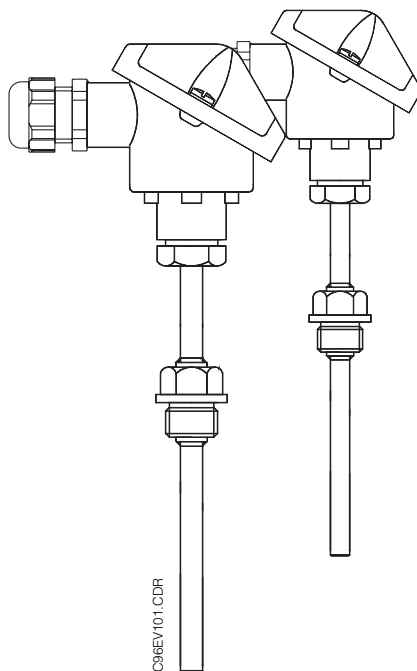


RTD Thermometer *omnigrad TST90*

Process thermometer - Building automation

Ø 6 mm M.I. replaceable inset

Straight and Reduced Tip - Matched pairs



Description

TST90 RTD thermometer assembly includes a replaceable single Pt100 inset in mineral insulated cable, a terminal head and a thermowell. The inset is equipped with special matched Pt100 for thermal energy measurement. The terminal head can be selected from a wide choice of standard items (see the Order key or the TA20 Technical Information for more details). The thermowell can be delivered with a reduced tip for fast response time. TST90 is always delivered in matched pairs.

Application

Typical application can be found in heat exchangers for inlet and outlet differential temperature measurement. The thermal energy can be calculated knowing ΔT between inlet and outlet, flowrate and other parameters.

Technical data

Mineral Insulated Replaceable Inset

Version:	TET90
Sensing element:	Platinum resistance, 1 x Pt100 Ω at 0°C, thinfilm type
Tolerances:	matched pairs, ± 0.05 K (0÷120°C) or ± 0.1 K (-40÷0°C)
Operating temperature:	-50°C to +200°C
Wiring:	2 or 4 wire connections
Insulation resistance:	≥ 100 M Ω , test voltage 250 V at ambient temperature
Electrical connections:	terminal block
Stem:	mineral insulated cable
Sheath:	AISI316L / W.1.4404
Standard diameter:	6 mm straight tip type or 3x50 reduced tip type
Response time values:	T ₅₀ = 24 s ; T ₉₀ = 72 s (straight tip)
<small>(according to IEC 751 in moving water at 0.4 m/s)</small>	T ₅₀ = 7.5 s ; T ₉₀ = 20.5 s (reduced tip)
Internal resistance:	0.06 Ω /m for each single conductor (straight tip)
<small>(for 2 wire electrical connection compensation)</small>	0.12 Ω /m for each single conductor (reduced tip)

Protecting tube

Version:	TA10 thermowell
Standard diameter:	9 x 7 mm
Reduced tip:	see next page
Standard material:	AISI316Ti / W.1.4571
Connection to process:	G 1/2" - M
Connection to head:	M24 x 1.5
Max. rating conditions:	50 bar @ 20°C ; 1 bar @ 400°C

Terminal head

refer to Order key

Quality made by
Endress+Hauser



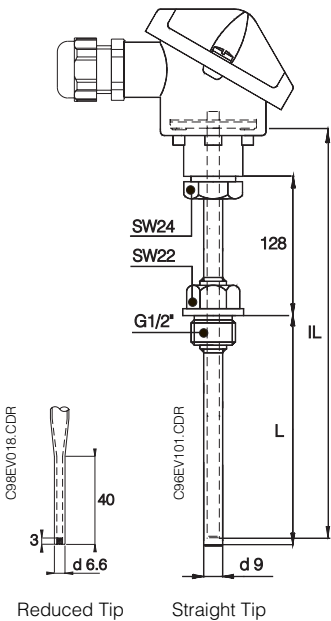
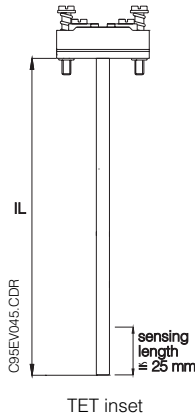
ISO 9001

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Order key

- Accuracy statement is referred to the inset only as defined by IEC751 without thermowell which may introduce a thermal drift due to process connection heat dissipation in conjunction to short immersion lengths. For a correct temperature measurement thermowell immersion length must be 20 times its diameter. Shorter immersion lengths can be supplied but the thermometer requires an external (process connection, neck and connection head) thermal insulation.
- For inset replacement, length IL is calculated as follows:
IL = L + 155 mm



Note: all dimensions in millimeters

TST90 - Process thermometer - Building automation
Ø 6 mm M.I. inset - Straight and Reduced Tip - Matched pairs

Material of the thermowell						
1 - AISI316Ti / W.1.4571						
Process immersion length L						
U - 100 mm						
D - 160 mm						
F - 250 mm						
K - 400 mm						
X - mm length to specification (min.75mm-max.3700mm)						
Y - mm special length						
Thermowell material						
1 - AISI316Ti / W.1.4571						
Shape of tip						
S - Straight tip, standard response						
T - Reduced tip, fast response						
Electrical connections						
3 - Terminal block						
Class and type of inset						
1S2 - 1 Pt100, 2 wires, cal. 0,05 K (0 + 120°C)						
1S4 - 1 Pt100, 4 wires, cal. 0,05 K (0 + 120°C)						
1U4 - 1 Pt100, 4 wires, cal. 0,1 K (-40 + 0°C)						
Terminal head						
A - TA20A: M24 bottom, PG16 Grey, IP55						
B - TA20B: M24 bottom, PG16 Grey, IP55						
D - TA20B: M24 bottom, PG16 Grey, IP55						
Y - To specification						

TST90-								Complete Order Code
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Supplementary documentation

- ☐ TET90 Ø 6 mm M.I. inset
Technical Information TI225T/02/en
- ☐ TA20 terminal heads
Technical Information TI072T/02/en

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