

Resistance thermometer Pt100 with weld-in thermowell Type series GA252.



Features

- Resistance thermometer with weld-in thermowell per DIN 43772 model 4 or custom-made design
- Pt100 connection in 3- or 4-wire technology
- Measuring insert 1 x Pt100 or 2 x Pt100
- Measuring insert interchangeable

Options

- Approvals / Certificates
 - Explosion protection
 - Classification per SIL2
- As per UKCA regulations
- Various transmitters can be integrated
- Measuring insert for In-Process calibration

Application

The resistance thermometer with weld-in thermowell is suited for operation on tanks and pipes. Weld-in thermowells per DIN 43772 model 4 or custom-made versions are available. Because of its robust design it is suitable for use in a great number of technological processes. The resistance thermometer can be supplied with a built in transmitter. A variety of transmitters for head mounting is available for different applications.

For In-process calibration the integration of a special measuring insert with additional test pipe is possible (data sheet DB_T4-025-45, Type GA3100, reference sensor: data sheet DB_T4-025-46, Type GA3110).

**SIL2**

Application area

- Chemical and petrochemical industry
- Plant and mechanical engineering
- General process technology

Technical data

Constructional design

Design:	Measuring insert (interchangeable) with connection head and thermowell
Connection head:	■ Model B cap with slotted screws, material: aluminium, degree of protection IP 54 ■ Model BUZH high spring cover with slotted screw, material: aluminium, degree of protection IP 65 ■ Field housing Ø 60 mm screw cap, material: stainless mat.-no. 1.4305 (303), degree of protection IP 67 Further connection heads upon request
Neck tube:	Standard Ø 9 mm, reinforced design Ø 11 mm. Material: stainless steel mat.-no. 1.4571 (316Ti)

Measuring system

Measuring insert:	Per DIN 43735, interchangeable, Ø 6 mm, rigid or as sheathed element Material stainless steel
Measuring resistor:	Pt100 per EN 60751, 3- or 4-wire technology (see order details)
Optional :	Measuring insert with connection socket per DIN 43735 and with additional test pipe for In-Process calibration (see data sheet DB_T4-025-45) Material: stainless steel mat.-no. 1.4571 (316 Ti)

Accuracy

Accuracy:	Class A per EN 60751 For In-Process measuring insert: class A in the range -50...300 °C, above this class B
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Indication

Design:	Programmable LED-on-site indication for stainless steel field housing (Ø 60 mm), (see data sheet DB_M6-031)
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Temperature ranges

See order details

Thermowell

Weld-in thermowell acc. to DIN 43772 model 4 or custom-made design.

Applications and materials see order code.

Option:
certification of material testing per EN 10204

Upon request a calculation for thermowells can be made
(for static or dynamic application) with certificate.

Transmitter

Integration:	Suitable Pt100 transmitter can be integrated into the connection head
Options:	■ Instead of terminal block ■ Mounting in the spring cover of the connection head BUZH
	For further suitable analog and digital transmitters see product group T4.

Tests and certificates

Ex approval standard measuring insert:

ATEX:	BVS 04 ATEX E 144 X ⊕ II 2G EEx ia IIC T4/T6 $U_i \leq 30 \text{ V}$ $P_i \leq 200 \text{ mW}$ Further technical information see Ex Instruction XA_002.
UK:	Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus. Further technical information see Ex Instruction XA_030.

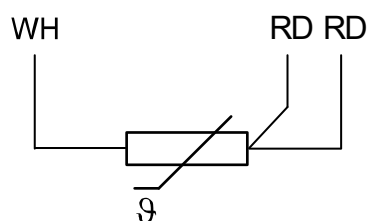
Ex approval measuring insert In-Process calibration:

ATEX:	IBExU 13 ATEX 1017 X ⊕ II 2G Ex ia IIC T6...T1 Gb $U_i \leq 30 \text{ V}$ $P_i \leq 750 \text{ mW}$ $L_i \text{ max. } 10 \mu\text{H/m}$ $C_i \text{ max. } 500 \text{ pF/m}$ Further technical information see Ex Instruction XA_003.
UK:	Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus. Further technical information see Ex Instruction XA_003.
SIL2:	Functional safety per EN 61508, classification per SIL2. For detailed information see SIL instruction SA_005.

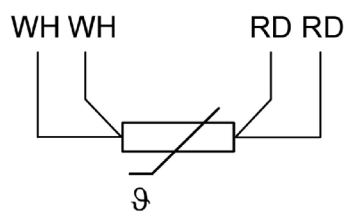
Connection diagram

Connection head

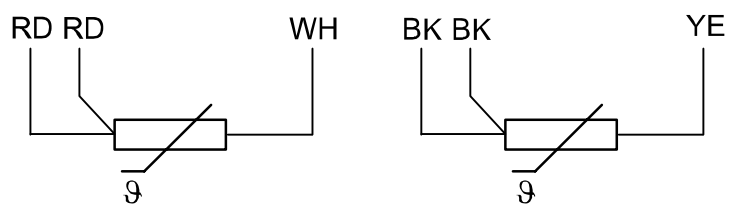
Pt100 3-wire



Pt100 4-wire

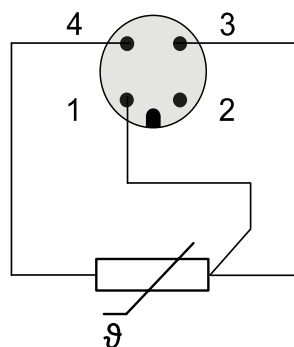


2 x Pt100 3-wire

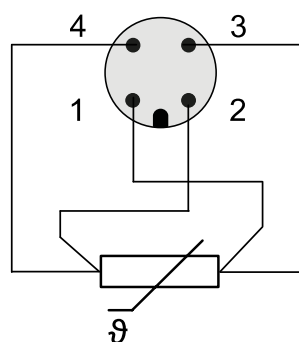


Circular connector M12

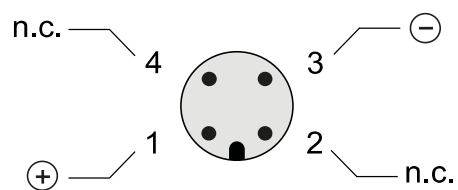
1 x Pt100 3-wire



1 x Pt100 4-wire



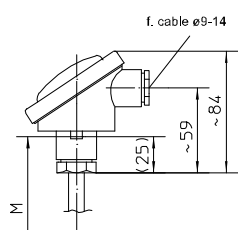
Transmitter



Dimensions

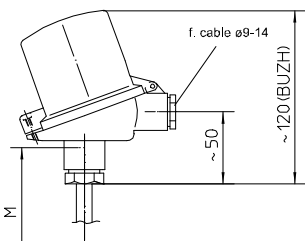
connection heads

model B, cap with
2 slotted screws
mat. aluminium, IP 54



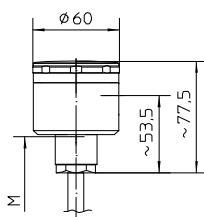
up to sealing surface

model BUZH, high spring cover
with slotted screw,
mat. aluminium, IP 65



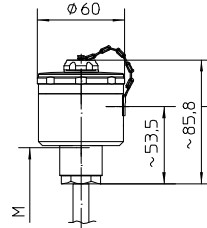
up to sealing surface

connection head field housing,
screw cap,
mat. stainless steel, IP 67

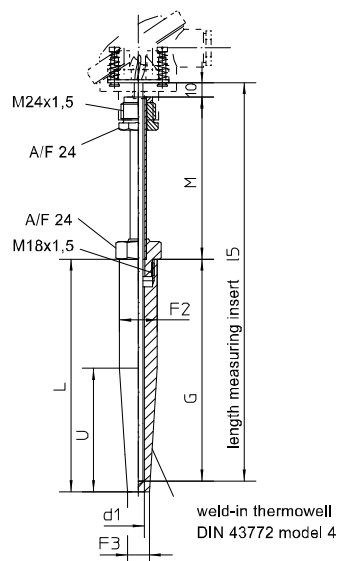
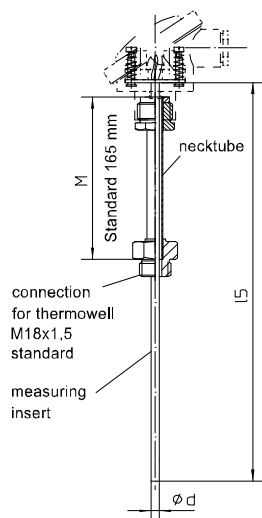
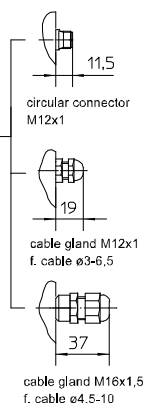


up to sealing surface

connection head field housing,
screw cap with opening,
mat. stainless steel, IP 67



up to sealing surface



length measuring insert $L5 = L + 10 + M$

Order details

Resistance thermometer Pt100 with weld-in thermowell					
GA252 .	design	with weld-in thermowell			
0	ex-protection	without			
1		explosion protection, type of ex-protection s. below			
A23	with neck tube	to connection head M24x1.5			
17		to thermowell M18x1.5			
1		neck tube Ø	9 mm, standard		
2			11 mm, reinforced design		
9			varying		
2		length neck tube	M = 165 mm		
9			varying		
1		mat. neck tube	stainless steel mat.-no. 1.4571 (316Ti)		
9			varying		
	weld-in thermowell DIN 43772, model 4	dimensions thermowell			meas. insert length
		L =	U =	d1 Ø	with neck tube M = 165 mm
B10 .		110 mm	65 mm	7 mm	285 mm
B11 .		140 mm	65 mm	7 mm	315 mm
B12 .		170 mm	133 mm	7 mm	345 mm
B13 .		200 mm	125 mm	7 mm	375 mm
B14 .		200 mm	65 mm	7 mm	375 mm
B15 .		260 mm	125 mm	7 mm	435 mm
B99 .		varying			
1	thermowell material	stainless steel mat.-no. 1.4571 (316Ti)			
2		steel mat.-no. 1.5415, 16 Mo 3			
3		steel mat.-no. 1.7335, 13 CrMo 44			
9		varying			
	measuring insert, as per EN 43735 (class A)	diameter, design, material	meas. element	operating range	test pipe
D2-M22		6 mm, st. steel, standard	thin film	-50...400 °C	-
D6-M21		6 mm, sheathed element, st. steel	ceramic	-200...600 °C	-
D22-M24		6 mm, rigid, st. steel (In-Process)		-50...400 °C ¹	28 mm ²
N2	sensor type	1 x Pt100 in 3-wire technology			
N3		1 x Pt100 in 4-wire technology			
N5		2 x Pt100 in 3-wire technology			
T11	connection head	model B	electrical connection cable gland M20x1.5		
T15		model BUZH	nickel plated brass cable Ø 9-14		
T47		field housing	cable gland	polyamide black	cable Ø 3-6,5
T47.40				st. steel	cable Ø 4,5-10
T47.21			with plug connector M12x1		
T47.51					
T49		field housing with additional opening for reference sensor	cable gland	polyamide black	cable Ø 3-6.5
T49.40				st. steel	cable Ø 4.5-10
T49.21					

Additional features (to be indicated in case of need, only)		
S52	Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus (UK; Standard measuring insert)	
S53	Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus (UK; Measuring insert In-Process calibration)	
S68	type of ex-protection	 II 2G Ex ia IIC T4/T6 ³ , BVS 04 ATEX E 144 X (standard measuring insert)
S75		 II 2G Ex ia IIC T6-T1 Gb, IBExU 13 ATEX 1017 X (In-Process calibration)
Z1	incl. transmitter (pls specify separately)	mounting on the measuring insert (instead of terminal block)
Z2		mounting in the spring cover of the connection head BUZH
W1020	material certificate per EN 10204-3.1	
W2604	functional safety per EN 61508, classification per SIL2	
W2660	as per UKCA regulations ⁴	
W1204	calibration certificate per EN 10204-3.1 (3 meas. points)	

Order code (example): GA2520 - A2317121 - B111 - D2-M22 - N2 - T47

¹ Up to 300 °C accuracy class A, above this class B.

² For In-Process calibration.

³ Only with sheathed element.

⁴ Not possible with inline diaphragm seal or connection to inline unit ASEPTconnect with pipe diameter > 25 mm.