

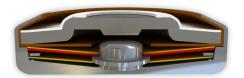
# DATASHEET Thermal Protector LK1

## 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.



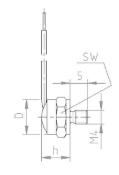
#### Features:

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 pres- sure 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



# LK1





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 increme	ents	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	-03 K± 13 K(≥ 183 C ≤ 200 C 1831)
Housing height		from 7,0 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		[+]
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/DC		up until 500 V AC / 14 V DC
Rated voltage AC		250 V (VDE) 277 V (UL)
Rated current AC $\cos \varphi = 1.0$ /cycles		2,5 A / 10.000
Rated current AC $\cos \varphi = 0.6/\text{cycles}$		1,6 A / 10.000
Max. switching current AC $\cos \varphi = 1.0$ /cycles		6,3 A / 3.000 7,5 A / 300
Rated current AC $\cos \varphi = 0.4/\text{cycles}$		1,8 A / 10.000
Max. switching current AC $\cos \varphi = 0.4$ /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 <sup>2</sup>

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

### Ordering example: LK1 - 125. 05 0100/ 0100 Type / version NST[°C] -Tolerance [K] -

## Lead lengths [ mm ] More varieties of the type series K1:

• CK1- with or without epoxy; without insulation

• NK1- with a connection wire; partially insulated in a plastic cap

• SK1 – with connector cables; with or without epoxy; insulation: Mylar®-Nomex®

• CK1 Pin – with pins; with epoxy; without insulation

Marking example:



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

www.thermik.de/data/CK1 www.thermik.de/data/NK1 www.thermik.de/data/SK1 www.thermik.de/data/CK1-Pin





"in accodance with the Thermite Ist - Specifications behing to past applications (on the part of the bayer) which deviate from or standards are not decked for their capacity to support an application and not continuing with standards. The responsibility to straight the subdistry of their specification is responsibility to make the facility of the specification of the public view between the continuing with standards of the responsibility of the second and against an ending a fund of second continuing critical data, in resonances therefore, which are development therefore.