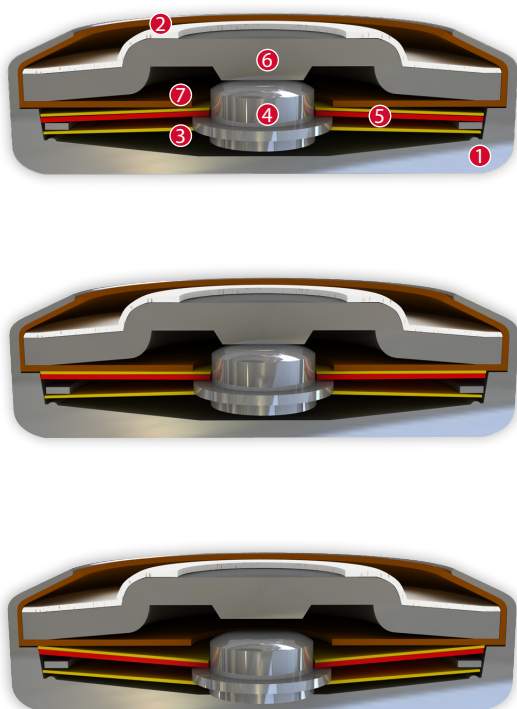


DATASHEET

Thermal Protector SK1

Type series K1



Construction and function

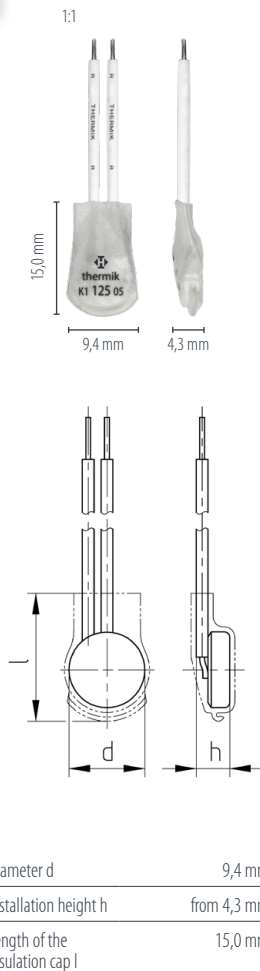
The switchgear of type series K1 is fixed in a positive lock and is self-aligning between the floor of a conductive housing (1) and a contact cap which is made of steel (2) and insulated from it, plus an integrated stationary silver contact (6) which closes the housing like a button cell. At the same time, the spring snap-in disc (3) which forms the current transfer element bears the movable contact (4) and discharges the flow of current and self-heating from the bimetallic disc (5) by exercising consistent, steady contact pressure. The bimetallic disc (5) is held on the one movable contact (4) which sticks out through this without having to be welded or fixed. As such, it can continually work (exposed) and only reacts to the ambient temperature in the device to be protected. In addition, between the bimetallic disc (5) and the spring snap-in disc (3) there is an insert made of insulating material (7) in order, for the function itself, to stop insignificant vibration noises as a result of the oscillating bimetallic disc (5) on the spring snap-in disc (3) in applications with uncontrolled, magnetic effects. When the rated switching temperature is reached, the bimetallic disc (5) snaps into its inverted position and pushes the spring snap-in disc (3) downwards. The contact is abruptly opened and the temperature rise of the device to be protected is disrupted. If the ambient temperature now falls, the bimetallic disc (5) snaps back into its start position when reaching the defined reset temperature and the contact is closed again.



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 |

SK1



Type: Normally closed; resets automatically; with connector cables; with or without epoxy; insulation: Mylar®-Nomex®

| | | |
|--|--|------------------------|
| Nominal switching temperature (NST) in 5 °C increments | 60 °C - 200 °C | |
| Tolerance (standard) | ±5 K | |
| Reverse switch temperature (RST) below NST (defined RST is possible at the customer's request) | UL VDE | -35 K ±15 K ≥ 35 °C |
| Installation height | from 4,3 mm | |
| Diameter | 9,4 mm | |
| Length of the insulation cap | 15,0 mm | |
| Resistance to impregnation * | suitable | |
| Suitable for installation in protection class | I + II | |
| Pressure resistance to the switch housing * | 450 N | |
| Standard connection | Lead wire 0,25 mm ² / AWG22 | |
| Available approvals (please state) | IEC; ENEC; VDE; UL; CSA; CQC | |
| Operational voltage range AC/DC | up until 500 V AC / 14 V DC | |
| 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 | 6,3 A / 3.000 7,5 A / 300 | |
| Rated current AC cos φ = 0.4/cycles | 1,8 A / 10.000 | |
| Max. switching current AC cos φ = 0.4/cycles | 7,2 A / 1.000 | |
| Rated voltage DC | 12 V | |
| Max. switching current DC/cycles | 40,0 A / 10.000 | |
| High voltage resistance | 2,0 kV | |
| 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:

SK1 - 125.05 0100/ 0100

Type / version _____

NST [°C] _____

Tolerance [K] _____

Lead lengths [mm] _____ L₁ L₂

Marking example:

 thermik

Trade mark _____

Type / version _____ K1

NST [°C] . Tolerance [K] — 125.05

More varieties of the type series K1:

- CK1 Pin – with pins; with epoxy; without insulation
- CK1 – with connector cables; with or without epoxy; without insulation
- LK1 – fully insulated in a screw on housing; with epoxy; with connector cables
- NK1 – with a connection wire; partially insulated in a plastic cap

- www.thermik.de/data/CK1-Pin
- www.thermik.de/data/CK1
- www.thermik.de/data/LK1
- www.thermik.de/data/NK1

*In accordance with the Thermik test. Specifications relating to our applications (on the part of the buyer) which deviate from our standards are not checked for their capacity to support an application and for conformity with standards. The responsibility for testing the suitability of Thermik products for such applications falls upon the user. Slight deviations are possible in terms of dimensional values, depending on the embodiment 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.