



Product designation

Motor protection  
circuit breaker  
SM1R

Product type designation

**Electrical features**

|   |     |            |
|---|-----|------------|
| Number of poles                           | Nr. | 3          |
| Magnetic protection                       |     | yes        |
| Thermal protection                        |     | yes        |
| Phase failure detection                   |     | yes        |
| Rated insulation voltage $U_i$ IEC/EN     | V   | 690        |
| Rated impulse withstand voltage $U_{imp}$ | kV  | 6          |
| Rated frequency                           | Hz  | 50/60      |
| Thermal trip adjustment range             |     | 13...18    |
| Rated current ( $I_n$ )                   | A   | 18         |
| Magnetic tripping                         |     | 13 x $I_n$ |

Operational short-circuit current breaking capacity ( $I_{cs}$ ) at AC

|      |    |     |
|------|----|-----|
| 230V | kA | 100 |
| 400V | kA | 100 |
| 440V | kA | 5   |
| 500V | kA | 5   |
| 690V | kA | 2   |

Maximum short-circuit current breaking capacity ( $I_{cu}$ ) at AC

|      |    |     |
|------|----|-----|
| 230V | kA | 100 |
| 400V | kA | 100 |
| 440V | kA | 100 |
| 500V | kA | 10  |
| 690V | kA | 4   |

Tripping class

10A

IEC Utilization category

A

**Operations**

|                 |        |        |
|-----------------|--------|--------|
| Mechanical life | cycles | 100000 |
| Electrical life | cycles | 100000 |

**Mechanical features**

Tightening torque for terminals

|     |      |      |
|-----|------|------|
| min | Nm   | 2.5  |
| max | Nm   | 3    |
| min | lbin | 22   |
| max | lbin | 26.5 |

Max number of wires simultaneously connectable

Nr. 2

Conductor section

AWG/Kcmil

|     |    |
|-----|----|
| min | 16 |
| max | 8  |

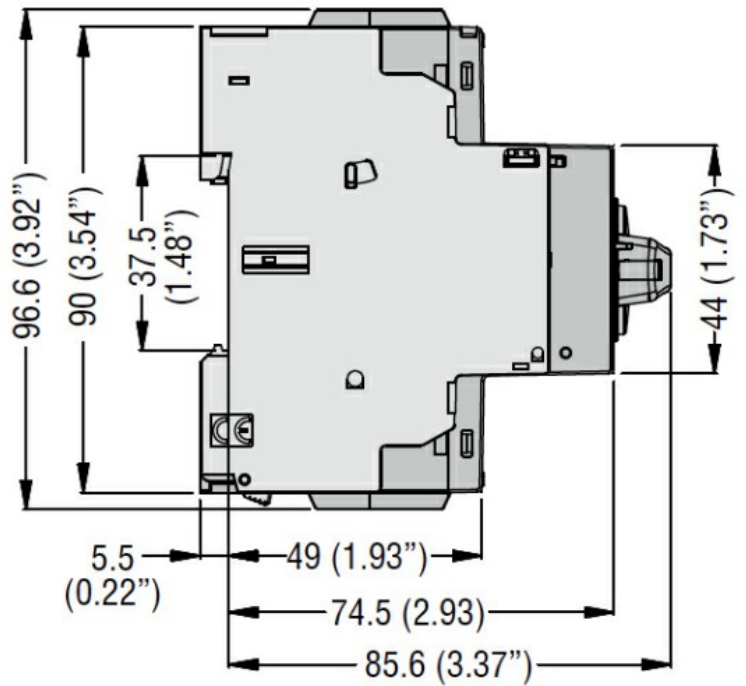
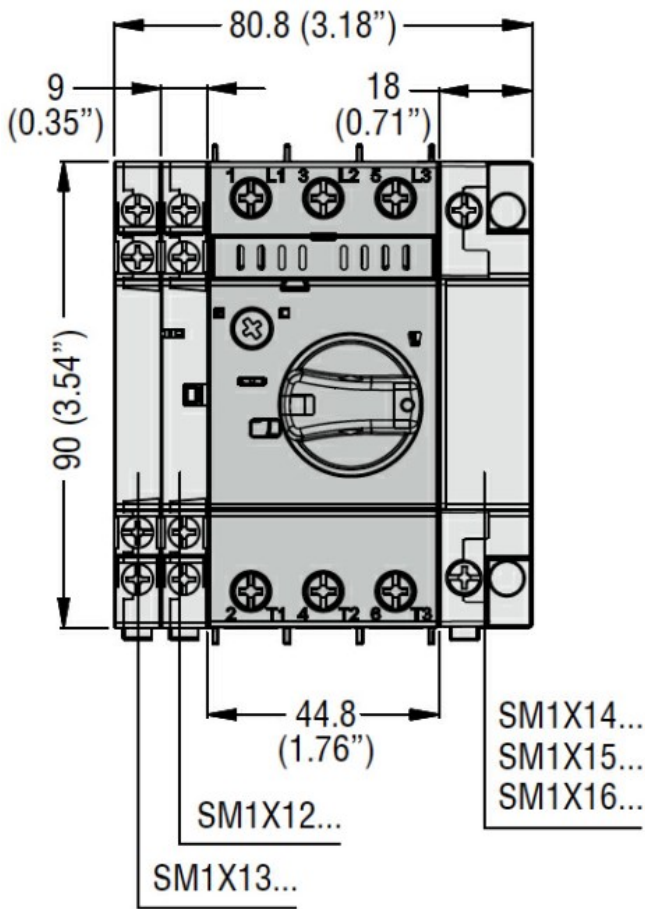
Flexible w/o lug conductor section

|     |                 |   |
|-----|-----------------|---|
| min | mm <sup>2</sup> | 1 |
|-----|-----------------|---|

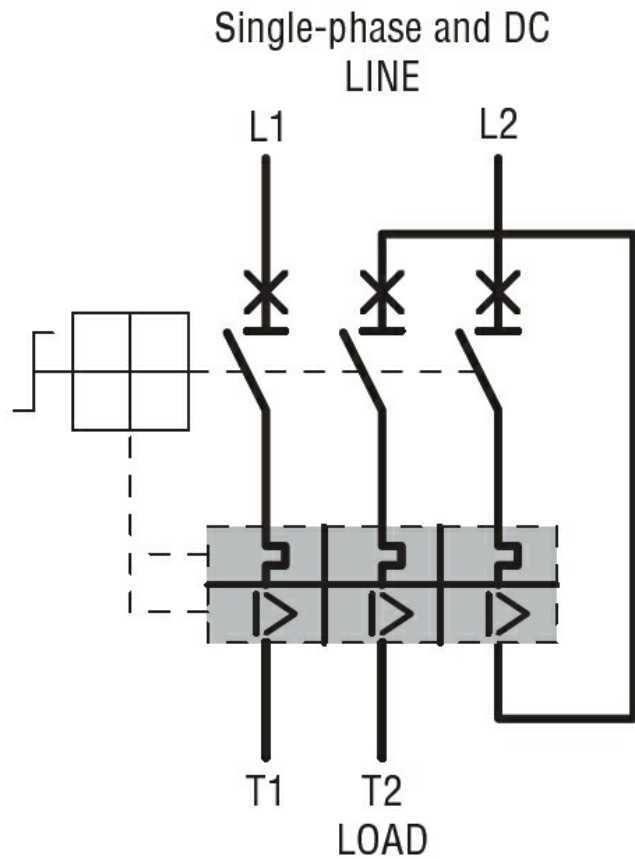
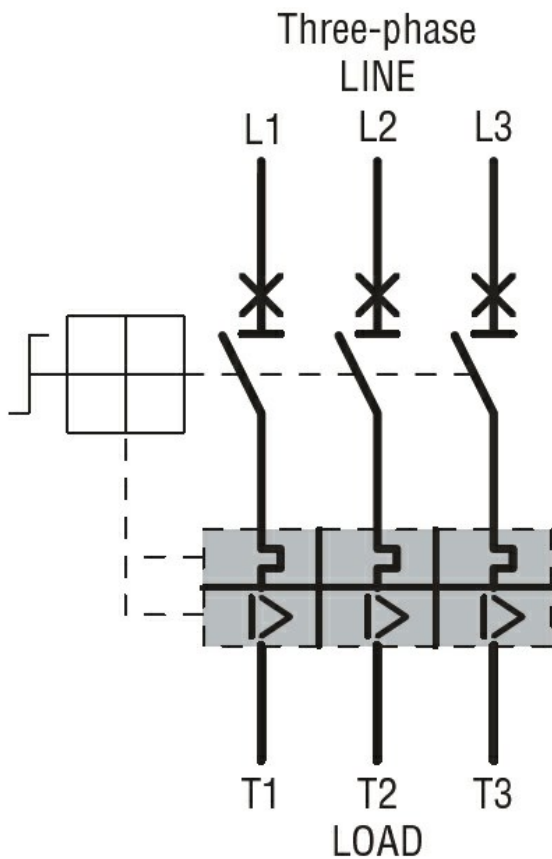
Flexible c/w lug conductor section

|  |  |                  |                 |                          |
|--|--|------------------|-----------------|--------------------------|
|  |  | min              | mm <sup>2</sup> | 1                        |
| Flexible with insulated spade lug conductor section  |  |                  |                 |                          |
|  |  | min              | mm <sup>2</sup> | 1                        |
| Screwdriver  |  |                  |                 |                          |
| Power terminal protection according to IEC/EN 60529  |  |                  |                 | PH2                      |
| Cable stripping length   |  |                  |                 | IP20                     |
|  |  | main circuit     | mm              | 1                        |
| <b>Ambient conditions</b>  |  |                  |                 |                          |
| Temperature  |  |                  |                 |                          |
| Operating temperature  |  |                  |                 |                          |
|  |  | min              | °C              | -20                      |
|  |  | max              | °C              | +60                      |
| Storage temperature  |  |                  |                 |                          |
|  |  | min              | °C              | -50                      |
|  |  | max              | °C              | +80                      |
| Compensation temperature   |  |                  |                 |                          |
|  |  | min              | °C              | -20                      |
|  |  | max              | °C              | +50                      |
| Max altitude   |  |                  | m               | 3000                     |
| Operating position   |  |                  |                 |                          |
|  |  | normal allowable |                 | Vertical plan<br>Any     |
| Fixing   |  |                  |                 | Screw / DIN rail<br>35mm |
| Weight   |  |                  | g               | 390                      |
| <b>UL technical data</b>   |  |                  |                 |                          |
| Motor Disconnect   |  |                  |                 |                          |
|  |  | at 240V          | kA              | 30                       |
|  |  | at 480V          | kA              | 30                       |
|  |  | at 600V          | kA              | 30                       |
|  |  | protection       |                 | 200A class J             |
| Group Motor Installation   |  |                  |                 |                          |
|  |  | at 240V          | kA              | 30                       |
|  |  | at 480V          | kA              | 30                       |
|  |  | at 600V          | kA              | 30                       |
|  |  | protection       |                 | 200A class J             |
| Tap Conductor Protection   |  |                  |                 |                          |
|  |  | at 480Y/277V     | kA              | 65                       |
| UL508 / UL 60947-4-1 Manual Self Protected Combination Motor Controller (Type E) Short circuit current |  |                  |                 |                          |
|  |  | at 240V          | kA              | 65                       |
|  |  | at 600Y/347V     | kA              | 65                       |
| Maximum UL/CSA horsepower ratings single-phase   |  |                  |                 |                          |
|  |  | 110V-120V        | HP              | 1                        |
|  |  | 220V-240V        | HP              | 3                        |
| Maximum UL/CSA horsepower ratings three-phase, 3-pole  |  |                  |                 |                          |
|  |  | 200V-208V        | HP              | 5                        |
|  |  | 220V-240V        | HP              | 5                        |
|  |  | 440V-480V        | HP              | 10                       |
|  |  | 550V-600V        | HP              | 15                       |

**Dimensions**



Wiring diagrams



Certifications and compliance

Certifications

CSA C22.2 n° 14

IEC/EN 60947-1

IEC/EN 60947-2

IEC/EN 60947-4-1

UL508

Compliance

cULus

EAC

ETIM classification

ETIM 8.0

EC000074 -  
Motor protection  
circuit-breaker