



# Complete protection from burning of motor winding

INSTA Thermistors with positive temperature coefficient (PTC) are utilised for the temperature sensing of windings. Their 3 & 4 mm pill is especially suitable for embedding into the windings of electric motors and transformers.

Other Thermistor types are also available for overload protection, temperature control and sensing e.g. Of Electronic Sub - assemblies, Heat sinks, Transformers etc.

## PTC Thermistors

### FUNCTION

INSTA Thermistors are manufactured in accordance with DIN 44081 and 44082. Due to their small thermal mass, they have favorable temperature sensitivity. The resistance increases sharply in the region of the nominal response temperature. This signal can be used to switch off power circuit of electric motors / transformers by using TEMPSense unit. The temperature resistance diagram shows the principle characteristics of INSTA PTC Thermistors.

### Installation Instructions

INSTA Thermistors should be placed as near as possible to the hot spot. In three phase motors, one Thermistor should be embedded in each phase. Good thermal coupling between Thermistor and winding is essential. The PTC Thermistors should be inserted parallel to the winding.

In this way the mechanical stresses on the PTC Thermistors during forming the end turns of overhang winding can be minimized. Shrink cap is especially well suited for this because of its mechanical stability. Response times  $\leq 5$  sec. are achieved with INSTA Thermistor.

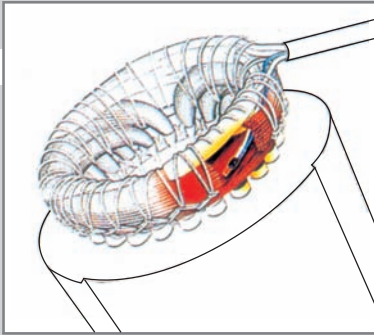
INSTA PTC thermistors are available in standard (4mm) and miniature (3mm) versions. Resistance at room temperature is  $< 250 \Omega$  and  $< 100 \Omega$  respectively.

### Special Designs

INSTA can supply customized connections with your individual lead lengths, cross-sectional areas, crimped contacts etc. PTC ceramics with cold resistance  $\leq 100 \Omega$  are available on request.

“ EXPERTISE OVER 25 YEARS IN

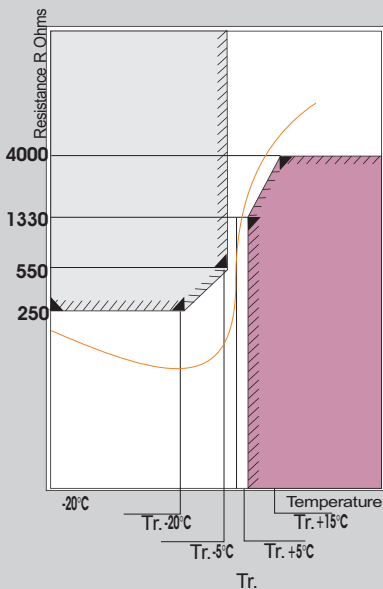
WINDING PROTECTION AT YOUR SERVICE ”



## STRUCTURE

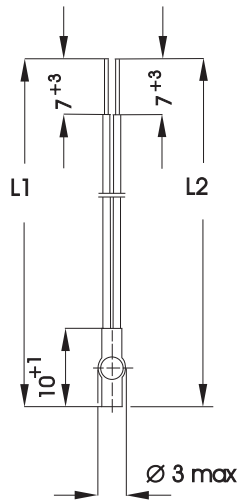
Characteristics according to DIN 44081 or 44082. Miniature & standard design, 3 & 4 mm because of the small thermal mass. Robust construction. Cold resistance < 250 Ohm, other values upon request.

TEMPERATURE- RESISTANCE DIAGRAM ACCORDING TO DIN 44081/44082



## COLOUR CODING

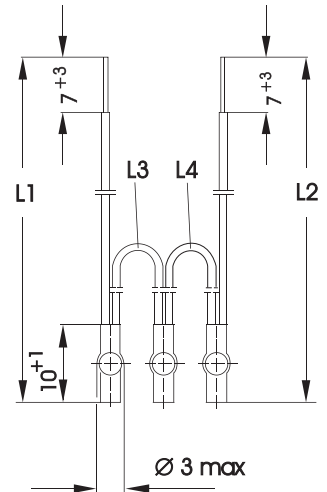
Class of Insulation	Sub.	Sub.	Sub.	A	E	E	B	B	F	F	F	F	H	H	On. req.	On. req.
Nominal Response Temperature NAT [C]	60	70	80	90	100	110	120	130	140	145	150	155	160	170	180	190
Colour codes of leads	white gray	white brown	white white	green green	red red	brown brown	gray gray	blue blue	white blue	white black	black black	blue black	blue red	white green	white red	orange black



Single Thermistor with Nomex Mylar/Kyner shrink sleeve.

L1 = 500 mm L2 = 500 mm

Customized lead lengths also available



Triplex Thermistor with Nomex Mylar/Kyner shrink sleeve

L3 = 185 mm L4 = 185 mm

## MAIN CHARACTERISTICS

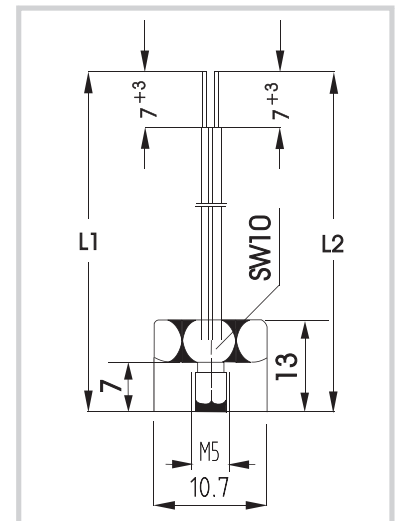
Nominal response temperature  
Tr. = 60°C upto 190°C  
in steps of 10°C  
also available 115°C, 145°C and 155°C

Characteristics values	Values	Measurement voltage (DC)
Resistance in the temperature range -20°C upto Tr. -20°C	20 to 250 Ω	≤ 2.5V
Resistance at Tr. -5°C	≤ 550 Ω	≤ 2.5V
Resistance at Tr. +5°C	≥ 1330 Ω	≤ 2.5V
Resistance at Tr. +15°C	≥ 4000 Ω	≤ 7.5V pulsed

Maximum Operating Voltage:  $U_{max} = 30V$  DC

High voltage insulation  $U_{rms} = 2.5$  KV

Thermal response time according to DIN 44081 or 44082



Mount - on Sensor

in isolated brass/aluminium housing with M5 tapping.

Our other products: Pt-100 RTDs, Pt-100 BTDs, Slot RTDs, Thermistor Protection Relays & Thermal Switches (TOP)

ISO 9001 : 2008 Certified Company



**INSTA CONTROL PVT. LTD. INDIA**

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