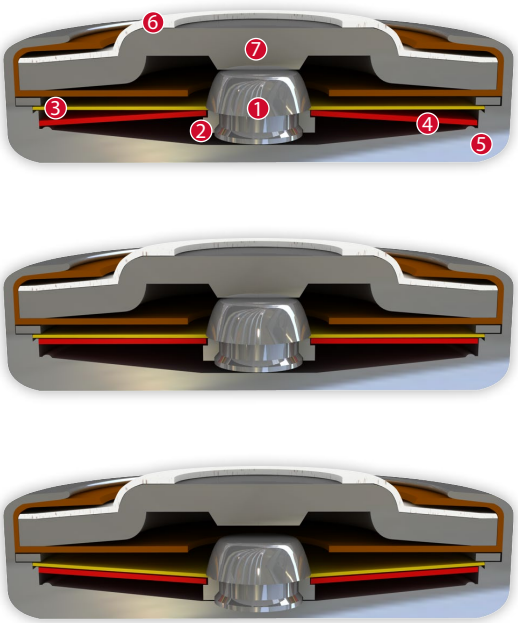
DATASHEET

Thermal Protector S05

Type series 05



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 carried by the spring snap-in disc (3) acting 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 without the contact pressure defined by the spring snap-in disc (3) diminishing. 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 opened. The temperature will now fall, the bimetallic disc (4) will only snap back upon reaching a defined reset temperature and the contact is closed 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	with always constant contact pressure up to the nominal switching point, resulting in low contact stress
Temperature resistance	by use of high temperature resistant materials and components

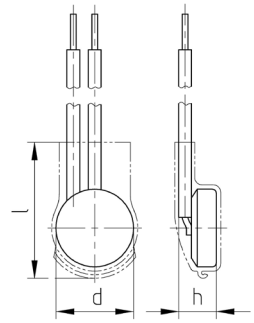
Technical Data Type S05

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

S05

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

1:1



Diameter d	11,4 mm
Installation height h	from 5,4 mm
Length of the insulation cap l	19,0 mm

Nominal switching temperature (NST) in 5 °C increments		50 °C - 200 °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 5,4 mm
Diameter		11,4 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 (appr.≤ 180°C); CSA; CQC; CMJ
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		6,3 A / 10.000
Rated current AC cos φ = 0.6/cycles		4,0 A / 10.000
Max. switching current AC cos φ = 1.0/cycles		10,0 A / 3.000 20,0 A / 300
Rated current AC cos φ = 0.4/cycles		4,6 A / 10.000
Max. switching current AC cos φ = 0.4/cycles		18,4 A / 1.000
Rated voltage DC		12 V (VDE, UL)
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/s²

Ordering example:

S05 - 125. 05 0100/ 0100

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

Marking example:

Trade mark — **thermik**
Type / version — **05**
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 series 05:

- *C05 – with connector cables; with or without epoxy; without insulation* — *www.thermik.de/data/C05*
- *L05 – with connector cables; with epoxy; fully insulated in a screw on housing* — *www.thermik.de/data/L05*
- *F05 – with connector cables; with epoxy; fully insulated in a Nomex® cap* — *www.thermik.de/data/F05*

thermik®
brings temperatures under control

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