




Manual motor protectors, UL 508 Type E, LMR series


electric
100% electricity

Manual motor protectors, UL 508 type E LMR series

Manual motor protectors LMR up to 32A



LMR32...

Order code	Thermal trip adjustment range	Short circuit breaking capacity at 400V		Qty per pkg	Wt [kg]
		Icu [kA]	Ics [kA]		
	[A]	[kA]	[kA]	n°	[kg]
Breaking capacity Icu 100kA (0.1-13A); 50kA (11-32A) at 400V.					
LMR32 0016	0.1-0.16	100	100	5	0.320
LMR32 0025	0.16-0.25	100	100	5	0.320
LMR32 0040	0.25-0.4	100	100	5	0.320
LMR32 0063	0.4-0.63	100	100	5	0.320
LMR32 0100	0.63-1	100	100	5	0.320
LMR32 0160	1-1.6	100	100	5	0.320
LMR32 0250	1.6-2.5	100	100	5	0.320
LMR32 0400	2.5-4	100	100	5	0.320
LMR32 0600	4-6	100	100	5	0.320
LMR32 0800	5-8	100	100	5	0.320
LMR32 1000	6-10	100	100	5	0.340
LMR32 1300	9-13	100	100	5	0.340
LMR32 1700	11-17	50	38	5	0.340
LMR32 2200	14-22	50	38	5	0.340
LMR32 2600	18-26	50	38	5	0.340
LMR32 3200	22-32	50	38	5	0.340

General characteristics

LMR are manual motor protectors with high breaking capacity and equipped with thermal and magnetic trip releases. Motor control and protection, up to 15kW at 400V / 20HP 480V, are possible by choosing the suitable adjustment range, 0.1 to 32A.

The LMR32 protectors have rotating handle operation and are suitable also as motor disconnect according to IEC/EN 60947/UL508 standards.

Their high breaking capacity consents to exclude protection fuses on the majority of the installations.

Operational characteristics

- Rated insulation voltage U_i : 690V
- Rated impulse withstand voltage: 6kV
- Rated frequency: 50/60Hz
- Maximum rated current: 32A
- 16 different adjustment ranges
- Breaking capacity: see table on page 4
- Power dissipation: 1.7-7.4W
- Magnetic tripping: 13In max
- Thermal tripping class: 10
- Phase failure sensitive
- Mechanical life: 100,000 cycles
- Electrical life: 100,000 cycles
- Mounting on 35mm DIN rail (IEC/EN 60715)
- Mounting position: Any
- Utilisation category: A
- Padlockable handle with no need of accessories
- Adjuster sealing mechanism, standard supplied.

Certifications and compliance

Certifications obtained: cULus as "Combination Motor Controller Type E".

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1, UL508.

NOTE: When more than one protectors are mounted, side by side, without leaving space between each to consent free air circulation on the protector sides, an have simultaneous operation, the thermal trip adjuster must be positioned at a value 15% greater than the rated motor current.

Order code	Setting range of thermal trip ❶ [A]	UL maximum horsepower ratings					
		Single-phase ❷ 120V [HP]		Three-phase 200V [HP]			
		240V [HP]	240V [HP]	240V [HP]	480V [HP]	600V [HP]	
LMR32 0016	0.1-0.16	—	—	—	—	—	—
LMR32 0025	0.16-0.25	—	—	—	—	—	—
LMR32 0040	0.25-0.4	—	—	—	—	—	—
LMR32 0063	0.4-0.63	—	—	—	—	—	—
LMR32 0100	0.63-1	—	—	—	—	—	1/2
LMR32 0160	1-1.6	—	1/10	—	—	3/4	3/4
LMR32 0250	1.6-2.5	—	1/6	1/2	1/2	1	1 1/2
LMR32 0400	2.5-4	1/8	1/3	3/4	3/4	2	3
LMR32 0600	4-6	1/4	1/2	1	1 1/2	3	5
LMR32 0800	5-8	1/3	1	2	2	5	5
LMR32 1000	6-10	1/3	1 1/2	2	3	5	7 1/2
LMR32 1300	9-13	1/2	2	3	3	7 1/2	10
LMR32 1700	11-17	1	3	3	5	10	15
LMR32 2200	14-22	1 1/2	3	5	7 1/2	15	20
LMR32 2600	18-26	2	3	7 1/2	7 1/2	15	20
LMR32 3200	22-32	2	5	7 1/2	10	20	30

❶ The appropriate thermal trip range of the protector should be selected on the bases of the motor nameplate full-load current since the horsepower ratings given in the table are for reference only.

❷ Single-phase horsepower ratings are based on wiring the three poles in series; see wiring scheme on page 5.

Add-on blocks and accessories



LMRX11...



LMRX13 11



LMRX14...



LMRX16...



LMRX18...



11 SMX90 30



11 SMX90 31



11 SMX90 3...
11 SMX90 4...



LMRX90 50

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]
Add-on auxiliary contacts.			
LMRX11 20	Front mount 2NO	10	0.020
LMRX11 11	Front mount 1NO+1NC	10	0.020
LMRX11 02	Front mount 2NC	10	0.020
LMRX12 20	Side mount 2NO	2	0.040
LMRX12 11	Side mount 1NO+1NC	2	0.040
LMRX12 02	Side mount 2NC	2	0.040
LMRX13 11	Side-mount indicator contact switch for thermal and magnetic tripping 1NO+1NC	1	0.040
Undervoltage trip releases.			
LMRX14 230	230VAC 50/60Hz 240VAC 60Hz	1	0.100
LMRX14 400	400VAC 50/60Hz 440VAC 60Hz	1	0.100
LMRX14 440	440VAC 50/60Hz 480VAC 60Hz	1	0.100
Shunt trip releases.			
LMRX16 024	24VAC 50/60Hz	1	0.100
LMRX16 110	110VAC 50/60Hz 120VAC 60Hz	1	0.100
LMRX16 230	230VAC 50/60Hz 240VAC 60Hz	1	0.100
LMRX16 400	400VAC 50/60Hz 440VAC 60Hz	1	0.100
LMRX16 440	440VAC 50/60Hz 480VAC 60Hz	1	0.100
Padlockable door-coupling handle. IP65.			
LMRX18 15	Black colour	1	0.120
LMRX18 14	Red/yellow colour	1	0.120
Terminal block for busbar supply.			
11 SMX90 30	For all types	10	0.033
Safety isolating cover.			
11 SMX90 31	For unused busbar terminals	10	0.005
Three-phase connection busbars 45mm spacing.			
11 SMX90 32	For 2 protectors without side-mount contacts	10	0.027
11 SMX90 33	For 3 protectors without side-mount contacts	10	0.048
11 SMX90 34	For 4 protectors without side-mount contacts	10	0.068
11 SMX90 35	For 5 protectors without side-mount contacts	10	0.090
Three-phase connection busbars 54mm spacing.			
11 SMX90 42	For 2 protectors with side-mount contacts	10	0.034
11 SMX90 43	For 3 protectors with side-mount contacts	10	0.054
11 SMX90 44	For 4 protectors with side-mount contacts	10	0.078
11 SMX90 45	For 5 protectors with side-mount contacts	10	0.103
Three-pole enlarged terminals.			
LMRX90 50	4-25mm ² ; 10-4 AWG	10	0.033
Rigid LMR32 protector-contactors connection.			
LMRX31 41	For LMR32 protector with BF09A, BF12A, BF18A and BF25A contactor	10	0.040

General and operational characteristics

ADD-ON AUXILIARY BLOCKS

- Snap on to the front or left-side of the protector
- Maximum combination: 6 auxiliary contacts of which
 - 2 on front and 4 side mount
 - or
 - 2 on front, 2 side mount and 2 side mount indicator switches
- Conventional free air thermal current I_{th}: 10A (5A for LMRX11...)
- Rated insulation voltage U_i: 690V (250V for LMRX11)
- Designation according to IEC/EN 60947-5-1: A600 Q300
- Conductor cross section minimum-maximum (1 or 2 wires): 0.75-2.5mm² or 18/14 AWG
- Width of side-mount auxiliary contacts equal to 0.5 standard DIN 46880 module.

UNDERVOLTAGE TRIP RELEASE

- Connectable on the right side of the protector
- Consumption in-rush/holding: 8.5/3VA
- Drop-out voltage: 0.35-0.7U_z
- Pick-up voltage: 0.85-1.1U_s
- Conductor cross section minimum-maximum (1 or 2 wires): 0.75-2.5mm² or 18/14 AWG.

SHUNT TRIP RELEASE

- Connectable on the right side of the protector
- In-rush consumption: 20VA
- Pick-up voltage: 0.85-1.1U_s
- Conductor cross section minimum-maximum (1 or 2 wires): 0.75-2.5mm² or 18/14 AWG.

THREE-PHASE CONNECTION BUSBAR

- I_{max} 63A
- Conductor cross section minimum-maximum (1 or 2 wires): 4-25mm² or 10/4 AWG.

THERMAL BLOCK FOR BUSBAR SUPPLY

- I_{max} 63A
- Conductor cross section minimum-maximum (1 or 2 wires): 4-25mm² or 10/4 AWG.

Certifications and compliance

Certifications obtained: cULus for auxiliary contacts, releases and padlockable attachment for operating lever. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1.

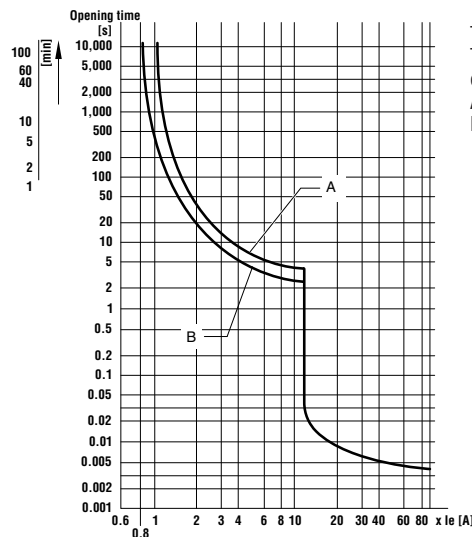
Manual motor protectors, UL 508 type E LMR series

Operational characteristics

TYPE		LMR32	
Rated insulation voltage U_i	V	690	
Rated frequency	Hz	50/60	
Rated impulse voltage U_{imp}	kV	6	
Maximum rated current	A	32	
Number of adjustment ranges		16	
Power dissipation	W	1.7-7.4	
Magnetic tripping		13 I_n	
Mechanical life	cycles	100,000	
Electrical life (I_n max AC3)	cycles	100,000	
Maximum tightening torque for terminals	Nm	2	
	I_{bin}	18	
	Tool	PZ2	
Minimum-maximum conductor Section connectable 1 or 2 wires	AWG	N°	
	Flexible without lug	mm ²	1-10
AMBIENT CONDITIONS			
Temperature	Operating	°C	-20...+60
	Compensation	°C	-20...+50
	Storage	°C	-50...+80
Maximum altitude	m	3000	
Mounting position		any	
Mounting / fixing		35mm DIN rail (IEC/EN 60715)	

PZ2 = Pozidrive.

Thermal tripping curve

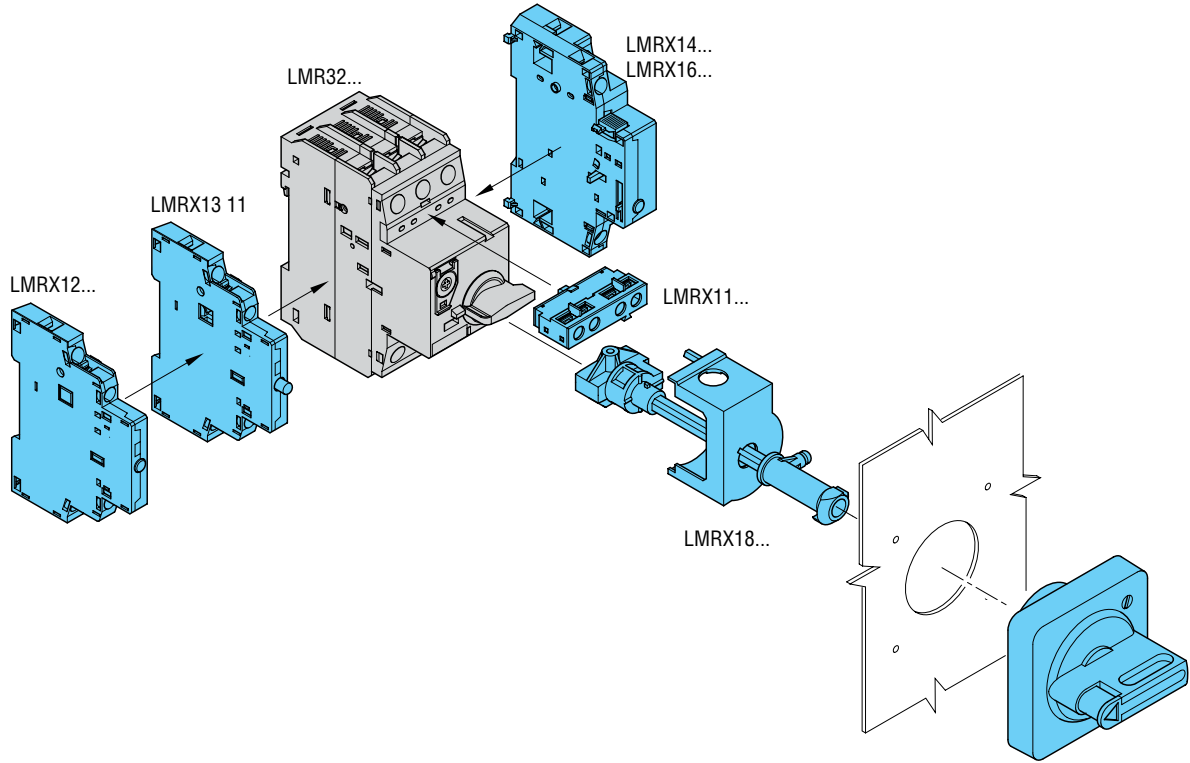


Tripping times at cold state are an indication only.
The tripping time at hot state is obtained by multiplying the value obtained from the characteristic curve by 0.75.
A = Balanced 3-phase operation
B = 2-phase operation (phase failure).

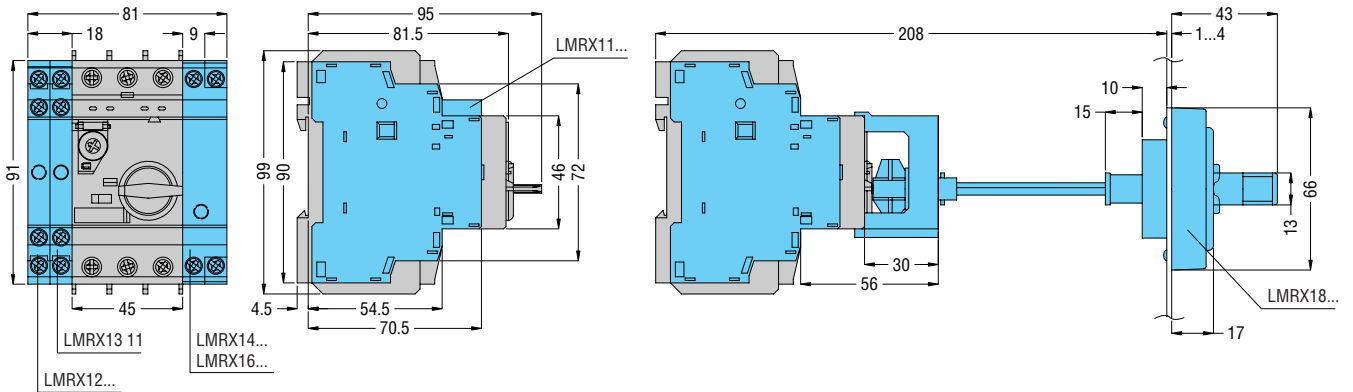
Breaking capacity

TYPE	RATED SHORT-CIRCUIT BREAKING CAPACITY [kA]									
	230V/240V		400V/415V		440V/460V		500V		690V	
	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
LMR32 0016	100	100	100	100	100	100	100	100	100	100
LMR32 0025	100	100	100	100	100	100	100	100	100	100
LMR32 0040	100	100	100	100	100	100	100	100	100	100
LMR32 0063	100	100	100	100	100	100	100	100	100	100
LMR32 0100	100	100	100	100	100	100	100	100	100	100
LMR32 0160	100	100	100	100	100	100	100	100	100	100
LMR32 0250	100	100	100	100	100	100	100	100	8	8
LMR32 0400	100	100	100	100	100	100	100	100	8	8
LMR32 0600	100	100	100	100	100	100	100	100	6	6
LMR32 0800	100	100	100	100	50	38	50	38	6	6
LMR32 1000	100	100	100	100	50	38	50	38	6	6
LMR32 1300	100	100	100	100	50	38	42	32	6	6
LMR32 1700	100	100	50	38	20	15	10	8	4	4
LMR32 2200	100	100	50	38	20	15	10	8	4	4
LMR32 2600	100	100	50	38	20	15	10	8	4	4
LMR32 3200	100	100	50	38	20	15	10	8	4	4

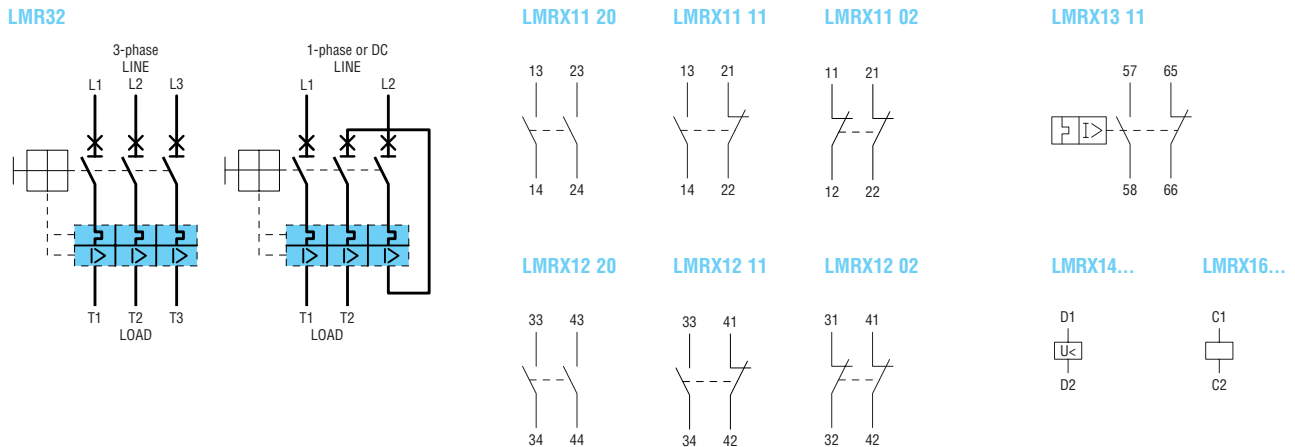
Combinations



Overall dimensions



Wiring schemes



new
2009



Switch disconnectors
16 to 1250A



Contactors



Signal towers and beacons



Digital multimeters
DMG series



Automatic transfer switch controller
ATL 10 type



Switching power supplies

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