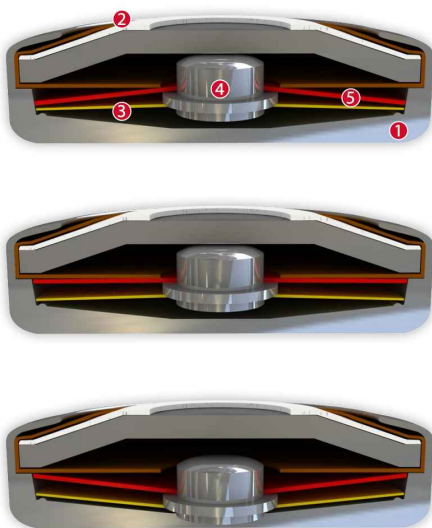


DATASHEET

Thermal Protector CM1

Type series F1



Construction and function

The switch mechanism of Type F1 is comprised of five primary parts: 1) a conductive housing, 2) a steel contact cover with stationary contact, 3) a snap-action spring disc, 4) a movable contact, and 5) a bimetallic disc. The conductive housing and steel contact cover form the enclosure, to lock the self-aligning switch mechanism in place. The cover is insulated from the housing, and closes it to appear like a button cell. The snap-action spring disc is the current transfer element and bears the movable contact. It conducts the current flow and self-heating from the bimetallic disc by exercising consistent, steady contact pressure. The bimetallic disc floats within the thermal protector and the movable contact extends through the center of the bimetallic disc without being welded or riveted. When the rated switching temperature is reached, the bimetallic disc snaps into its inverted position and pushes the spring disc downwards. The contact is abruptly opened and the temperature rise of the device being protected is disrupted. If the ambient temperature then falls, the bimetallic disc snaps back into its original position, and the contact is once again closed. The thermal protector may be covered with insulation, mounted into another housing, or left uninsulated. See specifications and ranges described below.

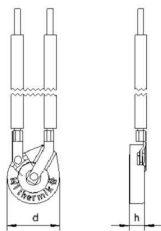


Features:

| | |
|---------------------------------|---|
| Specially flat design | to fit closely built-up circuits |
| Quick response sensitivity | Featured by small protector mass and the metal-housing |
| Excellent long term performance | due to instantaneous switching, fine silver contacts, constant contact resistance and to electrically as well as mechanically unstressed bimetallic disc, reproducible switching temperature values |
| Instantaneous switching | with always constant contact pressure up to the nominal switching point, resulting in low contact stress |
| Very short bounce times | < 1 ms |
| Temperature resistance | by use of high temperature resistant materials and components |

CM1

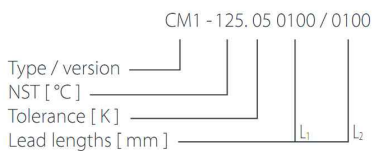
Type: Normally closed; resets automatically; with connector cables; without insulation



| | |
|-----------------------|-------------|
| Installation height h | from 3,3 mm |
| Diameter d | 10,2 mm |
| Housing length | 11,5 mm |

| | | |
|--|-----|--|
| Nominal switching temperature (NST) in 5 °C increments | | 70 °C - 180 °C |
| Tolerance (standard) | | ±2,5 K / ±5 K |
| Reverse Switch Temperature (defined RST is possible at the customer's request) | UL | ≥ 35 °C (≤ 80 °C NST) |
| | VDE | -35 K ± 15 K (≥ 85 °C ≤ 180 °C NST) |
| | | ≥ 35 °C |
| Installation height | | from 3,3 mm |
| Diameter | | 10,2 mm |
| Housing length | | 11,5 mm |
| Resistance to impregnation * | | suitable |
| Suitable for installation in protection class | | I |
| Pressure resistance to the switch housing * | | 150 N |
| Standard connection | | Lead wire 0,25 mm ² / AWG22 |
| Available approvals (please state) | | IEC; ENEC; VDE; UL; CQC |
| Operational voltage range AC | | up until 500 V AC |
| Rated voltage AC | | 250 V (VDE) 277 V (UL) |
| Rated current AC cos φ = 1.0/cycles | | 2,5 A / 10.000 |
| Rated current AC cos φ = 0.6/cycles | | 1,6 A / 10.000 |
| Max. switching current AC cos φ = 1.0/cycles | | 6,0 A / 3.000 |
| Total bounce time | | < 1 ms |
| Contact resistance (according to MIL-STD. R5757) | | ≤ 50 mΩ |
| Vibration resistance at 10 ... 60 Hz | | 100 m/s ² |

Ordering example:



Marking example:



More varieties of the type series F1:

- SF1 – with or without epoxy; insulation: Mylar®-Nomex®
- UM1 – with crimped/soldered connections (incl. customer specific connections)
- PM1 – with plug connections (incl. customer specific connections)
- SM1 – with connector cables; insulation: Mylar®-Nomex®
- CF1 – with or without epoxy; without insulation

- www.thermik.de/data/SF1
- www.thermik.de/data/UM1
- www.thermik.de/data/PM1
- www.thermik.de/data/SM1
- www.thermik.de/data/CF1

*In accordance with the Thermik test - Specifications relating to part applications (on the part of the buyer) which deviate from our standards, are not checked for their capacity to support an application. The user must ensure that the application conditions do not exceed the specified limits. The user is responsible for the correct application of the product. - We reserve the right to make technical changes in the course of further development. - Details concerning certain data, measurement methods, applications, approvals, etc. can be supplied upon request.