



Page 1-4

SM1P...

- Motor protection
- Push button control
- Ranges 0.1...40A (16 choices)
- IEC breaking capacity Icu at 400V: from 100 to 10kA
- Suitable for mounting in modular panels.



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SM1R...

- Motor protection
- Rotary knob type
- Ranges 0.1...40A (16 choices)
- IEC breaking capacity Icu at 400V: from 100 to 20kA
- Thermal and magnetic trip indicator
- UL 60947-4-1 Type E via accessory (certification obtained for range from 0.1 to 6.5A; pending for all the other ratings. Consult Technical support for more information).



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SM1RM...

- Starter protection (magnetic only)
- Rotary knob type
- Rated current from 0.16 to 40A
- IEC breaking capacity Icu at 400V: from 100 to 20kA.



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SM2R...

- Motor protection
- Rotary knob type
- Ranges 34...63A (2 choices)
- IEC breaking capacity Icu at 400V: 50kA
- UL 60947-4-1 Type E.



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SM3R...

- Motor protection
- Rotary knob type
- Ranges 55...100A (3 choices)
- IEC breaking capacity Icu at 400V: 50kA
- Thermal and magnetic trip indicator
- UL 60947-4-1 Type E via accessory.



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SM1PF...

- Fuse monitoring function
- Push button control
- Fixed thermal protection: 0.2A
- Magnetic trip threshold: 1.2A.



LOVATO Electric motor protection circuit breakers are suitable for new motors with high IE3 efficiency values

IEC ratings

Motor protection (magnetic and thermal protection)



SM1P...



SM1R...

SM2R...

SM3R...

Starter protection (magnetic protection)



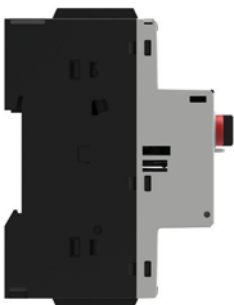
SM1RM...

Rated current	0.1...40A	0.1...40A	34...63A	55...100A	0.1...40A
Thermal protection	●	●	●	●	
Magnetic protection	●	●	●	●	●
TRIP position	●	●	●	●	●
Phase failure sensitive	●	●	●	●	
Padlockable in O	●	●	●	●	●

Choice	230V		400V		440V		500V		690V		230V		400V		440V		500V		690V		230V		400V		440V		500V		690V		
	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	
[A]	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA	
0.1...0.16	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.16...0.25	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.25...0.4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.4...0.63	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0.63...1	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1...1.6	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1.6...2.5	100	100	100	100	100	100	100	100	100	3	3	100	100	100	100	100	100	100	100	10	10	100	100	100	100	100	100	100	10	10	10
2.5...4	100	100	100	100	100	100	100	100	100	3	3	100	100	100	100	100	100	100	100	10	10	100	100	100	100	100	100	100	10	10	10
4...6.5	100	100	100	100	100	100	100	100	100	3	3	100	100	100	100	100	100	100	100	4	2	100	100	100	100	100	100	100	4	2	2
6.3...10	100	100	100	100	100	25	12.5	25	12.5	3	3	100	100	100	100	42	42	42	42	4	2	100	100	100	100	42	42	42	4	2	2
9...14	100	100	25	12.5	10	5	10	5	3	3	100	100	100	100	42	42	42	42	4	2	100	100	100	100	42	42	42	4	2	2	
13...18	100	50	25	12.5	10	5	10	5	3	3	100	100	100	100	10	5	10	5	4	2	100	100	100	100	10	5	10	5	4	2	
17...23	50	50	15	5	10	5	10	5	3	2	100	100	50	25	10	5	10	5	4	2	100	100	50	25	10	5	10	5	4	2	
20...25	50	50	15	5	10	5	10	5	3	2	100	100	50	25	10	5	10	5	4	2	100	100	50	25	10	5	10	5	4	2	
24...32	50	50	10	5	10	5	10	5	3	2	100	100	50	25	10	5	10	5	4	2	100	100	50	25	10	5	10	5	4	2	
30...40	20	20	10	5	10	5	10	5	3	2	100	100	20	10	10	5	10	5	4	2	100	100	20	25	10	5	10	5	4	2	
34...50	-	-	-	-	-	-	-	-	-	-	100	100	50	50	35	27	10	8	5	5	-	-	-	-	-	-	-	-	-	-	
45...63	-	-	-	-	-	-	-	-	-	-	100	100	50	50	35	27	10	8	5	5	-	-	-	-	-	-	-	-	-	-	
55...75	-	-	-	-	-	-	-	-	-	-	100	100	50	38	40	30	8	6	5	4	-	-	-	-	-	-	-	-	-	-	
70...90	-	-	-	-	-	-	-	-	-	-	100	100	50	38	40	30	8	6	5	4	-	-	-	-	-	-	-	-	-	-	
80...100	-	-	-	-	-	-	-	-	-	-	100	100	50	38	40	30	8	6	5	4	-	-	-	-	-	-	-	-	-	-	

● SM1P... MODULAR SIZE

- Mounting on front of panels or in modular panels for rapid access to buttons, avoiding the opening of the door by non-technical staff.
- Auxiliary contacts, indicator contacts and releases compatible with modular panels.



● 40A IN 45mm

- From 0.1A to 40A in a device just 45mm wide.
- High short-circuit breaking capacity up to 40A.
- Small, cost-effective starters.



● SM1R... TRIP INDICATION

- Thermal and magnetic trip indication with trip position of knob.
- Specific optical indication for short-circuit tripping; guarantees maximum safety for operators and reliability of the system.
- Auxiliary trip indication contacts with ability to distinguish overload from short circuit.



● UL Type E

- The entire rotary knob type is certified UL Type E (pending for ranges from 6.5 to 40A. Consult Technical support for more information).
- Type E is a specific requirement of the UL standards that requires, of short-circuit protection devices, increased terminal isolation distances and strict breaking capacity tests.
- Eliminates the need for further short-circuit protection devices upstream of the motor protection.

● SM1... HIGH-PERFORMANCE PLASTICS

- IEC/EN 60335-compliant plastics for domestic and similar applications. Can be used in catering equipment.
- EN 45545-compliant plastics: fire behaviour and emissions of fumes. Suitable for railway applications.

Fuse monitoring



SM1PF...

UL508 ratings



SM1P...



SM1R... - SM2R... - SM3R...

0.2A												UL508 / UL 60947-4-1 Manual Motor Controller - Short circuit current in kA												UL508 / UL 60947-4-1 Manual Self Protected Combination Motor Controller (Type E) Short circuit current in kA			
												Motor Disconnect Group Motor Installation			Protection			Motor Disconnect Group Motor Installation			Protection			Tap Conductor Protection			
												240V	480V	600V	480V	600V	480V	600V	480V	600V	480Y/277V	600Y/347V	240V	480Y/277V	600Y/347V		
Icu		Ics		Icu		Ics		Icu		Ics		Icu		Ics		Icu		Ics		Icu		Ics		Icu		Ics	
kA		kA		kA		kA		kA		kA		kA		kA		kA		kA		kA		kA		kA		kA	
-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	Fuse or CB	50	50	50	50	Fuse or CB	50	50	50	50	50	50	50
100	100	100	100	100	100	100	100	100	100	100	100	50	50	50	Fuse or CB	50	50	50	50	Fuse or CB	50	50	50	50	50	50	50
-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	Fuse or CB	50	50	50	50	Fuse or CB	50	50	50	50	50	50	50
-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	Fuse or CB	50	50	50	50	Fuse or CB	50	50	50	50	50	50	50
-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	Fuse or CB	50	50	50	50	Fuse or CB	50	50	50	50	50	50	50
-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	100A Class J	30	30	30	30	Fuse or CB	30	30	30	30	30	30	30
-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	100A Class J	30	30	30	30	Fuse or CB	30	30	30	30	30	30	30
-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	100A Class J	30	30	30	30	Fuse or CB	30	30	30	30	30	30	30
-	-	-	-	-	-	-	-	-	-	-	-	30	30	30	100A Class J	30	30	30	30	100A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	30	30	-	100A Class J	30	30	30	30	200A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	30	30	-	100A Class J	30	30	30	30	200A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	Fuse or CB	30	30	30	30	200A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	Fuse or CB	30	30	30	30	200A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	Fuse or CB	30	30	30	30	200A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	Fuse or CB	30	30	30	30	200A Class J	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	10	50	10	Fuse or CB	50	10	100	50	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	10	50	10	Fuse or CB	50	10	100	50	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	10	40	10	Fuse or CB	40	10	100	40	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	10	40	10	Fuse or CB	40	10	100	40	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	10	40	10	Fuse or CB	40	10	100	40	-	-	-

Ⓢ Pending

ENCLOSURES

- Various types of plastic enclosures are available for rotating and button-controlled motor protection circuit breakers up to 40A.
- Surface and flush mount.
- Ideal for small machines and isolated motors.
- IP65 (UL Type 4X) protection rating and UV-ray resistant.
- Very robust plastics, IK07; pass even the strict UL "ball impact" test.
- UL-certified.



DOOR COUPLING HANDLES

- Padlockable door coupling handles for the entire rotary knob type. Make systems compliant with safety regulations.
- Tough, easy and quick to install.



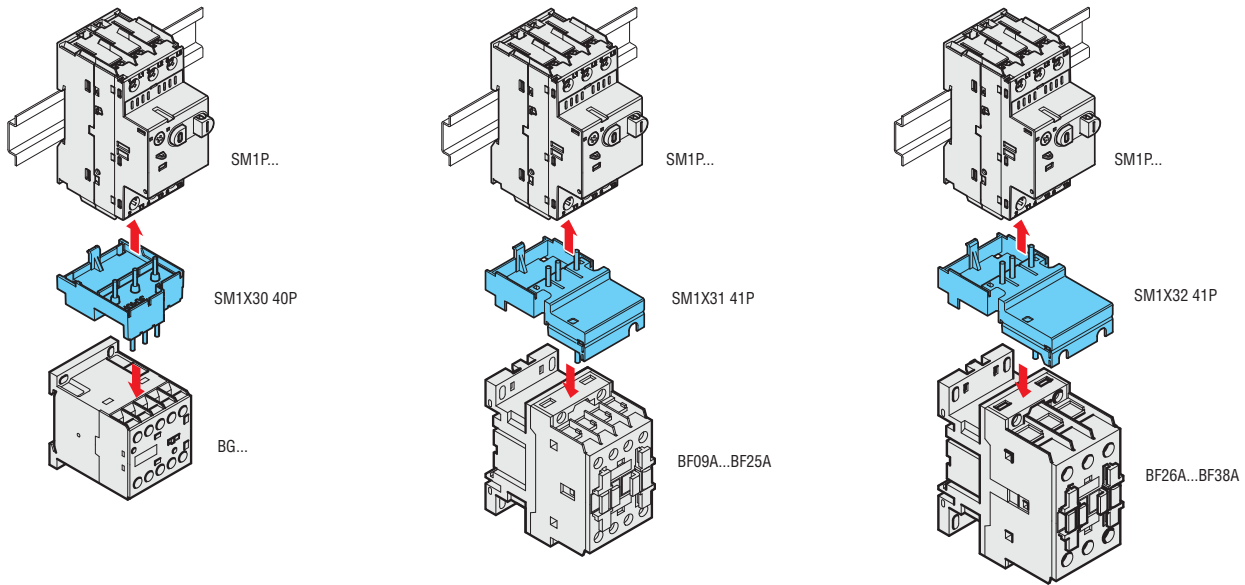
SM1... PADLOCKABILITY

- Padlockability as standard on the entire rotary knob type and push button-controlled motor protection circuit breaker range. For greater operator safety during maintenance and bypassing of the equipment.

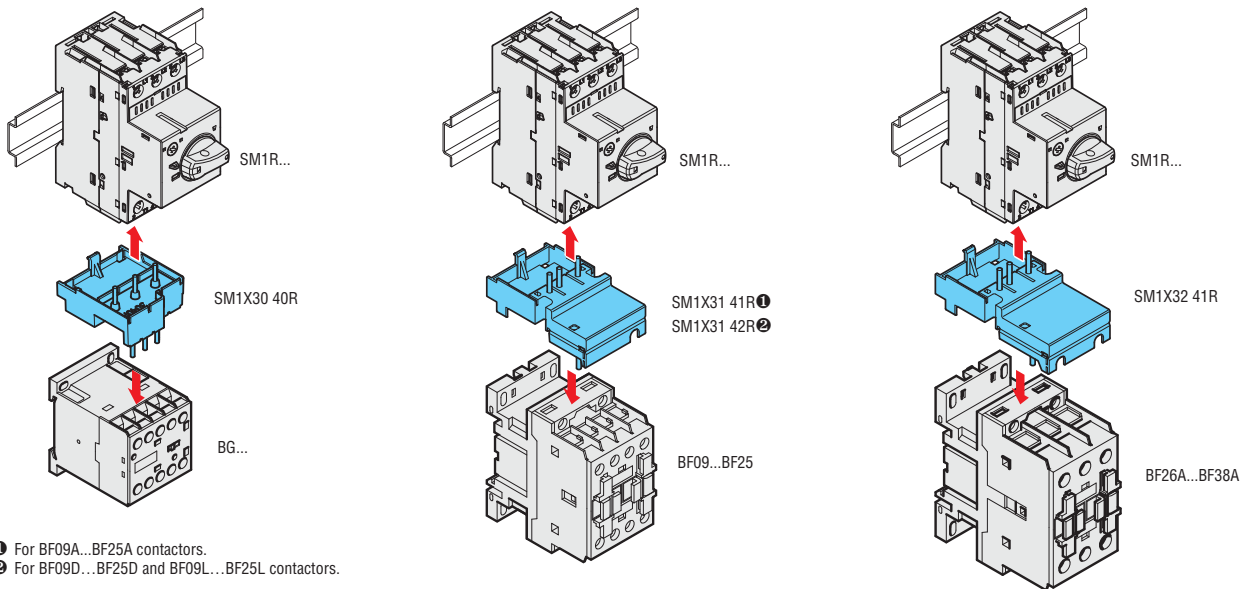


Combinations

Rigid SM1P... breaker - contactor connections.

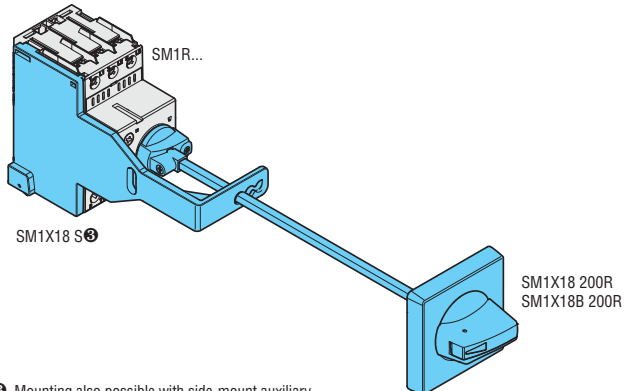


Rigid SM1R... breaker - contactor connections.



- ① For BF09A...BF25A contactors.
- ② For BF09D...BF25D and BF09L...BF25L contactors.

Padlockable door coupling handle.



- ③ Mounting also possible with side-mount auxiliary contacts SM1X12... and SM1X13...

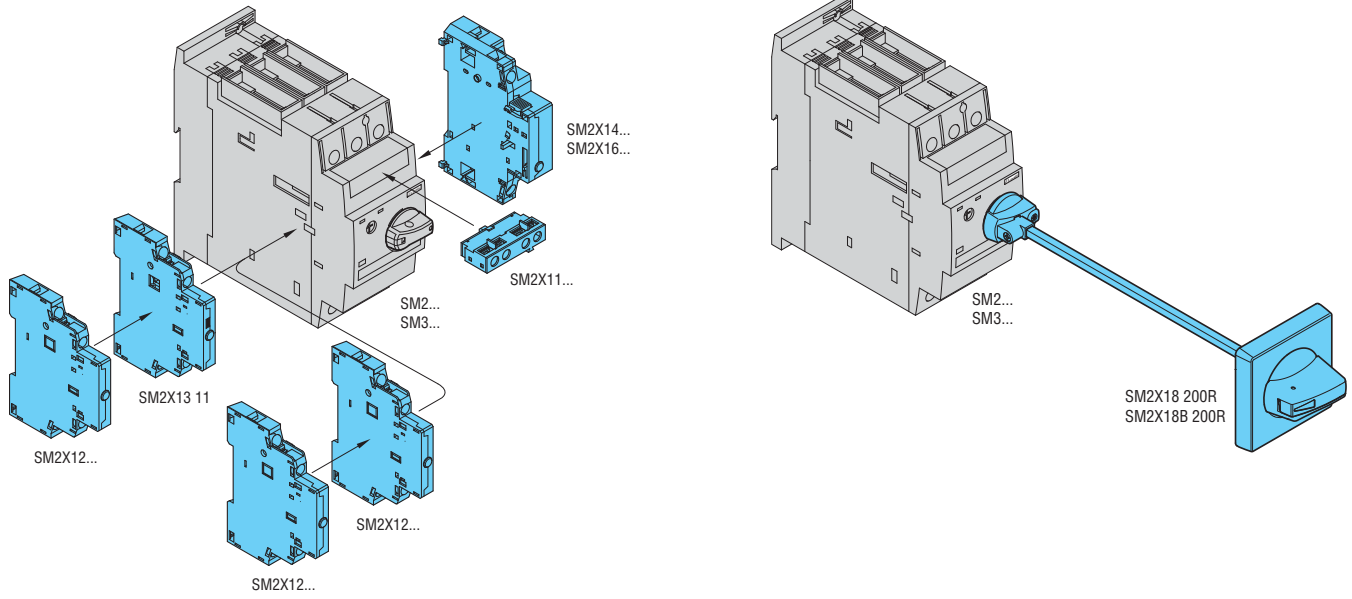
1 Motor protection circuit breakers

Add-on blocks and accessories for SM2... and SM3...

Combinations

Combinations of SM2... and SM3... motor protection circuit breakers

Padlockable door coupling handle.



MAXIMUM UL/CSA HORSEPOWER RATINGS

		Single-phase			Three-phase, 3-pole		
		110V-120V	220V-240V	200V-208V	220-240V	440-/480V	550V-600V
		[HP]	[HP]	[HP]	[HP]	[HP]	[HP]
SM1R0016	SM1P0016	—	—	—	—	—	—
SM1R0025	SM1P0025	—	—	—	—	—	—
SM1R0040	SM1P0040	—	—	—	—	—	—
SM1R0063	SM1P0063	—	—	—	—	—	—
SM1R0100	SM1P0100	—	—	—	—	1/2	1/2
SM1R0160	SM1P0160	—	1/10	—	—	3/4	1
SM1R0250	SM1P0250	—	1/6	1/2	1/2	1	1.5
SM1R0400	SM1P0400	1/8	1/3	3/4	3/4	2	3
SM1R0650	SM1P0650	1/4	1/2	1.5	1.5	3	5
SM1R1000	SM1P1000	1/2	1.5	2	3	5	7.5
SM1R1400	—	3/4	2	3	3	10	10
SM1R1800	—	1	3	5	5	10	15
SM1R2300	—	1.5	3	5	7.5	15	20
SM1R2500	—	2	3	5	7.5	15	20
SM1R3200	—	2	5	10	10	20	30
SM1R4000	—	3	7.5	10	10	30	30
—	SM1P1400	3/4	2	3	3	10	—
—	SM1P1800	1	3	5	5	10	—
—	SM1P2300	1.5	3	5	7.5	15	—
—	SM1P2500	2	3	5	7.5	15	—
—	SM1P3200	2	5	10	10	20	—
—	SM1P4000	3	7.5	10	10	30	—
SM2R5000	—	3	10	15	15	30	40
SM2R6300	—	5	10	20	20	40	60
SM3R7500	—	5	15	20	25	50	60
SM3R9000	—	7 1/2	20	25	30	60	75
SM3R9900	—	10	20	30	30	75	100