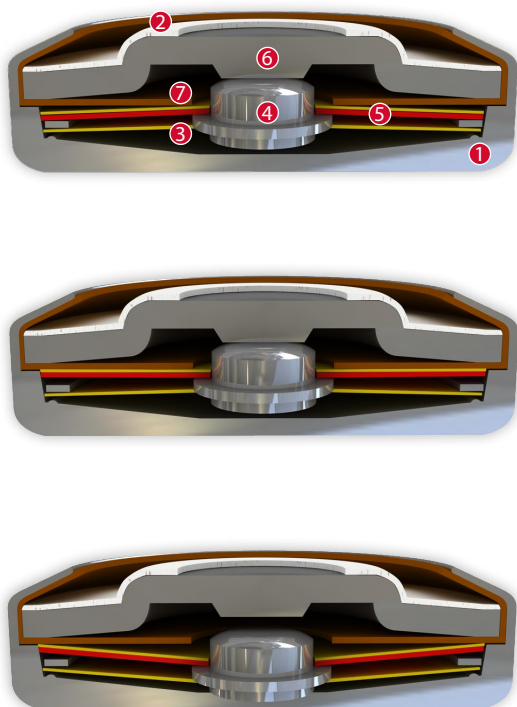


DATASHEET

Thermal Protector SK1

Type series K1



Construction and function

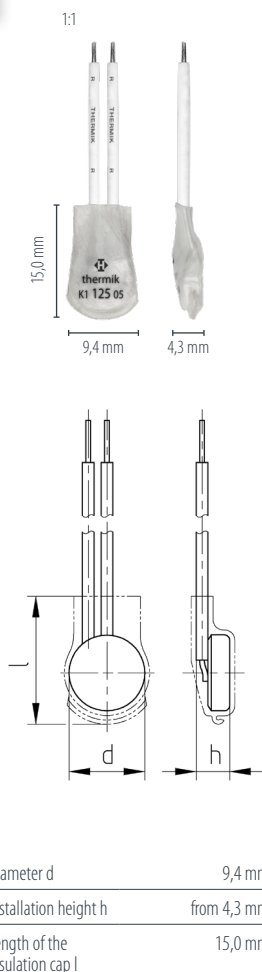
The switchgear of type series K1 is fixed in a positive lock and is self-aligning between the floor of a conductive housing (1) and a contact cap which is made of steel (2) and insulated from it, plus an integrated stationary silver contact (6) which closes the housing like a button cell. At the same 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 (defined RST is possible at the customer's request)	UL $\geq 35^{\circ}\text{C}$ ($\leq 80^{\circ}\text{C}$ NST) -35 K ± 15 K ($\geq 85^{\circ}\text{C} \leq 180^{\circ}\text{C}$ NST) -65 K ± 15 K ($\geq 185^{\circ}\text{C} \leq 200^{\circ}\text{C}$ NST) VDE $\geq 35^{\circ}\text{C}$
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 part 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 stability of Thermik products for such applications falls upon the user. • Slight deviations are possible in terms of dimensions/ 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.