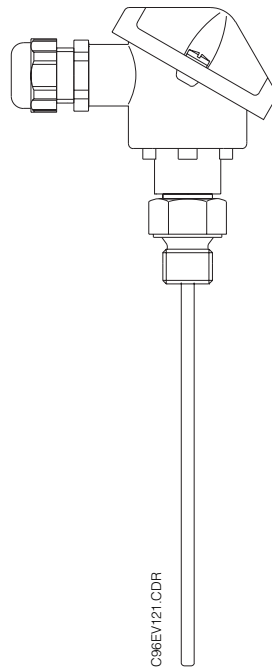
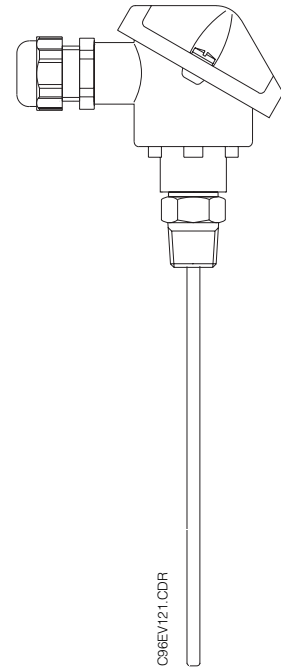


RTD Thermometer *omnigrad TST289*

**Heavy duty - General purpose
M.I. replaceable inset
male connection to thermowell**



TST289
with G/M thread



TST289
with NPT thread

Description

TST289 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).

TST289 is suitable for bar stock and

welded tube thermowells with female connection (refer to TA500 series).

Application

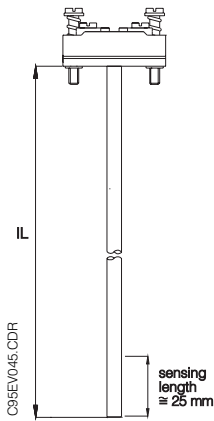
TST289 RTD thermometer range covers a wide variety of market requirements worldwide. It is widely used in many heavy duty applications either in vessels or in pipes. Typical applications can be found in the chemical industry, petroleum refineries, power stations, boilers, incinerators and everywhere 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: $\geq 100 \text{ M}\Omega$, test voltage 250 V at ambient temperature
 Electrical connections: washer with 45 or 70 mm wires or terminal board



TET inset

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

Terminal head version	TET100/102/105/107/200 Inset length IL
TA20 (*)	L + 45 mm (**)
TA20G/M	L + 60 mm

Table B

Notes: (*) All models except for TA20G and TA20M
 (**) L = Insertion length
 Refer also to Note [1] in the Order key

Thermowell connection

Engaging thread	Threaded	C (mm)
 NPT	1/4" NPT	6
	3/8" NPT	6
	1/2" NPT	8
	3/4" NPT	8,5
	1" NPT	10
 GAS METRIC	G 1/4"	10
	G 3/8"	12
	G 1/2" DIN 43763	15
	G 1/2"	15
	G 3/4"	15
	G 1"	20
	M20 DIN 16179	15

Table C

Protecting tube

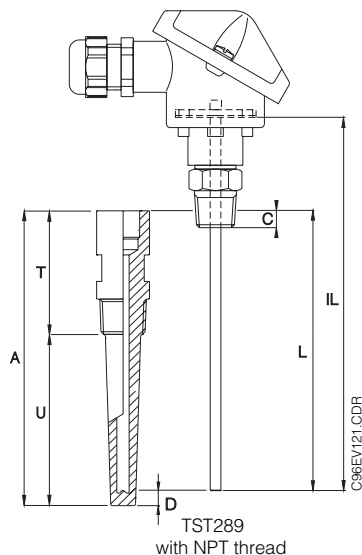
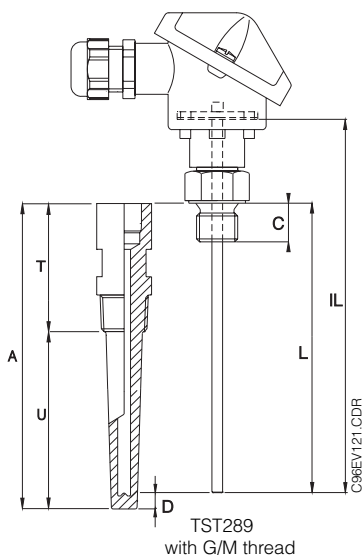
Version: TA500 thermowell series
 Insertion length: insertion length L is calculated as follows
 $L = A - D$ where
 A = Thermowell nominal length
 D = Thermowell bottom thickness

Terminal head

Version: refer to Order key
 Protection class: typical IP55
 Electrical connections: PG11, PG16, 1 or 2 x 1/2" NPT, 3/4" NPT, G 1/2" depending on head version

Order key

- Each TST289 RTD thermometer must be ordered with corresponding thermowell selected from TA500 series.
- Note [1] : Insertion length L is intended as delivered, without any compression length considered. Thermowells which will be applied should consider that an inset compression length inside the thermowell of at least 3 mm is required. Thermowell bore depth should be 3 mm shorter than insertion length L.
- 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 (thermowell connection and connection head) thermal insulation.



TST289 RTD Thermometer - Heavy duty - General purpose M.I. replaceable inset - With male connection to thermowell

Insertion length L [1]

U - 100 mm		
A - 115 mm	E - 330 mm	K - 510 mm
B - 170 mm	F - 360 mm	L - 610 mm
C - 230 mm	G - 420 mm	M - 690 mm
D - 270 mm	H - 480 mm	Y - mm to specification

Material and type of process connection

BE - AISI316Ti/W.1.4571, G 1/2" Std. DIN	DL - AISI316L/ W.1.4404, 1/4" NPT
DB - AISI316L/W.1.4404, G 1/4"	DM - AISI316L/ W.1.4404, 3/8" NPT
DC - AISI316L/W.1.4404, G 3/8"	DN - AISI316L/W.1.4404, 1/2" NPT
DD - AISI316L/W.1.4404, G 1/2"	DP - AISI316L/ W.1.4404, 3/4" NPT
DF - AISI316L/W.1.4404, G 3/4"	DQ - AISI316L/W.1.4404, 1" NPT
DH - AISI316L/W.1.4404, G 1"	DZ - AISI316L/W.1.4404, M20x1.5 DIN16179

Price for 100 mm of insertion length L

- 1 - Sheath O.D. 3 mm - AISI316L/W.1.4404 (TET105/107)
- 3 - Sheath O.D. 6 mm - AISI316L/W.1.4404 (TET100/102)
- 8 - Double O.D. 3 mm MgO cable - AISI316L/W.1.4404 (TET200 only)

Version of RTD inset

- 1 - washer with 45 mm wires
- 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, neck conn., el. conn., mater., IP

- A1 - TA20A, M24x1.5, Pg16, Al, IP55
- A2 - TA20A, M24x1.5, 1/2" NPT, Al, IP55
- A3 - TA20A, M24x1.5, Pg16, Al, IP68
- AC - TA20A, G 1/2", Pg16, Al, IP55
- AD - TA20A, G 1/2", G 1/2", Al, IP55
- B1 - TA20B, M24x1.5, Pg16, PA, IP55
- C1 - TA20C, M24x1.5, Pg16, Al, IP65
- C2 - TA20C, M24x1.5, 1/2" NPT, Al, IP65
- CB - TA20C, G 1/2", G 1/2", Al, IP65
- CC - TA20C, G 1/2", PG16, Al, IP65
- CD - TA20C, G 1/2", 1/2" NPT, Al, IP65
- D1 - TA20D, M24x1.5, Pg16, Al, IP55
- D2 - TA20D, M24x1.5, 1/2" NPT, Al, IP55
- E1 - TA20E, M24x1.5, Pg16, Al, IP55
- EC - TA20E, G 1/2", Pg16, Al, IP55
- ED - TA20E, G 1/2", G 1/2", Al, IP55
- F1 - TA20F, M24x1.5, Pg16, PP, IP55
- FC - TA20F, G 1/2", Pg16, PP, IP55
- FD - TA20F, G 1/2", G 1/2", PP, IP55
- G2 - TA20G, 1/2" NPT, 1/2" NPT, Al, IP65, grey
- G3 - TA20G, 1/2" NPT, 3/4" NPT, Al, IP65, grey
- G4 - TA20G, 1/2" NPT, double 1/2" NPT, Al, IP65, grey
- GB - TA20G, 1/2" NPT, 1/2" NPT, Al, IP65, blue
- GC - TA20G, 1/2" NPT, 3/4" NPT, Al, IP65, blue
- GD - TA20G, 1/2" NPT, double 1/2" NPT, Al, IP65, blue
- M1 - TA20M, M24x1.5, Pg16, Al, IP55
- P1 - TA20P, M24x1.5, Pg16, Al, IP55
- P2 - TA20P, M24x1.5, 1/2" NPT, Al, IP55
- PC - TA20P, G 1/2", Pg16, Al, IP55
- PD - TA20P, G 1/2", G 1/2", Al, IP55
- UC - TA20U, G 1/2", PG16, POM, IP55
- U1 - TA20U, M24x1.5, Pg16, POM, IP65
- W1 - TA20W, M24x1.5, Pg16, Al, IP65
- W2 - TA20W, M24x1.5, 1/2" NPT, Al, IP55
- X3 - TA20X, M24x1.5, Pg11, AISI, IP65

Built-in transmitter

- 0 - Without built-in transmitter
- 1 - With built-in transmitter to be separately ordered

TST289-

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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