

## Motor protection circuit breakers SM1... up to 40A. Magnetic and thermal protection



SM1P...



SM1R...

Order code	Thermal trip adjustment range		Short circuit breaking capacity at 400V		Qty per pkg	Wt [kg]
	[A]	[A]	Icu [kA]	Ics [kA]		
Push button control. For UL ratings see page 1-12.						
SM1P 0016	0.1...0.16		100	100	1	0.280
SM1P 0025	0.16...0.25		100	100	1	0.280
SM1P 0040	0.25...0.4		100	100	1	0.280
SM1P 0063	0.4...0.63		100	100	1	0.280
SM1P 0100	0.63...1		100	100	5	0.280
SM1P 0160	1...1.6		100	100	5	0.280
SM1P 0250	1.6...2.5		100	100	5	0.350
SM1P 0400	2.5...4		100	100	5	0.350
SM1P 0650	4...6.5		100	100	5	0.350
SM1P 1000	6.3...10		100	100	5	0.350
SM1P 1400	9...14		25	12.5	5	0.350
SM1P 1800	13...18		25	12.5	5	0.350
SM1P 2300	17...23		15	5	1	0.350
SM1P 2500	20...25		15	5	1	0.350
SM1P 3200	24...32		10	5	1	0.350
SM1P 4000	30...40		10	5	1	0.350
Rotary knob type. For UL ratings see page 1-12.						
SM1R 0016	0.1...0.16		100	100	1	0.320
SM1R 0025	0.16...0.25		100	100	1	0.320
SM1R 0040	0.25...0.4		100	100	1	0.320
SM1R 0063	0.4...0.63		100	100	1	0.320
SM1R 0100	0.63...1		100	100	5	0.320
SM1R 0160	1...1.6		100	100	5	0.320
SM1R 0250	1.6...2.5		100	100	5	0.320
SM1R 0400	2.5...4		100	100	5	0.390
SM1R 0650	4...6.5		100	100	5	0.390
SM1R 1000	6.3...10		100	100	5	0.390
SM1R 1400	9...14		100	100	5	0.390
SM1R 1800	13...18		100	100	5	0.390
SM1R 2300	17...23		50	25	1	0.390
SM1R 2500	20...25		50	25	1	0.390
SM1R 3200	24...32		50	25	1	0.390
SM1R 4000	30...40		20	10	1	0.390

### General characteristics

SM1P... and SM1R... are modern circuit breakers with thermal and magnetic trip releases and high breaking capacity. Motor control and protection of up to 22kW (400V) are possible by choosing the suitable adjustment range, 0.1 to 40A. The dimensions of SM1P... breakers are compliant with the DIN43880 standard, allowing them to be mounted in all modular enclosures on the market.

A magnetic trip indicator integrated on the SM1R... breakers avoids dangerous closing operations during short-circuit conditions, previously disconnected by the breaker. SM1R... breakers are Type E-certified according to UL 60947-4-1 (certification obtained for range from 0.1 to 6.5A; pending for all the other ratings). SM1P... and SM1R... motor protection circuit breakers are suitable for isolation in accordance with IEC/EN 60947 standards and can be padlocked in OFF position without using accessories. Their high breaking capacity consents to exclude protection fuses on the majority of the installations.

### Operational characteristics

- IEC rated insulation voltage  $U_i$ : 690V
- IEC rated impulse withstand voltage: 6kV
- IEC rated frequency: 50/60Hz
- Maximum rated current: 40A
- Adjustment ranges: 16
- IEC breaking capacity: See table on page 1-2
- Heat dissipation per phase: 0.7...3.3W
- Magnetic tripping: 13In max. ①
- Tripping class: 10A
- Phase failure sensitive
- Mechanical life: 100,000 cycles
- Electrical life: 100,000 cycles
- Mounting on 35mm DIN rail (IEC/EN 60715)
- Mounting position: Any
- IEC utilisation category: A
- Padlocking in OFF:  $\varnothing$ 4mm/0.16"
- IEC degree of protection: IP20.

### Certifications and compliance

Certifications obtained: cULus, EAC. SM1R... breakers are Type E-certified (Self-Protected Combination Motor Controllers) according to UL 60947-4-1 (certification obtained for range from 0.1 to 6.5A; pending for all the other ratings). Certifications pending: CCC. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1. Plastic materials compliant with standards: IEC/EN 60335 and EN 45545.

① 10In max for dimensions 0.1...0.16A and 0.16...0.25A.

## Motor protection circuit breakers SM1RM... up to 40A. Magnetic protection



SM1RM...

Order code	Rated and magnetic trip current		Short circuit breaking capacity at 400V		Qty per pkg	Wt [kg]
	Rat. [A]	Trip. [A]	Icu [kA]	Ics [kA]		
Rotary knob type. For UL ratings see page 1-12.						
SM1RM 0016	0.16	1.6	100	100	1	0.320
SM1RM 0025	0.25	3.2	100	100	1	0.320
SM1RM 0040	0.4	5.2	100	100	1	0.320
SM1RM 0063	0.63	8.2	100	100	1	0.320
SM1RM 0100	1	13	100	100	5	0.320
SM1RM 0160	1.6	21	100	100	5	0.320
SM1RM 0250	2.5	33	100	100	5	0.320
SM1RM 0400	4	52	100	100	5	0.390
SM1RM 0650	6.5	85	100	100	5	0.390
SM1RM 1000	10	130	100	100	5	0.390
SM1RM 1400	14	182	100	100	5	0.390
SM1RM 1800	18	234	100	100	5	0.390
SM1RM 2300	23	299	50	25	1	0.390
SM1RM 2500	25	325	50	25	1	0.390
SM1RM 3200	32	416	50	25	1	0.390
SM1RM 4000	40	420	20	10	1	0.390

### General characteristics

SM1RM... are motor protection circuit breakers with magnetic tripping only and high breaking capacity. They are typically used to protect starters where there is a thermal relay or other overload protection. Starter control and protection of up to 22kW (400V) are possible by choosing the suitable adjustment range, from 0.1 to 40A.

### Operational characteristics

- IEC rated insulation voltage  $U_i$ : 690V
- IEC rated impulse withstand voltage: 6kV
- IEC rated frequency: 50/60Hz
- Maximum rated current: 40A
- IEC breaking capacity: See table on page 1-3
- Heat dissipation per phase: 0.7...3.3W
- Magnetic tripping: 13In max.
- Mechanical life: 100,000 cycles
- Electrical life: 100,000 cycles
- Mounting on 35mm DIN rail (IEC/EN 60715)
- Mounting position: Any
- IEC utilisation category: A
- Padlocking in OFF:  $\varnothing$ 4mm
- IEC degree of protection: IP20.

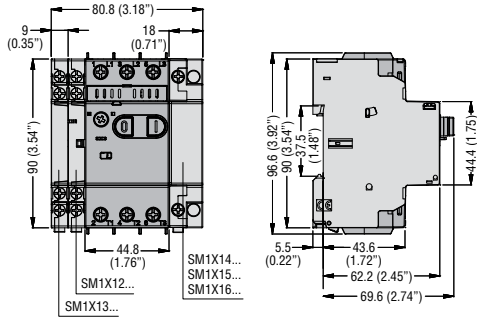
### Certifications and compliance

Certifications obtained: cULus, EAC. Certifications pending: CCC. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 n° 60947-1, CSA C22.2 n° 60947-4-1. Plastic materials compliant with standards: IEC/EN 60335 and EN 45545.

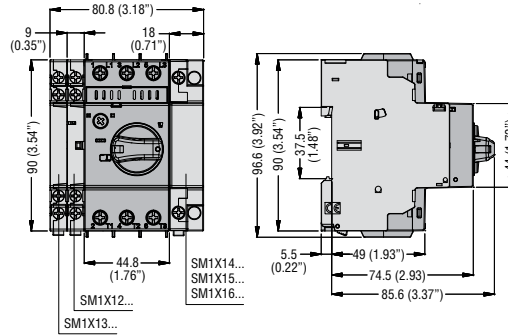
# 1 Motor protection circuit breakers

Dimensions [mm (in)]

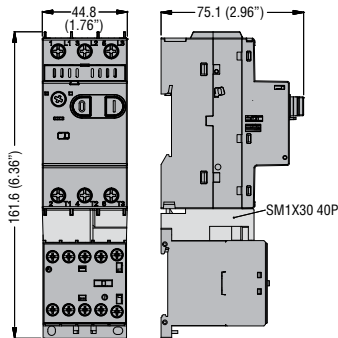
**SM1P... with side-mount auxiliary contacts**



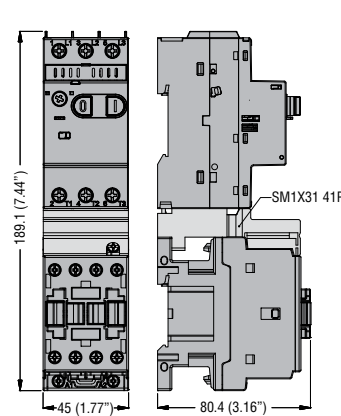
**SM1R... with side-mount auxiliary contacts**



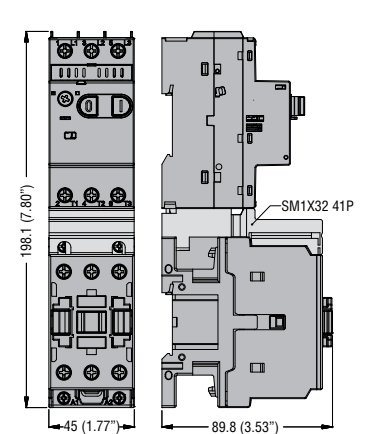
**SM1P... with BG... mini-contacts and connection SM1X30 40P**



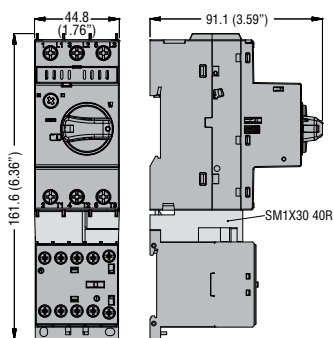
**SM1P... with BF09 A...BF25 A... contactors and connection SM1X31 41P**



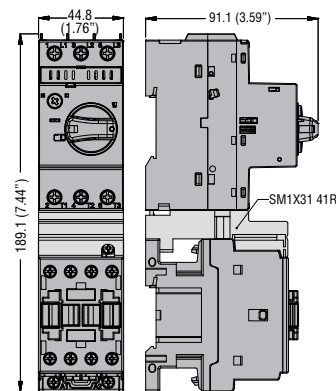
**SM1P... with BF26 A...BF38 A... contactors and connection SM1X32 41P**



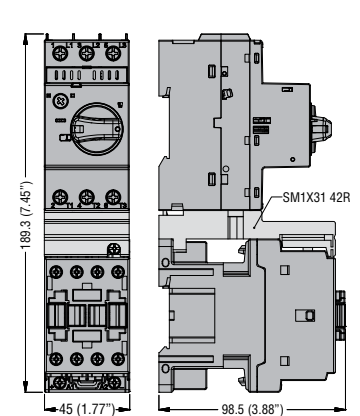
**SM1R... with BG... mini-contacts and connection SM1X30 40R**



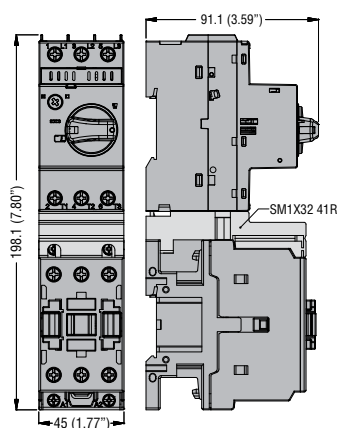
**SM1R... with BF09 A...BF25 A... contactors and connection SM1X31 41R**



**SM1R... with BF09 D...BF25 D... contactors BF09 L...BF25 L... and connection SM1X31 42R**



**SM1R... with BF26 A...BF38 A... contactors and connection SM1X32 41R**



**SM1R... padlockable door coupling handle SM1X18 200R or SM1X18B 200R**

