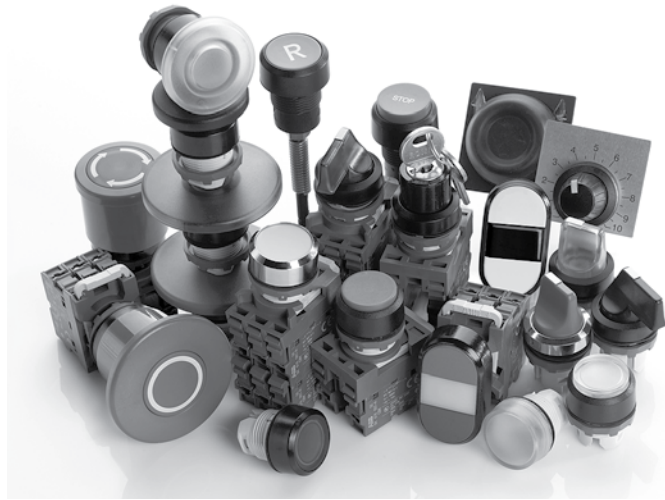


# Modular range Pilot devices

**ABB**

**Modular range**  
22mm



8

## General construction

- Snap-on feature reduces installation time
- Bezels: Black plastic, chrome metal. Grey plastic available as an option
- Contact block holder features rear mounting with quick-release locking mechanism for high security
- Buttons available in several colors
- Engraved text caps available
- Custom-specific markings on request
- UL File# E57057
- CSA File# LR19700

## Operators

- Pushbuttons, illuminated and non-illuminated
- Double pushbuttons, illuminated and non-illuminated
- Mushroom pushbuttons, illuminated and non-illuminated, Ø 40 mm and Ø 60 mm
- Emergency stop pushbuttons, illuminated and non-illuminated, twist or pull release
- Selector switches, illuminated and non-illuminated, 2 or 3 position, short or long handle
- Key operated selector switches, 2 or 3 position
- Toggle switches, 2 or 3 position

## Pilot lights

- Full voltage, resistor and transformer
- LED & filament bulbs available for illuminated pushbuttons and pilot lights

## Contact blocks

- Quick-mount, quick-release contact block holder for fast and easy assembly
- NO & NC contact blocks are color coded for easy identification: Green = NO, Red = NC
- Silver tipped contacts
- Wiping action for high reliability
- Low energy gold plated contact blocks
- Base mounted contact blocks which snap onto a 35 mm DIN rail or into a plastic enclosure
- Contact block holder for three or five blocks in a single row

## Additional products

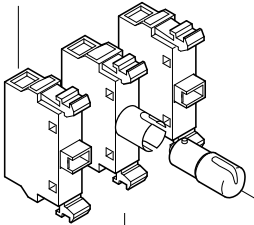
- Buzzer, continuous and pulsating
- 5 kΩ and 10 kΩ potentiometers
- Definite purpose pushbuttons
- Reset pushbuttons
- Broad range of accessories

## General information Mounting

### Exploded view

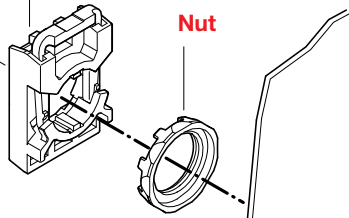
#### Contact block

Single pole with making or breaking contact



#### Holder

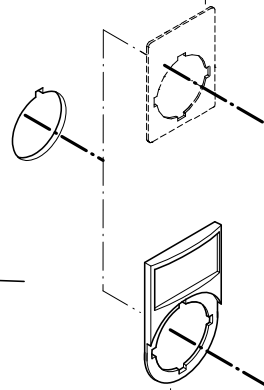
Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.



#### Nut

#### Legend plates

Of aluminum with slots that guide the legend plate and the operator into the correct position. Please, see the chapter 'legend plates' for more information.

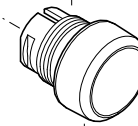


#### Lamp block

Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.

#### Operator

Buttons, lenses and handles in several colors. Illuminated or non-illuminated.



#### Legend plate holder

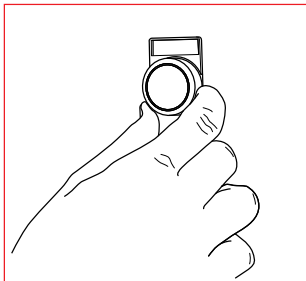
Of black plastic. Insert of brushed aluminum. Please, see the chapter 'legend plates' for more information.

#### Bezels

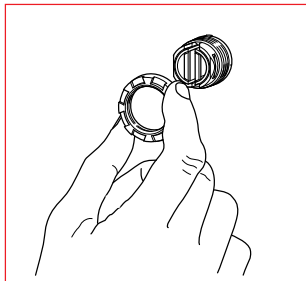
Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

8

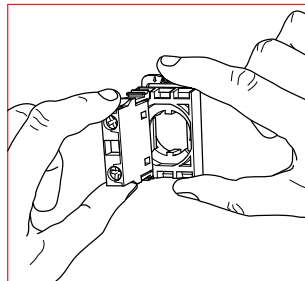
### Easy to mount



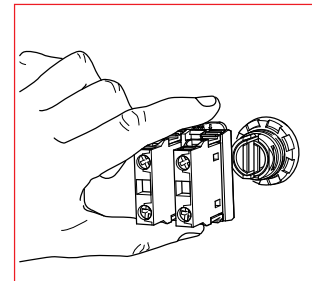
The operator is to be inserted from the front.....



...and secured at the back with a nut.

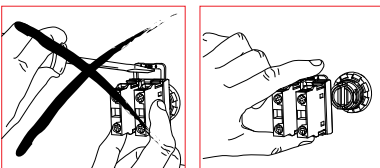


The contact blocks/lamp block are then snapped on to the holder...



...and the holder snaps on to the operator.

### ...and to remove



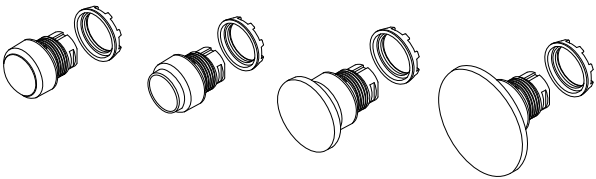
Press down the spring on the holder and pull the holder from the actuator.

# Selection Guide

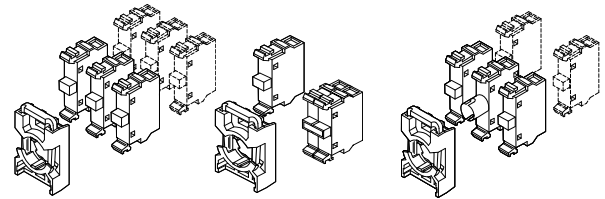
Pilot Devices  
Modular Range  
22mm

8

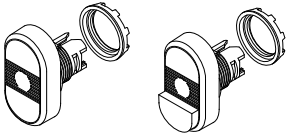
**Pushbuttons and Mushroom pushbuttons**



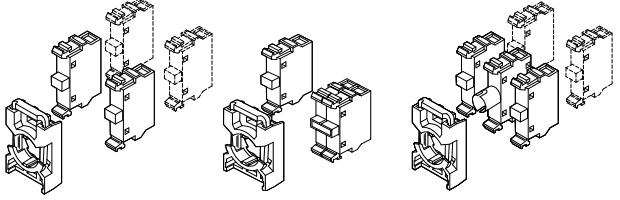
**Contact block/lamp block combinations**



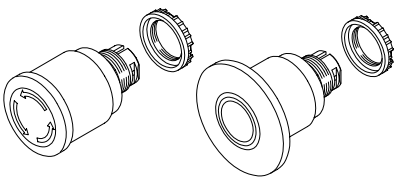
**Double pushbuttons**



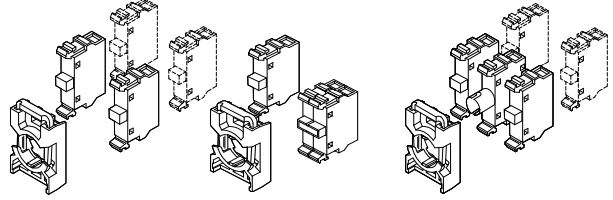
**Contact block/lamp block combinations**



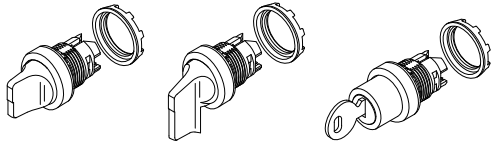
**Emergency stop pushbuttons**



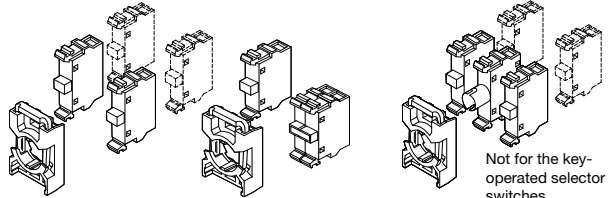
**Contact block/lamp block combinations**



**Selector switches**

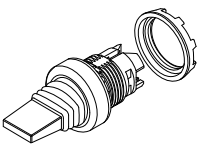


**Contact block/lamp block combinations**

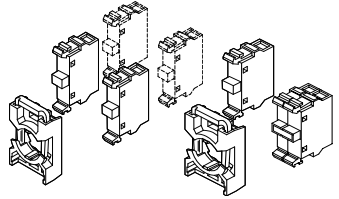


Not for the key-operated selector switches

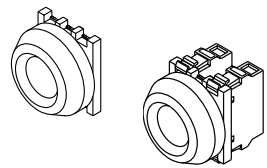
**Toggle switches**



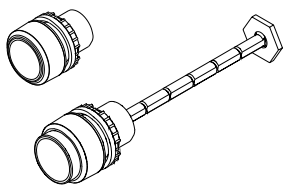
**Contact block combinations**



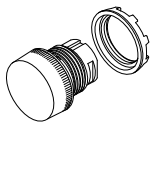
**Definite purpose push-buttons**



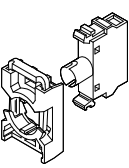
**Reset pushbuttons**




**Pilot lights**




**Lamp block combination**



**Buzzers**



**Potentiometers**

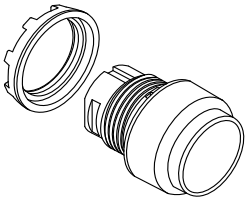
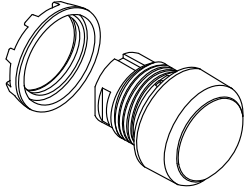


## Flush and extended pushbuttons

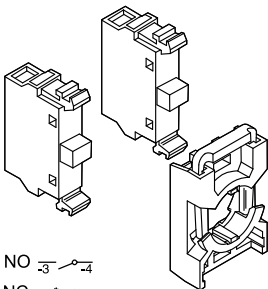
### Non-illuminated

### Momentary and maintained

8



Bezel in black plastic as standard  
Bezel in metal:  
Replace '1' in the:  
Cat No. MPX-1 0X  
3 for metal bezel



#### Operator ...

Description	Catalog No.	Ref. Code
<b>with flush button</b>		
<b>Momentary</b>		
Red	<b>MP1-10R</b>	1SFA 611 100 R1001
Green	<b>MP1-10G</b>	1SFA 611 100 R1002
Yellow	<b>MP1-10Y</b>	1SFA 611 100 R1003
Blue	<b>MP1-10L</b>	1SFA 611 100 R1004
White	<b>MP1-10W</b>	1SFA 611 100 R1005
Black	<b>MP1-10B</b>	1SFA 611 100 R1006
Clear	<b>MP1-10C</b>	1SFA 611 100 R1008
<b>Maintained</b>		
Red	<b>MP2-10R</b>	1SFA 611 101 R1001
Green	<b>MP2-10G</b>	1SFA 611 101 R1002
Yellow	<b>MP2-10Y</b>	1SFA 611 101 R1003
Blue	<b>MP2-10L</b>	1SFA 611 101 R1004
White	<b>MP2-10W</b>	1SFA 611 101 R1005
Black	<b>MP2-10B</b>	1SFA 611 101 R1006
Clear	<b>MP2-10C</b>	1SFA 611 101 R1008

#### with extended button

<b>Momentary</b>		
Red	<b>MP3-10R</b>	1SFA 611 102 R1001
Green	<b>MP3-10G</b>	1SFA 611 102 R1002
Yellow	<b>MP3-10Y</b>	1SFA 611 102 R1003
Blue	<b>MP3-10L</b>	1SFA 611 102 R1004
White	<b>MP3-10W</b>	1SFA 611 102 R1005
Black	<b>MP3-10B</b>	1SFA 611 102 R1006
Clear	<b>MP3-10C</b>	1SFA 611 102 R1008
<b>Maintained</b>		
Red	<b>MP4-10R</b>	1SFA 611 103 R1001
Green	<b>MP4-10G</b>	1SFA 611 103 R1002
Yellow	<b>MP4-10Y</b>	1SFA 611 103 R1003
Blue	<b>MP4-10L</b>	1SFA 611 103 R1004
White	<b>MP4-10W</b>	1SFA 611 103 R1005
Black	<b>MP4-10B</b>	1SFA 611 103 R1006
Clear	<b>MP4-10C</b>	1SFA 611 103 R1008

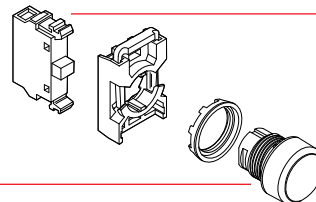
#### Contact blocks, and holder

Blocks	Catalog No.	Ref. Code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

#### Ordering example

Requested: A modular pushbutton, momentary,  
with red flush button and one NO contact.

Ref.: 1 piece of MP1-10R + 1 piece of MCBH-10

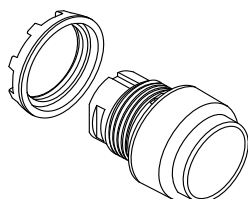
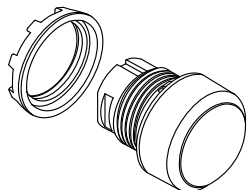


## Flush and extended pushbuttons

### Illuminated

### Momentary and maintained

Bulb max 1.2 W



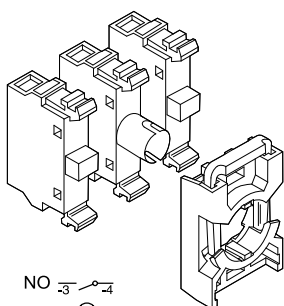
Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the

Catalog No. MPX-1 0X

3 for metal bezel



NO  $\frac{3}{-}$   $\frac{4}{-}$   
LB  $\frac{x1}{\otimes}$   $\frac{x2}{\otimes}$   
NC  $\frac{1}{-}$   $\frac{2}{-}$

#### Operator ...

Description	Catalog No.	Ref. Code
-------------	-------------	-----------

#### with flush button

##### Momentary ①

Red	<b>MP1-11R</b>	1SFA 611 100 R1101
Green	<b>MP1-11G</b>	1SFA 611 100 R1102
Yellow	<b>MP1-11Y</b>	1SFA 611 100 R1103
Blue	<b>MP1-11L</b>	1SFA 611 100 R1104
White	<b>MP1-11W</b>	1SFA 611 100 R1105
Clear	<b>MP1-11C</b>	1SFA 611 100 R1108

##### Maintained ①③

Red	<b>MP2-11R</b>	1SFA 611 101 R1101
Green	<b>MP2-11G</b>	1SFA 611 101 R1102
Yellow	<b>MP2-11Y</b>	1SFA 611 101 R1103
Blue	<b>MP2-11L</b>	1SFA 611 101 R1104
White	<b>MP2-11W</b>	1SFA 611 101 R1105
Clear	<b>MP2-11C</b>	1SFA 611 101 R1108

#### with extended button

##### Momentary ①

Red	<b>MP3-11R</b>	1SFA 611 102 R1101
Green	<b>MP3-11G</b>	1SFA 611 102 R1102
Yellow	<b>MP3-11Y</b>	1SFA 611 102 R1103
Blue	<b>MP3-11L</b>	1SFA 611 102 R1104
White	<b>MP3-11W</b>	1SFA 611 102 R1105
Clear	<b>MP3-11C</b>	1SFA 611 102 R1108

##### Maintained ①③

Red	<b>MP4-11R</b>	1SFA 611 103 R1101
Green	<b>MP4-11G</b>	1SFA 611 103 R1102
Yellow	<b>MP4-11Y</b>	1SFA 611 103 R1103
Blue	<b>MP4-11L</b>	1SFA 611 103 R1104
White	<b>MP4-11W</b>	1SFA 611 103 R1105
Clear	<b>MP4-11C</b>	1SFA 611 103 R1108

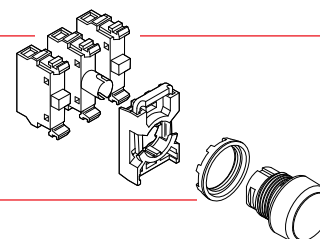
#### Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

#### Ordering example

Requested: A modular pushbutton, maintained and illuminated with green flush button and one NO + one NC contact.

Ref.: 1 piece of MP2-11G + 1 piece of MCBH-111  
Bulb - see accessories



- ① No contact block in the center position, reserved for lamp block
- ② Lamp block MLB-1. Bulb not included. For other lamp blocks see Accessories.
- ③ Bulb max 1.2 W, not included.

## Double pushbuttons Non-illuminated

### Operator ...

<b>Upper button</b>		<b>Lower button</b>		<b>Catalog No.</b>	<b>Ref. Code</b>
Color	Text	Color	Text		
<b>with flush buttons ①</b>					
Green	No text	Red	No text	<b>MPD1-11B</b>	1SFA 611 130 R1106
	I	O	O	<b>MPD2-11B</b>	1SFA 611 131 R1106
	ON	OFF	OFF	<b>MPD3-11B</b>	1SFA 611 132 R1106
	START	STOP	STOP	<b>MPD4-11B</b>	1SFA 611 133 R1106
White	No text	Black	No text	<b>MPD5-11B</b>	1SFA 611 134 R1106
	I	O	O	<b>MPD6-11B</b>	1SFA 611 135 R1106
	ON	OFF	OFF	<b>MPD7-11B</b>	1SFA 611 136 R1106
	START	STOP	STOP	<b>MPD8-11B</b>	1SFA 611 137 R1106

<b>with extended lower button ①</b>					
Green	No text	Red	No text	<b>MPD12-11B</b>	1SFA 611 141 R1106
	I	O	O	<b>MPD13-11B</b>	1SFA 611 142 R1106
	ON	OFF	OFF	<b>MPD14-11B</b>	1SFA 611 143 R1106
	START	STOP	STOP	<b>MPD15-11B</b>	1SFA 611 144 R1106
White	No text	Black	No text	<b>MPD16-11B</b>	1SFA 611 145 R1106
	I	O	O	<b>MPD17-11B</b>	1SFA 611 146 R1106
	ON	OFF	OFF	<b>MPD18-11B</b>	1SFA 611 147 R1106
	START	STOP	STOP	<b>MPD19-11B</b>	1SFA 611 148 R1106

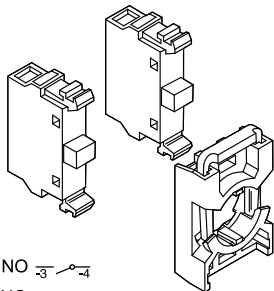
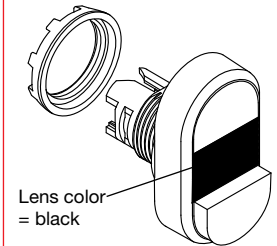
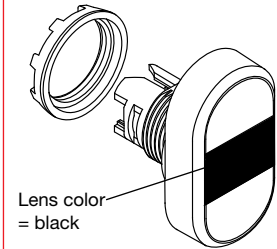
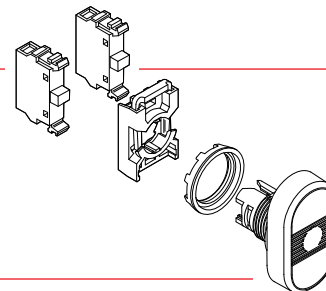
### Contact blocks, and holder

<b>Blocks</b>	<b>Catalog No.</b>	<b>Ref. Code</b>
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Ordering example – Double pushbutton

Requested: A non-illuminated double pushbutton, Green/Red,  
No text, with 2 NO blocks

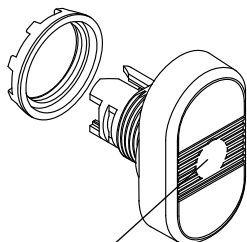
Ref.: 1 piece of MPD1-11B + 1 piece of MCBH-20



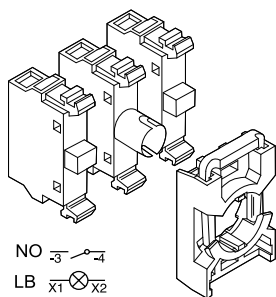
① No contact block in the center position.



## Double pushbuttons Illuminated



Lens colors:  
Red  
Green  
Yellow  
Clear



### Operator ...

Upper button		Lower button		Catalog No.	Ref. Code	
Color	Text	Color	Text			
<b>with flush buttons ①</b>						
<b>Red lens</b>						
Green	No text	Red	No text	<b>MPD1-11R</b>	1SFA 611 130 R1101	
	I		O		<b>MPD2-11R</b>	1SFA 611 131 R1101
	ON		OFF		<b>MPD3-11R</b>	1SFA 611 132 R1101
	START		STOP		<b>MPD4-11R</b>	1SFA 611 133 R1101
White	No text	Black	No text	<b>MPD5-11R</b>	1SFA 611 134 R1101	
	I		O		<b>MPD6-11R</b>	1SFA 611 135 R1101
	ON		OFF		<b>MPD7-11R</b>	1SFA 611 136 R1101
	START		STOP		<b>MPD8-11R</b>	1SFA 611 137 R1101
<b>Green lens</b>						
Green	No text	Red	No text	<b>MPD1-11G</b>	1SFA 611 130 R1102	
	I		O		<b>MPD2-11G</b>	1SFA 611 131 R1102
	ON		OFF		<b>MPD3-11G</b>	1SFA 611 132 R1102
	START		STOP		<b>MPD4-11G</b>	1SFA 611 133 R1102
White	No text	Black	No text	<b>MPD5-11G</b>	1SFA 611 134 R1102	
	I		O		<b>MPD6-11G</b>	1SFA 611 135 R1102
	ON		OFF		<b>MPD7-11G</b>	1SFA 611 136 R1102
	START		STOP		<b>MPD8-11G</b>	1SFA 611 137 R1102
<b>Yellow lens</b>						
Green	No text	Red	No text	<b>MPD1-11Y</b>	1SFA 611 130 R1103	
	I		O		<b>MPD2-11Y</b>	1SFA 611 131 R1103
	ON		OFF		<b>MPD3-11Y</b>	1SFA 611 132 R1103
	START		STOP		<b>MPD4-11Y</b>	1SFA 611 133 R1103
White	No text	Black	No text	<b>MPD5-11Y</b>	1SFA 611 134 R1103	
	I		O		<b>MPD6-11Y</b>	1SFA 611 135 R1103
	ON		OFF		<b>MPD7-11Y</b>	1SFA 611 136 R1103
	START		STOP		<b>MPD8-11Y</b>	1SFA 611 137 R1103
<b>Clear lens</b>						
Green	No text	Red	No text	<b>MPD1-11C</b>	1SFA 611 130 R1108	
	I		O		<b>MPD2-11C</b>	1SFA 611 131 R1108
	ON		OFF		<b>MPD3-11C</b>	1SFA 611 132 R1108
	START		STOP		<b>MPD4-11C</b>	1SFA 611 133 R1108
White	No text	Black	No text	<b>MPD5-11C</b>	1SFA 611 134 R1108	
	I		O		<b>MPD6-11C</b>	1SFA 611 135 R1108
	ON		OFF		<b>MPD7-11C</b>	1SFA 611 136 R1108
	START		STOP		<b>MPD8-11C</b>	1SFA 611 137 R1108

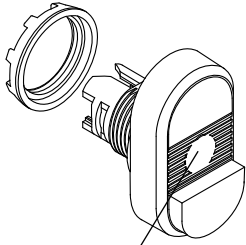
### Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

① No contact block in the center position, reserved for lamp block.

② Lamp block MLB-1. Bulb not included. For other lamp blocks see Accessories, bulb max 1.2 W.

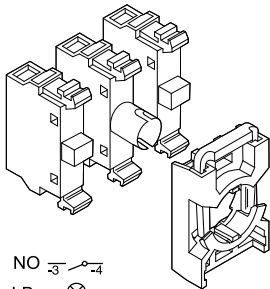
## Double pushbuttons Illuminated



Lens colors:  
Red  
Green  
Yellow  
Clear

### Operator ...

Upper button		Lower button		Catalog No.	Ref. Code
Color	Text	Color	Text		
<b>with extended lower button ①</b>					
<b>Red lens</b>					
Green	No text	Red	No text	<b>MPD12-11R</b>	1SFA 611 141 R1101
			O	<b>MPD13-11R</b>	1SFA 611 142 R1101
	ON		OFF	<b>MPD14-11R</b>	1SFA 611 143 R1101
	START		STOP	<b>MPD15-11R</b>	1SFA 611 144 R1101
White	No text	Black	No text	<b>MPD16-11R</b>	1SFA 611 145 R1101
			O	<b>MPD17-11R</b>	1SFA 611 146 R1101
	ON		OFF	<b>MPD18-11R</b>	1SFA 611 147 R1101
	START		STOP	<b>MPD19-11R</b>	1SFA 611 148 R1101
<b>Green lens</b>					
Green	No text	Red	No text	<b>MPD12-11G</b>	1SFA 611 141 R1102
			O	<b>MPD13-11G</b>	1SFA 611 142 R1102
	ON		OFF	<b>MPD14-11G</b>	1SFA 611 143 R1102
	START		STOP	<b>MPD15-11G</b>	1SFA 611 144 R1102
White	No text	Black	No text	<b>MPD16-11G</b>	1SFA 611 145 R1102
			O	<b>MPD17-11G</b>	1SFA 611 146 R1102
	ON		OFF	<b>MPD18-11G</b>	1SFA 611 147 R1102
	START		STOP	<b>MPD19-11G</b>	1SFA 611 148 R1102
<b>Yellow lens</b>					
Green	No text	Red	No text	<b>MPD12-11Y</b>	1SFA 611 141 R1103
			O	<b>MPD13-11Y</b>	1SFA 611 142 R1103
	ON		OFF	<b>MPD14-11Y</b>	1SFA 611 143 R1103
	START		STOP	<b>MPD15-11Y</b>	1SFA 611 144 R1103
White	No text	Black	No text	<b>MPD16-11Y</b>	1SFA 611 145 R1103
			O	<b>MPD17-11Y</b>	1SFA 611 146 R1103
	ON		OFF	<b>MPD18-11Y</b>	1SFA 611 147 R1103
	START		STOP	<b>MPD19-11Y</b>	1SFA 611 148 R1103
<b>Clear lens</b>					
Green	No text	Red	No text	<b>MPD12-11C</b>	1SFA 611 141 R1108
			O	<b>MPD13-11C</b>	1SFA 611 142 R1108
	ON		OFF	<b>MPD14-11C</b>	1SFA 611 143 R1108
	START		STOP	<b>MPD15-11C</b>	1SFA 611 144 R1108
White	No text	Black	No text	<b>MPD16-11C</b>	1SFA 611 145 R1108
			O	<b>MPD17-11C</b>	1SFA 611 146 R1108
	ON		OFF	<b>MPD18-11C</b>	1SFA 611 147 R1108
	START		STOP	<b>MPD19-11C</b>	1SFA 611 148 R1108



NO  $\overline{3}$  - 4  
LB  $\overline{x1}$  -  $\overline{x2}$   
NC  $\overline{1}$  - 2

### Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

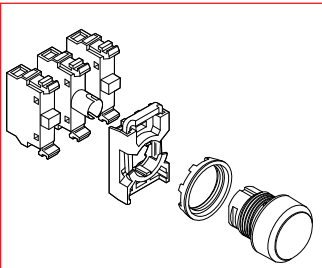
① No contact block in the center position, reserved for lamp block.

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.



# Press-to-test pilot light pushbuttons

Pilot Devices  
Modular Range  
22mm



MP1-MLFPT1C

**Flush button standard.**  
For extended button, replace  
'1' in MP1-... with '3'

## Press-to-test

Type	Black plastic ring	Chrome metal ring
	Catalog number	Catalog number
<b>Operator only ①</b>	MP1-KLPTΔ	MP1-MLPTΔ
<b>Full voltage type</b>		
6V	MP1-KLFPT6Δ	MP1-MLFPT6Δ
12V	MP1-KLFPT7Δ	MP1-MLFPT7Δ
24V	MP1-KLFPT8Δ	MP1-MLFPT8Δ
48V	MP1-KLFPT9Δ	MP1-MLFPT9Δ
120V	MP1-KLFPT1Δ	MP1-MLFPT1Δ
<b>Resistor type</b>		
120V	MP1-KLRPT1Δ	MP1-MLRPT1Δ
240V	MP1-KLRPT2Δ	MP1-MLRPT2Δ
<b>Transformer type</b>		
120V/6V	MP1-KLTPT1Δ	MP1-MLTPT1Δ
240V/6V	MP1-KLTPT2Δ	MP1-MLTPT2Δ
380V/6V	MP1-KLTPT3Δ	MP1-MLTPT3Δ
480V/6V	MP1-KLTPT4Δ	MP1-MLTPT4Δ
600V/6V	MP1-KLTPT5Δ	MP1-MLTPT5Δ
120V/24V	MP1-KLTPT6Δ	MP1-MLTPT6Δ
240V/24V	MP1-KLTPT7Δ	MP1-MLTPT7Δ
380V/24V	MP1-KLTPT8Δ	MP1-MLTPT8Δ
480V/24V	MP1-KLTPT9Δ	MP1-MLTPT9Δ

Δ Select the lens color from the "Illuminated lenses" selection chart and substitute the suffix code for the Δ. The lens and bulb are included in the price.

## Press-to-test (LED bulb)

Type	Black plastic ring	Chrome metal ring
	Catalog number	Catalog number
<b>Full voltage type</b>		
24V	MP1-KLFPTL8Δ	MP1-MLFPTL8Δ
120V	MP1-KLFPTL1Δ	MP1-MLFPTL1Δ
230V		MP1-MLFPTL2Δ
<b>Transformer type</b>		
120V/24V	MP1-KLTPTL1Δ	MP1-MLTPTL1Δ
240V/24V	MP1-KLTPTL2Δ	MP1-MLTPTL2Δ
380V/24V	MP1-KLTPTL3Δ	MP1-MLTPTL3Δ
480V/24V	MP1-KLTPTL4Δ	MP1-MLTPTL4Δ

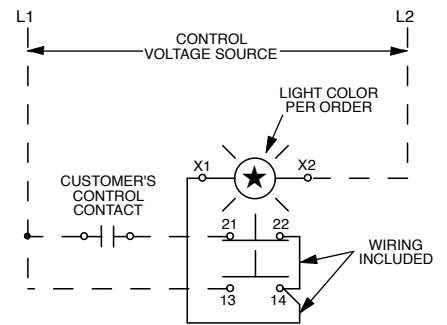
Δ Select the lens color from the "Illuminated lenses" selection chart and substitute the suffix code for the Δ. The lens and bulb are included in the price.

## Δ Illuminated lenses

Button color	Suffix code
Red	R
Green	G
Yellow	Y
Blue	L
Clear	C
White	W

NOTE: White LEDs use clear lenses.

## Schematic



Press-to-test schematic

① 1 N.O. & 1 N.C. contact supplied; lamp module and bulb must be ordered separately.

## Mushroom pushbuttons

### Non-illuminated and illuminated

### Momentary

#### Operator ...

Operator material	Button color	Catalog No.	Ref. Code
<b>non-illuminated</b>			
<b>Ø 40 mm</b>			
Plastic	Red	<b>MPM1-10R</b>	1SFA 611 124 R1001
	Yellow	<b>MPM1-10Y</b>	1SFA 611 124 R1003
	Black	<b>MPM1-10B</b>	1SFA 611 124 R1006
<b>Ø 60 mm</b>			
Plastic	Red	<b>MPM2-10R</b>	1SFA 611 125 R1001
	Yellow	<b>MPM2-10Y</b>	1SFA 611 125 R1003
	Black	<b>MPM2-10B</b>	1SFA 611 125 R1006

#### illuminated ①

<b>Ø 40 mm</b>			
Plastic	Green	<b>MPM1-11G</b>	—
	Red	<b>MPM1-11R</b>	1SFA 611 124 R1101
	Yellow	<b>MPM1-11Y</b>	1SFA 611 124 R1103
<b>Ø 60 mm</b>			
Plastic	Green	<b>MPM2-11G</b>	—
	Red	<b>MPM2-11R</b>	1SFA 611 125 R1101
	Yellow	<b>MPM2-11Y</b>	1SFA 611 125 R1103

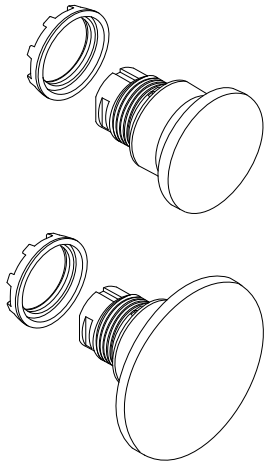
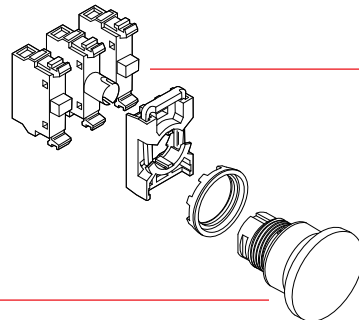
#### Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

#### Ordering example – Mushroom Pushbutton

Requested: A modular mushroom pushbutton, Ø 40 mm, illuminated, red, with one NO + one NC contact and a standard lamp block

Ref.: 1 piece of MPM1-11R + 1 piece of MCBH-111  
Bulb - see accessories



Bezel in black plastic as standard

Bezel in metal:

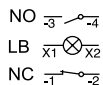
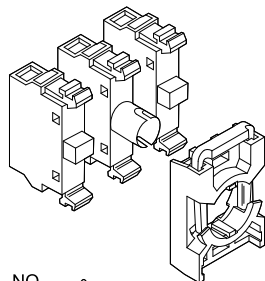
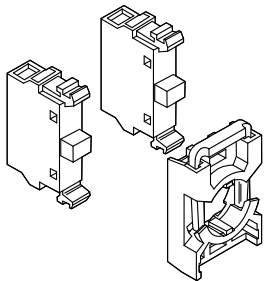
Replace '1' in the:

Catalog No. MPMX-1 0X

Ref. Code 1SFA611XXX R 1XXX

3 for metal bezel

4 for grey plastic bezel



① No contact block in the center position, reserved for lamp block.

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

## Emergency stop pushbuttons Non-illuminated and illuminated

Fulfills IEC 60947-5-5

### Operator ...

Operator function	Button color and material	Catalog No.	Ref. Code
<b>non-illuminated</b>			
<b>Ø 40 mm</b>			
Twist release	Red, plastic	<b>MPMT3-10R</b>	1SFA 611 510 R1001
Pull release	Red, plastic	<b>MPMP3-10R</b>	1SFA 611 511 R1001
Twist release	Black, plastic	<b>MPMT3-10B</b>	1SFA 611 510 R1006
Pull release	Black, plastic	<b>MPMP3-10B</b>	1SFA 611 511 R1006
<b>Ø 60 mm</b>			
Twist release	Red, plastic	<b>MPMT4-10R</b>	1SFA 611 510 R1006
Pull release	Red, plastic	<b>MPMP4-10R</b>	1SFA 611 511 R1006
<b>illuminated ①</b>			
<b>Ø 40 mm</b>			
Twist release	Red, plastic	<b>MPMT3-11R</b>	1SFA 611 510 R1101
Pull release	Red, plastic	<b>MPMP3-11R</b>	1SFA 611 511 R1101
<b>Ø 60 mm</b>			
Twist release	Red, plastic	<b>MPMT4-11R</b>	1SFA 611 513 R1101
Pull release	Red, plastic	<b>MPMP4-11R</b>	1SFA 611 514 R1101

For compact E-Stops, see page 8.31.

### Contact blocks, lamp block and holder ②

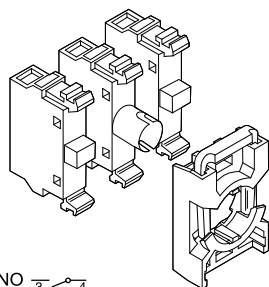
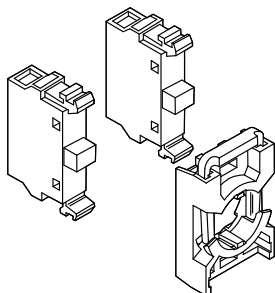
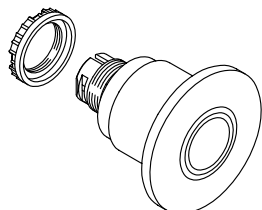
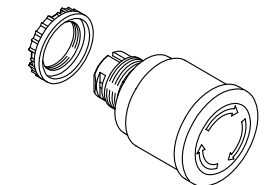
Blocks	Catalog No.	Ref. Code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

<b>Durability test</b>	6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations.	<b>Latching test</b>	Impulse voltage test at 2,500 V
<b>Robustness</b>	The force 113 N applied in three axes	<b>Resetting test</b>	Pulling force < 50 N Turning torque < 1 Nm
<b>Conditioning</b>	Heat and cold, moist atmosphere, and in 5 % NaC	<b>Shock</b>	15 g shock
		<b>Vibration</b>	2 h at 50m/s <sup>2</sup>
		<b>Contacts with positive opening operation</b>	15 g shock

① No contact in the center position













② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 2 W.

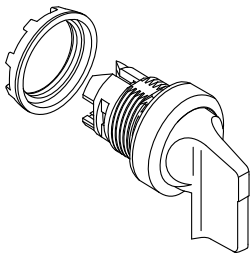
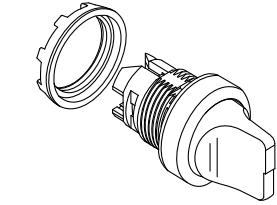


NO   
LB   
NC

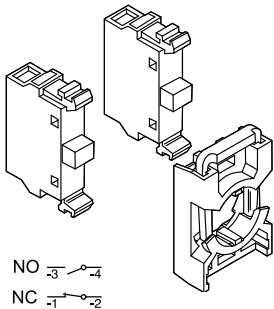
## Two-position selector switches Non-illuminated

### Operator ...

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle</b> ①			
<b>Maintained</b>			
	Red	<b>M2SS1-10R</b>	1SFA 611 200 R1001
	Black	<b>M2SS1-10B</b>	1SFA 611 200 R1006
	Grey	<b>M2SS1-10U</b>	1SFA 611 200 R1007
<b>Momentary, spring return from C to B</b>			
	Red	<b>M2SS3-10R</b>	1SFA 611 202 R1001
	Black	<b>M2SS3-10B</b>	1SFA 611 202 R1006
	Grey	<b>M2SS3-10U</b>	1SFA 611 202 R1007
<b>with long handle</b> ①			
<b>Maintained</b>			
	Red	<b>M2SS4-10R</b>	1SFA 611 203 R1001
	Black	<b>M2SS4-10B</b>	1SFA 611 203 R1006
	Grey	<b>M2SS4-10U</b>	1SFA 611 203 R1007
<b>Momentary, spring return from C to B</b>			
	Red	<b>M2SS6-10R</b>	1SFA 611 205 R1001
	Black	<b>M2SS6-10B</b>	1SFA 611 205 R1006
	Grey	<b>M2SS6-10U</b>	1SFA 611 205 R1007



Bezel in black plastic as standard  
Bezel in metal:  
Replace '1' in the:  
Catalog No. M2SSX-1 0X  
Ref. Code 1SFA61 XXX R 1XXX  
3 for metal bezel  
4 for grey plastic bezel



### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A (B)	O	O
C	x	x

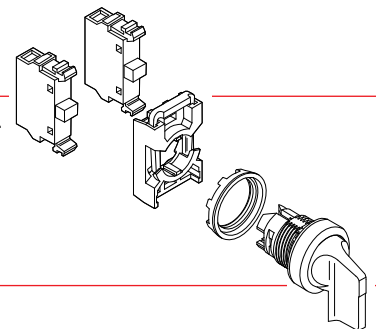
O = not actuated (normal state)  
x = actuated (state changed)

### Contact blocks and holder

Blocks	Catalog No.	Ref. Code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Ordering example

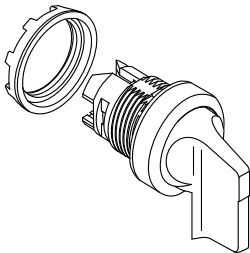
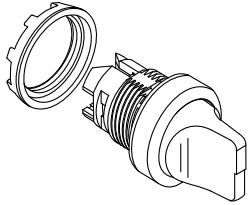
Requested: A non-illuminated modular selector switch. Black.  
Maintained.  
Handle positions: A and C  
With 2 NC contacts  
Ref.: 1 piece of M2SS2-10B + 1 piece of MCBH-02



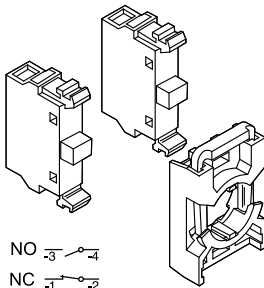
① No contact block in the center position

# Three-position selector switches

## Non-illuminated



Bezel in black plastic as standard  
**Bezel in metal:**  
 Replace '1' in the:  
 Catalog No. M3SSX-1 0X  
 Ref. Code 1SFA611XXX R 1XXX  
**3** for metal bezel  
**4** for grey plastic bezel



### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A	x	o
B	o	o
C	o	x

### Operator ...

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle ①</b>			
<b>Maintained</b>			
	Red	<b>M3SS1-10R</b>	1SFA 611 210 R1001
	Black	<b>M3SS1-10B</b>	1SFA 611 210 R1006
	Grey	<b>M3SS1-10U</b>	1SFA 611 210 R1007
<b>Momentary, spring return from A to B and from C to B</b>			
	Red	<b>M3SS2-10R</b>	1SFA 611 211 R1001
	Black	<b>M3SS2-10B</b>	1SFA 611 211 R1006
	Grey	<b>M3SS2-10U</b>	1SFA 611 211 R1007
<b>Momentary, spring return from C to B</b>			
	Red	<b>M3SS3-10R</b>	1SFA 611 212 R1001
	Black	<b>M3SS3-10B</b>	1SFA 611 212 R1006
	Grey	<b>M3SS3-10U</b>	1SFA 611 212 R1007
<b>Momentary, spring return from A to B</b>			
	Red	<b>M3SS7-10R</b>	1SFA 611 216 R1001
	Black	<b>M3SS7-10B</b>	1SFA 611 216 R1006
	Grey	<b>M3SS7-10U</b>	1SFA 611 216 R1007

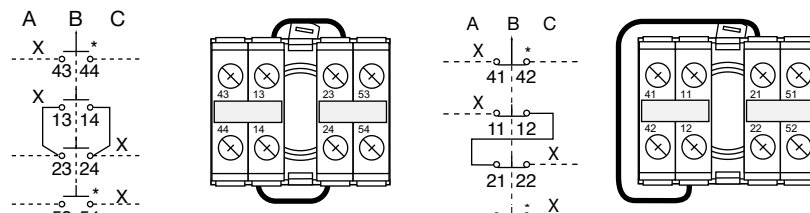
### with long handle ①

<b>Maintained</b>			
	Red	<b>M3SS4-10R</b>	1SFA 611 213 R1001
	Black	<b>M3SS4-10B</b>	1SFA 611 213 R1006
	Grey	<b>M3SS4-10U</b>	1SFA 611 213 R1007
<b>Momentary, spring return from A to B and from C to B</b>			
	Red	<b>M3SS5-10R</b>	1SFA 611 214 R1001
	Black	<b>M3SS5-10B</b>	1SFA 611 214 R1006
	Grey	<b>M3SS5-10U</b>	1SFA 611 214 R1007
<b>Momentary, spring return from C to B</b>			
	Red	<b>M3SS6-10R</b>	1SFA 611 215 R1001
	Black	<b>M3SS6-10B</b>	1SFA 611 215 R1006
	Grey	<b>M3SS6-10U</b>	1SFA 611 215 R1007
<b>Momentary, spring return from A to B</b>			
	Red	<b>M3SS8-10R</b>	1SFA 611 217 R1001
	Black	<b>M3SS8-10B</b>	1SFA 611 217 R1006
	Grey	<b>M3SS8-10U</b>	1SFA 611 217 R1007

### Contact blocks and holder

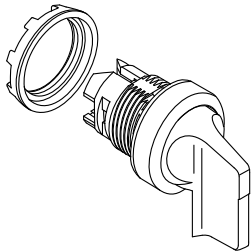
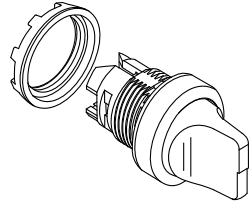
Blocks	Catalog No.	Ref. Code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Center position connection detail

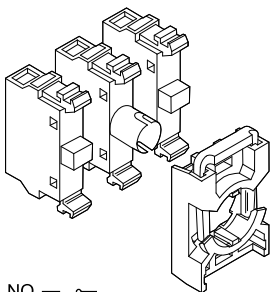


① No contact block in center position

## Two-position selector switches Illuminated



Bezel in black plastic as standard  
Bezel in metal:  
Replace '1' in the:  
Catalog No. M2SSX-1 0X  
Ref. Code 1SFA61 XXX R 1XXX  
3 for metal bezel  
4 for grey plastic bezel



NO  $\frac{3}{-}$   $\frac{4}{-}$   
LB  $\frac{x1}{-}$   $\frac{x2}{-}$   
NC  $\frac{-1}{-}$   $\frac{-2}{-}$

### Operator ...

Symbol	Handle color	Catalog No.	Ref. Code
--------	--------------	-------------	-----------

#### with short handle ①

##### Maintained



Red	<b>M2SS1-11R</b>	1SFA 611 200 R1101
Green	<b>M2SS1-11G</b>	1SFA 611 200 R1102
Yellow	<b>M2SS1-11Y</b>	1SFA 611 200 R1103
Blue	<b>M2SS1-11L</b>	1SFA 611 200 R1104
Clear	<b>M2SS1-11C</b>	1SFA 611 200 R1108

##### Maintained



Red	<b>M2SS2-11R</b>	1SFA 611 201 R1101
Green	<b>M2SS2-11G</b>	1SFA 611 201 R1102
Yellow	<b>M2SS2-11Y</b>	1SFA 611 201 R1103
Blue	<b>M2SS2-11L</b>	1SFA 611 201 R1104
Clear	<b>M2SS2-11C</b>	1SFA 611 201 R1108

#### Momentary, spring return from C to B



Red	<b>M2SS3-11R</b>	1SFA 611 202 R1101
Green	<b>M2SS3-11G</b>	1SFA 611 202 R1102
Yellow	<b>M2SS3-11Y</b>	1SFA 611 202 R1103
Blue	<b>M2SS3-11L</b>	1SFA 611 202 R1104
Clear	<b>M2SS3-11C</b>	1SFA 611 202 R1108

#### with long handle ②

##### Maintained



Red	<b>M2SS4-11R</b>	1SFA 611 203 R1101
Green	<b>M2SS4-11G</b>	1SFA 611 203 R1102
Yellow	<b>M2SS4-11Y</b>	1SFA 611 203 R1103
Blue	<b>M2SS4-11L</b>	1SFA 611 203 R1104
Clear	<b>M2SS4-11C</b>	1SFA 611 203 R1108

##### Maintained



Red	<b>M2SS5-11R</b>	1SFA 611 204 R1101
Green	<b>M2SS5-11G</b>	1SFA 611 204 R1102
Yellow	<b>M2SS5-11Y</b>	1SFA 611 204 R1103
Blue	<b>M2SS5-11L</b>	1SFA 611 204 R1104
Clear	<b>M2SS5-11C</b>	1SFA 611 204 R1108

#### Momentary, spring return from C to B



Red	<b>M2SS6-11R</b>	1SFA 611 205 R1101
Green	<b>M2SS6-11G</b>	1SFA 611 205 R1102
Yellow	<b>M2SS6-11Y</b>	1SFA 611 205 R1103
Blue	<b>M2SS6-11L</b>	1SFA 611 205 R1104
Clear	<b>M2SS6-11C</b>	1SFA 611 205 R1108

### Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

Contact functions See Page 8.11

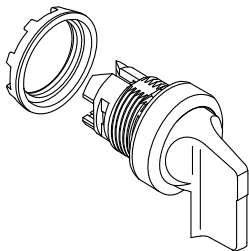
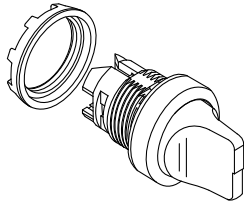
Ordering example See Page 8.12

① No contact block in the center position, reserved for lamp block.

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.



# Three-position selector switches Illuminated



Bezel in black plastic as standard

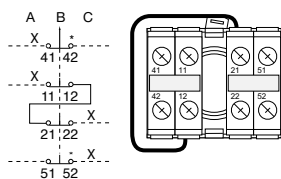
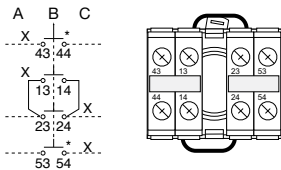
Bezel in metal:

Replace '1' in the:

Catalog No. M3SSX-1 0X

3 for metal bezel

### Center position connection detail



## Operator ...

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle ①</b>			
<b>Maintained</b>			
	Red	<b>M3SS1-11R</b>	1SFA 611 210 R1101
	Green	<b>M3SS1-11G</b>	1SFA 611 210 R1102
	Yellow	<b>M3SS1-11Y</b>	1SFA 611 210 R1103
	Blue	<b>M3SS1-11L</b>	1SFA 611 210 R1104
	Clear	<b>M3SS1-11C</b>	1SFA 611 210 R1108
<b>Momentary, spring return from A to B and from C to B</b>			
	Red	<b>M3SS2-11R</b>	1SFA 611 211 R1101
	Green	<b>M3SS2-11G</b>	1SFA 611 211 R1102
	Yellow	<b>M3SS2-11Y</b>	1SFA 611 211 R1103
	Blue	<b>M3SS2-11L</b>	1SFA 611 211 R1104
	Clear	<b>M3SS2-11C</b>	1SFA 611 211 R1108
<b>Momentary, spring return from C to B</b>			
	Red	<b>M3SS3-11R</b>	1SFA 611 212 R1101
	Green	<b>M3SS3-11G</b>	1SFA 611 212 R1102
	Yellow	<b>M3SS3-11Y</b>	1SFA 611 212 R1103
	Blue	<b>M3SS3-11L</b>	1SFA 611 212 R1104
	Clear	<b>M3SS3-11C</b>	1SFA 611 212 R1108
<b>Momentary, spring return from A to B</b>			
	Red	<b>M3SS7-11R</b>	1SFA 611 216 R1101
	Green	<b>M3SS7-11G</b>	1SFA 611 216 R1102
	Yellow	<b>M3SS7-11Y</b>	1SFA 611 216 R1103
	Blue	<b>M3SS7-11L</b>	1SFA 611 216 R1104
	Clear	<b>M3SS7-11C</b>	1SFA 611 216 R1108

<b>with long handle ①</b>			
<b>Maintained</b>			
	Red	<b>M3SS4-11R</b>	1SFA 611 213 R1101
	Green	<b>M3SS4-11G</b>	1SFA 611 213 R1102
	Yellow	<b>M3SS4-11Y</b>	1SFA 611 213 R1103
	Blue	<b>M3SS4-11L</b>	1SFA 611 213 R1104
	Clear	<b>M3SS4-11C</b>	1SFA 611 213 R1108
<b>Momentary, spring return from A to B and from C to B</b>			
	Red	<b>M3SS5-11R</b>	1SFA 611 214 R1101
	Green	<b>M3SS5-11G</b>	1SFA 611 214 R1102
	Yellow	<b>M3SS5-11Y</b>	1SFA 611 214 R1103
	Blue	<b>M3SS5-11L</b>	1SFA 611 214 R1104
	Clear	<b>M3SS5-11C</b>	1SFA 611 214 R1108
<b>Momentary, spring return from C to B</b>			
	Red	<b>M3SS6-11R</b>	1SFA 611 215 R1101
	Green	<b>M3SS6-11G</b>	1SFA 611 215 R1102
	Yellow	<b>M3SS6-11Y</b>	1SFA 611 215 R1103
	Blue	<b>M3SS6-11L</b>	1SFA 611 215 R1104
	Clear	<b>M3SS6-11C</b>	1SFA 611 215 R1108
<b>Momentary, spring return from A to B</b>			
	Red	<b>M3SS8-11R</b>	1SFA 611 217 R1101
	Green	<b>M3SS8-11G</b>	1SFA 611 217 R1102
	Yellow	<b>M3SS8-11Y</b>	1SFA 611 217 R1103
	Blue	<b>M3SS8-11L</b>	1SFA 611 217 R1104
	Clear	<b>M3SS8-11C</b>	1SFA 611 217 R1108

**Contact blocks, lamp block and holder** See Page 8.13

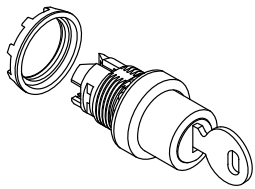
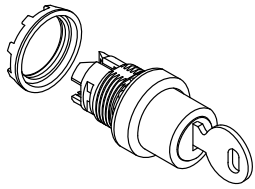
**Contact functions** See Page 8.12

**Ordering example** See Page 8.12

① No contact block in the center position, reserved for lamp block.

## Key-operated selector switches 2 and 3 positions

8



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the:

Catalog No. MXSSKX-1 0Δ

Ref. Code 1SFA6112XX R 1XXΔ

3 for metal bezel

② Key codes

71 (standard) Δ = 1

72 Δ = 2

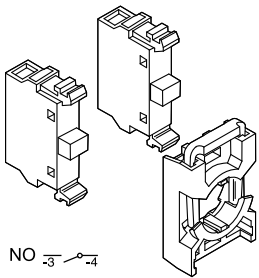
73 Δ = 3

Other (on request)

③ Key codes

71 (standard) Δ = 1

72 Δ = 2



NO  $\overline{3}$  - 4  
NC  $\overline{1}$  - 2

### Operator ...

Symbol	The key can be removed in	Catalog No.	Ref. Code
<b>2 positions ①</b>			
	in both positions	<b>M2SSK1-10Δ</b> ②	1SFA 611 280 R100Δ ②
<b>Maintained</b>			
	in position B only	<b>M2SSK2-10Δ</b> ②	1SFA 611 281 R100Δ ②
<b>Maintained</b>			
	in position B only	<b>M2SSK3-10Δ</b> ②	1SFA 611 282 R100Δ ②
<b>Momentary, spring return from C to B</b>			
<b>3 positions ①</b>			
	in all positions	<b>M3SSK1-10Δ</b> ②	1SFA 611 283 R100Δ ②
<b>Maintained</b>			
	in position B only	<b>M3SSK2-10Δ</b> ②	1SFA 611 284 R100Δ ②
<b>Maintained</b>			
	in position B only	<b>M3SSK3-10Δ</b> ②	1SFA 611 285 R100Δ ②
<b>Momentary, spring return from A to B and from C to B</b>			
	in position A only	<b>M3SSK4-10Δ</b> ③	1SFA 611 286 R100Δ ③
<b>Momentary, spring return from C to B</b>			
	in all positions	<b>M3SSK5-10Δ</b> ②	1SFA 611 287 R100Δ ②
<b>Momentary, spring return from C to B</b>			

### Contact blocks and holder

Blocks	Catalog No.	Ref. Code
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Contact functions

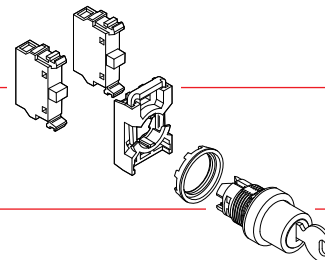
Two positions: See Page 8.12

Three positions: See Page 8.13

### Ordering example

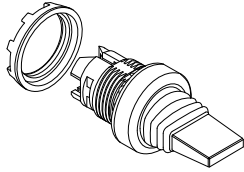
Requested: A key-operated selector switch. Three positions. Maintained. The key removeable in position B. Key code 72. With 2 NC contacts

Ref.: 1 piece of M3SSK2-102 + 1 piece of MCBH-02



① No contact block in the center position

# Toggle switches 2 and 3 positions



## Operator

Symbol	Bezel	Catalog No.	Ref. Code
--------	-------	-------------	-----------

### Toggle switch with 2 positions

#### Maintained

	Black plastic	<b>MTS1-10B</b>	1SFA 611 300 R1006
	Metal	<b>MTS1-30B</b>	1SFA 611 300 R 3006

### Toggle switch with 3 positions

#### Momentary, spring return from A to B and from C to B

	Black plastic	<b>MTS2-10B</b>	1SFA 611 301 R1006
	Metal	<b>MTS2-30B</b>	1SFA 611 301 R 3006

#### Maintained

	Black plastic	<b>MTS3-10B</b>	1SFA 611 302 R1006
	Metal	<b>MTS3-30B</b>	1SFA 611 302 R 3006

## Contact blocks and holder

Blocks	Catalog No.	Ref. Code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

## Contact block functions

Block positions as seen from operator front.

### Two-position maintained switch

Handle position	Left block	Right block
A	O	O
C	x	x

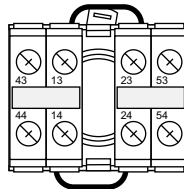
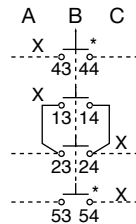
O = not actuated (normal state)  
x = actuated (state changed)

### Three-position switch

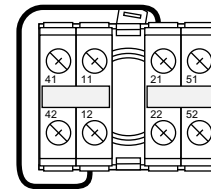
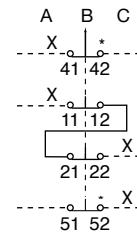
Handle position	Left block	Middle block	Right block
A	O	x	x
B	O	O	O
C	x	x	O

O = not actuated (normal state)  
x = actuated (state changed)

## Center position connection detail



\* Contacts may be N.O. or N.C.



\* Contacts may be N.O. or N.C.



## Reset pushbuttons

### Reset pushbutton without shaft

Lens Color	Text	Catalog No.	Ref. Code
<b>With flush button</b>			
Red	No text	<b>KPR1-100R</b>	1SFA 616 160 R1001
Green	No text	<b>KPR1-100G</b>	1SFA 616 160 R1002
	II	<b>KPR1-103G</b>	1SFA 616 160 R1032
Yellow	No text	<b>KPR1-100Y</b>	1SFA 616 160 R1003
Blue	No text	<b>KPR1-100L</b>	1SFA 616 160 R1004
	R	<b>KPR1-101L</b>	1SFA 616 160 R1014
White	No text	<b>KPR1-100W</b>	1SFA 616 160 R1005
	R	<b>KPR1-101W</b>	1SFA 616 160 R1015
	I	<b>KPR1-102W</b>	1SFA 616 160 R1025
	II	<b>KPR1-103W</b>	1SFA 616 160 R1035
Black	No text	<b>KPR1-100B</b>	1SFA 616 160 R1006
	RESET	<b>KPR1-104B</b>	1SFA 616 160 R1046
<b>With extended button</b>			
Red	No text	<b>KPR2-100R</b>	1SFA 616 161 R1001
	O	<b>KPR2-105R</b>	1SFA 616 161 R1051
White	No text	<b>KPR2-100W</b>	1SFA 616 161 R1005
Black	No text	<b>KPR2-100B</b>	1SFA 616 161 R1006
	O	<b>KPR2-105B</b>	1SFA 616 161 R1056

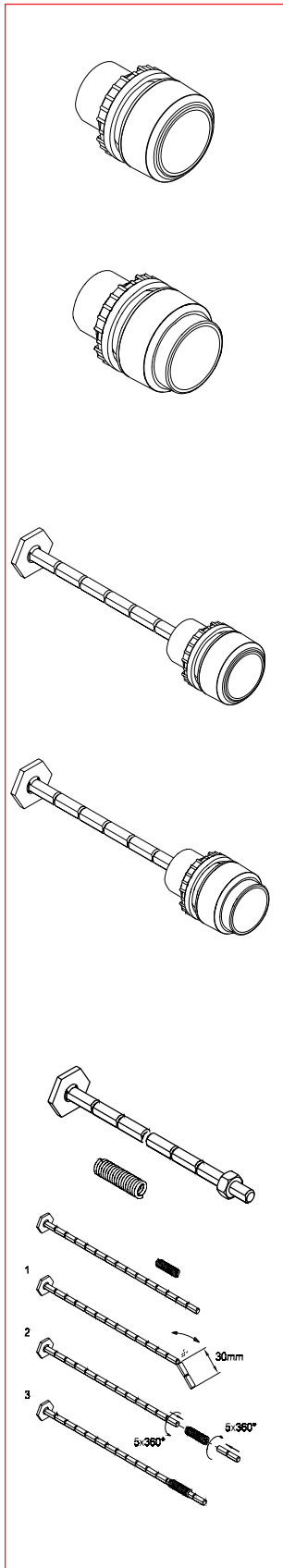
### Reset pushbutton with 180mm shaft The shaft can be cut to desired length

Lens Color	Text	Catalog No.	Ref. Code
<b>With flush button</b>			
Red	No text	<b>KPR3-100R</b>	1SFA 616 162 R1001
Green	No text	<b>KPR3-100G</b>	1SFA 616 162 R1002
	II	<b>KPR3-103G</b>	1SFA 616 162 R1032
Yellow	No text	<b>KPR3-100Y</b>	1SFA 616 162 R1003
Blue	No text	<b>KPR3-100L</b>	1SFA 616 162 R1004
	R	<b>KPR3-101L</b>	1SFA 616 162 R1014
White	No text	<b>KPR3-100W</b>	1SFA 616 162 R1005
	R	<b>KPR3-101W</b>	1SFA 616 162 R1015
	I	<b>KPR3-102W</b>	1SFA 616 162 R1025
	II	<b>KPR3-103W</b>	1SFA 616 162 R1035
Black	No text	<b>KPR3-100B</b>	1SFA 616 162 R1006
	RESET	<b>KPR3-104B</b>	1SFA 616 162 R1046
	RESET	<b>KPR3-104BMR</b>	(Reset w/metal shaft)
<b>With extended button</b>			
Red	No text	<b>KPR4-100R</b>	1SFA 616 163 R1001
	O	<b>KPR4-105R</b>	1SFA 616 163 R1051
White	No text	<b>KPR4-100W</b>	1SFA 616 163 R1005
Black	No text	<b>KPR4-100B</b>	1SFA 616 163 R1006
	O	<b>KPR4-105B</b>	1SFA 616 163 R1056

### Accessories

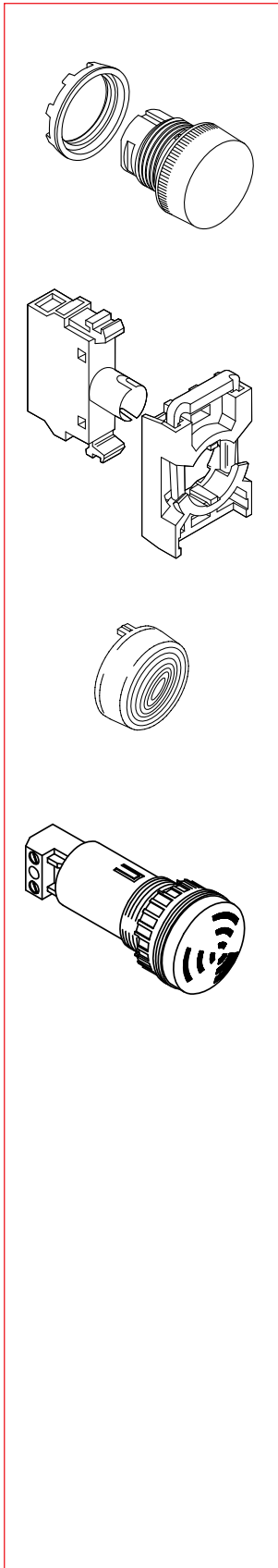
In applications with a long shaft, a flexible joint can be used to avoid damage to the shaft.

Description	Catalog No.	Ref. Code
<b>180mm Shaft</b> Including fixing nut	<b>KA1-8046</b>	1SFA 616 920 R8046
<b>Flexible joint</b>	<b>KA1-8047</b>	1SFA 616 920 R8047
<b>180mm Metal shaft</b> Including fixing nut & foot	<b>KA1-8046MR</b>	—



# Pilot lights and Buzzers

Pilot Devices  
Modular Range  
22mm



## Pilot light head ①②

Lens color	Catalog No.	Ref. Code
Red	<b>ML1-100R</b>	1SFA 611 400 R1001
Green	<b>ML1-100G</b>	1SFA 611 400 R1002
Yellow	<b>ML1-100Y</b>	1SFA 611 400 R1003
Blue	<b>ML1-100L</b>	1SFA 611 400 R1004
White	<b>ML1-100W</b>	1SFA 611 400 R1005
Clear	<b>ML1-100C</b>	1SFA 611 400 R1008

## Lamp blocks with holder ①

Supply voltage	Catalog No.	Ref. Code
<b>For max. 2 W, 230 V AC and DC filament bulb or LED</b> $\frac{230\text{ V, } 2\text{ W}}{X1 \quad \otimes \quad X2}$ 115 V AC supply voltage. <b>For 60 V filament bulb max. 1.2 W</b> $\frac{115\text{ V}}{X1} \rightarrow \text{---} \rightarrow \frac{60\text{ V}}{1.2\text{ W } X2}$ 230 V AC supply voltage. <b>For 130 V filament bulb max. 2 W</b> $\frac{230\text{ V}}{X1} \rightarrow \text{---} \rightarrow \frac{130\text{ V}}{2\text{ W } X2}$	<b>MCBH-001</b>	1SFA 611 605 R1200
	<b>MCBH-002</b>	1SFA 611 605 R1300
	<b>MCBH-003</b>	1SFA 611 605 R1400

## Light diffusing lens

To improve illumination. *Note: Cannot be used with text cap.*

Description	Catalog No.	Ref. Code
The lens is used instead of text cap	<b>KA1-8005</b>	1SFA 616 920 R8005

## Buzzers

Black. Frequency: Approx. 2400 Hz. Loudness: Min 80 dB (A)/10 cm  
Rated current: ≤ 8 mA. Service life: >5000 h

Supply voltage	Tone	Catalog No.	Catalog No.	Ref. Code
24 V AC/DC	Continuous	<b>KB1-4010</b>		1SFA 616 401 R4010
115 V AC/DC	Continuous	<b>KB1-4030</b>		1SFA 616 401 R4030
230 V AC	Continuous	<b>KB1-4040</b>		1SFA 616 401 R4040
24 V AC/DC	Pulsating	<b>KB1-4110</b>		1SFA 616 401 R4110
115 V AC/DC	Pulsating	<b>KB1-4130</b>		1SFA 616 401 R4130
230 V AC	Pulsating	<b>KB1-4140</b>		1SFA 616 401 R4140

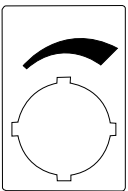
① Bulb not included. See page 8.23  
② For compact style, see page 8.33.

## Potentiometers

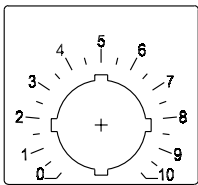


### Resistor data

Element Catalog No. Cermet  
Power rating 2 W  
Mechanical angle 280°  
Terminals Solder lugs  
Insulation voltage 900 V  
Operating temperature -1 – +70 °C



29.6 x 44.5 mm



48.5 x 44.5 mm

### Complete potentiometers

Black knob with integrated position indication and marking in white, no leads

Description	Catalog No.	Ref. Code
<b>- with resistor 5 kohm</b>		
Black plastic	<b>KT-105B</b>	1SFA 616 410 R1056
Metal	<b>KT-305B</b>	1SFA 616 410 R3056
<b>- with resistor 10 kohm</b>		
Black plastic	<b>KT-110B</b>	1SFA 616 410 R1106
Metal	<b>KT-310B</b>	1SFA 616 410 R3106

### Speed potentiometer, with legend plate, leads and terminal blocks

Description	Catalog No.	Ref. Code
<b>- with resistor 5 kohm</b>		
Black plastic	<b>MP1-KSP5K</b>	
<b>- with resistor 10 kohm</b>		
Black plastic	<b>MP1-KSP10K</b>	

### Operating knob – without resistor

Black knob with integrated position indication and marking in white.

For shaft diameter 6 - 6.35 mm.  
Min. shaft length 20 mm

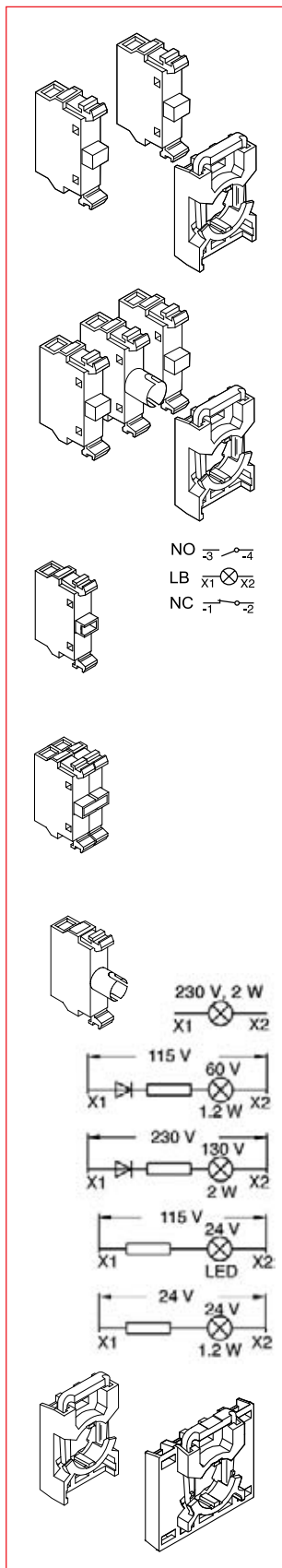
Description	Catalog No.	Ref. Code
Black plastic	<b>KT-100B</b>	1SFA 616 410 R1006
Metal	<b>KT-300B</b>	1SFA 616 410 R3006

### Legend plates

Aluminum

Description	Catalog No.	Ref. Code
Symbol - see figure	<b>SK615562-87</b>	SK 615 562-87
Scale: 0 - 10	<b>SK615562-88</b>	SK 615 562-88





## Contact blocks and lamp blocks with holder for front mounting

Max. number of blocks in holder	Included blocks	Catalog No.	Ref. Code
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### For non-illuminated operators

3	1 NC	<b>MCBH-01</b>	1SFA 611 605 R1110
3	1 NO	<b>MCBH-10</b>	1SFA 611 605 R1101
3	2 NC	<b>MCBH-02</b>	1SFA 611 605 R1120
3	2 NO	<b>MCBH-20</b>	1SFA 611 605 R1102
3	3 NC	<b>MCBH-03</b>	1SFA 611 605 R1130
3	3 NO	<b>MCBH-30</b>	1SFA 611 605 R1103
3	1 NO + 1 NC	<b>MCBH-11</b>	1SFA 611 605 R1111
3	1 NO + 2 NC	<b>MCBH-12</b>	1SFA 611 605 R1121
3	2 NO + 1 NC	<b>MCBH-21</b>	1SFA 611 605 R1112

### For illuminated operators

3	1 LB	<b>MCBH-001</b>	—
3	1 NC + 1 LB	<b>MCBH-011</b>	1SFA 611 605 R1210
3	1 NO + 1 LB	<b>MCBH-101</b>	1SFA 611 605 R1201
3	1 NO + 1 NC + 1 LB	<b>MCBH-111</b>	1SFA 611 605 R1211
3	2 NC + 1 LB	<b>MCBH-021</b>	1SFA 611 605 R1220
3	2 NO + 1 LB	<b>MCBH-201</b>	1SFA 611 605 R1202

## Single contact blocks for front mounting

Included blocks	Catalog No.	Ref. Code
1 NO	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC	<b>MCB-01</b>	1SFA 611 610 R1010
1 NO with gold plated contacts	<b>MCB-10G</b>	1SFA 611 610 R1101
1 NC with gold plated contacts	<b>MCB-01G</b>	1SFA 611 610 R1110

## Double contact block for front mounting

To be used together with MCBH5-00 when contact blocks in position 4- and 5- are needed. Also when using MCBH-00 together with selector switch and contact block in position 3- is needed

Included blocks	Catalog No.	Ref. Code
2 NO	<b>MCB-20</b>	1SFA 611 610 R1002
2 NC	<b>MCB-02</b>	1SFA 611 610 R1020
1 NO + 1 NC	<b>MCB-11</b>	1SFA 611 610 R1011

## Single lamp blocks for front mounting, Ba 9s base

Description	Catalog No.	Ref. Code
<b>For max. 2 W, 230 V AC and DC filament bulb or LED</b>	<b>MLB-1</b>	1SFA 611 620 R1001
115 V AC supply voltage. <b>For 60 V filament bulb max. 1.2 W</b>	<b>MLB-2</b>	1SFA 611 620 R1002
230 V AC supply voltage. <b>For 130 V filament bulb max. 2 W</b>	<b>MLB-3</b>	1SFA 611 620 R1003
115 V AC and DC supply voltage <b>For 24 V LED</b>	<b>MLB-4</b>	1SFA 611 620 R1004
24 V AC and DC supply voltage. With resistor. Intended for electronic circuits. The resistor limits the making current and protects against disturbances in the electronic circuit <b>For 24 V filament bulb</b>	<b>MLB-5</b>	1SFA 611 620 R1005

## Holders

Description	Catalog No.	Ref. Code
Holders for front mounting		
For three blocks	<b>MCBH-00</b>	1SFA 611 605 R1100
For five blocks	<b>MCBH5-00</b>	1SFA 611 601 R1100

## Accessories

### Transformer block

For 6 or 24 V filament bulb and 24 V LED. Rated power 1.5 W.

Primary voltage	Secondary voltage	Bulb Suffix LED   Filament	Catalog No.	Ref. Code
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#### With lamp holder for front mounting, Ba 9s base

Intended to supply a 1.2 W filament bulb.

110 - 127 V AC	6 V AC	- T1	<b>KTR1-1001</b>	1SFA 616 950 R1001
220 - 250 V AC	6 V AC	- T2	<b>KTR1-1002</b>	1SFA 616 950 R1002
380 - 420 V AC	6 V AC	- T3	<b>KTR1-1003</b>	1SFA 616 950 R1003
440 - 480 V AC	6 V AC	- T4	<b>KTR1-1004</b>	1SFA 616 950 R1004
500 - 600 V AC	6 V AC	- T5	<b>KTR1-1005</b>	1SFA 616 950 R1005
110 - 127 V AC	24 V AC	TL1 T6	<b>KTR1-1011</b>	1SFA 616 950 R1011
220 - 250 V AC	24 V AC	TL2 T7	<b>KTR1-1012</b>	1SFA 616 950 R1012
380 - 420 V AC	24 V AC	TL3 T8	<b>KTR1-1013</b>	1SFA 616 950 R1013
440 - 480 V AC	24 V AC	TL4 T9	<b>KTR1-1014</b>	1SFA 616 950 R1014

#### For illuminated operators

Intended to supply a 1.2 W filament bulb mounted in lamp block MLB-1 (1SFA 611 620 R1001) only.

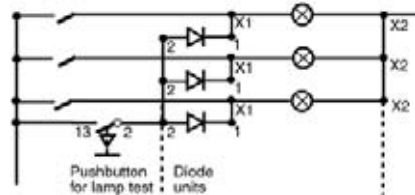
110 - 127 V AC	6 V AC	- T1	<b>KTR1-2001</b>	1SFA 616 950 R2001
220 - 250 V AC	6 V AC	- T2	<b>KTR1-2002</b>	1SFA 616 950 R2002
380 - 420 V AC	6 V AC	- T3	<b>KTR1-2003</b>	1SFA 616 950 R2003
440 - 480 V AC	6 V AC	- T4	<b>KTR1-2004</b>	1SFA 616 950 R2004
500 - 600 V AC	6 V AC	- T5	<b>KTR1-2005</b>	1SFA 616 950 R2005
110 - 127 V AC	24 V AC	TL1 T6	<b>KTR1-2011</b>	1SFA 616 950 R2011
220 - 250 V AC	24 V AC	TL2 T7	<b>KTR1-2012</b>	1SFA 616 950 R2012
380 - 420 V AC	24 V AC	TL3 T8	<b>KTR1-2013</b>	1SFA 616 950 R2013
440 - 480 V AC	24 V AC	TL4 T9	<b>KTR1-2014</b>	1SFA 616 950 R2014

### Diode block

To be used if several lamps are to be connected to a common lamp-test pushbutton. A diode must be connected in series with each lamp. The diode block snaps onto the lamp block or is placed at the side.

Description	Catalog No.	Ref. Code
Diode block	<b>MDB-1001</b>	1SFA 611 630 R1001

#### Diagram for lamp test with three diode block



⓪ Can be used with LED bulb  
Ⓜ To be used with with directly supplied lamp blocks only.



## Filament bulbs

Ba 9s base Catalog No. of current: AC/DC. A lamp changing tool is required for changing bulb.

Description					Catalog No.	Ref. Code
Rated voltage V	Rated current mA	Rated output W	Service life h	Luminance mcd		
6	200	1.2	10 000	350	<b>5911 086-11</b>	5911 086-11
12	100	1.2	10 000	230	<b>5911 086-12</b>	5911 086-12
24	50	1.2	10 000	280	<b>5911 086-13</b>	5911 086-13
30	40	1.2	10 000	250	<b>5911 086-4</b>	5911 086-4
48	42	2	6 000	500	<b>5911 086-5</b>	5911 086-5
60	20	1.2	5 000	190	<b>5911 086-14</b>	5911 086-14
110	18	2	7 500	250	<b>5911 086-7</b>	5911 086-7
130	15	2	7 500	120	<b>5911 086-15</b>	5911 086-15

## LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

Description				Catalog No.	Ref. Code
Color	Rated current mA	Wave-length nm	Luminance mcd		
<b>Rated voltage 12 V, DC</b> Service life >50 000 h					
Red	15	630	250	<b>KA2-2011</b>	1SFA 616 921 R2011
Green	15	525	1000	<b>KA2-2012</b>	1SFA 616 921 R2012
Yellow	15	592	250	<b>KA2-2013</b>	1SFA 616 921 R2013
Blue	15	470	450	<b>KA2-2014</b>	1SFA 616 921 R2014
White	15	x=0.31 y=0.32	600	<b>KA2-2015</b>	1SFA 616 921 R2015
<b>Rated voltage 24 V, (AC)/DC</b> Service life >50 000 h					
Red	15	630	250	<b>KA2-2021</b>	1SFA 616 921 R2021
Green	15	525	800	<b>KA2-2022</b>	1SFA 616 921 R2022
Yellow	15	592	250	<b>KA2-2023</b>	1SFA 616 921 R2023
Blue	15	470	400	<b>KA2-2024</b>	1SFA 616 921 R2024
White	15	x=0.31 y=0.32	500	<b>KA2-2025</b>	1SFA 616 921 R2025
<b>Rated voltage 48 V, (AC)/DC</b> Service life >50 000 h					
Red	12	630	200	<b>KA2-2041</b>	1SFA 616 921 R2041
Green	12	525	1700	<b>KA2-2042</b>	1SFA 616 921 R2042
Yellow	12	592	240	<b>KA2-2043</b>	1SFA 616 921 R2043
Blue	12	470	720	<b>KA2-2044</b>	1SFA 616 921 R2044
White	12	x=0.31 y=0.32	1200	<b>KA2-2045</b>	1SFA 616 921 R2045
<b>Rated voltage 60 V, (AC)/DC</b> Service life >50 000 h					
Red	10	630	160	<b>KA2-2051</b>	1SFA 616 921 R2051
Green	10	525	1400	<b>KA2-2052</b>	1SFA 616 921 R2052
Yellow	10	592	200	<b>KA2-2053</b>	1SFA 616 921 R2053
Blue	10	470	600	<b>KA2-2054</b>	1SFA 616 921 R2054
White	10	x=0.31 y=0.32	1000	<b>KA2-2055</b>	1SFA 616 921 R2055
<b>Rated voltage 110-130 V, AC</b> Service life 25 000 h					
Red	4-6	630	60-100	<b>KA2-2131</b>	1SFA 616 921 R2131
Green	4-6	525	500-850	<b>KA2-2132</b>	1SFA 616 921 R2132
Yellow	4-6	592	70-120	<b>KA2-2133</b>	1SFA 616 921 R2133
Blue	4-6	470	220-350	<b>KA2-2134</b>	1SFA 616 921 R2134
White	4-6	x=0.31 y=0.32	350-600	<b>KA2-2135</b>	1SFA 616 921 R2135
<b>Rated voltage 110-130 V, AC/DC</b> Service life 25 000 h					
Red	4-6	630	60-100	<b>KA2-2141</b>	1SFA 616 921 R2141
Green	4-6	525	500-850	<b>KA2-2142</b>	1SFA 616 921 R2142
Yellow	4-6	592	70-120	<b>KA2-2143</b>	1SFA 616 921 R2143
Blue	4-6	470	220-350	<b>KA2-2144</b>	1SFA 616 921 R2144
White	4-6	x=0.31 y=0.32	350-600	<b>KA2-2145</b>	1SFA 616 921 R2145
<b>Rated voltage 230 V, AC</b> Service life 25 000 h					
Red	4	630	60	<b>KA2-2221</b>	1SFA 616 921 R2221
Green	4	525	500	<b>KA2-2222</b>	1SFA 616 921 R2222
Yellow	4	592	70	<b>KA2-2223</b>	1SFA 616 921 R2223
Blue	4	470	220	<b>KA2-2224</b>	1SFA 616 921 R2224
White	4	x=0.31 y=0.32	350	<b>KA2-2225</b>	1SFA 616 921 R2225

Ⓢ At AC the luminance is decreased with 30 % and there is also a slight flickering.

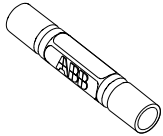
## Accessories



### Flashing LED

A lamp changing tool is required for changing bulb.  
Choose the same color for the LED and the lamp cap or use a clear lamp cap.  
The lamp base has to be connected to cathode (-) and the bottom contact to anode (+).

Description	Catalog No.	Ref. Code
<b>Rated voltage 24 V, rated current 25 mA, DC</b>		
Color	Wave length nm	Service life hours
Red	630	50 000
Green	565	50 000
Yellow	585	50 000
	<b>4950 512-1</b>	4950 512-1
	<b>4950 512-2</b>	4950 512-2
	<b>4950 512-3</b>	4950 512-3



### Lamp changing tool

Description	Catalog No.	Ref. Code
For LEDs and for bulbs	<b>KA1-8072</b>	1SFA 616 920 R8072



### Mounting tool

Description	Catalog No.	Ref. Code
Used for tightening the sleeve	<b>KA1-8015</b>	1SFA 611 920 R8015



### Membrane of rubber

Of transparent, heat and cold resistant rubber. Does not harden at low temperature.  
Gives IP 67 degree of protection. When membrane is used, remove the gasket.

For operator with	Catalog No.	Ref. Code
Flush button	<b>KA1-8052</b>	1SFA 616 920 R8052
Extended button	<b>KA1-8002</b>	1SFA 616 920 R8002
Double pushbutton	<b>MA1-8126</b>	—

### Emergency stop shroud

For 40 mm Emergency Stop Pushbuttons. Not for use with plastic enclosure.

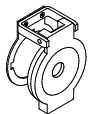
Color	Catalog No.	Ref. Code
To prevent inadvertant operation. Yellow	<b>KA1-8053</b>	1SFA 616 920 R8053



### Protective ring

For flush and extended buttons

Description	Catalog No.	Ref. Code
To prevent inadvertant operation. Not together with legend plate holder.	<b>SK615512-1</b>	SK 615 512-1



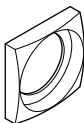
### Protective cover

Description	Catalog No.	Ref. Code
For flush button. To prevent inadvertant operation. Not together with legend plate holder.	<b>KA1-8010</b>	1SFA 616 920 R8010



### Bezel (Packing unit 10 pieces)

Description	Catalog No.	Ref. Code
<b>For pushbutton</b>		
Grey, plastic	<b>KA1-8079</b>	1SFA 616 920 R8079
Black, plastic	<b>KA1-8022</b>	1SFA 616 920 R8022
Metal	<b>KA1-8021</b>	1SFA 616 920 R8021
<b>For selector switch</b>		
Grey, plastic	<b>KA1-8077</b>	1SFA 616 920 R8077
Black, plastic	<b>KA1-8080</b>	1SFA 616 920 R8080
Metal	<b>KA1-8024</b>	1SFA 616 920 R8024



### Square bezel

Black, plastic (Packing unit 10 pieces)	<b>SK616016-2</b>	SK 616 016-2
Grey, plastic (Packing unit 10 pieces)	<b>KA1-8124</b>	1SFA 611 920 R8124

# Accessories

Pilot Devices  
Modular Range  
22mm



## 30 mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Catalog No.	Ref. Code
<b>For use with emergency stop pushbuttons</b>		
Black plastic	KA1-8027	1SFA 616 920 R8027
Metal	KA1-8028	1SFA 616 920 R8028
<b>For use with pushbuttons, selector switches, pilot lights, potentiometers and buzzers</b>		
Black plastic	KA1-8029	1SFA 616 920 R8029
Metal	KA1-8030	1SFA 616 920 R8030

## Adaptors

Description	Catalog No.	Ref. Code
For flush mounted pushbuttons	KA1-8073	1SFA 616 920 R8073
For flush mounted selector switches	KA1-8074	1SFA 616 920 R8074

## Extra key (packing unit, 2 pcs)

Description	Catalog No.	Ref. Code
Ronis 455 (key code 71)	SK 616 021-71	SK 616 021-71
Ronis 421 (key code 72)	SK 616 021-72	SK 616 021-72
Ronis 3433-E (key code 73)	SK 616 021-73	SK 616 021-73

## Label sheet

Description	Catalog No.	Ref. Code
For marking of contact blocks at two levels	2949 1725-1	2949 1725-1

## Lenses for pilot lights (Packing unit 10 pieces)

Description/Color	Catalog No.	Ref. Code
Red	KA1-8031	1SFA 616 920 R8031
Green	KA1-8032	1SFA 616 920 R8032
Yellow	KA1-8033	1SFA 616 920 R8033
Blue	KA1-8034	1SFA 616 920 R8034
White	KA1-8035	1SFA 616 920 R8035
Clear	KA1-8038	1SFA 616 920 R8038
Fresnel light diffusing lens ①	KA1-8005	1SFA 616 920 R8005

## Buttons for pushbuttons (Packing unit 10 pieces)

Description	Color	Catalog No.	Ref. Code
<b>Flush, opaque</b>	Red	KA1-8081	1SFA 616 920 R8081
	Green	KA1-8082	1SFA 616 920 R8082
	Yellow	KA1-8083	1SFA 616 920 R8083
	Blue	KA1-8084	1SFA 616 920 R8084
	White	KA1-8085	1SFA 616 920 R8085
	Black	KA1-8086	1SFA 616 920 R8086
	Grey	KA1-8087	1SFA 616 920 R8087
	Clear	KA1-8088	1SFA 616 920 R8088
<b>Extended, opaque</b>	Red	KA1-8091	1SFA 616 920 R8091
	Green	KA1-8092	1SFA 616 920 R8092
	Yellow	KA1-8093	1SFA 616 920 R8093
	Blue	KA1-8094	1SFA 616 920 R8094
	White	KA1-8095	1SFA 616 920 R8095
	Black	KA1-8096	1SFA 616 920 R8096
	Grey	KA1-8097	1SFA 616 920 R8097
	Clear	KA1-8098	1SFA 616 920 R8098
<b>Flush, transparent</b>	Red	KA1-8101	1SFA 616 920 R8101
	Green	KA1-8102	1SFA 616 920 R8102
	Yellow	KA1-8103	1SFA 616 920 R8103
	Blue	KA1-8104	1SFA 616 920 R8104
	White	KA1-8105	1SFA 616 920 R8105
	Clear	KA1-8108	1SFA 616 920 R8108
<b>Extended, transparent</b>	Red	KA1-8111	1SFA 616 920 R8111
	Green	KA1-8112	1SFA 616 920 R8112
	Yellow	KA1-8113	1SFA 616 920 R8113
	Blue	KA1-8114	1SFA 616 920 R8114
	White	KA1-8115	1SFA 616 920 R8115
	Clear	KA1-8118	1SFA 616 920 R8118

① Light diffusing insert is placed between the bulb and the lens.

## Accessories

8



### Blanking plug (22mm)

Description	Catalog No.	Reference Code
Grey plastic	<b>MA1-8129</b>	1SFA 611 920 R8129
Black plastic	<b>MA1-8130</b>	1SFA 611 920 R8130

### Blanking plug (30mm)

Description	Catalog No.	Reference Code
Black plastic	<b>MA1-8133</b>	1SFA 611 920 R8133

### Spare gasket, 22mm

Description	Catalog No.
Gasket, 22mm	<b>21520357-1</b>

### Locking nut – for mounting 22mm pilot devices

Description	Catalog No.	Reference Code
Grey plastic, 22mm	<b>MA1-8019</b>	1SFA 611 920 R8019

### Locking nut – for mounting 30mm adaptor with 22mm device

Description	Catalog No.	Reference Code
Grey plastic, 30mm	<b>MA1-8134</b>	1SFA 611 920 R8134

### Selector switch lock

Description	Catalog No.
Selector switch lock	<b>CBK-XSWL</b>

### Selector switch guard

Description	Catalog No.
Selector switch guard	<b>CBK-XSWG</b>

### DIN rail adaptor

For 35mm DIN rail. To be used with rear-mounting contact blocks. Accessories kit includes 1 dummy block and 2 connector pins. Must be used when DIN-rail mounting pilot devices with only 1 contact block.

Description	Catalog No.	Reference Code
DIN rail adaptor	<b>MA1-8131</b>	1SFA611920R8131
DIN rail adaptor, with accessories	<b>MA1-8001</b>	1SFA611920R8001
Extra dummy block, rear mount	<b>MDB-2</b>	1SFA611630R1002



## Technical data

Pilot Devices  
Modular Range  
22mm



### Approvals

The pushbuttons, selector switches and pilot lights are approved by:  
- National approval agencies: UL, CSA and China Compulsory Product Certification

For detail information please contact ABB

### Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
EN 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
EN 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
EN 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators
EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

### Degrees of protection

Operators	IP	UL/CSA
Pushbutton with flush or extended button, <b>MP</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Double pushbutton, <b>MPD</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Mushroom pushbutton, momentary, <b>MPM</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Emergency stop pushbutton, <b>MPMT/P</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Selector switch, <b>M2SS/M3SS</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Key operated selector switch, <b>M2SSK/M3SSK</b>	IP 66	Type 1, 3R, 4, 4X, 12
Toggle switch, <b>MTS2/MTS3</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Definite purpose pushbutton, 30 mm, <b>KP6</b>	IP 66	Type 1, 3R, 4, 4X
Reset button, <b>KPR</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Pilot lights, <b>ML</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Buzzer, <b>KB</b>	IP 65	Type 4X
Potentiometer, <b>KT</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
<b>Contact block &amp; transformer block</b>	IP 20	
<b>Enclosures</b>		
Plastic enclosures	IP 66	
Metallic enclosures	IP 67	



### Material

**No ozone depleting substances in the products.**

All front parts are made of polycarbonate

Material		
PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PSU	Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand high temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc		Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy		Good corrosion resistance in inland-, sea and industrial atmosphere.
Rubber		Chloroprene Nitrile

## Mechanical life

### Operators

Pushbuttons with flush or extended button, momentary mushroom pushbutton	2 million operations
Selector switch, maintained mushroom pushbutton, key operated selector switch and double pushbutton	0.5 million operations
Emergency stop pushbutton	0.1 million operations
Toggle switch	1 million operations
Lockable pushbuttons	0.3 million operations

## Temperature

Ambient temperature during operation	-25 to +70 °C
<i>Exception: All pilot devices with 2 W continuously lit filament bulb</i>	
	-25 to +40 °C
Storage temperature	-30 to +85 °C

8

## Terminals

Plus-minus Pozidriv No.2 screw with DIN-washer.	
Connectable area	min. 1 x 0.5 mm <sup>2</sup> /AWG 20 max. 2 x 2.5 mm <sup>2</sup> /2 x AWG14
Recommended torque	0.9 Nm

## Tightening torque

Locking nut, M22	Min. 2 Nm Max. 2.3 Nm
------------------	--------------------------

## Contact blocks

Mechanical endurance	10 million operations
Self cleaning contacts of silver, NC contact with positive opening.	
At voltages and currents below 24 V and 5.6 mA two contact blocks in parallel are recommended. As an alternative, gold plated contacts can be used.	

Ratings as per UL, CSA, NEMA	A600	Q600
	AC	DC
Rated insulation voltage	600 V	600 V
Rated thermal current	10 A	2.5 A
Rated operational current	at 120 V 240 V 480 V 600 V	at 125 V 250 V 480 V 600 V
	6 A 3 A 1.5 A 1.2 A	0.55 A 0.27 A 0.10 A 0.10 A

### Ratings as per IEC 60 947-5-1

Rated insulation voltage, $U_i$	690 V
Rated thermal current, $I_{th}$	10 A
Rated operational current, $I_e$	
utilisation category AC 15,	at 120 V 8 A 230 V 6 A 400 V 4 A 690 V 2 A
Rated operational current, $I_e$	
utilisation category DC 13,	at 24 V 5 A 125 V 1.1 A 250 V 0.55 A
<b>Contact resistance</b>	< 25 mΩ
<b>Compulsory function test</b>	at 5V, 16 mA

### Max. number of contact blocks per operator ①

Pushbutton, toggle switch and mushroom pushbutton	6
Maintained pushbutton	4
Double pushbutton, selector switch, key operated selector switch and emergency stop pushbutton	4
<b>Short circuit protection</b>	
Max. fuse at 1 kA	16 A ordinary 10 A delayed

① The contact blocks can be stacked in max. two levels on the 3- block holder.  
Only one level is accepted on the 5-block holder.

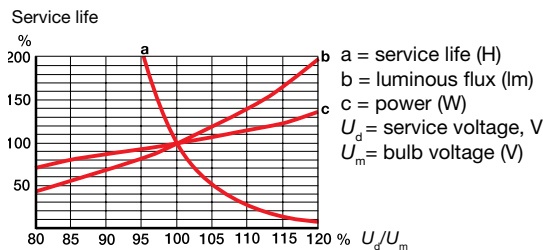
## Lamp block

### Ratings as per IEC 60 947-5-1

Rated insulation voltage	230 V
Base	Ba 9s
Permissible power, up to	2 W

### Service life of filament bulb

Relative service life, luminous flux and power consumption at different service voltages.  
It is generally true to say that bulbs for lower voltages give more light and have better vibration-withstand capability than bulbs for higher voltages.



### Lamp comparison

Bulb Catalog No.	Approx. life (hours)	Shock and service immunity	High vibration temperature	Low power operating	Brightness consumption
Filament	5000 - 10 000	+	+	+	+++
LED	25 000 - 50 000	+++	++	++	++

Very good +++  
Good ++  
Less good +

## Transformer block

Suitable for filament bulb 6 or 24 V AC and 1.2 W and LED 24 V.

Rated power	1.5 W
Rated voltage	Ratio, see Accessories page 8.25
Rated insulation voltage acc. to IEC 70 °C (DT)	Class E



**Modular range**  
30mm



# 30mm Pilot devices

## General construction

- Snap-on features reduce installation time
- Bezels: black plastic or chrome metal
- Contact block holder features rear mounting with quick-release locking mechanism for high security
- Buttons available in several colors
- Engraved text caps available
- Custom-specific markings on request
- UL File# E57057
- CSA File# LR19700

## Operators

- Pushbuttons, illuminated and non-illuminated
- Mushroom pushbuttons, illuminated and non-illuminated, 40mm and 60mm diameter
- Emergency stop pushbuttons, illuminated and non-illuminated, twist or pull release
- Selector switches, illuminated and non-illuminated, 2- or 3-position, short or long handle
- Key-operated selector switches, 2- or 3-position
- Toggle switches, 2- or 3-position

## Contact blocks

- Quick-mount, quick release contact block holder for fast and easy assembly/disassembly
- NO & NC contact blocks are color-coded for easy identification: Green = NO; Red = NC
- Silver-tipped contacts
- Wiping action for high reliability
- Low energy gold-plated contact blocks
- Contact block holder for three or five blocks in a single row

## Pilot lights

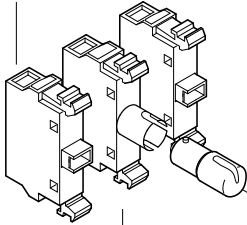
- Full voltage, resistor and transformer
- LED and filament bulbs available

## General information Mounting

### Exploded view

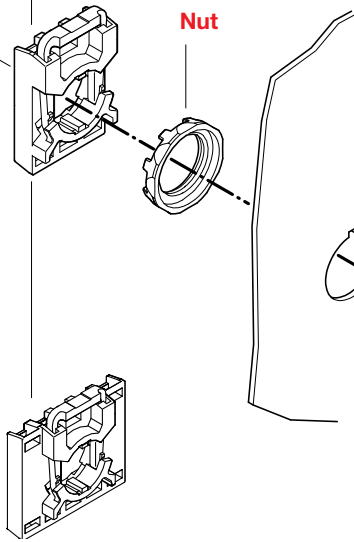
#### Contact block

Single pole with making or breaking contact



#### Holder

Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.



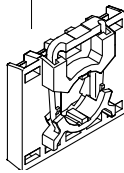
#### Nut

#### Legend plates

Of aluminum with slots that guide the legend plate and the operator into the correct position.

#### Lamp block

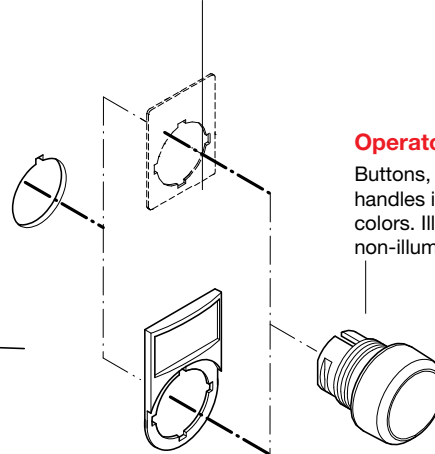
Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.



#### Five block holder

#### Operator

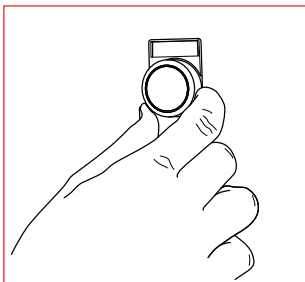
Buttons, lenses and handles in several colors. Illuminated or non-illuminated.



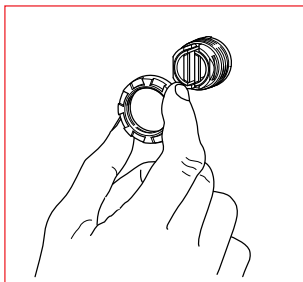
#### Bezels

Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

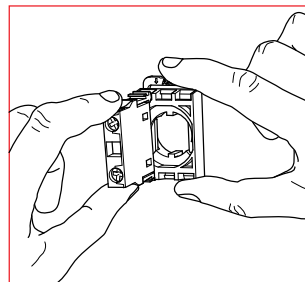
### Easy to mount



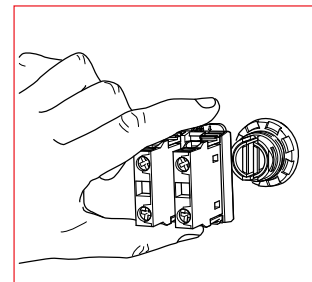
The operator is to be inserted from the front.....



...and secured at the back with a nut.

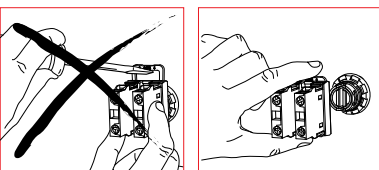


The contact blocks/lamp block are then snapped on to the holder...



...and the holder snaps on to the operator.

### ...and to remove

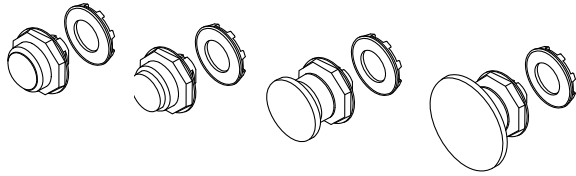


Press down the spring on the holder and pull the holder from the actuator.

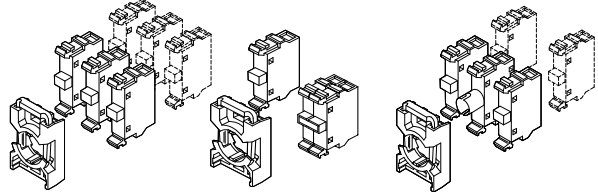
# Selection guide

Pilot Devices  
Modular Range  
30mm

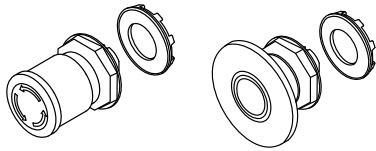
## Pushbuttons and Mushroom pushbuttons



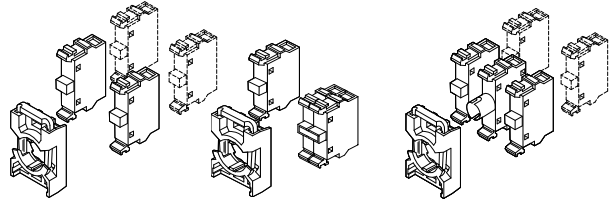
### Contact block/lamp block combinations



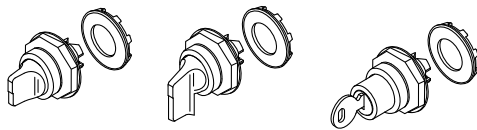
## Emergency stop pushbuttons



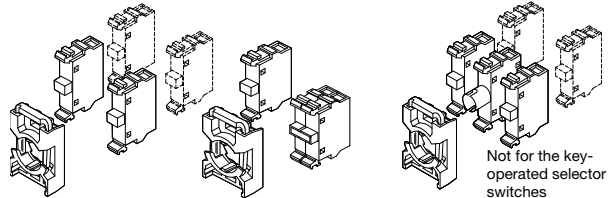
### Contact block/lamp block combinations



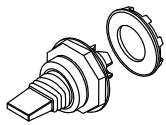
## Selector switches



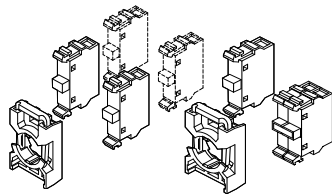
### Contact block/lamp block combinations



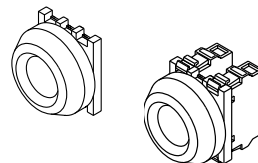
## Toggle switches



### Contact block combinations

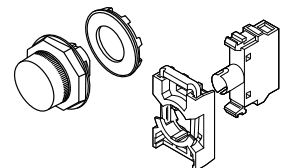


## Definite purpose push-buttons



## Pilot lights

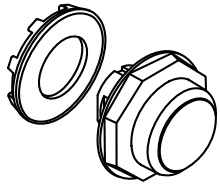
### Lamp block combination



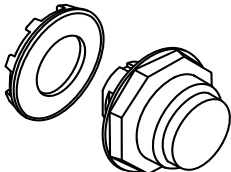
## Flush and extended pushbuttons

### Non-illuminated and illuminated

### Momentary and maintained



Flush



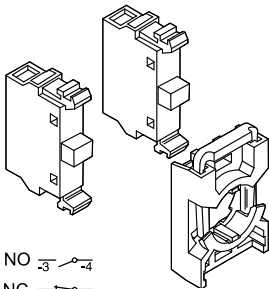
Extended

Δ Non-illuminated  
button color

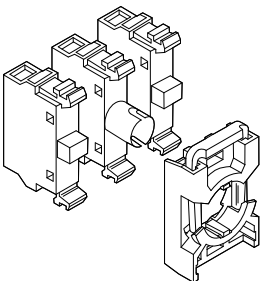
R Red  
G Green  
Y Yellow  
L Blue  
W White  
B Black  
C Clear

‡ Illuminated  
button color

R Red  
G Green  
Y Yellow  
L Blue  
W White  
C Clear



NO  $\overline{3}$   $\rightarrow$   $\overline{4}$   
NC  $\overline{1}$   $\rightarrow$   $\overline{2}$



#### Non-illuminated

Description	Catalog number
<b>Black plastic bezel</b>	
Flush, momentary	<b>G1MP1-10Δ</b>
Flush, maintained	<b>G1MP2-10Δ</b>
Extended, momentary	<b>G1MP3-10Δ</b>
Extended, maintained	<b>G1MP4-10Δ</b>
<b>Chrome bezel</b>	
Flush, momentary	<b>G2MP1-30Δ</b>
Flush, maintained	<b>G2MP2-30Δ</b>
Extended, momentary	<b>G2MP3-30Δ</b>
Extended, maintained	<b>G2MP4-30Δ</b>

#### Illuminated<sup>①</sup>

Description	Catalog number
<b>Black plastic bezel</b>	
Flush, momentary	<b>G1MP1-11‡</b>
Flush, maintained	<b>G1MP2-11‡</b>
Extended, momentary	<b>G1MP3-11‡</b>
Extended, maintained	<b>G1MP4-11‡</b>
<b>Chrome bezel</b>	
Flush, momentary	<b>G2MP1-31‡</b>
Flush, maintained	<b>G2MP2-31‡</b>
Extended, momentary	<b>G2MP3-31‡</b>
Extended, maintained	<b>G2MP4-31‡</b>

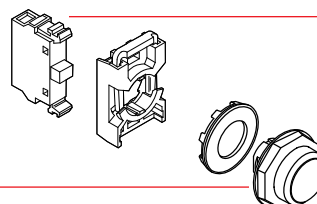
#### Contact blocks, lamp block and holder <sup>②</sup>

Blocks	Catalog number	Ref. code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder <sup>①</sup>	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

#### Ordering example

Requested: A modular pushbutton, momentary,  
with red flush button and one NO contact.

Ref.: 1 piece of G1MP1- 40R +1 piece of MCBH-10



<sup>①</sup> No contact block in the center position.

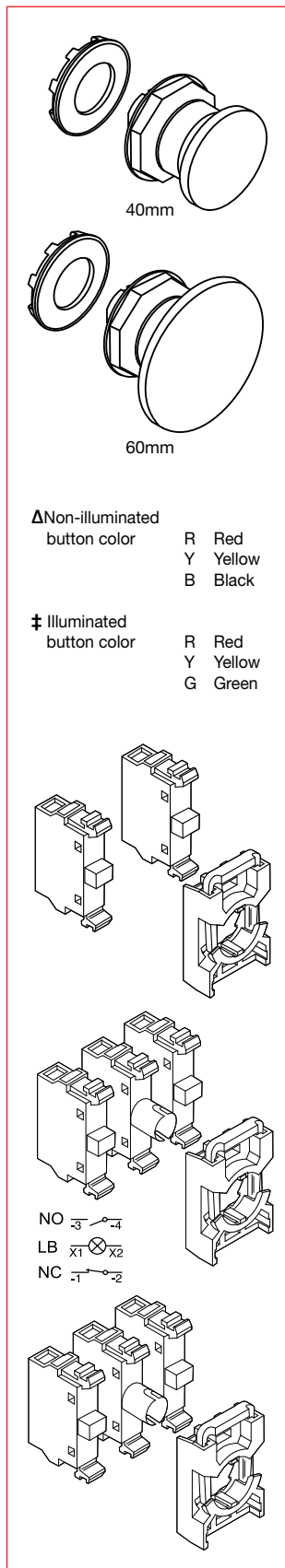
<sup>②</sup> Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.



## Mushroom pushbuttons

### Non-illuminated and illuminated

### Momentary



#### Non-illuminated

Description	Catalog number
<b>Black plastic bezel</b>	
40mm	<b>G1MPM1-10Δ</b>
60mm	<b>G1MPM2-10Δ</b>
<b>Chrome bezel</b>	
40mm	<b>G2MPM1-30Δ</b>
60mm	<b>G2MPM2-30Δ</b>

#### Illuminated<sup>①</sup>

Description	Catalog number
<b>Black plastic bezel</b>	
40mm	<b>G1MPM1-11‡</b>
60mm	<b>G1MPM2-11‡</b>
<b>Chrome bezel</b>	
40mm	<b>G2MPM1-31‡</b>
60mm	<b>G2MPM2-31‡</b>

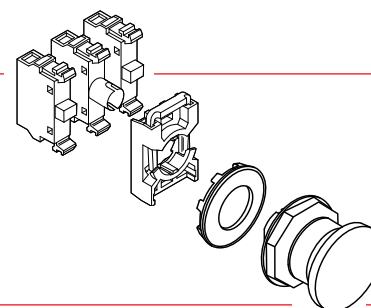
#### Contact blocks, lamp block and holder<sup>②</sup>

Blocks	Catalog number	Ref. code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder <sup>①</sup>	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

#### Ordering example – Mushroom Pushbutton

Requested: A modular mushroom pushbutton, Ø 40 mm, illuminated, red, with one NO + one NC contact and a standard lamp block

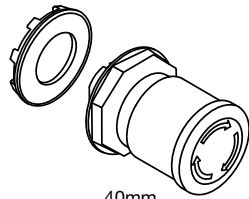
Ref.: 1 piece of G1MPM1-41B + 1 piece of MCBH-111  
Bulb - see accessories



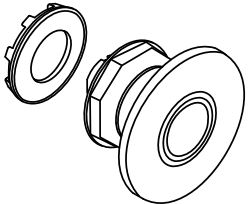
- ① No contact block in the center position  
② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

## Emergency stop pushbuttons Non-illuminated and illuminated

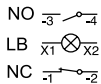
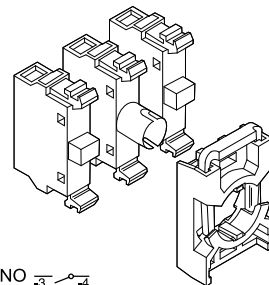
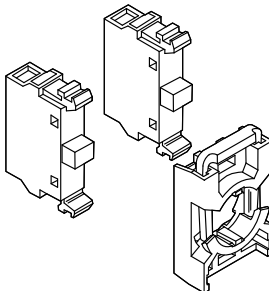
Fulfills IEC 60947-5-5



40mm



60mm



### Non-illuminated, red

Description	Catalog number
<b>Black plastic bezel</b>	
40mm, twist release	<b>G1MPMT3-10R</b>
40mm, pull release	<b>G1MPMP3-10R</b>
60mm, twist release	<b>G1MPMT4-10R</b>
60mm, pull release	<b>G1MPMP4-10R</b>
<b>Chrome bezel</b>	
40mm, twist release	<b>G2MPMT3-10R</b>
40mm, pull release	<b>G2MPMP3-10R</b>
60mm, twist release	<b>G2MPMT4-10R</b>
60mm, pull release	<b>G2MPMP4-10R</b>

### Illuminated, red<sup>①</sup>

Description	Catalog number
<b>Black plastic bezel</b>	
40mm, twist release	<b>G1MPMT3-11R</b>
40mm, pull release	<b>G1MPMP3-11R</b>
60mm, twist release	<b>G1MPMT4-11R</b>
60mm, pull release	<b>G1MPMP4-11R</b>
<b>Chrome bezel</b>	
40mm, twist release	<b>G2MPMT3-11R</b>
40mm, pull release	<b>G2MPMP3-11R</b>
60mm, twist release	<b>G2MPMT4-11R</b>
60mm, pull release	<b>G2MPMP4-11R</b>

### Contact blocks, lamp block and holder<sup>②</sup>

Blocks	Catalog number	Ref. code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC + 1 LB with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

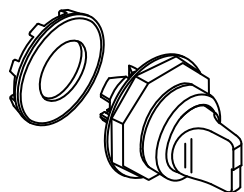
To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

<b>Durability test</b>	6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations.	<b>Latching test</b>	Impulse voltage test at 2,500 V
<b>Robustness</b>	The force 113 N applied in three axes	<b>Resetting test</b>	Pulling force < 50 N Turning torque < 1 Nm
<b>Conditioning</b>	Heat and cold, moist atmosphere, and in 5 % NaC	<b>Shock</b>	15 g shock
		<b>Vibration</b>	2 h at 50m/s <sup>2</sup>
		<b>Contacts with positive opening operation</b>	15 g shock

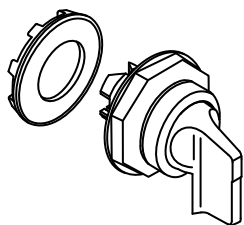
① No contact in the center position

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 2 W.

## 2 Position selector switches Non-illuminated



Short handle



Long handle

Δ Switch color    R Red  
                          B Black  
                          U Grey

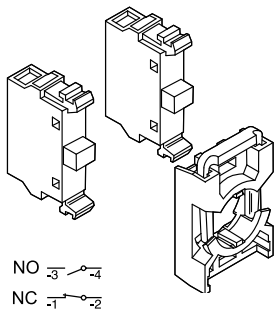
Maintained



Maintained



Momentary,  
spring return  
from C to B



NO   
NC

### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A (B)	O	O
C	x	x

O = not actuated (normal state)  
x = actuated (state changed)

### Non-illuminated

Description	Catalog number
Short handle	
<b>Black plastic bezel</b>	
Maintained B & C	<b>G1M2SS1-10Δ</b>
Maintained A & C	<b>G1M2SS2-10Δ</b>
Spring return from C to B	<b>G1M2SS3-10Δ</b>
<b>Chrome bezel</b>	
Maintained B & C	<b>G2M2SS1-30Δ</b>
Maintained A & C	<b>G2M2SS2-30Δ</b>
Spring return from C to B	<b>G2M2SS3-30Δ</b>
Long handle	
<b>Black plastic bezel</b>	
Maintained B & C	<b>G1M2SS4-10Δ</b>
Maintained A & C	<b>G1M2SS5-10Δ</b>
Spring return from C to B	<b>G1M2SS6-10Δ</b>
<b>Chrome bezel</b>	
Maintained B & C	<b>G2M2SS4-30Δ</b>
Maintained A & C	<b>G2M2SS5-30Δ</b>
Spring return from C to B	<b>G2M2SS6-30Δ</b>

### Contact blocks and holder

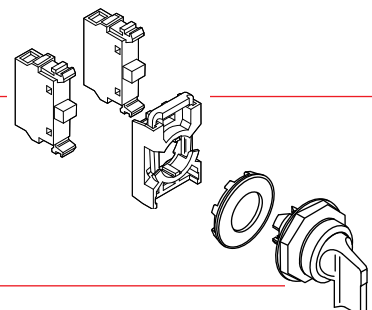
Blocks	Catalog number	Ref. code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Ordering example

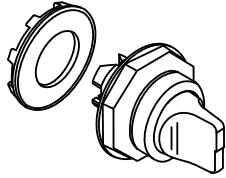
Requested: A non-illuminated modular selector switch. Black. Maintained.

Handle positions: A and C  
With 2 NC contacts

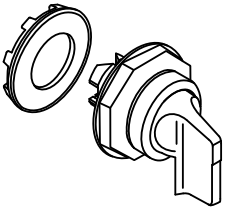
Ref.: 1 piece of G1M2SS2-40B + 1 piece of MCBH-02



## 2 Position selector switches Illuminated

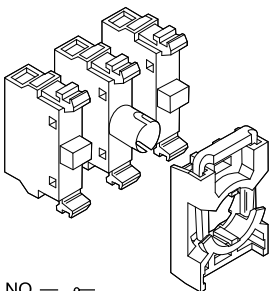
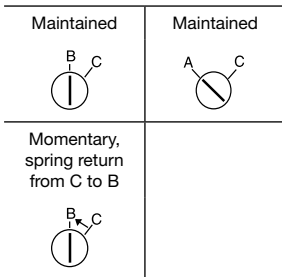


Short handle



Long handle

Δ Switch color	R	Red
	G	Green
	Y	Yellow
	L	Blue
	C	Clear



### Illuminated<sup>①</sup>

Description	Catalog number
Short handle	
<b>Black plastic bezel</b> Maintained B & C Maintained A & C Spring return from C to B	<b>G1M2SS1-11Δ</b> <b>G1M2SS2-11Δ</b> <b>G1M2SS3-11Δ</b>
<b>Chrome bezel</b> Maintained B & C Maintained A & C Spring return from C to B	<b>G2M2SS1-31Δ</b> <b>G2M2SS2-31Δ</b> <b>G2M2SS3-31Δ</b>
Long handle	
<b>Black plastic bezel</b> Maintained B & C Maintained A & C Spring return from C to B	<b>G1M2SS4-11Δ</b> <b>G1M2SS5-11Δ</b> <b>G1M2SS6-11Δ</b>
<b>Chrome bezel</b> Maintained B & C Maintained A & C Spring return from C to B	<b>G2M2SS4-31Δ</b> <b>G2M2SS5-31Δ</b> <b>G2M2SS6-31Δ</b>

### Contact blocks, lamp block and holder<sup>②</sup>

Blocks	Catalog number	Ref. code
1 NO + 1 LB with holder	<b>MCBH-101</b>	1SFA 611 605 R1201
1 NC + 1 LB with holder	<b>MCBH-011</b>	1SFA 611 605 R1210
2 NO + 1 LB with holder	<b>MCBH-201</b>	1SFA 611 605 R1202
2 NC + 1 LB with holder	<b>MCBH-021</b>	1SFA 611 605 R1220
1 NO + 1 NC with holder	<b>MCBH-111</b>	1SFA 611 605 R1211
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Lamp block for 2 W, max 230 V AC/DC bulb or LED	<b>MLB-1</b>	1SFA 611 620 R1001
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

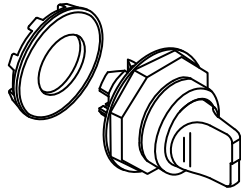
**Contact functions** See Page 7

**Ordering example** See Page 7

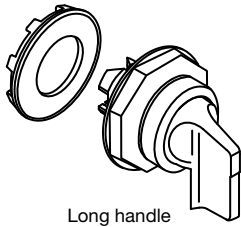
① No contact block in the center position

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

## 3 Position selector switches Non-illuminated

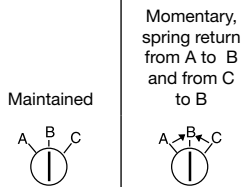


Short handle

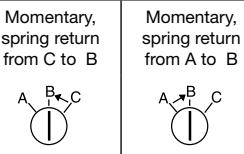


Long handle

Δ Switch color  
R Red  
B Black  
U Grey

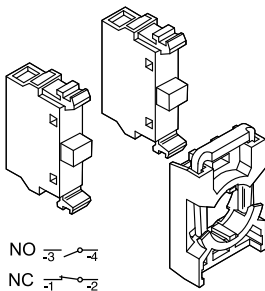


Momentary, spring return from A to B and from C to B



Momentary, spring return from C to B

Momentary, spring return from A to B



### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A	x	O
B	O	O
C	O	x

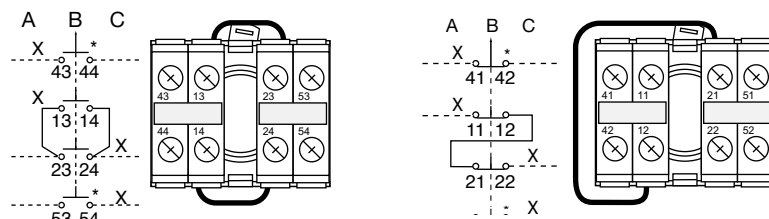
### Non-illuminated

Description	Catalog number
Short handle	
<b>Black plastic bezel</b>	
Maintained A, B & C	<b>G1M3SS1-10Δ</b>
Spring return A & C to B	<b>G1M3SS2-10Δ</b>
Maint A, Spring ret C to B	<b>G1M3SS3-10Δ</b>
Maint C, Spring ret A to B	<b>G1M3SS7-10Δ</b>
<b>Chrome bezel</b>	
Maintained A, B & C	<b>G2M3SS1-30Δ</b>
Spring return A & C to B	<b>G2M3SS2-30Δ</b>
Maint A, Spring ret C to B	<b>G2M3SS3-30Δ</b>
Maint C, Spring ret A to B	<b>G2M3SS7-30Δ</b>
Long handle	
<b>Black plastic bezel</b>	
Maintained A, B & C	<b>G1M3SS4-10Δ</b>
Spring return A & C to B	<b>G1M3SS5-10Δ</b>
Maint A, Spring ret C to B	<b>G1M3SS6-10Δ</b>
Maint C, Spring ret A to B	<b>G1M3SS8-10Δ</b>
<b>Chrome bezel</b>	
Maintained A, B & C	<b>G2M3SS4-30Δ</b>
Spring return A & C to B	<b>G2M3SS5-30Δ</b>
Maint A, Spring ret C to B	<b>G2M3SS6-30Δ</b>
Maint C, Spring ret A to B	<b>G2M3SS8-30Δ</b>

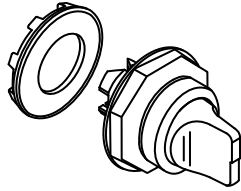
### Contact blocks and holder

Blocks	Catalog number	Ref. code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

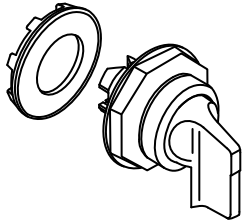
### Center position connection detail



## 3 Position selector switches Illuminated



Short handle



Long handle

Δ Switch color	R	Red
	G	Green
	Y	Yellow
	L	Blue
	C	Clear

Maintained



Momentary, spring return from A to B and from C to B



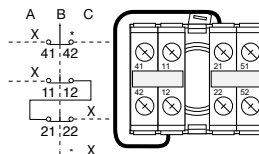
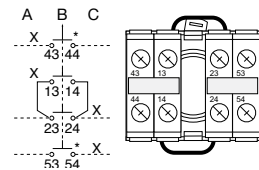
Momentary, spring return from C to B



Momentary, spring return from A to B



### Center position connection detail



### Illuminated<sup>①</sup>

Description	Catalog number
Short handle	
<b>Black plastic bezel</b>	
Maintained A, B & C	<b>G1M3SS1-11Δ</b>
Spring return A & C to B	<b>G1M3SS2-11Δ</b>
Maint A, Spring ret C to B	<b>G1M3SS3-11Δ</b>
Maint C, Spring ret A to B	<b>G1M3SS7-11Δ</b>
<b>Chrome bezel</b>	
Maintained A, B & C	<b>G2M3SS1-31Δ</b>
Spring return A & C to B	<b>G2M3SS2-31Δ</b>
Maint A, Spring ret C to B	<b>G2M3SS3-31Δ</b>
Maint C, Spring ret A to B	<b>G2M3SS7-31Δ</b>
Long handle	
<b>Black plastic bezel</b>	
Maintained A, B & C	<b>G1M3SS4-11Δ</b>
Spring return A & C to B	<b>G1M3SS5-11Δ</b>
Maint A, Spring ret C to B	<b>G1M3SS6-11Δ</b>
Maint C, Spring ret A to B	<b>G1M3SS8-11Δ</b>
<b>Chrome bezel</b>	
Maintained A, B & C	<b>G2M3SS4-31Δ</b>
Spring return A & C to B	<b>G2M3SS5-31Δ</b>
Maint A, Spring ret C to B	<b>G2M3SS6-31Δ</b>
Maint C, Spring ret A to B	<b>G2M3SS8-31Δ</b>

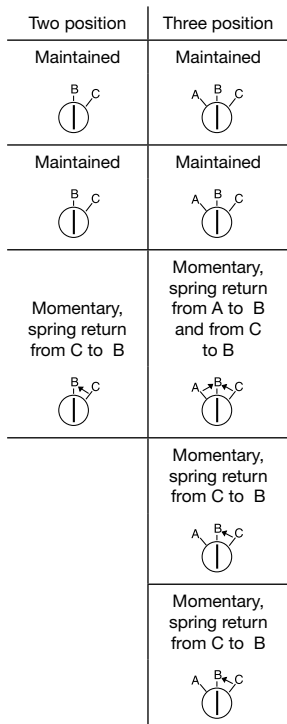
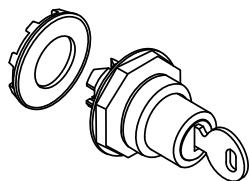
**Contact blocks, lamp block and holder** See Page 8

**Contact functions** See Page 9

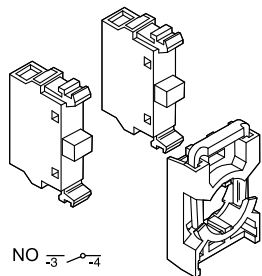
**Ordering example** See Page 7

<sup>①</sup> No contact block in the center position

## Key-operated selector switches<sup>①</sup> 2 and 3 positions



Δ Key code    1 Ronis 71  
                  2 Ronis 72  
                  3 Ronis 73



NO

NC

Description	The key can be removed in...	Catalog number
<b>2-position</b>		
<b>Black plastic bezel</b>		
Maintained B & C	B & C	<b>G1M2SSK1-10Δ</b>
Maintained B & C	B only	<b>G1M2SSK2-10Δ</b>
Spring return C to B	B only	<b>G1M2SSK3-10Δ</b>
<b>Chrome bezel</b>		
Maintained B & C	B & C	<b>G2M2SSK1-30Δ</b>
Maintained B & C	B only	<b>G2M2SSK2-30Δ</b>
Spring return C to B	B only	<b>G2M2SSK3-30Δ</b>
<b>3-position</b>		
<b>Black plastic bezel</b>		
Maintained A, B, &C	A, B & C	<b>G1M3SSK1-10Δ</b>
Maintained A, B, &C	B only	<b>G1M3SSK2-10Δ</b>
Spring return A & C to B	B only	<b>G1M3SSK3-10Δ</b>
Spring return C to B	A only	<b>G1M3SSK4-10Δ</b>
Spring return C to B	A, B, & C	<b>G1M3SSK5-10Δ</b>
<b>Chrome bezel</b>		
Maintained A, B, &C	A, B & C	<b>G2M3SSK1-30Δ</b>
Maintained A, B, &C	B only	<b>G2M3SSK2-30Δ</b>
Spring return A & C to B	B only	<b>G2M3SSK3-30Δ</b>
Spring return C to B	A only	<b>G2M3SSK4-30Δ</b>
Spring return C to B	A, B, & C	<b>G2M3SSK5-30Δ</b>

### Contact blocks and holder

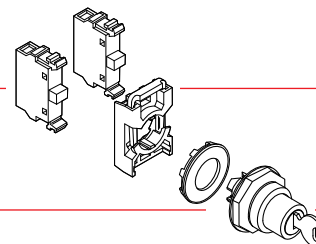
Blocks	Catalog number	Ref. code
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Contact functions

2 positions: See Page 9  
3 positions: See Page 9

### Ordering example

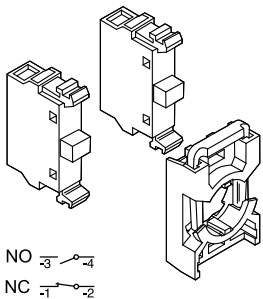
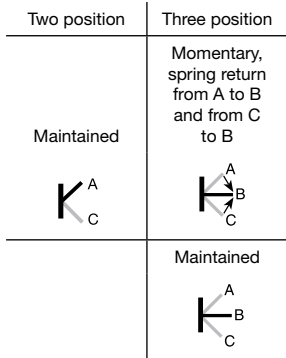
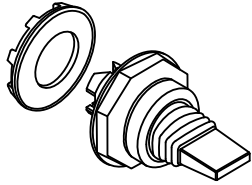
Requested: A key-operated selector switch. Three positions. Maintained. The key removeable in position B. Key code 72. With 2 NC contacts  
Ref.: 1 piece of G1M3SSK2-402 + 1 piece of MCBH-02



① Includes two keys



## Toggle switches 2 and 3 positions



Description	Catalog number
<b>2-position</b> Maintained, black bezel Maintained, chrome bezel	<b>G1MTS1-10B</b> <b>G2MTS1-30B</b>
<b>3-position</b> Maintained, black bezel Maintained, chrome bezel Spring return from A and C to B, black bezel Spring return from A and C to B, chrome bezel	<b>G1MTS3-10B</b> <b>G2MTS3-30B</b> <b>G1MTS2-10B</b> <b>G2MTS2-30B</b>

### Contact blocks and holder

Blocks	Catalog number	Ref. code
1 NO with holder	<b>MCBH-10</b>	1SFA 611 605 R1101
1 NC with holder	<b>MCBH-01</b>	1SFA 611 605 R1110
2 NO with holder	<b>MCBH-20</b>	1SFA 611 605 R1102
2 NC with holder	<b>MCBH-02</b>	1SFA 611 605 R1120
1 NO + 1 NC with holder	<b>MCBH-11</b>	1SFA 611 605 R1111
1 NO without holder	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC without holder	<b>MCB-01</b>	1SFA 611 610 R1010
Holder for 3 blocks	<b>MCBH-00</b>	1SFA 611 605 R1100

### Contact block functions

Block positions as seen from operator front.

#### 2-position maintained switch

Handle position	Left block	Right block
A	O	O
C	x	x

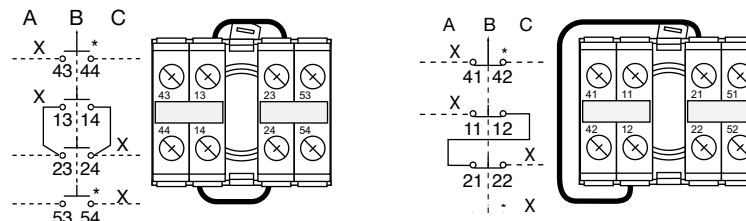
O = not actuated (normal state)  
x = actuated (state changed)

#### 3-position switch

Handle position	Left block	Middle block	Right block
A	O	x	x
B	O	O	O
C	x	x	O

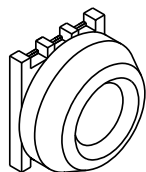
O = not actuated (normal state)  
x = actuated (state changed)

### Center position connection detail

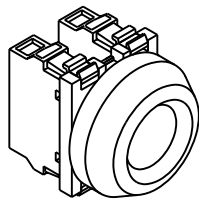


## Definite purpose pushbuttons

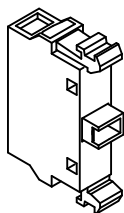
### IP 66, and now NEMA 1, 3R, 4 & 4X!



Actuator only



Actuator with blocks



Contact block

### Definite purpose pushbuttons

The definite purpose pushbutton, 30 mm, is a robust and compact pushbutton for use in cold, hot, damp, oily and other tough environments.

Suitable especially for hydraulic lifts, compact pendant controllers and pushbutton stations.

Included contact blocks	Membrane color	Catalog number	Ref. code
1 NO + 1 NC	Black	<b>1SFA616105R4076</b>	1SFA 616 105 R4076
1 NO	Black	<b>1SFA616105R4016</b>	1SFA 616 105 R4016
1 NC	Black	<b>1SFA616105R4046</b>	1SFA 616 105 R4046
2 NO	Black	<b>1SFA616105R4026</b>	1SFA 616 105 R4026
2 NC	Black	<b>1SFA616105R4056</b>	1SFA 616 105 R4056
–	Red	<b>KP6-40R</b>	1SFA 616 105 R4001
–	Green	<b>KP6-40G</b>	1SFA 616 105 R4002
–	Black	<b>KP6-40B</b>	1SFA 616 105 R4006

### Contact block

Description	Catalog number	Ref. code
1 NO	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC	<b>MCB-01</b>	1SFA 611 610 R1010

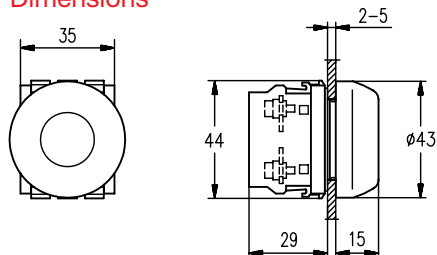
### Accessories

Description	Catalog number ①	Ref. code
Guide washer for positioning and anti rotation	<b>2154373-1</b>	2154 373-1

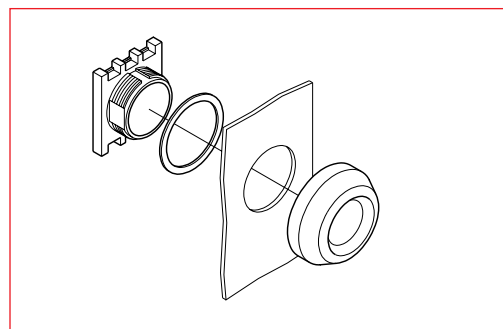
### Technical data

Degree of protection	IP66
Ambient temperature	-30° ...+70°

### Dimensions

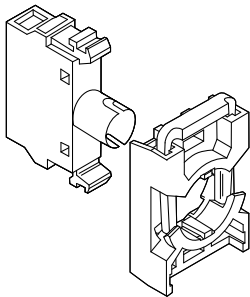
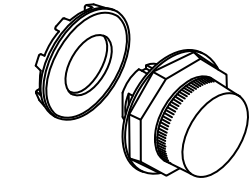


### Mounting



① IP66 Rating only.

## Pilot lights



Lamp block + holder



Diffusing lens

Δ Lens color	R Red
	G Green
	Y Yellow
	L Blue
	W White
	C Clear

Description	Catalog number
Black plastic mounting ring	<b>G1ML1-100Δ</b>
Chrome mounting ring	<b>G2ML1-100Δ</b>

### Lamp blocks with holder <sup>Ⓞ</sup>

Supply voltage	Catalog number	Ref. code
<b>For max. 2 W, 230 V AC and DC filament bulb or LED</b> $\begin{array}{c} 230 \text{ V, } 2 \text{ W} \\ \text{---} \text{---} \\ \text{X1} \text{---} \text{---} \text{X2} \end{array}$	<b>MCBH-001</b>	1SFA 611 605 R1200
115 V AC supply voltage. <b>For 60 V filament bulb</b> <b>max. 1.2 W</b> $\begin{array}{c} 115 \text{ V} \\ \text{---} \text{---} \\ \text{X1} \text{---} \text{---} \text{X2} \\ \text{60 V} \\ \text{---} \text{---} \\ \text{1.2 W} \end{array}$		
230 V AC supply voltage. <b>For 130 V filament bulb</b> <b>max. 2 W</b> $\begin{array}{c} 230 \text{ V} \\ \text{---} \text{---} \\ \text{X1} \text{---} \text{---} \text{X2} \\ \text{130 V} \\ \text{---} \text{---} \\ \text{2 W} \end{array}$	<b>MCBH-002</b>	1SFA 611 605 R1300
	<b>MCBH-003</b>	1SFA 611 605 R1400

### Light diffusing lens

To improve illumination. *Note: Cannot be used with text cap.*

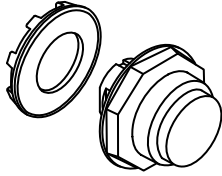
Description	Catalog number	Ref. code
The lens is used instead of text cap	<b>KA1-8005</b>	1SFA 616 920 R8005

<sup>Ⓞ</sup> Bulb not included. See page 18

# Press-to-test pilot light pushbuttons

## Momentary

Pilot Devices  
Modular Range  
30mm

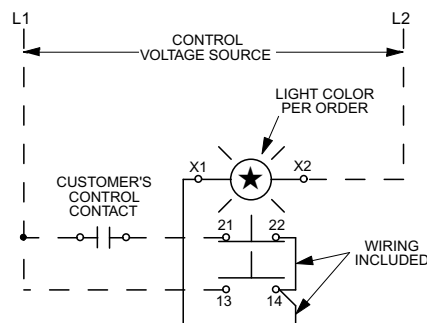


- Button type      1 Flush  
                          3 Extended
- Δ Lens color        R Red  
                          G Green  
                          Y Yellow  
                          L Blue  
                          W White  
                          C Clear

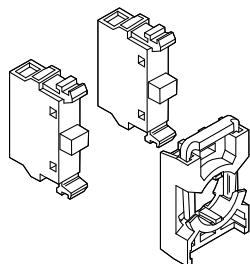
Complete device: 1No+1NC, lamp block, and bulb  
Light difusing lens not included

Description	Voltage type	Catalog number
<b>Full voltage type</b>		
<b>Black plastic bezel</b>	6V 12V 24V 48V 120V	<b>G1MP</b> ‡ -KLFPT6Δ <b>G1MP</b> ‡ -KLFPT7Δ <b>G1MP</b> ‡ -KLFPT8Δ <b>G1MP</b> ‡ -KLFPT9Δ <b>G1MP</b> ‡ -KLFPT1Δ
<b>Chrome bezel</b>	6V 12V 24V 48V 120V	<b>G2MP</b> ‡ -MLFPT6Δ <b>G2MP</b> ‡ -MLFPT7Δ <b>G2MP</b> ‡ -MLFPT8Δ <b>G2MP</b> ‡ -MLFPT9Δ <b>G2MP</b> ‡ -MLFPT1Δ
<b>Transformer type</b>		
<b>Black plastic bezel</b>		
6V fil bulb included	110-127V/6V 220-240V/6V 380-420V/6V 440/480V/6V 500-600V/6V	<b>G1MP</b> ‡ -KLTPT1Δ <b>G1MP</b> ‡ -KLTPT2Δ <b>G1MP</b> ‡ -KLTPT3Δ <b>G1MP</b> ‡ -KLTPT4Δ <b>G1MP</b> ‡ -KLTPT5Δ
24V fil bulb included	110-127V/24V 220-240V/24V 380-420V/24V 440/480V/24V	<b>G1MP</b> ‡ -KLTPT6Δ <b>G1MP</b> ‡ -KLTPT7Δ <b>G1MP</b> ‡ -KLTPT8Δ <b>G1MP</b> ‡ -KLTPT9Δ
24V AC/DC LED included	110-127V/24V 220-240V/24V 380-420V/24V 440/480V/24V	<b>G1MP</b> ‡ -KLTPTL1Δ <b>G1MP</b> ‡ -KLTPTL2Δ <b>G1MP</b> ‡ -KLTPTL3Δ <b>G1MP</b> ‡ -KLTPTL4Δ
<b>Chrome bezel</b>		
6V fil bulb included	110-127V/6V 220-240V/6V 380-420V/6V 440/480V/6V 500-600V/6V	<b>G2MP</b> ‡ -MLTPT1Δ <b>G2MP</b> ‡ -MLTPT2Δ <b>G2MP</b> ‡ -MLTPT3Δ <b>G2MP</b> ‡ -MLTPT4Δ <b>G2MP</b> ‡ -MLTPT5Δ
24V fil bulb included	110-127V/24V 220-240V/24V 380-420V/24V 440/480V/24V	<b>G2MP</b> ‡ -MLTPT6Δ <b>G2MP</b> ‡ -MLTPT7Δ <b>G2MP</b> ‡ -MLTPT8Δ <b>G2MP</b> ‡ -MLTPT9Δ
24V AC/DC LED included	110-127V/24V 220-240V/24V 380-420V/24V 440/480V/24V	<b>G2MP</b> ‡ -MLTPTL1Δ <b>G2MP</b> ‡ -MLTPTL2Δ <b>G2MP</b> ‡ -MLTPTL3Δ <b>G2MP</b> ‡ -MLTPTL4Δ
<b>Resistor type</b>		
<b>Black plastic bezel</b>	120V fil bulb 120V AC/DC LED 240V AC LED	<b>G1MP</b> ‡ -KLRPT1Δ <b>G1MP</b> ‡ -KLRPTL1Δ <b>G1MP</b> ‡ -KLRPTL2Δ
<b>Chrome bezel</b>	120V fil bulb 120V AC/DC LED 240V AC LED	<b>G2MP</b> ‡ -MLRPT1Δ <b>G2MP</b> ‡ -MLRPTL1Δ <b>G2MP</b> ‡ -MLRPTL2Δ

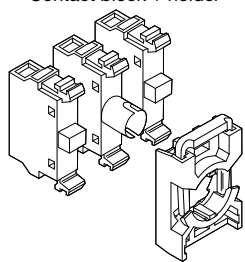
### Schematic



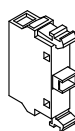
Press- to-test schematic



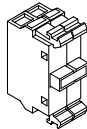
Contact block + holder



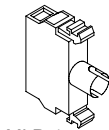
Contacts and lamp block + holder



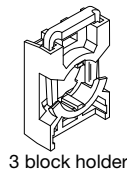
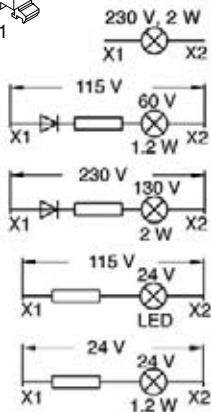
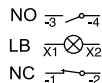
MCB-10



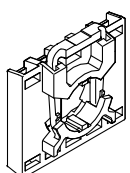
MCB-20



MLB-1



3 block holder



5 block holder

## Contact blocks and lamp blocks with holder for front mounting

Max. number of blocks in holder	Included blocks	Catalog number	Ref. code
<b>For non-illuminated operators</b>			
3	1 NC	<b>MCBH-01</b>	1SFA 611 605 R1110
3	1 NO	<b>MCBH-10</b>	1SFA 611 605 R1101
3	2 NC	<b>MCBH-02</b>	1SFA 611 605 R1120
3	2 NO	<b>MCBH-20</b>	1SFA 611 605 R1102
3	3 NC	<b>MCBH-03</b>	1SFA 611 605 R1130
3	3 NO	<b>MCBH-30</b>	1SFA 611 605 R1103
3	1 NO + 1 NC	<b>MCBH-11</b>	1SFA 611 605 R1111
3	1 NO + 2 NC	<b>MCBH-12</b>	1SFA 611 605 R1121
3	2 NO + 1 NC	<b>MCBH-21</b>	1SFA 611 605 R1112

<b>For illuminated operators</b>			
3	1 NC + 1 LB	<b>MCBH-011</b>	1SFA 611 605 R1210
3	1 NO + 1 LB	<b>MCBH-101</b>	1SFA 611 605 R1201
3	1 NO + 1 NC + 1 LB	<b>MCBH-111</b>	1SFA 611 605 R1211
3	2 NC + 1 LB	<b>MCBH-021</b>	1SFA 611 605 R1220
3	2 NO + 1 LB	<b>MCBH-201</b>	1SFA 611 605 R1202

## Single contact blocks for front mounting

Included blocks	Catalog number	Ref. code
1 NO	<b>MCB-10</b>	1SFA 611 610 R1001
1 NC	<b>MCB-01</b>	1SFA 611 610 R1010
1 NO with gold plated contacts	<b>MCB-10G</b>	1SFA 611 610 R1101
1 NC with gold plated contacts	<b>MCB-01G</b>	1SFA 611 610 R1110

## Double contact block for front mounting

To be used together with MCBH5-00 when contact blocks in position 4- and 5- are needed.  
Also when using MCBH-00 together with selector switch and contact block in position 3- is needed

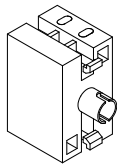
Included blocks	Catalog number	Ref. code
2 NO	<b>MCB-20</b>	1SFA 611 610 R1002
2 NC	<b>MCB-02</b>	1SFA 611 610 R1020
1 NO + 1 NC	<b>MCB-11</b>	1SFA 611 610 R1011

## Single lamp blocks for front mounting, Ba 9s base

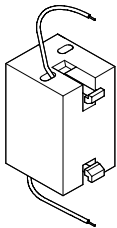
Description	Catalog number	Ref. code
<b>For max. 2 W, 230 V AC and DC filament bulb or LED</b>	<b>MLB-1</b>	1SFA 611 620 R1001
115 V AC supply voltage. <b>For 60 V filament bulb max. 1.2 W</b>	<b>MLB-2</b>	1SFA 611 620 R1002
230 V AC supply voltage. <b>For 130 V filament bulb max. 2 W</b>	<b>MLB-3</b>	1SFA 611 620 R1003
115 V AC and DC supply voltage <b>For 24 V LED</b>	<b>MLB-4</b>	1SFA 611 620 R1004
24 V AC and DC supply voltage. With resistor. Intended for electronic circuits. The resistor limits the making current and protects against disturbances in the electronic circuit <b>For 24 V filament bulb</b>	<b>MLB-5</b>	1SFA 611 620 R1005

## Holders

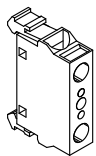
Description	Catalog number	Ref. code
Holders for front mounting		
For three blocks	<b>MCBH-00</b>	1SFA 611 605 R1100
For five blocks	<b>MCBH5-00</b>	1SFA 611 601 R1100



Transformer block with lamp holder for pilot lights



Transformer block for illuminated operators



Diode block

## Transformer block

For 6 or 24 V filament bulb and 24 V LED. Rated power 1.5 W.

Primary voltage	Secondary voltage	Bulb Suffix LED   Filament	Catalog number	Ref. code
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### With lamp holder for front mounting, Ba 9s base

Intended to supply a 1.2 W filament bulb.

110 - 127 V AC 6 V AC	-	T1	<b>KTR1-1001</b>	1SFA 616 950 R1001
220 - 250 V AC 6 V AC	-	T2	<b>KTR1-1002</b>	1SFA 616 950 R1002
380 - 420 V AC 6 V AC	-	T3	<b>KTR1-1003</b>	1SFA 616 950 R1003
440 - 480 V AC 6 V AC	-	T4	<b>KTR1-1004</b>	1SFA 616 950 R1004
500 - 600 V AC 6 V AC	-	T9	<b>KTR1-1005</b>	1SFA 616 950 R1005

110 - 127 V AC 24 V AC ①	TL1	T5	<b>KTR1-1011</b>	1SFA 616 950 R1011
220 - 250 V AC 24 V AC ①	TL2	T6	<b>KTR1-1012</b>	1SFA 616 950 R1012
380 - 420 V AC 24 V AC ①	TL3	T7	<b>KTR1-1013</b>	1SFA 616 950 R1013
440 - 480 V AC 24 V AC ①	TL4	T8	<b>KTR1-1014</b>	1SFA 616 950 R1014

### For illuminated operators ②

Intended to supply a 1.2 W filament bulb mounted in lamp block MLB-1 (1SFA 611 620 R1001) only.

110 - 127V AC 6 V AC	-	T1	<b>KTR1-2001</b>	1SFA 616 950 R2001
220 - 250 V AC 6 V AC	-	T2	<b>KTR1-2002</b>	1SFA 616 950 R2002
380 - 420 V AC 6 V AC	-	T3	<b>KTR1-2003</b>	1SFA 616 950 R2003
440 - 480 V AC 6 V AC	-	T4	<b>KTR1-2004</b>	1SFA 616 950 R2004
500 - 600 V AC 6 V AC	-	T9	<b>KTR1-2005</b>	1SFA 616 950 R2005

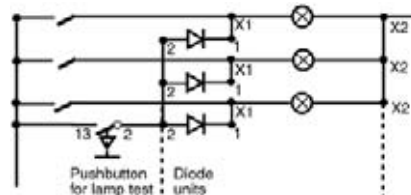
110 - 127 V AC 24 V AC ①	TL1	T5	<b>KTR1-2011</b>	1SFA 616 950 R2011
220 - 250 V AC 24 V AC ①	TL2	T6	<b>KTR1-2012</b>	1SFA 616 950 R2012
380 - 420 V AC 24 V AC ①	TL3	T7	<b>KTR1-2013</b>	1SFA 616 950 R2013
440 - 480 V AC 24 V AC ①	TL4	T8	<b>KTR1-2014</b>	1SFA 616 950 R2014

## Diode block

To be used if several lamps are to be connected to a common lamp-test pushbutton. A diode must be connected in series with each lamp. The diode block snaps onto the lamp block or is placed at the side.

Description	Catalog number	Ref. code
Diode block	<b>MDB-1001</b>	1SFA 611 630 R1001

### Diagram for lamp test with three diode block



① Can be used with LED bulb  
② To be used with directly supplied lamp blocks only.



### Filament bulbs

Ba 9s base. A lamp changing tool is required for changing bulb.

Description					Catalog number	Ref. code
Rated voltage V	Rated current mA	Rated output W	Service life h	Luminance mcd		
6	200	1.2	10 000	350	<b>5911 086-11</b>	5911 086-11
12	100	1.2	10 000	230	<b>5911 086-12</b>	5911 086-12
24	50	1.2	10 000	280	<b>5911 086-13</b>	5911 086-13
30	40	1.2	10 000	250	<b>5911 086-4</b>	5911 086-4
48	42	2	6 000	500	<b>5911 086-5</b>	5911 086-5
60	20	1.2	5 000	190	<b>5911 086-14</b>	5911 086-14
110	18	2	7 500	250	<b>5911 086-7</b>	5911 086-7
130	15	2	7 500	120	<b>5911 086-15</b>	5911 086-15

### LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

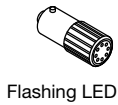
Description					Catalog number	Ref. code
Color	Rated current mA	Wave-length nm	Luminance mcd			
<b>Rated voltage 12 V, DC</b> Service life >50 000 h						
Red	15	630	250	<b>KA2-2011</b>	1SFA 616 921 R2011	
Green	15	525	1000	<b>KA2-2012</b>	1SFA 616 921 R2012	
Yellow	15	592	250	<b>KA2-2013</b>	1SFA 616 921 R2013	
Blue	15	470	450	<b>KA2-2014</b>	1SFA 616 921 R2014	
White	15	x=0.31 y=0.32	600	<b>KA2-2015</b>	1SFA 616 921 R2015	
<b>Rated voltage 24 V, (AC)/DC</b> Service life >50 000 h						
Red	15	630	250	<b>KA2-2021</b>	1SFA 616 921 R2021	
Green	15	525	800	<b>KA2-2022</b>	1SFA 616 921 R2022	
Yellow	15	592	250	<b>KA2-2023</b>	1SFA 616 921 R2023	
Blue	15	470	400	<b>KA2-2024</b>	1SFA 616 921 R2024	
White	15	x=0.31 y=0.32	500	<b>KA2-2025</b>	1SFA 616 921 R2025	
<b>Rated voltage 48 V, (AC)/DC</b> Service life >50 000 h						
Red	12	630	200	<b>KA2-2041</b>	1SFA 616 921 R2041	
Green	12	525	1700	<b>KA2-2042</b>	1SFA 616 921 R2042	
Yellow	12	592	240	<b>KA2-2043</b>	1SFA 616 921 R2043	
Blue	12	470	720	<b>KA2-2044</b>	1SFA 616 921 R2044	
White	12	x=0.31 y=0.32	1200	<b>KA2-2045</b>	1SFA 616 921 R2045	
<b>Rated voltage 60 V, (AC)/DC</b> Service life >50 000 h						
Red	10	630	160	<b>KA2-2051</b>	1SFA 616 921 R2051	
Green	10	525	1400	<b>KA2-2052</b>	1SFA 616 921 R2052	
Yellow	10	592	200	<b>KA2-2053</b>	1SFA 616 921 R2053	
Blue	10	470	600	<b>KA2-2054</b>	1SFA 616 921 R2054	
White	10	x=0.31 y=0.32	1000	<b>KA2-2055</b>	1SFA 616 921 R2055	
<b>Rated voltage 110-130 V, AC</b> Service life 25 000 h						
Red	4-6	630	60-100	<b>KA2-2131</b>	1SFA 616 921 R2131	
Green	4-6	525	500-850	<b>KA2-2132</b>	1SFA 616 921 R2132	
Yellow	4-6	592	70-120	<b>KA2-2133</b>	1SFA 616 921 R2133	
Blue	4-6	470	220-350	<b>KA2-2134</b>	1SFA 616 921 R2134	
White	4-6	x=0.31 y=0.32	350-600	<b>KA2-2135</b>	1SFA 616 921 R2135	
<b>Rated voltage 110-130 V, AC/DC</b> Service life 25 000 h						
Red	4-6	630	60-100	<b>KA2-2141</b>	1SFA 616 921 R2141	
Green	4-6	525	500-850	<b>KA2-2142</b>	1SFA 616 921 R2142	
Yellow	4-6	592	70-120	<b>KA2-2143</b>	1SFA 616 921 R2143	
Blue	4-6	470	220-350	<b>KA2-2144</b>	1SFA 616 921 R2144	
White	4-6	x=0.31 y=0.32	350-600	<b>KA2-2145</b>	1SFA 616 921 R2145	
<b>Rated voltage 230 V, AC</b> Service life 25 000 h						
Red	4	630	60	<b>KA2-2221</b>	1SFA 616 921 R2221	
Green	4	525	500	<b>KA2-2222</b>	1SFA 616 921 R2222	
Yellow	4	592	70	<b>KA2-2223</b>	1SFA 616 921 R2223	
Blue	4	470	220	<b>KA2-2224</b>	1SFA 616 921 R2224	
White	4	x=0.31 y=0.32	350	<b>KA2-2225</b>	1SFA 616 921 R2225	

⊕ At AC the luminance is decreased by 30% and there is also a slight flickering.

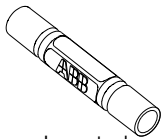


# Accessories

Pilot Devices  
Modular Range  
30mm



Flashing LED



Lamp tool



Mounting tool



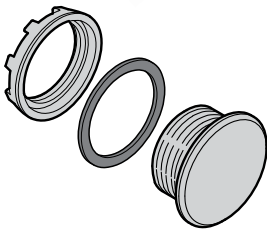
30mm adaptors



Flush mount adaptor



Extra key



Blanking plug



30mm gasket

## Flashing LED

A lamp changing tool is required for changing bulb.  
Choose the same color for the LED and the lamp cap or use a clear lamp cap.  
The lamp base has to be connected to cathode (-) and the bottom contact to anode (+).

Description	Catalog number	Ref. code
<b>Rated voltage 24 V, rated current 25 mA, DC</b>		
Color	Wave length nm	Service life hours
Red	630	50 000
Green	565	50 000
Yellow	585	50 000
	<b>4950 512-1</b>	4950 512-1
	<b>4950 512-2</b>	4950 512-2
	<b>4950 512-3</b>	4950 512-3

## Lamp changing tool

Description	Catalog number	Ref. code
For LEDs and for bulbs	<b>KA1-8072</b>	1SFA 616 920 R8072

## Mounting tool

Description	Catalog number	Ref. code
Used for tightening the sleeve	<b>KA1-8015</b>	1SFA 611 920 R8015

## 30mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Catalog number	Ref. code
<b>For use with emergency stop pushbuttons</b>		
Black plastic	<b>KA1-8027</b>	1SFA 616 920 R8027
Metal	<b>KA1-8028</b>	1SFA 616 920 R8028
<b>For use with pushbuttons, selector switches, pilot lights, potentiometers and buzzers</b>		
Black plastic	<b>KA1-8029</b>	1SFA 616 920 R8029
Metal	<b>KA1-8030</b>	1SFA 616 920 R8030

## Flush mount adaptor, 30mm

Description	Catalog number	Ref. code
For flush mounted pushbuttons	<b>KA1-8073</b>	1SFA 616 920 R8073
For flush mounted selector switches	<b>KA1-8074</b>	1SFA 616 920 R8074

## Extra key

Description	Catalog number	Ref. code
Ronis 455 (key code 71)	<b>SK616021-71</b>	SK 616 021-71
Ronis 421 (key code 72)	<b>SK616021-72</b>	SK 616 021-72
Ronis 3433-E (key code 73)	<b>SK616021-73</b>	SK 616 021-73

## Blanking plug (30mm)

Description	Catalog number	Ref. code
Black plastic	<b>MA1-8133</b>	1SFA 611 920 R8133

## 30mm gasket

Description	Catalog number
Gasket, 30mm	<b>1SFA616920R8018</b>



### Approvals

The pushbuttons, selector switches and pilot lights are approved by:  
- National approval agencies: UL, CSA and China Compulsory Product Certification

For detail information please contact ABB

### Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
EN 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
EN 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
EN 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators
EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

### Degrees of protection

Operators	IP	UL/CSA
Pushbutton with flush or extended button, <b>MP</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Double pushbutton, <b>MPD</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Mushroom pushbutton, momentary, <b>MPM</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Emergency stop pushbutton, <b>MPMT/P</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Selector switch, <b>M2SS/M3SS</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Key operated selector switch, <b>M2SSK/M3SSK</b>	IP 66	Type 1, 3R, 4, 4X, 12
Toggle switch, <b>MTS2/MTS3</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Definite purpose pushbutton, 30 mm, <b>KP6</b>	IP 66	Type 1, 3R, 4, 4X
Reset button, <b>KPR</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Pilot lights, <b>ML</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
Buzzer, <b>KB</b>	IP 65	Type 4X
Potentiometer, <b>KT</b>	IP 66	Type 1, 3R, 4, 4X, 12, 13
<b>Contact block &amp; transformer block</b>	IP 20	
<b>Enclosures</b>		
Plastic enclosures	IP 66	
Metallic enclosures	IP 67	



### Material

**No ozone depleting substances in the products.**

All front parts are made of polycarbonate

Material		
PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PSU	Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand high temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc		Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy		Good corrosion resistance in inland-, sea and industrial atmosphere.
Rubber		Chloroprene Nitrile

## Mechanical life

### Operators

Pushbuttons with flush or extended button, momentary mushroom pushbutton	2 million operations
Selector switch, maintained mushroom pushbutton, key operated selector switch and double pushbutton	0.5 million operations
Emergency stop pushbutton	0.1 million operations
Toggle switch	1 million operations
Lockable pushbuttons	0.3 million operations

## Temperature

Ambient temperature during operation	-25 to +70 °C
<i>Exception: All pilot devices with 2 W continuously lit filament bulb</i>	-25 to +40 °C
Storage temperature	-30 to +85 °C

## Terminals

Plus-minus Pozidriv No.2 screw with DIN-washer.	
Connectable area	min. 1 x 0.5 mm <sup>2</sup> /AWG 20 max. 2 x 2.5 mm <sup>2</sup> /2 x AWG14
Recommended torque	0.9 Nm

## Tightening torque

Locking nut, M22	Min. 2 Nm Max. 2.3 Nm
------------------	--------------------------

## Contact blocks

Mechanical endurance 10 million operations

Self cleaning contacts of silver, NC contact with positive opening.

At voltages and currents below 24 V and 5.6 mA two contact blocks in parallel are recommended. As an alternative, gold plated contacts can be used.

Ratings as per UL, CSA, NEMA	A600	Q600
	AC	DC
Rated insulation voltage	600 V	600 V
Rated thermal current	10 A	2.5 A
Rated operational current	at 120 V 6 A	at 125 V 0.55 A
	240 V 3 A	250 V 0.27 A
	480 V 1.5 A	480 V 0.10 A
	600 V 1.2 A	600 V 0.10 A

### Ratings as per IEC 60 947-5-1

Rated insulation voltage, $U_i$	690 V
Rated thermal current, $I_{th}$	10 A
Rated operational current, $I_e$	
utilisation category AC 15,	at 120 V 8 A
	230 V 6 A
	400 V 4 A
	690 V 2 A

Rated operational current, $I_e$	
utilisation category DC 13,	at 24 V 5 A
	125 V 1.1 A
	250 V 0.55 A

<b>Contact resistance</b>	< 25 mΩ
<b>Compulsory function test</b>	at 5V, 16 mA

### Max. number of contact blocks per operator ①

Pushbutton, toggle switch and mushroom pushbutton	6
Maintained pushbutton	4
Double pushbutton, selector switch, key operated selector switch and emergency stop pushbutton	4

### Short circuit protection

Max. fuse at 1 kA	16 A ordinary 10 A delayed
-------------------	-------------------------------

## Lamp block

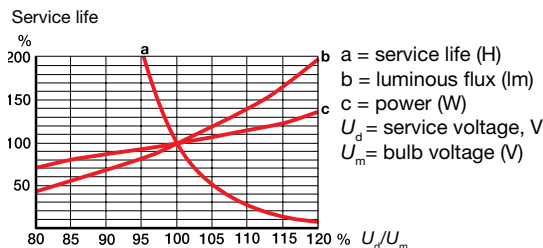
### Ratings as per IEC 60 947-5-1

Rated insulation voltage	230 V
Base	Ba 9s
Permissible power, up to	2 W

### Service life of filament bulb

Relative service life, luminous flux and power consumption at different service voltages.

It is generally true to say that bulbs for lower voltages give more light and have better vibration-withstand capability than bulbs for higher voltages.



### Lamp comparison

Bulb Catalog No.	Approx. life (hours)	Shock and service immunity	High vibration temperature	Low power operating	Brightness consumption
Filament	5000 - 10 000	+	+	+	+++
LED	25 000 - 50 000	+++	++	++	++

Very good +++  
Good ++  
Less good +

## Transformer block

Suitable for filament bulb 6 or 24 V AC and 1.2 W and LED 24 V.

Rated power	1.5 W
Rated voltage	Ratio, see Accessories page 8.25
Rated insulation voltage acc. to IEC 70 °C (DT)	Class E

① The contact blocks can be stacked in max. two levels on the 3- block holder.  
Only one level is accepted on the 5-block holder.

## Notes

# Assembled Modular range

**ABB****Assembled Modular Range**  
22mm**General construction**

- Snap-on feature reduces installation time
- Bezels: black plastic, chrome metal
- Contact block holder features rear mounting with quick-release locking mechanism for high security
- Buttons available in several colors
- Engraved text caps available
- Custom-specific markings on request
- UL File# E57057
- CSA File# LR19700

**Operators**

- Pushbuttons, illuminated and non-illuminated
- Double pushbuttons, illuminated and non-illuminated
- Mushroom pushbuttons, illuminated and non-illuminated, 40mm and 60mm diameter
- Emergency stop pushbuttons, illuminated and non-illuminated, twist or pull release
- Selector switches, illuminated and non-illuminated, 2- or 3-position, short or long handle
- Key-operated selector switches, 2- or 3-position
- Toggle switches, 2- or 3-position

**Contact blocks**

- Quick-mount, quick release contact block holder for fast and easy assembly/disassembly
- NO & NC contact blocks are color-coded for easy identification: Green = NO; Red = NC
- Silver-tipped contacts
- Wiping action for high reliability
- Low energy gold-plated contact blocks
- Contact block holder for three or five blocks in a single row

**Pilot lights**

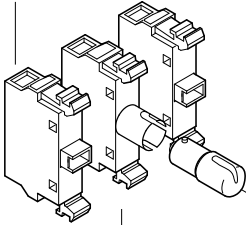
- Full voltage, resistor and transformer
- LED and filament bulbs available

## Mounting

### Exploded view

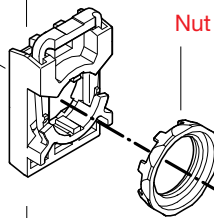
#### Contact block

Single pole with making or breaking contact



#### Holder

Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.

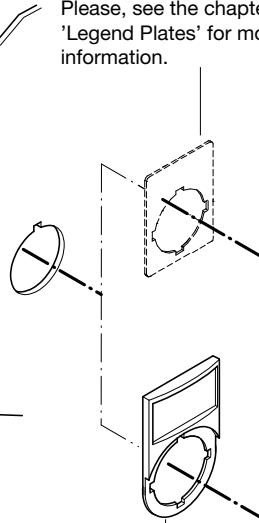


#### Nut

#### Legend plates

Of brushed aluminum with slots that guide the legend plate and the operator into the correct position.

Please, see the chapter 'Legend Plates' for more information.



#### 30mm adaptor

#### Operator

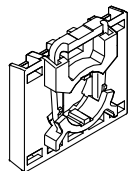
Buttons, lenses and handles in several colors. Illuminated or non-illuminated.



#### Lamp block

Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.

#### Five block holder



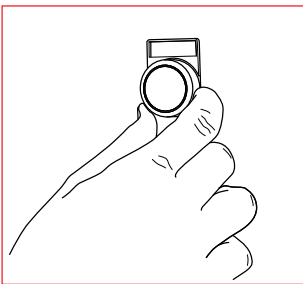
#### Legend plate holder

Of black plastic. Insert of brushed aluminum. Please, see the chapter 'legend plates' for more information.

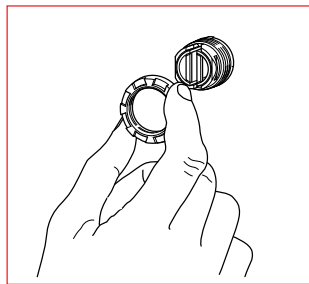
#### Bezels

Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

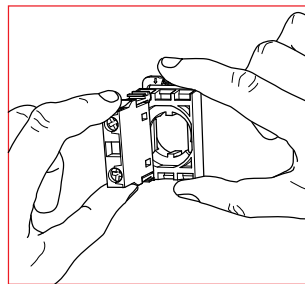
### Easy to mount



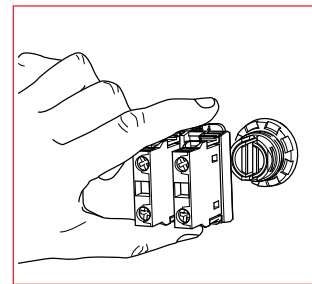
The operator is to be inserted from the front.....



...and secured at the back with a nut.

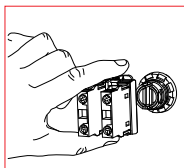
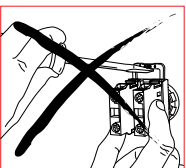


The contact blocks/lamp block are then snapped onto the holder...



...and the holder snaps onto the operator.

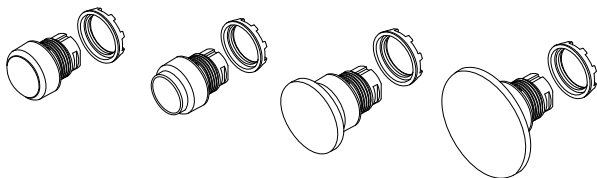
### ...and to remove



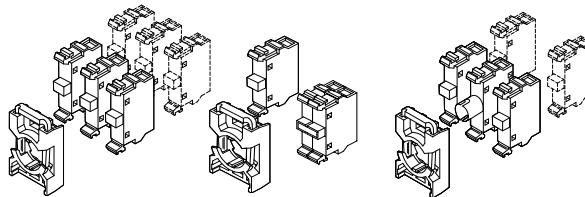
Press down the spring clip on the holder and pull the holder from the actuator.

## Selection guide

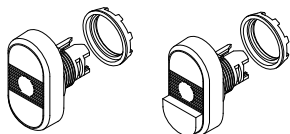
### Pushbuttons and Mushroom pushbuttons



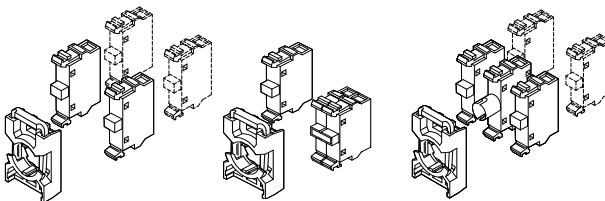
#### Contact block/lamp block combinations



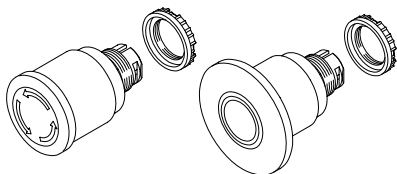
### Double pushbuttons



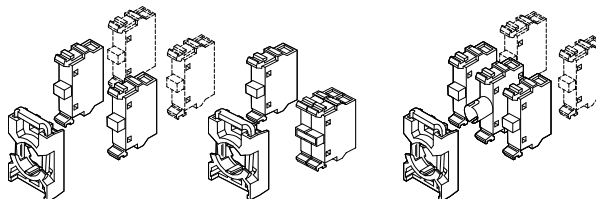
#### Contact block/lamp block combinations



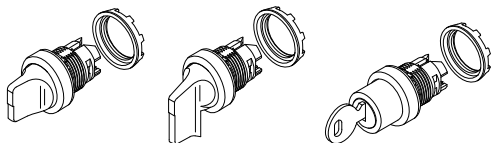
### Emergency stop pushbuttons



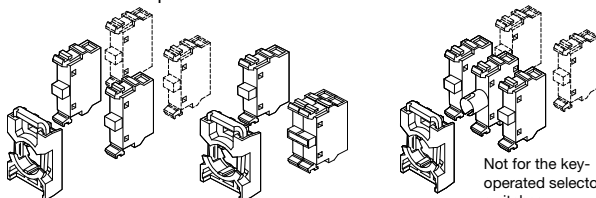
#### Contact block/lamp block combinations



### Selector switches



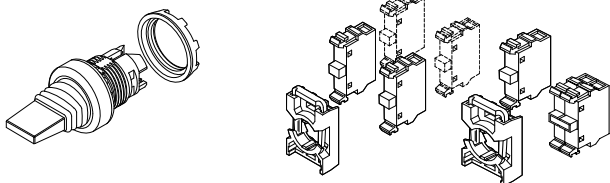
#### Contact block/lamp block combinations



Not for the key-operated selector switches

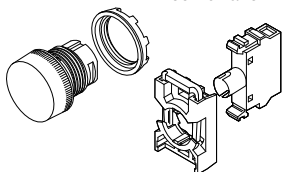
### Toggle switches

#### Contact block combinations



### Pilot lights

#### Lamp block combination





## Catalog number and list price explanation

Assembled pilot device catalog numbers are created by selecting the appropriate characters from the grid. Begin at the top of the grid and work down, adding the desired characters to the catalog number to create a specific product. The list price is found by adding the prices of all the individually selected options.

### Pushbuttons, non-illuminated

Options	Catalog Number Characters																			
Momentary Flush			M	P	1	-														
Maintained Flush			M	P	2	-														
Momentary Extended			M	P	3	-														
Maintained Extended			M	P	4	-														
Bezel, Black Plastic, with Holder							4	0												
Bezel, Chrome Metal, with Holder							6	0												
Button Color - Red											R									
Button Color - Green											G									
Button Color - Yellow											Y									
Button Color - Blue											L									
Button Color - White											W									
Button Color - Black											B									
Button Color - Clear											C									
Contact Blocks, 1NO												1	0							
Contact Blocks, 2NO												2	0							
Contact Blocks, 3NO												3	0							
Contact Blocks, 1NC												0	1							
Contact Blocks, 2NC												0	2							
Contact Blocks, 3NC												0	3							
Contact Blocks, 1NO+1NC												1	1							
Contact Blocks, 2NO+1NC												2	1							
Contact Blocks, 1NO+2NC												1	2							
Contact Blocks, 1NO, Gold												1	0	G						
Contact Blocks, 2NO, Gold												2	0	G						
Contact Blocks, 3NO, Gold												3	0	G						
Contact Blocks, 1NC, Gold												0	1	G						
Contact Blocks, 2NC, Gold												0	2	G						
Contact Blocks, 3NC, Gold												0	3	G						
Contact Blocks, 1NO+1NC, Gold												1	1	G						
Contact Blocks, 2NO+1NC, Gold												2	1	G						
Contact Blocks, 1NO+2NC, Gold												1	2	G						
Text Caps with Clear Lens Only											C						C	X	X	
5 Block Holder																				5
30mm Black Plastic Adaptor Ring	G	1																		
30mm Chrome Metal Adaptor Ring	G	2																		

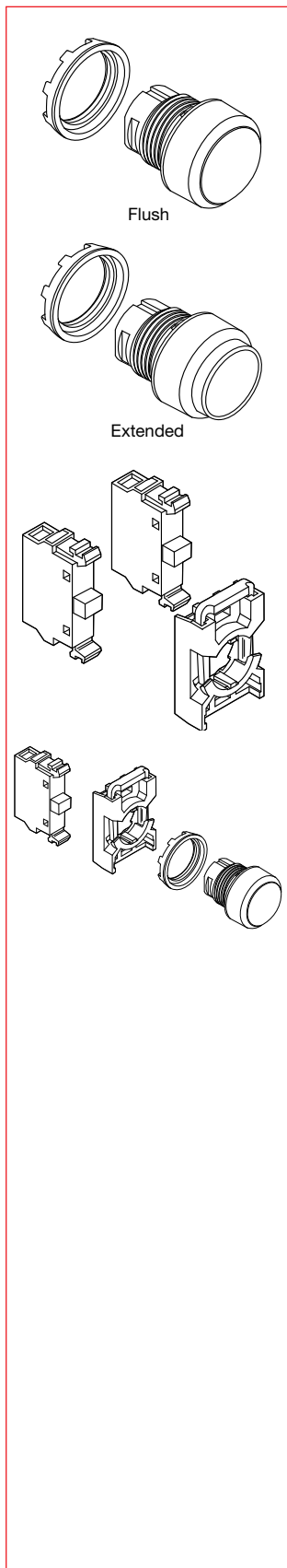
**M P 1 - 4 0 R 1 0**

#### EXAMPLE:

What is the catalog number and price for a 22mm momentary flush pushbutton with a black bezel, red button & 1 NO contact block? Follow the arrows to see how the catalog number is determined.

## Pushbuttons Non-illuminated

### Pushbuttons, non-illuminated

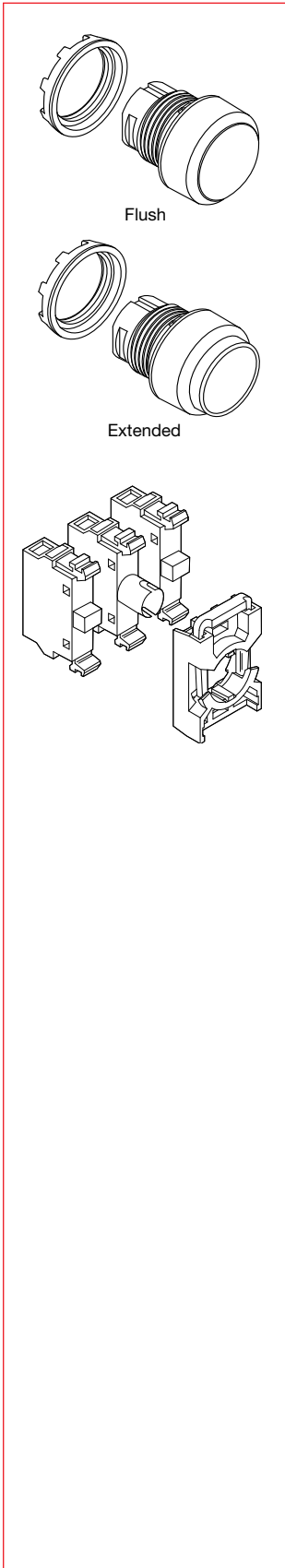


Options	Catalog Number Characters										
Momentary Flush			M	P	1	-					
Maintained Flush ①			M	P	2	-					
Momentary Extended			M	P	3	-					
Maintained Extended ①			M	P	4	-					
Bezel, Black Plastic, with Holder						-	4	0			
Bezel, Chrome Metal, with Holder						-	6	0			
Button Color - Red									R		
Button Color - Green									G		
Button Color - Yellow									Y		
Button Color - Blue									L		
Button Color - White									W		
Button Color - Black									B		
Button Color - Clear									C		
Contact Blocks, 1NO									1	0	
Contact Blocks, 2NO									2	0	
Contact Blocks, 3NO									3	0	
Contact Blocks, 1NC									0	1	
Contact Blocks, 2NC									0	2	
Contact Blocks, 3NC									0	3	
Contact Blocks, 1NO+1NC									1	1	
Contact Blocks, 2NO+1NC									2	1	
Contact Blocks, 1NO+2NC									1	2	
Contact Blocks, 1NO, Gold									1	0	G
Contact Blocks, 2NO, Gold									2	0	G
Contact Blocks, 3NO, Gold									3	0	G
Contact Blocks, 1NC, Gold									0	1	G
Contact Blocks, 2NC, Gold									0	2	G
Contact Blocks, 3NC, Gold									0	3	G
Contact Blocks, 1NO+1NC, Gold									1	1	G
Contact Blocks, 2NO+1NC, Gold									2	1	G
Contact Blocks, 1NO+2NC, Gold									1	2	G
Text Caps with Clear Lens Only									C		C X X②
5 Block Holder											5
30mm Black Plastic Adaptor Ring ③	G	1									
30mm Chrome Metal Adaptor Ring ③	G	2									

See catalog number explanation on page 4.

① No contact block in center position.  
 ② Replace "XX" with text cap legends from pages 33 - 34.  
 ③ For 30mm devices, use Discount Schedule CC

## Pushbuttons Illuminated



### Pushbuttons, illuminated

Options	Catalog Number Characters															
Momentary Flush ①		M	P	1	-											
Maintained Flush ①		M	P	2	-											
Momentary Extended ①		M	P	3	-											
Maintained Extended ①		M	P	4	-											
Bezel, Black Plastic, with Holder				-	4											
Bezel, Chrome Metal, with Holder				-	6											
Illuminated without Lamp block ②				-		1										
Lamp block, MLB-1, Bulb not Included				-		2										
Lamp block, MLB-2, Bulb not Included				-		3										
Lamp block, MLB-3, Bulb not Included				-		4										
Lamp block, MLB-4, Bulb not Included				-		5										
Lamp block, MLB-5, Bulb not Included				-		6										
Button Color - Red				-			R									
Button Color - Green				-			G									
Button Color - Yellow				-			Y									
Button Color - Blue				-			L									
Button Color - White				-			W									
Button Color - Clear				-			C									
Contact Blocks, 1NO				-		1	0									
Contact Blocks, 2NO				-		2	0									
Contact Blocks, 3NO				-		3	0									
Contact Blocks, 1NC				-		0	1									
Contact Blocks, 2NC				-		0	2									
Contact Blocks, 3NC				-		0	3									
Contact Blocks, 1NO+1NC				-		1	1									
Contact Blocks, 2NO+1NC				-		2	1									
Contact Blocks, 1NO+2NC				-		1	2									
Contact Blocks, 1NO, Gold				-		1	0	G								
Contact Blocks, 2NO, Gold				-		2	0	G								
Contact Blocks, 3NO, Gold				-		3	0	G								
Contact Blocks, 1NC, Gold				-		0	1	G								
Contact Blocks, 2NC, Gold				-		0	2	G								
Contact Blocks, 3NC, Gold				-		0	3	G								
Contact Blocks, 1NO+1NC, Gold				-		1	1	G								
Contact Blocks, 2NO+1NC, Gold				-		2	1	G								
Contact Blocks, 1NO+2NC, Gold				-		1	2	G								
Filament Bulb 6V				-				F	6							
Filament Bulb 12V				-				F	7							
Filament Bulb 24V				-				F	8							
Filament Bulb 30V				-				F	3	0						
Filament Bulb 48V				-				F	9							
Filament Bulb 60V				-				F	6	0						
Filament Bulb 110V				-				F	1	1						
Filament Bulb 130V				-				F	1							
LED 12VDC				-				L	7							
LED 24VAC/DC				-				L	8							
LED 48VAC/DC				-				L	9							
LED 60VAC/DC				-				L	6	0						
LED 110-130VAC				-				L	1							
LED 110-130VAC/DC				-				L	1	3						
LED 230V				-				L	2							
Transformer Block 110-127/6VBulb				-				T	1							
Transformer Block 220-240/6VBulb				-				T	2							
Transformer Block 380-420/6VBulb				-				T	3							
Transformer Block 440-480/6VBulb				-				T	4							
Transformer Block 500-600/6VBulb				-				T	5							
Transformer Block 110-127/24VBulb				-				T	6							
Transformer Block 220-240/24VBulb				-				T	7							
Transformer Block 380-420/24VBulb				-				T	8							
Transformer Block 440-480/24VBulb				-				T	9							
Transformer Block 110-127/24VLED				-				T	L	1						
Transformer Block 220-240/24VLED				-				T	L	2						
Transformer Block 380-420/24VLED				-				T	L	3						
Transformer Block 440-480/24VLED				-				T	L	4						
Text Caps with Clear Lens Only				-				C						C	X	X③
5 Block Holder				-												5
30mm Black Plastic Adaptor Ring ④	G	1		-												
30mm Chrome Metal Adaptor Ring ④	G	2		-												

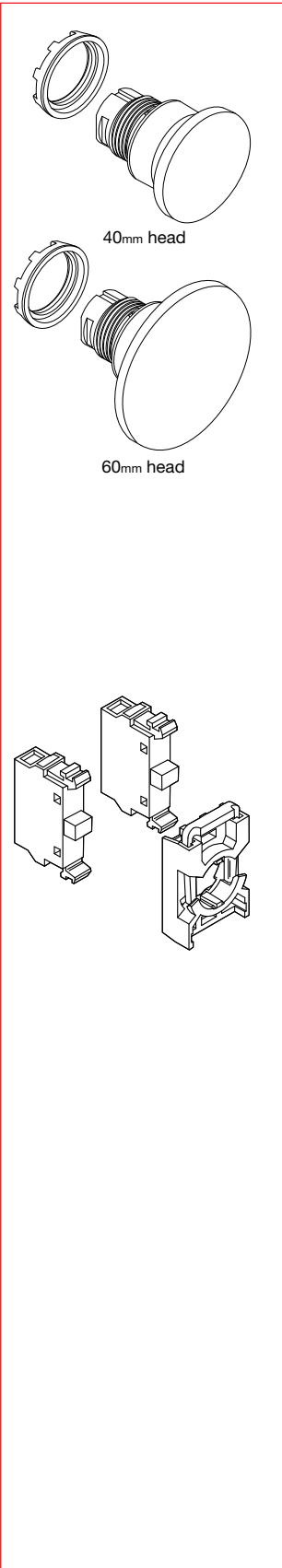
See catalog number explanation on page 4.

- ① No contact block in center position.
- ② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.
- ③ Replace "XX" with text cap legends from pages 33 - 34.
- ④ For 30mm devices, use Discount Schedule CC

# Mushroom pushbuttons

## Non-illuminated, momentary

### Mushroom pushbuttons, non-illuminated

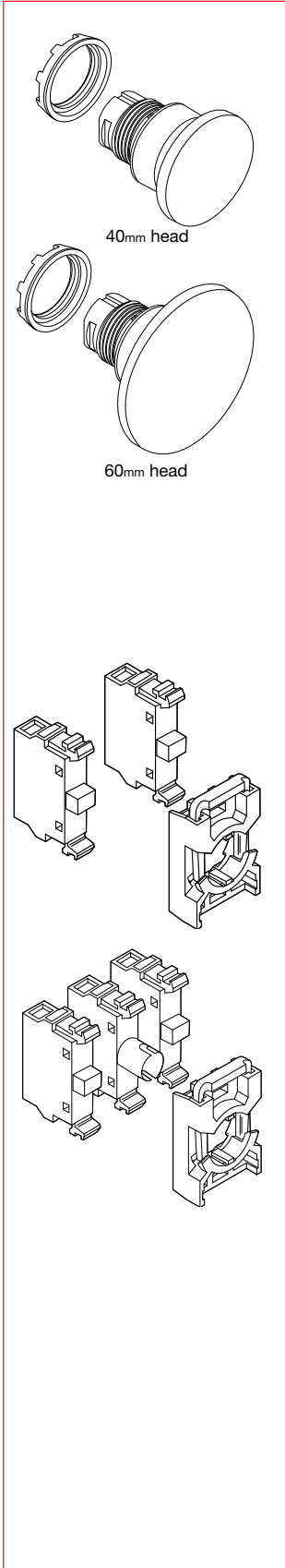


Options	Catalog number characters																				
Momentary, 40 mm			M	P	M	1	-														
Momentary, 60 mm			M	P	M	2	-														
Bezel, Black Plastic, with Holder							-	4	0												
Bezel, Chrome Metal, with Holder							-	6	0												
Button Color - Red																			R		
Button Color - Yellow																			Y		
Button Color - Black																			B		
Contact Blocks, 1NO																			1	0	
Contact Blocks, 2NO																			2	0	
Contact Blocks, 3NO																			3	0	
Contact Blocks, 1NC																			0	1	
Contact Blocks, 2NC																			0	2	
Contact Blocks, 3NC																			0	3	
Contact Blocks, 1NO+1NC																			1	1	
Contact Blocks, 2NO+1NC																			2	1	
Contact Blocks, 1NO+2NC																			1	2	
Contact Blocks, 1NO, Gold																			1	0	G
Contact Blocks, 2NO, Gold																			2	0	G
Contact Blocks, 3NO, Gold																			3	0	G
Contact Blocks, 1NC, Gold																			0	1	G
Contact Blocks, 2NC, Gold																			0	2	G
Contact Blocks, 3NC, Gold																			0	3	G
Contact Blocks, 1NO+1NC, Gold																			1	1	G
Contact Blocks, 2NO+1NC, Gold																			2	1	G
Contact Blocks, 1NO+2NC, Gold																			1	2	G
5 Block Holder																					5
30mm Black Plastic Adaptor Ring ①	G																				
30mm Chrome Metal Adaptor Ring ①	G																				

See catalog number explanation on page 4.

① For 30mm devices, use Discount Schedule CC.

## Mushroom pushbuttons Illuminated, momentary ①



### Mushroom pushbuttons, illuminated ①

Options	Catalog number characters										
Momentary, 40 mm			M	P	M	1	-				
Momentary, 60 mm			M	P	M	2	-				
Bezel, Black Plastic, with Holder							-	4			
Bezel, Chrome Metal, with Holder							-	6			
Illuminated without Lamp block ②							-	1			
Lamp block, MLB-1, Bulb not Included							-	2			
Lamp block, MLB-2, Bulb not Included							-	3			
Lamp block, MLB-3, Bulb not Included							-	4			
Lamp block, MLB-4, Bulb not Included							-	5			
Lamp block, MLB-5, Bulb not Included							-	6			
Button Color - Red									R		
Button Color - Yellow									Y		
Button Color - Green									G		
Contact Blocks, 1NO								1	0		
Contact Blocks, 2NO								2	0		
Contact Blocks, 3NO								3	0		
Contact Blocks, 1NC								0	1		
Contact Blocks, 2NC								0	2		
Contact Blocks, 3NC								0	3		
Contact Blocks, 1NO+1NC								1	1		
Contact Blocks, 2NO+1NC								2	1		
Contact Blocks, 1NO+2NC								1	2		
Contact Blocks, 1NO, Gold								1	0	G	
Contact Blocks, 2NO, Gold								2	0	G	
Contact Blocks, 3NO, Gold								3	0	G	
Contact Blocks, 1NC, Gold								0	1	G	
Contact Blocks, 2NC, Gold								0	2	G	
Contact Blocks, 3NC, Gold								0	3	G	
Contact Blocks, 1NO+1NC, Gold								1	1	G	
Contact Blocks, 2NO+1NC, Gold								2	1	G	
Contact Blocks, 1NO+2NC, Gold								1	2	G	
Filament Bulb, 6V										F	6
Filament Bulb, 12V										F	7
Filament Bulb, 24V										F	8
Filament Bulb, 30V										F	3 0
Filament Bulb, 48V										F	9
Filament Bulb, 60V										F	6 0
Filament Bulb, 110V										F	1 1
Filament Bulb, 130V										F	1
LED, 12VDC										L	7
LED, 24VAC/DC										L	8
LED, 48VAC/DC										L	9
LED, 60VAC/DC										L	6 0
LED, 110-130VAC										L	1
LED, 110-130VAC/DC										L	1 3
LED, 230VAC										L	2
Transformer Block, 110-127/6V, bulb 6V										T	1
Transformer Block, 220-240/6V, bulb 6V										T	2
Transformer Block, 380-420/6V, bulb 6V										T	3
Transformer Block, 440-480/6V, bulb 6V										T	4
Transformer Block, 500-600/6V, bulb 6V										T	5
Transformer Block, 110-127/24V, bulb 24V										T	6
Transformer Block, 220-240/24V, bulb 24V										T	7
Transformer Block, 380-420/24V, bulb 24V										T	8
Transformer Block, 440-480/24V, bulb 24V										T	9
Transformer Block, 110-127/24V, bulb 24V LED										T	L 1
Transformer Block, 220-240/24V, bulb 24V LED										T	L 2
Transformer Block, 380-420/24V, bulb 24V LED										T	L 3
Transformer Block, 440-480/24V, bulb 24V LED										T	L 4
5 Block Holder											5
30mm Black Plastic Adaptor Ring ③	G	1									
30mm Chrome Metal Adaptor Ring ③	G	2									

See catalog number explanation on page 4.

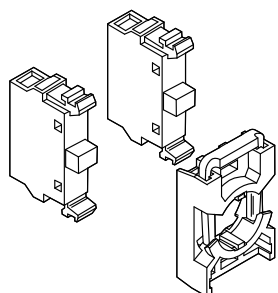
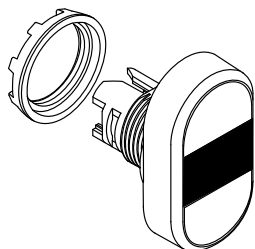
① No contact block in center position.

② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.

③ For 30mm devices, use Discount Schedule CC.

## Double pushbuttons Flush/flush, non-illuminated ①

### Double pushbutton, flush/flush, non-illuminated ①



Options	Catalog number characters										
Flush/Flush, Green/Red	M	P	D	1	-						
Flush/Flush, Green/Red, I/O	M	P	D	2	-						
Flush/Flush, Green/Red, ON/OFF	M	P	D	3	-						
Flush/Flush, Green/Red, START/STOP	M	P	D	4	-						
Flush/Flush, White/Black	M	P	D	5	-						
Flush/Flush, White/Black, I/O	M	P	D	6	-						
Flush/Flush, White/Black, ON/OFF	M	P	D	7	-						
Flush/Flush, White/Black, START/STOP	M	P	D	8	-						
With Holder							2	0			
Center Lens Color - Black									B		
Contact Blocks, 1NO									1	0	
Contact Blocks, 2NO									2	0	
Contact Blocks, 3NO									3	0	
Contact Blocks, 1NC									0	1	
Contact Blocks, 2NC									0	2	
Contact Blocks, 3NC									0	3	
Contact Blocks, 1NO+1NC									1	1	
Contact Blocks, 2NO+1NC									2	1	
Contact Blocks, 1NO+2NC									1	2	
Contact Blocks, 1NO, Gold									1	0	G
Contact Blocks, 2NO, Gold									2	0	G
Contact Blocks, 3NO, Gold									3	0	G
Contact Blocks, 1NC, Gold									0	1	G
Contact Blocks, 2NC, Gold									0	2	G
Contact Blocks, 3NC, Gold									0	3	G
Contact Blocks, 1NO+1NC, Gold									1	1	G
Contact Blocks, 2NO+1NC, Gold									2	1	G
Contact Blocks, 1NO+2NC, Gold									1	2	G
5 Block Holder											5

See catalog number explanation on page 4.

① No contact block in center position.

## Double pushbutton Flush/flush, illuminated center ①



### Double pushbutton, flush/flush, illuminated ①

Options	Catalog number characters																			
Flush/Flush, Green/Red	M	P	D	1	-															
Flush/Flush, Green/Red, I/O	M	P	D	2	-															
Flush/Flush, Green/Red, ON/OFF	M	P	D	3	-															
Flush/Flush, Green/Red, START/STOP	M	P	D	4	-															
Flush/Flush, White/Black	M	P	D	5	-															
Flush/Flush, White/Black, I/O	M	P	D	6	-															
Flush/Flush, White/Black, ON/OFF	M	P	D	7	-															
Flush/Flush, White/Black, START/STOP	M	P	D	8	-															
With Holder					-					2										
Illuminated without Lamp block ②					-					1										
Lamp block, MLB-1, Bulb not Included					-					2										
Lamp block, MLB-2, Bulb not Included					-					3										
Lamp block, MLB-3, Bulb not Included					-					4										
Lamp block, MLB-4, Bulb not Included					-					5										
Lamp block, MLB-5, Bulb not Included					-					6										
Center Lens Color - Red					-											R				
Center Lens Color - Green					-											G				
Center Lens Color - Yellow					-											Y				
Center Lens Color - Clear					-											C				
Contact Blocks, 1NO					-											1	0			
Contact Blocks, 2NO					-											2	0			
Contact Blocks, 3NO					-											3	0			
Contact Blocks, 1NC					-											0	1			
Contact Blocks, 2NC					-											0	2			
Contact Blocks, 3NC					-											0	3			
Contact Blocks, 1NO+1NC					-											1	1			
Contact Blocks, 2NO+1NC					-											2	1			
Contact Blocks, 1NO+2NC					-											1	2			
Contact Blocks, 1NO, Gold					-											1	0	G		
Contact Blocks, 2NO, Gold					-											2	0	G		
Contact Blocks, 3NO, Gold					-											3	0	G		
Contact Blocks, 1NC, Gold					-											0	1	G		
Contact Blocks, 2NC, Gold					-											0	2	G		
Contact Blocks, 3NC, Gold					-											0	3	G		
Contact Blocks, 1NO+1NC, Gold					-											1	1	G		
Contact Blocks, 2NO+1NC, Gold					-											2	1	G		
Contact Blocks, 1NO+2NC, Gold					-											1	2	G		
Filament Bulb, 6V					-														F	6
Filament Bulb, 12V					-														F	7
Filament Bulb, 24V					-														F	8
Filament Bulb, 30V					-														F	3 0
Filament Bulb, 48V					-														F	9
Filament Bulb, 60V					-														F	6 0
Filament Bulb, 110V					-														F	1 1
Filament Bulb, 130V					-														F	1
LED, 12VDC					-														L	7
LED, 24VAC/DC					-														L	8
LED, 48VAC/DC					-														L	9
LED, 60VAC/DC					-														L	6 0
LED, 110-130VAC					-														L	1
LED, 110-130VAC/DC					-														L	1 3
LED, 230VAC					-														L	2
Transformer Block, 110-127/6V, bulb 6V					-														T	1
Transformer Block, 220-240/6V, bulb 6V					-														T	2
Transformer Block, 380-420/6V, bulb 6V					-														T	3
Transformer Block, 440-480/6V, bulb 6V					-														T	4
Transformer Block, 500-600/6V, bulb 6V					-														T	5
Transformer Block, 110-127/24V, bulb 24V					-														T	6
Transformer Block, 220-240/24V, bulb 24V					-														T	7
Transformer Block, 380-420/24V, bulb 24V					-														T	8
Transformer Block, 440-480/24V, bulb 24V					-														T	9
Transformer Block, 110-127/24V, bulb 24V LED					-														T	L 1
Transformer Block, 220-240/24V, bulb 24V LED					-														T	L 2
Transformer Block, 380-420/24V, bulb 24V LED					-														T	L 3
Transformer Block, 440-480/24V, bulb 24V LED					-														T	L 4
5 Block Holder					-															5

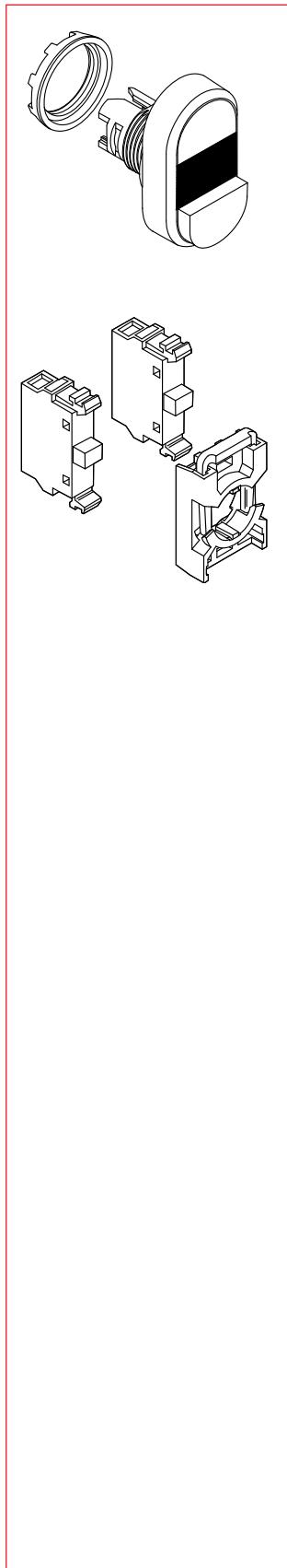
See catalog number explanation on page 4.

① No contact block in center position.

② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.



## Double pushbuttons Flush/extended, non-illuminated ①



### Double pushbutton, flush/extended, non-illuminated ①

Options	Catalog number characters										
Flush/Extended, Green/Red	M	P	D	1	2	-					
Flush/Extended, Green/Red, I/O	M	P	D	1	3	-					
Flush/Extended, Green/Red, ON/OFF	M	P	D	1	4	-					
Flush/Extended, Green/Red, START/STOP	M	P	D	1	5	-					
Flush/Extended, White/Black	M	P	D	1	6	-					
Flush/Extended, White/Black, I/O	M	P	D	1	7	-					
Flush/Extended, White/Black, ON/OFF	M	P	D	1	8	-					
Flush/Extended, White/Black, START/STOP	M	P	D	1	9	-					
With Holder							2	0			
Center Lens Color - Black									B		
Contact Blocks, 1NO									1	0	
Contact Blocks, 2NO									2	0	
Contact Blocks, 3NO									3	0	
Contact Blocks, 1NC									0	1	
Contact Blocks, 2NC									0	2	
Contact Blocks, 3NC									0	3	
Contact Blocks, 1NO+1NC									1	1	
Contact Blocks, 2NO+1NC									2	1	
Contact Blocks, 1NO+2NC									1	2	
Contact Blocks, 1NO, Gold									1	0	G
Contact Blocks, 2NO, Gold									2	0	G
Contact Blocks, 3NO, Gold									3	0	G
Contact Blocks, 1NC, Gold									0	1	G
Contact Blocks, 2NC, Gold									0	2	G
Contact Blocks, 3NC, Gold									0	3	G
Contact Blocks, 1NO+1NC, Gold									1	1	G
Contact Blocks, 2NO+1NC, Gold									2	1	G
Contact Blocks, 1NO+2NC, Gold									1	2	G
5 Block Holder											5

See catalog number explanation on page 4.

① No contact block in center position.

## Double pushbuttons Flush/extended, illuminated ①



### Double pushbutton, flush/extended, illuminated ①

Options	Catalog number characters										
Flush/Extended, Green/Red	M	P	D	1	2	-					
Flush/Extended, Green/Red, I/O	M	P	D	1	3	-					
Flush/Extended, Green/Red, ON/OFF	M	P	D	1	4	-					
Flush/Extended, Green/Red, START/STOP	M	P	D	1	5	-					
Flush/Extended, White/Black	M	P	D	1	6	-					
Flush/Extended, White/Black, I/O	M	P	D	1	7	-					
Flush/Extended, White/Black, ON/OFF	M	P	D	1	8	-					
Flush/Extended, White/Black, START/STOP	M	P	D	1	9	-					
With Holder						-	2				
Illuminated without Lamp block ②						-		1			
Lamp block, MLB-1, Bulb not Included						-		2			
Lamp block, MLB-2, Bulb not Included						-		3			
Lamp block, MLB-3, Bulb not Included						-		4			
Lamp block, MLB-4, Bulb not Included						-		5			
Lamp block, MLB-5, Bulb not Included						-		6			
Lens Color - Red						-		R			
Lens Color - Green						-		G			
Lens Color - Yellow						-		Y			
Lens Color - Clear						-		C			
Contact Blocks, 1NO						-		1	0		
Contact Blocks, 2NO						-		2	0		
Contact Blocks, 3NO						-		3	0		
Contact Blocks, 1NC						-		0	1		
Contact Blocks, 2NC						-		0	2		
Contact Blocks, 3NC						-		0	3		
Contact Blocks, 1NO+1NC						-		1	1		
Contact Blocks, 2NO+1NC						-		2	1		
Contact Blocks, 1NO+2NC						-		1	2		
Contact Blocks, 1NO, Gold						-		1	0	G	
Contact Blocks, 2NO, Gold						-		2	0	G	
Contact Blocks, 3NO, Gold						-		3	0	G	
Contact Blocks, 1NC, Gold						-		0	1	G	
Contact Blocks, 2NC, Gold						-		0	2	G	
Contact Blocks, 3NC, Gold						-		0	3	G	
Contact Blocks, 1NO+1NC, Gold						-		1	1	G	
Contact Blocks, 2NO+1NC, Gold						-		2	1	G	
Contact Blocks, 1NO+2NC, Gold						-		1	2	G	
Filament Bulb, 6V						-				F	6
Filament Bulb, 12V						-				F	7
Filament Bulb, 24V						-				F	8
Filament Bulb, 30V						-				F	3 0
Filament Bulb, 48V						-				F	9
Filament Bulb, 60V						-				F	6 0
Filament Bulb, 110V						-				F	1 1
Filament Bulb, 130V						-				F	1
LED, 12VDC						-				L	7
LED, 24VAC/DC						-				L	8
LED, 48VAC/DC						-				L	9
LED, 60VAC/DC						-				L	6 0
LED, 110-130VAC						-				L	1
LED, 110-130VAC/DC						-				L	1 3
LED, 230VAC						-				L	2
Transformer Block, 110-127/6V, bulb 6V						-				T	1
Transformer Block, 220-240/6V, bulb 6V						-				T	2
Transformer Block, 380-420/6V, bulb 6V						-				T	3
Transformer Block, 440-480/6V, bulb 6V						-				T	4
Transformer Block, 500-600/6V, bulb 6V						-				T	5
Transformer Block, 110-127/24V, bulb 24V						-				T	6
Transformer Block, 220-240/24V, bulb 24V						-				T	7
Transformer Block, 380-420/24V, bulb 24V						-				T	8
Transformer Block, 440-480/24V, bulb 24V						-				T	9
Transformer Block, 110-127/24V, bulb 24V LED						-				T	L 1
Transformer Block, 220-240/24V, bulb 24V LED						-				T	L 2
Transformer Block, 380-420/24V, bulb 24V LED						-				T	L 3
Transformer Block, 440-480/24V, bulb 24V LED						-				T	L 4
5 Block Holder						-					5

See catalog number explanation on page 4.

① No contact block in center position.

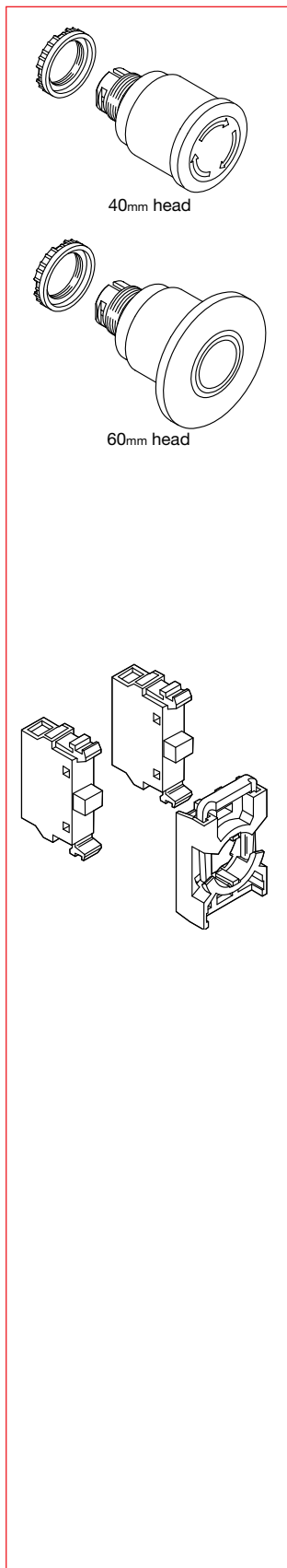
② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.

## Emergency stops & machine stops

### Non-illuminated, maintained

### Fulfills IEC 60947-5-5

#### Emergency stops and machine stops, non-illuminated, maintained



Options	Catalog number characters																			
40mm, Twist Release			M	P	M	T	3	-												
40mm, Pull Release			M	P	M	P	3	-												
60mm, Twist Release			M	P	M	T	4	-												
60mm, Pull Release			M	P	M	P	4	-												
With Holder, 3 Block											-	2	0							
Red																		R		
Contact Blocks, 1NO																		1	0	
Contact Blocks, 2NO																		2	0	
Contact Blocks, 3NO																		3	0	
Contact Blocks, 1NC																		0	1	
Contact Blocks, 2NC																		0	2	
Contact Blocks, 3NC																		0	3	
Contact Blocks, 1NO+1NC																		1	1	
Contact Blocks, 2NO+1NC																		2	1	
Contact Blocks, 1NO+2NC																		1	2	
Contact Blocks, 1NO, Gold																		1	0	G
Contact Blocks, 2NO, Gold																		2	0	G
Contact Blocks, 3NO, Gold																		3	0	G
Contact Blocks, 1NC, Gold																		0	1	G
Contact Blocks, 2NC, Gold																		0	2	G
Contact Blocks, 3NC, Gold																		0	3	G
Contact Blocks, 1NO+1NC, Gold																		1	1	G
Contact Blocks, 2NO+1NC, Gold																		2	1	G
Contact Blocks, 1NO+2NC, Gold																		1	2	G
5 Block Holder																				5
30mm Black Plastic Adaptor Ring ①	G																			
30mm Chrome Metal Adaptor Ring ①	G																			

See catalog number explanation on page 4.

#### To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

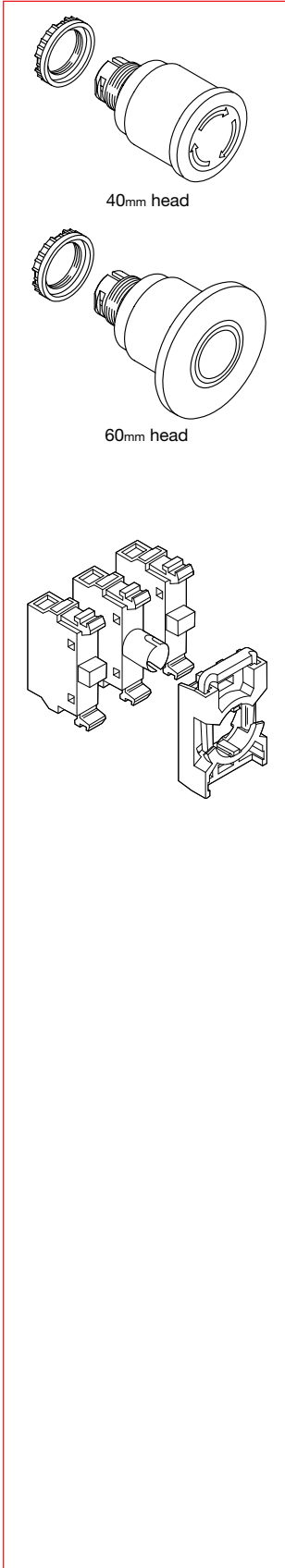
<b>Durability test</b>	6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations.	<b>Latching test</b>	Impulse voltage test at 2,500 V
<b>Robustness</b>	The force 113 N applied in three axes	<b>Resetting test</b>	Pulling force < 50 N Turning torque < 1 Nm
<b>Conditioning</b>	Heat and cold, moist atmosphere, and in 5 % NaC	<b>Shock</b>	15 g shock
		<b>Vibration</b>	2 h at 50m/s <sup>2</sup>
		<b>Contacts with positive opening operation</b>	15 g shock

① For 30mm devices, use Discount Schedule CC.

## Emergency stops & machine stops

### Illuminated, maintained ①

### Fulfills IEC 60947-5-5



#### Emergency stops and machine stops, illuminated

Options	Catalog number characters															
40mm, Twist Release			M	P	M	T	3	-								
40mm, Pull Release			M	P	M	P	3	-								
60mm, Twist Release			M	P	M	T	4	-								
60mm, Pull Release			M	P	M	P	4	-								
With Holder								-	2							
Illuminated without Lamp block ②								-		1						
Lamp block, MLB-1, Bulb not Included								-		2						
Lamp block, MLB-2, Bulb not Included								-		3						
Lamp block, MLB-3, Bulb not Included								-		4						
Lamp block, MLB-4, Bulb not Included								-		5						
Lamp block, MLB-5, Bulb not Included								-		6						
Button Color - Red								-			R					
Contact Blocks, 1NO								-			1	0				
Contact Blocks, 2NO								-			2	0				
Contact Blocks, 3NO								-			3	0				
Contact Blocks, 1NC								-			0	1				
Contact Blocks, 2NC								-			0	2				
Contact Blocks, 3NC								-			0	3				
Contact Blocks, 1NO+1NC								-			1	1				
Contact Blocks, 2NO+1NC								-			2	1				
Contact Blocks, 1NO+2NC								-			1	2				
Contact Blocks, 1NO, Gold								-			1	0	G			
Contact Blocks, 2NO, Gold								-			2	0	G			
Contact Blocks, 3NO, Gold								-			3	0	G			
Contact Blocks, 1NC, Gold								-			0	1	G			
Contact Blocks, 2NC, Gold								-			0	2	G			
Contact Blocks, 3NC, Gold								-			0	3	G			
Contact Blocks, 1NO+1NC, Gold								-			1	1	G			
Contact Blocks, 2NO+1NC, Gold								-			2	1	G			
Contact Blocks, 1NO+2NC, Gold								-			1	2	G			
Filament Bulb, 6V								-					F	7		
Filament Bulb, 12V								-					F	7		
Filament Bulb, 24V								-					F	8		
Filament Bulb, 30V								-					F	3	0	
Filament Bulb, 48V								-					F	9		
Filament Bulb, 60V								-					F	6	0	
Filament Bulb, 110V								-					F	1	1	
Filament Bulb, 130V								-					F	1		
LED, 12VDC								-					L	7		
LED, 24VAC/DC								-					L	8		
LED, 48VAC/DC								-					L	9		
LED, 60VAC/DC								-					L	6	0	
LED, 110-130VAC								-					L	1		
LED, 110-130VAC/DC								-					L	1	3	
LED, 230VAC								-					L	2		
Transformer Block, 110-127/6V, bulb 6V								-					T	1		
Transformer Block, 220-240/6V, bulb 6V								-					T	2		
Transformer Block, 380-420/6V, bulb 6V								-					T	3		
Transformer Block, 440-480/6V, bulb 6V								-					T	4		
Transformer Block, 500-600/6V, bulb 6V								-					T	5		
Transformer Block, 110-127/24V, bulb 24V								-					T	6		
Transformer Block, 220-240/24V, bulb 24V								-					T	7		
Transformer Block, 380-420/24V, bulb 24V								-					T	8		
Transformer Block, 440-480/24V, bulb 24V								-					T	9		
Transformer Block, 110-127/24V, bulb 24V LED								-					T	L	1	
Transformer Block, 220-240/24V, bulb 24V LED								-					T	L	2	
Transformer Block, 380-420/24V, bulb 24V LED								-					T	L	3	
Transformer Block, 440-480/24V, bulb 24V LED								-					T	L	4	
5 Block Holder																5
30mm Black Plastic Adaptor Ring ③	G		1													
30mm Chrome Metal Adaptor Ring ③	G		2													

See catalog number explanation on page 4.

To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

See page 13.

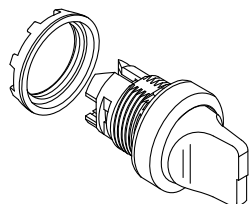
① No contact block in center position.

② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.

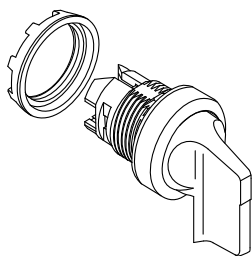
③ For 30mm devices, use Discount Schedule CC.

## Selector switches, 2 position Non-illuminated ①

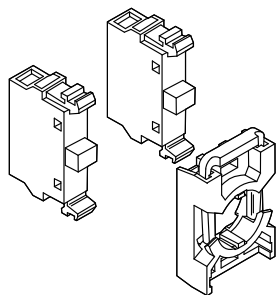
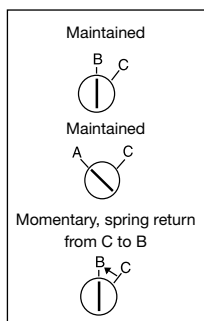
### Selector switches, 2 position, non-illuminated ①



Short handle



Long handle



#### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A or (B)	O	O
C	X	X

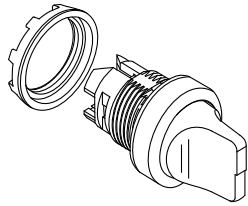
O = not actuated (normal state)  
X = actuated (changed state)

Options	Catalog number characters										
Short/Main B&C	M	2	S	S	1	-					
Short/Main A&C	M	2	S	S	2	-					
Short/Spring Return C to B	M	2	S	S	3	-					
Long/Main B&C	M	2	S	S	4	-					
Long/Main A&C	M	2	S	S	5	-					
Long/Spring Return C to B	M	2	S	S	6	-					
Bezel, Black Plastic, with Holder						-	4	0			
Bezel, Chrome Metal, with Holder						-	6	0			
Switch Color - Red						-			R		
Switch Color - Black						-			B		
Switch Color - Grey						-			U		
Contact Blocks, 1NO						-				1	0
Contact Blocks, 2NO						-				2	0
Contact Blocks, 3NO						-				3	0
Contact Blocks, 1NC						-				0	1
Contact Blocks, 2NC						-				0	2
Contact Blocks, 3NC						-				0	3
Contact Blocks, 1NO+1NC						-				1	1
Contact Blocks, 2NO+1NC						-				2	1
Contact Blocks, 1NO, Gold						-				1	0
Contact Blocks, 2NO, Gold						-				2	0
Contact Blocks, 3NO, Gold						-				3	0
Contact Blocks, 1NC, Gold						-				0	1
Contact Blocks, 2NC, Gold						-				0	2
Contact Blocks, 3NC, Gold						-				0	3
Contact Blocks, 1NO+1NC, Gold						-				1	1
Contact Blocks, 2NO+1NC, Gold						-				2	1
Contact Blocks, 1NO+2NC, Gold						-				1	2
5 Block Holder						-					5
30mm Black Plastic Adaptor Ring ②	G	1				-					
30mm Chrome Metal Adaptor Ring ②	G	2				-					

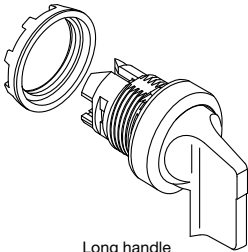
See catalog number explanation on page 4.

① No contact block in center position.  
② For 30mm devices, use Discount Schedule CC.

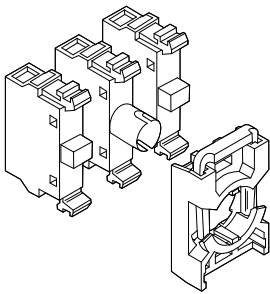
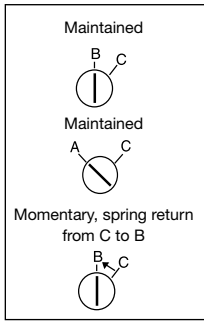
## Selector switches, 2 position Illuminated ①



Short handle



Long handle



### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A or (B)	O	O
C	X	X

O = not actuated (normal state)  
X = actuated (changed state)

### Selector switches, 2 position, illuminated ①

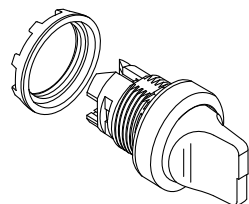
Options	Catalog number characters										
Short/Main B&C	M	2	S	S	1	-					
Short/Main A&C	M	2	S	S	2	-					
Short/Spring Return C to B	M	2	S	S	3	-					
Long/Main B&C	M	2	S	S	4	-					
Long/Main A&C	M	2	S	S	5	-					
Long/Spring Return C to B	M	2	S	S	6	-					
Bezel, Black Plastic, with Holder						-	4				
Bezel, Chrome Metal, with Holder						-	6				
Illuminated without Lamp block ②						-		1			
Lamp block, MLB-1, Bulb not Included						-		2			
Lamp block, MLB-2, Bulb not Included						-		3			
Lamp block, MLB-3, Bulb not Included						-		4			
Lamp block, MLB-4, Bulb not Included						-		5			
Lamp block, MLB-5, Bulb not Included						-		6			
Switch Color - Red						-		R			
Switch Color - Green						-		G			
Switch Color - Yellow						-		Y			
Switch Color - Blue						-		L			
Switch Color - Clear						-		C			
Contact Blocks, 1NO						-		1	0		
Contact Blocks, 2NO						-		2	0		
Contact Blocks, 3NO						-		3	0		
Contact Blocks, 1NC						-		0	1		
Contact Blocks, 2NC						-		0	2		
Contact Blocks, 3NC						-		0	3		
Contact Blocks, 1NO+1NC						-		1	1		
Contact Blocks, 2NO+1NC						-		2	1		
Contact Blocks, 1NO+2NC						-		1	2		
Contact Blocks, 1NO, Gold						-		1	0	G	
Contact Blocks, 2NO, Gold						-		2	0	G	
Contact Blocks, 3NO, Gold						-		3	0	G	
Contact Blocks, 1NC, Gold						-		0	1	G	
Contact Blocks, 2NC, Gold						-		0	2	G	
Contact Blocks, 3NC, Gold						-		0	3	G	
Contact Blocks, 1NO+1NC, Gold						-		1	1	G	
Contact Blocks, 2NO+1NC, Gold						-		2	1	G	
Contact Blocks, 1NO+2NC, Gold						-		1	2	G	
Filament Bulb, 6V						-				F	6
Filament Bulb, 12V						-				F	7
Filament Bulb, 24V						-				F	8
Filament Bulb, 30V						-				F	3 0
Filament Bulb, 48V						-				F	9
Filament Bulb, 60V						-				F	6 0
Filament Bulb, 110V						-				F	1 1
Filament Bulb, 130V						-				F	1
LED, 12VDC						-				L	7
LED, 24VAC/DC						-				L	8
LED, 48VAC/DC						-				L	9
LED, 60VAC/DC						-				L	6 0
LED, 110-130VAC						-				L	1
LED, 110-130VAC/DC						-				L	1 3
LED, 230VAC						-				L	2
Transformer Block, 110-127/6V, bulb 6V						-				T	1
Transformer Block, 220-240/6V, bulb 6V						-				T	2
Transformer Block, 380-420/6V, bulb 6V						-				T	3
Transformer Block, 440-480/6V, bulb 6V						-				T	4
Transformer Block, 500-600/6V, bulb 6V						-				T	5
Transformer Block, 110-127/24V, bulb 24V						-				T	6
Transformer Block, 220-240/24V, bulb 24V						-				T	7
Transformer Block, 380-420/24V, bulb 24V						-				T	8
Transformer Block, 440-480/24V, bulb 24V						-				T	9
Transformer Block, 110-127/24V, bulb 24V LED						-				T	L 1
Transformer Block, 220-240/24V, bulb 24V LED						-				T	L 2
Transformer Block, 380-420/24V, bulb 24V LED						-				T	L 3
Transformer Block, 440-480/24V, bulb 24V LED						-				T	L 4
5 Block Holder						-					5
30mm Black Plastic Adaptor Ring ③					G	1					
30mm Chrome Metal Adaptor Ring ③					G	2					

See catalog number explanation on page 4.

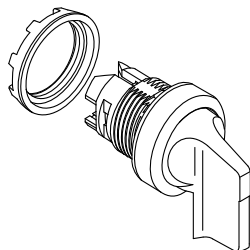
① No contact block in center position.  
② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.  
③ For 30mm devices, use Discount Schedule CC.

## Selector switches, 3 position Non-illuminated ①

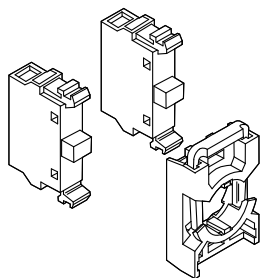
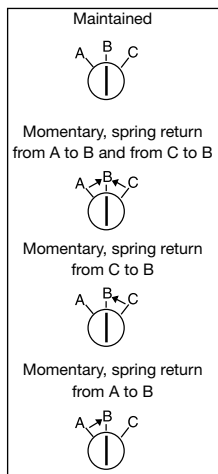
### Selector switches, 3 position, non-illuminated ①



Short handle



Long handle



#### Contact functions

Block positions as seen from operator front.

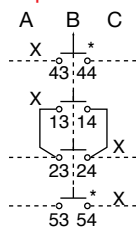
Handle position	Left block	Right block
A	X	O
B	O	O
C	O	X

O = not actuated (normal state)  
X = actuated (changed state)

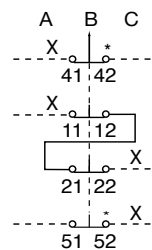
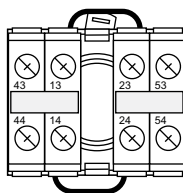
Options	Catalog number characters																						
Short/3-Main				M	3	S	S	1	-														
Short/Spring Return to B				M	3	S	S	2	-														
Short/Main A&B/Spring Return C to B				M	3	S	S	3	-														
Long/3-Main				M	3	S	S	4	-														
Long/Spring Return to B				M	3	S	S	5	-														
Long/Main A&B/Spring Return C to B				M	3	S	S	6	-														
Short/Main B&C/Spring Return A to B				M	3	S	S	7	-														
Long/Main B&C/Spring Return A to B				M	3	S	S	8	-														
Bezel, Black Plastic, with Holder																	-	4	0				
Bezel, Chrome Metal, with Holder																	-	6	0				
Switch Color - Red																				R			
Switch Color - Black																				B			
Switch Color - Grey																				U			
Contact Blocks, 1NO																				1	0		
Contact Blocks, 2NO																				2	0		
Contact Blocks, 3NO																				3	0		
Contact Blocks, 1NC																				0	1		
Contact Blocks, 2NC																				0	2		
Contact Blocks, 3NC																				0	3		
Contact Blocks, 1NO+1NC																				1	1		
Contact Blocks, 2NO+1NC																				2	1		
Contact Blocks, 1NO+2NC																				1	2		
Contact Blocks, 1NO, Gold																				1	0	G	
Contact Blocks, 2NO, Gold																				2	0	G	
Contact Blocks, 3NO, Gold																				3	0	G	
Contact Blocks, 1NC, Gold																				0	1	G	
Contact Blocks, 2NC, Gold																				0	2	G	
Contact Blocks, 3NC, Gold																				0	3	G	
Contact Blocks, 1NO+1NC, Gold																				1	1	G	
Contact Blocks, 2NO+1NC, Gold																				2	1	G	
Contact Blocks, 1NO+2NC, Gold																				1	2	G	
5 Block Holder																							5
30mm Black Plastic Adaptor Ring ②				G	1																		
30mm Chrome Metal Adaptor Ring ②				G	2																		

See catalog number explanation on page 4.

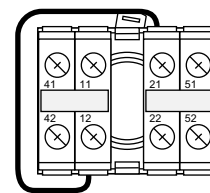
#### Center position connection detail



\* Contacts may be N.O. or N.C.



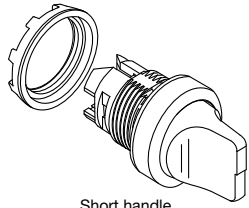
\* Contacts may be N.O. or N.C.



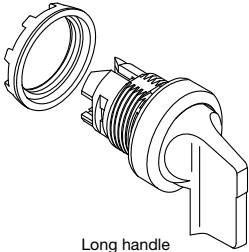
① No contact block in center position.  
② For 30mm devices, use Discount Schedule CC.



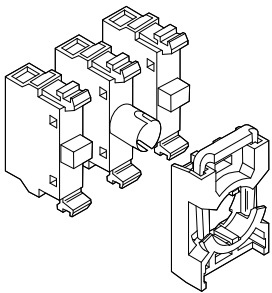
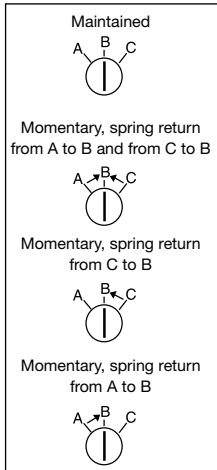
## Selector switches, 3 position Illuminated ①



Short handle



Long handle



### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A	X	O
B	O	O
C	O	X

O = not actuated (normal state)  
X = actuated (changed state)

Center Position  
Connection Detail

See page 17.

### Selector switches, 3 position, illuminated ①

Option	Catalog number characters											
Short/3-Main	M	3	S	S	1	-						
Short/Spring Return to B	M	3	S	S	2	-						
Short/Main A&B/Spring Return C to B	M	3	S	S	3	-						
Long/3-Main	M	3	S	S	4	-						
Long/Spring Return to B	M	3	S	S	5	-						
Long/Main A&B/Spring Return C to B	M	3	S	S	6	-						
Short/Main B&C/Spring Return A to B	M	3	S	S	7	-						
Long/Main B&C/Spring Return A to B	M	3	S	S	8	-						
Bezel, Black Plastic, with Holder						4						
Bezel, Chrome Metal, with Holder						6						
Illuminated without Lamp Block ②							1					
Lamp block, MLB-1, Bulb not Included							2					
Lamp block, MLB-2, Bulb not Included							3					
Lamp block, MLB-3, Bulb not Included							4					
Lamp block, MLB-4, Bulb not Included							5					
Lamp block, MLB-5, Bulb not Included							6					
Switch Color - Red								R				
Switch Color - Green								G				
Switch Color - Yellow								Y				
Switch Color - Blue								L				
Switch Color - Clear								C				
Contact Blocks, 1NO									1	0		
Contact Blocks, 2NO									2	0		
Contact Blocks, 3NO									3	0		
Contact Blocks, 1NC									0	1		
Contact Blocks, 2NC									0	2		
Contact Blocks, 3NC									0	3		
Contact Blocks, 1NO+1NC									1	1		
Contact Blocks, 2NO+1NC									2	1		
Contact Blocks, 1NO+2NC									1	2		
Contact Blocks, 1NO, Gold									1	0	G	
Contact Blocks, 2NO, Gold									2	0	G	
Contact Blocks, 3NO, Gold									3	0	G	
Contact Blocks, 1NC, Gold									0	1	G	
Contact Blocks, 2NC, Gold									0	2	G	
Contact Blocks, 3NC, Gold									0	3	G	
Contact Blocks, 1NO+1NC, Gold									1	1	G	
Contact Blocks, 2NO+1NC, Gold									2	1	G	
Contact Blocks, 1NO+2NC, Gold									1	2	G	
Filament Bulb, 6V											F 6	
Filament Bulb, 12V											F 7	
Filament Bulb, 24V											F 8	
Filament Bulb, 30V											F 3 0	
Filament Bulb, 48V											F 9	
Filament Bulb, 60V											F 6 0	
Filament Bulb, 110V											F 1 1	
Filament Bulb, 130V											F 1	
LED, 12VDC											L 7	
LED, 24VAC/DC											L 8	
LED, 48VAC/DC											L 9	
LED, 60VAC/DC											L 6 0	
LED, 110-130VAC											L 1	
LED, 110-130VAC/DC											L 1 3	
LED, 230VAC											L 2	
Transformer Block, 110-127/6V, bulb 6V											T 1	
Transformer Block, 220-240/6V, bulb 6V											T 2	
Transformer Block, 380-420/6V, bulb 6V											T 3	
Transformer Block, 440-480/6V, bulb 6V											T 4	
Transformer Block, 500-600/6V, bulb 6V											T 5	
Transformer Block, 110-127/24V, bulb 24V											T 6	
Transformer Block, 220-240/24V, bulb 24V											T 7	
Transformer Block, 380-420/24V, bulb 24V											T 8	
Transformer Block, 440-480/24V, bulb 24V											T 9	
Transformer Block, 110-127/24V, bulb 24V LED											T L 1	
Transformer Block, 220-240/24V, bulb 24V LED											T L 2	
Transformer Block, 380-420/24V, bulb 24V LED											T L 3	
Transformer Block, 440-480/24V, bulb 24V LED											T L 4	
5 Block Holder												5
30mm Black Plastic Adaptor Ring ③					G	1						
30mm Chrome Metal Adaptor Ring ③					G	2						

See catalog number explanation on page 4.

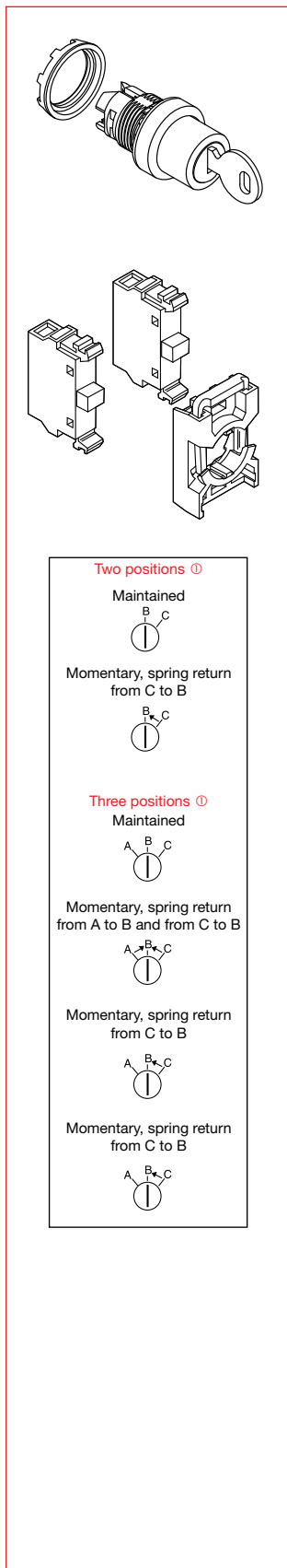
① No contact block in center position.

② No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.

③ For 30mm devices, use Discount Schedule CC.

# Key-operated selector switches

## 2 & 3 position ①



### Key-operated selector switches ①

Options	Catalog number characters											
2 Maintained Positions, Key Removable in B and C	M	2	S	S	K	1	-					
2 Maintained Positions, Key Removable in B	M	2	S	S	K	2	-					
2 Positions, Spring Return from C to B, Key Removable in B	M	2	S	S	K	3	-					
3 Maintained Positions, Key Removable in A, B and C	M	3	S	S	K	1	-					
3 Maintained Positions, Key Removable in B	M	3	S	S	K	2	-					
3 Positions, Spring Return from A and C to B, Key Removable in B	M	3	S	S	K	3	-					
3 Positions, A and B maintained, Spring Return C to B, Key Removable in A	M	3	S	S	K	4	-					
3 Positions, A and B maintained, Spring Return C to B, Key Removable in All Positions.	M	3	S	S	K	5	-					
Bezel, Black Plastic, with Holder							-	4	0			
Bezel, Chrome Metal, with Holder							-	6	0			
Key Code 71										1		
Key Code 72										2		
Key Code 73										3		
Other Key Code										4		
Contact Blocks, 1NO										1	0	
Contact Blocks, 2NO										2	0	
Contact Blocks, 3NO										3	0	
Contact Blocks, 1NC										0	1	
Contact Blocks, 2NC										0	2	
Contact Blocks, 3NC										0	3	
Contact Blocks, 1NO+1NC										1	1	
Contact Blocks, 2NO+1NC										2	1	
Contact Blocks, 1NO+2NC										1	2	
Contact Blocks, 1NO, Gold										1	0	G
Contact Blocks, 2NO, Gold										2	0	G
Contact Blocks, 3NO, Gold										3	0	G
Contact Blocks, 1NC, Gold										0	1	G
Contact Blocks, 2NC, Gold										0	2	G
Contact Blocks, 3NC, Gold										0	3	G
Contact Blocks, 1NO+1NC, Gold										1	1	G
Contact Blocks, 2NO+1NC, Gold										2	1	G
Contact Blocks, 1NO+2NC, Gold										1	2	G
5 Block Holder												5
30mm Black Plastic Adaptor Ring ②	G	1										
30mm Chrome Metal Adaptor Ring ②	G	2										

See catalog number explanation on page 4.

### Extra key

Description	Catalog No.	Ref. Code
Ronis 455 (key code 71)	<b>SK 616 021-71</b>	SK 616 021-71
Ronis 421 (key code 72)	<b>SK 616 021-72</b>	SK 616 021-72
Ronis 3433-E (key code 73)	<b>SK 616 021-73</b>	SK 616 021-73

### Contact block functions

Block positions as seen from operator front.

#### Two-position switch

Handle position	Left block	Right block
B	O	O
C	X	X

O = not actuated (normal state)  
X = actuated (changed state)

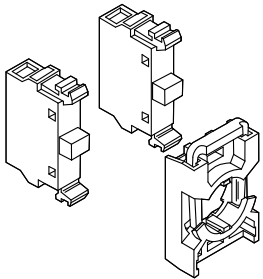
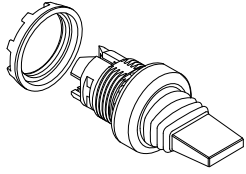
#### Three-position switch

Handle position	Left block	Right block
A	O	X
B	O	O
C	X	O

O = not actuated (normal state)  
X = actuated (state changed)

① No contact block in center position.  
② For 30mm devices, use Discount Schedule CC.

# Toggle switches



## Toggle switches

Options	Catalog number characters											
2 Maintained Positions			M	T	S	1	-					
3 Positions, Spring Return to Center			M	T	S	2	-					
3 Maintained Positions			M	T	S	3	-					
Bezel, Black, with Holder								4	0			
Bezel, Chrome, with Holder								6	0			
Switch Color - Black										B		
Contact Blocks, 1NO										1	0	
Contact Blocks, 2NO										2	0	
Contact Blocks, 3NO										3	0	
Contact Blocks, 1NC										0	1	
Contact Blocks, 2NC										0	2	
Contact Blocks, 3NC										0	3	
Contact Blocks, 1NO+1NC										1	1	
Contact Blocks, 2NO+1NC										2	1	
Contact Blocks, 1NO+2NC										1	2	
Contact Blocks, 1NO, Gold										1	0	G
Contact Blocks, 2NO, Gold										2	0	G
Contact Blocks, 3NO, Gold										3	0	G
Contact Blocks, 1NC, Gold										0	1	G
Contact Blocks, 2NC, Gold										0	2	G
Contact Blocks, 3NC, Gold										0	3	G
Contact Blocks, 1NO+1NC, Gold										1	1	G
Contact Blocks, 2NO+1NC, Gold										2	1	G
Contact Blocks, 1NO+2NC, Gold										1	2	G
5 Block Holder												5
30mm Black Plastic Adaptor Ring ①	G		1									
30mm Chrome Metal Adaptor Ring ①	G		2									

See catalog number explanation on page 4.

## Contact block functions

Block positions as seen from operator front.

### Two-position maintained switch

Handle position	Left block	Right block
A	O	O
C	X	X

O = not actuated (normal state)

X = actuated (state changed)

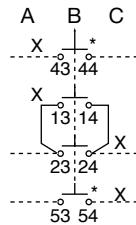
### Three-position switch

Handle position	Left block	Right block
A	O	X
B	O	O
C	X	O

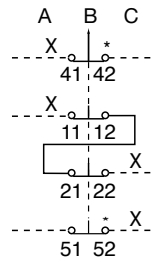
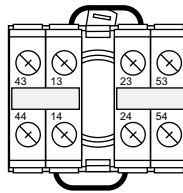
O = not actuated (normal state)

X = actuated (state changed)

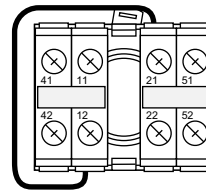
## Center position connection detail



\* Contacts may be N.O. or N.C.



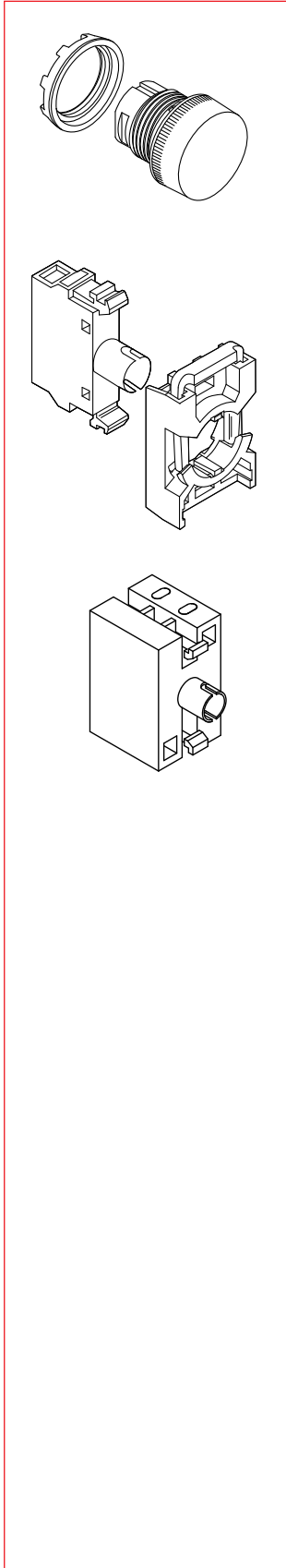
\* Contacts may be N.O. or N.C.



① For 30mm devices, use Discount Schedule CC.

# Pilot lights

Pilot Devices  
Modular Range  
Assembled, 22mm



## Pilot lights

Options	Catalog number characters										
	M	L	1	-	2	0					
Pilot Light with light diffusing lens											
With Holder					2	0					
Lens Color - Red							R				
Lens Color - Green							G				
Lens Color - Yellow							Y				
Lens Color - Blue							L				
Lens Color - White							W				
Lens Color - Clear							C				
Lamp block, MLB-1, Bulb not Included								1	0		
Lamp block, MLB-2, Bulb not Included								2	0		
Lamp block, MLB-3, Bulb not Included								3	0		
Lamp block, MLB-4, Bulb not Included								0	1		
Lamp block, MLB-5, Bulb not Included								0	2		
Filament Bulb, 6V										F 6	
Filament Bulb, 12V										F 7	
Filament Bulb, 24V										F 8	
Filament Bulb, 30V										F 3 0	
Filament Bulb, 48V										F 9	
Filament Bulb, 60V										F 6 0	
Filament Bulb, 110V										F 1 1	
Filament Bulb, 130V										F 1	
LED, 12VDC										L 7	
LED, 24VAC/DC										L 8	
LED, 48VAC/DC										L 9	
LED, 60VAC/DC										L 6 0	
LED, 110-130VAC										L 1	
LED, 110-130VAC/DC										L 1 3	
LED, 230VAC										L 2	
Transformer Block, 110-127V/6V, bulb 6V										T 1	
Transformer Block, 220-240V/6V, bulb 6V										T 2	
Transformer Block, 380-420/6V, bulb 6V										T 3	
Transformer Block, 440-480/6V, bulb 6V										T 4	
Transformer Block, 500-600/6V, bulb 6V										T 5	
Transformer Block, 110-127/24V, bulb 24V										T 6	
Transformer Block, 220-240/24V, bulb 24V										T 7	
Transformer Block, 380-420/24V, bulb 24V										T 8	
Transformer Block, 440-480/24V, bulb 24V										T 9	
Transformer Block, 110-127/24V, bulb 24V LED										TL1	
Transformer Block, 220-240/24V, bulb 24V LED										TL2	
Transformer Block, 380-420/24V, bulb 24V LED										TL3	
Transformer Block, 440-480/24V, bulb 24V LED										TL4	
5 Block Holder											5
30mm Black Plastic Adaptor Ring ①	G	1									
30mm Chrome Metal Adaptor Ring ①	G	2									

See catalog number explanation on page 4.

① For 30mm devices, use Discount Schedule CC.

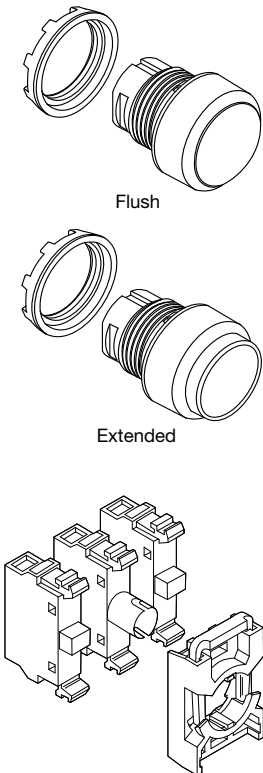
## Press to test pilot lights

### Press to test pilot lights

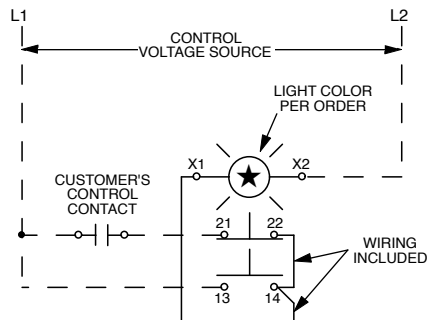
Options

Catalog number characters

Options	Catalog number characters						
Momentary, Flush		M	P	1	-		
Momentary, Extended		M	P	3	-		
Bezel, Black Plastic with Holder, 1/1 Contacts					-	KL	
Bezel, Chrome Metal with Holder, 1/1 Contacts					-	ML	
Illuminated without Lamp Block							PT
Full Voltage Lamp Block, (select Filament bulb or LED from below)					-		FPT
Resistor Lamp Block, (select 120V or 240V bulb or LED only)					-		RPT
Filament bulb, 6V					-		6
Filament bulb, 12V					-		7
Filament bulb, 24V					-		8
Filament bulb, 48V					-		9
Filament bulb, 120V					-		1
LED, 12 V AC					-		L7
LED, 24 V AC/DC					-		L8
LED, 48 V AC/DC					-		L9
LED, 60 V AC/DC					-		L60
LED, 120V AC					-		L1
LED, 120 V AC/DC					-		L13
LED, 240 V AC					-		L2
Transformer Block, 110-127/6V, includes 6V fill. bulb					-		TPT1
Transformer Block, 220-240/6V, includes 6V fill. bulb					-		TPT2
Transformer Block, 380-420/6V, includes 6V fill. bulb					-		TPT3
Transformer Block, 440-480/6V, includes 6V fill. bulb					-		TPT4
Transformer Block, 500-600/6V, includes 6V fill. bulb					-		TPT5
Transformer Block, 110-127/24V, includes 24V fill. bulb					-		TPT6
Transformer Block, 220-240/24V, includes 24V fill. bulb					-		TPT7
Transformer Block, 380-420/24V, includes 24V fill. bulb					-		TPT8
Transformer Block, 440-480/24V, includes 24V fill. bulb					-		TPT9
Transformer Block, 110-127/24V, includes 24V LED					-		TPTL1
Transformer Block, 220-240/24V, includes 24V LED					-		TPTL2
Transformer Block, 380-420/24V, includes 24V LED					-		TPTL3
Transformer Block, 440-480/24V, includes 24V LED					-		TPTL4
Button Color - Red							R
Button Color - Green							G
Button Color - Yellow							Y
Button Color - Blue							L
Button Color - White							W
Button Color - Clear							C
30mm Black Plastic Adaptor Ring ②	G	1					
30mm Chrome Metal Adaptor Ring ②	G	2					



### Schematic



Press- to-test schematic

① No filament bulb, LED or transformer block can be combined with "Illuminated without Lamp block" selection.  
 ② For 30mm devices, use Discount Schedule CC.

## Catalog number explanation Modular pilot devices

### Pilot light

Example 1: Type **ML1-100R**

**L1** Pilot Light Head

#### Lens color:

R = Red W = White  
G = Green C = Clear  
Y = Yellow  
L = Blue

### Operators

Example 2: Type **MP1-10Y**

**P** Pushbutton  
**PD** Pushbutton, Double  
**PK** Pushbutton, Key-lockable  
**PM** Pushbutton, Mushroom  
**PMT** Pushbutton, Mushroom, Twist release  
**PMP** Pushbutton, Mushroom, Pull release  
**2SS** 2-pos. Selector Switch  
**3SS** 3-pos. Selector Switch  
**KB** Buzzer  
**KT** Potentiometer  
**TS** Toggle Switch

#### Button color:

R = Red W = White  
G = Green B = Black (non-illuminated only)  
Y = Yellow C = Clear  
L = Blue U = Grey (non-illuminated only)

#### Lens color for double pushbuttons:

R = Red  
G = Green  
Y = Yellow  
C = Clear  
B = Black (non-illuminated only)

Example 3: Type **M2SSK1-101**

**2SSK** 2-pos. Selector Switch, Key-lockable  
**3SSK** 3-pos. Selector Switch, Key-lockable  
**PK** Pushbutton, Key-lockable

#### Key code :

1 = 71  
2 = 72  
3 = 73

### Buzzer, contact blocks, lamp block

Example 4: Type **MCBH-10**

**B** Buzzer  
**CB** Contact Block  
**CBH** Contact Block with Holder  
**LB** Lamp Block

#### Contact blocks:

10 1 NO  
01 1 NC  
11 1 NO +1 NC  
02 2 NO  
20 2 NC

M= "Generation" M, Modular range

## Color selection

### Color selection according to IEC 60204-1

IEC 60204-1 specifies coding principles for indicators and actuators and gives recommendation regarding the use of colors. An excerpt from the standard is given below. For detailed information, see the standard.

### Meaning of colors – General principles

Color	Meaning		
	Safety of persons or environment	Condition of process	State of equipment
RED	Danger	Emergency	Faulty
YELLOW	Warning/caution	Abnormal	Abnormal
GREEN	Safe	Normal	Normal
BLUE	Mandatory significance		
WHITE, GREY, BLACK	No specific meaning assigned		

### Non-illuminated actuators

#### Emergency actuators

EMERGENCY-STOP / OFF actuators shall be identified by the color **RED**

#### STOP / OFF actuators

**WHITE, GREY** and **BLACK** are the preferred colors for STOP / OFF actuators, with the main preference being for **BLACK**. **RED** is also permitted. **GREEN** shall not be used.

#### START / ON actuators

**WHITE, GREY** and **BLACK** are the preferred colors for START / ON actuators, which cause the closing of switching devices and the equipment to start, with the main preference being for **WHITE**. **GREEN** is also permitted. **RED** shall not be used.

#### Use of **WHITE** and **BLACK** for specific meanings

Where the colors **WHITE** and **BLACK** are used to distinguish between START / ON and STOP / OFF actuators, then the color **WHITE** shall be used for START / ON actuators and the color **BLACK** shall be used for STOP / OFF actuators.

#### The same actuators serving for **START** and **STOP** or **ON** and **OFF**

**WHITE, GREY** and **BLACK** are the preferred colors for actuators which, when actuated several times, act alternately as a START / ON and STOP / OFF actuator.

The colors **YELLOW** and **GREEN** shall not be used. The color **RED** shall be used only in cases where the same actuator, other than a push-button, is used for both EMERGENCY STOP / OFF and normal operation.

**WHITE, GREY** and **BLACK** are preferred colors for actuators which cause a movement while they are actuated and stop the movement when they are released (such as inching or jogging actuators). **GREEN** is also permitted. **RED** shall not be used.

#### RESET actuators

RESET actuators (used, for example, with protective relays) shall be **BLUE, WHITE, GREY** and **BLACK**, except RESET actuators which also act as STOP / OFF actuators. The color of such STOP / OFF actuators shall be in accordance with

**STOP / OFF actuators** above.





Compact range

22mm



8

# 22mm Compact range

The compact range is a new competitive choice for customers with high requirements of cost efficient, easy to use and reliable products.

### General construction

- "All-in-one function"
- One Ref. code =one complete function
- Easy mounting
- Less inventory
- Broad range of accessories
- Same front design as for the modular range.
- Durable actuators in clear colors with large text and push area
- Marked push areas available
- UL File# E57057
- CSA File# LR19700

### Technical advantages

- High degree of protection:  
UL Type 1, 3R, 4, 4X, 12 & 13
- One or two built-in electrically separated contacts (1NO, 1NC, 2NO, 2NC or 1NC & 1NO)
- Contacts with wiping action
- Low built-in depth

### Operators

- Pushbuttons, non-illuminated
- Emergency stop pushbuttons, non-illuminated, twist, pull or key release
- Selector switches, non-illuminated, 2 or 3 position

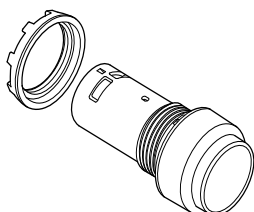
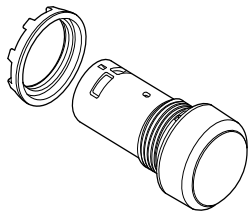
### Pilot lights

- Ba 9s base for bulbs (6-130 V) or LED (12-130 V DC, 24-230 V AC)
- Pilot light with integrated LED (12-220 V DC, 24-230 V AC)



## Flush and extended pushbuttons Non-illuminated

8



Bezel in black plastic as standard  
Bezel in metal:

Replace '1' in the:  
Catalog No. CP#10Δ-...  
Ref. Code 1SFA619XXX R 1XXX  
3 for metal bezel

### Codes for button colors

	Catalog No.	Ref. Code
		‡
Red	R	1
Green	G	2
Yellow	Y	3
Blue	L	4
White	W	5
Black	B	6
Grey	U	7

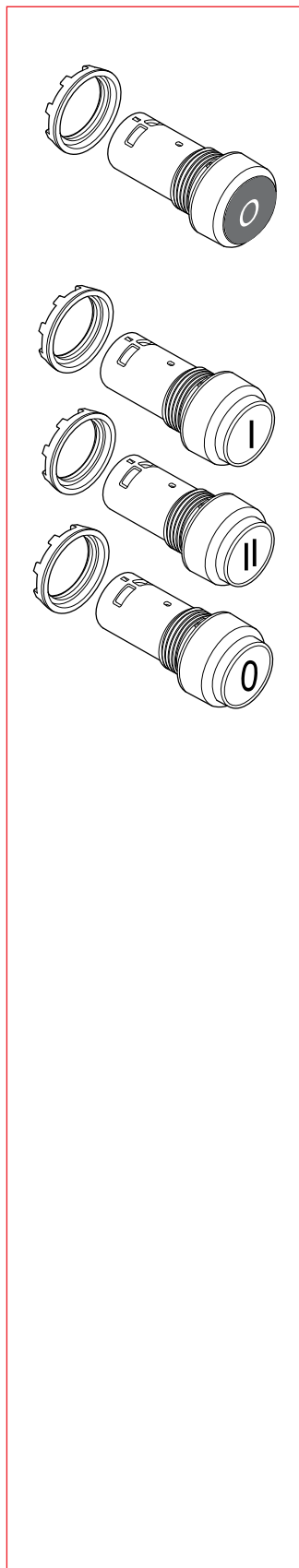
### Pushbutton with ...

Description	Catalog No.	Ref. Code
<b>Flush button</b>		
<b>Momentary</b>		
Contacts included:		
1 NO	CP110 -10	1SFA 619 100 R101‡
2 NO	CP110 -20	1SFA 619 100 R102‡
1 NC	CP110 -01	1SFA 619 100 R104‡
2 NC	CP110 -02	1SFA 619 100 R105‡
1 NO +1 NC	CP110 -11	1SFA 619 100 R107‡
<b>Maintained</b>		
Contacts included:		
1 NO	CP210 -10	1SFA 619 101 R101‡
2 NO	CP210 -20	1SFA 619 101 R102‡
1 NC	CP210 -01	1SFA 619 101 R104‡
2 NC	CP210 -02	1SFA 619 101 R105‡
1 NO +1 NC	CP210 -11	1SFA 619 101 R107‡
<b>Extended button</b>		
<b>Momentary</b>		
Contacts included:		
1 NO	CP310 -10	1SFA 619 102 R101‡
2 NO	CP310 -20	1SFA 619 102 R102‡
1 NC	CP310 -01	1SFA 619 102 R104‡
2 NC	CP310 -02	1SFA 619 102 R105‡
1 NO +1 NC	CP310 -11	1SFA 619 102 R107‡
<b>Maintained</b>		
Contacts included:		
1 NO	CP410 -10	1SFA 619 103 R101‡
2 NO	CP410 -20	1SFA 619 103 R102‡
1 NC	CP410 -01	1SFA 619 103 R104‡
2 NC	CP410 -02	1SFA 619 103 R105‡
1 NO +1 NC	CP410 -11	1SFA 619 103 R107‡

## Marked pushbuttons

Marked on push area, non-illuminated  
Momentary

Pilot Devices  
Compact range  
22mm

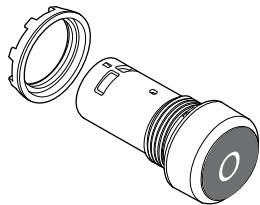


Legend	Button description ①	Contacts	Catalog Number	Reference. Code
	white, flush	1NO	<b>CP1110W-10</b>	1SFA619110R1015
	white, flush	1NO	<b>CP1210W-10</b>	1SFA619120R1015
	red, flush	1NC	<b>CP1310R-01</b>	1SFA619130R1041
	red, extended	1NC	<b>CP3310B-01</b>	1SFA619132R1046
	green, flush	1NO + 1NC	<b>CP9-1007</b>	1SFA619199R1007
	green, flush	2NO	<b>CP9-1008</b>	1SFA619199R1008
	grey, flush	1NO + 1NC	<b>CP9-1025</b>	1SFA619199R1025
	red, flush	1NO + 1NC	<b>CP9-1009</b>	1SFA619199R1009
	red, flush	2NO	<b>CP9-1010</b>	1SFA619199R1010
	red, extended	1NO + 1NC	<b>CP9-1018</b>	1SFA619199R1018
	green, flush	1NO + 1NC	<b>CP9-1033</b>	1SFA619199R1033
	red, flush	1NO + 1NC	<b>CP9-1034</b>	1SFA619199R1034
	blue, flush	1NO + 1NC	<b>CP9-1021</b>	1SFA619199R1021
	black, flush	1NO + 1NC	<b>CP9-1015</b>	1SFA619199R1015

① Black bezel available only.

## Marked pushbuttons

Marked on push area, non-illuminated  
Momentary



8

Legend	Button description ①	Contacts	Catalog Number	Reference. Code
	black, extended	1NO + 1NC	<b>CP9-1017</b>	1SFA619199R1017
	black, flush	1NO + 1NC	<b>CP9-1016</b>	1SFA619199R1016
	black, flush	2NO	<b>CP9-1032</b>	1SFA619199R1032
	white, flush	1NO	<b>CP9-1022</b>	1SFA619199R1022
	white, flush	1NO + 1NC	<b>CP9-1005</b>	1SFA619199R1005
	white, flush	2NO	<b>CP9-1006</b>	1SFA619199R1006
	green, flush	1NO + 1NC	<b>CP9-1019</b>	1SFA619199R1019
	black, flush	1NO + 1NC	<b>CP9-1020</b>	1SFA619199R1020
	white, flush	1NO	<b>CP9-1024</b>	1SFA619199R1024
	black, flush	2NO	<b>CP9-1023</b>	1SFA619199R1023
	black, flush	1NO + 1NC	<b>CP9-1045</b>	1SFA619199R1045
	black, flush	1NO + 1NC	<b>CP9-1046</b>	1SFA619199R1046
	black, flush	1NO + 1NC	<b>CP9-1047</b>	1SFA619199R1047
	black, flush	1NO + 1NC	<b>CP9-1048</b>	1SFA619199R1048

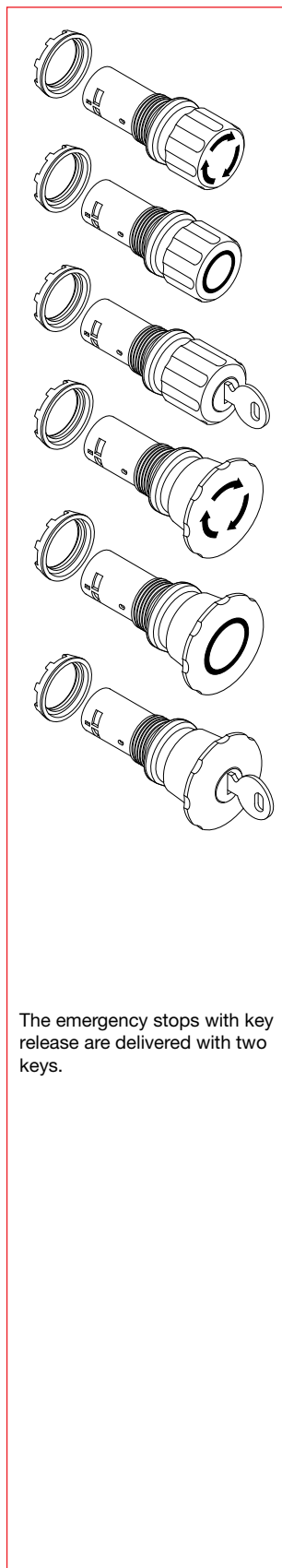
① Black bezel available only.

# Emergency stop pushbuttons

## Non-illuminated

Pilot Devices  
Compact range  
22mm

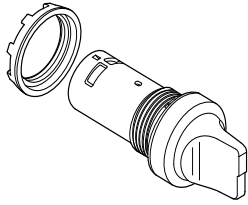
Fulfills IEC 60947-5-5



### Plastic operator

Description	Color	Catalog No.	Ref. Code
<b>Ø 30 mm</b>			
Twist release	Red		
<u>Contacts included:</u>			
1 NC		<b>CE3T-10R-01</b>	1SFA 619 500 R1041
2 NO		<b>CE3T-10R-20</b>	1SFA 619 500 R1021
2 NC		<b>CE3T-10R-02</b>	1SFA 619 500 R1051
1 NO +1 NC		<b>CE3T-10R-11</b>	1SFA 619 500 R1071
Twist release	Black		
<u>Contacts included:</u>			
1 NO + 1 NC		<b>CE3T-10B-11</b>	1SFA 619 500 R1076
Pull release	Red		
<u>Contacts included:</u>			
2 NC		<b>CE3P-10R-02</b>	1SFA 619 501 R1051
1 NO +1 NC		<b>CE3P-10R-11</b>	1SFA 619 501 R1071
Pull release	Black		
<u>Contacts included:</u>			
1 NO +1 NC		<b>CE3P-10B-11</b>	1SFA 619 501 R1076
Key release (Key code 71, Ronis 455)	Red		
<u>Contacts included:</u>			
2 NC		<b>CE3K1-10R-02</b>	1SFA 619 502 R1051
1 NO +1 NC		<b>CE3K1-10R-11</b>	1SFA 619 502 R1071
Key release (Key code 71, Ronis 455)	Black		
<u>Contacts included:</u>			
1 NO +1 NC		<b>CE3K1-10B-11</b>	1SFA 619 502 R1076
<b>Ø 40 mm</b>			
Twist release	Red		
<u>Contacts included:</u>			
1 NC		<b>CE4T-10R-01</b>	1SFA 619 550 R1041
2 NO		<b>CE4T-10R-20</b>	1SFA 619 550 R1021
2 NC		<b>CE4T-10R-02</b>	1SFA 619 550 R1051
1 NO +1 NC		<b>CE4T-10R-11</b>	1SFA 619 550 R1071
Twist release	Black		
<u>Contacts included:</u>			
1 NO & 1 NC		<b>CE4T-10B-11</b>	1SFA 619 550 R1076
Pull release	Red		
<u>Contacts included:</u>			
2 NC		<b>CE4P-10R-02</b>	1SFA 619 551 R1051
1 NO +1 NC		<b>CE4P-10R-11</b>	1SFA 619 551 R1071
Pull release	Black		
<u>Contacts included:</u>			
1 NO +1 NC		<b>CE4P-10B-11</b>	1SFA 619 551 R1076
Key release (Key code 71, Ronis 455)	Red		
<u>Contacts included:</u>			
2 NC		<b>CE4K1-10R-02</b>	1SFA 619 552 R1051
1 NO +1 NC		<b>CE4K1-10R-11</b>	1SFA 619 552 R1071
Key release (Key code 71, Ronis 455)	Black		
<u>Contacts included:</u>			
1 NO +1 NC		<b>CE4K1-10B-11</b>	1SFA 619 552 R1076

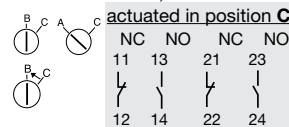
## 2 and 3 position selector switches Non-illuminated



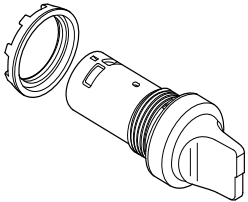
### Contacts actuated

#### Two position selector switch

Contacts included,



	NC	NO	NC	NO
1NO	-	1	-	-
2NO	-	1	-	1
1NC	1	-	-	-
2NC	1	-	1	-
1NO + 1NC	-	1	1	-



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the:

Catalog No. C#SS#10Δ-...

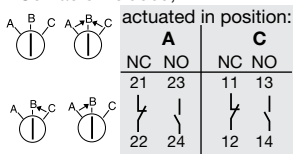
Ref. Code 1SFA619XXX R 1XXX

3 for metal bezel

### Contacts actuated

#### Three position selector switch

Contacts included,



	A		C	
	NC	NO	NC	NO
2NO	-	1	-	1
2NC	1	-	1	-
1NO + 1NC	1	-	-	1

### Codes for handle colors

	Catalog No.	Ref. Code
Red	<b>R</b>	<b>1</b>
Black	<b>B</b>	<b>6</b>
Grey	<b>U</b>	<b>7</b>

### Selector switch with ...

Description	Catalog No.	Ref. Code
-------------	-------------	-----------

#### Short handle. Two positions

##### Maintained

Contacts included:

1 NO		<b>C2SS110 -10</b>	1SFA 619 200 R101‡
2 NO		<b>C2SS110 -20</b>	1SFA 619 200 R102‡
1 NC		<b>C2SS110 -01</b>	1SFA 619 200 R104‡
2 NC		<b>C2SS110 -02</b>	1SFA 619 200 R105‡
1 NO + 1 NC		<b>C2SS110 -11</b>	1SFA 619 200 R107‡

##### Maintained

Contacts included:

1 NO		<b>C2SS210 -10</b>	1SFA 619 201 R101‡
2 NO		<b>C2SS210 -20</b>	1SFA 619 201 R102‡
1 NC		<b>C2SS210 -01</b>	1SFA 619 201 R104‡
2 NC		<b>C2SS210 -02</b>	1SFA 619 201 R105‡
1 NO + 1 NC		<b>C2SS210 -11</b>	1SFA 619 201 R107‡

##### Momentary

Contacts included:

1 NO		<b>C2SS310 -10</b>	1SFA 619 202 R101‡
2 NO		<b>C2SS310 -20</b>	1SFA 619 202 R102‡
1 NC		<b>C2SS310 -01</b>	1SFA 619 202 R104‡
2 NC		<b>C2SS310 -02</b>	1SFA 619 202 R105‡
1 NO + 1 NC		<b>C2SS310 -11</b>	1SFA 619 202 R107‡

#### Short handle. Three positions

##### Maintained

Contacts included:

2 NO		<b>C3SS110 -20</b>	1SFA 619 210 R102‡
2 NC		<b>C3SS110 -02</b>	1SFA 619 210 R105‡
1 NO + 1 NC		<b>C3SS110 -11</b>	1SFA 619 210 R107‡

##### Momentary

Contacts included:

2 NO		<b>C3SS210 -20</b>	1SFA 619 211 R102‡
2 NC		<b>C3SS210 -02</b>	1SFA 619 211 R105‡
1 NO + 1 NC		<b>C3SS210 -11</b>	1SFA 619 211 R107‡

##### Momentary

Contacts included:

2 NO		<b>C3SS310 -20</b>	1SFA 619 212 R102‡
2 NC		<b>C3SS310 -02</b>	1SFA 619 212 R105‡
1 NO + 1 NC		<b>C3SS310 -11</b>	1SFA 619 212 R107‡

##### Momentary

Contacts included:

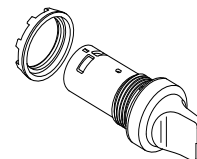
2 NO		<b>C3SS710 -20</b>	1SFA 619 216 R102‡
2 NC		<b>C3SS710 -02</b>	1SFA 619 216 R105‡
1 NO + 1 NC		<b>C3SS710 -11</b>	1SFA 619 216 R107‡

### Ordering example – Compact selector switch

Requested: A red compact selector switch with three positions, Momentary, spring return from A to B and maintained position in C. With 2 NC contacts.

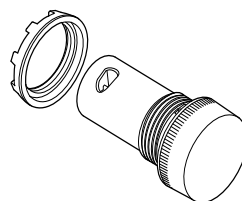
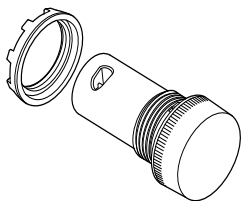
Ref.: 10 pieces of C3SS7-10R-02

Minimum Ref. quantity: 10 pieces  
Packing: 10 pieces/plastic bag, 10 bags/box



# Pilot lights

Pilot Devices  
Compact range  
22mm



## Pilot light Ba 9s base, bulb not included

Description	Catalog No.	Ref. Code
Color:		
Red	CL-100R	1SFA 619 402 R1001
Green	CL-100G	1SFA 619 402 R1002
Yellow	CL-100Y	1SFA 619 402 R1003
Blue	CL-100L	1SFA 619 402 R1004
White	CL-100W	1SFA 619 402 R1005
Clear	CL-100C	1SFA 619 402 R1008

## Pilot light with integrated LED Service life >50 000 hours

Color	Rated current mA	Luminance mcd	Wave-length nm	Catalog No.	Ref. Code
<b>Rated voltage 12 V, DC ①</b>					
Red	30	60	625	CL-501R	1SFA 619 402 R5011
Green	15	126	520	CL-501G	1SFA 619 402 R5012
Yellow	30	60	590	CL-501Y	1SFA 619 402 R5013
Blue	30	22	470	CL-501L	1SFA 619 402 R5014
White	30	88	②	CL-501W	1SFA 619 402 R5015
<b>Rated voltage 24 V, AC/DC</b>					
Red	15	60	625	CL-502R	1SFA 619 402 R5021
Green	15	126	520	CL-502G	1SFA 619 402 R5022
Yellow	15	60	590	CL-502Y	1SFA 619 402 R5023
Blue	15	22	470	CL-502L	1SFA 619 402 R5024
White	15	88	②	CL-502W	1SFA 619 402 R5025
<b>Rated voltage 48 V, AC/DC</b>					
Red	15	60	625	CL-504R	1SFA 619 402 R5041
Green	15	126	520	CL-504G	1SFA 619 402 R5042
Yellow	15	60	590	CL-504Y	1SFA 619 402 R5043
Blue	15	22	470	CL-504L	1SFA 619 402 R5044
White	15	88	②	CL-504W	1SFA 619 402 R5045
<b>Rated voltage 60 V, AC/DC</b>					
Red	15	60	625	CL-505R	1SFA 619 402 R5051
Green	15	126	520	CL-505G	1SFA 619 402 R5052
Yellow	15	60	590	CL-505Y	1SFA 619 402 R5053
Blue	15	22	470	CL-505L	1SFA 619 402 R5054
White	15	88	②	CL-505W	1SFA 619 402 R5055
<b>Rated voltage 110-130 V, AC</b>					
Red	15	60	625	CL-513R	1SFA 619 402 R5131
Green	15	126	520	CL-513G	1SFA 619 402 R5132
Yellow	15	60	590	CL-513Y	1SFA 619 402 R5133
Blue	15	22	470	CL-513L	1SFA 619 402 R5134
White	15	88	②	CL-513W	1SFA 619 402 R5135
<b>Rated voltage 110-130 V, DC ①</b>					
Red	15	60	625	CL-515R	1SFA 619 402 R5151
Green	15	126	520	CL-515G	1SFA 619 402 R5152
Yellow	15	60	590	CL-515Y	1SFA 619 402 R5153
Blue	15	22	470	CL-515L	1SFA 619 402 R5154
White	15	88	②	CL-515W	1SFA 619 402 R5155
<b>Rated voltage 220 V, DC ①</b>					
Red	15	60	625	CL-520R	1SFA 619 402 R5201
Green	15	126	520	CL-520G	1SFA 619 402 R5202
Yellow	15	60	590	CL-520Y	1SFA 619 402 R5203
Blue	15	22	470	CL-520L	1SFA 619 402 R5204
White	15	88	②	CL-520W	1SFA 619 402 R5205
<b>Rated voltage 230 V, AC</b>					
Red	15	60	625	CL-523R	1SFA 619 402 R5231
Green	15	126	520	CL-523G	1SFA 619 402 R5232
Yellow	15	60	590	CL-523Y	1SFA 619 402 R5233
Blue	15	22	470	CL-523L	1SFA 619 402 R5234
White	15	88	②	CL-523W	1SFA 619 402 R5235
<b>Rated voltage 380 V, AC</b>					
Red	15	60	625	CL-530R	1SFA 619 402 R5301
Green	15	126	520	CL-530G	1SFA 619 402 R5302
Yellow	15	60	590	CL-530Y	1SFA 619 402 R5303
Blue	15	22	470	CL-530L	1SFA 619 402 R5304
White	15	88	②	CL-530W	1SFA 619 402 R5305
<b>Rated voltage 415 V, AC</b>					
Red	15	60	625	CL-541R	1SFA 619 402 R5411
Green	15	126	520	CL-541G	1SFA 619 402 R5412
Yellow	15	60	590	CL-541Y	1SFA 619 402 R5413
Blue	15	22	470	CL-541L	1SFA 619 402 R5414
White	15	88	②	CL-541W	1SFA 619 402 R5415

① Care should be taken for DC supply where + and - must be correctly connected. (this is marked on the product, X1 (+) and X2 (-)).

② X=0.31, Y=0.32

Minimum Ref. quantity: 10 pieces  
Packing: 10 pieces/plastic bag, 10 bags/box





**Filament bulbs** Ba 9s base Catalog No. of current: AC/DC. A lamp changing tool is required for changing bulb.

Description					Catalog No.	Ref. Code
Rated voltage V	Rated current mA	Rated output W	Service life h	Lumina-nance mcd		
6	200	1.2	10 000	350	<b>5911 086-11</b>	5911 086-11
12	100	1.2	10 000	230	<b>5911 086-12</b>	5911 086-12
24	50	1.2	10 000	280	<b>5911 086-13</b>	5911 086-13
30	40	1.2	10 000	250	<b>5911 086-4</b>	5911 086-4
48	42	2	6 000	500	<b>5911 086-5</b>	5911 086-5
60	20	1.2	5 000	190	<b>5911 086-14</b>	5911 086-14
110	18	2	7 500	250	<b>5911 086-7</b>	5911 086-7
130	15	2	7 500	120	<b>5911 086-15</b>	5911 086-15

### LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

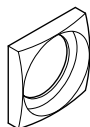
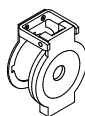
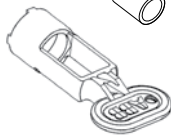
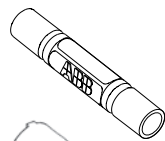


Color	Rated current mA	Wave-length nM	Lumi-nance mcd	Catalog No.	Ref. Code
<b>Rated voltage 12 V, DC</b> Service life >50 000 h					
Red	15	630	250	<b>KA2-2011</b>	1SFA 616 921 R2011
Green	15	525	1000	<b>KA2-2012</b>	1SFA 616 921 R2012
Yellow	15	592	250	<b>KA2-2013</b>	1SFA 616 921 R2013
Blue	15	470	450	<b>KA2-2014</b>	1SFA 616 921 R2014
White	15	x=0.31 y=0.32	600	<b>KA2-2015</b>	1SFA 616 921 R2015
<b>Rated voltage 24 V, (AC)/DC</b> Service life >50 000 h					
Red	15	630	250	<b>KA2-2021</b>	1SFA 616 921 R2021
Green	15	525	800	<b>KA2-2022</b>	1SFA 616 921 R2022
Yellow	15	592	250	<b>KA2-2023</b>	1SFA 616 921 R2023
Blue	15	470	400	<b>KA2-2024</b>	1SFA 616 921 R2024
White	15	x=0.31 y=0.32	500	<b>KA2-2025</b>	1SFA 616 921 R2025
<b>Rated voltage 48 V, (AC)/DC</b> Service life >50 000 h					
Red	12	630	200	<b>KA2-2041</b>	1SFA 616 921 R2041
Green	12	525	1700	<b>KA2-2042</b>	1SFA 616 921 R2042
Yellow	12	592	240	<b>KA2-2043</b>	1SFA 616 921 R2043
Blue	12	470	720	<b>KA2-2044</b>	1SFA 616 921 R2044
White	12	x=0.31 y=0.32	1200	<b>KA2-2045</b>	1SFA 616 921 R2045
<b>Rated voltage 60 V, (AC)/DC</b> Service life >50 000 h					
Red	10	630	160	<b>KA2-2051</b>	1SFA 616 921 R2051
Green	10	525	1400	<b>KA2-2052</b>	1SFA 616 921 R2052
Yellow	10	592	200	<b>KA2-2053</b>	1SFA 616 921 R2053
Blue	10	470	600	<b>KA2-2054</b>	1SFA 616 921 R2054
White	10	x=0.31 y=0.32	1000	<b>KA2-2055</b>	1SFA 616 921 R2055
<b>Rated voltage 110-130 V, AC</b> Service life 25 000 h					
Red	4-6	630	60-100	<b>KA2-2131</b>	1SFA 616 921 R2131
Green	4-6	525	500-850	<b>KA2-2132</b>	1SFA 616 921 R2132
Yellow	4-6	592	70-120	<b>KA2-2133</b>	1SFA 616 921 R2133
Blue	4-6	470	220-350	<b>KA2-2134</b>	1SFA 616 921 R2134
White	4-6	x=0.31 y=0.32	350-600	<b>KA2-2135</b>	1SFA 616 921 R2135
<b>Rated voltage 110-130 V, AC/DC</b> Service life 25 000 h					
Red	4-6	630	60-100	<b>KA2-2141</b>	1SFA 616 921 R2141
Green	4-6	525	500-850	<b>KA2-2142</b>	1SFA 616 921 R2142
Yellow	4-6	592	70-120	<b>KA2-2143</b>	1SFA 616 921 R2143
Blue	4-6	470	220-350	<b>KA2-2144</b>	1SFA 616 921 R2144
White	4-6	x=0.31 y=0.32	350-600	<b>KA2-2145</b>	1SFA 616 921 R2145
<b>Rated voltage 230 V, AC</b> Service life 25 000 h					
Red	4	630	60	<b>KA2-2221</b>	1SFA 616 921 R2221
Green	4	525	500	<b>KA2-2222</b>	1SFA 616 921 R2222
Yellow	4	592	70	<b>KA2-2223</b>	1SFA 616 921 R2223
Blue	4	470	220	<b>KA2-2224</b>	1SFA 616 921 R2224
White	4	x=0.31 y=0.32	350	<b>KA2-2225</b>	1SFA 616 921 R2225

Ⓢ At AC the luminance is decreased with 30 % and there is also a slight flickering.

## Accessories

Pilot Devices  
Compact range  
22mm



### Lamp changing tool

Description	Catalog No.	Ref. Code
For LEDs and for bulbs	<b>KA1-8072</b>	1SFA 616 920 R8072

### Mounting tool

Description	Catalog No.	Ref. Code
Used for tightening the locking nut	<b>KA1-8015</b>	1SFA 611 920 R8015

### Membrane of silicone

Of transparent, heat and cold resistant silicon rubber. Does not harden at low temperature. Gives IP 67 degree of protection. When membrane is used, remove the gasket.

For operator with	Catalog No.	Ref. Code
Flush button	<b>KA1-8052</b>	1SFA 616 920 R8052
Extended button	<b>KA1-8002</b>	1SFA 616 920 R8002

### Protective ring

Description	Catalog No.	Ref. Code
For flush and extended pushbutton To prevent inadvertant operation. Not together with legend plate holder.	<b>SK615512-1</b>	SK 615 512-1

### Protective cover

Description	Catalog No.	Ref. Code
For flush button. To prevent inadvertant operation. Not together with legend plate holder.	<b>KA1-8010</b>	1SFA 616 920 R8010

### Button

Description	Catalog No.	Ref. Code
Grey, flush (Packing unit 10 pieces)	<b>KA1-8087</b>	1SFA 616 920 R8087
Grey, extended (Packing unit 10 pieces)	<b>KA1-8097</b>	1SFA 616 920 R8097

### Bezel

Description	Catalog No.	Ref. Code
<b>For pushbutton</b>		
Grey (Packing unit 10 pieces)	<b>KA1-8079</b>	1SFA 616 920 R8079
Black (Packing unit 10 pieces)	<b>KA1-8022</b>	1SFA 616 920 R8022
Metal (Packing unit 10 pieces)	<b>KA1-8021</b>	1SFA 616 920 R8021
<b>For selector switch</b>		
Grey (Packing unit 10 pieces)	<b>CA1-8076</b>	1SFA 619 920 R8076
Black (Packing unit 10 pieces)	<b>CA1-8077</b>	1SFA 619 920 R8077
Metal (Packing unit 10 pieces)	<b>CA1-8078</b>	1SFA 619 920 R8078

### Square bezel

Black, plastic (Packing unit 10 pieces)	<b>SK616016-2</b>	SK 616 016-2
Grey, plastic (Packing unit 10 pieces)	<b>KA1-8124</b>	1SFA 611 920 R8124

### Blanking plug (22mm)

Description	Catalog No.	Ref. Code
Grey plastic	<b>MA1-8129</b>	1SFA 611 920 R8129
Black plastic	<b>MA1-8130</b>	1SFA 611 920 R8130

### Blanking plug (30mm)

Description	Catalog No.	Ref. Code
Black plastic	<b>MA1-8133</b>	1SFA 611 920 R8133



### 30 mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Catalog No.	Ref. Code
<b>For use with pushbuttons, selector switches, emergency stop push-button and pilot lights</b>		
Black plastic.	<b>KA1-8029</b>	1SFA 616 920 R8029
Metal.	<b>KA1-8030</b>	1SFA 616 920 R8030



### Adaptors

<b>For flush mounted pushbutton</b>	<b>KA1-8073</b>	1SFA 616 920 R8073
<b>For flush mounted selector switches</b>	<b>CA1-8075</b>	1SFA 619 920 R8075



### Extra key (packing unit, 2 pcs)

Description	Catalog No.	Ref. Code
Ronis 455 (key code 71)	<b>SK616021-71</b>	SK 616 021-71



### Padlock attachment for 30mm mushroom head (twist release only)

Prevents unauthorized use of equipment. Provides space for up to 4 padlocks with the button in the depressed position. Holes fit standard 1/4" padlock.

Description	Catalog No.
Padlock attachment	<b>SK615502-D</b>



## Approvals

The pushbuttons, selector switches and pilot lights are approved by:  
- National approval agencies: UL and China Compulsory Product Certification

For detail information please contact ABB

## Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
EN 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
EN 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
EN 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators
EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

## Degrees of protection

Pilot device	IP	UL/CSA
Compact pushbutton, <b>CP1, CP2, CP3, CP4</b>	IP66	Type 1, 3R, 4, 4X, 12, 13
Compact selector switch, <b>C2SS, C3SS</b>	IP66	Type 1, 3R, 4, 4X, 12, 13
Compact pilot light, <b>CL</b>	IP66	Type 1, 3R, 4, 4X, 12, 13
Compact emergency stop pushbutton, <b>CE3T, CE3P, CE4T, CE4P, CE3K1, CE4K1</b>	IP66	Type 1, 3R, 4, 4X, 12, 13
<b>Terminals</b>	IP20	

## Temperature

Ambient temperature during operation	-25 to +70 °C
Exception: All pilot devices with 2 W continuously lit filament bulb	-25 to +40 °C
Storage temperature	-30 to +85 °C

## Tightening torque

Locking nut, M22	Min. 2 Nm Max. 2.3 Nm
------------------	--------------------------

## Contacts

Self-cleaning contacts of silver-coated brass

Ratings as per UL, CSA, NEMA	AC C300	DC R300
Rated insulation voltage	250 V	250 V
Rated thermal current	2.5 A	1 A
Rated operational current		
at 120 V	1.5 A	
125 V		0.22 A
240 V	0.75 A	
250 V		0.11 A
<b>Ratings as per IEC 60947-5-1</b>		
Rated insulation voltage, $U_i$	300 V	
Rated thermal current, $I_{th}$	5 A	
Rated operational current, $I_o$ , utilisation category AC-15		
at 120 V	1.5 A	
240 V	1 A	
Rated operational current, $I_o$ , utilisation category DC-13,		
at 24 V	0.3 A	
125 V	0.2 A	
<b>Short circuit protection</b>		
Max. fuse at 1 kA	16 A ordinary 10 A delayed	
<b>Tightening torque</b>		
compact pushbutton & selector switch	0.8 Nm (M3)	
compact pilot light	0.9 Nm (M3.5)	
compact emergency stop pushbutton	0.8 Nm (M3)	
<b>Terminals</b>		
Plus-minus Pozidriv No. 2		
Compact pushbutton		
Compact selector switch		
Compact emergency stop		
Connectable area	min. 1 x 0.5 mm <sup>2</sup> /1 x AWG22 max. 2 x 1.5 mm <sup>2</sup> /2 x AWG14	
Compact pilot light		
Connectable area	min. 1 x 0.5 mm <sup>2</sup> /1 x AWG20 max. 2 x 2.5 mm <sup>2</sup> /2 x AWG14	

## Material

### No ozone depleting substances in the products.

All front parts are made of polycarbonate

Material	Characteristics
PC Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PA Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT	Can withstand temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc	Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy	Good corrosion resistance in inland-, sea and industrial atmosphere.
Rubber	Chloroprene, Nitrile



# Assembled Stations & enclosures

**ABB** Assembled stations & enclosures



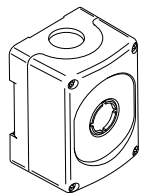
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## Features

- Available for 1, 2, 3, 4 & 6 operators.
- Base mounted contacts allow for easy removal of operator cover. Wiring remains with base.
- Up to 5 contact blocks can be used per operator for some combinations.
- Environmental ratings: UL/CSA Type 1, 3R, 4, 4X, 12 & 13, IP66
- Available in high impact strength polycarbonate (plastic) material.
- Rated for outdoor use.
- Enclosures can withstand light acid solutions and other chemicals.
- Metallic enclosures available.

## Plastic enclosures

### 1, 2 & 3 seat Modular range



1 Position

#### 1-seat Plastic enclosures. Yellow top/light grey bottom

Description					Catalog No.
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	
Type	Twist Release 40mm E	—	—	—	P1-ES
	Stop	—	—	—	
Color	Red	—	—	—	
Contacts	2 NC	—	—	—	
Name plate	EMERGENCY STOP	—	—	—	
Type	III. Twist Release 40mm E	—	—	—	P1-1ES
	40mm E-Stop	—	—	—	
Color	Red, 120V	—	—	—	
Contacts	2 NC, 1 LB	—	—	—	
Name plate	EMERGENCY STOP	—	—	—	

#### 1-seat Plastic enclosure, dark grey top/light grey bottom

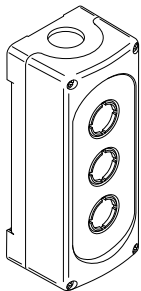
Description					Catalog No.
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	
Type	3-pos sel. Main	—	—	—	P1-HOA
Color	Black	—	—	—	
Contacts	2 NO	—	—	—	
Name plate	HAND/OFF/AUTO	—	—	—	

#### 2-seat Plastic enclosure, dark grey top/light grey bottom

Description					Catalog No.
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	
Type	Button mom. Ext.	Button mom. Flush	—	—	P2-SS
Color	Red	Green	—	—	
Contacts	1 NC	1 NO	—	—	
Name plate	STOP	START	—	—	
Type	3-pos sel. Main	Pilot Light	—	—	P2-1HOARL
Color	Black	Red	—	—	
Contacts	2 NO	1 LB	—	—	
Name plate	HAND/OFF/AUTO	RUN	—	—	
Type	2-pos sel. Main	Pilot Light	—	—	P2-1OORL
Color	Black	Red	—	—	
Contacts	1 NO	1 LB	—	—	
Name plate	ON/OFF	RUN	—	—	

#### 3-seat Plastic enclosure, dark grey top/light grey bottom

Description					Catalog No.
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	
Type	Button mom. Ext.	Button mom. Flush	Pilot Light	—	P3-1SSRL
Color	Red	Green	Red	—	
Contacts	1 NC	1 NO	1 LB	—	
Name plate	STOP	START	RUN	—	
Type	3-pos sel. Main	Pilot Light	Pilot Light	—	P3-1HOARLG
Color	Black	Red	Green	—	
Contacts	2 NO	1 LB	1 LB	—	
Name plate	HAND/OFF/AUTO	RUN	OFF	—	
Type	2-pos sel. Main	Pilot Light	Pilot Light	—	P3-1OORLGL
Color	Black	Red	Green	—	
Contacts	1 NO	1 LB	1 LB	—	
Name plate	ON/OFF	RUN	OFF	—	
Type	3-pos sel. Main	Button mom. Flush	Pilot Light	—	P3-1HOASRL
Color	Black	Green	Red	—	
Contacts	2 NO	1 NO	1 LB	—	
Name plate	HAND/OFF/AUTO	START	RUN	—	
Type	Twist Release 40mm E Stop	3-pos sel. Main	Pilot Light	—	P3-1ESHOAR
Color	Red	Black	Red	—	
Contacts	2 NC	2 NO	1 LB	—	
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	RUN	—	



3 Position

2 Position

1 Position



# Plastic enclosures

## 4 seat

### Modular range

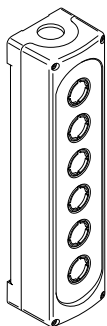
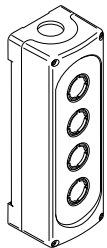
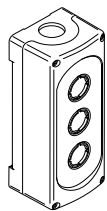
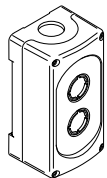


#### 4-seat Plastic enclosure, dark grey top/light grey bottom

Description					Catalog No.
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	
Type	Button mom., Ext.	Button mom., Flush	Pilot Light	Pilot Light	<b>P4-1SSRLGL</b>
Color	Red	Green	Green	Red	
Contacts	1 NC	1 NO	1 LB	1 LB	
Name plate	STOP	START	OFF	RUN	
Type	3-pos sel. Main	Button mom., Flush	Pilot Light	Pilot Light	<b>P4-1HOASRLGL</b>
Color	Black	Green	Green	Red	
Contacts	2 NO	1 NO	1 LB	1 LB	
Name plate	HAND/OFF/AUTO	START	OFF	RUN	
Type	3-pos sel. Main	Pilot Light	Pilot Light	Pilot Light	<b>P4-1HOARLYLGL</b>
Color	Black	Green	Yellow	Red	
Contacts	2 NO	1 LB	1 LB	1 LB	
Name plate	HAND/OFF/AUTO	OFF	FAULT	RUN	
Type	2-pos. sel. Main	Pilot Light	Pilot Light	Pilot Light	<b>P4-10ORLYLGL</b>
Color	Black	Green	Yellow	Red	
Contacts	1 NO	1 LB	1 LB	1 LB	
Name plate	ON/OFF	OFF	FAULT	RUN	
Type	Twist Release 40mm E Stop	Button mom., Ext.	Button mom., Flush	Pilot Light	<b>P4-1ESSRL</b>
Color	Red	Red	Green	Red	
Contacts	2 NC	1 NC	1 NO	1 LB	
Name plate	EMERGENCY STOP	STOP	START	RUN	
Type	Twist Release 40mm E Stop	3-pos. sel. Main	Pilot Light	Pilot Light	<b>P4-1ESHOARLG</b>
Color	Red	Black	Green	Red	
Contacts	2 NC	2 NO	1 LB	1 LB	
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	OFF	RUN	
Type	Twist Release 40mm E Stop	2-pos sel. Main	Pilot Light	Pilot Light	<b>P4-1ESOORLGL</b>
Color	Red	Black	Green	Red	
Contacts	2 NC	1 NO	1 LB	1 LB	
Name plate	EMERGENCY STOP	ON/OFF	OFF	RUN	

## Degree of protection, IP 66 Modular range

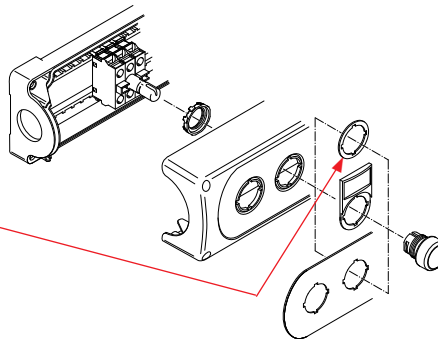
Empty plastic enclosures Now with stainless steel screws



Size	Color top/bottom	Catalog No.	Ref. Code
1-seat	Dark grey/Light grey	<b>MEP1-0</b>	1SFA 611 811 R1000
1-seat	Yellow/Light grey	<b>MEPY1-0</b>	1SFA 611 821 R1000
2-seat	Dark grey/Light grey	<b>MEP2-0</b>	1SFA 611 812 R1000
3-seat	Dark grey/Light grey	<b>MEP3-0</b>	1SFA 611 813 R1000
4-seat	Dark grey/Light grey	<b>MEP4-0</b>	1SFA 611 814 R1000
6-seat	Dark grey/Light grey	<b>MEP6-0</b>	1SFA 611 816 R1000

### When Ordering

- Select operators from page 8.4 and 8.38.  
N.B. Selector switches with short handle for vertically mounted selector switches must be Ref.ed from page 8.45 - 8.46
- Select contact blocks and lamp blocks for rear mounting, see page 8.45
- Accessories, see page 8.45  
N.B. **One spacer per operator** has to be Ref.ed if legend plate is not used.  
(for rear mounted pilot devices)



## Accessories Modular range

### Contact blocks for rear mounting

Description	Catalog No.	Ref. Code
<b>Contact blocks</b>		
1NO	<b>MCB-10B</b>	1SFA 611 610 R2001
1NC	<b>MCB-01B</b>	1SFA 611 610 R2010

### Double contact block

2NO	<b>MCB-20B</b>	1SFA 611 610 R2002
2NC	<b>MCB-02B</b>	1SFA 611 610 R2020
1NO+1NC	<b>MCB-11B</b>	1SFA 611 610 R2011

### Contact blocks with gold plated contacts

1NO	<b>MCB-10BG</b>	1SFA 611 610 R2101
1NC	<b>MCB-01BG</b>	1SFA 611 610 R2110

### Lamp blocks

#### For max. 2 W, 230 V AC and DC filament bulb or LED

<b>MLB-1B</b>	1SFA 611 620 R2001
---------------	--------------------

115 V AC supply voltage.

#### For 60 V filament bulb max. 1.2 W

<b>MLB-2B</b>	1SFA 611 620 R2002
---------------	--------------------

230 V AC supply voltage.

#### For 130 V filament bulb max. 2 W

<b>MLB-3B</b>	1SFA 611 620 R2003
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### Protective sleeve

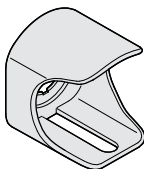
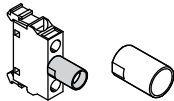
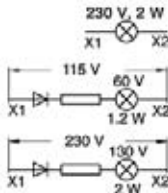
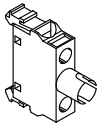
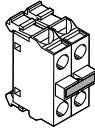
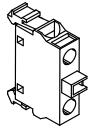
Description	Catalog No.	Ref. Code
To make a rear mounted lamp block screen protected. IP20	<b>53960543-1</b>	5396 0543-1

### Earthing terminal

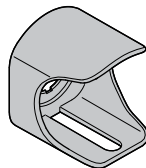
Description	Catalog No.	Ref. Code
For plastic enclosure.	<b>MA5-3005</b>	1SFA 611 925 R3005

### Shrouds

Color	Catalog No.	Reference Code
Yellow	MA1-8053	1SFA611920R8053
Gray	MA1-8128	1SFA611920R8128



Yellow shroud



Gray shroud

## Accessories Modular range

### Spacer

Description	Catalog No.	Ref. Code
1 mm thick. Needed when legend plates are not used in plastic enclosures. Spacer (Packing unit 10 pieces)	<b>SK615516-1</b>	SK 615 516-1
Spacer for Modular emergency stop pushbutton (Packing unit 10 pieces)	<b>KA1-8045</b>	1SFA 616 920 R 8045

### Blanking plug

Description	Catalog No.	Ref. Code
Grey plastic, 22mm	<b>MA1-8129</b>	1SFA 611 920 R8129
Black plastic, 22mm	<b>MA1-8130</b>	1SFA 611 920 R8130
Black plastic, 30mm	<b>MA1-8133</b>	1SFA 611 920 R8133

### Cable gland

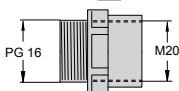
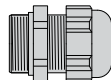
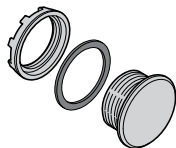
Description	Catalog No.	Ref. Code
PG 13.5	<b>MA5-3006</b>	1SFA 611 925 R3006
PG 16	<b>MA5-3007</b>	1SFA 611 925 R3007

### Nut

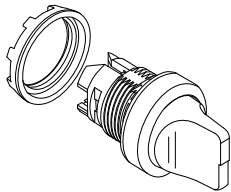
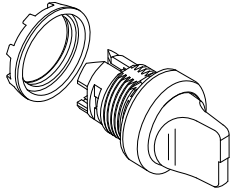
Description	Catalog No.	Ref. Code
PG 13.5	<b>MA5-3008</b>	1SFA 611 925 R3007
PG 16	<b>MA5-3009</b>	1SFA 611 925 R3009

### Adaptor

Description	Catalog No.	Ref. Code
PG 16/M20	<b>MA5-3010</b>	1SFA 611 925 R3010



## 2 position selector switches for mounting in vertically mounted enclosures Modular range



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the:

Catalog No. M2SSX-1 0X

Ref. Code 1SFA611XXX R 1XXX

3 for metal bezel

4 for grey plastic bezel

### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A (B)	O	O
O	x	x

O = not actuated (normal state)

x = actuated (state changed)

### Non-illuminated operator ... ①

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle</b>			
<b>Maintained</b>			
	Red	<b>M2SSV1-10R</b>	1SFA 611 220 R1001
	Black	<b>M2SSV1-10B</b>	1SFA 611 220 R1006
<b>Maintained</b>			
	Red	<b>M2SSV2-10R</b>	1SFA 611 221 R1001
	Black	<b>M2SSV2-10B</b>	1SFA 611 221 R1006
<b>Momentary, spring return from C to B</b>			
	Red	<b>M2SSV3-10R</b>	1SFA 611 222 R1001
	Black	<b>M2SSV3-10B</b>	1SFA 611 222 R1006

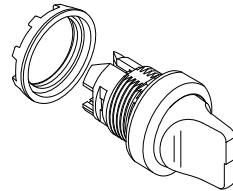
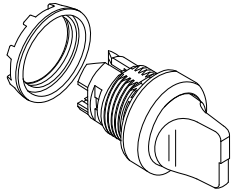
### Illuminated operator ... ① ②

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle</b>			
<b>Maintained</b>			
	Red	<b>M2SSV1-11R</b>	1SFA 611 220 R1101
	Green	<b>M2SSV1-11G</b>	1SFA 611 220 R1102
	Yellow	<b>M2SSV1-11Y</b>	1SFA 611 220 R1103
<b>Maintained</b>			
	Red	<b>M2SSV2-11R</b>	1SFA 611 221 R1101
	Green	<b>M2SSV2-11G</b>	1SFA 611 221 R1102
	Yellow	<b>M2SSV2-11Y</b>	1SFA 611 221 R1103
<b>Momentary, spring return from C to B</b>			
	Red	<b>M2SSV3-11R</b>	1SFA 611 222 R1101
	Green	<b>M2SSV3-11G</b>	1SFA 611 222 R1102
	Yellow	<b>M2SSV3-11Y</b>	1SFA 611 222 R1103

① No contact in center position

② Lamp block for max 230 V AC/DC. Bulb not included. Other lamp block see Accessories

## 3 position selector switches for mounting in vertically mounted enclosures Modular range



**Bezel in black plastic as standard**  
**Bezel in metal:**  
Replace '1' in the:  
Catalog No. M3SSX-1 0X  
Ref. Code 1SFA611XXX R 1XXX  
**3** for metal bezel  
**4** for grey plastic bezel

### Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A	x	0
B	0	0
C	0	x

### Non-illuminated operator ... ①

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle</b>			
<b>Maintained</b>			
	Red	<b>M3SSV1-10R</b>	1SFA 611 230 R1001
	Black	<b>M3SSV1-10B</b>	1SFA 611 230 R1006
<b>Momentary, spring return from A to B and from C to B</b>			
	Red	<b>M3SSV2-10R</b>	1SFA 611 231 R1001
	Black	<b>M3SSV2-10B</b>	1SFA 611 231 R1006
<b>Momentary, spring return from C to B</b>			
	Red	<b>M3SSV3-10R</b>	1SFA 611 232 R1001
	Black	<b>M3SSV3-10B</b>	1SFA 611 232 R1006

### Illuminated operator ... ① ②

Symbol	Handle color	Catalog No.	Ref. Code
<b>with short handle</b>			
<b>Maintained</b>			
	Red	<b>M3SSV1-11R</b>	1SFA 611 230 R1101
	Green	<b>M3SSV1-11G</b>	1SFA 611 230 R1102
	Yellow	<b>M3SSV1-11Y</b>	1SFA 611 230 R1103
<b>Momentary, spring return from A to B and from C to B</b>			
	Red	<b>M3SSV2-11R</b>	1SFA 611 231 R1101
	Green	<b>M3SSV2-11G</b>	1SFA 611 231 R1102
	Yellow	<b>M3SSV2-11Y</b>	1SFA 611 231 R1103
<b>Momentary, spring return from C to B</b>			
	Red	<b>M3SSV3-11R</b>	1SFA 611 232 R1001
	Green	<b>M3SSV3-11G</b>	1SFA 611 232 R1002
	Yellow	<b>M3SSV3-11Y</b>	1SFA 611 232 R1003

**Contact blocks, lamp block and holder** See Page 8.45

① No contact in center position

② Lamp block for max 230 V AC/DC. Bulb not included. Other lamp block see Accessories

## Compact E-Stop Component parts

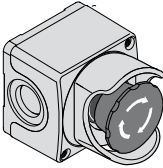
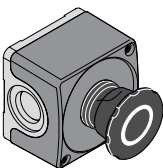
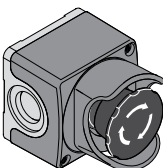
### 1-seat emergency-stop enclosures

	Description	Catalog Number	Order Code
	Enclosure 1-Seat Dark grey/light grey 50Dmm X 65Wmm 65Hmm	<b>CEP1-0</b>	1SFA 619 811 R1000
	Enclosure 1-Seat Yellow/light grey 50Dmm X 65Wmm 65Hmm	<b>CEPY1-0</b>	1SFA 619 821 R1000
	Shroud For emergency stops; yellow 30Dmm X 45Wmm 60Hmm	<b>CA1-8053</b>	1SFA 619 920 R8053
	Shroud For machine stops; dark grey 30Dmm X 45Wmm 60Hmm	<b>CA1-8054</b>	1SFA 619 920 R8054
	Legend plate, yellow aluminum 60mm	<b>CA6-1026</b>	1SFA619930R1026



## Compact E-Stop Assembled stations

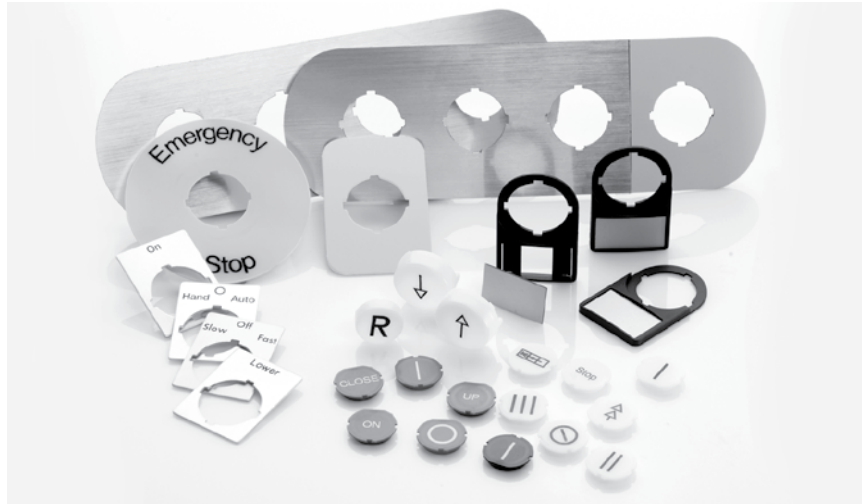
### Assembled 1-seat emergency stop enclosures

	Description	Catalog Number	Order Code
	Emergency Stop Enclosure Twist release; red button 2NC	<b>CEPY1-1001</b>	1SFA 619 821 R1001
	Emergency Stop Enclosure Pull release; red button 2NC	<b>CEPY1-1002</b>	1SFA 619 821 R1002
	Emergency Stop Enclosure with Shroud Twist release; red button 2NC	<b>CEPY1-2001</b>	1SFA 619 821 R2001
	Emergency Stop Enclosure with Shroud Pull release; red button 2NC	<b>CEPY1-2002</b>	1SFA 619 821 R2002
	Machine Stop Enclosure Twist release; black button 1NO + 1NC	<b>CEP1-1001</b>	1SFA 619 81 R1002
	Machine Stop Enclosure Pull release; black button 1NO + 1NC	<b>CEP1-1002</b>	1SFA 619 811 R1002
	Machine Stop Enclosure with Shroud Twist release; black button 1NO + 1NC	<b>CEP1-2001</b>	1SFA 619 811 R2001
	Machine Stop Enclosure with Shroud Pull release; black button 1NO + 1NC	<b>CEP1-2002</b>	1SFA 619 811 R2002

# 22mm Legend plates



## Legend plates 22mm



8

### Fixed legend plates

- Of silvergrey anodized aluminum for:
  - pushbuttons
  - two-position selector switches
  - three-position selector switches
  - toggle switches
  - customer selected text

### Special legend plates

- For emergency stop pushbuttons
- Legend plate with or without customer selected text
- Legend plate holders with inserts of anodized brushed aluminum  
With or without text or symbol for:
  - pushbuttons
  - two-position selector switch
  - three position selector switch
  - customer selected textFor plastic enclosures:
- Legend plate holders with inserts of anodized brushed aluminum on black plastic.  
With or without text or symbol for push-buttons
- Legend plates of silvergrey anodized aluminum. For 1- 2-, 3- 4- or 6-seat plastic enclosures

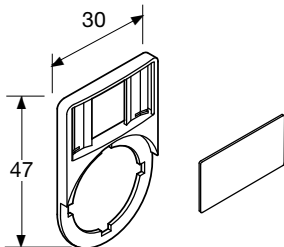
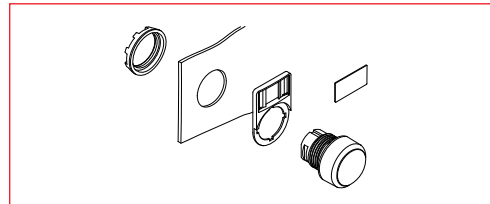
### Text caps

- For illuminated pushbuttons (flush or extended) and pilot lights with or without text or symbol or with customer selected text.

## Special legend plates 22mm

### Legend plate holders with inserts

- Holder of black plastic.
  - Holder of grey plastic for plastic enclosures.
  - Insert of brushed aluminum on black plastic.
- The insert is securely retained in a pocket and can be removed.  
3 mm high text in typeface Helvetica.



### Legend plate holder (black)

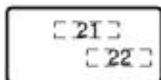
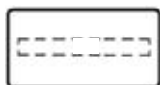
Description	Catalog No.
Black	1SFA 616 920 R8120

### Inserts

Description	Catalog No.
Of brushed aluminum on black plastic Without text or symbol	1SFA 616 920 R8121

### Inserts with text/symbol

Description	Catalog No.
Of brushed aluminum on black plastic With text or symbol	
<b>O</b>	1SFA 611 930 R1032
<b>I</b>	1SFA 611 930 R1033
<b>→</b>	1SFA 611 930 R1034
<b>→→</b>	1SFA 611 930 R1035
Close	1SFA 611 930 R1036
Open	1SFA 611 930 R1037
On	1SFA 611 930 R1038
Off	1SFA 611 930 R1039
Fast	1SFA 611 930 R1040
Slow	1SFA 611 930 R1041
Down	1SFA 611 930 R1042
Up	1SFA 611 930 R1043
Start	1SFA 611 930 R1044
Stop	1SFA 611 930 R1045



For two-position selector switch

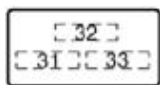
### Inserts for two-position selector switches

Of brushed aluminum on black plastic. Text on both sides.

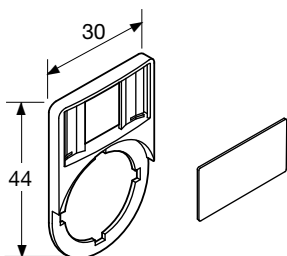
Description	Catalog No.
With text or symbol	
Pos. 21    Pos. 22	
O            I	1SFA 611 930 R 1070
I            II	1SFA 611 930 R 1071
→           →→	1SFA 611 930 R 1072
Off          On	1SFA 611 930 R 1073
Stop        Start	1SFA 611 930 R 1074
Low         High	1SFA 611 930 R 1075
Slow        Fast	1SFA 611 930 R 1076
Close       Open	1SFA 611 930 R 1077
Jog          Run	1SFA 611 930 R 1078
Hand        Auto	1SFA 611 930 R 1079

# Special legend plates

## 22mm



For three-position selector switch



### Inserts for three-position selector switches

Of brushed aluminum on black plastic. Text on both sides.

Description			Catalog No.
<u>With text or symbol</u>			
Pos. 31	Pos. 32	Pos. 33	
←	O	→	<b>1SFA 611 930 R 1080</b>
→	O	→→	<b>1SFA 611 930 R 1081</b>
I	O	II	<b>1SFA 611 930 R 1082</b>
Hand	O	Auto	<b>1SFA 611 930 R 1083</b>
Slow	Off	Fast	<b>1SFA 611 930 R 1084</b>

### Legend plate holder (grey) for plastic enclosures

Description	Catalog No.
Grey	<b>1SFA 611 930 R1060</b>

### Inserts

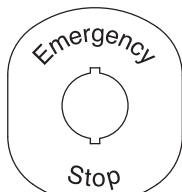
Description	Catalog No.
Of brushed aluminum on black plastic	
Without text or symbol	<b>1SFA 611 930 R1061</b>

### Inserts with text/symbol

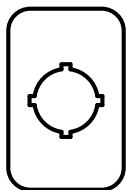
Description	Catalog No.
Of brushed aluminum on black plastic	
<u>With text or symbol</u>	
<b>O</b>	<b>1SFA 611 930 R1062</b>
<b>I</b>	<b>1SFA 611 930 R1063</b>
<b>II</b>	<b>1SFA 611 930 R1064</b>

## Special legend plates Emergency stops 22mm

### Emergency stop legend plates, 70mm, for modular enclosures ①



MA6-1026



Description/Text	Catalog No.
Black text on a yellow aluminum plate.	
Nöd Stopp	<b>SK 615 546-1</b>
Emergency Stop	<b>SK 615 546-2</b>
Not Aus	<b>SK 615 546-3</b>
ARRET D'URGENCE	<b>SK 615 546-4</b>
HÄTÄSEIS	<b>SK 615 546-5</b>
PARADA DE EMERGENCIA	<b>SK 615 546-6</b>
Without text	<b>SK 615 546-8</b>
Black text on a yellow plastic plate. Quantity per package: 10 Can be used as yellow background.	
Emergency Stop	<b>1SFA 616 915 R1005</b>

### Emergency stop legend plates, 60mm, for compact enclosures

Description/Text	Catalog No.	Order code
Legend plate, yellow aluminum, 60mm	<b>CA6-1026</b>	1SFA619930R1026

### Emergency stop legend plates for modular compact enclosures

Description/Text	Catalog No.	Order code
For horizontally mounted enclosures with yellow plastic/black text	<b>MA6-1026</b>	1SFA611930R1026
For vertically mounted enclosures with yellow plastic/black text	<b>MA6-1026</b>	1SFA611930R1101

### Emergency stop legend plate

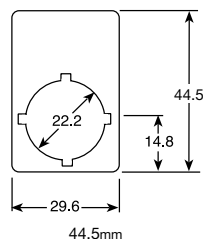
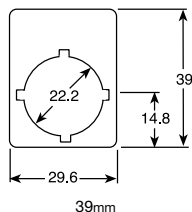
Description/Text	Catalog No.
Black text on an yellow aluminum plate.	
Legend plate without text	<b>1SFA 611 930 R1010</b>
Legend plate (1SFA 611 930 R1010) with text:	
Nöd stopp	<b>1SFA 611 930 R1017</b>
Not Aus	<b>1SFA 611 930 R1018</b>
Emergency Stop	<b>1SFA 611 930 R1019</b>
ARRET D'URGENCE	<b>1SFA 611 930 R1020</b>
Hätäseis	<b>1SFA 611 930 R1021</b>
PARADA DE EMERGENCIA	<b>1SFA 611 930 R1022</b>
Black text on an yellow plastic plate.	
Legend plate without text	<b>1SFA 611 930 R1011</b>
Legend plate (1SFA 611 930 R1011) with text:	
Emergency Stop	<b>1SFA 611 930 R1023</b>

① Does not work with pushbutton enclosure.

② Quantity per package: 10.

③ When ordering, please state text and position (Line 21 and Line 22). Only the initial character is upper case unless other is stated. Quantity per package: 1.

## Legend plates for pushbuttons 22mm



### 22mm Blank fixed legend plates

Of silvergrey aluminum

Size	Catalog No.
39mm H	SK 615 540-1
44.5mm H	SK 615 541-1

### 22mm Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

Symbol	Catalog No.
O	SK 615 550-61
I	SK 615 550-62
	SK 615 550-63
←	SK 615 562-12
→	SK 615 562-18
↔	SK 615 562-27

### 22mm Engraved fixed legend plates, with text ①

Of silvergrey aluminum

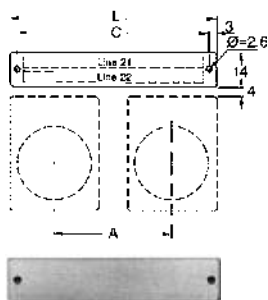
Text	Catalog No.
<b>English</b>	
Close	SK 615 552-13
Down	SK 615 552-14
Emergency stop	SK 615 552-15
Fast	SK 615 552-16
Forward	SK 615 552-17
In	SK 615 550-29
Inching	SK 615 552-18
Jog	SK 615 552-JO
Left	SK 615 552-39
Lower	SK 615 552-20
Off	SK 615 552-21
On	SK 615 552-22
Open	SK 615 552-23
Out	SK 615 552-24
Raise	SK 615 552-25
Reset	SK 615 552-27
Reverse	SK 615 552-28
Right	SK 615 552-40
Run	SK 615 552-29
Slow	SK 615 552-30
Start	SK 615 550-44
Stop	SK 615 552-31
Up	SK 615 552-32

### Legend plates without or with customer-selected text

Of aluminum

Number of operations	Max. number of characters per line	Dimensions			Without text ② Catalog No.	With text ③ Catalog No.
		A	L	C		
1	7	-	29.6	23.6	SK 615 545-1	SK 615 998-1
2	20	30.5	60	54	SK 615 545-2	SK 615 998-2
2	24	40	70	64	SK 615 545-3	SK 615 998-3
3	33	30.5	90	84	SK 615 545-4	SK 615 998-4
3	42	40	110	104	SK 615 545-5	SK 615 998-5

USE CUSTOM ENGRAVING FORM ON NEXT PAGE



① Text height 3 mm.

**Engraved legend plate form**  
Special legend plates  
22mm

ENGRAVED LEGEND PLATE FORM

PAGE: \_\_\_ OF: \_\_\_

ORDER DATE: \_\_\_\_\_

ORDER NUMBER: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

ALL CAPITALS? YES NO

SHIPPING METHOD: \_\_\_\_\_

REMARKS: \_\_\_\_\_

DUE DATE: \_\_\_\_ - \_\_\_\_ - \_\_\_\_

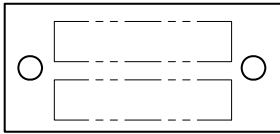
To be completed by ABB personnel:

ENGRAVER: \_\_\_\_\_

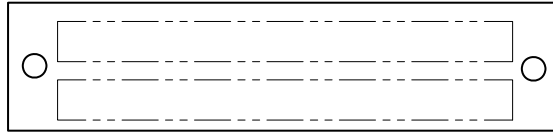
Q.C. INSPECTION: \_\_\_\_\_

**PRINT INFORMATION TO BE ENGRAVED**

MAX 7  
CHARAC-  
TERS PER  
LINE

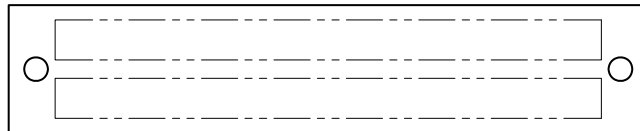


SK 615 545-1



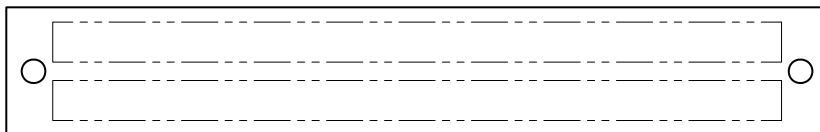
SK 615 545-2

MAXIMUM OF 20  
CHARACTERS PER LINE



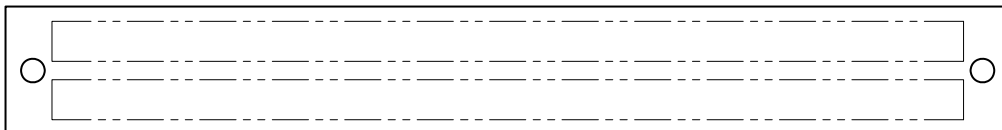
SK 615 545-3

MAXIMUM OF 24  
CHARACTERS PER LINE



SK 615 545-4

MAXIMUM OF 33  
CHARACTERS PER LINE

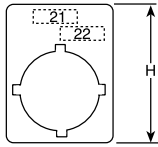


SK 615 545-5

MAXIMUM OF 44  
CHARACTERS PER LINE



# Legend plates for 2 position selector switches 22mm



H = 39 mm

## Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

**Symbol/Text**

**Pos 21 Pos. 22**

**Catalog No.**

O I

**SK 615 550-75**

I II

**SK 615 550-76**

→ →→

**SK 615 562-72**

## Engraved fixed legend plates, with text ①

Of silvergrey aluminum

**Symbol/Text**

**Pos 21 Pos. 22**

**Catalog No.**

### English

Hand Auto

**SK 615 550-71**

Jog Run

**SK 615 552-52**

Off On

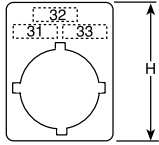
**SK 615 552-53**

Stop Start

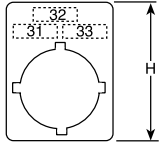
**SK 615 552-55**

① Text height 3 mm. Only the initial character is upper case unless other is stated.

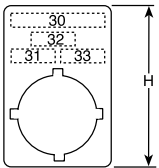
## Legend plates for 3 position selector switches 22mm



H = 39 mm



H = 39 mm



H = 44.5 mm

### Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

Symbol/Text

Pos. 31 Pos. 32 Pos. 33

I	O	II
←	O	→
→	O	→→

Catalog No.

SK 615 550-81

SK 615 562-82

SK 615 562-83

### Engraved fixed legend plates, with text ①

Of silvergrey aluminum

Symbol/Text

Pos. 31 Pos. 32 Pos. 33

#### English

Hand	O	Auto
Slow	Off	Fast

Catalog No.

SK 615 550-80

SK 615 552-60

### Aluminum name plate blank (anodized silvergray aluminum)

Blank 39mm

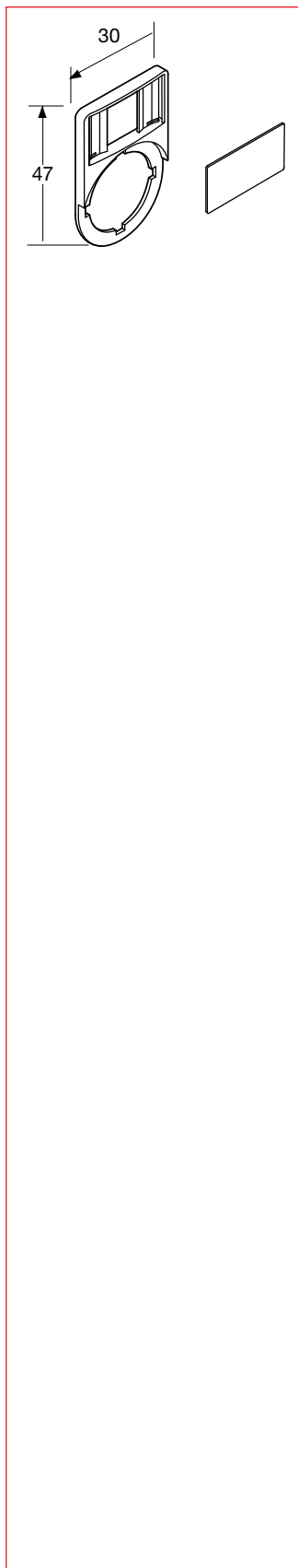
44.5mm

SK 615 540-1

SK 615 541-1

① Text height 3 mm. Only the initial character is upper case unless other is stated.

## Custom engraved inserts for legend plate holders 22mm



### Nameplate Inserts — Brushed aluminum

Type	Maximum letters per line	Catalog number
 1 line	11	MP-NP19-01
 2 lines	11	MP-NP19-02
 2 position selector switch	5	MP-NP19-03
 3 position selector switch	5	MP-NP19-04
 2 position selector switch	5	MP-NP19-05

### General specifications

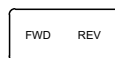
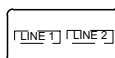
1. All characters are 1/8" high, upper & lower case. Please specify if all capital letters are desired.
2. The legend plate inserts and the fixed legend plates are silver-grey anodized aluminum.
3. All special engravings involve engraving the desired lettering into the metal surface and then treating the engraved surfaces with black ink.

#### EXAMPLE:

MP-NP19-05

1: FWD

2: REV



"MP-NP19" is the blank legend plate catalog number. "-05" refers to the layout of text (see dimension illustrations).

### Legend Plate order form

Use legend plate order form on next page.

**Engraved legend plate form**  
Custom engraved nameplates  
22mm

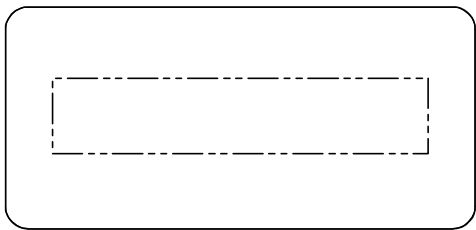
ENGRAVED LEGEND PLATE FORM  
MP-NP19

PAGE: \_\_\_\_ OF: \_\_\_\_

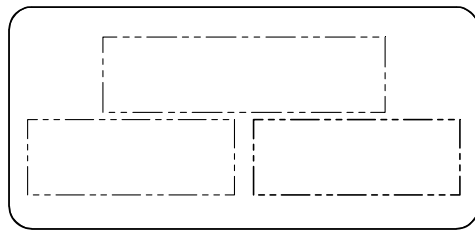
MP-NP19- \_\_\_\_ ( BRUSHED ALUMINUM )  
ORIG. DATE: \_\_\_\_\_  
ISSUED BY: \_\_\_\_\_  
ALL CAPITALS?    YES    NO  
REMARKS: \_\_\_\_\_

ORDER NUMBER: \_\_\_\_\_  
ORDER: QTY: \_\_\_\_\_  
SHIPPING METHOD: \_\_\_\_\_  
DUE DATE: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
ENGRAVER: \_\_\_\_\_  
Q.C. INSPECTION: \_\_\_\_\_

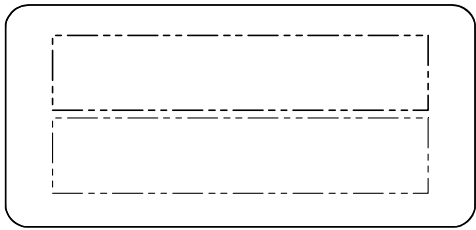
PRINT INFORMATION TO BE ENGRAVED



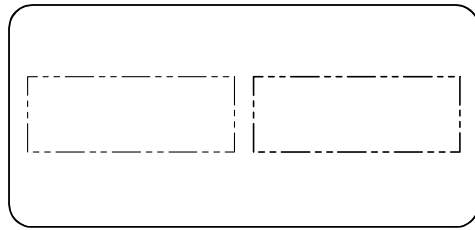
-01



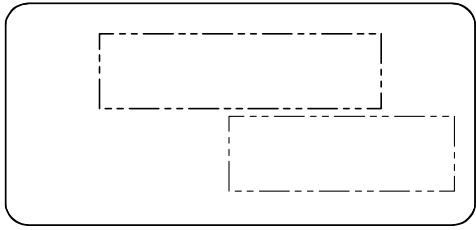
-04



-02



-05



-03

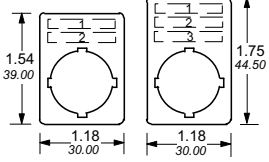
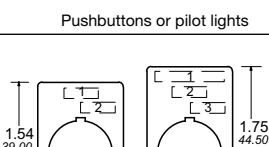
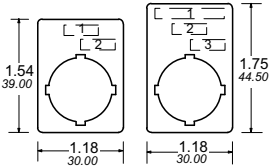
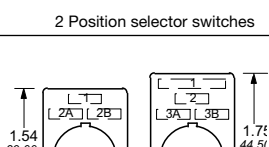
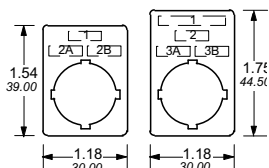
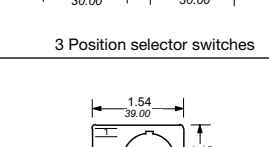
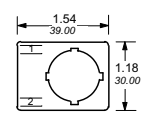
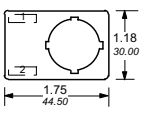
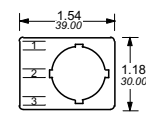
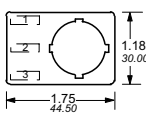
MP-NP19: REV. A  
03/04/05

8

# Custom engraved nameplates 22mm

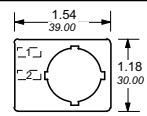
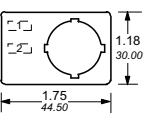
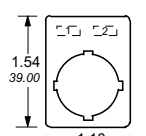
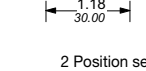
Pilot Devices  
Legend plates

## Fixed nameplates – aluminum ①

Type	Maximum letters per line	Catalog number
 Pushbuttons or pilot lights	11	MP-NPE28-01
	39mm	
 Pushbuttons or pilot lights	11	MP-NPE29-01
	44.5mm	
 2 Position selector switches	5	MP-NPE28-02
	39mm	
 2 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3)	MP-NPE29-02
	44.5mm	
 3 Position selector switches	5	MP-NPE28-03
	39mm	
 3 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3A) 5 (line 3B)	MP-NPE29-03
	44.5mm	
 2 Position toggle switches	4	MP-NPE28-04
	39mm	
 2 Position toggle switches	5	MP-NPE29-04
	44.5mm	
 3 Position toggle switches		MP-NPE28-05
	39mm	
 3 Position toggle switches		MP-NPE29-05
	44.5mm	



## Fixed nameplates – aluminum or plastic ①

Type	Maximum letters per line	Catalog number
 Pushbuttons or pilot lights	11	MP-NPE28-06
	39mm	
 Pushbuttons or pilot lights	11	MP-NPE29-06
	44.5mm	
 2 Position selector switches	5	MP-NPE28-07
	39mm	
 2 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3)	MP-NPE29-07
	44.5mm	

### General specifications

- All characters are 1/8" high, upper & lower case. Please specify if all capital letters are desired.
- The legend plate inserts and the fixed legend plates are silver-grey anodized aluminum.
- All special engravings involve engraving the desired lettering into the metal surface and then treating the engraved surfaces with black ink.

### Ordering custom engraved nameplates – USE ORDER FORM FROM FOLLOWING PAGES

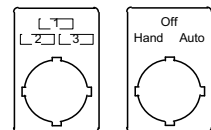
- Select the desired legend plate.
- Indicate the catalog number.
- Write the desired words to be engraved on each line.

#### EXAMPLE:

MP-NPE28P-03

- OFF
- HAND
- AUTO

"MP-NPE28P" is the blank legend plate catalog number. "B" indicates that the black side of the plate is to be engraved. "-03" refers to the layout of text (see dimension illustrations above).



① For drilling plans, see page 8.74.

# Engraved legend plate form

## Custom engraved nameplates

### 22mm

#### ENGRAVED LEGEND PLATE FORM

MP-NPE28

PAGE: \_\_\_ OF: \_\_\_

MP-NPE28-\_\_\_ (BRUSHED ALUMNINUM)

ORDER NUMBER: \_\_\_\_\_

ORIG. DATE: \_\_\_\_\_

ORDER: QTY: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

SHIPPING METHOD: \_\_\_\_\_

ALL CAPITALS? YES NO

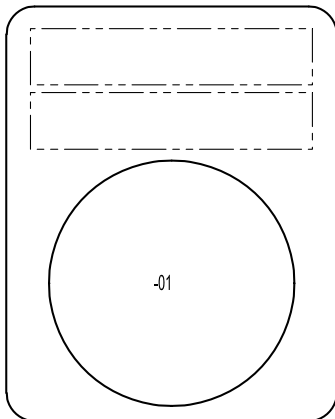
DUE DATE: \_\_\_ - \_\_\_ - \_\_\_

REMARKS: \_\_\_\_\_

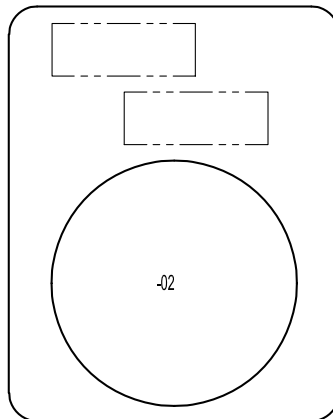
ENGRAVER: \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

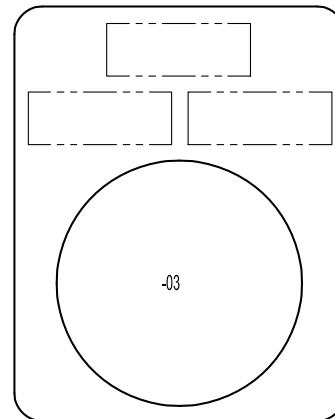
#### PRINT INFORMATION TO BE ENGRAVED



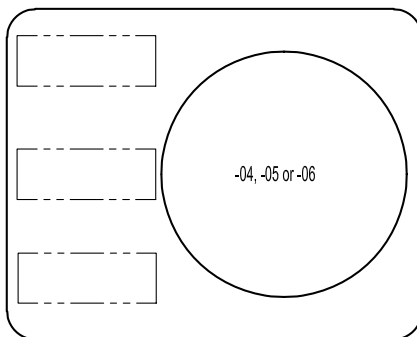
-01



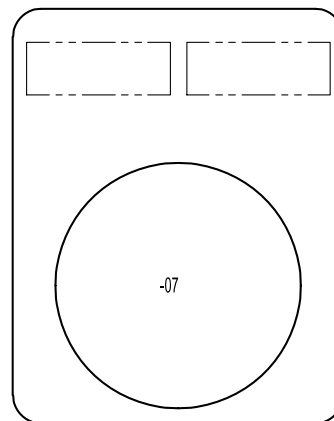
-02



-03



-04, -05 or -06



-07

MP-NPE28  
5/26/04

**Engraved legend plate form**  
Custom engraved nameplates  
22mm

**ENGRAVED LEGEND PLATE FORM**

MP-NPE29 PAGE: \_\_\_ OF: \_\_\_

MP-NPE29- ____ (BRUSHED ALUMNINUM)	ORDER NUMBER: _____
ORIG. DATE: _____	ORDER: QTY: _____
ISSUED BY: _____	SHIPPING METHOD: _____
ALL CAPITALS? YES NO	DUE DATE: ___ - ___ - ___
REMARKS: _____	ENGRAVER: _____
	Q.C. INSPECTION: _____

---

PRINT INFORMATION TO BE ENGRAVED

-01

-04, -05 OR -06

-03

-07

-02

MP-NPE29  
6/10/04



## Special legend plates for plastic enclosures 22mm

### Legend plates for plastic enclosures

For 1, 2, 3, 4 or 6-seat

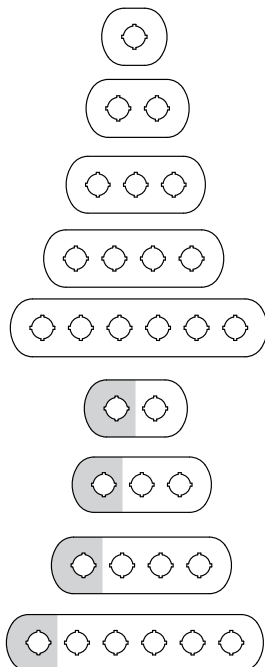
Description	Catalog No.
Of silvergrey aluminum on plastic.	
<b>1-seat</b>	<b>1SFA 611 930 R1000</b>
<b>2-seat</b>	<b>1SFA 611 930 R1002</b>
<b>3-seat</b>	<b>1SFA 611 930 R1003</b>
<b>4-seat</b>	<b>1SFA 611 930 R1004</b>
<b>6-seat</b>	<b>1SFA 611 930 R1005</b>
Of silvergrey aluminum on plastic. (Pos. 1 Yellow)	
<b>2-seat</b>	<b>1SFA 611 930 R1006</b>
<b>3-seat</b>	<b>1SFA 611 930 R1007</b>
<b>4-seat</b>	<b>1SFA 611 930 R1008</b>
<b>6-seat</b>	<b>1SFA 611 930 R1009</b>

### Custom engraved legend plates for plastic enclosures


For 1, 2, 3, 4 or 6-seat

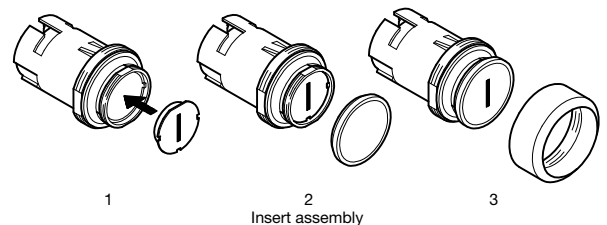
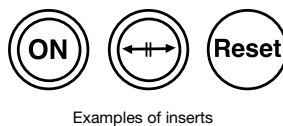
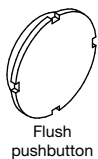
Fill in appropriate templates on the following pages when ordering

Description	Name Plate	Catalog No.
Custom engraved 1-seat	1SFA 611 930 R1000	CUSTOM 1 SEAT
Custom engraved 2-seat	1SFA 611 930 R1002	CUSTOM 2 SEAT
Custom engraved 3-seat	1SFA 611 930 R1003	CUSTOM 3 SEAT
Custom engraved 4-seat	1SFA 611 930 R1004	CUSTOM 4 SEAT
Custom engraved 6-seat	1SFA 611 930 R1005	CUSTOM 6 SEAT
Custom engraved 2-seat, position 1 yellow	1SFA 611 930 R1006	CUSTOM 2 SEAT Y
Custom engraved 3-seat, position 1 yellow	1SFA 611 930 R1007	CUSTOM 3 SEAT Y
Custom engraved 4-seat, position 1 yellow	1SFA 611 930 R1008	CUSTOM 4 SEAT Y
Custom engraved 6-seat, position 1 yellow	1SFA 611 930 R1009	CUSTOM 6 SEAT Y



# Text cap inserts 22mm

Legend	Cap color ①	Suffix code ②	Flush button catalog number	Extended button catalog number	Pilot light catalog number
	White	C82	1SFA 616 901 R9036	—	—
Start	White	C67	1SFA 616 901 R2030	1SFA 616 902 R2030	1SFA 616 903 R2030
START	Green	C5	1SFA 616 906 R1042	—	—
	Black	C81	1SFA 616 908 R1042	—	—
On	White	C68	1SFA 616 901 R1020	1SFA 616 902 R1020	1SFA 616 903 R1020
ON	White	C69	1SFA 616 901 R1039	—	1SFA 616 903 R1039
	Green	C70	1SFA 616 906 R1039	—	—
	Black	C1	1SFA 616 908 R1030	—	—
Off	White	C71	1SFA 616 901 R1019	1SFA 616 902 R1019	1SFA 616 903 R1019
OFF	White	C72	—	1SFA 616 902 R1040	—
	Red	C73	—	1SFA 616 905 R1040	—
	Black	C2	1SFA 616 908 R1040	1SFA 616 909 R1040	—
Stop	White	C74	1SFA 616 901 R1031	1SFA 616 902 R1031	1SFA 616 903 R1031
STOP	Red	C4	1SFA 616 904 R1047	1SFA 616 905 R1047	—
Reset	White	C75	1SFA 616 901 R1025	1SFA 616 902 R1025	1SFA 616 903 R1025
Blank	White	C15	1SFA 616 901 R9000	1SFA 616 902 R9000	1SFA 616 903 R9000
	Green	CG	2949 1468-2	2949 1469-2	—
UP	Green	C11	1SFA 616 906 R1043	—	—
DOWN	Green	C12	1SFA 616 906 R1044	—	—
OPEN	White	C16	1SFA 616 901 R1045	—	—
	Green	C19	1SFA 616 906 R1045	—	—
CLOSE	White	C17	1SFA 616 901 R1046	—	—
	Green	C20	1SFA 616 906 R1046	—	—
REV	Green	C6	1SFA 616 906 R1048	—	—
FWD	Green	C7	1SFA 616 906 R1049	—	—
SLOW	Green	C8	1SFA 616 906 R1050	—	—
FAST	Green	C9	1SFA 616 906 R1051	—	—
JOG	Green	C10	1SFA 616 906 R1052	—	—
RESET	Black	C3	1SFA 616 908 R1041	—	—
LATCH	White	C18	1SFA 616 901 R1053	—	—



① Illuminated pushbuttons and pilot lights must use white insert.

② For extended pushbuttons, insert "E" at the end of the catalog number. For pilot lights, insert "P" at end of the catalog number.

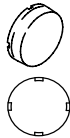
## Text cap inserts 22mm

Flush button

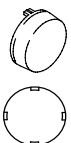


Can be turned 90° or 180°

Extended button



Pilot light



### Text caps for illuminated pushbuttons and pilot lights

Text/Symbol <sup>①</sup>	Cap color <sup>②</sup>	Suffix	Flush button Catalog No.	Extended button Catalog No.	Pilot light Catalog No.
→	White	C14	1SFA 616 901 R9006	1SFA 616 902 R9006	1SFA 616 903 R9006
O	White	C21	1SFA 616 901 R9004	1SFA 616 902 R9004	1SFA 616 903 R9004
	Red	C22	1SFA 616 904 R9004	1SFA 616 905 R9004	-
	Black	C23	1SFA 616 908 R9004	-	-
I	White	C24	1SFA 616 901 R9002	1SFA 616 902 R9002	1SFA 616 903 R9002
	Green	C25	1SFA 616 906 R9002	-	-
	Black	C26	1SFA 616 908 R9002	-	-
II	White	C27	1SFA 616 901 R9003	1SFA 616 902 R9003	1SFA 616 903 R9003
	Green	C28	1SFA 616 906 R9003	-	-
	Black	C29	1SFA 616 908 R9003	-	-
III	White	C30	1SFA 616 901 R9028	1SFA 616 902 R9028	-
	Black	C31	1SFA 616 908 R9028	-	-
+	White	C32	1SFA 616 901 R9011	1SFA 616 902 R9011	-
	Green	C33	1SFA 616 906 R9011	-	-
	Black	C34	1SFA 616 908 R9011	-	-
-	White	C35	1SFA 616 901 R9012	-	-
	Red	C36	1SFA 616 904 R9012	-	-
	Black	C37	1SFA 616 908 R9012	-	-
↑	White	C38	1SFA 616 901 R9005	1SFA 616 902 R9005	1SFA 616 903 R9005
	Black	C39	1SFA 616 908 R9005	-	-
↗	White	C40	1SFA 616 901 R9014	1SFA 616 902 R9014	-
	Black	C41	1SFA 616 908 R9014	-	-
↔	White	C42	1SFA 616 901 R9015	1SFA 616 902 R9015	-
	Black	C43	1SFA 616 908 R9015	-	-
↔	White	C44	1SFA 616 901 R9016	1SFA 616 902 R9016	-
	Black	C45	1SFA 616 908 R9016	-	-
↘	White	C46	1SFA 616 901 R9017	1SFA 616 902 R9017	-
	Black	C47	1SFA 616 908 R9017	-	-
⊕	White	C47	1SFA 616 901 R9018	1SFA 616 902 R9018	-
	Black	C48	1SFA 616 908 R9018	-	-
●	White	C49	1SFA 616 901 R9019	1SFA 616 902 R9019	-
	Black	C50	1SFA 616 908 R9019	-	-
⊙	White	C51	1SFA 616 901 R9020	1SFA 616 902 R9020	-
	Black	C52	1SFA 616 908 R9020	-	-
✎	White	C53	1SFA 616 901 R9021	1SFA 616 902 R9021	-
	Black	C54	1SFA 616 908 R9021	-	-
⚡	White	C55	1SFA 616 901 R9022	1SFA 616 902 R9022	-
	Black	C56	1SFA 616 908 R9022	-	-
⚡	White	C57	1SFA 616 901 R9023	1SFA 616 902 R9023	-
	Black	C58	1SFA 616 908 R9023	-	-
⚡	White	C59	1SFA 616 901 R9024	1SFA 616 902 R9024	-
	Black	C60	1SFA 616 908 R9024	-	-
⚡	White	C61	1SFA 616 901 R9025	1SFA 616 902 R9025	-
	Black	C62	1SFA 616 908 R9025	-	-
⚡	White	C63	1SFA 616 901 R9026	1SFA 616 902 R9026	-
	Black	C64	1SFA 616 908 R9026	-	-
⚡	White	C65	1SFA 616 901 R9027	1SFA 616 902 R9027	-
	Black	C66	1SFA 616 908 R9027	-	-

① Use only white caps for illuminated pushbutton and pilot lights.

② Add "E" for extended button or "P" for pilot light.

**Engraved legend plate form**  
Custom engraved nameplates  
1-Seat, vertical, 22mm

**ENGRAVED LEGEND PLATE FORM**

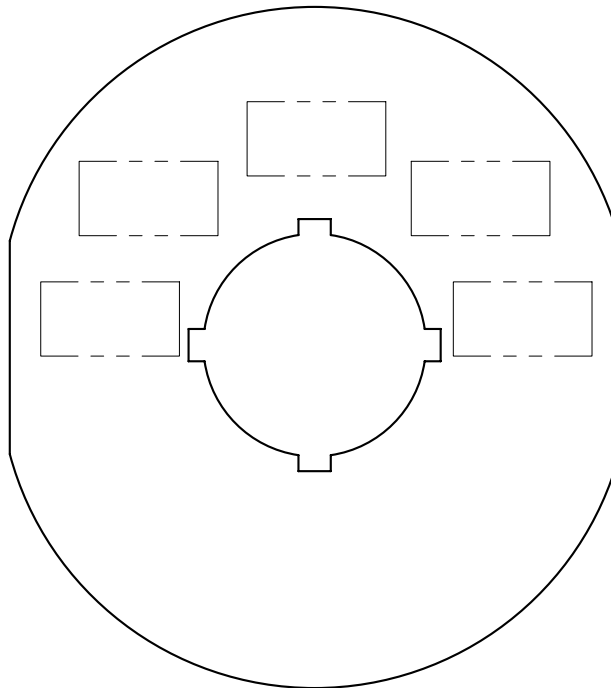
PAGE \_\_\_\_ of \_\_\_\_

CUSTOM 1 SEAT  
(silver-grey brushed plastic)

ORDER NUMBER : \_\_\_\_\_ ORDER QTY: \_\_\_\_\_  
SHIPPING METHOD \_\_\_\_\_ DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
ALL CAPITALS? YES NO  
ORDER DATE: \_\_\_\_\_ ISSUED BY \_\_\_\_\_  
REMARKS: \_\_\_\_\_

To be completed by ABB personnel.  
ENGRAVER \_\_\_\_\_ Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



# Engraved legend plate form

## Custom engraved nameplates

### 1-Seat, horizontal, 22mm

#### ENGRAVED LEGEND PLATE FORM

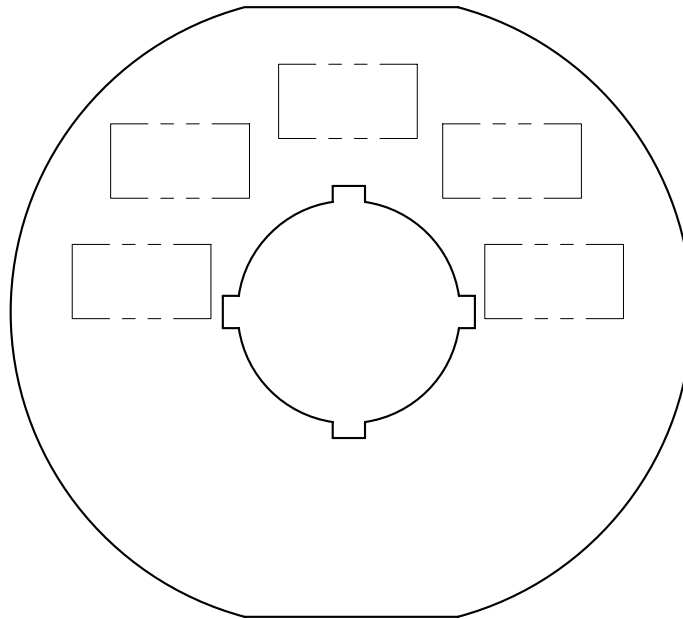
PAGE \_\_\_\_ of \_\_\_\_

CUSTOM 1 SEAT  
(silver-grey brushed plastic)

ORDER NUMBER : \_\_\_\_\_ ORDER QTY: \_\_\_\_\_  
SHIPPING METHOD \_\_\_\_\_ DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
ALL CAPITALS? YES NO  
ORDER DATE: \_\_\_\_\_ ISSUED BY \_\_\_\_\_  
REMARKS: \_\_\_\_\_

To be completed by ABB personnel.  
ENGRAVER \_\_\_\_\_ Q.C. INSPECTION : \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



**Engraved legend plate form**  
**Custom engraved nameplates**  
**2-Seat, vertical, 22mm**

**ENGRAVED LEGEND PLATE FORM**

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE:      **CUSTOM 2 SEAT**  
 (silver-grey aluminum)

**CUSTOM 2 SEAT Y**  
 (position 1 yellow)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS?    YES    NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

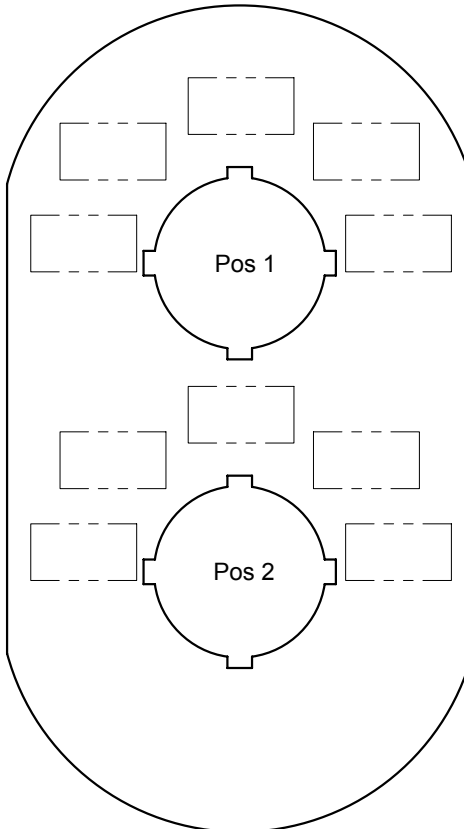
REMARKS : \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



## Engraved legend plate form

Custom engraved nameplates  
3-Seat, vertical, 22mm

### ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE:      CUSTOM 3 SEAT      CUSTOM 3 SEAT Y  
                                 (silver-grey aluminum)      (position 1 yellow)

ORDER NUMBER : \_\_\_\_\_ ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_ DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS?    YES   NO

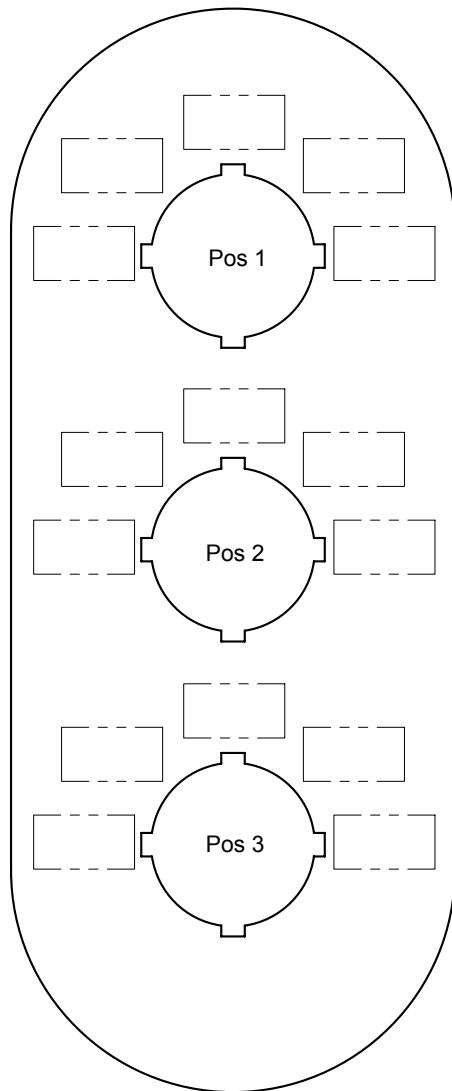
ORDER DATE: \_\_\_\_\_ ISSUED BY \_\_\_\_\_

REMARKS : \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_ Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



## Engraved legend plate form

Custom engraved nameplates  
4-Seat, vertical, 22mm

### ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE:          CUSTOM 4 SEAT                          CUSTOM 4 SEAT Y  
                                    (silver-grey aluminum)                          (position 1 yellow)

ORDER NUMBER : \_\_\_\_\_ ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_ DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

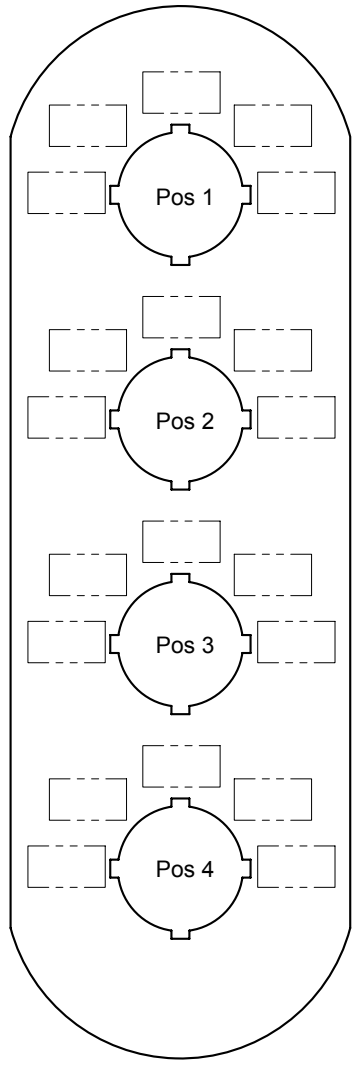
ALL CAPITALS?   YES   NO

ORDER DATE: \_\_\_\_\_ ISSUED BY \_\_\_\_\_

REMARKS : \_\_\_\_\_

To be completed by ABB personnel  
ENGRAVER \_\_\_\_\_ Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:





# Engraved legend plate form

## Custom engraved nameplates

### 6-Seat, vertical, 22mm

#### ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE: CUSTOM 6 SEAT  
(silver-grey aluminum)

CUSTOM 6 SEAT Y  
(position 1 yellow)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS? YES NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

REMARKS: \_\_\_\_\_

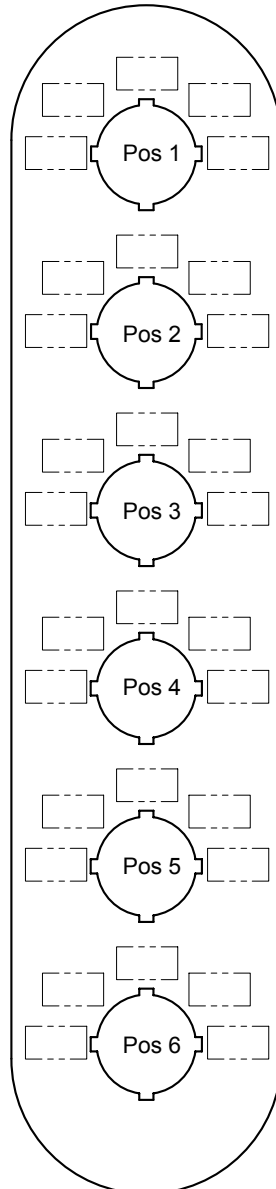
\_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO  
BE ENGRAVED:



# 30mm Legend plates



**Legend plates**  
30mm



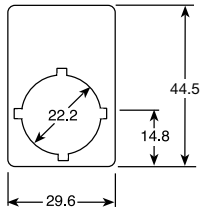
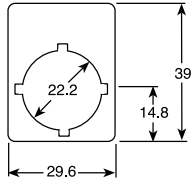
#### Custom legend plates

- Legend plate with customer selected text

#### Text caps

- For illuminated pushbuttons (flush or extended) and pilot lights
- With or without text or symbol or with customer selected text

## Legend plates for pushbuttons 30mm



### Blank fixed legend plates

Of silvergrey aluminum

Size	Catalog Number
50mm H	<b>SK 615 640-1</b>
56mm H	<b>SK 615 641-1</b>

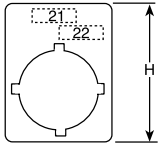
### Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Text	Catalog Number
<b>English</b>	
Close	<b>SK 615 652-13</b>
Down	<b>SK 615 652-14</b>
Emergency stop	<b>SK 615 652-15</b>
Fast	<b>SK 615 652-16</b>
Forward	<b>SK 615 652-17</b>
In	<b>SK 615 652-29</b>
Inching	<b>SK 615 652-18</b>
Left	<b>SK 615 652-39</b>
Lower	<b>SK 615 652-20</b>
Off	<b>SK 615 652-21</b>
On	<b>SK 615 652-22</b>
Open	<b>SK 615 652-23</b>
Out	<b>SK 615 652-24</b>
Raise	<b>SK 615 652-25</b>
Reset	<b>SK 615 652-27</b>
Reverse	<b>SK 615 652-28</b>
Right	<b>SK 615 652-40</b>
Run	<b>SK 615 652-29</b>
Slow	<b>SK 615 652-30</b>
Start	<b>SK 615 652-44</b>
Stop	<b>SK 615 652-31</b>
Up	<b>SK 615 652-32</b>

① Text height 3 mm.

# Legend plates for 2 position selector switches 30mm



## Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Symbol/Text

Pos. 21 Pos. 22

Catalog Number

### English

Hand Auto

**SK 615 652-71**

Jog Run

**SK 615 652-52**

Off On

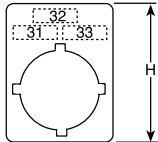
**SK 615 652-53**

Stop Start

**SK 615 652-55**

① Text height 3 mm. Only the initial character is upper case unless other is stated.

## Legend plates for 3 position selector switches 30mm



### Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Symbol/Text

Pos 31 Pos. 32 Pos. 33

Catalog Number

#### English

Hand O Auto

Slow Off Fast

**SK 615 652-80**

**SK 615 652-60**

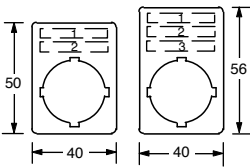
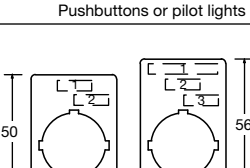
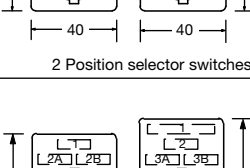
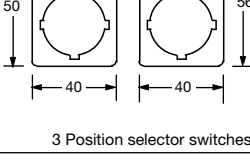
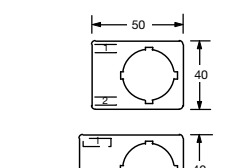
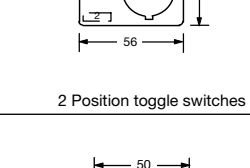
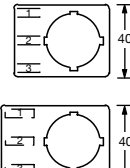
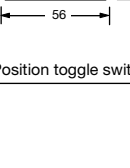


① Text height 3 mm. Only the initial character is upper case unless other is stated.

# Custom engraved legend plates

## 30mm

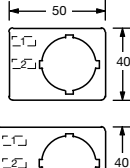
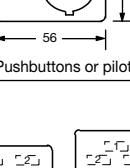
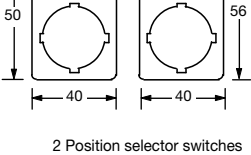
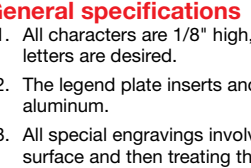
Pilot Devices  
Legend plates

### Fixed nameplates – aluminum

Type	Maximum letters per line	Catalog number
 Pushbuttons or pilot lights	11	G1MP-NPE28-01
	50mm	
 Pushbuttons or pilot lights	11	G1MP-NPE29-01
	56mm	
 2 Position selector switches	5	G1MP-NPE28-02
	50mm	
 2 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3)	G1MP-NPE29-02
	56mm	
 3 Position selector switches	5	G1MP-NPE28-03
	50mm	
 3 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3A) 5 (line 3B)	G1MP-NPE29-03
	56mm	
 2 Position toggle switches	4	G1MP-NPE28-04
	50mm	
 2 Position toggle switches	5	G1MP-NPE29-04
	56mm	
 3 Position toggle switches		G1MP-NPE28-05
	50mm	
 3 Position toggle switches		G1MP-NPE29-05
	56mm	



### Fixed nameplates – aluminum

Type	Maximum letters per line	Catalog number
 Pushbuttons or pilot lights	11	G1MP-NPE28-06
	50mm	
 Pushbuttons or pilot lights	11	G1MP-NPE29-06
	56mm	
 2 Position selector switches	5	G1MP-NPE28-07
	50mm	
 2 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3)	G1MP-NPE29-07
	56mm	

### General specifications

- All characters are 1/8" high, upper & lower case. Please specify if all capital letters are desired.
- The legend plate inserts and the fixed legend plates are silver-grey anodized aluminum.
- All special engravings involve engraving the desired lettering into the metal surface and then treating the engraved surfaces with black ink.

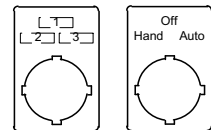
### Ordering custom engraved nameplates

- Select the desired legend plate.
- Use following pages to order.
- Indicate the catalog number.
- Write the desired words to be engraved on each line.

#### EXAMPLE:

G1MP-NPE28P-03

- OFF
- HAND
- AUTO



# Engraved legend plate form

## Custom engraved legend plates

### 30mm

#### ENGRAVED LEGEND PLATE FORM

G1MP-NPE28

PAGE: \_\_\_ OF: \_\_\_

G1MP-NPE28-\_\_\_ (BRUSHED ALUMNINUM)

ORDER NUMBER: \_\_\_\_\_

ORIG. DATE: \_\_\_\_\_

ORDER: QTY: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

SHIPPING METHOD: \_\_\_\_\_

ALL CAPITALS? YES NO

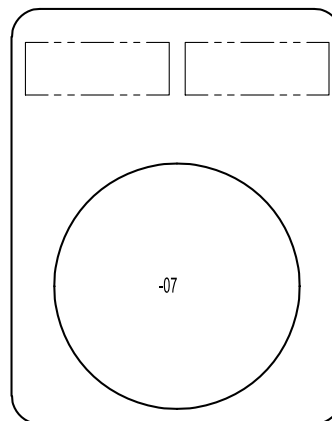
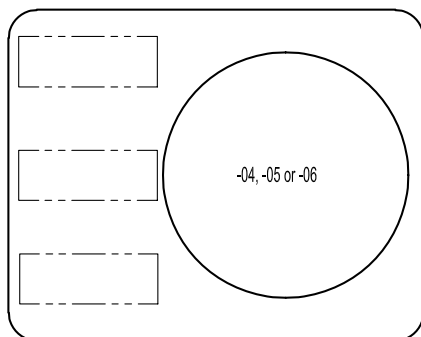
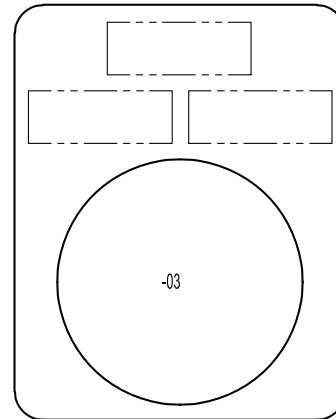
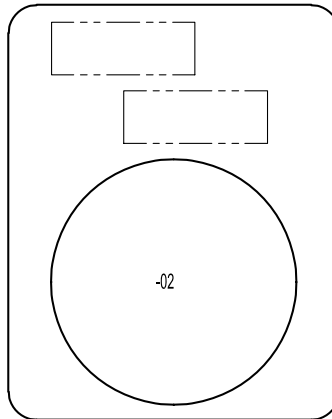
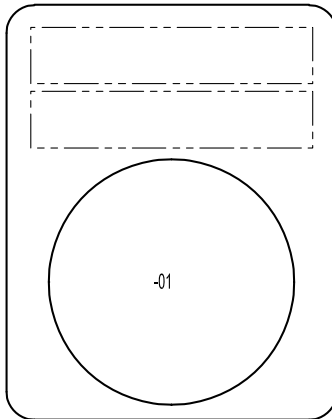
DUE DATE: \_\_\_ - \_\_\_ - \_\_\_

REMARKS: \_\_\_\_\_

ENGRAVER: \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

#### PRINT INFORMATION TO BE ENGRAVED



G1MP-NPE28  
6/10/04

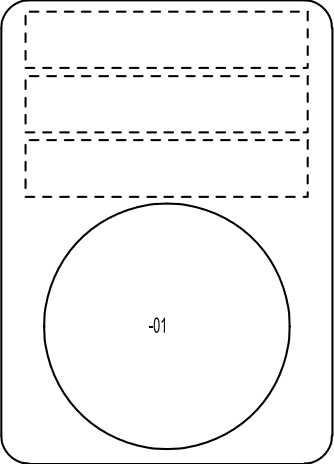
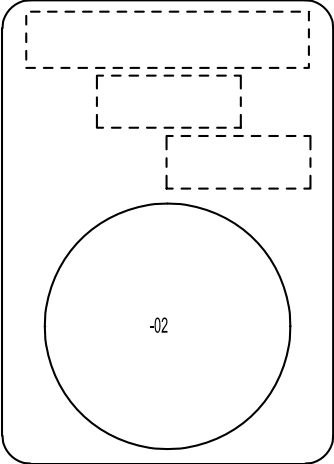
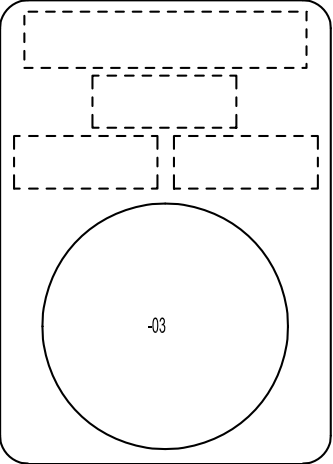
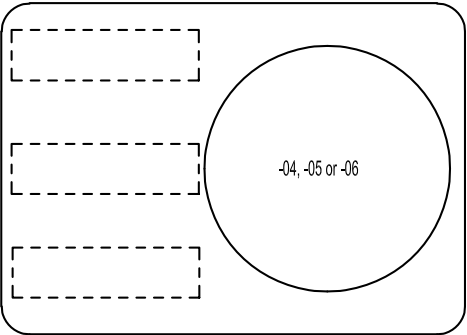
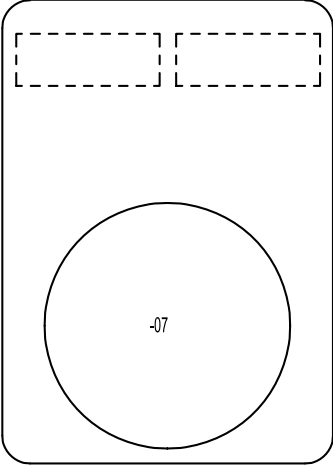
**Engraved legend plate form**  
Custom engraved legend plates  
30mm

**ENGRAVED LEGEND PLATE FORM**  
G1MP-NPE29

G1MP-NPE29-\_\_\_\_ (BRUSHED ALUMINUM)      PAGE: \_\_\_\_ OF: \_\_\_\_  
ORDER NUMBER: \_\_\_\_\_  
ORIG. DATE: \_\_\_\_\_      ORDER: QTY: \_\_\_\_  
ISSUED BY: \_\_\_\_\_      SHIPPING METHOD: \_\_\_\_\_  
ALL CAPITALS?   YES   NO      DUE DATE: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
REMARKS: \_\_\_\_\_      ENGRAVER: \_\_\_\_\_  
Q.C. INSPECTION: \_\_\_\_\_

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PRINT INFORMATION TO BE ENGRAVED

 <p>-01</p>	 <p>-02</p>	 <p>-03</p>
 <p>-04, -05 or -06</p>	 <p>-07</p>	

G1MP-NPE29  
6/10/04



## Text cap inserts 30mm

Legend	Cap color ①	Suffix code ②	Flush button catalog number	Extended button catalog number	Pilot light catalog number
	White	C82	1SFA 616 901 R9036	—	—
Start	White	C67	1SFA 616 901 R2030	1SFA 616 902 R2030	1SFA 616 903 R2030
START	Green	C5	1SFA 616 906 R1042	—	—
	Black	C81	1SFA 616 908 R1042	—	—
On	White	C68	1SFA 616 901 R1020	1SFA 616 902 R1020	1SFA 616 903 R1020
ON	White	C69	1SFA 616 901 R1039	—	1SFA 616 903 R1039
	Green	C70	1SFA 616 906 R1039	—	—
	Black	C1	1SFA 616 908 R1030	—	—
Off	White	C71	1SFA 616 901 R1019	1SFA 616 902 R1019	1SFA 616 903 R1019
OFF	White	C72	—	1SFA 616 902 R1040	—
	Red	C73	—	1SFA 616 905 R1040	—
	Black	C2	1SFA 616 908 R1040	1SFA 616 909 R1040	—
Stop	White	C74	1SFA 616 901 R1031	1SFA 616 902 R1031	1SFA 616 903 R1031
STOP	Red	C4	1SFA 616 904 R1047	1SFA 616 905 R1047	—
Reset	White	C75	1SFA 616 901 R1025	1SFA 616 902 R1025	1SFA 616 903 R1025
Blank	White	C15	1SFA 616 901 R9000	1SFA 616 902 R9000	1SFA 616 903 R9000
	Green	CG	2949 1468-2	2949 1469-2	—
UP	Green	C11	1SFA 616 906 R1043	—	—
DOWN	Green	C12	1SFA 616 906 R1044	—	—
OPEN	White	C16	1SFA 616 901 R1045	—	—
	Green	C19	1SFA 616 906 R1045	—	—
CLOSE	White	C17	1SFA 616 901 R1046	—	—
	Green	C20	1SFA 616 906 R1046	—	—
REV	Green	C6	1SFA 616 906 R1048	—	—
FWD	Green	C7	1SFA 616 906 R1049	—	—
SLOW	Green	C8	1SFA 616 906 R1050	—	—
FAST	Green	C9	1SFA 616 906 R1051	—	—
JOG	Green	C10	1SFA 616 906 R1052	—	—
RESET	Black	C3	1SFA 616 908 R1041	—	—
LATCH	White	C18	1SFA 616 901 R1053	—	—



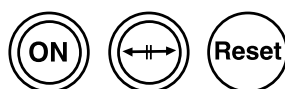
Flush  
pushbutton



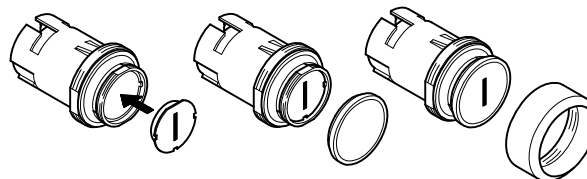
Extended  
pushbutton



Pilot light



Examples of inserts



1

2

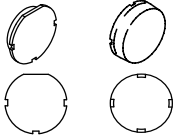
3

Insert assembly

① Illuminated pushbuttons and pilot lights must use white insert.  
② Add suffix code to end of the catalog number.

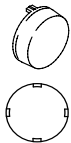
# Text cap inserts 30mm

**Flush button**      **Extended button**



Can be turned 90° or 180°

**Pilot light**



## Text caps for illuminated pushbuttons and pilot lights

Text/Symbol <sup>①</sup>	Cap color	Suffix <sup>②</sup>	Flush button Catalog No.	Extended button Catalog No.	Pilot light Catalog No.
→	White	C14	1SFA 616 901 R9006	1SFA 616 902 R9006	1SFA 616 903 R9006
O	White	C21	1SFA 616 901 R9004	1SFA 616 902 R9004	1SFA 616 903 R9004
	Red	C22	1SFA 616 904 R9004	1SFA 616 905 R9004	-
	Black	C23	1SFA 616 908 R9004	-	-
I	White	C24	1SFA 616 901 R9002	1SFA 616 902 R9002	1SFA 616 903 R9002
	Green	C25	1SFA 616 906 R9002	-	-
	Black	C26	1SFA 616 908 R9002	-	-
II	White	C27	1SFA 616 901 R9003	1SFA 616 902 R9003	1SFA 616 903 R9003
	Green	C28	1SFA 616 906 R9003	-	-
	Black	C29	1SFA 616 908 R9003	-	-
III	White	C30	1SFA 616 901 R9028	1SFA 616 902 R9028	-
	Black	C31	1SFA 616 908 R9028	-	-
+	White	C32	1SFA 616 901 R9011	1SFA 616 902 R9011	-
	Green	C33	1SFA 616 906 R9011	-	-
	Black	C34	1SFA 616 908 R9011	-	-
-	White	C35	1SFA 616 901 R9012	-	-
	Red	C36	1SFA 616 904 R9012	-	-
	Black	C37	1SFA 616 908 R9012	-	-
↑	White	C38	1SFA 616 901 R9005	1SFA 616 902 R9005	1SFA 616 903 R9005
	Black	C39	1SFA 616 908 R9005	-	-
↗	White	C40	1SFA 616 901 R9014	1SFA 616 902 R9014	-
	Black	C41	1SFA 616 908 R9014	-	-
↔	White	C42	1SFA 616 901 R9015	1SFA 616 902 R9015	-
	Black	C43	1SFA 616 908 R9015	-	-
↔↔	White	C44	1SFA 616 901 R9016	1SFA 616 902 R9016	-
	Black	C45	1SFA 616 908 R9016	-	-
→	White	C46	1SFA 616 901 R9017	1SFA 616 902 R9017	-
	Black	C47	1SFA 616 908 R9017	-	-
⊕	White	C47	1SFA 616 901 R9018	1SFA 616 902 R9018	-
	Black	C48	1SFA 616 908 R9018	-	-
●	White	C49	1SFA 616 901 R9019	1SFA 616 902 R9019	-
	Black	C50	1SFA 616 908 R9019	-	-
⊙	White	C51	1SFA 616 901 R9020	1SFA 616 902 R9020	-
	Black	C52	1SFA 616 908 R9020	-	-
☞	White	C53	1SFA 616 901 R9021	1SFA 616 902 R9021	-
	Black	C54	1SFA 616 908 R9021	-	-
⚡	White	C55	1SFA 616 901 R9022	1SFA 616 902 R9022	-
	Black	C56	1SFA 616 908 R9022	-	-
⚡⚡	White	C57	1SFA 616 901 R9023	1SFA 616 902 R9023	-
	Black	C58	1SFA 616 908 R9023	-	-
⚡	White	C59	1SFA 616 901 R9024	1SFA 616 902 R9024	-
	Black	C60	1SFA 616 908 R9024	-	-
⬆	White	C61	1SFA 616 901 R9025	1SFA 616 902 R9025	-
	Black	C62	1SFA 616 908 R9025	-	-
⬇	White	C63	1SFA 616 901 R9026	1SFA 616 902 R9026	-
	Black	C64	1SFA 616 908 R9026	-	-
⚡	White	C65	1SFA 616 901 R9027	1SFA 616 902 R9027	-
	Black	C66	1SFA 616 908 R9027	-	-

① Use only white caps for illuminated pushbutton and pilot lights.

② Add suffix code to end of the catalog number.



# Signal Towers & beacons



## Signal towers K70 Signal beacons KSB



8

Signal towers K70 and Signal beacons KSB offer a wide range of signal elements in all voltages and a solution for every signalling field.

### Signal towers K70

- Fast mounting of signal elements using bayonet fixing.
- Easy changing of bulbs for each module without tools.
- Flexibility of signal element combination.
- Up to 5 elements possible/up to 10 elements with bracket for 2-sided mounting.
- Flashing light elements can be mounted in each module.
- Up to 5 flashing light elements possible.
- High protection rating optical and audible signal elements with IP 54.
- LED elements for long life
- Large variety of different versions
  - Permanent light, 12-240V, AC/DC
  - Blinking light, 24-230V
  - Flashing light, 24-230V
  - Audible 85db continuous or pulsating
  - LED, 24V

### Signal beacons KSB

- Large variety of different versions:
  - Permanent light, max. 250V
  - Blinking light, 24V, AC/DC
  - Flashing light, 24-230VAC
  - LED light, 24V, AC/DC
- IP65 for outdoor use
- Available in 5 colors
- High impact polycarbonate

## Signal towers K70 Description

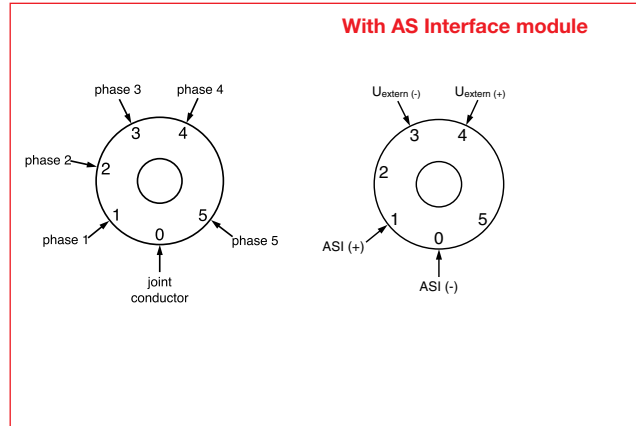
### Simple fitting with quick fix system

Each K 70 module is equipped with a bayonet fixing with integral contact system. The modules are fastened together by aligning the corresponding white marks then with a gentle twist they are locked into place (see the figures).

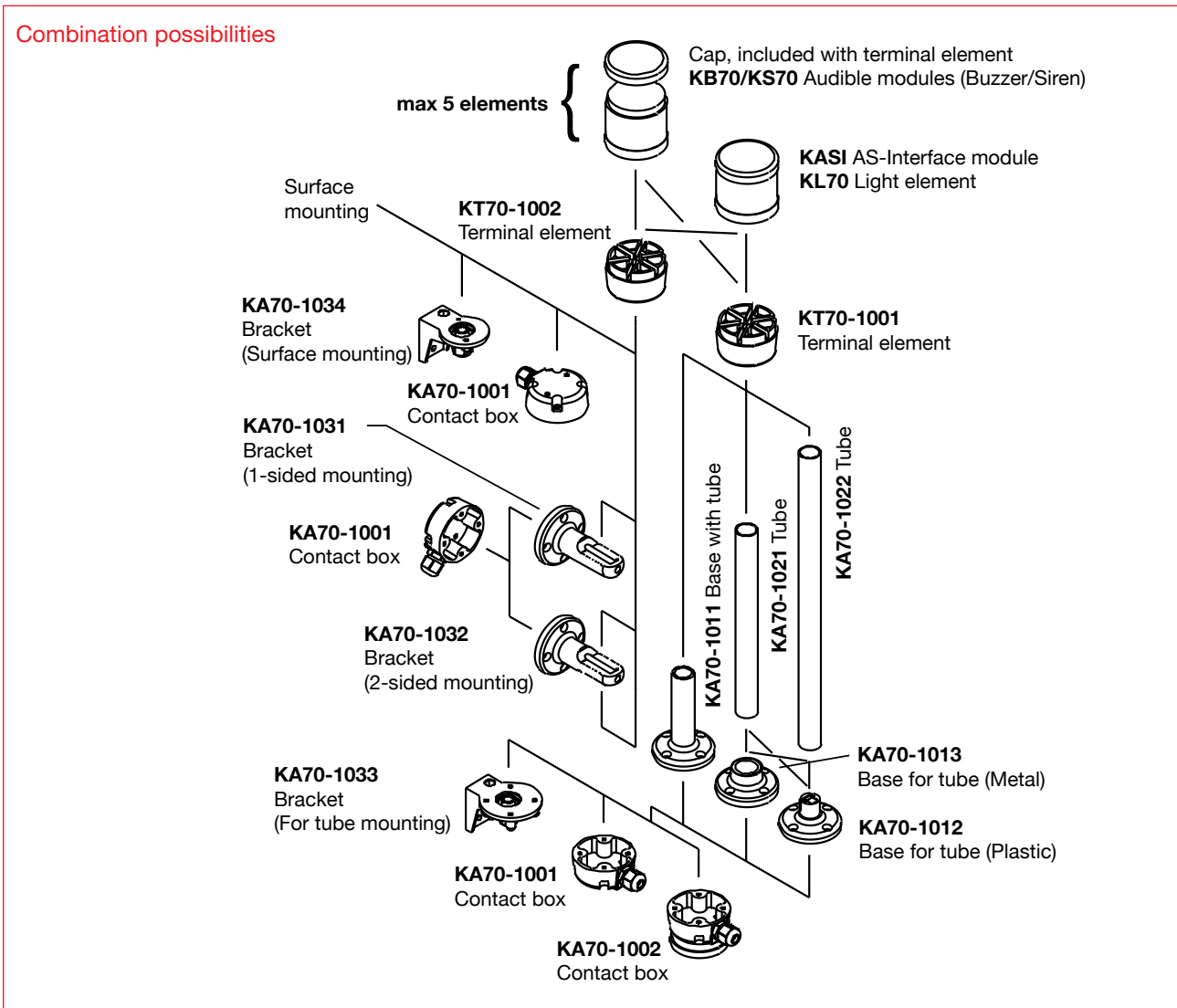


8

### Connection plans



### Combination possibilities



# Signal towers K70



## Optical modules

Description	Catalog No.	Ref. Code
<b>Light element</b>		
<b>Permanent light</b> , 12-240 V AC/DC. For bulb BA15d. Bulb not included.		
Red	<b>KL70-401R</b>	1SFA 616 070 R4011
Green	<b>KL70-401G</b>	1SFA 616 070 R4012
Yellow	<b>KL70-401Y</b>	1SFA 616 070 R4013
Blue	<b>KL70-401L</b>	1SFA 616 070 R4014
Clear	<b>KL70-401C</b>	1SFA 616 070 R4018
<b>Blinking light</b> , 24 V AC/DC. For bulb BA15d. Bulb not included.		
Red	<b>KL70-302R</b>	1SFA 616 070 R3021
Green	<b>KL70-302G</b>	1SFA 616 070 R3022
Yellow	<b>KL70-302Y</b>	1SFA 616 070 R3023
Blue	<b>KL70-302L</b>	1SFA 616 070 R3024
Clear	<b>KL70-302C</b>	1SFA 616 070 R3028
<b>Flashing light</b> , 24 V DC. Xenon tube included. Not changeable.		
Red	<b>KL70-203R</b>	1SFA 616 070 R2031
Green	<b>KL70-203G</b>	1SFA 616 070 R2032
Yellow	<b>KL70-203Y</b>	1SFA 616 070 R2033
Blue	<b>KL70-203L</b>	1SFA 616 070 R2034
Clear	<b>KL70-203C</b>	1SFA 616 070 R2038
<b>Blinking light</b> , 115 V AC/DC. For bulb BA15d. Bulb not included.		
Red	<b>KL70-312R</b>	1SFA 616 070 R3121
Green	<b>KL70-312G</b>	1SFA 616 070 R3122
Yellow	<b>KL70-312Y</b>	1SFA 616 070 R3123
Blue	<b>KL70-312L</b>	1SFA 616 070 R3124
Clear	<b>KL70-312C</b>	1SFA 616 070 R3128
<b>Flashing light</b> , 115 V AC. Xenon tube included. Not changeable.		
Red	<b>KL70-113R</b>	1SFA 616 070 R1131
Green	<b>KL70-113G</b>	1SFA 616 070 R1132
Yellow	<b>KL70-113Y</b>	1SFA 616 070 R1133
Blue	<b>KL70-113L</b>	1SFA 616 070 R1134
Clear	<b>KL70-113C</b>	1SFA 616 070 R1138
<b>Blinking light</b> , 230 V AC/DC. For bulb BA15d. Bulb not included.		
Red	<b>KL70-322R</b>	1SFA 616 070 R3221
Green	<b>KL70-322G</b>	1SFA 616 070 R3222
Yellow	<b>KL70-322Y</b>	1SFA 616 070 R3223
Blue	<b>KL70-322L</b>	1SFA 616 070 R3224
Clear	<b>KL70-322C</b>	1SFA 616 070 R3228
<b>Flashing light</b> , 230 V AC. Xenon tube included. Not changeable.		
Red	<b>KL70-123R</b>	1SFA 616 070 R1231
Green	<b>KL70-123G</b>	1SFA 616 070 R1232
Yellow	<b>KL70-123Y</b>	1SFA 616 070 R1233
Blue	<b>KL70-123L</b>	1SFA 616 070 R1234
Clear	<b>KL70-123C</b>	1SFA 616 070 R1238
<b>LED Permanent light</b> , 24 V AC/DC. LED included. Not changeable.		
Red	<b>KL70-305R</b>	1SFA 616 070 R3051
Green	<b>KL70-305G</b>	1SFA 616 070 R3052
Yellow	<b>KL70-305Y</b>	1SFA 616 070 R3053
Blue	<b>KL70-305L</b>	1SFA 616 070 R3054
White	<b>KL70-305C</b>	1SFA 616 070 R3058
<b>LED Blinking light</b> , 24 V AC/DC. LED included. Not changeable.		
Red	<b>KL70-306R</b>	1SFA 616 070 R3061
Green	<b>KL70-306G</b>	1SFA 616 070 R3062
Yellow	<b>KL70-306Y</b>	1SFA 616 070 R3063
Blue	<b>KL70-305L</b>	1SFA 616 070 R3064
White	<b>KL70-305C</b>	1SFA 616 070 R3068
<b>LED Rotating light</b> , 24 V AC/DC. LED included. Not changeable.		
Red	<b>KL70-307R</b>	1SFA 616 070 R3071
Green	<b>KL70-307G</b>	1SFA 616 070 R3072
Yellow	<b>KL70-307Y</b>	1SFA 616 070 R3073
Blue	<b>KL70-305L</b>	1SFA 616 070 R3074
White	<b>KL70-305C</b>	1SFA 616 070 R3078

## Signal towers K70 Accessories

Description	Catalog No.	Ref. Code
<b>Bulbs</b> Bulb Ba 15d, 42 mm, Max 7 W For permanent or blinking light.		
24 V, 5 W, AC/DC	<b>KLB24</b>	1SFA 616 923 R1028
115 V, 5 W, AC/DC	<b>KLB1</b>	1SFA 616 923 R1118
230 V, 5 W, AC/DC	<b>KLB2</b>	1SFA 616 923 R1148
<b>LED bulbs</b> Ba 15d. For 24 V AC/DC, 40 mA		
Red	<b>KA4-1021</b>	1SFA 616 924 R1021
Green	<b>KA4-1022</b>	1SFA 616 924 R1022
Yellow	<b>KA4-1023</b>	1SFA 616 924 R1023
Blue	<b>KA4-1024</b>	1SFA 616 924 R1024
White	<b>KA4-1025</b>	1SFA 616 924 R1025
<b>Audible modules</b>		
<b>Buzzer element</b>		
85 dB, continuous or pulsating tone, adjustable, 8mA		
24 V AC/DC	<b>KB70-3001</b>	1SFA 616 071 R3001
115 V AC/DC	<b>KB70-3101</b>	1SFA 616 071 R3101
230 V AC	<b>KB70-1201</b>	1SFA 616 071 R1201
<b>Siren element</b>		
Multi function, 8 diff. tones adjustable, volume adjustable 100 dB, 115 VAC, 40 mA		
	<b>KS70-1104</b>	1SFA 616 073 R1104
Multi function, 8 diff. tones adjustable, 40 mA volume adjustable 100 dB, 230 VAC, 40 mA		
	<b>KS70-1204</b>	1SFA 616 073 R1204
Multi function, 7 diff. tones adjustable, volume adjustable, remote control 100 dB, 24 VDC, 100 mA		
	<b>KS70-2004</b>	1SFA 616 073 R2004
Multi function, 8 diff. tones adjustable, volume adjustable, 100 dB, 24 VAC/DC, 80 mA		
	<b>KS70-3004</b>	1SFA 616 073 R3004
Continuous tone alternating 108 dB, 24 VDC, 100 mA		
	<b>KS70-2002</b>	1SFA 616 073 R2002
<b>AS-Interface module</b>		
18,5-31,6 VAC/DC for external voltage	<b>KASI-4101</b>	1SFA 616 079 R4101
18,5-31,6 VAC/DC	<b>KASI-4102</b>	1SFA 616 079 R4102
<b>Terminal elements</b>		
For tube mounting, including cap	<b>KT70-1001</b>	1SFA 616 075 R1001
For bracket or base, including cap	<b>KT70-1002</b>	1SFA 616 075 R1002
<b>Special parts</b>		
<b>Contact box</b>		
Cable exit at side	<b>KA70-1001</b>	1SFA 616 077 R1001
Magnetic base	<b>KA70-1002</b>	1SFA 616 077 R1002
<b>Base with tube</b>		
D=25 mm L=110 mm	<b>KA70-1011</b>	1SFA 616 077 R1011
<b>Base for tube</b>		
D=25 mm, Plastic	<b>KA70-1012</b>	1SFA 616 077 R1012
D=25 mm, Metal	<b>KA70-1013</b>	1SFA 616 077 R1013
<b>Tube, anodized aluminum</b>		
D=25 mm L=250 mm	<b>KA70-1021</b>	1SFA 616 077 R1021
D=25 mm L=400 mm	<b>KA70-1022</b>	1SFA 616 077 R1022
<b>Bracket</b>		
1-sided mounting	<b>KA70-1031</b>	1SFA 616 077 R1031
2-sided mounting	<b>KA70-1032</b>	1SFA 616 077 R1032
For tube mounting	<b>KA70-1033</b>	1SFA 616 077 R1033
For surface mounting	<b>KA70-1034</b>	1SFA 616 077 R1034



KA70-1001



KA70-1002



KA70-1012



KA70-1013

KA70-1021



KA70-1011



KA70-1032



KA70-1033

# Signal Beacons KSB



## Signal Beacons KSB

Description	Catalog No.	Ref. Code
<b>Permanent light</b> , 12-240 V AC/DC. For bulb BA15d. Bulb not included.		
Red	<b>KSB-401R</b>	1SFA 616 080 R4011
Green	<b>KSB-401G</b>	1SFA 616 080 R4012
Yellow	<b>KSB-401Y</b>	1SFA 616 080 R4013
Blue	<b>KSB-401L</b>	1SFA 616 080 R4014
Clear	<b>KSB-401C</b>	1SFA 616 080 R4018
<b>Flashing light</b> , 24 V DC. Xenon tube included. Not changeable.		
Red	<b>KSB-203R</b>	1SFA 616 080 R2031
Green	<b>KSB-203G</b>	1SFA 616 080 R2032
Yellow	<b>KSB-203Y</b>	1SFA 616 080 R2033
Blue	<b>KSB-203L</b>	1SFA 616 080 R2034
Clear	<b>KSB-203C</b>	1SFA 616 080 R2038
<b>Flashing light</b> , 115 V AC. Xenon tube included. Not changeable.		
Red	<b>KSB-113R</b>	1SFA 616 080 R1131
Green	<b>KSB-113G</b>	1SFA 616 080 R1132
Yellow	<b>KSB-113Y</b>	1SFA 616 080 R1133
Blue	<b>KSB-113L</b>	1SFA 616 080 R1134
Clear	<b>KSB-113C</b>	1SFA 616 080 R1138
<b>Flashing light</b> , 230 V AC. Xenon tube included. Not changeable.		
Red	<b>KSB-123R</b>	1SFA 616 080 R1231
Green	<b>KSB-123G</b>	1SFA 616 080 R1232
Yellow	<b>KSB-123Y</b>	1SFA 616 080 R1233
Blue	<b>KSB-123L</b>	1SFA 616 080 R1234
Clear	<b>KSB-123C</b>	1SFA 616 080 R1238
<b>LED Permanent light</b> , 24 V AC/DC. LED included. Not changeable.		
Red	<b>KSB-305R</b>	1SFA 616 080 R3051
Green	<b>KSB-305G</b>	1SFA 616 080 R3052
Yellow	<b>KSB-305Y</b>	1SFA 616 080 R3053
<b>LED Blinking light</b> , 24 V AC/DC. LED included. Not changeable.		
Red	<b>KSB-306R</b>	1SFA 616 080 R3061
Green	<b>KSB-306G</b>	1SFA 616 080 R3062
Yellow	<b>KSB-306Y</b>	1SFA 616 080 R3063
<b>LED Rotating light</b> , 24 V AC/DC. LED included. Not changeable.		
Red	<b>KSB-307R</b>	1SFA 616 080 R3071
Green	<b>KSB-307G</b>	1SFA 616 080 R3072
Yellow	<b>KSB-307Y</b>	1SFA 616 080 R3073
<b>Special parts</b>		
Anti-twist device	<b>KASB-100</b>	1SFA 616 087 R1000
<b>Bulbs for Signal Beacons</b> Max 10 W. For permanent light, 2,000 hour life.		
Bulb Ba15d, 52 mm:		
12 V, 7 W, AC/DC	<b>1SFA 616 922 R1018</b>	1SFA 616 922 R1018
24 V, 7 W, AC/DC	<b>1SFA 616 922 R1028</b>	1SFA 616 922 R1028
115 V, 7 W, AC/DC	<b>1SFA 616 922 R1118</b>	1SFA 616 922 R1118
220-260 V, 7-10 W, AC/DC	<b>1SFA 616 922 R1148</b>	1SFA 616 922 R1148





## Technical data

### Signal Towers K70

### Signal Beacons KSB

#### Signal Towers K70

##### Approvals



##### Technical specifications

<b>Housing and accessories</b>	Polyamide, high impact, black
<b>Dome</b>	Polycarbonate, transparent
<b>Fixing</b>	Base mounting Tube mounting, for tube ø 25 mm Bracket mounting B 15 d, for bulb max. 7W
<b>Socket</b>	B 15 d, for bulb max. 7W
<b>8 Connection</b>	Screwable connection up to 2.5 mm <sup>2</sup>
<b>Number of modules possible</b>	max. 5
<b>2-sided bracket</b>	max. 10 elements

##### Degrees of protection

<b>Light elements</b>	IP 54 UL Type 5
<b>Audible elements</b>	IP 54 UL Type 5

##### Electrical data

<b>Permanent light element</b>	12 - 240 V AC/DC
Bulb socket B 15 d, max 7 W	Bulb not included
<b>Blinking light element</b>	<u>24 V</u> <u>115 V</u> <u>230 V</u> AC/DC    AC/DC    AC/DC Bulb not included
Starting current	< 0.5 A
<b>Flashing light element</b>	<u>24 V</u> <u>115 V</u> <u>230 V</u> DC        AC        AC
Flash frequency	1 Hz    1 Hz    1 Hz
Flash energy	2 Ws    2 Ws    2 Ws
Life duration	4 x 10 <sup>6</sup> flashes
Current consumption	125 mA 20 mA    35 mA
reduced for AS-Interface	80 mA
Starting current	< 0.5 A at 24 V
<b>LED Permanent light element</b>	<u>24 V</u> AC/DC
Current consumption	45 mA
Starting current	< 0.5 A at 24 V
<b>LED Blinking light element</b>	<u>24 V</u> AC/DC
Current consumption	25 mA
Starting current	< 0.5 A at 24 V
Blink frequency	c. 1 Hz    c. 1 Hz    c. 1 Hz
<b>LED Rotating light element</b>	24 V, AC/DC
Current consumption	70 mA
Starting current	< 0.5 A at 24 V
Rotation frequency	c. 120 r.p.m.
<b>Temperature</b>	
Ambient temperature during operations	-20 to +50 °C

#### Signal Beacons KSB

##### Approvals



##### Technical specifications

<b>Housing and accessories</b>	PC/ABS-Blend, high impact, black
<b>Dome</b>	Polycarbonate, transparent
<b>Fixing</b>	Installation mounting for ø 37 mm (PG 29)
<b>Bulb socket</b>	B 15 d, max. 10 W
<b>Bulb change</b>	via rear access with bayonet mechanism (Bulb not included)
<b>Connection</b>	Screwable connection max. 2.5 mm <sup>2</sup>

##### Degrees of protection

IP 65 UL Type 5
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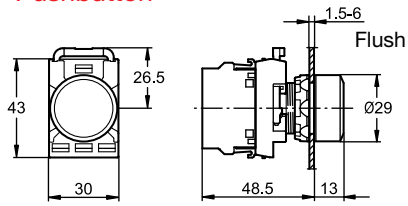
##### Electrical data

<b>Permanent light element</b>	
Operating voltage	max. 250 V
Bulb socket B 15 d, max 10 W	Bulb not included
<b>LED version:</b>	
<b>Permanent light</b>	24 V, AC/DC
Current consumption	45 mA
<b>Blinking light element</b>	24 V, AC/DC
Current consumption	25 mA
<b>Rotating light element</b>	24 V, AC/DC
Current consumption	70 mA
Starting current	< 0.5 A
<b>Flashing light element</b>	
Operating voltage	<u>24 V</u> <u>115 V</u> <u>230 V</u> AC/DC    AC        AC
Flash frequency	1 Hz    1 Hz    1 Hz
Flash energy	2 Ws    2 Ws    2 Ws
Life duration	4 x 10 <sup>6</sup> flashes
Current consumption	125 mA    20 mA    35 mA
Starting current	< 0.5 A    < 0.5 A    < 0.25 A
<b>Temperature</b>	
Ambient temperature during operations	-20 to +50 °C

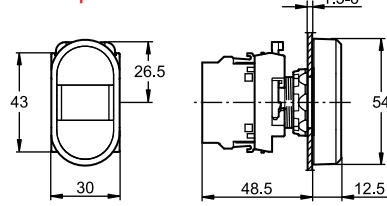
# Approximate dimensions Modular range

All dimensions in MM

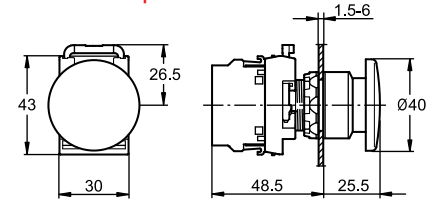
Pushbutton



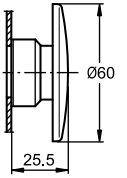
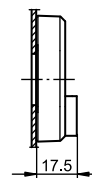
Double pushbutton



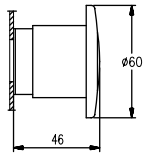
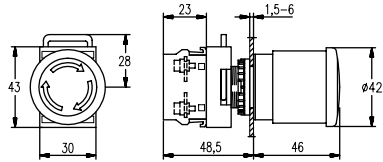
Mushroom pushbutton



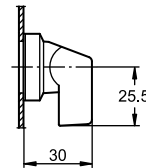
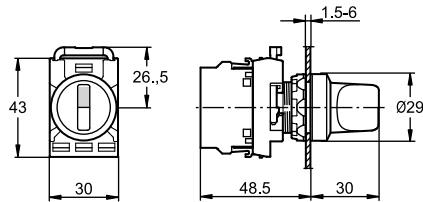
Extended



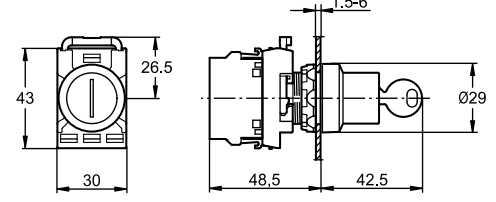
Emergency stop pushbutton



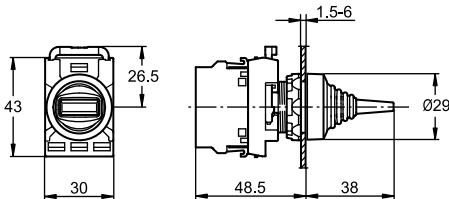
Selector switch



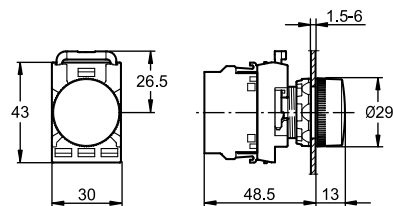
Key-operated selector switch



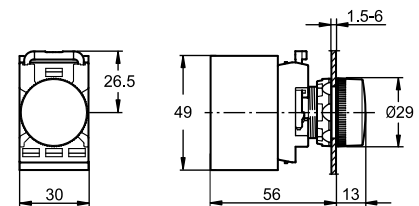
Toggle switch



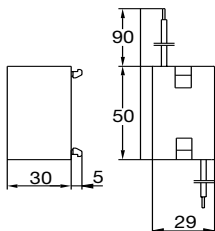
Pilot light



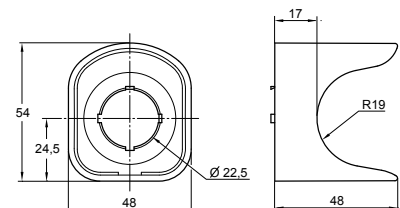
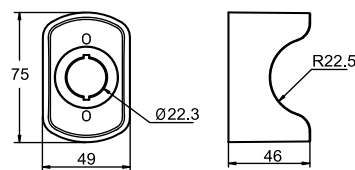
Pilot light with transformer



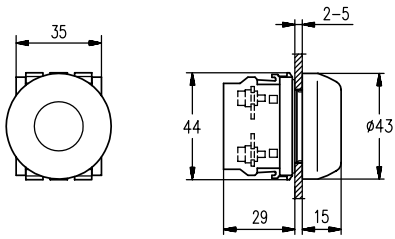
Transformer block



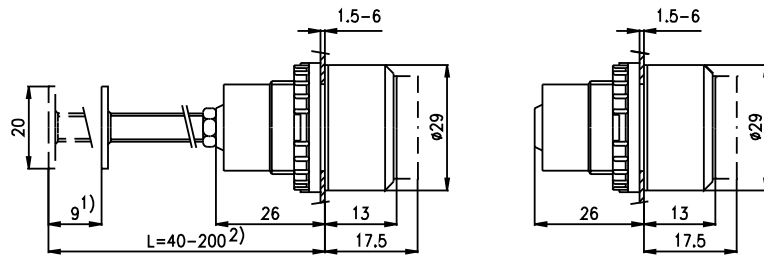
Emergency stop shroud



## Definite purpose pushbutton

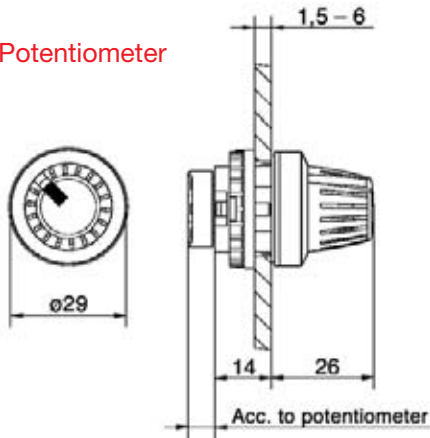


## Reset pushbutton

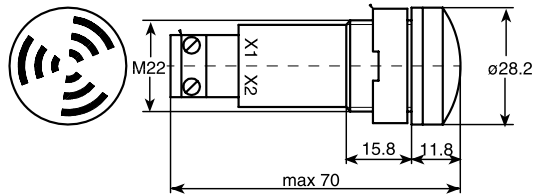


- 1) Length of stroke.
- 2) Can be cut to desired length.

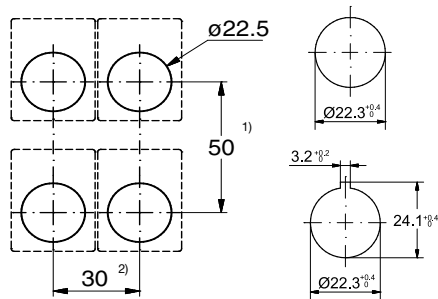
## Potentiometer



## Buzzer

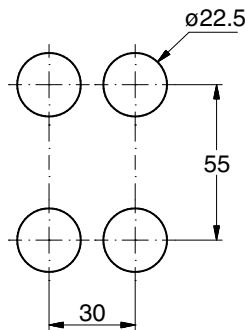


## Drilling plans for pushbuttons, switches and pilot lights

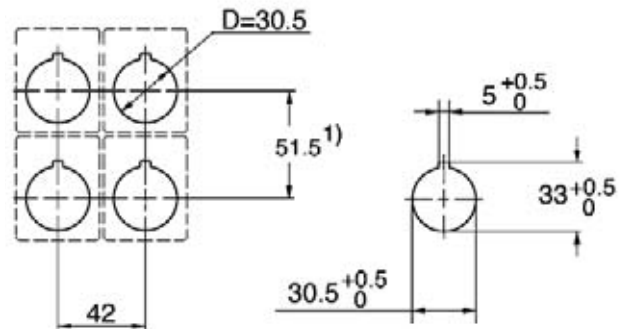


- 1) 55 mm when legend plate H= 44.5 mm is used.  
61 mm for mushroom pushbutton with D=60 mm
- 2) 37 mm when legend plate with insert is used,

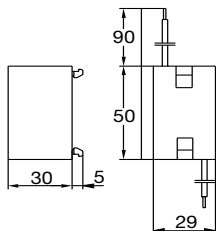
## Drilling plan for double pushbutton



## Drilling plan for 30 mm adaptor



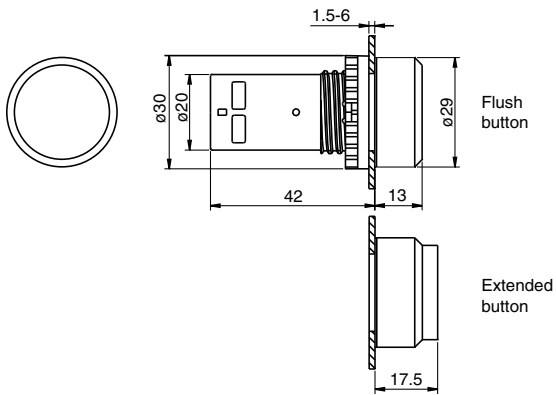
## Transformer block



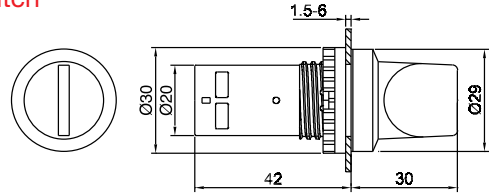
# Approximate dimensions Compact range

All dimensions in MM

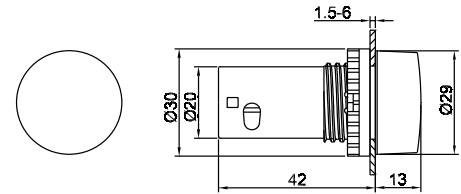
## Pushbutton



## Selector switch

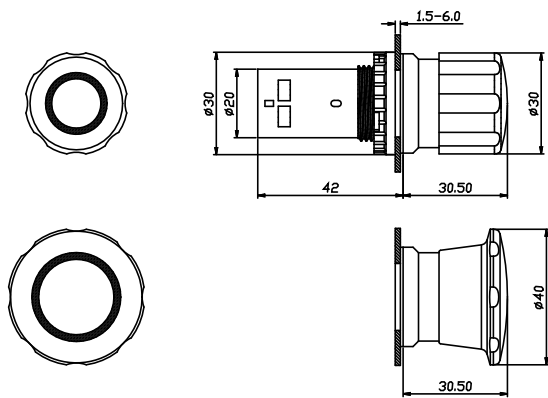


## Pilot light

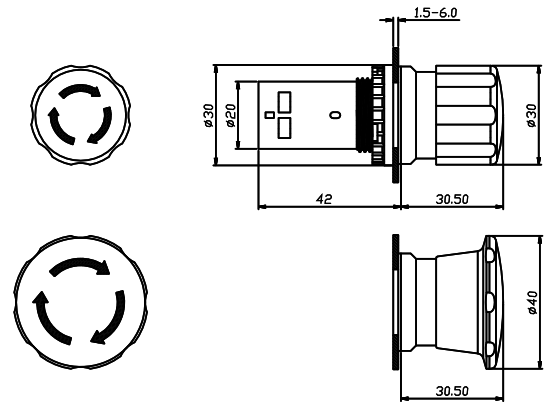


## Emergency stop pushbuttons

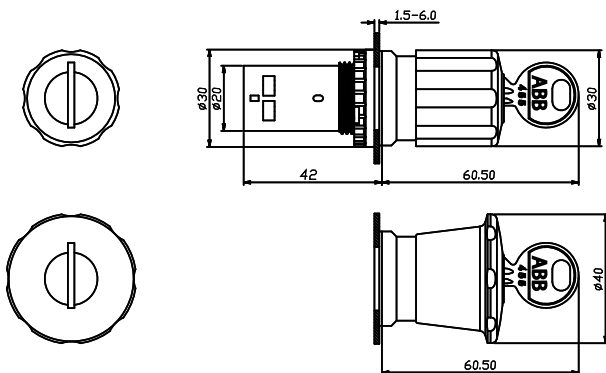
CE3P/CE4P (Pull release)



CE3T/CE4T (Twist release)



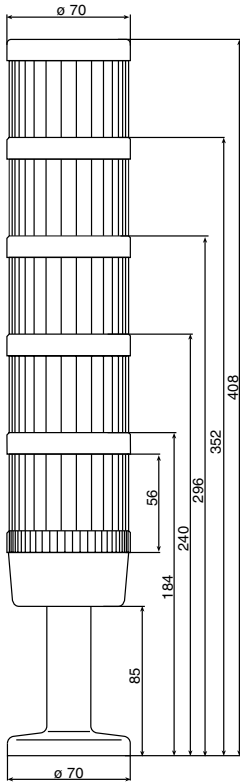
CE3K1/CE4K1



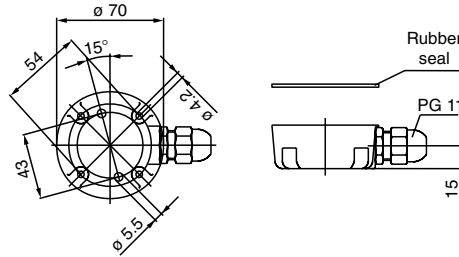
# Approximate dimensions and drilling plans Signal Towers/Signal Beacons

All dimensions in MM

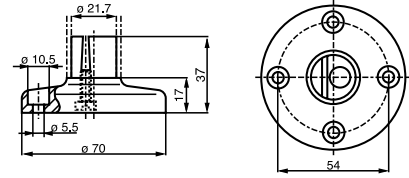
## Signal Towers K 70



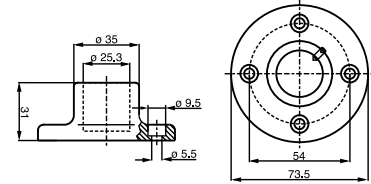
## Contact box for cable exit at side



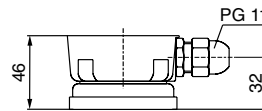
## Base for tube, plastic



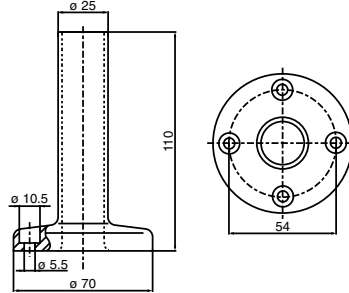
## Base for tube, metal



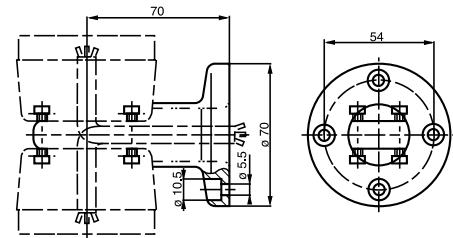
## Contact box with magnetic base



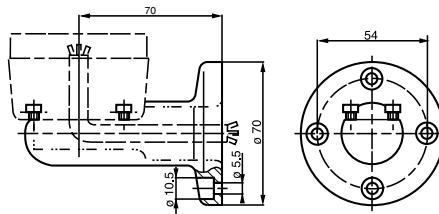
## Base with integrated tube



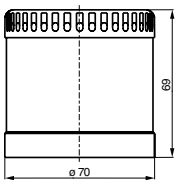
## Bracket 2-sided mounting



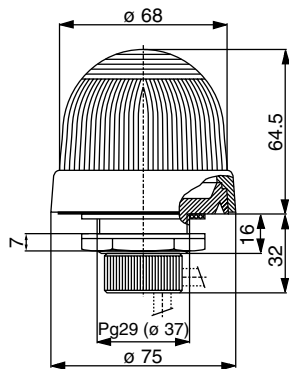
## Bracket 1-sided mounting



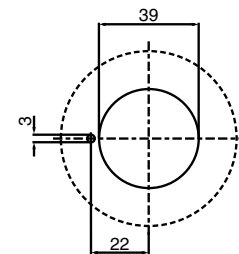
## Audible module



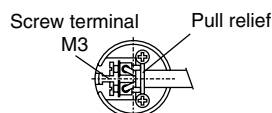
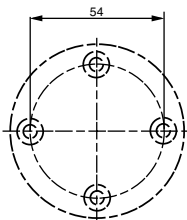
## Signal Beacons K SB



## Drilling plan for Signal Beacons KSB

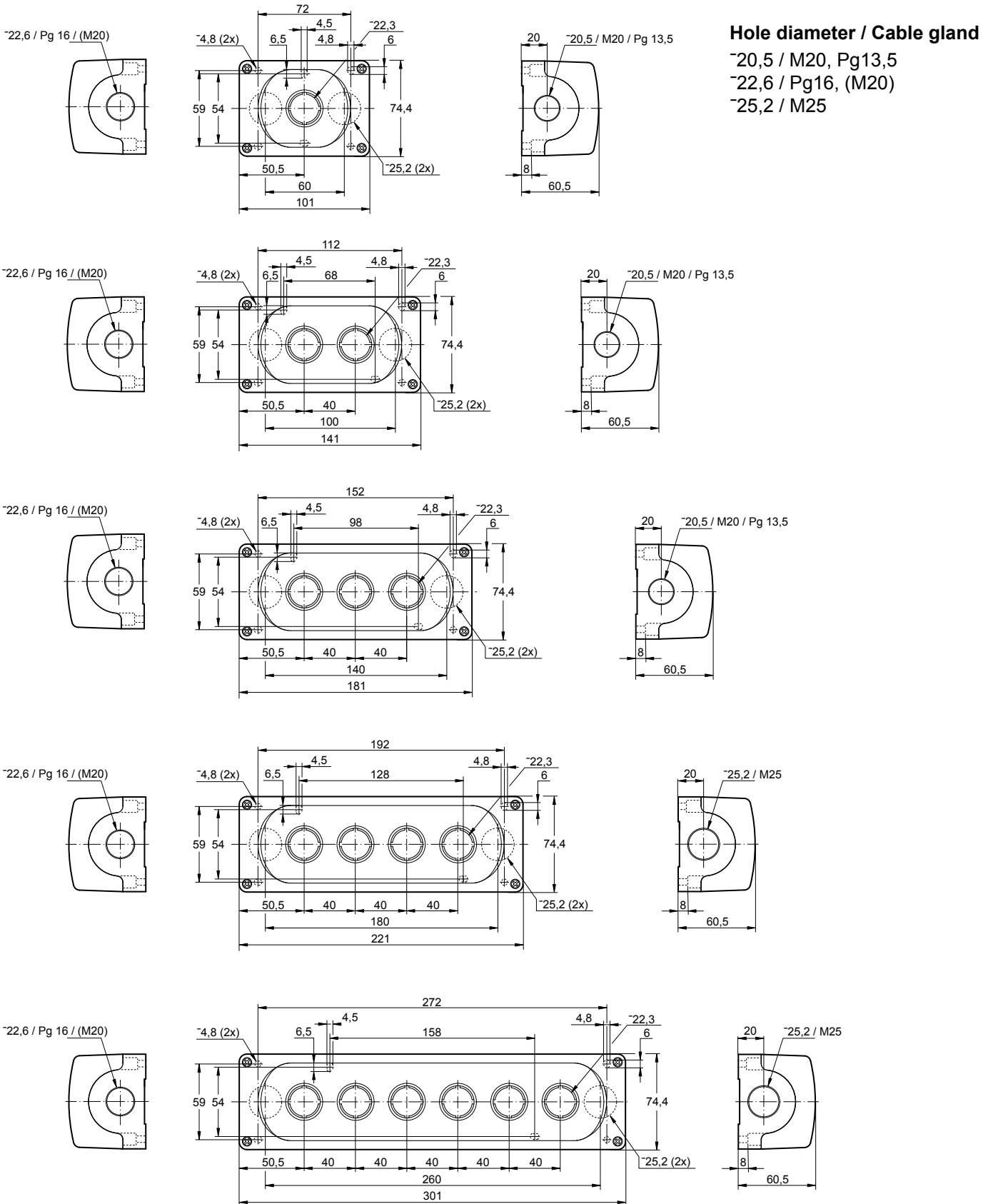


## Drilling plan for Signal Towers K 70



# Approximate dimensions Enclosures

All dimensions in MM



## Color selection

### Color selection according to IEC 60204-1

IEC 60204-1 specifies coding principles for indicators and actuators and gives recommendation regarding the use of colors. An excerpt from the standard is given below. For detailed information, see the standard.

### Meaning of colors – General principles

Color	Meaning		
	Safety of persons or environment	Condition of process	State of equipment
RED	Danger	Emergency	Faulty
YELLOW	Warning/caution	Abnormal	Abnormal
GREEN	Safe	Normal	Normal
8 BLUE	Mandatory significance		
WHITE, GREY, BLACK	No specific meaning assigned		

### Non-illuminated actuators

#### Emergency actuators

EMERGENCY-STOP / OFF actuators shall be identified by the color **RED**

#### STOP / OFF actuators

**WHITE, GREY** and **BLACK** are the preferred colors for STOP / OFF actuators, with the main preference being for **BLACK**. **RED** is also permitted. **GREEN** shall not be used.

#### START / ON actuators

**WHITE, GREY** and **BLACK** are the preferred colors for START / ON actuators, which cause the closing of switching devices and the equipment to start, with the main preference being for **WHITE**. **GREEN** is also permitted. **RED** shall not be used.

#### Use of **WHITE** and **BLACK** for specific meanings

Where the colors **WHITE** and **BLACK** are used to distinguish between START / ON and STOP / OFF actuators, then the color **WHITE** shall be used for START / ON actuators and the color **BLACK** shall be used for STOP / OFF actuators.

#### The same actuators serving for **START** and **STOP** or **ON** and **OFF**

**WHITE, GREY** and **BLACK** are the preferred colors for actuators which, when actuated several times, act alternately as a START / ON and STOP / OFF actuator.

The colors **YELLOW** and **GREEN** shall not be used. The color **RED** shall be used only in cases where the same actuator, other than a push-button, is used for both EMERGENCYSTOP / OFF and normal operation.

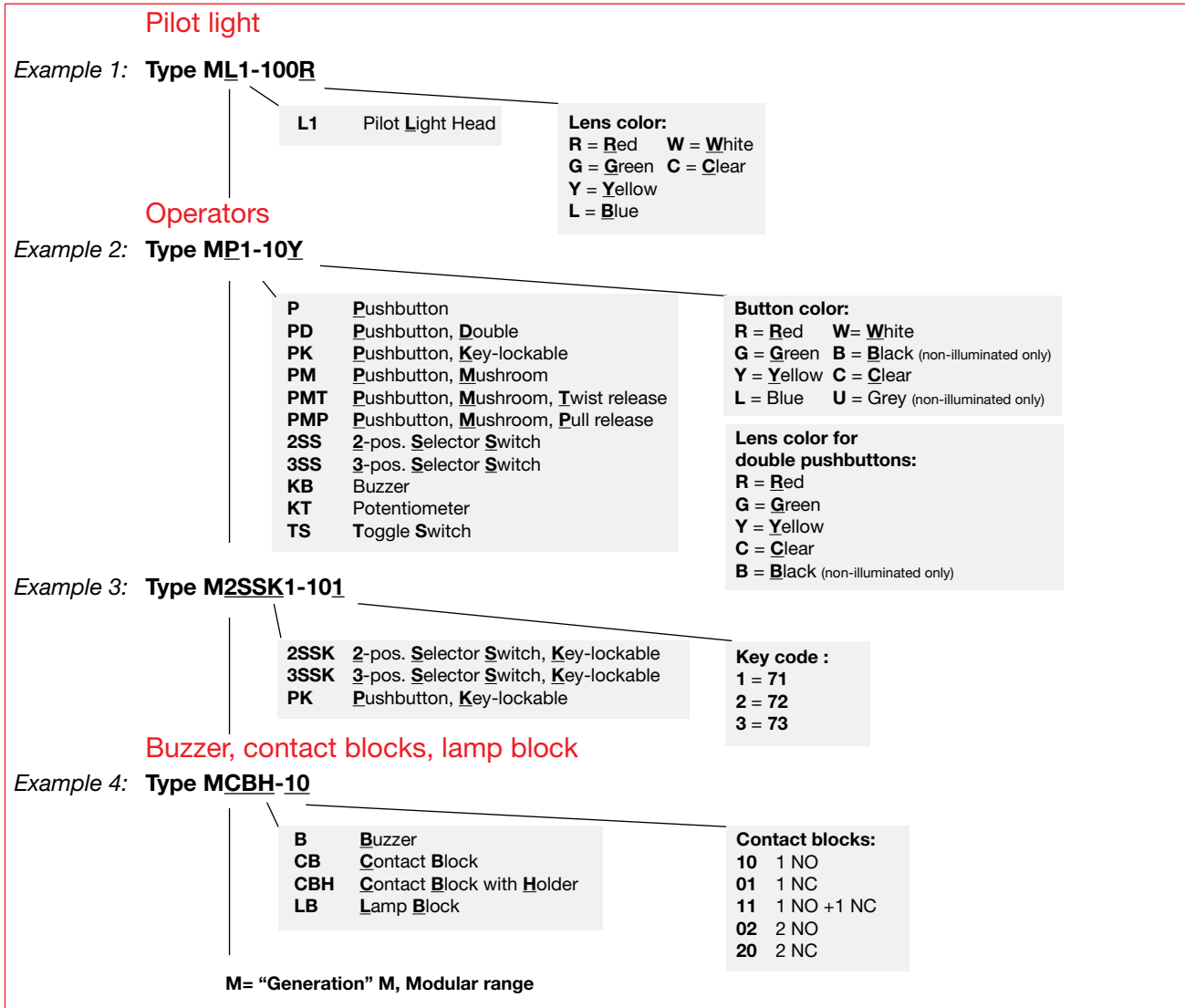
**WHITE, GREY** and **BLACK** are preferred colors for actuators which cause a movement while they are actuated and stop the movement when they are released (such as inching or jogging actuators). **GREEN** is also permitted. **RED** shall not be used.

#### RESET actuators

RESET actuators (used, for example, with protective relays) shall be **BLUE, WHITE, GREY** and **BLACK**, except RESET actuators which also act as STOP / OFF actuators. The color of such STOP / OFF actuators shall be in accordance with **STOP / OFF actuators** above.

# Catalog number explanation

## Modular pilot devices



## Compact pilot devices

