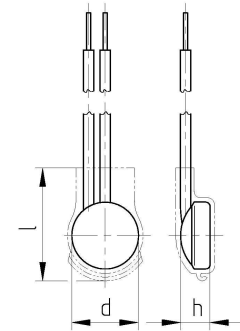


## Non-self-resetting Thermal Protector Series 01-Type P1-Version SP1, KP1, CP1

### Application:

Non-self-resetting Thermal-Protector (TP) with normally closed contacts are utilised for overheating protection of all kinds of electric equipment or devices, for example motors and transformers. They are applied, where protection against overheating is required and where an automatic reset of the device after overheating and subsequent cooling is not permitted or desired.



### Design:

The Thermal-Protector Type P1 are based on the well proven mechanism of Thermik's product Series 01. The PTC heating resistor  $R_H$ , parallel to the contact, effects an electrically operated self locking mechanism.

#### Versions :

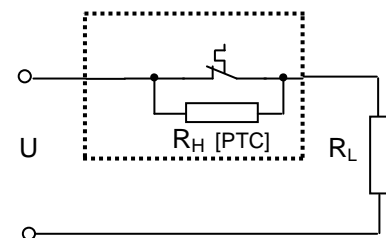
- SP1 - with insulation cap
- KP1 - with shorter insulation cap than SP1
- CP1 - without insulation cap

Diameter <b>d</b>	
SP1	9.4 mm
CP1	9.0 mm
Height <b>h</b>	
SP1	5.2 mm
CP1	4.8 mm
Length of insulation cap <b>l</b>	
SP1	17 mm
dimensions (average)	

### Operation:

If, in case of overheating, the rated switching temperature of the bimetallic disc is reached, this suddenly snaps over and opens the contact. When the contact is open, the heating resistor  $R_H$  is activated and prevents the temperature to fall below the reset temperature of the bimetallic disc. Only after switching off the operating voltage and after a relative short cooling phase the bimetallic disc resets to close the contact.

TP of Type P1



### Features:

<b>Very compact and flat design</b>	
<b>Quick response sensitivity</b>	: featured by the metal housing and small protector mass
<b>Excellent long term performance</b>	: due to fine silver contacts. Reproducible switching temperature values due to tempered, electrically and mechanically unstressed bimetallic disc and by use of temperature resistant materials
<b>Instantaneous switching</b>	: with constant contact pressure over the whole temperature range
<b>Very short bounce times</b>	: < 1 ms
<b>Self regulating PTC- heating resistor</b>	: enables rated switching temperatures up to 180 °C, due to a very small overshooting of the temperature effected by $R_H$

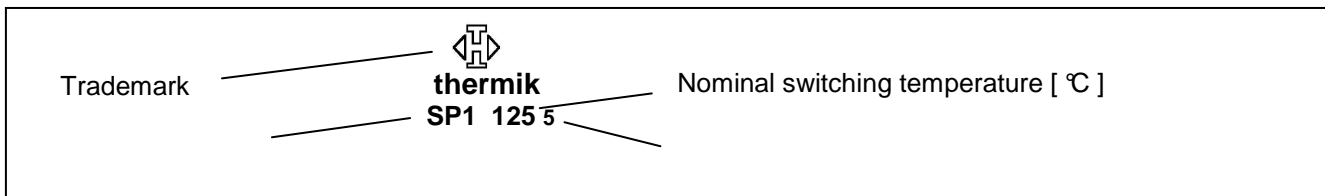
## Technical Data - Series 01 - Type P1

Contact type	NC – normally closed -
Nominal switching temperature (NST)	70 °C - 180 °C <span style="float: right;">in steps of 5 K</span>
Standard tolerance	± 5 K
Resetting temperature (RST)	> 35°C (VDE)
Operating voltage	100 up to 250 V AC ..... for NST 70 °C – 180 °C
Rated voltage	250 V AC
Rated current I <sub>Nom</sub>	2.5 A @ cos φ = 1.0 1.6 A @ cos φ = 0.6
Current sensitivity at I <sub>Nom</sub>	no
Max. switching current	10.0 A @ cos φ = 1.0 / 1,000 switching cycles (approved values) 6.3 A @ cos φ = 1.0 / 1,000 switching cycles
Contact bounce time	< 1 ms
Impregnation resistance	suitable (according to Thermik-Test)
Contact resistance	< 50 mΩ with reference to MIL-STD. R 5757
Vibration proof at 10 ..... 60 Hz	100 m/s <sup>2</sup>
Self locking with heating resistor R <sub>H</sub>	Up to -20 °C , suspended in air. With thermal coupling corresponding higher temperature. PTC- heating resistor
Switch insulation (SP1, KP1)	insulation cap Mylar <sup>®</sup> – Nomex <sup>®</sup> ® Trademark DuPont
Dielectric strength of the insulation cap (SP1, KP1)	2 kV <sub>r.m.s.</sub>
Standard connection leads	multi stranded wire 0.25 mm <sup>2</sup> or solid Φ 0.5 mm, lengths 100 mm or 300 mm, other lengths on request. Constant operating temperature min. 180 °C , insulation class H.
Approvals acc. to design for	VDE acc. to EN 60730-1; EN 60730-2-9 UL acc. to UL 2111 CSA acc. to C 22.2 CB *) acc. to IEC 60730-1; EN60730-2-9

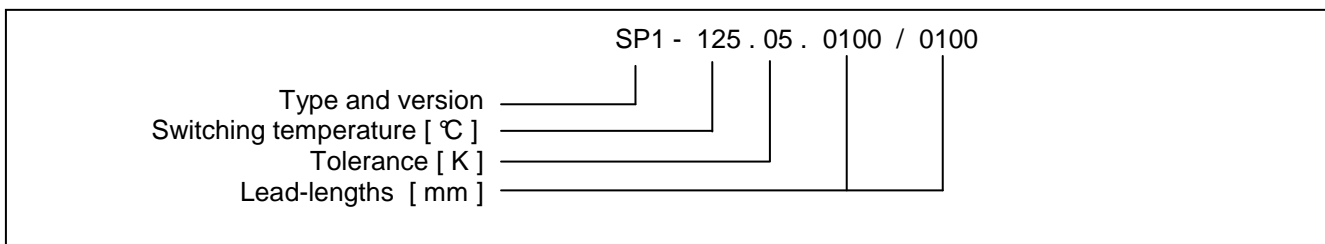
\*) The "European Accreditation CB Scheme" Certificate, named CB- Certificate, covers virtually all national approbations.

The data of this table refers to the standard version. For others - please inquire.

### Marking example of the insulation cap:



### Ordering example:



The indicated values in this data sheet can differ for special designs. We reserve the right to modify technical specifications without notice.