Resistance Thermometers – Measuring Insert

Replacement part for the installation into connection heads

TPtMiAo
TPtMiAoT

Application

The measuring inserts TPtMiAo and TPtMiAoT according to DIN 43 735 are solely intended for installation into protective fittings for electrical thermometers with connection heads form B according to DIN EN 50 446.

For both models, we offer various measuring resistors according to DIN EN 60 751. In addition, model TPtMiAoT is available with several fitted transmitters with analogue or digital output.

For the installation in connection heads with flameproof enclosure (types XD-AD and XD-SD), the measuring inserts are optionally available with a sleeve, which forms, in combination with a socket, a flameproof gap in the connection head. The measuring inserts must not be replaced in explosive atmospheres and do not have an own EU Type Examination Certificate. They are solely intended for operation in accordingly certified protective fittings.

Standard Versions

Measuring Element
Platinum thin-film measuring resistor Pt100 according to DIN EN 60 751 in 2-, 3- or 4-wire connection as single or dual measuring resistor

Operating Temperature Range[1)]
–200 °C to +600 °C (–328 °F to +1112 °F)

Ambient Temperature Ranges[2)]

Model TPtMiAo:	–40 °C to +100 °C (–40 °F to +212 °F)
Model TPtMiAoT:	–40 °C to +85 °C (–40 °F to +185 °F)

Accuracy
Class AA, A or B according to DIN EN 60 751

Temperature Sensor
Made of sheathed, mineral insulated cable

Sheath material:	stainless steel 316L (1.4404)
Insulation:	MgO
Diameter (d):	$3^{\pm 0.05}$ or $6^{\pm 0.06}$ mm ($0.12^{\pm 0.002}$ or $0.24^{\pm 0.0024}$ ")
Min. bending radius[3)]:	5-fold diameter (d)
Spring travel:	approximately 7 mm (0.28")

Degree of Protection (DIN EN 60 529)
IP00[4)]

Output Signal

Model TPtMiAo:	resistance according to DIN EN 60 751
Model TPtMiAoT:	4…20 mA, HART® or PROFIBUS® PA/ FOUNDATION™ Fieldbus

Ordering Information

See page 3

Special Versions (Upon Request)

- Measuring insert diameter 4.5 or 8 mm (0.18 or 0.31")
- Other basic values (e.g. Pt500, Pt1000) and limited tolerances (e.g. ⅓ cl. B, ⅛ cl. B)
- Measuring resistor wire-wound in ceramic –200 °C to +800 °C (–328 °F to +1472 °F)
- Special sheath materials
- Other head-mount transmitters, also with voltage output
- Version without ceramic terminal block for the subsequent mounting of transmitters

[1)] for accuracy class AA, the operating temperature range is reduced to –70 °C to +550 °C (–94 °F to +1022 °F)
[2)] max. permissible temperature at the ceramic terminal block or the transmitter
[3)] the bottom 50 mm (1.97") of the temperature sensor must not be bent
[4)] Measuring inserts are intended for the installation into protective fittings for electrical thermometers, which are equipped with an appropriate degree of protection for safe operation.

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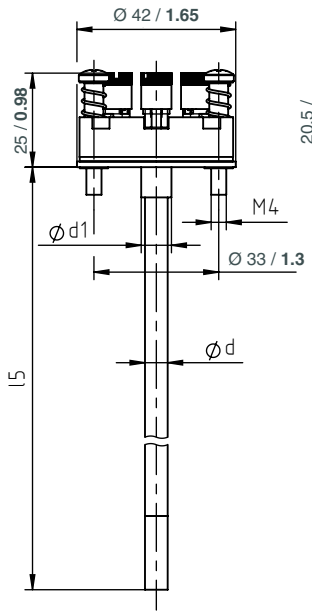
Dimensional Data (mm/inches) and Weight (kg/lb), Electrical Connection

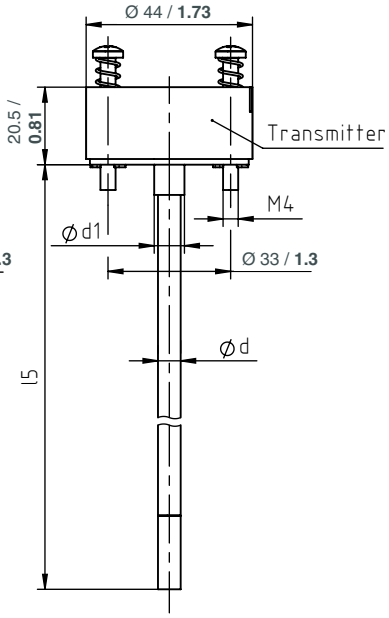
Dimensional Data

Standard version

TPtMiAo

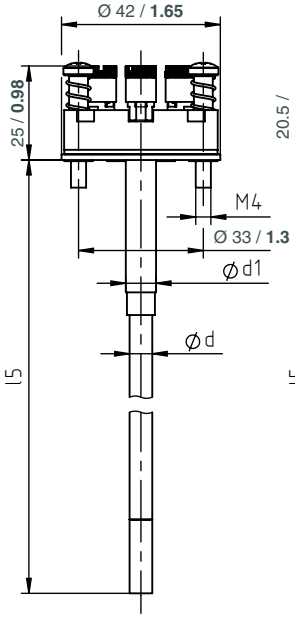


TPtMiAoT

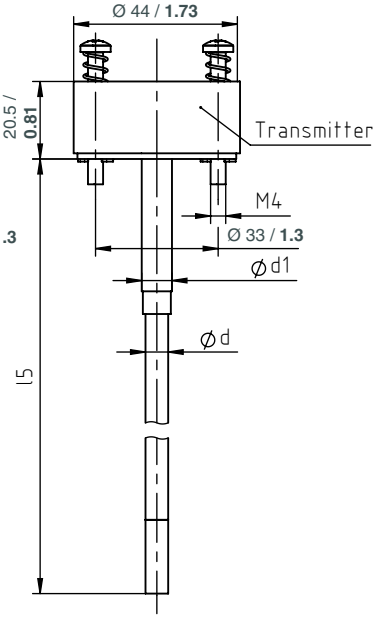


Version with sleeve

TPtMiAo



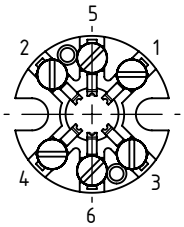
TPtMiAoT

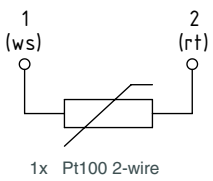


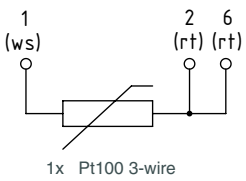
Dimensional Data and Weights

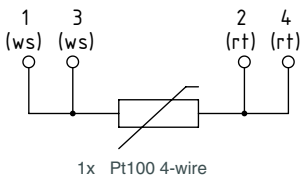
Ø d	Ø d1		approx. weight[1)]	
	standard	sleeve	TPtMiXiAo	TPtMiXiAoT
3 / **0.12**	6 / **0.24**	8 / **0.31**	0.13 / **0.29**	0.12 / **0.26**
6 / **0.24**	8 / **0.31**	8 / **0.31**	0.15 / **0.33**	0.15 / **0.33**

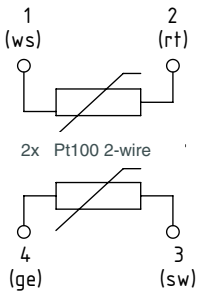
Electrical Connection

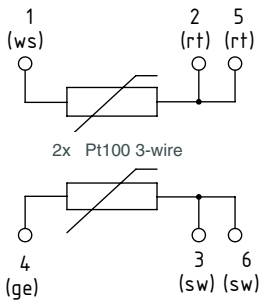












[1)] based on an installation length (l5) of 150 mm (5.91")

Ordering Information

Basic Model:	Resistance Thermometer – Measuring Insert		TPtMiAo
Transmitter:	without		without code letter
	with fitted transmitter		**T**
Version:	standard		**S**
	with fitting sleeve for connection heads with flameproof enclosure		**D**
Measuring resistor:	Pt100 DIN EN 60 751, class AA		**AA**
	Pt100 DIN EN 60 751, class A		**A**
	Pt100 DIN EN 60 751, class B		**B**
No. of measuring resistors:	1		**1**
	2[1)]		**2**
Connection method:	2-wire connection		**2L**
	3-wire connection		**3L**
	4-wire connection[1)]		**4L**
Measuring insert Ø d:	3 mm (0.12")		**d = 3 mm**
	6 mm (0.24")		**d = 6 mm**
Installation length:	l5 in mm	e.g.	**l5 = 200 mm**
With fitted transmitter:	TT5331: 4…20 mA		**5331-A, 5331-D**
	TT5333: 4…20 mA[2)]		**5333-A, 5333-D**
	TT5337: 4…20 mA + HART 7		**5337-A, 5337-D**
	TT5350: PROFIBUS® PA / FOUNDATION™ Fieldbus		**5350-A, 5350-B**
Measuring range:	scaling of the 4…20 mA signal to the temperature range	e.g.	**0 °C to +250 °C**
Options:	crimped-on tube sleeve 50 mm (1.97") for alignment to the internal thermowell diameter	Ø 8 mm (0.31") Ø 10 mm (0.39")	

Example:	**TPtMiAoT, D, B, 1, 3L, d = 6 mm, l5 = 150 mm, 5333A, 0 °C to +300 °C**

Special Versions: Please describe your requirements in cleartext!

[1)] For the dual measuring resistor, a 4-wire connection is not applicable.
[2)] Only 3-wire connection applicable.