



Features

- Measuring resistor 1 x Pt 100 in 3- or 4-wire technology
- Measuring insert of stainless steel
- Measuring insert interchangeable
- Process connections for food/pharmaceutical/ biotechnology
- Hygienic design, constructive design according to the EHEDG recommendations
- Available with reduced tip (fast response)

Options

- Explosion protection
- Transmitter can be integrated
- Classification per SIL 2
- Measuring insert for In-process calibration

Application area

- Food industry
- Pharmaceuticals
- Biotechnology

Application

The resistance thermometer is suited for operation on tanks and pipings especially in hygienic applications. All standard types of process connections are available. Because of its robust design it is suitable for use in a great number of technological processes. The change in resistance, dependant on the measurement temperature, can be detected by a transmitter and converted into a standardized signal. 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 T4-025-45, Type GA3100, reference sensor: data sheet T4-025-46, Type GA3110).

Technical Data

Mechanical design
measuring insert (interchangeable) with connection head and thermowell

Connection head
selective

- 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

Thermowell
material stainless steel mat.-no. 1.4571 (316Ti) or 1.4404 (316L)
thermowell 9 x 1 or 11 x 2 mm
length see order details
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.

Measuring insert
material stainless steel, interchangeable, DIN 43735
resistor Pt 100 per DIN 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 Ti)
(see data sheet T4-025-45)

Type of sensor/class/ciit
see order details

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

Ex-approval
For standard measuring insert:
BVS 04 ATEX E 144 X
Ex II 2G Ex ia IIC T4/T6
U_i ≤ 30 V
P_i ≤ 200 mW
More technical information see XA_002

For In-process calibration:
IBExU 13 ATEX 1017 X
Ex II 2G Ex ia IIC T6-T1 Gb
U_i ≤ 30 V
P_i ≤ 750 mW
L_i max. 10 µH/m
C_i max. 500 pF/m
More technical information see XA_003.

Accuracy of the measuring resistor
class A per DIN EN 60751

Process connections

- aseptic connection DIN 11864-1
- DIN 11851 with coupling nut
- Tri-Clamp
- clamp connection DIN 32676
- clamp connection acc. to ISO 2852
- thermowell with welding ball 30 x 40 mm
- thread connection G1A conical, metal-to-metal joint
- Varivent
- Neumo BioControl
- Ingold connection incl. O-ring gasket EPDM

Further process connections upon request.
material of process conn.: stainless steel mat. no. 1.4404 (316L).
Gasket is not included (except for Ingold).

more Technical Data

Surface roughness

standard: surface roughness $Ra \leq 1.5 \mu m$
 hygienic: surface roughness $Ra \leq 0.8 \mu m$
 welding: $< 1.5 \mu m$

Integrated transmitters

suitable Pt 100 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 ($\varnothing 60 \text{ mm}$), see data sheet M6-031.

Dimensions

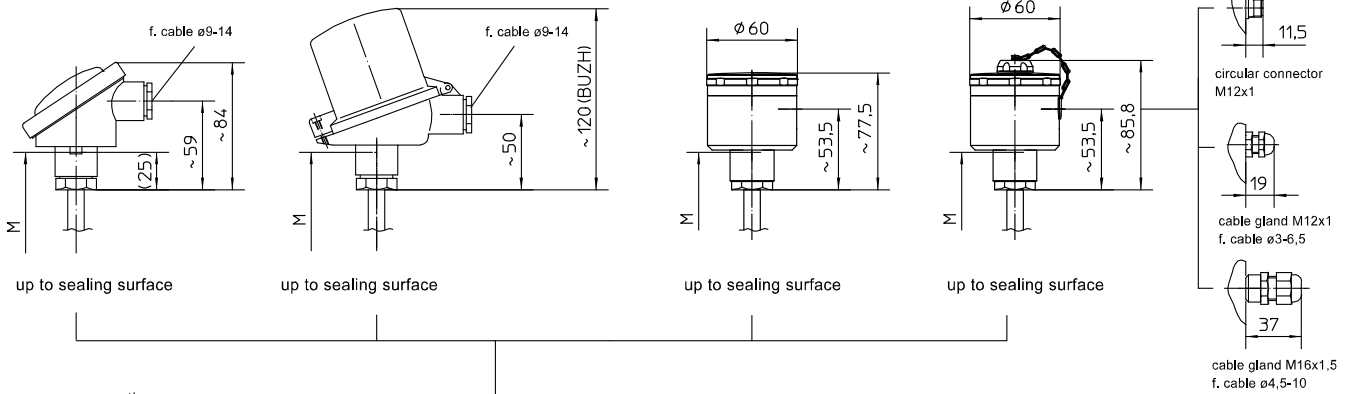
connection heads

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

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

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

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



process connections

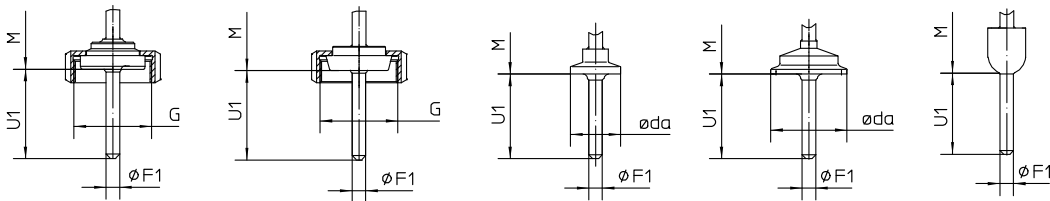
tapered coupling with groove union nut
 aseptic design per DIN 11864-1

tapered coupling with groove union nut
 per DIN 11851

Tri-clamp connection

clamp connection per DIN 32676 or ISO 2852

thermowell with welding ball 30x40 mm



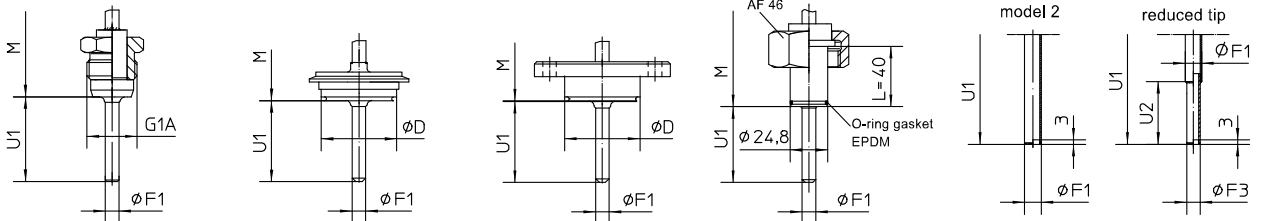
G1A dead-zone free (conical taper of metall)

Varivent connection

NEUMO BioControl

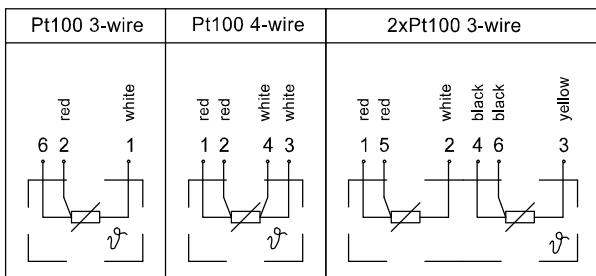
connection per INGOLD DN 25 with coupling nut

neck tube according to DIN 43772

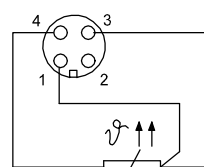


Connection diagram

connection head



circular connector M12x1



Order Details - please give additional specifications for models not listed -

Resistance thermometer Pt 100 for food/pharmaceutical/biotechnology				GA254	.
ex-protection	· without			0	
	· explosion protection, type of ex-protection s. below			1	
surface roughness	· standard			-	
	· according to hygienic design (see data sheet D1-030)			HY	
process connection (further process connections upon request)	tapered coupling with groove union nut DIN 11851 DN (da)	· DN 25 (26 mm)			A121066
		· DN 32 (35 mm)			A121068
		· DN 40 (41 mm)			A121070
	clamp DIN 32676 DN (da)	· DN 50 (53 mm)			A121072
		· DN 25 (50.5 mm)			A141066
		· DN 40 (50.5 mm)			A141070
	clamp ISO 2852 DN (da)	· DN 50 (64 mm)			A141072
		· DN 25 (1") (50.5 mm)			A145083
		· DN 38 (1 1/2") (50.5 mm)			A145084
	Tri-Clamp DN (da)	· DN 51 (2") (64 mm)			A145085
		· DN 63.5 (2 1/2") (77.5 mm)			A145086
	Varivent case connecting flange	· DN 1" (50.5 mm)			A147083
		· DN 1 1/2" (50.5 mm)			A147084
	BioControl (Neumo)	· D = 50, for Varivent-case DN 25 and 1" (da=66)			A151060
		· D = 68, for Varivent-case DN 40...DN 125 and 1 1/2"...6" (da=84)			A151061
		· Gr. 25 (30.5 mm)			A161066
	thermowell w. welding ball	· Gr. 50 (50 mm)			A161072
		· Gr. 65 (50.5 mm)			A161073
		· 30 x 40 mm			A191010
	aseptic connection DIN 11864-1, collar connection with coupling nut, model A (further variants upon request)	for pipes per DIN 11850 DN (da)	· DN 25 (RD 52x1.6)		
· DN 32 (RD 58x1.6)					B121168
· DN 40 (RD 65x1.6)					B121170
· DN 50 (RD 78x1.6)					B121172
for pipes ISO 1127 per DIN 2463 DN (da)		· DN 26.9 (RD 52x1.6)			B121266
		· DN 33.7 (RD 58x1.6)			B121268
		· DN 42.4 (RD 65x1.6)			B121270
		· DN 48.3 (RD 78x1.6)			B121272
threaded connection	· G1A, conical, metal-to-metal joint			A101015	
custom-made				A9999	
thermowell Ø	· F1 = 9 mm, thermowell 9/7, material stainless steel mat.-no. 1.4404 (316L)				C122
	· F1 = 11 mm, thermowell 11/7, material stainless steel mat.-no. 1.4571 (316Ti)				C131
	· 9/7, reduced design, tip F3 = Ø 5x20 mm, ID 3.5 mm, mat. stainless steel mat.-no.1.4404 (316L)				C162
neck tube	as in writing				C99
	· M = 80 mm				1
immersion length	· M = 145 mm				2
	as in writing				9
immersion length U1	length meas. insert I5				
		neck tube M=80 mm	neck tube M=145 mm		
	35 mm	125 mm	190 mm		035
	50 mm	140 mm	205 mm		050
	100 mm	190 mm	255 mm		100
	160 mm	250 mm	315 mm		160
	250 mm	340 mm	405 mm		250
	400 mm	490 mm	555 mm		400
custom-made					999
measuring insert, as per DIN 43735 (class A)	· diameter, design, material	meas. element	operating range	test pipe	
	· 6 mm, rigid, st. steel, standard	thin film	-50...+400 °C	-	D2-M22
	· 6 mm, sheathed element, st. steel	ceramic	-200...+600 °C	-	D6-M21
	· 6 mm, rigid, st. steel (In-process)		-50...+400 °C	28 mm ²	D22-M22
sensor type	· 1 x Pt 100 in 3-wire technology, standard				N2
	· 1 x Pt 100 in 4-wire technology				N3
	· 2 x Pt 100 in 3-wire technology				N5
connection head	· model B	electrical connection cable gland M20x1.5 nickel plated brass			T11
	· model BUZH	cable Ø 9-14			T15
	· field housing	cable gland	polyamide black	cable Ø 3-6.5	T47
			st. steel	cable Ø 4.5-10	T47.40
	· field housing with additional opening for reference sensor	cable gland	polyamide black	cable Ø 3-6.5	T47.21
			st. steel	cable Ø 3-6.5	T47.51
with circular connector M12x1					T49
					T49.40
					T49.21
additional features (to be indicated in case of need, only)					
type of ex-protection	· II 2G Ex ia IIC T4/T6 1, BVS 04 ATEX E 144 X (standard measuring insert)				S68
	· II 2G Ex ia IIC T6-T1 Gb, IBExU 13 ATEX 1017 X (In-process calibration)				S75
incl. transmitter (pls specify separately)	· mounting on the measuring insert (instead of terminal block)				Z1
	· mounting in the spring cover of the connection head BUZH				Z2
functional safety per EN 61508, classification per SIL 2					W2604
process connection electropolished					W4035
transmitter with resistance thermometer calibrated, incl. calibration certificate 3 meas. points					W4057
order code (example):				GA2540	A121066 C1311100 D2-M22 N2 T47

¹ only with sheathed element² for In-process calibration (no classification per SIL 2)