

Thermal-Magnetic Circuit Breaker | TMC 42-01/42-02

Single pole thermal-magnetic circuit breaker with tease-free, triple-free, snap action mechanism and two button operation (M-type TMCBE to IEC 934). Featuring a narrow profile housing, recessed terminals, standard DIN-rail mounting and precision CBE performance.

Typical Applications

Circuit protection for process control systems, equipment manufacturers and instrumentation.

Approvals

| Authority | Voltage Ratings | Current Ratings |
|---------------|-----------------|-----------------|
| VDE, Demko | AC 250V, DC 65V | 0.10 to 16 A |
| UL 1077, CSA | AC 250V, DC 80V | 0.10 to 16 A |
| ABS, BV, LRoS | AC 250V, DC 65V | 0.3 to 16 A |

Label Slot

ZB6 Marking System



Technical Data

| | | |
|--|--------------------------------------|------------------|
| Maximum Voltage Rating | AC 250V, 50/60 Hz; DC 80V | |
| Current Rating Range | 42-01 : 0.10...16 A | |
| Typical Life | 5,000 operations at 2xI _N | |
| Temperature Range | 0° to 55°C (+32° to +131°F) | |
| Creepage Resistance | PTI 600 to IEC 112 | |
| Insulation Co-ordination (IEC 664 and 664A) | Rated Impulse Withstand Voltage | Pollution Degree |
| Operating Area | 4kV | 3 |
| Dielectric Strength (IEC 664 and 664A) | Test Voltage | |
| Operating Area | AC 4,000V (double insulation) | |
| Insulation Resistance | | |
| Interrupting Capacity (VDE 0660, Part 101, P-2) | >100 MΩ (DC 500V) | |
| | 0.05 to 0.8 A | Self Limiting |
| | 1 to 2 A | 200 A |
| | 2.5 to 16 A | 400 A |

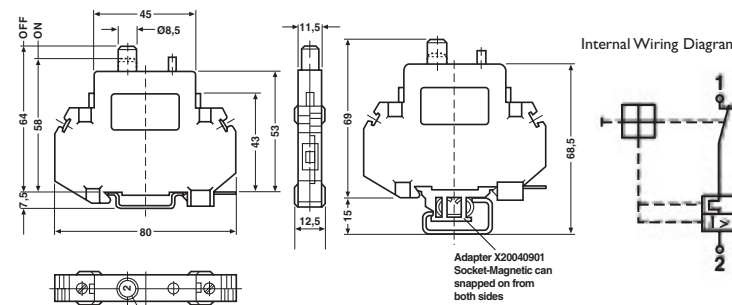
| Interrupting Capacity (UL 1077/EN60934 PC1) | I _N | U _N | Self Limiting |
|---|----------------|----------------|---------------|
| | 0.05 to 4.5 A | 250 V AC | 200 A |
| | 0.05 to 16 A | 250 V AC | 1,000 A |
| | 0.05 to 16 A | 80V DC | 1,000 A |

| Environmental Protection (IEC 529/DIN 40050) | |
|--|---|
| Operating Area | IP 40, Terminal Area IP 20 |
| Vibration | 5g (57-50 Hz), +0.38 mm (10-57 Hz) to IEC 68-2-6, Test Ea |
| | Test Fc 10 frequency cycles/axis |

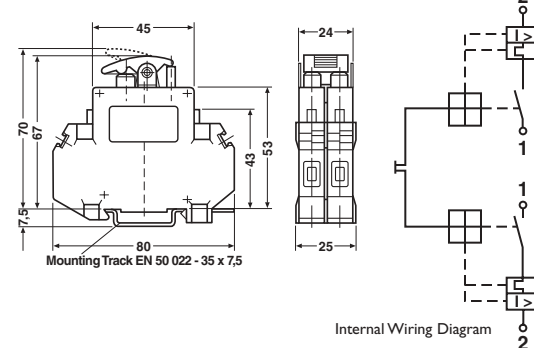
| | |
|---------------------------|--|
| Shock | 25g (11ms) to IEC 68-2-27, Test Ea |
| Corrosion | 96 hours at 5% saltspray to IEC 68-2-11, Test Ka |
| Humidity | 240 hours at 95% RH to IEC 68-2-3, Test Ca |
| Weight | Approx. 60g |
| Conductor Size | 0.5-6mm ² (AWG 20-AWG 10) |
| Recommended Torque | 0.8 Nm max |
| C-Rail Adapter | 5650505 |

Dimensions

Single Pole



Double Pole

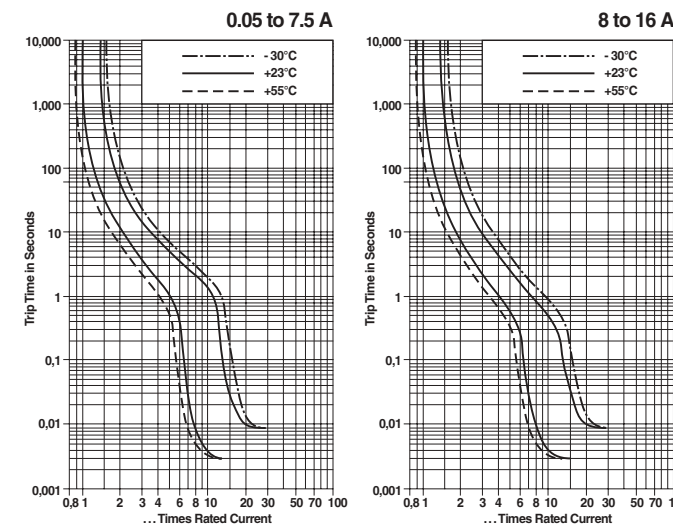


Standard current ratings and typical internal resistance values

| Thermal-Magnetic Circuit Breakers | | | | | |
|-----------------------------------|----------------|-----------------------|----------------|-----------------------|----------------|
| Ohms | Current Rating | TMC 42-01 Single Pole | | TMC 42-02 Double Pole | |
| | | Type | Part# | Type | Part # |
| 131.00 | 0.10 | TMC42-01-0.1 A | 5530915* | TMC42-02-0.1 A | 5650123* |
| 40.00 | 0.20 | TMC42-01-0.2 A | 5650102 | TMC42-02-0.2 A | 5650124* |
| 19.30 | 0.30 | TMC42-01-0.3 A | 5650103* | TMC42-02-0.3 A | 5650127* |
| 10.40 | 0.40 | TMC42-01-0.4 A | 5530944* | TMC42-02-0.4 A | 5531244* |
| 7.10 | 0.50 | TMC42-01-0.5 A | 5650106 | TMC42-02-0.5 A | 5531257* |
| 4.30 | 0.60 | TMC42-01-0.6 A | 5530960* | TMC42-02-0.6 A | 5531260* |
| 2.50 | 0.80 | TMC42-01-0.8 A | 5530986* | TMC42-02-0.8 A | 5531286* |
| 1.67 | 1.00 | TMC42-01-1.0 A | 5650108 | TMC42-02-1.0 A | 5531299 |
| 1.22 | 1.22 | TMC42-01-1.2 A | 5531008* | TMC42-02-1.2 A | 5531309* |
| 0.61 | 1.50 | TMC42-01-1.5 A | 5650109 | TMC42-02-1.5 A | 5650129* |
| 0.55 | 1.80 | TMC42-01-1.8 A | 5650110* | TMC42-02-1.8 A | 5531325* |
| 0.38 | 2.00 | TMC42-01-2.0 A | 5600314 | TMC42-02-2.0 A | 5531388 |
| 0.24 | 2.50 | TMC42-01-2.5 A | 5650113* | TMC42-02-2.5 A | 5650130* |
| 0.19 | 3.00 | TMC42-01-3.0 A | 5650114 | TMC42-02-3.0 A | 5650131 |
| 0.16 | 3.50 | TMC42-01-3.5 A | 5531053* | TMC42-02-3.5 A | 5531367* |
| 0.09 | 4.00 | TMC42-01-4.0 A | 5531066 | TMC42-02-4.0 A | 5650134* |
| 0.09 | 4.50 | TMC42-01-4.5 A | 5650115* | TMC42-02-4.5 A | 5650135* |
| 0.06 | 5.00 | TMC42-01-5.0 A | 5531082 | TMC42-02-5.0 A | 5651396 |
| 0.07 | 5.50 | TMC42-01-5.5 A | 5531095* | TMC42-02-5.5 A | 5531406* |
| 0.04 | 6.00 | TMC42-01-6.0 A | 5531105 | TMC42-02-6.0 A | 5650136* |
| 0.04 | 6.50 | TMC42-01-6.5 A | 5650116* | TMC42-02-6.5 A | 5650137* |
| 0.03 | 7.00 | TMC42-01-7.0 A | 5650117* | TMC42-02-7.0 A | 5531435* |
| 0.02 | 8.00 | TMC42-01-8.0 A | 5650120 | TMC42-02-8.0 A | 5650138* |
| 0.02 | 9.00 | TMC42-01-9.0 A | 5531147* | TMC42-02-9.0 A | 5531451* |
| <0.02 | 10.00 | TMC42-01-10 A | 5650121 | TMC42-02-10 A | 5531464 |
| <0.02 | 11.00 | TMC42-01-11 A | 5531163* | TMC42-02-11 A | 5531477* |
| <0.02 | 12.00 | TMC42-01-12 A | 5650122* | TMC42-02-12 A | 5650141* |
| <0.02 | 13.00 | TMC42-01-13 A | 5531189* | TMC42-02-13 A | 5531493* |
| <0.02 | 14.00 | TMC42-01-14 A | 5531192* | TMC42-02-14 A | 5531503* |
| <0.02 | 15.00 | TMC42-01-15 A | 5600310 | TMC42-02-15 A | 5600309 |
| <0.02 | 16.00 | TMC42-01-16 A | 5531202 | TMC42-02-16 A | 5650142* |

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

Typical time/current characteristics at 23°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.

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 factor shown below.

| Ambient temperature | °F | -22 | -4 | 14 | 32 | 73.4 | 104 | 122 | 140 |
|------------------------|----|-------------|-------------|-------------|-------------|----------|-------------|-------------|-------------|
| | °C | -30 | -20 | -10 | 0 | 23 | 40 | 50 | 60 |
| Derating factor | | 0.76 | 0.79 | 0.83 | 0.88 | 1 | 1.08 | 1.16 | 1.24 |