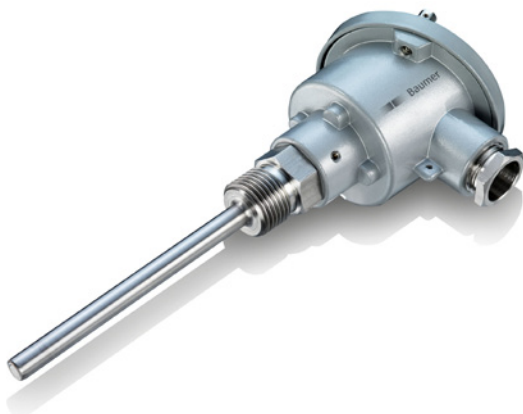




Main features

- Sensor and connection in stainless steel, AISI 316L
- DIN form B housing
- Robust design

Applications

- Industrial applications with industrial process connection
- Pipe systems
- Heating systems
- Water systems
- Tanks and vessels

Technical specification

Housing	DIN form B, Aluminium
El. connection	M20, option M16, M20 marine app.
Output	Pt100/Pt1000 Ceramic terminal block. 4...20 mA temperature transmitter
Sensor tube material	Stainless steel AISI 316L (1.4404)
Sensor diameter outside	Ø 6, Ø 8 or Ø 10 mm
Sensor length	Standard tip <3000 mm Fast response tip <300 mm
Standard response tip	As outside diameter
Fast response tip	Ø 4 x 20 mm
Max. flow velocity	Air : 40 m/sec Liquid : 5m/sec.

Sensor element, Pt100 - DIN/EN/IEC 60751

Pt100 DIN class B	$\pm (0.3 + 0.005xt) ^\circ\text{C}$
Pt100 1/3 DIN class B	$\pm 1/3 \times (0.3 + 0.005xt) ^\circ\text{C}$
Pt100 1/6 DIN class B	$\pm 1/6 \times (0.3 + 0.005xt) ^\circ\text{C}$
Pt100 DIN class A	$\pm (0.15 + 0.002xt) ^\circ\text{C}$
Single element	1 x Pt100
Double element	2 x Pt100
Connection	2-wire or 4-wire

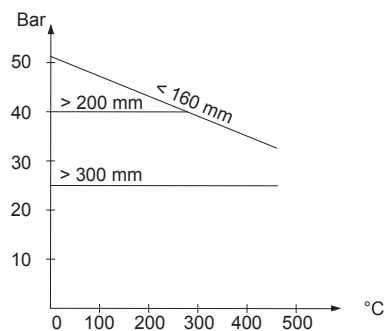
Sensor element, Pt1000 - DIN/EN/IEC 60751

Pt1000 DIN 1/3 DIN class B	$\pm 1/3 \times (0.3 + 0.005xt) ^\circ\text{C}$
Single element	1 x Pt1000
Connection	2-wire

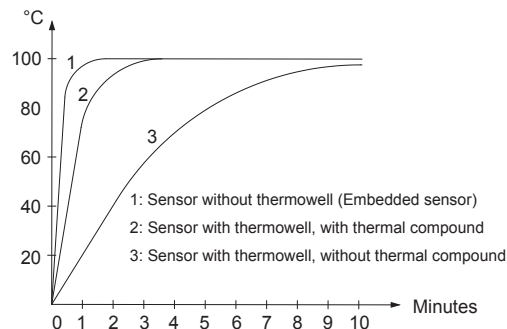
Environment

Ambient temperature	w.terminal block	-40...160°C
	w. transmitter	-40...85°C
Process temperature		-50...400°C
Protection class		IP65
Humidity		<100% RH, condensing
Vibrations		GL, test 2

Pressure

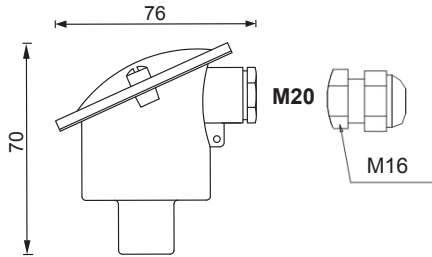


Response time



Note: When a pocket is used, the time delay increases. The delay is the time duration for the sensor to reflect the correct temperature after a sudden temperature change in the media.

Dimensions (mm), connection diagram and construction details



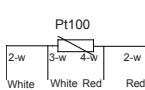
Ceramic terminal block



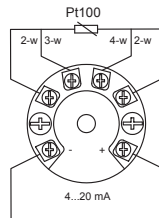
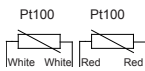
Temperature transmitter



Single element



Double element

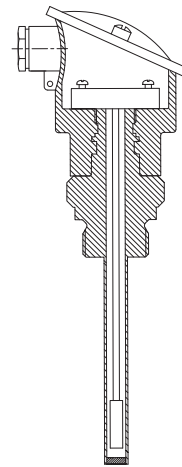
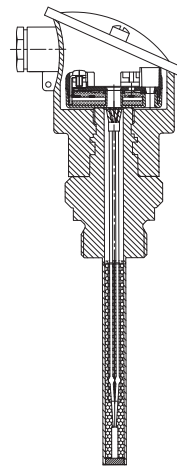
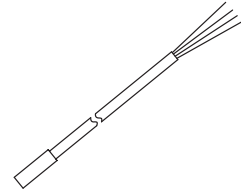


Embedded sensor

Not with replaceable sensor

Faster response time see page 1

Cable sensor insert



Transmitter, type FlexTop 2202 - Standard

Input	Pt100
Output	4...20 mA
Accuracy	
Input	<0.25°C
Output	<0.1% signal span (16mA)
Range	-200...850°C
Minimum span	25°C
Supply	8...35 VDC
Programmability	By FlexProgrammer 9701
For further information please see data sheet for FlexTop 2202	

Transmitter, type FlexTop 2211 - Performance

Input	Pt100 / Pt1000 (universal)
Output	4...20 mA
Accuracy	
Input	<0.1°C
Output	<0.1% signal span (16mA)
Range	-200...850°C
Minimum span	25°C
Supply	8...35 VDC
Programmability	By FlexProgrammer 9701
For further information please see data sheet for FlexTop 2211	

Transmitter, type FlexTop 2221 - Standard

Input	Pt100 / Pt1000 (universal)
Output	4...20 mA / HART
Accuracy	
Input	<0.1°C
Output	<0.1% signal span (16mA)
Range	-200...850°C
Minimum span	25°C
Supply	8...35 VDC
Programmability	By FlexProgrammer 9701 By HART terminal/modem
For further information please see data sheet for FlexTop 2221	

ATEX data for temperature transmitters

Transmitter, type FlexTop 2202 - ATEX

Approval	Ex ia IIC T5/T6, ATEX II 1G Ex nA II T5, ATEX II 3G
Supply	8...28 VDC
Internal inductivity	$L_i \leq 10 \mu\text{H}$
Internal capacity	$C_i \leq 10 \text{ nF}$
Temperature class	T1...T5: $-40 < T_{\text{amb}} < 85^\circ\text{C}$ T6: $-40 < T_{\text{amb}} < 50^\circ\text{C}$
Barrier data	U: $\leq 28 \text{ VDC}$ I: $\leq 0.1 \text{ A}$ P: $\leq 0.75 \text{ W}$

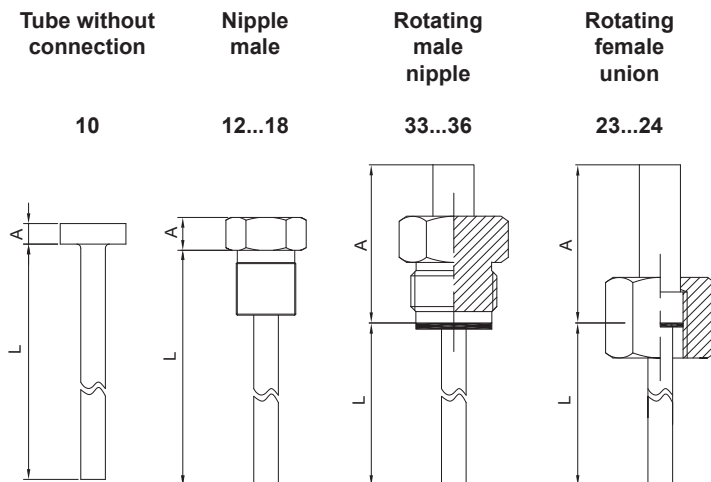
Transmitter, type FlexTop 2211 - ATEX

Approval	Ex ia IIC T5/T6, ATEX II 1G Ex nA II T5, ATEX II 3G
Supply	6.5...30 VDC
Internal inductivity	$L_i \leq 15 \mu\text{H}$
Internal capacity	$C_i \leq 5 \text{ nF}$
Temperature class	T1...T5: $-40 < T_{\text{amb}} < 85^\circ\text{C}$ T6: $-40 < T_{\text{amb}} < 50^\circ\text{C}$
Barrier data	U: $\leq 30 \text{ VDC}$ I: $\leq 0.1 \text{ A}$ P: $\leq 0.75 \text{ W}$

Transmitter, type FlexTop 2221 - ATEX

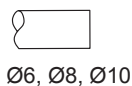
Approval	Ex ia IIC T5/T6, ATEX II 1G Ex nA II T5, ATEX II 3G
Supply	8...30 VDC (Ex nA : 12...30 VDC)
Internal inductivity	$L_i \leq 15 \mu\text{H}$
Internal capacity	$C_i \leq 5 \text{ nF}$
Temperature class	T1...T5: $-40 < T_{\text{amb}} < 85^\circ\text{C}$ T6: $-40 < T_{\text{amb}} < 50^\circ\text{C}$
Barrier data	U: $\leq 30 \text{ VDC}$ I: $\leq 0.1 \text{ A}$ P: $\leq 0.75 \text{ W}$

Dimensions (mm) for process connections and immersion tube

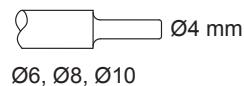


Connection	Code	A	A/F	L
Without	10	5	Ø18	20...3.000
G½, R½	12/13	10	22.0	20...3.000
M18, M20	16/17	10	22.0	20...3.000
½" NPT	18	10	22.0	20...3.000
G½ nipple	33	38	27.0	20...3.000
G¾ nipple	35	38	32.0	20...3.000
G1 nipple	36	38	36.0	20...3.000
G½ union	23	38	27.0	20...3.000
G¾ union	24	38	32.0	20...3.000

Standard
Tip



Fast
response tip



Ordering details TCR6

		TCR6	-	xxxx	.	x	x	x	x	.	x	x	xx	.	x	x	xx	.	xxxx
Model		TCR6	-																
Standard temperature sensor, CombiTemp TCR6																			
Electrical connection																			
Cable gland, M16				1520															
Cable gland, M16, shielded				1620															
Cable gland, M20 (standard)				1720															
Terminal block/Transmitter																			
Flying leads	Pt100 output			0															
Ceramic terminal block	Pt100 output			1															
FlexTop 2202	4...20 mA	±0.25°C		2															
FlexTop 2211	4...20 mA	±0.10°C		3															
FlexTop 2221	4...20 mA + HART®	±0.10°C		4															
Safety																			
Standard				0															
ATEX, ia (pending)				1															
ATEX, nA (pending)				3															
Configuration																			
No configuration				0															
Configuration of range				1															
Sensor element																			
None (for Cable Sensor)				0															
1 × Pt100 Cl. B				1															
2 × Pt100 Cl. B				2															
1 × Pt100 Cl. 1/3 B				5															
2 × Pt100 Cl. 1/3 B				6															
1 × Pt100 Cl. 1/6 B				7															
2 × Pt100 Cl. 1/6 B				8															
1 × Pt100 Cl. A				A															
2 × Pt100 Cl. A				B															
1 × Pt1000, cl. B				J															
1 × Pt1000, cl. 1/3 B				K															
Sensor insert type																			
Embedded	2-wire	sensor element		1															
Embedded	4-wire	sensor element		2															
Embedded	2x2-wire	sensor element		4															
Cable sensor	4-wire, Ø8 mm only	Pt100, 1/1 DIN B		A															
Cable sensor	4-wire, Ø8 mm only	Pt100, 1/3 DIN B		B															
Cable sensor	4-wire, Ø8 mm only	Pt100, 1/6 DIN B		C															
Cable sensor	4-wire, Ø8 mm only	Pt100, 1/1 DIN A		D															
Cooling neck																			
None				0															
71 mm				1															
142 mm				2															
213 mm				3															
Process connection																			
Tube without connection				10															
Nipple, male	G½	DIN3852 form A		12															
Nipple, male	R½	ISO 7/1		13															
Nipple, male	M18×1.5	ISO 261		16															
Nipple, male	M20×1.5	ISO 261		17															
Nipple, male	½"NPT-14	ANSI/ASME B1.20.1		18															
Rotating male nipple	G½	ISO 228/1 incl. NBR gasket		33															
Rotating male nipple	G¾	ISO 228/1 incl. NBR gasket		35															
Rotating male nipple	G1	ISO 228/1 incl. NBR gasket		36															
Rotating female union	G½	ISO 228/1 incl. NBR gasket		23															
Rotating female union	G¾	ISO 228/1 incl. NBR gasket		24															
Seal																			
No seal				0															
NBR gasket	(-40...108°C) for rotating nipple and union only			1															
Sensor diameter																			
Ø6.0 mm	Welded			5															
Ø8.0 mm	Welded			6															
Ø10 mm	Welded			8															
Sensor tip																			
Standard	Normal response			10															
Fast	Fast response	Not for cable sensor	Ø4 mm - Max. 300 mm	20															
Sensor tube length																			
Length in mm (e.g. 60 mm = 0060)																			xxxx



Main features

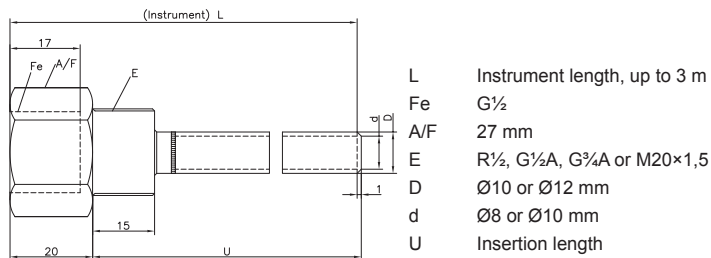
- Stainless steel, AISI 316
- Robust design

Applications

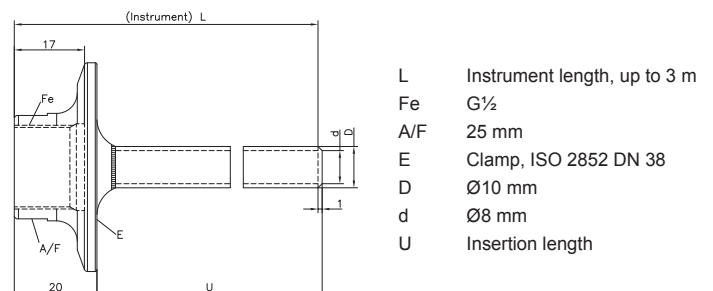
- For threaded process connection - Ø6 and Ø8 sensor
- For hygienic process connection - Ø6 sensor

Dimensions (mm)

Threaded industrial type



Hygienic type



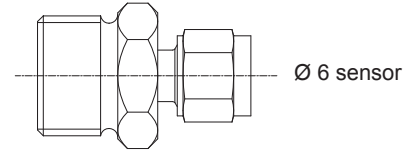
Ordering details ZPT4

	ZPT4	-	5	xx	6	x	.	xxxx
Model	Thermowell	ZPT4						
Instrument connection	Female thread $G\frac{1}{2}$		5					
Process connection	$R\frac{1}{2}$ ($\frac{1}{2}$ " BSPT)			14				
	$G\frac{1}{2}$			15				
	$G\frac{3}{4}$			34				
	M20x1.5			54				
	Clamp ISO 2852 DN 25/DN38			38				
Material	Stainless steel AISI 316L/1.4404				6			
Sensor diameter	Ø6 (outside Ø10 mm)					5		
	Ø8 (outside Ø12 mm)					7		
Length (L)	mm (60 mm = 0060)							0000

Mounting accessories: Compression gland, type ZPB1



Thread size
as per below



Specifications for compression gland, type ZPB1

Material	Stainless steel, AISI 316
Sensor diameter	Ø 6mm

Ordering details for compression gland

Model	ZPB1	-	0	14	65
Compression gland	ZPB1				
Material					
AISI 316 for Ø6 mm sensor			0		
Process connection					
G½A				14	65

Ventilation duct flange, Ø8 mm sensor only

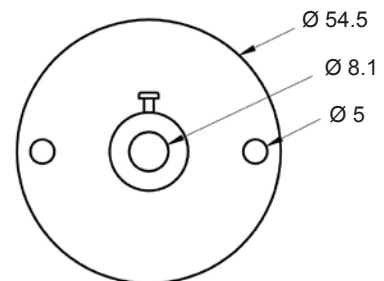
Material	Stainless steel, AISI 316
Sensor diameter	Ø 8mm



Dimensions for ventilation duct flange

Ventilation duct flange

Order : **ZPX1-002**



Ordering details

Model	
Duct flange	ZPX1.002

Thermal compound

Recommended within the temperature range of -40 ... +180 °C



Ordering details for thermal compound

Model	
6 gram in plastic bag	ZPX1-001