

Resistance Thermometers – Measuring Insert Intrinsically Safe

Replacement part for the installation into connection heads

TPtMiXiAo
TPtMiXiAoT



Application

The measuring inserts TPtMiXiAo and TPtMiXiAoT 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 and have an EU Type Examination Certificate for the ignition protection type "intrinsic safety". Both models meet the requirements of the directive 2014/34/EU for the application in potentially explosive atmospheres due to gases and dusts.

For the operation 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.

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

The measuring inserts shall only be used in a suitable housing.

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 Range¹⁾

–200 °C to +600 °C (–328 °F to +1112 °F)

Ambient Temperature Range²⁾

–40 °C to +85 °C (–40 °F to +185 °F)

Please refer to operating instruction B71 for the precise conditions.

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): $3^{+0.05}$ or $6^{+0.06}$ mm ($0.12^{+0.002}$ or $0.24^{+0.0024}$ ")
Min. bending radius³⁾: 5-fold diameter (d)
Spring travel: approximately 7 mm (0.28")

Degree of Protection (DIN EN 60 529)

IP00⁴⁾

Approvals

II 1G Ex ia IIC T6...T1 Ga⁵⁾
II 2G Ex ia IIC T6...T1 Gb⁵⁾
II 1D Ex ia IIIC T80 °C...T440 °C Ga⁵⁾
II 2D Ex ia IIIC T80 °C...T440 °C Gb⁵⁾



Application in Explosion Hazardous Areas

Zones 0, 1, 2: applicable with protective fitting with degree of protection of at least IP54
Zones 20, 21, 22: applicable with mounting part with degree of protection of at least IP6X

Output Signal

Model TPtMiXiAoT: 4...20 mA, HART® or PROFIBUS® PA/FOUNDATION™ Fieldbus

Electrical Connection Values

For the electrical connection values, please refer to operating instruction B71.

Ordering Information

See page 3

Special Versions (Upon Request)

- Other basic values (e.g. Pt500, Pt1000) and limited tolerances (e.g. ½ cl. B, ⅓ cl. B)
- Measuring resistor wire-wound in ceramic –200 °C to +800 °C (–328 °F to +1472 °F)
- Other head-mount transmitters, also with voltage output

¹⁾ for accuracy class AA, the operating temperature range is reduced to –70 °C to +550 °C (–94 °F to +1022 °F)

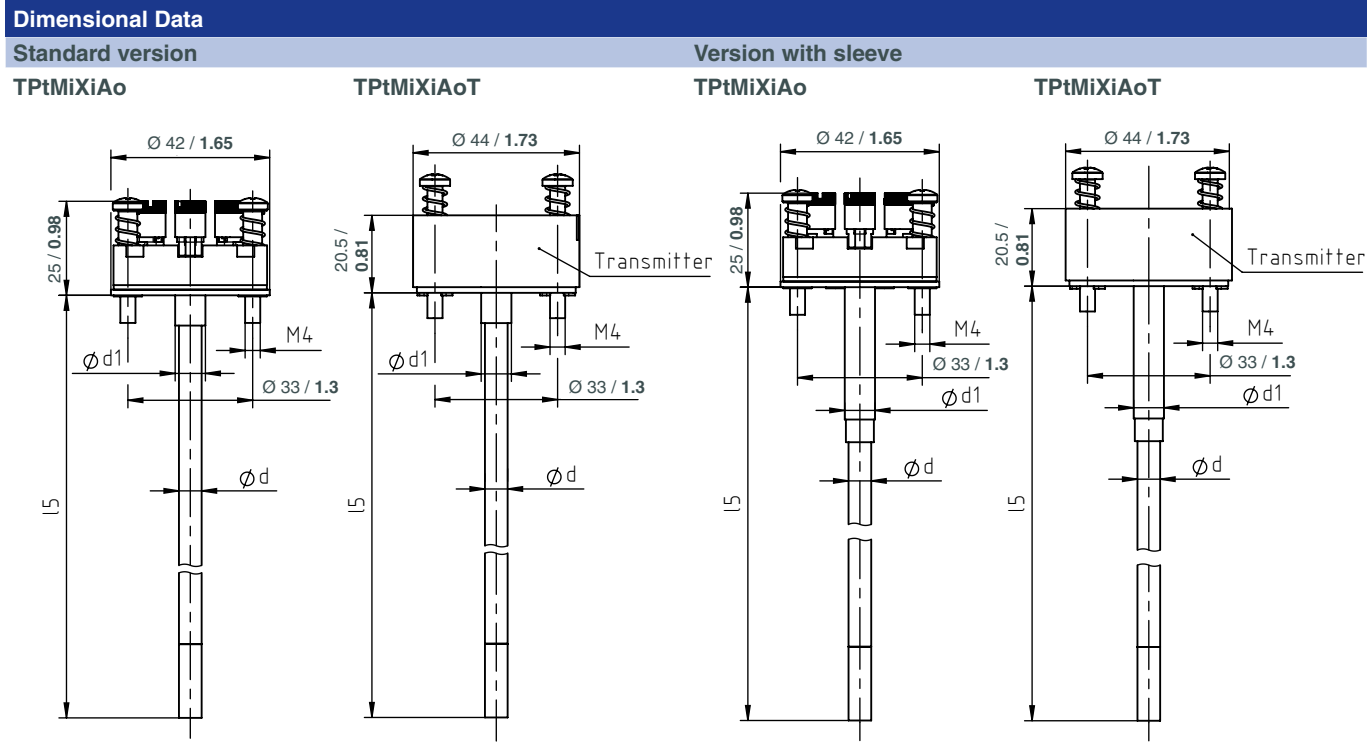
²⁾ max. permissible temperature at the ceramic terminal block or the transmitter

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

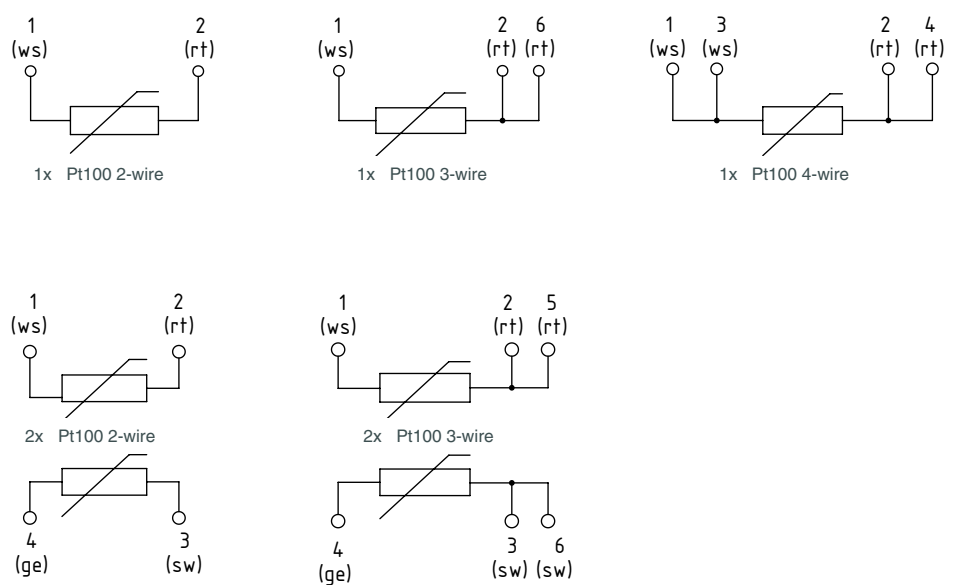
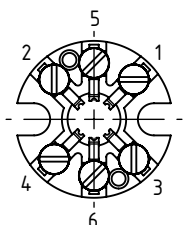
⁵⁾ only with suitable protective fitting

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



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 Intrinsically Safe	TPtMiXiAo
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 ²⁾		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:	I5 in mm	e.g.	I5 = 200 mm
With fitted transmitter:	TT5331: 4...20 mA		5331-D
	TT5333: 4...20 mA ³⁾		5333-D
	TT5337: 4...20 mA + HART 7		5337-D
	TT5350: PROFIBUS® PA/FOUNDATION™ Fieldbus		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")	

Example: TPtMiXiAoT, D, B, 1, 3L, d = 6 mm, I5 = 150 mm, 5333D, 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 applicable for accuracy class B.
³⁾ Only 3-wire connection applicable.