

1 Motor protection circuit breakers

Add-on blocks and accessories for SM1...



SM1X11...



SM1X12...



SM1X13...



SM1X14...
SM1X15...



SM1X16...



SM1X18 200R



SM1X9000R



SM1X18 S



SM1X89 02

BFX89 01

| Order code | Characteristics | Qty per pkg | Wt |
|--|---|-------------|-------|
| | | n° | [kg] |
| Add-on auxiliary contacts. | | | |
| SM1X11 20 | Front mount 2NO | 10 | 0.016 |
| SM1X11 11 | Front mount 1NO+1NC | 10 | 0.016 |
| SM1X12 20 | Side mount 2NO | 1 | 0.036 |
| SM1X12 11 | Side mount 1NO+1NC | 10 | 0.016 |
| SM1X12 02 | Side mount 2NC | 1 | 0.036 |
| SM1X13 11 | Side mount. Contacts for thermal and magnetic tripping indication 1NO+1NC | 1 | 0.036 |
| SM1X13 11M | Side mount. Contacts for magnetic tripping indication 1NO+1NC | 1 | 0.036 |
| Undervoltage trip releases. | | | |
| SM1X14 024 | 24VAC 50/60Hz | 1 | 0.130 |
| SM1X14 110 | 110VAC 50/60Hz | 1 | 0.130 |
| SM1X14 230 | 230VAC 50/60Hz | 1 | 0.130 |
| SM1X14 400 | 400VAC 50/60Hz, 400VAC 60Hz | 1 | 0.130 |
| SM1X15 024R① | With early-make contacts 24VAC 50/60Hz | 1 | 0.140 |
| SM1X15 110R① | With early-make contacts 110VAC 50/60Hz | 1 | 0.140 |
| SM1X15 230R① | With early-make contacts 230VAC 50/60Hz | 1 | 0.140 |
| SM1X15 400R① | With early-make contacts 400VAC 50/60Hz | 1 | 0.140 |
| Shunt trip releases. | | | |
| SM1X16 024 | 24VAC 50/60Hz | 1 | 0.130 |
| SM1X16 110 | 110VAC 50/60Hz | 1 | 0.130 |
| SM1X16 230 | 230VAC 50/60Hz | 1 | 0.130 |
| SM1X16 400 | 400VAC 50/60Hz | 1 | 0.130 |
| Adjuster sealing kit. | | | |
| SM1X18 12 | With wire and lead included | 1 | 0.006 |
| IP65 (4X) padlockable door coupling handle for SM1R... | | | |
| SM1X18 200R | Red/yellow complete with rod length 200mm/7.87" | 1 | 0.115 |
| SM1X18B 200R | Black complete with rod length 200mm/7.87" | 1 | 0.115 |
| SM1X18 S② | Support for rod >145mm/5.71" | 1 | 0.030 |
| Phase separation barriers for SM1R... | | | |
| SM1X9000R | For Type E as per UL508 / UL60947-4-1 | 5 | 0.016 |
| Three-phase connection busbars 45mm/1.77" spacing. | | | |
| 11 SMX90 32 | For 2 breakers | 10 | 0.028 |
| 11 SMX90 33 | For 3 breakers | 10 | 0.050 |
| 11 SMX90 34 | For 4 breakers | 10 | 0.071 |
| 11 SMX90 35 | For 5 breakers | 10 | 0.092 |
| Three-phase connection busbars 54mm/2.13" spacing. | | | |
| 11 SMX90 42 | For 2 breakers | 10 | 0.031 |
| 11 SMX90 43 | For 3 breakers | 10 | 0.056 |
| 11 SMX90 44 | For 4 breakers | 10 | 0.081 |
| 11 SMX90 45 | For 5 breakers | 10 | 0.090 |
| Terminal block for busbar supply. | | | |
| 11 SMX90 30 | For all busbar types | 10 | 0.048 |
| SM1X90 50 | For all busbar types Type E as per UL508 / UL60947-4-1 | 10 | 0.033 |
| Safety cover. | | | |
| 11 SMX90 31 | For unused terminals | 10 | 0.004 |
| Accessories for motor protection breaker fixing. | | | |
| SM1X89 02 | Metal bracket for fixing SM1... motor protection with screws | 10 | 0.006 |
| BFX89 01 | Universal plastic base for screw-fixing SM1... motor protection circuit breaker | 2 | 0.016 |

General and operational characteristics

ADD-ON AUXILIARY CONTACTS

- Connectable to the left side of the breaker or on the front
- Maximum combinations: 3 SM1X... blocks with 6 auxiliary contacts in total of which 1 front block and 2 side blocks
- IEC conventional free air thermal current I_{th}: 10A (5A for SM1X11...)
- IEC rated insulation voltage U_i: 690V (300V for SM1X11...)
- Rated impulse withstand voltage U_{imp} 6kV (4kV for SM1X11...)
- UL/CSA and IEC/EN 60947-5-1 designation: A600 - Q600 (C300 - R300 for SM1X11...)
- Maximum tightening torque: 1Nm / 9lbin
- Conductor cross section minimum-maximum (1 or 2 wires): 0.75...2.5mm² or 18...14AWG.
- Screw tightening tool: Phillips 2
- Maximum tightening torque: 1Nm / 9lbin
- Width of side-mount auxiliary contacts equal to 0.5 DIN 46880 modules
- IEC degree of protection: IP20.

UNDervoltage TRIP RELEASES

- Snap on to the right side of the breaker
- Consumption inrush/holding: 12/3.5VA
- Release voltage: 0.35...0.7Us
- Operating voltage: 0.85...1.1Us
- Maximum tightening torque: 1Nm / 9lbin
- Conductor cross section minimum-maximum (1 or 2 wires): 0.75...2.5mm² or 18...14AWG.
- Screw tightening tool: Phillips 2
- Maximum tightening torque: 1Nm / 9lbin
- Width of side-mount auxiliary contacts equal to 1 DIN 46880 module
- IEC degree of protection: IP20.

SHUNT TRIP RELEASES

- Snap on to the right side of the breaker
- In-rush consumption: 20VA
- Operating voltage: 0.7...1.1Us
- Conductor cross section minimum-maximum (1 or 2 wires): 0.75...2.5mm² or 18...14AWG.
- Screw tightening tool: Phillips 2
- Maximum tightening torque: 1Nm / 9lbin
- Width of side-mount auxiliary contacts equal to 1 standard DIN 46880 module
- IEC degree of protection: IP20.

PADLOCKABLE DOOR COUPLING HANDLE FOR SM1R...

- IEC degree of protection: IP65
- Degree of protection according to UL: Type 1, 2, 3R, 12, 12K, 4, 4X; external use
- Adjustable rod from 48 to 212mm (1.89" to 8.35")
- Ring-fixing in 22mm/0.87" hole.

THREE-PHASE CONNECTION BUSBARS

- I_{max} 63A
- SMX90 3... 45mm/1.77" spacing to reduce the width to the minimum
- SMX90 4... 54mm/2.13" spacing to consent to fit one side-mount auxiliary contact block on the breaker.

TERMINAL BLOCKS FOR BUSBAR SUPPLY

- I_{max} 63A
- Screw tightening tool: Phillips 2
- Maximum tightening torque: 2.3Nm / 20lbin
- Conductor cross section minimum-maximum: 4...25mm² or 10...4AWG.

Certifications and compliance

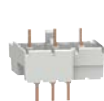
Certifications obtained: cULus (except terminal block for busbar supply), EAC.
 Certifications pending: CCC.
 Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.

① Only suitable for SM1R... motor protection circuit breakers

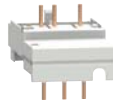
② Mounting also possible with side-mount auxiliary contacts SM1X12... and SM1X13...

1 Motor protection circuit breakers

Add-on blocks and accessories for SM1...



SM1X30...



SM1X31...
SM1X32...



SM1Z17 01P



SM1Z17 02P



SM1Z17 05P



SM1Z17 15R



SM1Z17 25R



SM1X17 40P



SM1X17 45P



SM1X17 46P



SM1X17 024R



11 SMX90 10



11 SMX90 12

| Order code | Characteristics | Qty per pkg | Wt |
|------------|-----------------|-------------|------|
| | | n° | [kg] |

Rigid SM1 breaker-contactor connections.

| | | | |
|-------------------|--|----|-------|
| SM1X30 40P | For motor protection breaker SM1P... with BG... mini-contactors | 10 | 0.019 |
| SM1X31 41P | For motor protection breaker SM1P... with BF09...25A contactors | 10 | 0.035 |
| SM1X32 41P | For motor protection breaker SM1P... with BF26...38A contactors (max 32A) | 10 | 0.045 |
| SM1X30 40R | For motor protection breaker SM1R... with BG... mini-contactors | 10 | 0.019 |
| SM1X31 41R | For motor protection breaker SM1R... with BF09...25A contactors | 10 | 0.035 |
| SM1X31 42R | For motor protection breaker SM1R... with contactors BF09...25D and BF09...25L | 10 | 0.044 |
| SM1X32 41R | For motor protection breaker SM1R... with contactors BF26...38A (max 32A) | 10 | 0.045 |

Surface mount enclosures IP65 (4X) for SM1P...

| | | | |
|-------------------|---|---|-------|
| SM1Z17 01P | Width 80mm/3.15" [Ⓐ] | 1 | 0.235 |
| SM1Z17 02P | Width 80mm/3.15". With button for emergency stop | 1 | 0.275 |
| SM1Z17 11P | Width 100mm/3.94" [Ⓐ] | 1 | 0.315 |
| SM1Z17 12P | Width 100mm/3.94". With button for emergency stop | 1 | 0.345 |

Flush mount enclosure IP65 (4X) for SM1P...

| | | | |
|-------------------|--|---|-------|
| SM1Z17 05P | Width 87mm/3.42" [Ⓐ] | 1 | 0.205 |
| SM1Z17 15R | With rotary actuator red/yellow. Width 100mm/3.94" | 1 | 0.350 |
| SM1Z17 10R | With black rotary actuator Width 100mm/3.94" | 1 | 0.350 |

Flush mount enclosures IP65 for SM1R (UL type 4X)

| | | | |
|-------------------|--|---|-------|
| SM1Z17 25R | With rotary actuator yellow/red Width 87mm/3.42" | 1 | 0.245 |
| SM1Z17 20R | With rotary actuator black Width 87mm/3.42" | 1 | 0.245 |

ENCLOSURE ACCESSORIES AND SPARE PARTS.

For SM1Z...P enclosures.

| | | | |
|-------------------|-------------------------------------|---|-------|
| SM1X17 40P | Emergency stop button. IP65 (4X) | 1 | 0.044 |
| SM1X17 45P | Rubber membrane with rim. IP65 (4X) | 1 | 0.016 |
| SM1X17 46P | Lockable block. IP65 (4X) | 1 | 0.030 |

LED pilot lights IP65.

| | | | |
|--------------------|--------------------|---|-------|
| SM1X17 024G | Green 24VAC/DC | 1 | 0.007 |
| SM1X17 024R | Red 24VAC/DC | 1 | 0.007 |
| SM1X17 400G | Green 110...400VAC | 1 | 0.007 |
| SM1X17 400R | Red 110...400VAC | 1 | 0.007 |

Plastic M25 to 1/2" NPT entry adapter.

| | | | |
|-----------------------|--|----|-------|
| 11 LM M25 PG16 | For enclosures SM1Z17 01P and SM1Z17 02P | 10 | 0.009 |
|-----------------------|--|----|-------|

Starter assembly adapter plates.

| | | | |
|--------------------|---|---|-------|
| 11 SMX90 10 | Adapter plate for direct starter comprising breaker SM1... and contactor BG..., BF09A...BF38A | 1 | 0.058 |
| 11 SMX90 12 | Adapter plate for reversing switch comprising breaker for motor protection SM1... contactors BG..., BF09A...BF38A | 1 | 0.095 |
| 11 SMX90 14 | Adapter plate for starter star-delta comprising motor protection breaker SM1... and contactors BF09A...BF38A | 1 | 0.118 |
| 11 SMX90 18 | 35mm rail for passage of wires underneath to contactor; for SMX90 14 | 1 | 0.025 |
| 11 SMX90 19 | DIN rail extension 35mm/1.38" | 1 | 0.025 |

General and operational characteristics

RIGID SM1 BREAKER-CONTACTOR CONNECTIONS

The SM1X3... connections electrically and mechanically fasten the motor protection breaker together with the contactor. This forms a highly compact single-unit starter for quick installation on a single 35mm DIN rail.

The SM1X3... connections can also be mounted in combination with reversing switches and star-delta starters made with the rigid connections indicated in section 2.

SURFACE MOUNT ENCLOSURES

- Top or bottom entry:
 - SM1Z17 01P and SM1Z17 02P 4 M25-threaded knockouts
 - SM1Z17 11P and SM1Z17 12P 4 threaded knockout with Ø20.5mm/0.81" or Ø26.5mm/1.04"
 - SM1Z17 10R e SM1Z17 15R 4 threaded knockout with Ø20.5mm/0.81" or Ø26.5mm/1.04"
- Possibility of rear entry too
- Protection rating: IP65 (UL Type 4X)
- Holds a breaker, one front-mount auxiliary contact block either one shunt or undervoltage release and one pilot light; only for SM1Z17 10R and SM1Z17 15R, 2 side-mount auxiliary contact blocks can be fitted as well
- The SM1Z17 10R and SM1Z17 15R rotary actuators can be padlocked with a maximum of 3 padlocks Ø4...8mm/0.16...0.31"
- Earth/ground terminal included
- Operating temperature: -25...+60°C
- Storage temperature: -50...+80°C.

FLUSH MOUNT ENCLOSURES FOR SM1P AND SM1R

- Holds a SM1P breaker, one front-mount auxiliary contact block and either one shunt or undervoltage release
- Protection rating: IP65 (UL Type 4X)
- Earth/ground terminal included
- 70x115mm/2.76x4.53" cutout for SM1P
- 70x143mm/2.77x5.65" cutout for SM1R
- Operating temperature: -25...+60°C
- Storage temperature: -50...+80°C.

ENCLOSURE ACCESSORIES

Emergency stop button:

- Turn to release
- Red button Ø35mm/1.38".

Lockable block:

- Prevents closing operation; 3 padlocks maximum Ø4...8mm/0.16...0.31".

STARTER ASSEMBLY ADAPTER PLATES

These accessories permit the assembly of starters, making slim and compact equipment that's easy and quick to install. The starter adapter plates install on DIN rail 35mm/1.38".

Certifications and compliance

Certifications obtained: cULus except SM1X17 024..., SM1X17 400..., SMX90... and 11 LM M25 PG16), EAC. Certifications pending: CCC for rigid connections and enclosures (maximum current enclosures for cULus: 25A).

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1.

For cULus pilot lights, please contact Technical support (Tel. 035 4282422; E-mail: service@LovatoElectric.com).

Ⓐ Complete with required voltage. Available voltages:
– AC 50/60Hz 24/110/220...240VAC (indicate 220/ 380...415VAC (indicate 380)).
Ⓐ Complete with rubber membrane.