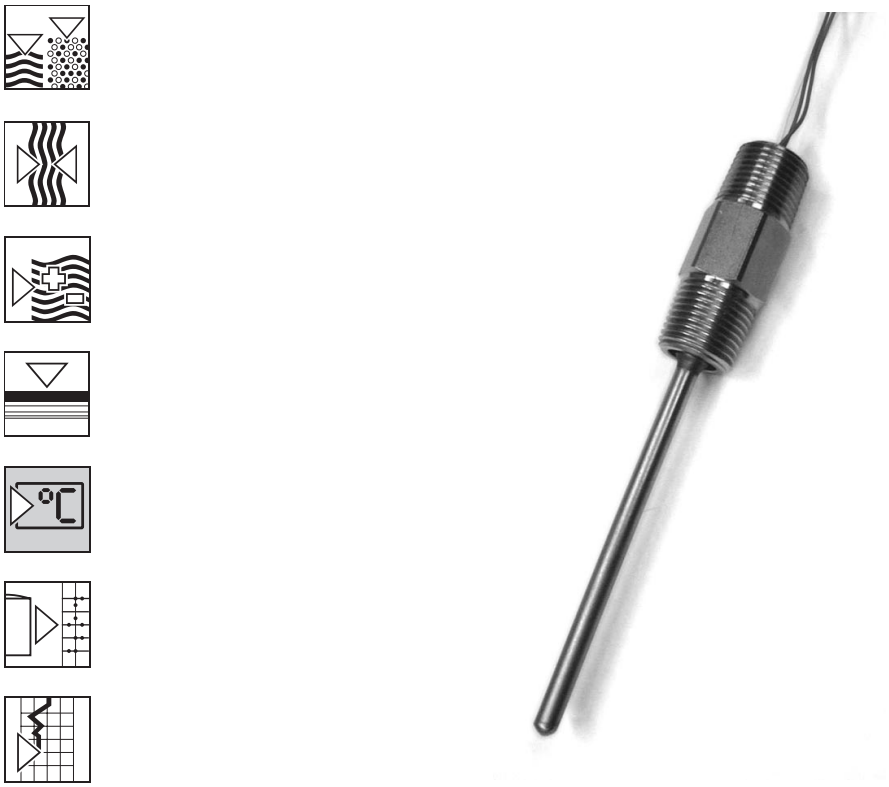
Technical
Information
TI 227T/02/en
71104996

Pt100 inset for EEx-d
omniset TET300

Nipple style
∅ 6 mm M.I. cable
Standard ceramic or glass Pt100



Description
TET300 consists of a mineral insulated cable stem 6 mm diameter with 150 mm flying leads for electronic temperature transmitter mounting.
The inset style and the leadwire termination is spring loaded. In this way the tip of the inset is pressed against the bottom of the thermowell ensuring a better thermal contact and a better resistance to vibrations. At the same time the springs compensate for the thermal expansion. TET300 utilizes standard or glass (suitable for high vibration level applications) Pt100 with 3 or 4 wires design. The temperature sensitive length of the inset is 25 mm from the closed end of the tube.

Application
TET300 is the EEx-d line RTD inset spare part. It can be used for installation into TST262 and TST264 Ex-Proof RTD thermometers and TMD833T Compact RTD thermometer.
It is suitable for electronic temperature transmitters matching TMD833 housing.

Technical data

Mineral Insulated Inset

Sensing element:	Platinum resistance, 1 or 2 x Pt100 Ω at 0°C, standard ceramic or glass type
Tolerances:	class A or B to IEC751, 1/3 DIN B
Operating temperature:	-196°C to +600°C standard ceramic type -50°C to +400°C glass type
Wiring:	3 or 4 wire connections
Insulation resistance:	≥ 100 MΩ, test voltage 250 V at ambient temperature
Electrical connections:	150 mm flying leads
Stem:	MgO insulated cable
Sheath:	AISI316L / W.1.4404
Standard diameter:	6 mm (± 0.1 mm)
Response time values:	according to IEC751, in moving water at 0.4 m/s T_{50}= 3.5 s; T_{90}= 8 s

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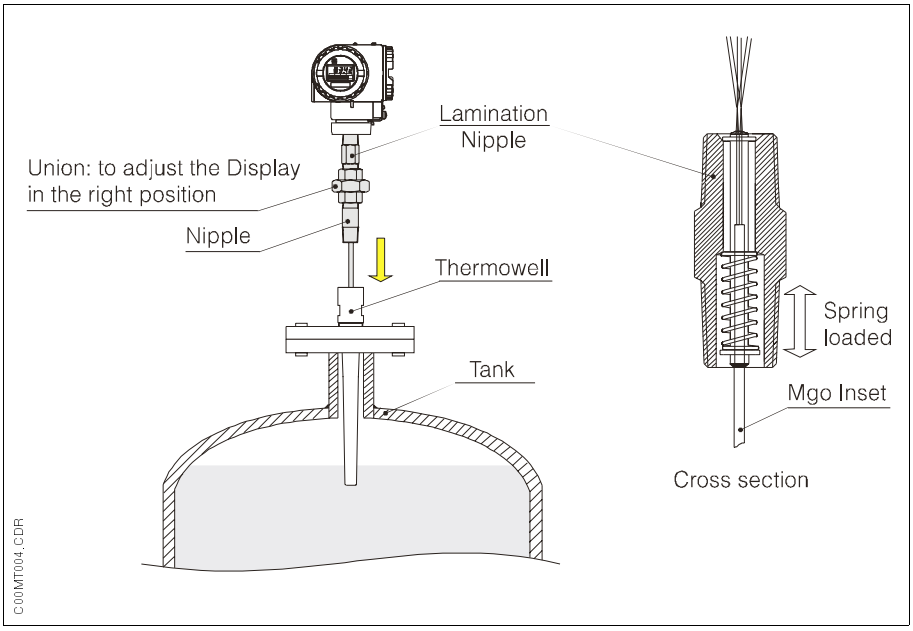
Installation

The spring loaded lamination Nipple guarantees always perfect contact with the tip of the thermowell for a fast response time.

It is necessary to calculated the length ML depending on the thread to the thermowell.



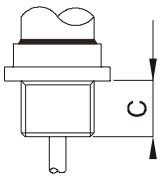
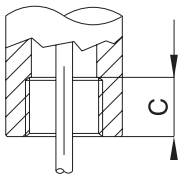
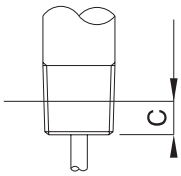
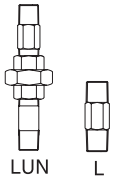
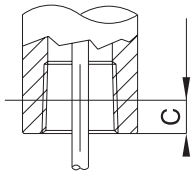
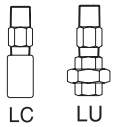
Temperature Measurement Point with Display

Selecting the inset

To easily select the connection thread to the thermowell please refer to the table below. All information regarding the thread of the relevant neck type are indicated.

The following page details how to calculate the thermometer insertion length ML for some types of thermometer / thermowell coupling.

Connection threads to thermowell

Type	Male					Female				
	Thread	Digit (*)	C (mm)	Thread engaged line	Connection model	Thread	Digit (*)	C (mm)	Thread engaged line	Connection model
Cylindrical	G 1/2"	D	15			M24x1.5	U	16		
	G 3/4"	F	15							
	M14x1.5	V	14							
	M18x1.5	W	14							
Conical	1/2" NPT	N	8			1/2" NPT	5	8		
	3/4" NPT	P	8.5			3/4" NPT	6	8.5		

(*) See Product structure TET300 : Connection thread to the thermowell (the letter for the relevant option)

Thermowell selection and ML calculation

ML calculation formulae - L type				
TW model	Thread to TET300	Formulae (1)	C [mm]	D [mm]
TA550	1/2" NPT	ML = A-D-C+F	8	6

(1) ML calculation is as follows: ML = A - (D + C) + F

ML calculation formulae - LUN type				
TW model	Thread to TET300	Formulae (1)	C [mm]	D [mm]
TA550	1/2" NPT	ML = A-D-C+F	8	6
TA573	M18x1.5	ML = A-D-C+F	14	3

(1) ML calculation is as follows: ML = A - (D + C) + F

ML calculation formulae - LU type				
TW model	Thread to TET300	Formulae (2)	C [mm]	D [mm]
TA10	1/2" NPT	ML = A - D - C	8	3
TA13	1/2" NPT	ML = A - D - C	8	3

(2) ML calculation is as follows: ML = A - (D + C)

ML calculation formulae - LC type				
TW model	Thread to TET300	Formulae (2)	C [mm]	D [mm]
TA10	1/2" NPT	ML = A - D - C	8	3
	M24x1.5	ML = A - D - C	16	3
TA13	1/2" NPT	ML = A - D - C	8	3
	M24x1.5	ML = A - D - C	16	3

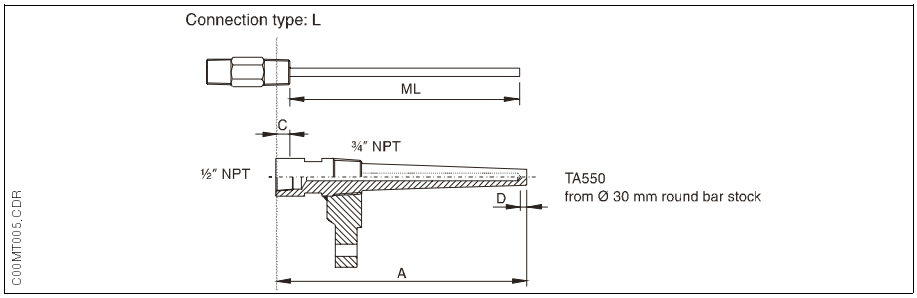
2) ML calculation is as follows: ML = A - (D + C)

A = Thermowell total length
C = Engagement thread
D = Thermowell bottom thickness *
F = Spring expansion length under pressure
ML = Insertion length

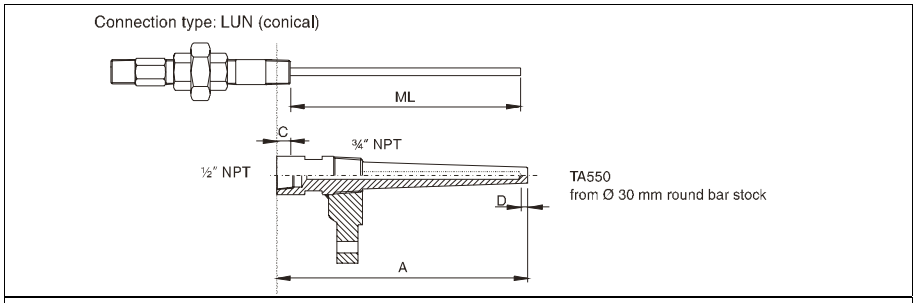
*) For the thermowell bottom thickness D, please refer also to the TI 138T/02/en relevant to the TA thermowell series.

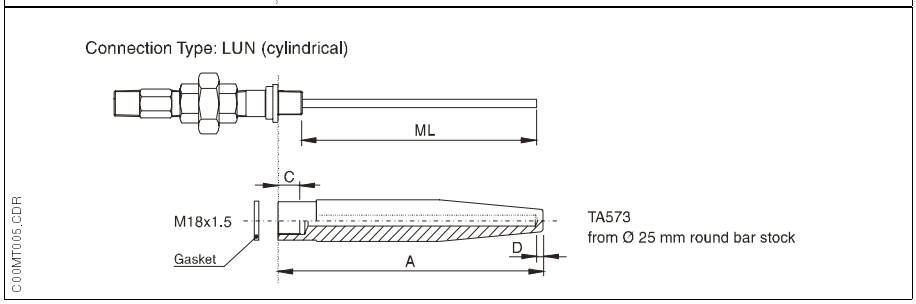
Note:
For customer specification types it is necessary to have the drawing with indication of the bottom thickness to calculate the Insertion length ML !

Thermowell selection for TET300 with L connection type

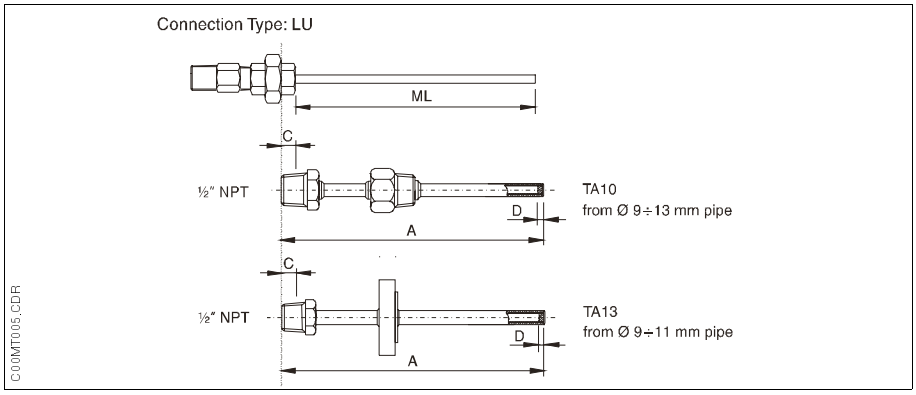


Thermowell selection for TET300 with LUN connection type

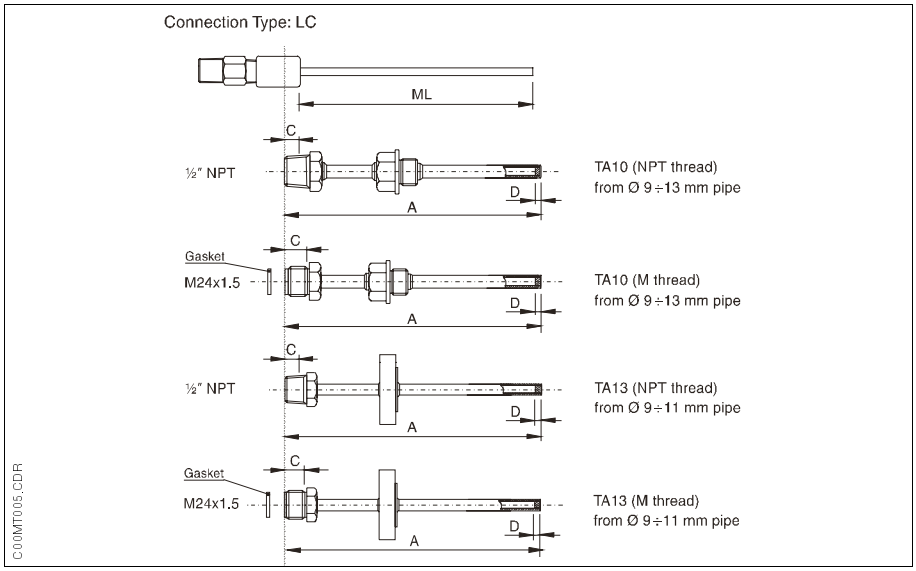




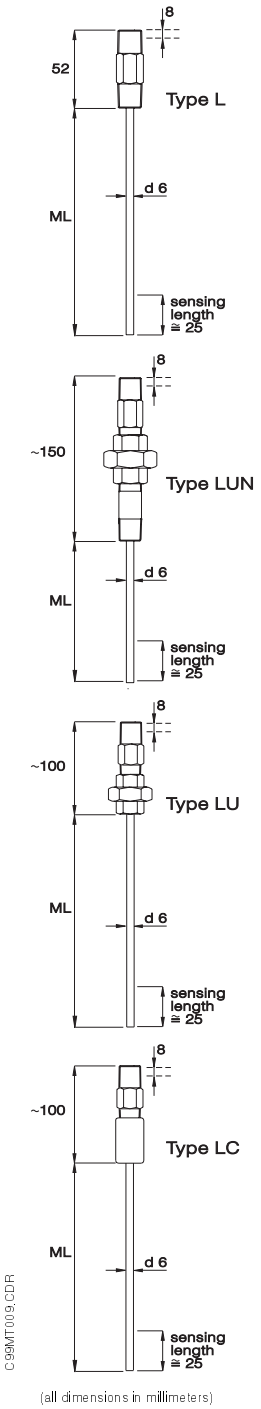
Thermowell selection for TET300 with LU connection type



Thermowell selection for TET300 with LC connection type



Product structure



(all dimensions in millimeters)

TET300- Pt100 inset for EEx-d - Nipple style
Ø 6 mm M.I. cable - Standard or glass Pt100

Application
R - General purpose
A - EEx d

Connection type and material
A - Nipple (size 1/2" only), S.S. - type L
B - Nipple, C.S. Union - type LU
D - Nipple, S.S. Union - type LU
E - Nipple, S.S. Coupling - type LC
F - Nipple, C.S. Union + Nipple - type LUN
H - Nipple, S.S. Union + Nipple - type LUN
Y - Nipple, connection and material as specified

Connection thread to thermowell *(1)*
D - G 1/2" B male (BSP parallel)
F - G 3/4" B male (BSP parallel)
N - 1/2" NPT male
5 - 1/2" NPT female
P - 3/4" NPT male
6 - 3/4" NPT female
U - M24x1,5 female (type LC only)
V - M14x1,5 male (type LUN only)
W - M18x1,5 male (type LUN only)
Y - Special connection thread as specified

Insertion length ML *(2)*
XX - ..... mm length to specification (min.50mm-max.990mm)
YY - ..... mm special length

Sheath material and diameter
3 - MgO cable AISI316L / W.1.4404 - Ø 6mm

Class and type of RTD inset
B - Standard, 1 Pt100, class B, 3 wires, T<600°C
D - Standard, 2 Pt100, class B, 3 wires, T<600°C
E - Standard, 1 Pt100, class B, 4 wires, T<600°C
H - Standard, 1 Pt100, class A, 3 wires, T<600°C
L - Standard, 2 Pt100, class A, 3 wires, T<600°C
M - Standard, 1 Pt100, class A, 4 wires, T<600°C
P - Standard, 1 Pt100, class 1/3 DIN, 3 wires, T<600°C
Q - Standard, 2 Pt100, class 1/3 DIN, 3 wires, T<600°C
R - Standard, 1 Pt100, class 1/3 DIN, 4 wires, T<600°C
0 - Glass, 1 Pt100, class B, 3 wires, T<400°C
1 - Glass, 2 Pt100, class B, 3 wires, T<400°C
2 - Glass, 1 Pt100, class B, 4 wires, T<400°C
3 - Glass, 1 Pt100, class A, 3 wires, T<400°C
4 - Glass, 2 Pt100, class A, 3 wires, T<400°C
5 - Glass, 1 Pt100, class A, 4 wires, T<400°C
6 - Glass, 1 Pt100, class 1/3 DIN, 3 wires, T<400°C
7 - Glass, 2 Pt100, class 1/3 DIN, 3 wires, T<400°C
8 - Glass, 1 Pt100, class 1/3 DIN, 4 wires, T<400°C
Y - Special RTD class and type

TET300-							Complete Order Code

(1) EEx-d certified version requires 1/2" NPT thread
(2) max. length 990 mm when ***standard bar stock*** thermowell is required
max. length 4000 mm when ***standard pipe*** thermowell is required
max. length 30000 mm when ***NO standard*** thermowell is required

Supplementary Documentation

☐ TMD833T compact RTD thermometer
Technical Information TI 241T/02/en

☐ Industrial Protecting Tubes
Technical Information TI 138T/02/en

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