Half shroud (for pushbuttons)             | Metal    | ABN2G        | ABN2G             | 1                                 |                                                           |
|                                                                                                                   | ❷ Full shroud (for pushbuttons)             |          | ABN2F        | ABN2F             | 1                                 |                                                           |
|                                                                                                                   | ❸ Full shroud (for mushroom pushbuttons)    |          | ABN3G        | ABN3G             | 1                                 |                                                           |
|                                                                                                                   | ❹ Shallow shroud (for jumbo mushrooms)      |          | ABN4G        | ABN4G             | 1                                 |                                                           |
|                                                                                                                   | ❺ Deep shroud (for jumbo mushrooms)         |          | ABN4F        | ABN4F             | 1                                 |                                                           |
|                                                                                                                   | ❻ Half shroud (for illuminated pushbuttons) |          | ALN1GL       | ALN1GL            | 1                                 | • For incandescent/LED illuminated pushbuttons (E12 base) |
|                                                                                                                   |                                             |          | ALN2GL       | ALN2GL            | 1                                 | • For LED illuminated pushbuttons (BA9S base)             |
|                                                                                                                   | ❼ Full shroud (for illuminated pushbuttons) |          | ALN1F        | ALN1F             | 1                                 | • For incandescent/LED illuminated pushbuttons (E12 base) |
|                                                                                                                   |                                             |          | ALN2FL       | ALN2FL            | 1                                 | • For LED illuminated push-buttons (BA9S base)            |
| Transformer<br>                | 100/110V AC (for LED/1W incandescent lamps) | TWR-016N | TWR-016N     | 1                 | Mounting screws are not included. |                                                           |
|                                                                                                                   | 200/220V AC (for LED/1W incandescent lamps) | TWR-026N | TWR-026N     | 1                 |                                   |                                                           |

## Maintenance Parts

### LED Lamps

| Dimensions                                                                        | Operating Voltage | Current Draw                                |                                               | Type No. | Ordering Type No. | Illumination Color Code                                                                                                                                 | Package Quantity | Base    |
|-----------------------------------------------------------------------------------|-------------------|---------------------------------------------|-----------------------------------------------|----------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------|
|                                                                                   |                   | AC                                          | DC                                            |          |                   |                                                                                                                                                         |                  |         |
|  | 6V AC/DC ±10%     | 17 mA<br>(A, R, W, Y)<br>8 mA<br>(G, PW, S) | 14 mA<br>(A, R, W, Y)<br>5.5 mA<br>(G, PW, S) | LSTD-6②  | LSTD-6②           | Specify a color code in place of ② in the Ordering Type No.<br><br>A: amber<br>G: green<br>PW: pure white<br>R: red<br>S: blue<br>W: white<br>Y: yellow | 1                | BA9S/13 |
|                                                                                   |                   |                                             |                                               | LSTD-6②  | LSTD-6②PN10       |                                                                                                                                                         | 10               |         |
|                                                                                   | 12V AC/DC ±10%    | 11 mA                                       | 10 mA                                         | LSTD-1②  | LSTD-1②           |                                                                                                                                                         | 1                |         |
|                                                                                   |                   |                                             |                                               | LSTD-1②  | LSTD-1②PN10       |                                                                                                                                                         | 10               |         |
|                                                                                   | 24V AC/DC ±10%    | 11 mA                                       | 10 mA                                         | LSTD-2②  | LSTD-2②           |                                                                                                                                                         | 1                |         |
|                                                                                   |                   |                                             |                                               | LSTD-2②  | LSTD-2②PN10       |                                                                                                                                                         | 10               |         |
|  | 6V AC/DC ±10%     | 17 mA<br>(A, R, W, Y)<br>8 mA<br>(G, PW, S) | 14 mA<br>(A, R, W, Y)<br>5.5 mA<br>(G, PW, S) | LETD-6②  | LETD-6②           | Specify a color code in place of ② in the Ordering Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow                   | 1                | E12/15  |
|                                                                                   |                   |                                             |                                               | LETD-6②  | LETD-6②PN10       |                                                                                                                                                         | 10               |         |
|                                                                                   | 12V AC/DC ±10%    | 7 mA                                        | 6.5 mA                                        | LETD-8②  | LETD-8②           |                                                                                                                                                         | 1                |         |
|                                                                                   |                   |                                             |                                               | LETD-8②  | LETD-8②PN10       |                                                                                                                                                         | 10               |         |
|                                                                                   | 24V AC/DC ±10%    | 11 mA                                       | 10 mA                                         | LETD-2②  | LETD-2②           |                                                                                                                                                         | 1                |         |
|                                                                                   |                   |                                             |                                               | LETD-2②  | LETD-2②PN10       |                                                                                                                                                         | 10               |         |

### Incandescent Lamps

| Dimensions                                                                          | Rated Operating Voltage | Lamp Ratings | Type No. | Package Quantity | Life                                         |
|-------------------------------------------------------------------------------------|-------------------------|--------------|----------|------------------|----------------------------------------------|
|  | 6V AC/DC                | 1W (6.3V)    | LS-6     | 1                | Approx. 1000 hours minimum (reference value) |
|                                                                                     | 12V AC/DC               | 1W (18V)     | LS-8     |                  |                                              |
|                                                                                     | 18V AC/DC               | 1W (24V)     | LS-2     |                  |                                              |
|                                                                                     | 24V AC/DC               | 1W (30V)     | LS-3     |                  |                                              |
|  | 6V AC/DC                | 2W (6.3V)    | LE-6     | 1                |                                              |
|                                                                                     | 12V AC/DC               | 2W (18V)     | LE-8     |                  |                                              |
|                                                                                     | 18V AC/DC               | 2W (24V)     | LE-2     |                  |                                              |
|                                                                                     | 24V AC/DC               | 2W (30V)     | LE-3     |                  |                                              |

### Transformer

| Separate Mounting Type                                                                        | Primary Voltage | Secondary Voltage | Type No. | Applicable Load                                                                                                                                     |
|-----------------------------------------------------------------------------------------------|-----------------|-------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| For 1W<br> | 100/110V AC     | 5.5V              | TWR516   | One full voltage type pilot light or illuminated switch containing LSTD-6②, LETD-6② LED lamp (6V AC/DC) or LS-6 incandescent lamp (6.3 V AC/DC, 1W) |
|                                                                                               | 200/220V AC     |                   | TWR526   |                                                                                                                                                     |
|                                                                                               | 400/440V AC     |                   | TWR546   |                                                                                                                                                     |
| For 2W<br> | 100/110V AC     | 15V               | TWR518   | One full voltage type pilot light or illuminated switch containing LE-8 incandescent lamp (18V AC/DC, 2W)                                           |
|                                                                                               | 200/220V AC     |                   | TWR528   |                                                                                                                                                     |
|                                                                                               | 400/440V AC     |                   | TWR548   |                                                                                                                                                     |

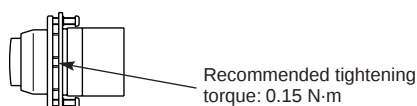
## Safety Precautions

- Turn off the power to the ø30 series control units before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid a burn on your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage and current requirements. Tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Failure to tighten terminal screws may cause overheating and fire.

## Instructions

### Panel Mounting for Square Pushbuttons and Pilot Lights

1. Tighten the square ring to the operator and position the ring correctly.
2. Lightly tighten the screw to secure the pilot light onto the panel.



### Tightening Torque for Terminal Screws

Tighten the terminal screws to a torque of 1.0 to 1.3 N·m.

### Replacement of Lamps

Lamps can be replaced by using the lamp holder tool (OR-55) from the front of the panel.

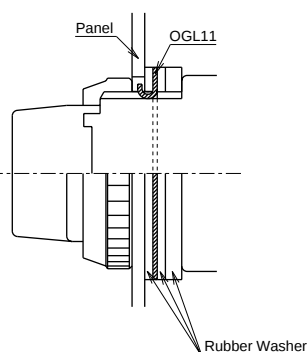
- **How to Remove**  
To remove, slip the lamp holder tool onto the lamp head lightly. Then push slightly, and turn the lamp holder tool counterclockwise.
- **How to Install**  
To install, insert the lamp head into the lamp holder tool. Place the pins on the lamp base to the grooves in the lamp socket. Inset the lamp and turn it clockwise.



### Installing the Anti-rotation Ring

Anti-rotation rings are used on selector switches or pushbuttons which rotate and used when using no nameplates.

Insert a 1.5mm thick rubber washer between the panel and the anti-rotation ring as shown on the right.



### Panel Thickness and Rubber Washer

Adjust the thickness of the rubber washers according to the panel thickness. Also, make sure to include the nameplate thickness when using a nameplate.

#### Applicable Models

- Extended Illuminated Pushbuttons with Half Shroud (LED)
- Extended Pushbuttons with Half Shroud (Diecast)
- Extended Illuminated Pushbuttons with Half Shroud (Diecast)

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 1 piece       | 1 piece |
| 0.8 to 1.8           | —             | 1 piece |
| 1.8 to 3.5           | 1 piece       | —       |

#### Applicable Models

- Extended Illuminated Pushbuttons with Full Shroud (Incandescent)
- Extended Illuminated Pushbuttons with Full Shroud (LED)
- Extended Illuminated Pushbuttons with Full Shroud (Diecast)
- Mushroom Pushbuttons with Full Shroud

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 2 pieces      | 1 piece |
| 0.8 to 2.0           | 1 piece       | 1 piece |
| 2.0 to 3.5           | 1 piece       | 1 piece |
| 3.5 to 5.0           | —             | 1 piece |
| 5.0 to 6.0 (6.5)     | 1 piece       | —       |

The number in brackets is for mushroom pushbuttons with full shroud. Extended illuminated pushbuttons with full shroud (incandescent) are 5.0 mm maximum.

#### Applicable Models

- Toggle Lever Types
- Knob Push Turn Lock Illuminated Pushbuttons

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 1 piece       | 1 piece |
| 0.8 to 2.0           | 1 piece       | 1 piece |
| 2.0 to 3.5           | —             | 1 piece |
| 3.5 to 5.5 (5.0)     | 1 piece       | —       |

The number in brackets is for knob push turn lock illuminated pushbuttons.

#### Applicable Models

- Extended Pushbuttons with Half Shroud
- Extended Illuminated Pushbuttons with Half Shroud (Incandescent)

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 1 piece       | 1 piece |
| 0.8                  | 1 piece       | 1 piece |
| 0.8 to 2.3           | —             | 1 piece |
| 2.3 to 4.0           | 1 piece       | —       |

#### Applicable Models

- Extended Pushbuttons with Full Shroud

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 3 pieces      | 1 piece |
| 0.8 to 1.5           | 3 pieces      | 1 piece |
| 1.5 to 3.0           | 2 pieces      | 1 piece |
| 3.0 to 4.5           | 1 piece       | 1 piece |
| 4.5 to 6.0           | —             | 1 piece |
| 6.0 to 7.5           | 1 piece       | —       |

#### Applicable Models

- Extended Pushbuttons with Full Shroud (Diecast)

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 2 pieces      | 1 piece |
| 0.8 to 2.5           | 2 pieces      | 1 piece |
| 2.5 to 4.0           | 1 piece       | 1 piece |
| 4.0 to 5.5           | —             | 1 piece |
| 5.5 to 6.0           | 1 piece       | —       |

#### Applicable Models

- Other Models (Excluding Square Types)

| Panel Thickness (mm) | Rubber Washer |         |
|----------------------|---------------|---------|
|                      | 1.5mm         | 3.0mm   |
| Supplied             | 2 pieces      | 1 piece |
| 0.8 to 3.5           | 2 pieces      | 1 piece |
| 3.5 to 5.0           | 1 piece       | 1 piece |
| 5.0 to 6.5           | —             | 1 piece |
| 6.5 to 7.5           | 1 piece       | —       |

## Installation of LED Illuminated Units

- Note the polarity for wiring when connecting to DC-DC converter unit.

| Terminal No. | Polarity |
|--------------|----------|
| X1           | Positive |
| X2           | Negative |

- Transformer type units are recommended for use in areas subjected to noise.

## Notes on LED Illuminated Units

LED lamps consist of semiconductors. If the applied voltage exceeds the rated voltage, LED elements may deteriorate due to overheat, resulting in significant decrease in luminance, hue change, or failure of lighting. Also, if an extraneous noise, transient voltage, or transient current is applied to the circuit, similar effects may occur. When using LED lamps, observe the following instructions.

### • Rated Voltage

The LED lamps are rated at 6V, 12V, or 24V AC/DC, and can be used within  $\pm 10\%$  the rated voltage of either AC or DC.

### • DC Power

- Switching power supply  
Regulated voltage from switching power supply is best suited. Make sure to use within the rated voltage of the LED lamp.
- Rechargeable battery  
Note that the battery voltage may exceed the rated voltage of the LED lamp while the battery is being charged and immediately after the charging is complete. Be sure to use the LED lamp on a voltage of  $\pm 10\%$  the rated voltage.
- Full-wave rectification  
Since the LED lamp is AC/DC compatible, a diode bridge for rectification is not necessary. If the LED lamp is used on a full-wave rectification current through a diode bridge, the rectifier diodes will reduce the voltage, resulting in lower luminance.
- Single-phase half-wave rectification  
This is not suitable for the power source of LED lamps. Use constant-voltage DC power.

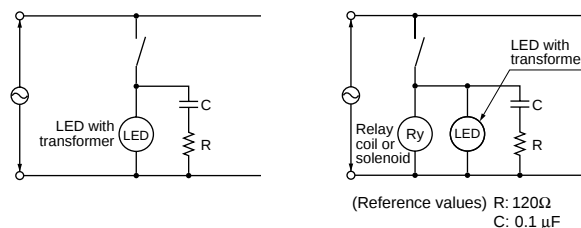
### • Noise

LED elements deteriorate due to extraneous noise, resulting in significant decrease in luminance, hue change, or failure of lighting. When such effects are anticipated, take a protection measure shown below, such as RC elements or a surge absorber.

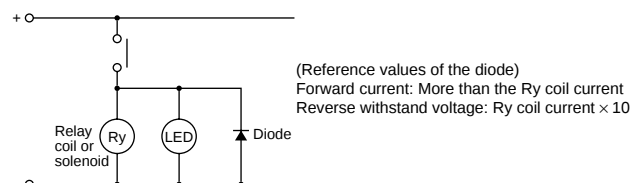
- Notes for Pure White LED Lamps

- Do not use the pure white LED outdoors, otherwise it will lead to the degradation of brightness and color. Do not remove or apply shock to the cap on the pure white LED lamp, otherwise it may break or damage the cap.
- For the pure white LED, use a white lens. The illumination color will be dull if a different color is used.

### [Protection Example 1] For AC circuit



### [Protection Example 2] For DC circuit

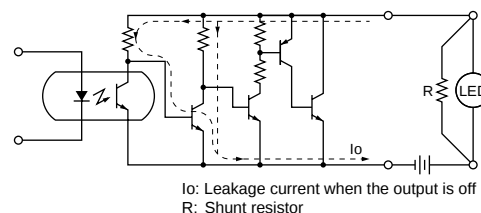


### • Countermeasures against Dim Lighting

- Leakage currents through the transistors or a contact protection circuit may cause the LED lamp to illuminate dimly even when the output is off.
- When the LED lamp is illuminated by a transistor output, take the following measure.

### [Circuit Example]

Connect shunt resistor R in parallel with the LED lamp.



# ø30 ø30 series Diecast Zinc Control Units

## Heavy duty switches for tough industrial usage

- Degree of protection: IP65 (IEC 60529)
- UL, CSA approved, and EN compliant

| Safety Standards                                                                      | File No. or Organization                                                          |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| UL   | UL Listing<br>File No. E68961                                                     |
| CSA  | File No. LR21451                                                                  |
| EN EN60947-5-1                                                                        |  |



## Specifications and Ratings

### Contact Ratings

| Pushbuttons<br>Illuminated Pushbuttons<br>Selector Switches<br>Illuminated Selector Switches<br>Selector Pushbuttons | Contact Block                                            | Type BST (ø30 series)        |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------|
|                                                                                                                      | Rated Insulation Voltage                                 | 600V                         |
|                                                                                                                      | Rated Continuous Current                                 | 10A                          |
|                                                                                                                      | Contact Ratings by Utilization Category<br>IEC 60947-5-1 | AC-15 (A600)<br>DC-13 (P600) |

### Characteristics

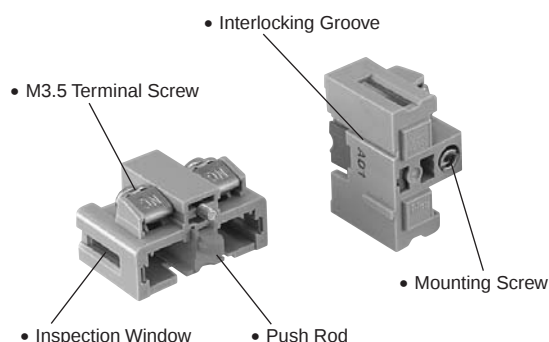
#### • Contact Ratings by Utilization Category

| Operational Voltage    |                |                                                        | 24V | 48V | 50V | 110V | 220V | 440V |
|------------------------|----------------|--------------------------------------------------------|-----|-----|-----|------|------|------|
| Operational<br>Current | AC<br>50/60 Hz | AC-12 Control of resistive loads and solid state loads | 10A | —   | 10A | 10A  | 6A   | 2A   |
|                        |                | AC-15 Control of electromagnetic loads (> 72 VA)       | 10A | —   | 7A  | 5A   | 3A   | 1A   |
|                        | DC             | DC-12 Control of resistive loads and solid state loads | 10A | 5A  | —   | 2.2A | 1.1A | —    |
|                        |                | DC-13 Control of electromagnets                        | 5A  | 2A  | —   | 1.1A | 0.6A | —    |

Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1).

Minimum applicable load: 3V AC/DC, 5 mA (applicable range may vary with operating conditions and load types)

### BST Contact Block (Light Gray)



#### • Contact Block Types

|          |     | Single-pole Contact Block Type                                                      |                                                                                      |                                                                                       |                                                                                       |
|----------|-----|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Contact  |     |  |  |  |  |
|          |     | 1NO                                                                                 | 1NC                                                                                  | 1NO (early make)                                                                      | 1NC (late break)                                                                      |
| Type     | BST | BST010                                                                              | BST001                                                                               | BST010S                                                                               | BST001S                                                                               |
| Push Rod |     | Green                                                                               | Red                                                                                  | Black                                                                                 | White                                                                                 |

Note: BST contact blocks are not interchangeable with dark gray BS contact blocks used for ø30 control units.

Specifications, ratings, and mounting hole layouts are the same as ø30 control units.

See "ø30 Series Control Units" on page 7.

## Ordering Information

### Standard Units

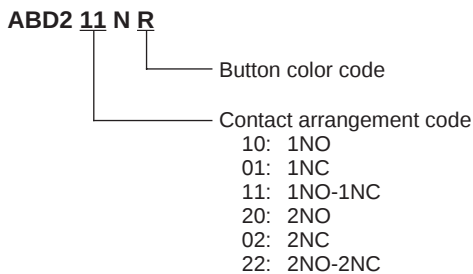
- Specify an operator or lens color code in the Type No.
- Black, green, and red colored buttons are included with flush pushbuttons.
- Full voltage type illuminated units are not supplied with a lamp. Order LED or incandescent lamps separately. Transformer type illuminated units contain an LED or incandescent lamp.
- Terminal covers, nameplates, and accessories are ordered separately.

### Terminal Cover

- When a terminal cover is required, order an applicable terminal cover referring to page 55.

The Type No. development charts shown below can be used to specify control units other than those listed on the following pages.

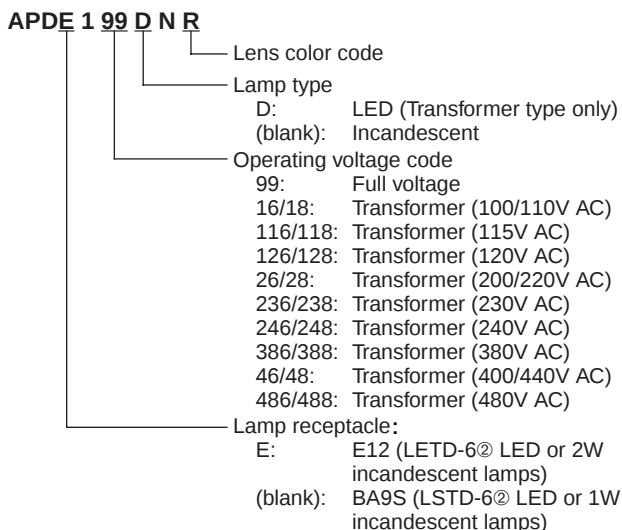
### ø30 Series Diecast Zinc Pushbuttons



Note:

- Mushroom pull type AZD3 can have a maximum of two contact blocks.
- Mushroom push-pull type AYD31 can have a maximum of two contact blocks.

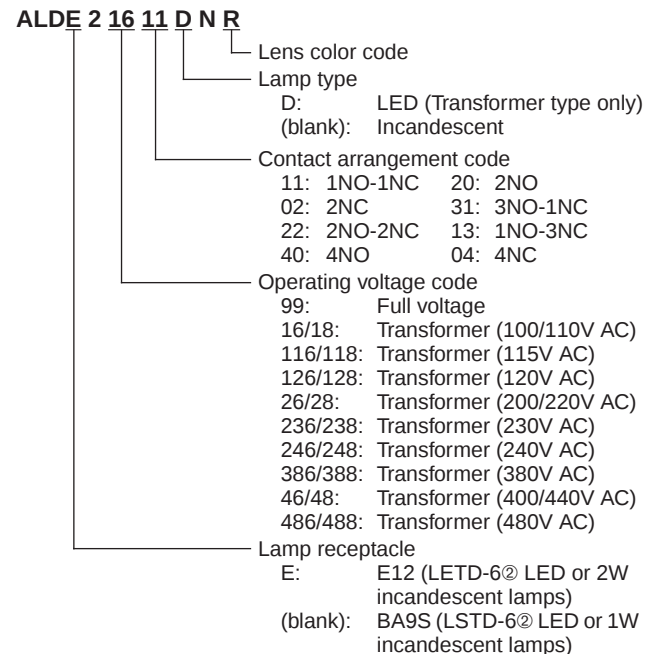
### ø30 Series Diecast Zinc Pilot Lights



Note:

- Full voltage type is not supplied with a lamp.
- Transformer types contain an LED lamp (LSTD-6 $\phi$  or LETD-6 $\phi$ ) or incandescent lamp (LS-6, 1W or LE-8, 2W).
- LED lamps cannot be used on 480V AC transformers.
- Operating voltage codes 18, 118, 128, 28, 238, 248, 388, 48, and 488 are available for incandescent types only.

### ø30 Series Diecast Zinc Illuminated Pushbuttons



Note:

- Illuminated pushbuttons cannot have an odd number of contact blocks, such as 1NO, 1NC, 3NO, 2NO-1NC, 1NO-2NC, and 3NC.
- Full voltage type is not supplied with a lamp.
- Transformer types contain an LED lamp (LSTD-6 $\phi$  or LETD-6 $\phi$ ) or incandescent lamp (LS-6, 1W or LE-8, 2W).
- LED lamps cannot be used on 480V AC transformers.
- Operating voltage codes 18, 118, 128, 28, 238, 248, 388, 48, and 488 are available for incandescent types only.

## ø30 Series Diecast Zinc Control Units

### ø30 Series Diecast Zinc Selector Switch

ASD 2 L 11 N

- 2: Number of positions
- L: Operator type  
(blank): Knob  
L: Lever
- 11: Contact arrangement code
- N: (blank)

### ø30 Series Diecast Zinc Key Selector Switch

ASD 2 K 20 N B

- 2: Number of positions
- K: Contact arrangement code
- 20: Number of positions
- N: Key removable position code
  - 2-position
    - Maintained  
(blank): Removable in all positions  
B: Removable in left only  
C: Removable in right only
    - Spring return from right  
(blank): Removable in left only
    - Spring return from left  
(blank): Removable in right only
  - 3-position
    - Maintained  
(blank): Removable in all positions  
B: Removable in left and center  
C: Removable in right and center  
D: Removable in center only  
E: Removable in right and left  
G: Removable in left only  
H: Removable in right only
    - Spring return from right  
(blank): Removable in left and center  
D: Removable in center only  
G: Removable in left only
    - Spring return from left  
(blank): Removable in right and center  
D: Removable in center only  
H: Removable in right only
    - Spring return two-way  
(blank): Removable in center only
- B: (blank)

Note:

- The key cannot be removed in the return position.

### ø30 Series Diecast Zinc Illuminated Selector Switch

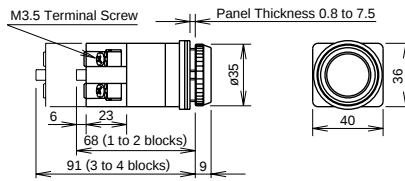
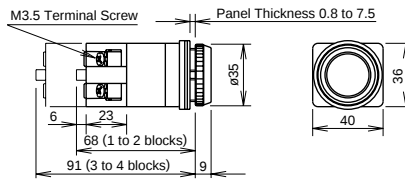
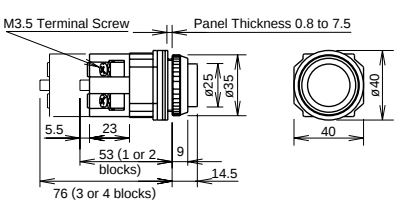
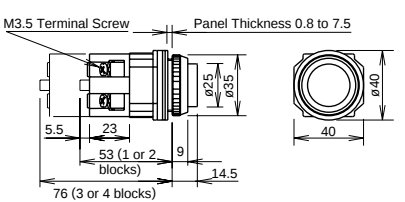
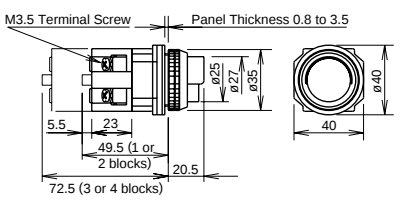
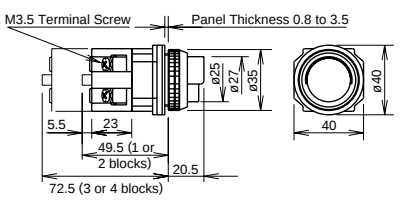
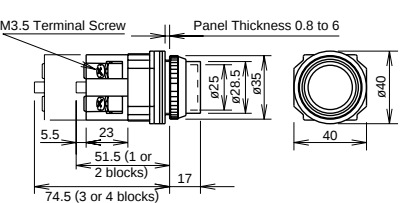
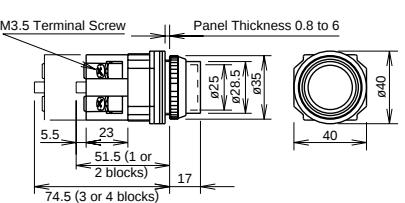
ASLD 2 16 22 D N R

- 2: Number of positions
- 16: Operating voltage code
  - 99: Full voltage
  - 16: Transformer (100/110V AC)
  - 156: Transformer (115V AC)
  - 136: Transformer (120V AC)
  - 26: Transformer (200/220V AC)
  - 236: Transformer (230V AC)
  - 256: Transformer (240V AC)
  - 386: Transformer (380V AC)
  - 46: Transformer (400/440V AC)
  - 486: Transformer (480V AC)
- 22: Contact arrangement code
- D: Lamp type  
D: LED (Transformer type only)  
(blank): Incandescent
- N: Lens color code
- R: (blank)

Note:

- Full voltage type is not supplied with a lamp.
- Transformer type contains an LED lamp (LSTD-6②) or incandescent lamp (LS-6).
- LED lamps cannot be used on 480V AC transformers.

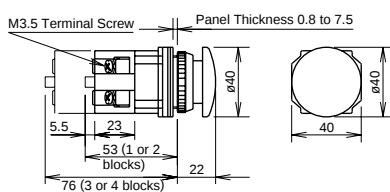
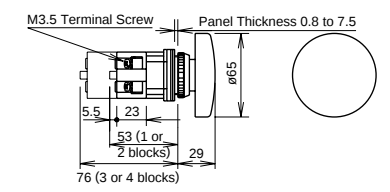
## Flush / Extended / Extended with Half Shroud / Extended with Full Shroud

| Shape                                                                                                                                                                                                             | Operation Type | Contact | Type No.  | ① Button Color Code                                                                                                                 | Dimensions (mm)                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|-----------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Flush<br>ABD1<br><br>                           | Momentary      | 1NO     | ABD110N①  | Black (B), green (G), and red (R) buttons are supplied with each unit.                                                              |    |
|                                                                                                                                                                                                                   |                | 1NC     | ABD101N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | ABD111N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | ABD120N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | ABD102N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | ABD122N①  |                                                                                                                                     |                                                                                       |
| Flush<br>AOD1<br><br>                           | Maintained     | 1NO     | AOD110N①  | Specify S, Y, or W when a blue, yellow, or white button is required.                                                                |    |
|                                                                                                                                                                                                                   |                | 1NC     | AOD101N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | AOD111N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | AOD120N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | AOD102N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | AOD122N①  |                                                                                                                                     |                                                                                       |
| Extended<br>ABD2<br><br>                        | Momentary      | 1NO     | ABD210N①  | Specify a button color code in place of ① in the Type No.<br><br>B: black<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow |   |
|                                                                                                                                                                                                                   |                | 1NC     | ABD201N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | ABD211N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | ABD220N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | ABD202N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | ABD222N①  |                                                                                                                                     |                                                                                       |
| Extended<br>AOD2<br><br>                     | Maintained     | 1NO     | AOD210N①  |                                                                                                                                     |   |
|                                                                                                                                                                                                                   |                | 1NC     | AOD201N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | AOD211N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | AOD220N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | AOD202N①  |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | AOD222N①  |                                                                                                                                     |                                                                                       |
| Extended with Half Shroud<br>ABGD2<br><br>  | Momentary      | 1NO     | ABGD210N① |                                                                                                                                     |  |
|                                                                                                                                                                                                                   |                | 1NC     | ABGD201N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | ABGD211N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | ABGD220N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | ABGD202N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | ABGD222N① |                                                                                                                                     |                                                                                       |
| Extended with Half Shroud<br>AOGD2<br><br>  | Maintained     | 1NO     | AOGD210N① |                                                                                                                                     |  |
|                                                                                                                                                                                                                   |                | 1NC     | AOGD201N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | AOGD211N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | AOGD220N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | AOGD202N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | AOGD222N① |                                                                                                                                     |                                                                                       |
| Extended with Full Shroud<br>ABFD2<br><br>  | Momentary      | 1NO     | ABFD210N① |                                                                                                                                     |  |
|                                                                                                                                                                                                                   |                | 1NC     | ABFD201N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | ABFD211N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | ABFD220N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | ABFD202N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | ABFD222N① |                                                                                                                                     |                                                                                       |
| Extended with Full Shroud<br>AOFD2<br><br>  | Maintained     | 1NO     | AOFD210N① |                                                                                                                                     |  |
|                                                                                                                                                                                                                   |                | 1NC     | AOFD201N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 1NO-1NC | AOFD211N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO     | AOFD220N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NC     | AOFD202N① |                                                                                                                                     |                                                                                       |
|                                                                                                                                                                                                                   |                | 2NO-2NC | AOFD222N① |                                                                                                                                     |                                                                                       |

- Round bezel and shroud (metal): Chrome-plated
- Pushbuttons with one or three contact blocks contain a dummy block
- Other contact arrangements are also available. See page 67.

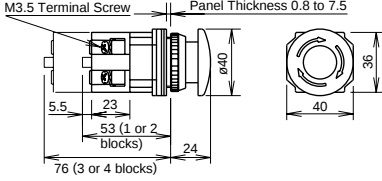
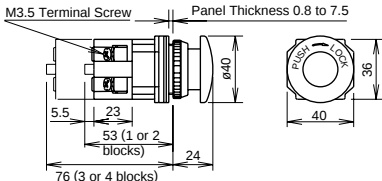
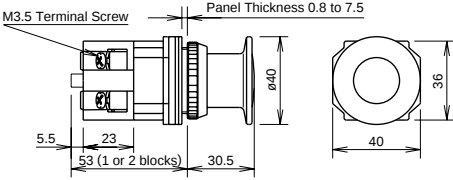
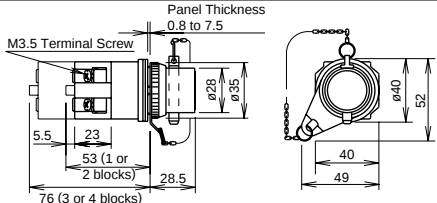
# ø30 ø30 Diecast Zinc series Pushbuttons

## Mushroom / Jumbo Mushroom Types

| Shape                                                                                                                                                                                                                                                                                                                                                                                             | Operation Type | Contact | Type No.  | ① Button Color Code                                                           | Dimensions (mm)                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|-----------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Mushroom<br>ABD3<br><br>                                      | Momentary      | 1NO     | ABD310N①  | B: black<br>G: green<br>R: red<br>W: white<br>Y: yellow                       |    |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | ABD301N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | ABD311N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | ABD320N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | ABD302N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | ABD322N①  |                                                                               |                                                                                       |
| Mushroom<br>AOD3<br><br>                                      | Maintained     | 1NO     | AOD310N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | AOD301N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | AOD311N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | AOD320N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | AOD302N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | AOD322N①  |                                                                               |                                                                                       |
| Mushroom with Full Shroud<br>ABGD3<br><br>                    | Momentary      | 1NO     | ABGD310N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | ABGD301N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | ABGD311N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | ABGD320N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | ABGD302N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | ABGD322N① |                                                                               |                                                                                       |
| Mushroom with Full Shroud<br>AOGD3<br><br>             | Maintained     | 1NO     | AOGD310N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | AOGD301N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | AOGD311N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | AOGD320N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | AOGD302N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | AOGD322N① |                                                                               |                                                                                       |
| Jumbo Mushroom<br>ABD4<br><br>                        | Momentary      | 1NO     | ABD410N①  | B: black<br>DG: dark green<br>DR: dark red<br>G: green<br>R: red<br>Y: yellow |  |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | ABD401N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | ABD411N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | ABD420N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | ABD402N①  |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | ABD422N①  |                                                                               |                                                                                       |
| Jumbo Mushroom with Shallow Shroud<br>ABGD4<br><br>   | Momentary      | 1NO     | ABGD410N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | ABGD401N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | ABGD411N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | ABGD420N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | ABGD402N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | ABGD422N① |                                                                               |                                                                                       |
| Jumbo Mushroom with Deep Shroud<br>ABFD4<br><br>      | Momentary      | 1NO     | ABFD410N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NC     | ABFD401N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 1NO-1NC | ABFD411N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO     | ABFD420N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NC     | ABFD402N① |                                                                               |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                | 2NO-2NC | ABFD422N① |                                                                               |                                                                                       |

- Specify a button color code in place of ① in the Type No.
- Round bezel and shroud (metal): Chrome-plated
- Pushbuttons with one or three contact blocks contain a dummy block
- Other contact arrangements are also available. See page 67.

## Pushlock Turn Reset / Push Turn Lock / Pull / Push-Pull / Pin Lock Types

| Shape                                                                                                                                                                                                                                                                                                                                                                         | Contact | Type No.  | ① Button Color Code                                    | Dimensions (mm)                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|--------------------------------------------------------|--------------------------------------------------------------------------------------|
| Mushroom Pushlock Turn Reset<br>AVD3<br><br>                                                                               | 1NO     | AVD310N①  | R: red<br>Y: yellow                                    |   |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NC     | AVD301N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NO-1NC | AVD311N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NO     | AVD320N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NC     | AVD302N①  |                                                        |                                                                                      |
| Mushroom Push Turn Lock<br>AJD3<br><br>   | 1NO     | AJD310N①  | B: black<br>G: green<br>R: red<br>Y: yellow            |   |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NC     | AJD301N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NO-1NC | AJD311N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NO     | AJD320N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NC     | AJD302N①  |                                                        |                                                                                      |
| Mushroom Pull<br>AZD3<br><br>             | 1NO     | AZN310N①  |                                                        |   |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NO-1NC | AZN311N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NO     | AZN320N①  |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NC     | AZN302N①  |                                                        |                                                                                      |
| Mushroom Push-Pull<br>AYD31<br><br>                                                                                   | 1NO-1NC | AYD3111N① | B: black<br>G: green<br>R: red<br>S: blue<br>Y: yellow |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NO     | AYD3120N① |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NC     | AYD3102N① |                                                        |                                                                                      |
| Pin Lock<br>ABD8P<br><br>         | 1NO     | ABD8P10N① |                                                        |  |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NC     | ABD8P01N① |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 1NO-1NC | ABD8P11N① |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NO     | ABD8P20N① |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NC     | ABD8P02N① |                                                        |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                               | 2NO-2NC | ABD8P22N① |                                                        |                                                                                      |

- Specify a button color code in place of ① in the Type No.
  - Round bezel (metal): Chrome-plated
  - Pushbuttons with one or three contact blocks contain a dummy block.
  - Other contact arrangements are also available. See page 67.
  - Pushlock Turn Reset:** Button is maintained when pressed and is reset when turned clockwise. Red buttons only.
- Note: AVD3 pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use the HN1E series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).
- Push Turn Lock:** Button is locked when turned clockwise in the depressed position and is reset when turned counterclockwise.
  - Pull:** Pulling the button operates the contacts. Up to 2 contact blocks (1 layer) can be mounted on pull switches.
  - Push-Pull:** Button is maintained in both depressed and reset positions. Up to 2 contact blocks (1 layer) can be mounted on AYD31 push-pull switches.
  - Pin Lock:** Button can be locked in either depressed or reset position by inserting the pin. Pad lock with a ø5mm pin can also be used to lock the button.

### • Contact Operation

#### Pull Switch (Spring Return)

| Contact | AZD3                                                                                 |                                                                                       |
|---------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|         | Normal                                                                               | Pull                                                                                  |
| 1NO     |  |  |
| 1NC     |  |  |
| 1NO-1NC |  |  |
| 2NO     |  |  |
| 2NC     |  |  |

#### Push-Pull Switch (Maintained)

| Contact | AYD31                                                                                |                                                                                       |
|---------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|         | Push                                                                                 | Pull                                                                                  |
| 1NO-1NC |  |  |
| 2NO     |  |  |
| 2NC     |  |  |

Note: Pull and push-pull switches can have a maximum of two contact blocks.

## ø30 ø30 Diecast Zinc Series Pilot Lights

### Dome Types

| Shape                                                                                                                                                                                                                                                                                                                                                                         | Lamp         | Input Type   | Lamp Receptacle | Type No.  | ② Lens/LED Color Code                                                          | Applicable Lamp |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|-----------------|-----------|--------------------------------------------------------------------------------|-----------------|
| Dome<br>APD1<br>APDE1<br><br><br><br><br> | Without Lamp | Full Voltage | BA9S            | APD199N②  | A: amber<br>C: clear<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow | LSTD<br>LS (1W) |
|                                                                                                                                                                                                                                                                                                                                                                               |              |              | E12             | APDE199N② |                                                                                | LETD<br>LE (2W) |
|                                                                                                                                                                                                                                                                                                                                                                               | LED          | Transformer  | BA9S            | APD1③DN②  | A: amber<br>G: green<br>PW: pure white (BA9S only)                             | LSTD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                               |              |              | E12             | APDE1③DN② | R: red<br>S: blue<br>W: white<br>Y: yellow                                     | LETD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                               | Incandescent | Transformer  | BA9S            | APD1③N②   | A: amber<br>C: clear<br>G: green<br>R: red<br>S: blue<br>W: white              | LS-6 (1W)       |
|                                                                                                                                                                                                                                                                                                                                                                               |              |              | E12             | APD1③N②   |                                                                                | LE-8 (2W)       |

#### • Operating Voltage Code

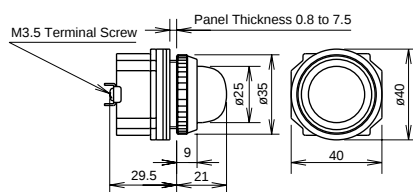
Specify an operating voltage code in place of ③ in the Type No.

| ③ Operating Voltage Code                                                                                                                                                  |                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| LED Transformer BA9S and E12 Types<br>Incandescent Transformer BA9S Type                                                                                                  | Incandescent Transformer E12 Type                                                                                                                     |
| 16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) | 18: 100/110V AC<br>118: 115V AC<br>128: 120V AC<br>28: 200/220V AC<br>238: 230V AC<br>248: 240V AC<br>388: 380V AC<br>48: 400/440V AC<br>488: 480V AC |

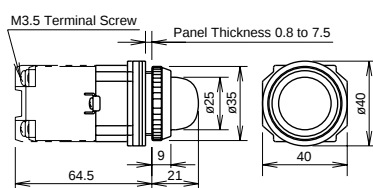
- Specify a lens/LED color code in place of ② in the Type No. Use the white lens (W) for LED pure white illumination.
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer and DC-DC converter types contain an LED lamp: LSTD-6② or LETD-6② (rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp: LS-6 (1W, 6V AC/DC) or LE-8 (2W, 18V AC/DC).

### Dimensions

#### • Full Voltage Type



#### • Transformer Type



All dimensions in mm.

## Round Extended Illuminated Pushbuttons

| Shape                                                                                                                                                                                                         | Lamp Receptacle | Operation Type | Lamp         | Input Type   | Contact | Type No.    | Applicable Lamp |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------|--------------|---------|-------------|-----------------|
| Round Extended<br>ALD2<br>AOLD2<br><br><br> | BA9S            | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALD29911N②  | LSTD<br>LS (1W) |
|                                                                                                                                                                                                               |                 |                |              |              | 2NO     | ALD29920N②  |                 |
|                                                                                                                                                                                                               |                 |                |              |              | 2NC     | ALD29902N②  |                 |
|                                                                                                                                                                                                               |                 |                | LED          | Transformer  | 1NO-1NC | ALD2③11DN②  | LSTD-6②         |
|                                                                                                                                                                                                               |                 |                |              |              | 2NO     | ALD2③20DN②  |                 |
|                                                                                                                                                                                                               |                 |                |              |              | 2NC     | ALD2③02DN②  |                 |
|                                                                                                                                                                                                               |                 |                | Incandescent | Transformer  | 1NO-1NC | ALD2③11N②   | LS-6            |
|                                                                                                                                                                                                               |                 |                |              |              | 2NO     | ALD2③20N②   |                 |
|                                                                                                                                                                                                               |                 |                |              |              | 2NC     | ALD2③02N②   |                 |
|                                                                                                                                                                                                               |                 | Maintained     | Without Lamp | Full Voltage | 1NO-1NC | AOLD29911N② | LSTD<br>LS (1W) |
|                                                                                                                                                                                                               |                 |                |              |              | 2NO     | AOLD29920N② |                 |
|                                                                                                                                                                                                               |                 |                |              |              | 2NC     | AOLD29902N② |                 |
|                                                                                                                                                                                                               |                 |                | LED          | Transformer  | 1NO-1NC | AOLD2③11DN② | LSTD-6②         |
|                                                                                                                                                                                                               |                 |                |              |              | 2NO     | AOLD2③20DN② |                 |
|                                                                                                                                                                                                               |                 |                |              |              | 2NC     | AOLD2③02DN② |                 |
|                                                                                                                                                                                                               |                 |                | Incandescent | Transformer  | 1NO-1NC | AOLD2③11N②  | LS-6            |
|                                                                                                                                                                                                               |                 |                |              |              | 2NO     | AOLD2③20N②  |                 |
|                                                                                                                                                                                                               |                 |                |              |              | 2NC     | AOLD2③02N②  |                 |

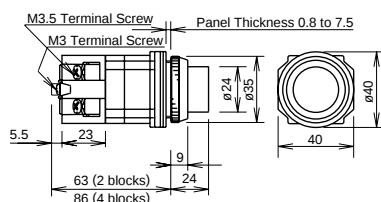
### • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                                                                                                                                                                              | ② Lens Color Code                                                                                                            | ③ Operating Voltage Code                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LED Illuminated Type                                                                                                                                                                                               | Incandescent Illuminated Type                                                                                                |                                                                                                                                                                                                                                              |
| Specify a lens/LED color code in place of ② in the Type No.<br>A: amber<br>G: green<br>PW: pure white<br>R: red<br>S: blue<br>W: white<br>Y: yellow<br><br>Use the white lens (W) for LED pure white illumination. | Specify a lens color code in place of ② in the Type No.<br>A: amber<br>C: clear<br>G: green<br>R: red<br>S: blue<br>W: white | Specify an operating voltage code in place of ③ in the Type No.<br>16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) |

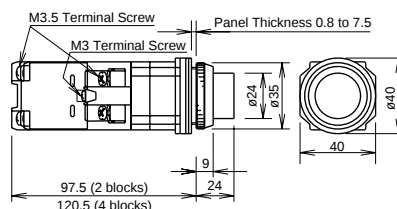
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp (LSTD-6②, rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC, 1W).

## Dimensions

### • ALD2/AOLD2 Full Voltage



### • ALD2/AOLD2 BA9S/Transformer



All dimensions in mm.

# ø30 ø30 Diecast Zinc Series Illuminated Pushbuttons

## Round Extended with Full Shroud Illuminated Pushbuttons

| Shape                                                                                                                                                                                                                                                                                                                                                                                         | Lamp Receptacle | Operation Type | Lamp         | Input Type   | Contact | Type No.     | Applicable Lamp |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------|--------------|---------|--------------|-----------------|
| Round Extended with Full Shroud<br>ALFD2<br>AOLFD2<br>    | BA9S            | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALFD29911N②  | LSTD<br>LS (1W) |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NO     | ALFD29920N②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NC     | ALFD29902N②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                | LED          | Transformer  | 1NO-1NC | ALFD2③11DN②  | LSTD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NO     | ALFD2③20DN②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NC     | ALFD2③02DN②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                | Incandescent | Transformer  | 1NO-1NC | ALFD2③11N②   | LS-6            |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NO     | ALFD2③20N②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NC     | ALFD2③02N②   |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 | Maintained     | Without Lamp | Full Voltage | 1NO-1NC | AOLFD29911N② | LSTD<br>LS (1W) |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NO     | AOLFD29920N② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NC     | AOLFD29902N② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                | LED          | Transformer  | 1NO-1NC | AOLFD2③11DN② | LSTD-6②         |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NO     | AOLFD2③20DN② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NC     | AOLFD2③02DN② |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                | Incandescent | Transformer  | 1NO-1NC | AOLFD2③11N②  | LS-6            |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NO     | AOLFD2③20N②  |                 |
|                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |              |              | 2NC     | AOLFD2③02N②  |                 |

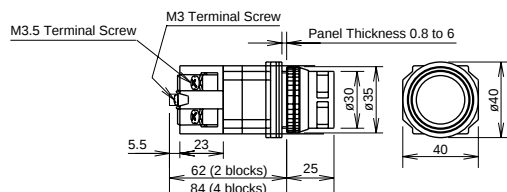
### • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                                                                                                                                                                          | ② Lens Color Code                                                                                                            | ③ Operating Voltage Code                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LED Illuminated Type                                                                                                                                                                                           | Incandescent Illuminated Type                                                                                                |                                                                                                                                                                                                                                              |
| Specify a lens/LED color code in place of ② in the Type No.<br>A: amber<br>G: green<br>PW: pure white<br>R: red<br>S: blue<br>W: white<br>Y: yellow<br>Use the white lens (W) for LED pure white illumination. | Specify a lens color code in place of ② in the Type No.<br>A: amber<br>C: clear<br>G: green<br>R: red<br>S: blue<br>W: white | Specify an operating voltage code in place of ③ in the Type No.<br>16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) |

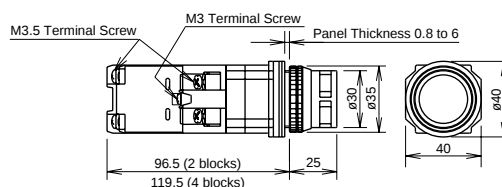
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp (LSTD-6②, rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC, 1W)

## Dimensions

### • ALFD2/AOLFD2 Full Voltage



### • ALFD2/AOLFD2 Transformer



All dimensions in mm.

# ø30 Diecast Zinc series Illuminated Pushbuttons ø30

## Mushroom (ø40) Illuminated Pushbuttons

| Shape                                                                                                              | Lamp Receptacle | Operation Type | Lamp         | Input Type   | Contact | Type No.     | Applicable Lamp |
|--------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------|--------------|---------|--------------|-----------------|
| ø40 Mushroom<br>ALD3<br>AOLD3<br> | BA9S            | Momentary      | Without Lamp | Full Voltage | 1NO-1NC | ALD39911DN②  | LSTD            |
|                                                                                                                    |                 |                |              |              | 2NO     | ALD39920DN②  |                 |
|                                                                                                                    |                 |                |              |              | 2NC     | ALD39902DN②  |                 |
|                                                                                                                    |                 |                | LED          | Transformer  | 1NO-1NC | ALD3③11DN②   | LSTD-6②         |
|                                                                                                                    |                 |                |              |              | 2NO     | ALD3③20DN②   |                 |
|                                                                                                                    |                 |                |              |              | 2NC     | ALD3③02DN②   |                 |
|                                                                                                                    |                 | Maintained     | Without Lamp | Full Voltage | 1NO-1NC | AOLD39911DN② | LSTD            |
|                                                                                                                    |                 |                |              |              | 2NO     | AOLD39920DN② |                 |
|                                                                                                                    |                 |                | LED          | Transformer  | 1NO-1NC | AOLD3③11DN②  | LSTD-6②         |
|                                                                                                                    |                 |                |              |              | 2NO     | AOLD3③20DN②  |                 |

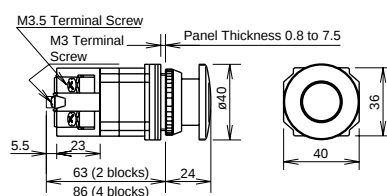
### • Color Code and Operating Voltage Code

| ② Lens/LED Color Code                                       | ③ Operating Voltage Code                                                                                                              |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| LED Illuminated Type                                        | LED Transformer BA9S Type                                                                                                             |
| Specify a lens/LED color code in place of ② in the Type No. | Specify an operating voltage code in place of ③ in the Type No.                                                                       |
| A: amber<br>G: green<br>R: red<br>W: white<br>Y: yellow     | 16: 100/110V AC<br>116: 115V AC<br>126: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>246: 240V AC<br>386: 380V AC<br>46: 400/440V AC |

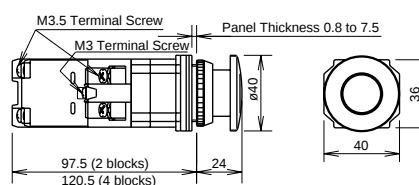
- Full voltage types do not contain a lamp. Order LED lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp (LSTD-6②, rated voltage 6V AC/DC).

## Dimensions

- ALD3/AOLD3  
Full Voltage



- ALD3/AOLD3  
Transformer



All dimensions in mm.

**Ø30**

| Mushroom Pushlock Turn Reset Types |  |
|------------------------------------|--|
|------------------------------------|--|

- | ③ Operating Voltage Code                                                 |                                   |
|--------------------------------------------------------------------------|-----------------------------------|
| LED Transformer BA9S and E12 Types<br>Incandescent Transformer BA9S Type | Incandescent Transformer E12 Type |
| 16: 100/110V AC                                                          | 18: 100/110V AC                   |
| 116: 115V AC                                                             | 118: 115V AC                      |
| 126: 120V AC                                                             | 128: 120V AC                      |
| 26: 200/220V AC                                                          | 28: 200/220V AC                   |
| 236: 230V AC                                                             | 238: 230V AC                      |
| 246: 240V AC                                                             | 248: 240V AC                      |
| 386: 380V AC                                                             | 388: 380V AC                      |
| 46: 400/440V AC                                                          | 48: 400/440V AC                   |
| 486: 480V AC (incandescent only)                                         | 488: 480V AC                      |

- ## Dimensions

- 
- Technical drawing of the M3 Terminal Screw assembly. The side view shows the screw with dimensions: 5.5 (thread length), 23 (terminal block length), 63 (2 blocks) and 86 (4 blocks) (terminal block length), 24 (terminal block thickness), and  $\varnothing 40$  (terminal block diameter). The top view shows the terminal block with dimensions: 40 (width) and 36 (height). The drawing also indicates the Panel Thickness 0.8 to 7.5.

- 
- Technical drawing of the M3.5 Terminal Screw (part 100-000000) showing side and top views with dimensions.
- Side View Dimensions:**
- Panel Thickness: 0.8 to 7.5
  - Terminal Screw: M3
  - Terminal Screw: M3.5
  - Overall Length: 77.5 (2 blocks)
  - Overall Length: 100.5 (4 blocks)
  - Distance from Panel to First Block: 5.5
  - Distance between Blocks: 23
  - Distance from Last Block to Panel: 20
  - Panel Thickness: 0.8 to 7.5
- Top View Dimensions:**
- Overall Width: 40
  - Overall Height: 36
  - Inner Diameter:  $\phi 40$

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## ASD Selector Switches (Knob Operator Type)

| No. of Positions |                    | Shape                     |       |                   |   |   | ASD                                                                                                                                                                                                                                                                                                                                      |                                                                                   |                                                                                     |                                                                                     |  |
|------------------|--------------------|---------------------------|-------|-------------------|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
|                  |                    | Contact Arrangement Chart |       |                   |   |   |     |                                                                                   |                                                                                     |                                                                                     |  |
| 90° 2-position   | Contact Code (ASD) | Contact Block             |       | Operator Position |   |   | Maintained                                                                                                                                                                                                                                                                                                                               | Spring Return from Right                                                          | Spring Return from Left                                                             | —                                                                                   |  |
|                  |                    | Mounting Position         | Type  | L                 | R |   |                                                                                                                                                                                                                                                         |  |  |                                                                                     |  |
|                  | 10 (1NO)           | 1                         | NO    |                   | ● |   | ASD210N                                                                                                                                                                                                                                                                                                                                  | ASD2110N                                                                          | ASD2210N *                                                                          |                                                                                     |  |
|                  |                    | 2                         | Dummy |                   |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 11 (1NO-1NC)       | 1                         | NO    |                   | ● |   | ASD211N                                                                                                                                                                                                                                                                                                                                  | ASD2111N                                                                          | ASD2211N *                                                                          |                                                                                     |  |
|                  |                    | 2                         | NC    | ●                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 20 (2NO)           | 1                         | NO    |                   | ● |   | ASD220N                                                                                                                                                                                                                                                                                                                                  | ASD2120N                                                                          | ASD2220N *                                                                          |                                                                                     |  |
|                  |                    | 2                         | NO    |                   | ● |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 22 (2NO-2NC)       | 1                         | NO    |                   | ● |   | ASD222N                                                                                                                                                                                                                                                                                                                                  | ASD2122N                                                                          | ASD2222N *                                                                          |                                                                                     |  |
|                  |                    | 2                         | NC    | ●                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 3                         | NO    |                   | ● |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 4                         | NC    | ●                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
| 45° 3-position   | Contact Code (ASD) | Contact Block             |       | Operator Position |   |   | Maintained                                                                                                                                                                                                                                                                                                                               | Spring Return from Right                                                          | Spring Return from Left                                                             | Spring Return Two-way                                                               |  |
|                  |                    | Mounting Position         | Type  | L                 | C | R |                                                                                                                                                                                                                                                         |  |  |  |  |
|                  | 20 (2NO)           | 1                         | NO    | ●                 |   |   | ASD320N                                                                                                                                                                                                                                                                                                                                  | ASD3120N                                                                          | ASD3220N                                                                            | ASD3320N                                                                            |  |
|                  |                    | 2                         | NO    |                   |   | ● |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 40 (4NO)           | 1                         | NO    | ●                 |   |   | ASD340N                                                                                                                                                                                                                                                                                                                                  | ASD3140N                                                                          | ASD3240N                                                                            | ASD3340N                                                                            |  |
|                  |                    | 2                         | NO    |                   |   | ● |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 3                         | NO    | ●                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 4                         | NO    |                   |   | ● |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 22 (2NO-2NC)       | 1                         | NO    | ●                 |   |   | ASD322N                                                                                                                                                                                                                                                                                                                                  | ASD3122N                                                                          | ASD3222N                                                                            | ASD3322N                                                                            |  |
|                  |                    | 2                         | NO    |                   |   | ● |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 3                         | NC    |                   |   | ■ |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 4                         | NC    | ■                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 02 (2NC)           | 1                         | NC    |                   |   | ■ | ASD302N                                                                                                                                                                                                                                                                                                                                  | ASD3102N                                                                          | ASD3202N                                                                            | ASD3302N                                                                            |  |
|                  |                    | 2                         | NC    | ■                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  | 04 (4NC)           | 1                         | NC    |                   |   | ■ | ASD304N                                                                                                                                                                                                                                                                                                                                  | ASD3104N                                                                          | ASD3204N                                                                            | ASD3304N                                                                            |  |
|                  |                    | 2                         | NC    | ■                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 3                         | NC    |                   |   | ■ |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |
|                  |                    | 4                         | NC    | ■                 |   |   |                                                                                                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     |                                                                                     |  |

- Knob: Black
- Round bezel (metal): Chrome-plated
- Selector switches with one contact block contain a dummy block.
- On the 2-position selector switches marked with \* above, the contact operation is reversed as follows.

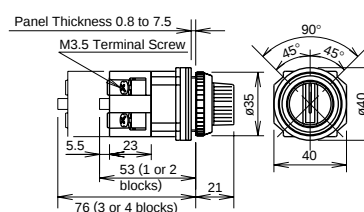


### • Contact Block Mounting Position and Contact Arrangement Chart



|   |    | Left | Center | Right |                   |
|---|----|------|--------|-------|-------------------|
|   |    | L    | C      | R     | Operator Position |
| 1 | NO | ●    |        |       |                   |
| 2 | NO |      |        | ●     |                   |
| 3 | NC |      |        | ■     |                   |
| 4 | NC | ■    |        |       |                   |

### • Dimensions



All dimensions in mm.

**Ø30**

## ASD Selector Switches (Lever Operator Type)

|                  |                           |                   |       |                   |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|------------------|---------------------------|-------------------|-------|-------------------|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| No. of Positions | Shape                     |                   |       |                   |   |   | ASD*L                                                                                                                                                                                                                                                 |                                                                                   |    |                                                                                     |
|                  | Contact Arrangement Chart |                   |       |                   |   |   |    |                                                                                   |                                                                                     |                                                                                     |
| 90° 2-position   | Contact Code (ASD)        | Contact Block     |       | Operator Position |   |   | Maintained                                                                                                                                                                                                                                            | Spring Return from Right                                                          | Spring Return from Left                                                             | —                                                                                   |
|                  |                           | Mounting Position | Type  | L                 | R |   |                                                                                                                                                                      |  |  |                                                                                     |
|                  | 10<br>(1NO)               | 1                 | NO    |                   | ● |   | ASD2L10N                                                                                                                                                                                                                                              | ASD21L10N                                                                         | ASD22L10N *                                                                         |                                                                                     |
|                  |                           | 2                 | Dummy |                   |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    |                   | ● |   | ASD2L11N                                                                                                                                                                                                                                              | ASD21L11N                                                                         | ASD22L11N *                                                                         |                                                                                     |
|                  |                           | 2                 | NC    | ●                 |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 20<br>(2NO)               | 1                 | NO    |                   | ● |   | ASD2L20N                                                                                                                                                                                                                                              | ASD21L20N                                                                         | ASD22L20N *                                                                         |                                                                                     |
|                  |                           | 2                 | NO    |                   | ● |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    |                   | ● |   | ASD2L22N                                                                                                                                                                                                                                              | ASD21L22N                                                                         | ASD22L22N *                                                                         |                                                                                     |
|                  |                           | 2                 | NC    | ●                 |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| 3                |                           | NO                |       | ●                 |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| 4                |                           | NC                | ●     |                   |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
| 45° 3-position   | Contact Code (ASD)        | Contact Block     |       | Operator Position |   |   | Maintained                                                                                                                                                                                                                                            | Spring Return from Right                                                          | Spring Return from Left                                                             | Spring Return Two-way                                                               |
|                  |                           | Mounting Position | Type  | L                 | C | R |                                                                                                                                                                      |  |  |  |
|                  | 20<br>(2NO)               | 1                 | NO    | ●                 |   |   | ASD3L20N                                                                                                                                                                                                                                              | ASD31L20N                                                                         | ASD32L20N                                                                           | ASD33L20N                                                                           |
|                  |                           | 2                 | NO    |                   |   | ● |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 40<br>(4NO)               | 1                 | NO    | ●                 |   |   | ASD3L40N                                                                                                                                                                                                                                              | ASD31L40N                                                                         | ASD32L40N                                                                           | ASD33L40N                                                                           |
|                  |                           | 2                 | NO    |                   |   | ● |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 3                 | NO    | ●                 |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 4                 | NO    |                   |   | ● |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                 |   |   | ASD3L22N                                                                                                                                                                                                                                              | ASD31L22N                                                                         | ASD32L22N                                                                           | ASD33L22N                                                                           |
|                  |                           | 2                 | NO    |                   |   | ● |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 3                 | NC    |                   |   | ■ |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 4                 | NC    | ■                 |   |   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 02<br>(2NC)               | 1                 | NC    |                   | ■ | ■ | ASD3L02N                                                                                                                                                                                                                                              | ASD31L02N                                                                         | ASD32L02N                                                                           | ASD33L02N                                                                           |
|                  |                           | 2                 | NC    | ■                 |   | ■ |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  | 04<br>(4NC)               | 1                 | NC    |                   | ■ | ■ | ASD3L04N                                                                                                                                                                                                                                              | ASD31L04N                                                                         | ASD32L04N                                                                           | ASD33L04N                                                                           |
|                  |                           | 2                 | NC    | ■                 |   | ■ |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 3                 | NC    |                   | ■ | ■ |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 4                 | NC    | ■                 |   | ■ |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |

- Lever: Black
- Round bezel (metal): Chrome-plated
- Selector switches with one contact block contain a dummy block.
- On the 2-position selector switches marked with \* above, the contact operation is reversed as follows.

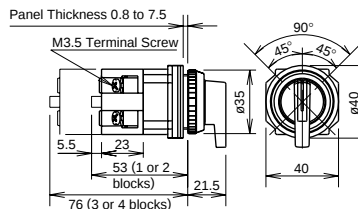
[Example] 

- **Contact Block Mounting Position and Contact Arrangement Chart**



|   |    | Left | Center | Right |                     |
|---|----|------|--------|-------|---------------------|
|   |    | L    | C      | R     | ← Operator Position |
| 1 | NO | •    |        |       |                     |
| 2 | NO |      |        | •     |                     |
| 3 | NC |      | ▬      |       |                     |
| 4 | NC | ▬    |        |       |                     |

- **Dimensions**



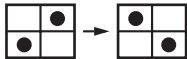
All dimensions in mm.

## ASD Key Selector Switches

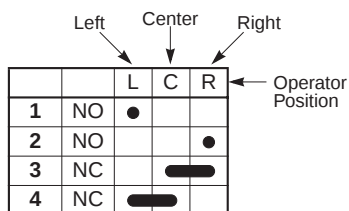
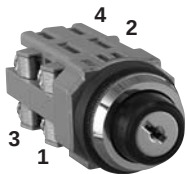
| No. of Positions | Shape                     |                   |       |                   |   |   | ASD*K                                                                             |                                                                                   |                                                                                     |                                                                                     |
|------------------|---------------------------|-------------------|-------|-------------------|---|---|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                  | Contact Arrangement Chart |                   |       |                   |   |   |  |  |    |   |
| 90° 2-position   | Contact Code (ASD)        | Contact Block     |       | Operator Position |   |   | Maintained                                                                        | Spring Return from Right                                                          | Spring Return from Left                                                             | —                                                                                   |
|                  |                           | Mounting Position | Type  | L                 | R |   |  |  |  |                                                                                     |
|                  | 10<br>(1NO)               | 1                 | NO    |                   | ● |   | ASD2K10N                                                                          | ASD21K10N                                                                         | ASD22K10N *                                                                         |                                                                                     |
|                  |                           | 2                 | Dummy |                   |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 11<br>(1NO-1NC)           | 1                 | NO    |                   | ● |   | ASD2K11N                                                                          | ASD21K11N                                                                         | ASD22K11N *                                                                         |                                                                                     |
|                  |                           | 2                 | NC    | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 20<br>(2NO)               | 1                 | NO    |                   | ● |   | ASD2K20N                                                                          | ASD21K20N                                                                         | ASD22K20N *                                                                         |                                                                                     |
|                  |                           | 2                 | NO    |                   | ● |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    |                   | ● |   | ASD2K22N                                                                          | ASD21K22N                                                                         | ASD22K22N *                                                                         |                                                                                     |
|                  |                           | 2                 | NC    | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| 3                |                           | NO                |       | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| 4                |                           | NC                | ●     |                   |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| 45° 3-position   | Contact Code (ASD)        | Contact Block     |       | Operator Position |   |   | Maintained                                                                        | Spring Return from Right                                                          | Spring Return from Left                                                             | Spring Return Two-way                                                               |
|                  |                           | Mounting Position | Type  | L                 | C | R |  |  |  |  |
|                  | 20<br>(2NO)               | 1                 | NO    | ●                 |   |   | ASD3K20N                                                                          | ASD31K20N                                                                         | ASD32K20N                                                                           | ASD33K20N                                                                           |
|                  |                           | 2                 | NO    |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 40<br>(4NO)               | 1                 | NO    | ●                 |   |   | ASD3K40N                                                                          | ASD31K40N                                                                         | ASD32K40N                                                                           | ASD33K40N                                                                           |
|                  |                           | 2                 | NO    |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 3                 | NO    | ●                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 4                 | NO    |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 22<br>(2NO-2NC)           | 1                 | NO    | ●                 |   |   | ASD3K22N                                                                          | ASD31K22N                                                                         | ASD32K22N                                                                           | ASD33K22N                                                                           |
|                  |                           | 2                 | NO    |                   |   | ● |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 3                 | NC    |                   |   | ■ |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  |                           | 4                 | NC    | ■                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 02<br>(2NC)               | 1                 | NC    |                   |   | ■ | ASD3K02N                                                                          | ASD31K02N                                                                         | ASD32K02N                                                                           | ASD33K02N                                                                           |
|                  |                           | 2                 | NC    | ■                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                  | 04<br>(4NC)               | 1                 | NC    |                   |   | ■ | ASD3K04N                                                                          | ASD31K04N                                                                         | ASD32K04N                                                                           | ASD33K04N                                                                           |
|                  |                           | 2                 | NC    | ■                 |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| 3                |                           | NC                |       |                   | ■ |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| 4                |                           | NC                | ■     |                   |   |   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |

- Cylinder: Black
- Round bezel (metal): Chrome-plated
- On the spring-returned types, the keys can be released only from the maintained positions. On the maintained types, the key can be released from every position. Key retained positions are also available. See page 12.
- Key selector switches are supplied with two standard keys.
- Key selector switches with one contact block contain a dummy block.
- On the 2-position selector switches marked with \* above, the contact operation is reversed as follows.

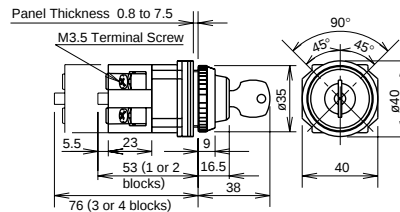
[Example]



- **Contact Block Mounting Position and Contact Arrangement Chart**



- **Dimensions**



All dimensions in mm.

**Ø30**

| Illuminated Selector Switches |  |
|-------------------------------|--|
|-------------------------------|--|

## 90° 2-position

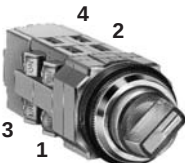
| <b>Shape</b>                     |                   |      |                   |   | ASLD (Base BA9S)                                                                                                                                                    |              |                                                                                                 |                                                                                                                 |                                                                                                                |
|----------------------------------|-------------------|------|-------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Contact Arrangement Chart</b> |                   |      |                   |   |    |              |                                                                                                 |                                                                                                                 |                                                                                                                |
| Contact Code                     | Contact Block     |      | Operator Position |   | Lamp                                                                                                                                                                                                                                                  | Input Type   | Maintained<br> | Spring Return from Right<br> | Spring Return from Left<br> |
|                                  | Mounting Position | Type | L                 | R |                                                                                                                                                                                                                                                       |              |                                                                                                 |                                                                                                                 |                                                                                                                |
| <b>11</b><br>(1NO-1NC)           | <b>1</b>          | NO   |                   | ● | Without Lamp                                                                                                                                                                                                                                          | Full Voltage | ASLD29911N②                                                                                     | ASLD219911N②                                                                                                    | ASLD229911N② *                                                                                                 |
|                                  | <b>2</b>          | NC   | ●                 |   | LED                                                                                                                                                                                                                                                   | Transformer  | ASLD2③11DN②                                                                                     | ASLD21③11DN②                                                                                                    | ASLD22③11DN② *                                                                                                 |
|                                  |                   |      |                   |   | Incandescent                                                                                                                                                                                                                                          | Transformer  | ASLD2③11N②                                                                                      | ASLD21③11N②                                                                                                     | ASLD22③11N② *                                                                                                  |
| <b>20</b><br>(2NO)               | <b>1</b>          | NO   |                   | ● | Without Lamp                                                                                                                                                                                                                                          | Full Voltage | ASLD29920N②                                                                                     | ASLD219920N②                                                                                                    | ASLD229920N② *                                                                                                 |
|                                  | <b>2</b>          | NO   |                   | ● | LED                                                                                                                                                                                                                                                   | Transformer  | ASLD2③20DN②                                                                                     | ASLD21③20DN②                                                                                                    | ASLD22③20DN② *                                                                                                 |
|                                  |                   |      |                   |   | Incandescent                                                                                                                                                                                                                                          | Transformer  | ASLD2③20N②                                                                                      | ASLD21③20N②                                                                                                     | ASLD22③20N② *                                                                                                  |
| <b>22</b><br>(2NO-2NC)           | <b>1</b>          | NO   |                   | ● | Without Lamp                                                                                                                                                                                                                                          | Full Voltage | ASLD29922N②                                                                                     | ASLD219922N②                                                                                                    | ASLD229922N② *                                                                                                 |
|                                  | <b>2</b>          | NC   | ●                 |   |                                                                                                                                                                                                                                                       |              |                                                                                                 |                                                                                                                 |                                                                                                                |
|                                  | <b>3</b>          | NO   |                   | ● | LED                                                                                                                                                                                                                                                   | Transformer  | ASLD2③22DN②                                                                                     | ASLD21③22DN②                                                                                                    | ASLD22③22DN② *                                                                                                 |
|                                  | <b>4</b>          | NC   | ●                 |   |                                                                                                                                                                                                                                                       |              |                                                                                                 |                                                                                                                 |                                                                                                                |
|                                  |                   |      |                   |   | Incandescent                                                                                                                                                                                                                                          | Transformer  | ASLD2③22N②                                                                                      | ASLD21③22N②                                                                                                     | ASLD22③22N② *                                                                                                  |

### • Color Code and Operating Voltage Code

| LED Illuminated Type                                               | Incandescent Illuminated Type                           | ③ Operating Voltage Code                                                                                                                                                  |
|--------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ② Lens/LED Color Code                                              | ② Lens Color Code                                       |                                                                                                                                                                           |
| Specify a lens/LED color code in place of ② in the Type No.        | Specify a lens color code in place of ② in the Type No. | Specify an operating voltage code in place of ③ in the Type No.                                                                                                           |
| A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow | A: amber<br>G: green<br>R: red<br>S: blue<br>W: white   | 16: 100/110V AC<br>156: 115V AC<br>136: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>256: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) |

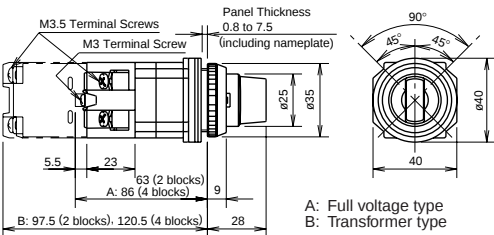
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp (LSTD-6②, rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC).
- On the 2-position selector switches marked with \* above, the contact operation is reversed as follows.

- **Contact Block Mounting Position and Contact Arrangement Chart**



|   |    | L | R |
|---|----|---|---|
| 1 | NO |   | • |
| 2 | NC | • |   |
| 3 | NO |   | • |
| 4 | NC | • |   |

- **Dimensions**



All dimensions in mm.

## Illuminated Selector Switches

### 45° 3-position

| Contact Code    | Contact Block     |      | Operator Position |   |   | Lamp Input Type           | Maintained  | Spring Return from Right | Spring Return from left | Spring Return Two-way |
|-----------------|-------------------|------|-------------------|---|---|---------------------------|-------------|--------------------------|-------------------------|-----------------------|
|                 | Mounting Position | Type | L                 | C | R |                           | L C R       | L C R                    | L C R                   | L C R                 |
| 20<br>(2NO)     | 1                 | NO   | ●                 |   |   | Without Lamp Full Voltage | ASLD39920N② | ASLD319920N②             | ASLD329920N②            | ASLD339920N②          |
|                 | 2                 | NO   |                   |   | ● | LED Transformer           | ASLD3③20DN② | ASLD31③20DN②             | ASLD32③20DN②            | ASLD33③20DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLD3③20N②  | ASLD31③20N②              | ASLD32③20N②             | ASLD33③20N②           |
| 02<br>(2NC)     | 1                 | NC   |                   | ■ |   | Without Lamp Full Voltage | ASLD39902N② | ASLD319902N②             | ASLD329902N②            | ASLD339902N②          |
|                 | 2                 | NC   |                   | ■ |   | LED Transformer           | ASLD3③02DN② | ASLD31③02DN②             | ASLD32③02DN②            | ASLD33③02DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLD3③02N②  | ASLD31③02N②              | ASLD32③02N②             | ASLD33③02N②           |
| 22<br>(2NO-2NC) | 1                 | NO   | ●                 |   |   | Without Lamp Full Voltage | ASLD39922N② | ASLD319922N②             | ASLD329922N②            | ASLD339922N②          |
|                 | 2                 | NO   |                   |   | ● | Without Lamp Full Voltage | ASLD39922N② | ASLD319922N②             | ASLD329922N②            | ASLD339922N②          |
|                 | 3                 | NC   |                   | ■ |   | LED Transformer           | ASLD3③22DN② | ASLD31③22DN②             | ASLD32③22DN②            | ASLD33③22DN②          |
|                 | 4                 | NC   |                   | ■ |   | LED Transformer           | ASLD3③22DN② | ASLD31③22DN②             | ASLD32③22DN②            | ASLD33③22DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLD3③22N②  | ASLD31③22N②              | ASLD32③22N②             | ASLD33③22N②           |
| 40<br>(4NO)     | 1                 | NO   | ●                 |   |   | Without Lamp Full Voltage | ASLD39940N② | ASLD319940N②             | ASLD329940N②            | ASLD339940N②          |
|                 | 2                 | NO   |                   |   | ● | Without Lamp Full Voltage | ASLD39940N② | ASLD319940N②             | ASLD329940N②            | ASLD339940N②          |
|                 | 3                 | NO   | ●                 |   |   | LED Transformer           | ASLD3③40DN② | ASLD31③40DN②             | ASLD32③40DN②            | ASLD33③40DN②          |
|                 | 4                 | NO   |                   |   | ● | LED Transformer           | ASLD3③40DN② | ASLD31③40DN②             | ASLD32③40DN②            | ASLD33③40DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLD3③40N②  | ASLD31③40N②              | ASLD32③40N②             | ASLD33③40N②           |
| 04<br>(4NC)     | 1                 | NC   |                   | ■ |   | Without Lamp Full Voltage | ASLD39904N② | ASLD319904N②             | ASLD329904N②            | ASLD339904N②          |
|                 | 2                 | NC   |                   | ■ |   | Without Lamp Full Voltage | ASLD39904N② | ASLD319904N②             | ASLD329904N②            | ASLD339904N②          |
|                 | 3                 | NC   |                   | ■ |   | LED Transformer           | ASLD3③04DN② | ASLD31③04DN②             | ASLD32③04DN②            | ASLD33③04DN②          |
|                 | 4                 | NC   |                   | ■ |   | LED Transformer           | ASLD3③04DN② | ASLD31③04DN②             | ASLD32③04DN②            | ASLD33③04DN②          |
|                 |                   |      |                   |   |   | Incandescent Transformer  | ASLD3③04N②  | ASLD31③04N②              | ASLD32③04N②             | ASLD33③04N②           |

### • Color Code and Operating Voltage Code

| LED Illuminated Type                                                                                                                  | Incandescent Illuminated Type                                                                                        | ③ Operating Voltage Code                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ② Lens/LED Color Code                                                                                                                 | ② Lens Color Code                                                                                                    |                                                                                                                                                                                                                                                  |
| Specify a lens/LED color code in place of ② in the Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow | Specify a lens color code in place of ② in the Type No.<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>W: white | Specify an operating voltage code in place of ③ in the Type No.<br><br>16: 100/110V AC<br>156: 115V AC<br>136: 120V AC<br>26: 200/220V AC<br>236: 230V AC<br>256: 240V AC<br>386: 380V AC<br>46: 400/440V AC<br>486: 480V AC (incandescent only) |

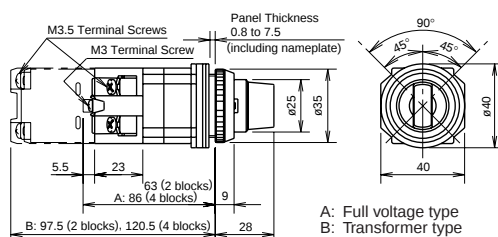
- Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 63.
- LED illuminated transformer types contain an LED lamp (LSTD-6②, rated voltage 6V AC/DC).
- Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC).

### • Contact Block Mounting Position and Contact Arrangement Chart



|   | Left | Center | Right | Operator Position |
|---|------|--------|-------|-------------------|
|   | L    | C      | R     |                   |
| 1 | NO   | ●      |       |                   |
| 2 | NO   |        | ●     |                   |
| 3 | NC   |        | ■     |                   |
| 4 | NC   | ■      |       |                   |

### • Dimensions



All dimensions in mm.

**Ø30**

### Ring Operator Type / Lever Operator Type Selector Pushbuttons

UL LISTED CSA CE

- 

Panel Thickness 0.8 to 7.5  
(including nameplate)

M3.5 Terminal Screw

5.5

23

53 (1 or 2 blocks)

76 (3 or 4 blocks)

26.5

50

37

37

R50

M3 Setscrew

(The actual screw is located on the opposite side)

## Accessories (For Diecast Zinc Series Only)

For other accessories, see pages 55 to 63.

| Shape                                           | Material      | Type No. | Ordering Type No. | Package Quantity | Description                         |
|-------------------------------------------------|---------------|----------|-------------------|------------------|-------------------------------------|
| <br>Flush (Octagonal)      Extended (Octagonal) | Chrome-plated | OG-81    | OG-81PN02         | 2                | • Cannot be used with half-shrouds. |
|                                                 |               | OG-82    | OG-82             | 1                |                                     |
| <br>Spare Key                                   | Metal         | TW-SK-0  | TW-SK-0PN02       | 2                | • For key selector switches         |

## Maintenance Parts (For Diecast Zinc Series Only)

| Shape                                       | Specification | Type No.   | Ordering Type No. | Package Quantity | Description                                                                                                                                                                                         |
|---------------------------------------------|---------------|------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>① Flush      ② Extended      ③ Mushroom | Plastic       | ① ABN1BN-① | ABN1BN-①PN05      | 5                | Specify a color code in place of ①.<br>B (black), G (green), R (red), S (blue), W (white), Y (yellow)<br>• Above colors are used for ø30 diecast zinc control units (light colored operator units). |
|                                             |               | ② ABN2BN-① | ABN2BN-①PN05      | 5                |                                                                                                                                                                                                     |
|                                             |               | ③ ABN3BN-① | ABN3BN-①PN02      | 2                |                                                                                                                                                                                                     |
| <br>Dummy Block                             | Plastic       | BST-D      | BST-DPN10         | 10               | • Used for 1NO or 1NC contact blocks.<br>• Snaps on to the operator unit.                                                                                                                           |
| <br>① Knob      ② Lever      ③ Color Insert | Plastic       | ① ASNHT-①  | ASNHT-①PN02       | 2                | Specify a color code in place of ①.<br>B (blue), G (green), R (red)                                                                                                                                 |
|                                             |               | ② ASNHL-①  | ASNHL-①PN02       |                  |                                                                                                                                                                                                     |
|                                             | Color Insert  | ③ TW-HC1①  | TW-HC1①PN05       | 5                | Specify a color code in place of ①.<br>B (black), G (green), R (red), S (blue), W (white), Y (yellow)                                                                                               |

## Safety Precautions

- Turn off the power to the ø30 diecast zinc control units before starting installation, removal, wiring, maintenance, and starting installation, removing, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid a burn on your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage and current requirements. Tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Failure to tighten terminal screws may cause overheat and fire.

## Instructions

### Tightening Torque for Terminal Screws

Tighten the M3.5 terminal screws to a torque of 1.0 to 1.3 N·m.

### Replacement of Lamps

Lamps can be replaced by using the lamp holder tool (OR-55) from the front of the panel.

- How to remove  
To remove, slip the lamp holder tool onto the lamp head lightly. Then push slightly, and turn the lamp holder tool counterclockwise.
- How to install  
To install, insert the lamp head into the lamp holder tool. Place the pins on the lamp base to the grooves in the lamp socket. Inset the lamp and turn it clockwise.

### Installation of LED Illuminated Units

- When using full voltage type LED illuminated units, provide protection against electrical noise, if necessary. See page 65 for notes on LED illuminated units.



OR-55



Specifications and other descriptions in this catalog are subject to change without notice.



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