

Thermal-Magnetic Circuit Breaker | TMC 91 H

Features

- Single, two and three pole circuit breakers
- Thermal-magnetic operation
- DIN/EN rail 50 022- 35 x 7.5 mm or 35 x 15 mm
- High rupture capacity 10 kA
- VDE, EN, UL and CSA approvals
- Auxiliary contacts optional
- S-type CBE according to IEC 934

Approvals

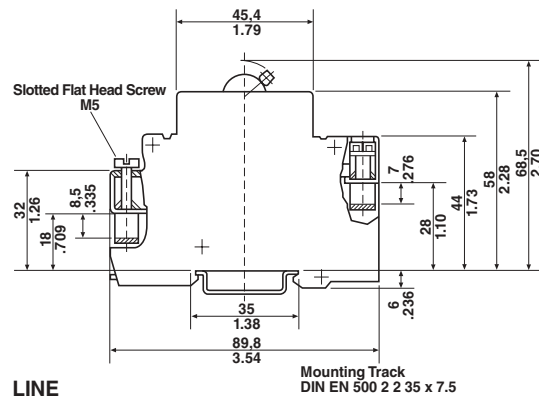
Authority	Voltage Ratings	Current Ratings
UL1077, CSA	AC 347/600 V	0.5 A to 32 A
	AC 277/480 V	0.5 A to 63 A
	DC 48 V	0.5 A to 63 A*
	DC 110 V	0.5 A to 50 A**
VDE	AC 240/415 V	

* Per pole, per DC Current ** For 2-pole, +and- of the same circuit

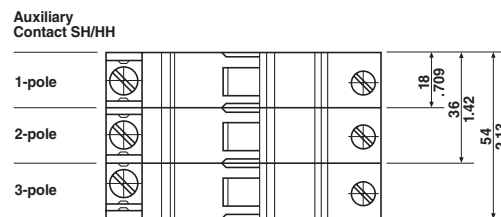
Switching Capacities

Current Ratings	Maximum Rupture Capacity
0.5 A to 50 A	10 000 A AC 277/480 V
63 A	10 000 A with series fuse 250 A class RK 1
0.5 A to 32 A	2 000 A AC 347/600 V

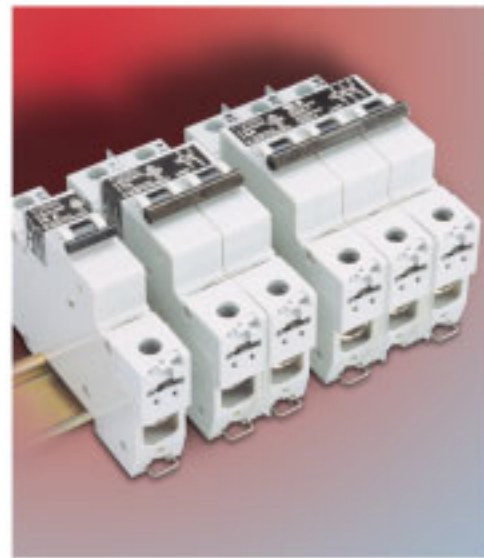
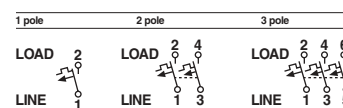
Dimensions



LINE



Internal Wiring Diagram



Technical Data

Maximum Voltage Rating	AC 277/480 V; AC 347/600 V (CSA)	
Current Rating Range	0.05 A to 63 A	
Auxiliary Circuit	AC 660 V (CSA tested at 2,000 A) (DC models upon request)	
Temperature Range		
Operating Temperature	-25° to +55°C (-13° to +131°F)	
Storage Temperature	-55° to +55°C (-67° to +131°F)	
Creepage Resistance	PTI 250 to IEC 112	
Insulation Values (IEC 664 and 664A)	Rated Impulse Withstand Voltage	Pollution Degree
Operating Area	4.0 kV	3
Dielectric Strength (IEC 664 and 664A)	Test Voltage	
Interrupting Capacity	10,000 Amps	
Operating Area	AC 4,400 V	
Auxiliary Contact Ratings	AC 220/240 V	5 A
	AC 277 V	3 A
	DC 24 V	4 A
	DC 60 V	1 A
	DC 220 V	0.4 A
Insulation Resistance	>100 MΩ (DC 500 V)	
Life at Rated	6,000 operations (UL tested)	
Current Mechanical	10,000 operations	
Cable Size	max 35 mm ² / AWG 2 (LINE) max 25 mm ² / AWG 3 (LOAD) max 2.5 mm ² / AWG 12 (auxiliary circuits)	
	Minimum 1 mm ² or AWG 16 for all circuits. Use a ferrule with wire sizes smaller than 16 AWG.	
Recommended Torque	0.5 Nm max	
Vibration	3 g (10 to 55 Hz) to IEC 68-2-6	
Shock	20 g (10 ms)	
Weight	1 pole	2 pole
	130 g	280 g
		3 pole
		430 g

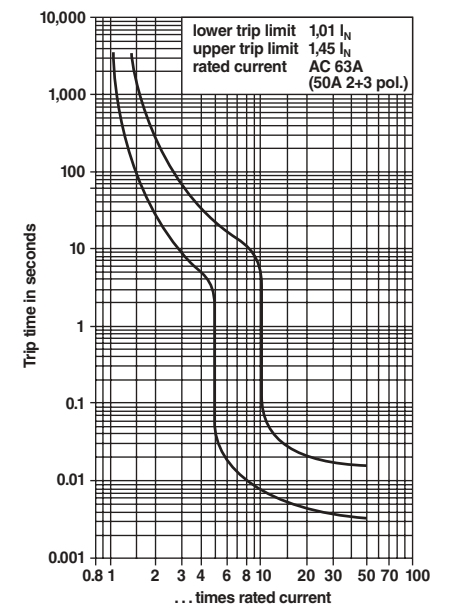
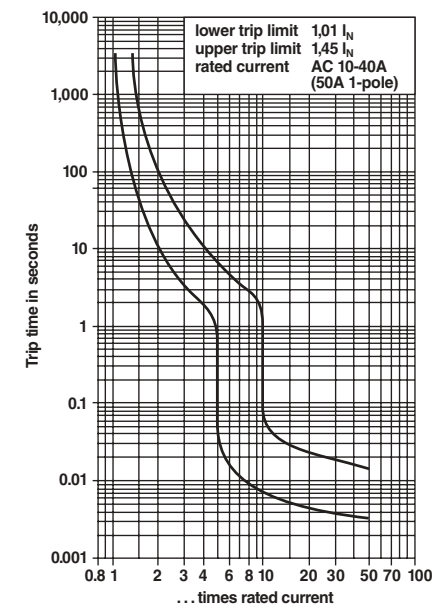
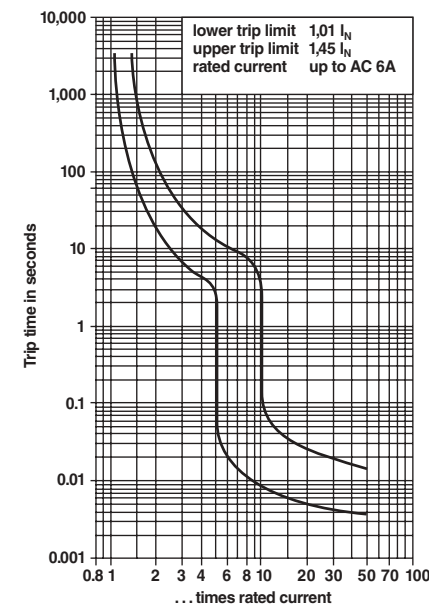
Standard current ratings and typical internal resistance values

Thermal-Magnetic Circuit Breakers

Internal Resistance per Pole (ohms)	Current Ratings (amps)	Single Pole		Double Pole		Triple Pole	
		Description	Part #	Description	Part #	Description	Part #
6.2	0.5	TMC 91-H-1-0.5 A	5650305	TMC 91-H-2-0.5 A	5650448*	TMC 91-H-3-0.5 A	5650458*
1.7	1	TMC 91-H-1-1 A	5650304	TMC 91-H-2-1 A	5650449	TMC 91-H-3-1 A	5650459*
0.45	2	TMC 91-H-1-2 A	5650302	TMC 91-H-2-2 A	5650450*	TMC 91-H-3-2 A	5650460*
0.22	3	TMC 91-H-1-3 A	5650306	TMC 91-H-2-3 A	5531529	TMC 91-H-3-3 A	5650461*
0.13	4	TMC 91-H-1-4 A	5650221*	TMC 91-H-2-4 A	5650451*	TMC 91-H-3-4 A	5650315*
0.05	6	TMC 91-H-1-6 A	5650223	TMC 91-H-2-6 A	5650452	TMC 91-H-3-6 A	5650466
≤0.02	10	TMC 91-H-1-10 A	5650220	TMC 91-H-2-10 A	5531587*	TMC 91-H-3-10 A	5650268*
≤0.02	13	TMC 91-H-1-13 A	5650303	TMC 91-H-2-13 A	5650453*	TMC 91-H-3-13 A	5650462
≤0.02	16	TMC 91-H-1-16 A	5650307	TMC 91-H-2-16 A	5531590	TMC 91-H-3-16 A	5650465
≤0.02	20	TMC 91-H-1-20 A	5650219	TMC 91-H-2-20 A	5650285	TMC 91-H-3-20 A	5600407
≤0.02	25	TMC 91-H-1-25 A	5650300*	TMC 91-H-2-25 A	5650454*	TMC 91-H-3-25 A	5650464
≤0.02	32	TMC 91-H-1-32 A	5650309	TMC 91-H-2-32 A	5650377	TMC 91-H-3-32 A	5650269
≤0.02	40	TMC 91-H-1-40 A	5650310*	TMC 91-H-2-40 A	5650455*	TMC 91-H-3-40 A	5531600*
<0.02	50	TMC 91-H-1-50 A	5650311	TMC 91-H-2-50 A	5650456*	TMC 91-H-3-50 A	5650463*
<0.02	63	TMC 91-H-1-63 A	5650312	TMC 91-H-2-63 A	5650457	TMC 91-H-3-63 A	5531561
		Auxiliary Con.	TMC 91-H-X21	5650550*	TMC 91-H-X21-21	5650551*	-

* Indicates breakers that are made-to-order and may require an 8 week lead time.

Typical time/current characteristics at 30°C



Direct Current – Magnetic tripping currents are increased by 30% in DC circuits with the effect of shifting the magnetic trip range 30% to the right of AC trip curves.

(multipole types: all poles symmetrically loaded)

The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factors shown in the table below.

Amps	Temperature °C														
	-20°	-15°	-10°	-5°	0°	+5°	+10°	+15°	+20°	+25°	+30°	+35°	+40°	+45°	+50°
0.5 – 4.0	0.84	0.85	0.87	0.88	0.89	0.91	0.93	0.94	0.96	0.98	1.00	1.02	1.04	1.06	1.09
8.0 – 10	0.75	0.77	0.78	0.81	0.83	0.85	0.88	0.90	0.93	0.96	1.00	1.04	1.09	1.14	1.20
13 – 40	0.79	0.80	0.82	0.84	0.86	0.88	0.90	0.93	0.94	0.97	1.00	1.03	1.06	1.11	1.15
50 – 60	0.81	0.83	0.84	0.85	0.87	0.89	0.91	0.93	0.94	0.97	1.00	1.02	1.05	1.09	1.12

Ordering Information

1 Type	TMC 91 H	Thermal-magnetic circuit breaker
2 Number of poles	1 1 pole	
	2 2 pole	
	3 3 pole	
3 Current ratings	0.5 1 2 3 4 6 10 13 16 20 25 32 40 50 63 A	

TMC 91 H – 1 – 10 = ordering information for breaker, single pole, 10 A