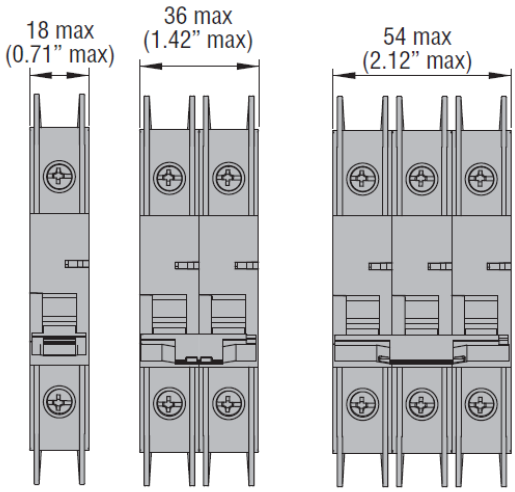
Lovato electric
ENERGY AND AUTOMATION

P1MB... UL489 MCB DEVICES DATASHEET

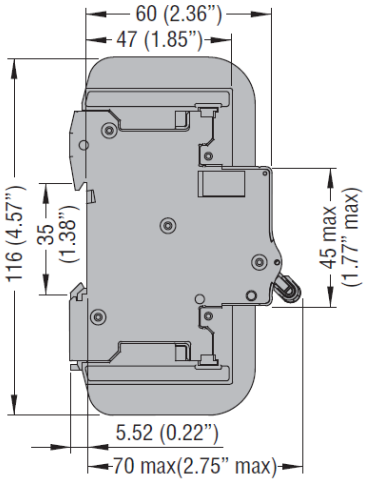
General characteristics
These devices comply with the UL 489 standard, mostly used in the North American markets, are designed to protect feeder circuits, the part of the system from the network supply point to the protection device for a branch circuit. They can in any case be used on the international market thanks to compliance with the IEC/EN60947-2 standard as well.
They have characteristics of tripping instantaneously defined as follows:
- C-curve: instantaneous trip 5…10 times In for inductive loads (mixed loads, resistive and inductive with low inrush current)
- D-curve: instantaneous trip 10…14 times In for highly inductive loads (loads with high inrush and current such as motors).

Operational characteristics
- Rated voltage 1…32A: 480Y/277V (UL489)
- Rated voltage 35…63A: 240V (UL489)
- Rated insulation voltage Ui: 440V (IEC/EN60947-2)
- Rated impulse voltage Uimp: 4kV (IEC/EN60947-2)
- Rated operational voltage Ue: 230/400VAC (IEC/EN60947-2)
- DC operational voltage: 125V

Certifications and compliance
Certifications obtained: EAC, cULus (E471594).
Compliant with standards: UL 489, IEC/EN 60947-2.



POWER BARS FOR UL APPROVED THERMAL-MAGNETIC CIRCUIT BREAKERS
- maximum rated AC voltage: 600V
- central power point: 160 A max
- side point for power supply: 80 A max
- pitch: 17.8 mm
- bar section: 18 mm²
- for parallel connection
- single pole: for 57 modules, 1000 mm long (57 1P switches)
- two pole: for 56 modules, 1000 mm long (28 2P switches)
- three pole: for 57 modules, 1012 mm long (19 3P switches).



Certifications
UL508 for ... P18K57... bars (for use with UL1077 approved thermal-magnetic circuit breakers).
UL489 for UL.... bars (for use with UL489 approved thermal-magnetic circuit breakers).

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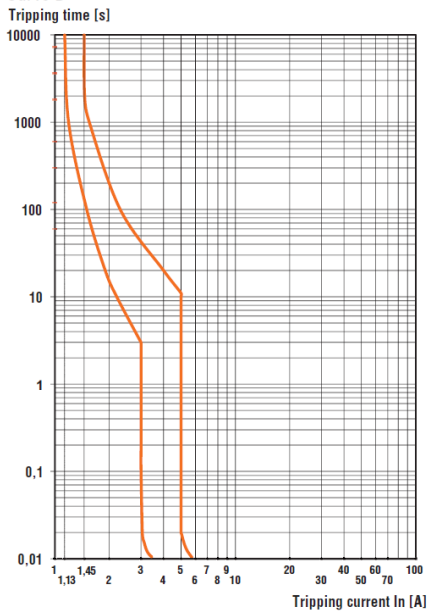
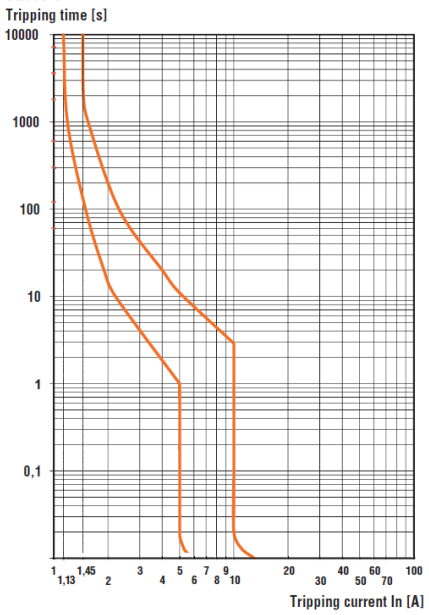
TYPE			P1 MB
Description			Circuit breaker
Standards			IEC/EN 60898, IEC/EN 60947-2 UL 1077 UL 489❶
IEC rated insulation voltage Ui		V	440
IEC rated impulse withstand voltage Uimp		kV	4
IEC rated operational voltage Ue	in AC	V	230 (1P, 1P+N) / 230/400 (2P, 3P, 4P)❸
	in DC	V	60 (1P) / 80 (2P)❹
Rated frequency		Hz	50/60
Maximum rated current		A	63
Available rated current for types		A	1, 2, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63❷
Versions			1P, 1P+N, 2P, 3P, 4P
Tripping characteristic		curve	B-C-D
Instantaneous tripping			Curve B: 3...5In Curve C: 5...10In Curve D: 10...14In
Residual operation characteristic		type	—
Rated residual current IΔn		mA	—
Short circuit capacity		kA	10 (6kA 1P+N)
Mechanical life		cycle	20,000
Maximum tightening torque of terminals		Nm	2
		lbin	15
		Tool	Pz2
Conductor section min…max.		mm^2	1...16
		AWG	14...6
AMBIENT CONDITIONS			
Temperature	Operating	°C	-35...+70
	Storage	°C	-40...+80
Max. altitude		m	2,000
Pollution degree			2

TRIP CHARACTERISTICS

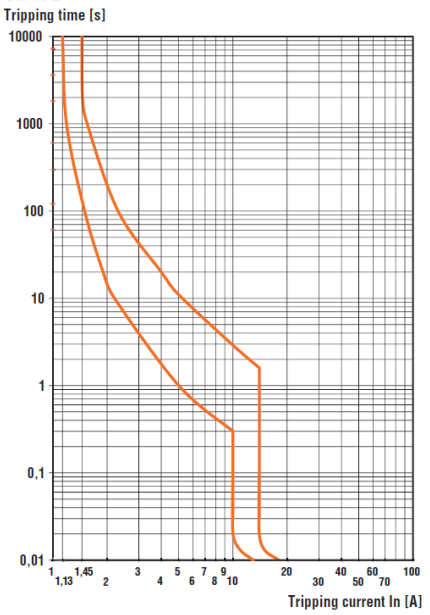
Curve B



Curve C



Curve D



❶ UL489 only P1MBU... version for the operational voltages for these devices refer to the pages for the chosen product.
❷ For the UL489, P1MBU... versions, the following rated current currents are also available: 1.6, 3, 5, 7, 8, 12, 15, 30, 35, 60 A.
❸ For the UL489, P1MBU... versions to 32A: 1P 277V; 2P and 3P 480Y/277V. From 35 to 63A: 1P 120V; 2P and 3P 240V.
❹ For the UL489, P1MBU..., 1P 60VDC and 2P 125VDC.