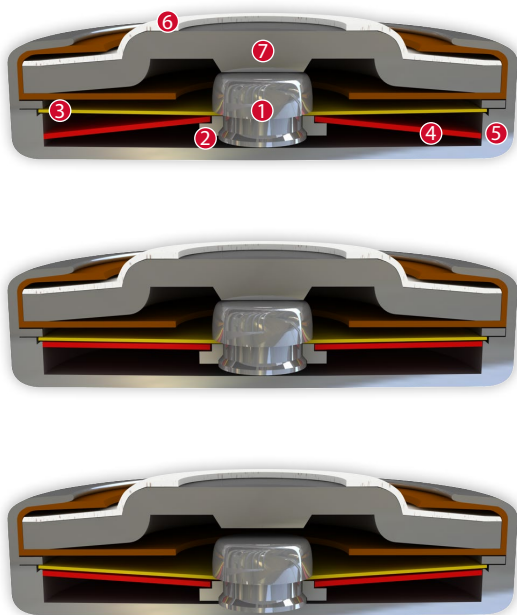


# DATASHEET

## Thermal Protector SQ5

### Type series Q5



#### Construction and function

Switchgear consisting of a mobile and circular contact bridge (1), a contact bearing pin (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 non-conductive floor of a housing (5) and an insulating ceramic bearing (6) with two integrated stationary contacts (7) as electrodes. At the same time, the switchgear is supported by the spring snap-in disc (3) with the contact bridge (1) 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 contact bearing pin (2), 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 contacts are abruptly opened. The temperature will now fall. The bimetallic disc (4) will only snap back upon reaching a defined reset temperature and the contacts will be closed again. As the contact bearing pin (2) is appropriately dimensioned, an easy, circular rotation of the circle-shaped contact bridge (1) is enabled with every switch so that transfer resistances remain constantly below the minimum limit after many switch cycles and the long term stability is sustained even under high levels of stress.



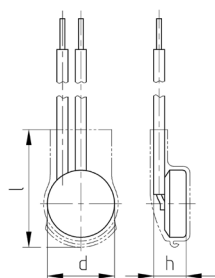
#### Features:

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 SQ5

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

### SQ5



Diameter d	11,4 mm
Installation height h	from 5,8 mm
Length of the insulation cap l	19,0 mm

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

Nominal switching temperature (NST) in 5 °C increments	70 °C - 180 °C
Tolerance (standard)	±5 K
Installation height	from 5,8 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 mm <sup>2</sup> / AWG20
Available approvals (please state)	IEC; VDE; ENEC
Operational voltage range AC/DC	up until 500 V AC / 14 V DC
Rated voltage AC	250 V
Rated current AC	6,3 A
Max. switching current AC	20 A
Rated voltage DC	12 V
Max. switching current DC	40 A
High voltage resistance	2,0 kV
Contact resistance (according to MIL-STD. R5757)	≤ 50 mΩ
Vibration resistance at 10 ... 60 Hz	100 m/s <sup>2</sup>

#### Ordering example:

SQ5 - 125.05 0100 / 0100

Type / version	_____	_____	_____	_____
NST [ °C ]	_____	_____	_____	_____
Tolerance [ K ]	_____	_____	_____	_____
Lead lengths [ mm ]	_____	_____	L <sub>1</sub>	L <sub>2</sub>

#### Marking example:

Trade mark  **thermik**  
 Type / version **Q5**  
 NST [ °C ] . Tolerance [ K ] — **125.05**

#### More varieties of the type series Q5:

- CQ5 – with connector cables; with or without epoxy; without insulation

[www.thermik.de/data/CQ5](http://www.thermik.de/data/CQ5)

\*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.