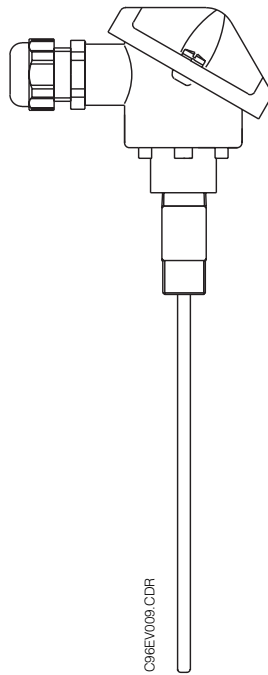
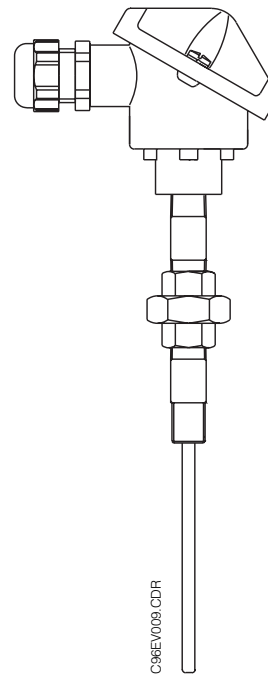


RTD Thermometer *omnigrad TST281*

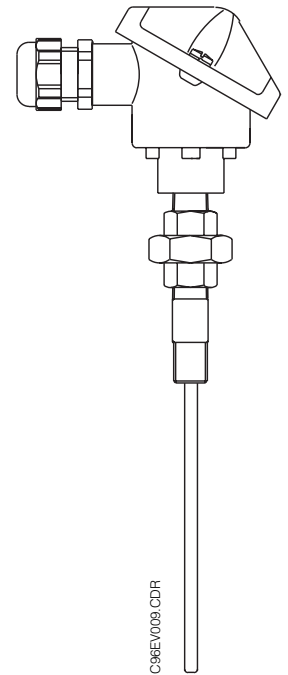
**Heavy duty - General purpose
M.I. replaceable inset
with Nipple or Nipple and Union
G 1/2" male connection to thermowell**



TST281 Type N
with Nipple



TST281 Type NUN
with Nipple/Union/Nipple



TST281 Type UN
with Union/Nipple

Description

TST281 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). TST281 is suitable for bar stock and

welded tube thermowells with G 1/2" female connection (refer to TA500 series).

Application

TST281 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.

Quality made by
Endress+Hauser



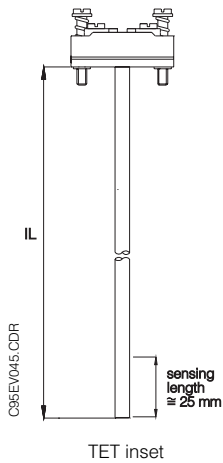
ISO 9001

Endress+Hauser

Nothing beats know-how



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: $\geq 100 \text{ M}\Omega$, test voltage 250 V at ambient temperature
 Electrical connections: washer with 70 mm wires or terminal board

Model	Sheath diameter (mm)	RTD element type	Operating temperature (°C)	Response time values ¹ (s)	
				T ₅₀	T ₉₀
TET100	6	standard	-200 ÷ +600	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
TET200	2 x 3	standard	-50 ÷ +400	3	6

Table A

Notes: [1] according to IEC 751, in moving water at 0.4 m/s

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

TST281 Thermometer	TET100/102/105/107/200 Inset length IL	
	TA20 (*)	TA20G
Type N - Nipple	ML + 117 mm [1]	ML + 127 mm
Type NUN - Nipple/Union/Nipple	ML + 152 mm	ML + 162 mm
Type UN - M/F Union and Nipple	ML + 132 mm	ML + 142 mm
Type N/NUN/UN - mm N length	ML+N+26 mm [2]	ML+N+35 mm

Table B

Notes: (*) All models except for TA20G - [1] ML = Insertion length - [2] N = Neck length

Protecting tube

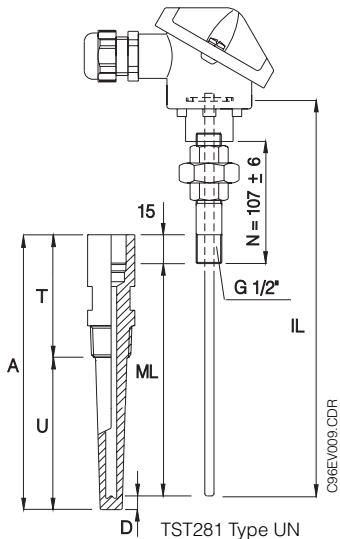
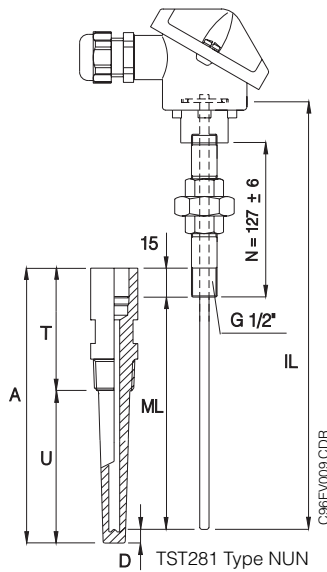
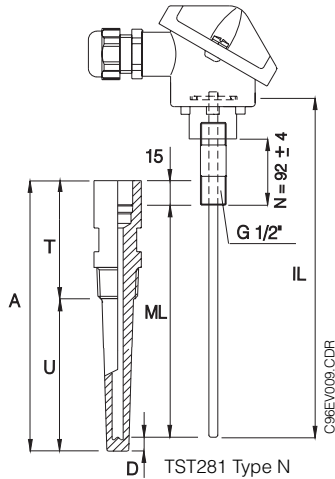
Version: TA500 thermowell series
 Insertion length: insertion length ML is calculated as follows
 $ML = A - D - 15 \text{ mm}$ where
 A = Thermowell nominal length
 D = Thermowell bottom thickness

Terminal head

Version: refer to Order key
 Protection class: typical IP55
 Electrical connections: PG16, 1 or 2 x 1/2" NPT, 3/4" NPT depending on head version

Order key

- Each TST281 RTD thermometer must be ordered with corresponding thermowell selected from TA500 series.
- For inset replacement see Technical data.
- Accuracy statement is referred to the replaceable inset only as defined by IEC 751 without any protecting thermowell which may introduce thermal drift due to process connection heat dissipation in conjunction to short immersion lengths. For a correct temperature measurement the thermowell immersion length must be 20 times its diameter. Shorter immersion lengths can be supplied but the thermometer requires an external (neck and connection head) thermal insulation.



TST281 RTD Thermometer - Heavy duty - General purpose M.I. replaceable inset - With Nipple or Nipple and Union G 1/2" male connection to thermowell

N length / Nipple-Union material / Type

- A - 92 mm / SS 304 / Type N (Nipple)
- B - 127 mm / SS 304 / Type NUN (Nipple/Union/Nipple)
- C - 107 mm / SS 304 / Type UN (M/F Union and Nipple)
- D - 92 mm / CS A105 / Type N (Nipple)
- E - 127 mm / CS A105 / Type NUN (Nipple/Union/Nipple)
- F - 107 mm / CS A105 / Type UN (M/F Union and Nipple)
- 1 - mm / SS 304 / Type N (Nipple)
- 2 - mm / SS 304 / Type NUN (Nipple/Union/Nipple)
- 3 - mm / SS 304 / Type UN (M/F Union and Nipple)
- 4 - mm / CS A105 / Type N (Nipple)
- 5 - mm / CS A105 / Type NUN (Nipple/Union/Nipple)
- 6 - mm / CS A105 / Type UN (M/F Union and Nipple)

Insertion length ML

TA - 100 mm insertion length ML

YY - mm insertion length ML

Price for 100 mm of insertion length ML

1 - MgO cable AISI316L / W1.4404 - Ø 3 mm (TET105/107)

3 - MgO cable AISI316L / W1.4404 - Ø 6 mm (TET100/102)

8 - MgO cable AISI316L / W1.4404 - Double Ø 3 mm (TET200 only)

Version of RTD inset

2 - washer with 70 mm wires (70 & 150 mm for 2 Pt100)

3 - terminal board

RTD Class and type of construction

TET100 & TET105 Standard RTD

B - standard RTD 1 Pt100, class B, 3 wires

D - standard RTD 2 Pt100, class B, 3 wires

E - standard RTD 1 Pt100, class B, 4 wires

H - standard RTD 1 Pt100, class A, 3 wires

L - standard RTD 2 Pt100, class A, 3 wires

M - standard RTD 1 Pt100, class A, 4 wires

P - standard RTD 1 Pt100, class 1/3 DIN, 3 wires

Q - standard RTD 2 Pt100, class 1/3 DIN, 3 wires

R - standard RTD 1 Pt100, class 1/3 DIN, 4 wires

TET200 Double standard RTD

T - standard RTD, Double, class B, 3 wires

V - standard RTD, Double, class A, 3 wires

TET102 & TET107 Glass RTD

0 - glass RTD 1 Pt100, class B, 3 wires

1 - glass RTD 2 Pt100, class B, 3 wires

2 - glass RTD 1 Pt100, class B, 4 wires

3 - glass RTD 1 Pt100, class A, 3 wires

4 - glass RTD 2 Pt100, class A, 3 wires

5 - glass RTD 1 Pt100, class A, 4 wires

6 - glass RTD 1 Pt100, class 1/3 DIN, 3 wires

7 - glass RTD 2 Pt100, class 1/3 DIN, 3 wires

8 - glass RTD 1 Pt100, class 1/3 DIN, 4 wires

Y - RTD class and type to specification

Heads: model, mat., el. conn., IP

A5 - TA20A, Al, Pg16, IP55

A6 - TA20A, Al, 1/2" NPT, IP55

D3 - TA20D, Al, Pg16, IP55

D4 - TA20D, Al, 1/2" NPT, IP55

E5 - TA20E, Al, Pg16, IP55

F5 - TA20F, PP, Pg 16, IP55

G2 - TA20G, Al, 1/2" NPT, IP65, grey

G3 - TA20G, Al, 3/4" NPT, IP65, grey

G4 - TA20G, Al, 2 x 1/2" NPT, IP65, grey

GB - TA20G, Al, 1/2" NPT, IP65, blue

GC - TA20G, Al, 3/4" NPT, IP65, blue

GD - TA20G, Al, 2 x 1/2" NPT, IP65, blue

P5 - TA20P, Al, Pg16, IP55

P6 - TA20P, Al, 1/2" NPT, IP55

T6 - TA20T, POM, Pg16, IP55

U6 - TA20U, POM, Pg16, IP55

W5 - TA20W, Al, Pg16, IP55

W6 - TA20W, Al, 1/2" NPT, IP55

Built-in 2 wire transmitter

0 - Without built-in transmitter

1 - With built-in transmitter to be separately ordered

TST281-

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Complete Order Code

Supplementary Documentation

- TET100 Ø 6 mm M.I. inset
Technical Information TI071T/02/en
- TET102 Ø 6 mm M.I. inset
Technical Information TI140T/02/en
- TET105 Ø 3 mm M.I. inset
Technical Information TI103T/02/en
- TET107 Ø 3 mm M.I. inset
Technical Information TI141T/02/en
- TET200 Ø 2 x 3 mm M.I. inset
Technical Information TI150T/02/en
- TA20 terminal heads
Technical Information TI072T/02/en
- TA500 series specific product T.I.

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