# labom

# **Resistance thermometer Pt100**

# with weld-in thermowell Type Series GA252 .



#### Application area

- · Chemical and petrochemical industry
- · Machinery construction
- · General process technology

### Features

- Resistance thermometer with weld-in thermowell 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

- Explosion protection
- As per UKCA regulations
- Classification per SIL2
- Transmitter 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 measuriung insert with additional test pipe is possible (data sheet T4-025-45,Type GA3100, reference sensor: data sheet T4-025-46, Type GA3110).

#### Mechanical design

Measuring insert interchangeable with connection head and neck-tube

#### **Connection head**

selective

- $\cdot$  model B, cap with 2 slotted screws, mat. aluminium, IP 54
- · model BUZH, high spring cover
- with slotted screw, mat. aluminium, IP 65
- field housing Ø 60 mm, screw cap,
- stainless steel mat.-no. 1.4305 (303), IP 67 further connection heads upon request

#### Neck tube

stainless steel mat.no. 1.4571 (316Ti) neck tube Ø 9 mm reinforced design Ø 11 mm length and connection see order details

#### Measuring insert

material stainless steel, interchangeable, DIN 43735. length of measuring insert  $I_5$ = thermowell length L + 10 mm + M. Ø of meas. insert 6 mm resistor Pt100 according to EN 60751 Optional: Measuring insert with connection socket per DIN 43735 and with additional test pipe for In-process calibration.

Material: stainless steel, mat.-no. 1.4571

(316  $T_i$ ) (see data sheet T4-025-45)

# Type of sensor/class/circuit see order details

#### Ex-approval

Ex-type examination certificate for <u>Standard measuring insert</u>: BVS 04 ATEX E 144 X S II 2G EEx ia IIC T4/T6 U<sub>i</sub>  $\leq$  30 V P<sub>i</sub>  $\leq$  200 mW

More technical information see XA\_002.

#### Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus (UK).

More technical information see XA 030.

#### Measuring insert In-process calibration: IBExU 13 ATEX 1017 X

Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus (UK).

More technical information see XA\_003.

#### **Functional safety**

per EN 61508, classification per SIL 2; without transmitter, only

# Accuracy of the measuring resistor class A per EN 60751

For In-process measuring insert: class A in the range -50...300 °C, above this class B

#### 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 DIN EN 10204 Upon request a calculation for thermowells can be made (for static or dynamic application) with certificate.

#### Integration of transmitter

suitable Pt100 transmitters can be integrated into the connection head. Options:

- a) instead of terminal block
- b) mounting in the spring cover of the connection head BUZH

see product group T4 for analog or digital transmitters

#### LED-on-site indication

programmable LED-on-site indication for stainless steel field housing (Ø 60 mm), see data sheet M6-031.

## Dimensions

#### connection heads

connection head field housing, model B, cap with model BUZH, high spring cover screw cap, 2 slotted screws with slotted screw, mat. stainless steel, IP 67 mat. aluminium, IP 54 mat. aluminium, IP 65 11,5 f. cable ø9-14 f. cable ø9-14 Ø60 120 (BUZH) circular connector M12x1 84 ~ 77. С С 20 6 С Ì 25 THT 19 cable gland M12x1 f. cable ø3-6,5 37 cable gland M16x1,5 f. cable ø4,5-10 thermomwell models process connection thermowell according to DIN 43772: insertion/ insertion/ flanged screw-in screw-in welding welding ╓╴ (M=L-U1) (M=L-U1) (M=L-U1) 5 5 5  $\cup$ ØF1 ØFЗ similar model 3 model 2 G/3 G model 2 G/3 G model 2 F/3F model 2 with reduced tip conical thread **DIN-flange** parallel thread DN50/PN10/40 G1/2B 1/2"NPT model B1 (DIN EN 1092-1) G3/4B 3/4"NPT DN25/PN10/40 G1B model B1 (DIN EN 1092-1) M20x1,5

## **Connection diagram**

#### connection head



circular connector M12x1



## Order details

Resistance thermon design	· with weld-in the					GA25	52.									
doolgii	· without	Simowon				Onize	0									
ex-protection	· explosion protection, type of ex-protection s. below						1									
	• to connection head M24x1.5						-	A23								
with neck tube	• to thermowell M18x1.5						_	17								
							_	1								
	neck tube Ø	9 mm, standard 11 mm, reinforced design					_	2								
			norced desi	gn			_	2								
		varying														
	length neck tube	M = 165 m	m						2							
		varying							9							
	mat. neck	stainless steel matno. 1.4571 (316Ti)							1							
	tube	varying							9							
weld-in thermowell DIN 43772, model 4	dimensions ther	length with neck														
	L =	U =		d1 Ø	tube M = 165 mm											
	110 mm	65 mm		7 mm	285 mm					B10.						
	140 mm	65 mm		7 mm	315 mm					B11.						
	170 mm	133 mm		7 mm	345 mm					B12.						
	200 mm	125 mm		7 mm	375 mm					B13.						
	200 mm	65 mm		7 mm	375 mm					B14.						
	260 mm	125 mm		7 mm	435 mm					B15.						
	varying	-							_	B99.						
thermowell material	· stainless steel	matno. 1.4	571 (316Ti)						- 1	1						
	· steel matno. 1.5415. 16 Mo 3									2						
	• steel matno. 1.7335, 13 Cr Mo 44								-	3						
		1.7000, 10							-	9						
	varying diameter, design	matorial		meas. element	operating range	test pi	no			3						
measuring insert, as per EN 43735 (class A)				thin film	-50+400 °C		<u>pc</u>			_	D2-M22	,				
											D2-IVI22	_				
										_	-	_				
	-				-50+400 C 2	28 mi	ill °			_	D22-M2	_				
sensor type	1 x Pt100 in 3-wire technology, standard											N2	-			
	1 x Pt100 in 4-wire technology 2 x Pt100 in 3-wire technology											N3	-			
												N5	_	-		
connection head		model B electrical connection cable gland M20x1.5 nickel plated brass model BUZH cable Ø 9-14											T11	-		
	model BUZH field housing	cable Ø 9-	1									_	T15	-		
		cable gland	polyamide	cable Ø 3-6.5									T47	_		
			black	cable Ø 4.5-10								_	T47.40	-		
			st. steel cable Ø 3-6.5										T47.21	-		
		with plug c	onnector M1	2x1						_			T47.51			
dditional features (	to be indicated	<u>in case o</u> f r	eed, only)												_	
type of ex-protection	· Intrinsically sa	fe per EN 6	0079-11, P5	.7 simple electrical	apparatus (UK; Stand	ard me	easu	ring ins	ert)					S52		
	· Intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus (UK; Meas						nsert	In-proc	ess c	alibra	tion)			S53		
	· 🕼 II 2G EEx ia IIC T4/T6 <sup>1</sup> , BVS 04 ATEX E 144 X (standard measuring insert)													S68	1	
	II 2G Ex ia IIC T6T1 Gb, IBExU 13 ATEX 1017 X (In-process calibration)													S75	1	
incl. transmitter · mounting on the measuring insert (inste					ad of terminal block)										Z1	]
(pls specify se		mounting in the spring cover of the connection head BUZH												Z2		
naterial certificate pe															T	W102
s per UKCA regulati																W266
Inctional safety per l		fication per S	SIL2												-	W260
transmitter with resistance thermometer calibrated, incl. calibration certificate with 3 meas. points												+			+	W120
			, oundre									_			-	

only with sheathed element
up to 300 °C accuracy class A, above this class B
for In-process calibration

<sup>4</sup> not possible with inline diaphragm seal or connection to inline unit ASEPTconnect with pipe diameter > 25 mm