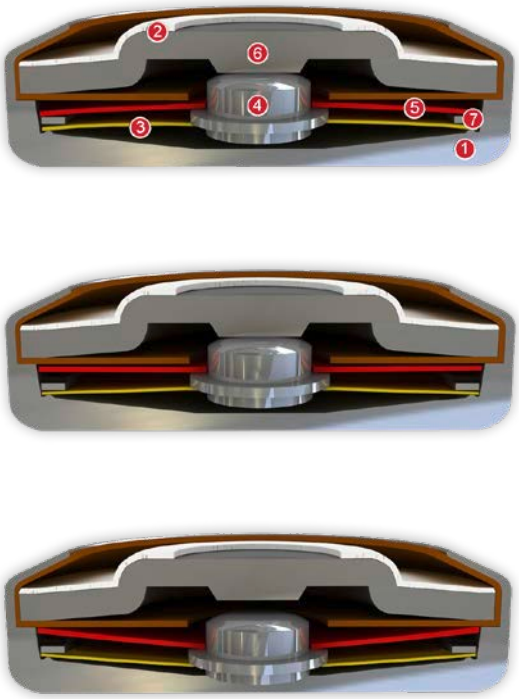
DATASHEET

Thermal Protector LK1

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 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:

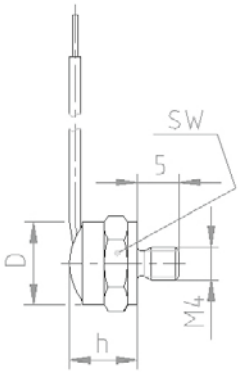
Specially flat design	to fit closely built-up circuits
Quick response sensitivity	Featured by small protector mass and the metal-housing
Excellent long term performance	due to instantaneous switching, fine silver contacts, constant contact resistance and to electrically as well as mechanically unstressed 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

Technical Data Type LK1

The listed products are an extract from our standard range. Other versions and customised manufacturing are available upon request.

LK1

Type: Normally closed; resets automatically; fully insulated in a screw on housing; with epoxy; with connector cables



Diameter d	10,0 mm
Housing height h	from 7,0 mm
Thread/Length	M4 x 5,0 mm
Width across flats/Max. torque	10,0 mm / 2 Nm

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	≥ 35° C (≤ 80° C NST) -35 K ± 15 K (≥ 85°C ≤ 180° C NST) -65 K ± 15 K (≥ 185° C ≤ 200° C NST)
	VDE	≥ 35 °C
Housing height		from 7,0 mm
Installation height		13,0 mm
Diameter		10,0 mm
Thread/Length		M4 x 5,0 mm
Width across flats/Max. torque		10,0 mm / 2 Nm
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 mm² / AWG22
Available approvals (please state)		IEC; ENEC; VDE; UL; CQC
Operational voltage range AC		up until 500 V AC (DC on demand)
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
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/s²

Ordering example:

LK1 - 125. 05 0100/ 0100

- Type / version
- NST [°C]
- Tolerance [K]
- Lead lengths [mm] — L_1 L_2

Marking example:

- Trade mark — **thermik**
- Type / version — **LK1**
- NST [°C] . Tolerance [K] — **125.05**

More varieties of the type series K1:

- *CK1– with or without epoxy; without insulation* — *www.thermik.de/en/data/CK1*
- *NK1– with a connection wire; partially insulated in a plastic cap* — *www.thermik.de/en/data/NK1*
- *SK1– with connector cables; with or without epoxy; insulation: Mylar®-Nomex®* — *www.thermik.de/en/data/SK1*
- *CK1 Pin – with pins; with epoxy; without insulation* — *www.thermik.de/en/data/CK1-Pin*

*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/or 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 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.

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