

RTD Thermometer *omnigrad TST280*

**Heavy duty - General purpose - M.I. replaceable inset
with Nipple or Nipple and Union
1/2" NPT male connection to thermowell**



TST280 Type N with Nipple



TST280 Type UN
with Union/Nipple

Description

TST280 RTD thermometer assembly includes a replaceable single or double Pt100 inset, in mineral insulated cable, which can be selected between standard or glass version (for high vibration level application).

From the TET family, the inset is available either with free wires for head transmitter mounting or with terminal board.

The terminal head can be selected from a wide choice of standard items (see the Order key or TA20 Technical Information for more details).

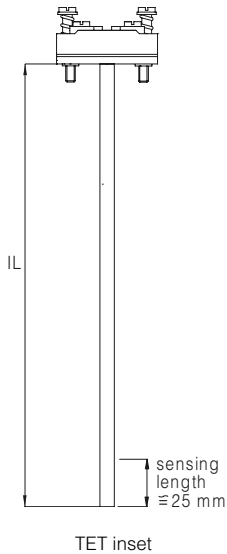
TST280 is suitable for bar stock and welded tube thermowells with 1/2" NPT female connection (refer to TA500 series).

Application

TST280 RTD thermometer range covers a wide variety of market requirements worldwide. It is widely used in many heavy duty applications either in vessels or in pipes. Typical applications can be found in the chemical industry, petroleum refineries, power stations, boilers, incinerators and everywhere a standard mechanical resistance is sufficient.

Technical data

Mineral insulated replaceable inset



Sensing element: Platinum resistance, 1 or 2 x Pt100 Ω at 0°C
 Tolerances: class A or B to IEC 751, 1/3 DIN B
 Wiring: 3 or 4 wire connections
 Insulation resistance: ≥ 100 MΩ, test voltage 250 V at ambient temperature
 Electrical connections: washer with 70 mm wires or terminal block

Table 1: Insets operating temperatures

Model	Sheath diameter (mm)	RTD element type	Operating temperature (°C)	Response time values ¹ (s)	
				T ₅₀	T ₉₀
TET100	6	standard	-50 ... 400	3.5	8
TET102	6	glass	-50 ... 400	3.5	8
TET105	3	standard	-50 ... 400	3	6
TET107	3	glass	-50 ... 400	3	6
TET 200	2 x 3	standard	-50 ... 400	3	6

Notes: [1] according to IEC751, in moving water at 0.4 m/s

Stem: mineral insulated cable (MgO)
 Sheath: AISI 316L/W.1.4404
 Replacement: inset length IL is calculated as follows

Table 2

TST280 Thermometer	TET100/102/105/107/200 Insert length IL	
	TA20 (*)	TA20G
Type N - Nipple	ML + 117 mm [1]	ML + 126 mm
Type NUN - Nipple/Union/Nipple	ML + 152 mm	ML + 161 mm
Type UN - M/F Union and Nipple	ML + 132 mm	ML + 141 mm
Type N/NUN/UN - ... mm N length	ML + N + 26 mm [2]	ML + N + 35 mm

Notes:

(*) All models except for TA20G

[1] ML = Insertion length

[2] N = Neck length, calculated as follows

Thermometer type N : Nipple total length - 8 mm (min. N = 42 mm)
 Thermometer type NUN : Nipple total length +27 mm (min. N = 127 mm)
 Thermometer type UN : Nipple total length +57 mm (min. N = 107 mm)

Protecting tube

Version: TA500 thermowell series
 Insertion length: Insertion length ML is calculated as follows
 ML = A - D - 8 mm where
 A = Thermowell nominal length
 D = Thermowell bottom thickness

Terminal head

Version, protection class and electrical connection: refer to order key

Table 3: Built-in head transmitter

(*)	Features	Model	Mounting
A	Transmitter 4..20mA, 0...50°C	Analogue Fixed Range TMT137	Suitable for Form B head
B	Transmitter 4..20mA, 0...100°C		
C	Transmitter 4..20mA, 0...150°C		
D	Transmitter 4..20mA, 0...200°C		
P	4..20mA analogue output with I/O isolation	Digital PC settable TMT181	Suitable for Form B head
Q	4..20mA analogue output with I/O isolation (EEx ia version)		
J	Hart@ analogue with I/O isolation	Hart@Protocol - TMT182	-
S	Profibus-PA with I/O isolation	Fieldbus - TMD834	-
V	Profibus-PA with I/O isolation (EEx ia version)		
R	Hart@ analogue with I/O isolation	Hart@Protocol TMT182	Suitable for Form B head
T	Hart@ analogue with I/O isolation (EEx ia version)		
0	Without built-in transmitter	On request	-
1	Built-in transmitter THT1, ordered separately		
9	Built-in transmitter as specified		

(*) refer to the order key

	Built-in head transmitter
--	---------------------------

**Supplementary
Documentation**

- Technical Information TET100 Ø6 mm M.I. Inset (TI071T/02/en)
- Technical Information TET102 Ø6 mm M.I. Inset (TI140T/02/en)
- Technical Information TET105 Ø3 mm M.I. Inset (TI103T/02/en)
- Technical Information TET107 Ø3 mm M.I. Inset (TI141T/02/en)
- Technical Information TET200 Ø2 x 3 mm M.I. Inset (TI150T/02/en)
- Technical Information TA20 terminal heads (TI072T/02/en)
- Technical Information TA500 series specific product

Endress+Hauser
GmbH+Co.
Instruments International
P.O. Box 2222
D-79574 Weil am Rhein
Germany

Tel. (07621) 975-02
Tx 773926
Fax (07621) 975 345
<http://www.endress.com>
info@ii.endress.com

Endress + Hauser
The Power of Know How

