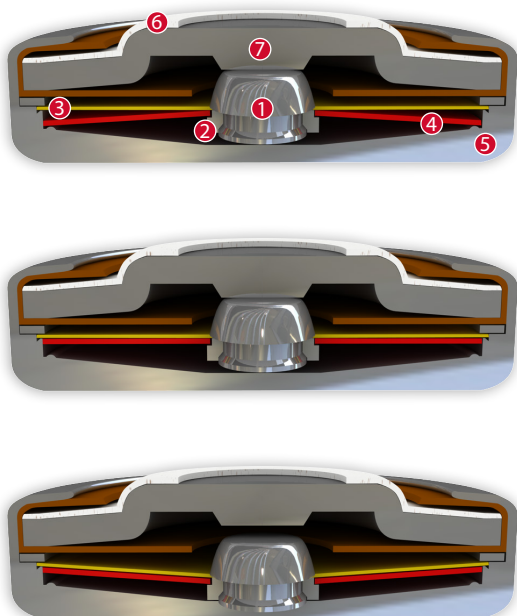


# DATASHEET

## Thermal Protector F05

### 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.

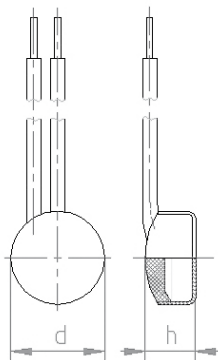
### Features:

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



F05

Type: Normally closed; resets automatically; with connector cables; with epoxy; fully insulated in a Nomex® cap



Diameter d 11,4 mm  
Installation height h from 6,5 mm

Nominal switching temperature (NST) in 5 °C increments	50 °C - 200 °C	
Tolerance (standard)	±5 K	
Reverse switch temperature (RST) below NST (defined RST is possible at the customer's request)	UL VDE	-35 K ±15 K ≥ 35 °C
Installation height	from 6,5 mm	
Diameter	11,4 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; ENEC; VDE; UL; CSA; 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 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	
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>	

Ordering example:

F05 - 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 \_\_\_\_\_ **F05**  
 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
- S05 – with or without epoxy; insulation: Mylar®-Nomex®
- L05 – with connector cables; with epoxy; fully insulated in a screw on housing

[www.thermik.de/data/C05](http://www.thermik.de/data/C05)

[www.thermik.de/data/S05](http://www.thermik.de/data/S05)

[www.thermik.de/data/L05](http://www.thermik.de/data/L05)