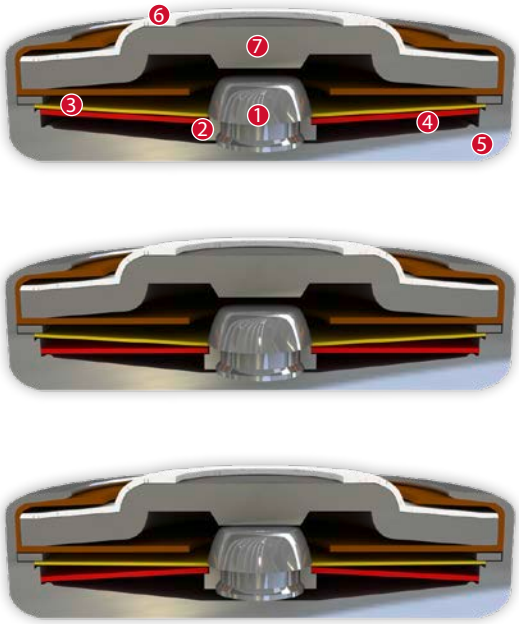
DATASHEET

Thermal Protector S09

Type series 09



Construction and function

Switchgear consisting of a movable silver contact (1), a contact bearer (2), a spring snap-in disc (3) and a bimetallic disc (4) which is riveted into one another, undetachable and fixed in a positive lock and self-aligning between a conductive, heat-transferring housing (5) and a contact cap made of steel (6) that is insulated from it, plus a stationary countercontact (7). At the same time, the switchgear is held open by the spring snap-in disc (3) used as a transfer element for electric current which is held between a supporting collar and a circumferential ring. As such, the bimetallic disc (4) underlying it, that is also stuck out from the movable contact (1), can continuously work (exposed) by mechanical loads. As soon as the bimetallic disc (4) reaches its rated switching temperature, it effectively springs against the throw force of the spring snap-in disc (3) into its inverted position. The contact is abruptly closed. The spring snap-in disc (3) is now a transfer element for electric current and as such, it enables the bimetallic disc (5) to continue to work on a continuous basis. When the spring back temperature is reached, the bimetallic disc snaps back into its start position and the contact is opened again.

Features:

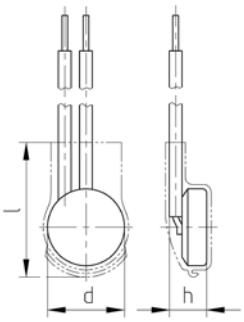
Small dimensions	suitable for mounting into and onto windings
Quick response sensitivity	featured by small protector mass and the metal-housing
Excellent long term performance	due to instantaneous switching, fine-silver contacts, constant contact resistance and to electrically as well as mechanically unstressed bimetallic disc, reproducible switching temperature values
Very short bouncing times	< 1 ms
Instantaneous switching	always with the same contact pressure up to reset point; resulting in low contact stress
Temperature resistance	by use of high temperature resistant materials and components

Technical Data Type S09

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

S09

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



Diameter d	11,7 mm
Installation height h	from 5,5 mm
Length of the insulation cap l	19,0 mm

Nominal switching temperature (NST) in 5 °C increments		50 °C - 180 °C
Tolerance (standard)		±5 K
Reverse Switch Temperature (defined RST is possible at the customer's request)	UL	≥ 30° C (≤ 75° C NST) -30 K ± 15 K (≥ 80° C ≤ 180° C NST)
	VDE	≥ 35 °C
Installation height		from 5,5 mm
Diameter		11,7 mm
Length of the insulation cap		19,0 mm
Resistance to impregnation *		suitable
Suitable for installation in protection class		I + II
Pressure resistance to the switch housing *		300 N
Standard connection		Lead wire 0,5 mm² / AWG20
Available approvals (please state)		IEC; ENEC; VDE; UL; CSA; CQC, CMJ
Operating 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		6,3 A / 10.000
Rated current AC cos φ = 0.6/cycles		4,0 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/s²

Ordering example:

S09 - 125. 05 0100 / 0100

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

Marking example:

Trade mark — **thermik**
Type / version — **S09**
NST [°C] . Tolerance [K] — **125.05**

*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.

More varieties of the type seriese 09:

- *L09 – with connector cables; with epoxy; fully insulated in a screw on housing* — *www.thermik.de/data/L09*
- *C09 – with connector cables; with or without epoxy; without insulation* — *www.thermik.de/data/C09*
- *F09 – with connector cables; with epoxy; fully insulated in a Nomex® cap* — *www.thermik.de/data/F09*

thermik®
brings temperatures under control

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