

Resistance Thermometers with Flameproof Enclosure, with Fabricated Thermowell

According to DIN 43 772, replaceable measuring insert

TPtSrXdA
TPtSrXdAT



Application

The resistance thermometer models TPtSrXdA and TPtSrXdAT with fabricated thermowells form 2, 2G and 2F according to DIN 43 772 have an EU Type Examination Certificate for the ignition protection type "flameproof enclosure". Both models meet the requirements of the directive 2014/34/EU for the application in potentially explosive atmospheres due to gases and dusts. The resistance thermometers can be mounted directly into the process. The measuring insert can be replaced as separate component.

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

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 Ranges²⁾

-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

Measuring Insert

Special measuring insert with sleeve, which forms, in combination with a socket, a flame arrester in the connection head. The measuring insert shall only be replaced by an original spare part. Spring-loaded in the connection head

Insertion tube made of sheathed, mineral insulated cable

Sheath material: stainless steel 316L (1.4404)
Insulation: MgO
Diameter (dF): 3 ± 0.05 or 6 ± 0.06 mm (0.12 ± 0.002 or 0.24 ± 0.004 ")
Spring travel: approximately 7 mm (0.28")

Neck Tube

Material: stainless steel 316Ti (1.4571)
Standard length h: 120 mm (4.7")

Thermowell

Form 2, 2F or 2G according to DIN 43 772
Material stainless steel 316Ti (1.4571)

Connection Heads

Types XD-AD, XD-AD-W, XD-SD or XD-SD-W

Degree of Protection (DIN EN 60 529)

IP66 – 68³⁾



Approvals

II 1G Ex ia db IIC T6...T1 Ga⁴⁾⁵⁾
II 1/2G Ex db IIC T6...T1 Ga/Gb
II 1/2G Ex ia/db IIC T6...T1 Ga/Gb⁴⁾⁵⁾
II 2G Ex db IIC T6...T1 Gb
II 1D Ex ia tb IIIC T80 °C...T440 °C Da⁴⁾⁵⁾
II 1/2D Ex ia/tb IIIC T80 °C...T440 °C Da/Db⁴⁾⁵⁾
II 2D Ex tb IIIC T80 °C...T440 °C Db

Application in Explosion Hazardous Areas

Zones 1, 2, 21, 22

Zones 0, 20:

applicable with measuring insert with ignition protection type Ex ia

Output Signal

Model TPtSrXdA: resistance according to DIN EN 60 751
Model TPtSrXdAT: 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 4

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

²⁾ permissible storage temperature at the connection head

³⁾ depending on the screwed cable gland used

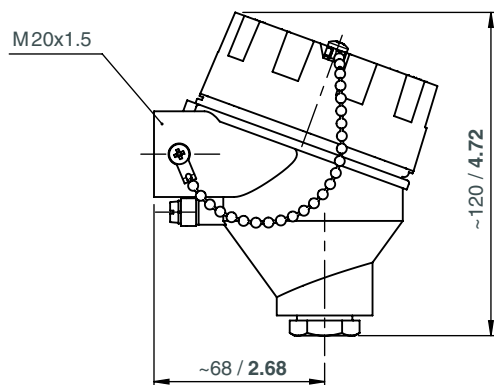
⁴⁾ only with intrinsically safe TPTMiXiAo / TPTMiXiAoT – measuring insert

⁵⁾ not with display in the connection head

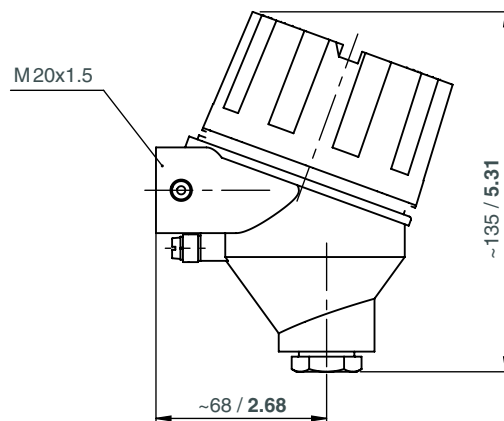
Connection Heads, Dimensional Data (mm/inches)

Connection Heads

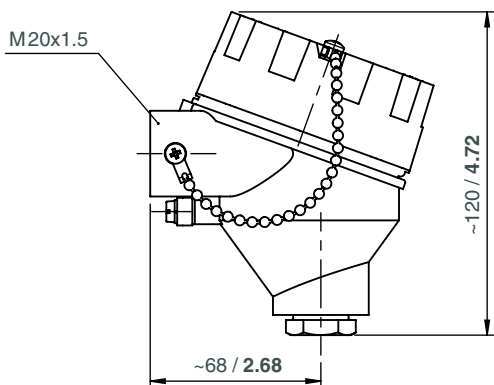
Head XD-AD
Material: die-cast aluminum
Lid: screw-on lid
No. of transmitters: 1
Max. installation dimensions: Ø 62 x 40 mm (2.44 x 1.57")
Specifics: –



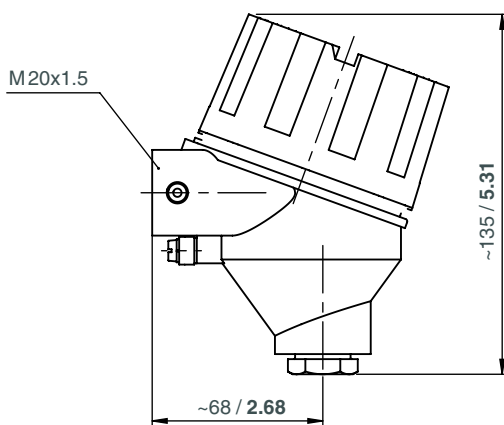
Head XD-AD-W
Material: die-cast aluminum
Lid: screw-on lid with window
No. of transmitters: 1
Max. installation dimensions: Ø 62 x 40 mm (2.44 x 1.57")
Specifics: with display in the high lid



Head XD-SD
Material: stainless steel 316 (1.4401)
Lid: screw-on lid
No. of transmitters: 1
Max. installation dimensions: Ø 62 x 40 mm (2.44 x 1.57")
Specifics: –



Head XD-SD-W
Material: stainless steel 316 (1.4401)
Lid: screw-on lid with window
No. of transmitters: 1
Max. installation dimensions: Ø 62 x 40 mm (2.44 x 1.57")
Specifics: with display in the high lid



Process Connections, Dimensional Data (mm/inches)

Dimensional Data

Process connections: Without thread

Form acc. to DIN 43 772: form 2

Installation length U1¹⁾: 280, 370, 520 mm (11.02, 14.57, 20.47")

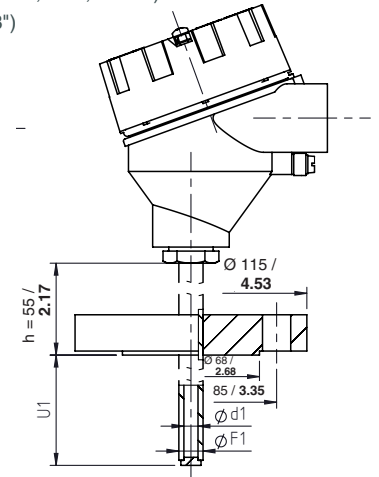
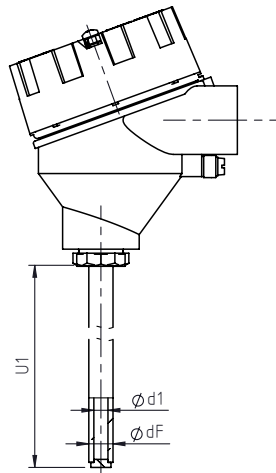
Measuring insert length: U1 + 33 mm (1.3")

Blind flange acc. to DIN 2527, DN 25 PN 40, form C form 2F

225, 315, 465 mm (8.86, 12.4, 18.31")

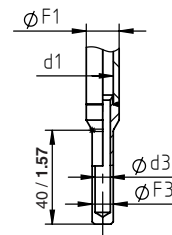
U1 + h + 33 mm (1.3")

F1	d1	Measuring insert Ø
12 / 0.47	9 / 0.35 ²⁾	6 / 0.24
14 / 0.55	9 / 0.35	6 / 0.24 ³⁾



Tapered measuring tip²⁾

F1	d1	F3	d3	Measuring insert Ø
12 / 0.47	7 / 0.28	6 / 0.24	3.5 / 0.14	3 / 0.12
14 / 0.55	9 / 0.35	9 / 0.35	6.5 / 0.26	6 / 0.24



Process connection: Thread spigot

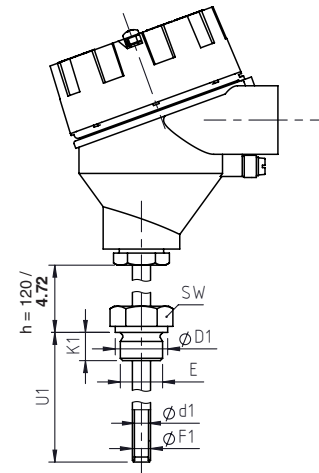
Form acc. to DIN 43 772: form 2G

Installation length U1¹⁾: 160, 250, 400 mm (6.3, 9.84, 15.75")

Measuring insert length: U1 + h + 33 mm (1.3")

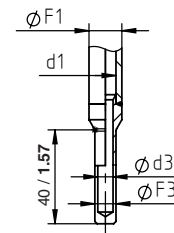
E	F1	d1	Measuring insert Ø
G ½ B (½" BSP) ½" NPT ²⁾ M20x1.5 ²⁾	12 / 0.47	7 / 0.28	6 / 0.24
G ¾ B (¾" BSP) ²⁾ G 1 B (1" BSP)	14 / 0.55	9 / 0.35	6 / 0.24 ³⁾

E	K1	i2	D1	SW
G ½ B (½" BSP)	14 / 0.55 ⁴⁾	–	26 / 1.02	27 / 1.06
½" NPT	19 / 0.75	8.13 / 0.32	–	27 / 1.06
M20x1.5	14 / 0.55	–	25 / 0.98	27 / 1.06
G ¾ B (¾" BSP)	16 / 0.63	–	27 / 1.06	32 / 1.26
G 1 B (1" BSP)	18 / 0.71 ⁴⁾	–	39 / 1.54	41 / 1.61



Tapered measuring tip²⁾

F1	d1	F3	d3	Measuring insert Ø
12 / 0.47	7 / 0.28	6 / 0.24	3.5 / 0.14	3 / 0.12
14 / 0.55	9 / 0.35	9 / 0.35	6.5 / 0.26	6 / 0.24



¹⁾ Deviating lengths available – please specify when ordering.

²⁾ No version according to DIN 43 772.

³⁾ With crimped-on sleeve Ø 8 x 50 mm (0.31 x 1.97") in the sensor range. Measuring insert with a consistent diameter of 8 mm (0.31") upon request.

⁴⁾ Deviating from DIN 43 772, we manufacture the length of the thread spigot according to DIN 3852-2.

Ordering Information

Basic Model:		Resistance Thermometer with Flameproof Enclosure	TPtSrXdA
Transmitter:	without		without code letter
	with fitted transmitter		T
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
Thermowell Ø F1:	12 x 2.5 mm (0.47 x 0.1")		F1 = 12 mm
	14 x 2.5 mm (0.55 x 0.1")		F1 = 14 mm
Measuring insert Ø dF:	3 mm (0.12")		dF = 3 mm
	6 mm (0.24")		dF = 6 mm
Connection head:	type XD-AD		XD-AD
	type XD-AD-W (with display in the high lid)		XD-AD-W
	type XD-SD		XD-SD
	type XD-SD-W (with display in the high lid)		XD-SD-W
Process connection:	form 2, without thread (plain)		2
	form 2F, blind flange according to DIN 2527, DN 25 PN 40		2F
	form 2G, thread spigot		2G
Tapered measuring tip:	without		without code letter
	with tapered measuring tip		S
Connection thread:	see page 3	e.g.	G ½ B
Installation length U1:	form according to DIN 43 772 (other lengths upon request)	2 280, 370, 520 mm (11.02, 14.57, 20.47")	
		2F 225, 315, 465 mm (8.86, 12.4, 18.31")	
		2G 160, 250, 400 mm (6.3, 9.84, 15.75")	e.g.
With fitted transmitter:	TT5331: 4...20 mA		5331-A, 5331-D
	TT5333: 4...20 mA ³⁾		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:	neck tube length h	other lengths, min. 20 mm (0.79")	
	instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17") sticker on the case	
Example:	TPtSrXdAT, B, 1, 3L, F1 = 12 mm, dF = 6 mm, XD-AD, 2G, G ½ B, U1 = 250 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 applicable for accuracy class B.

³⁾ Only 3-wire connection applicable.