

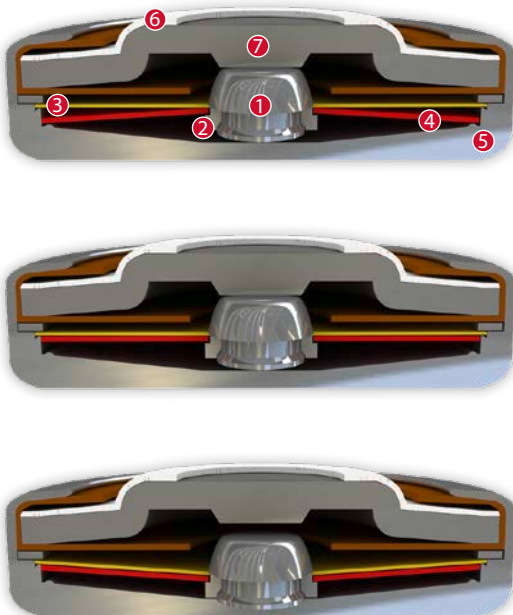
DATASHEET

Thermal Protector S05

Type series 05



Construction and function



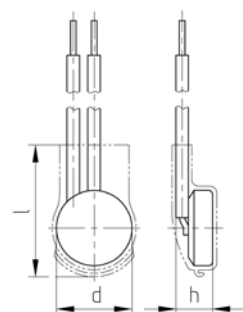
Switchgear consisting of a movable silver contact (1), a contact bearer (2), a spring snap-in disc (3) and a bimetallic disc (4) which is riveted into one another, undetachable and fixed in a positive lock and self-aligning between a conductive, heat-transferring housing (5) and a contact cap made of 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

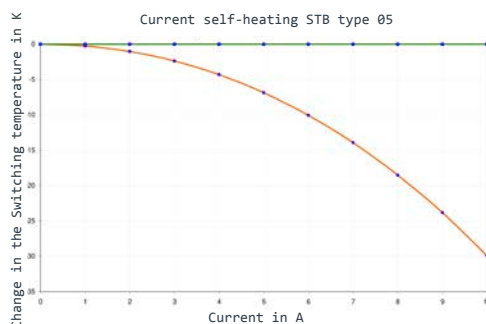
S05



Diameter d	11,7 mm
Installation height h	from 5,5 mm
Length of the insulation cap l	18,0 mm

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

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 $\geq 35^{\circ}\text{C}$ ($\leq 75^{\circ}\text{C}$ NST) VDE $-30\text{ K} \pm 15\text{ K}$ ($\geq 80^{\circ}\text{C} \leq 200^{\circ}\text{C}$ NST) $\geq 35^{\circ}\text{C}$
Installation height	from 5,5 mm
Diameter	11,7 mm
Length of the insulation cap	18,0 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 mm ² / AWG20
Available approvals (please state)	IEC; ENEC; VDE; UL (appr. $\leq 180^{\circ}\text{C}$); 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 $\cos \varphi = 1.0/\text{cycles}$	6,3 A / 10.000
Rated current AC $\cos \varphi = 0.6/\text{cycles}$	4,0 A / 10.000
Max. switching current AC $\cos \varphi = 1.0/\text{cycles}$	10,0 A / 3.000 20,0 A / 300
Rated current AC $\cos \varphi = 0.4/\text{cycles}$	4,6 A / 10.000
Max. switching current AC $\cos \varphi = 0.4/\text{cycles}$	18,4 A / 1.000
Rated voltage DC	12 V
Max. switching current DC/cycles	40,0 A / 10.000
Max. switching current DC/cycles	60,0 A / 3.000
High voltage resistance	2,0 kV
Total bounce time	< 1 ms
Contact resistance (according to MIL-STD. R5757)	$\leq 50\text{ m}\Omega$
Vibration resistance at 10 ... 60 Hz	100 m/s ²



Ordering example:

S05 - 125.05 0100/ 0100
 Type / version _____
 NST [°C] _____
 Tolerance [K] _____
 Lead lengths [mm] _____ L₁ L₂

Marking example:

Trade mark  thermik
 Type / version _____ 05
 NST [°C] . Tolerance [K] — 125.05

More varieties of the type series 05:
www.thermik.de/en/products/baureihen-en/05/

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PCA1.2003.10EG 10	S01.160.05.0050.0050	ZCKY11C
PCA1.2005.1S	CP1.140.05.0100.0100	ZCKY31
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PCS1.1503.1	S02.150.05.0050.0050	ZCY22
PCS1.1302.1M	S06.150.05.0100.0100	ZCE10
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PCS1.1302.10M	C01.240.05.0239.0114	ZCKE09
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