

Resistance thermometer Pt100 with interchangeable measuring insert Type series GA254 .



Application area

- Food industry
- Pharmaceuticals
- Biotechnology

Features

- Measuring resistor 1 x Pt100 in 3- or 4-wire technology
- Measuring insert of stainless steel
- Measuring insert interchangeable (spring-loaded)
- DIN 11864-1, VARIVENT®, DIN 11851 and Clamp per DIN 32676 / ISO 2852 with EHEDG certificate
- 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 SIL2
- Measuring insert for In-process calibration

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 Pt100 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 SIL2 ;
without transmitter, only

Ex-approval

For standard measuring insert:

BVS 04 ATEX E 144 X

Ex II 2G Ex ia IIC T4/T6 Gb

$U_i \leq 30 \text{ V}$

$P_i \leq 200 \text{ mW}$

More technical information see XA_002

For In-process calibration:

IBExU 13 ATEX 1017 X

Ex II 2G Ex ia IIC T6-T1 Gb

$U_i \leq 30 \text{ V}$

$P_i \leq 750 \text{ mW}$

L_i max. 10 $\mu\text{H/m}$

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).

Surface roughness

standard:

surface roughness $R_a \leq 1.5 \mu\text{m}$

hygienic:

surface roughness $R_a \leq 0.8 \mu\text{m}$

welding: $< 1.5 \mu\text{m}$

Integrated transmitters

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

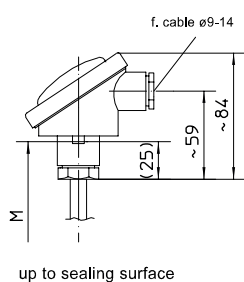
LED-on-site indication

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

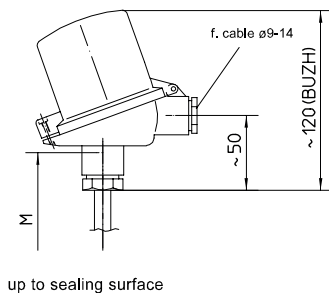
Dimensions

connection heads

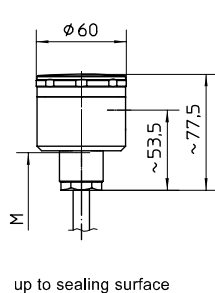
model B, cap with
2 slotted screws
mat. aluminium, IP 54



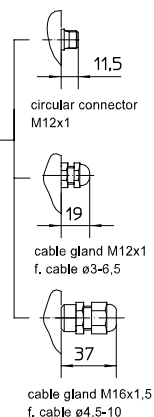
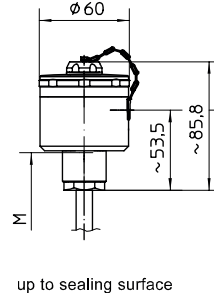
model BUZH, high spring cover
with slotted screw,
mat. aluminium, IP 65



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

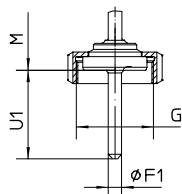


connection head field housing,
screw cap with opening,
mat. stainless steel, IP 67

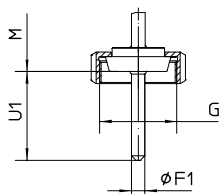


process connections

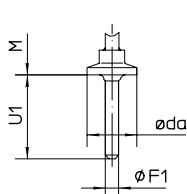
tapered coupling with
groove union nut
aseptic design per DIN 11864-1



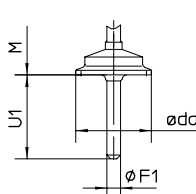
tapered coupling with
groove union nut
per DIN 11851



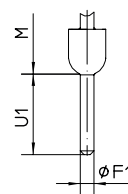
Tri-clamp connection



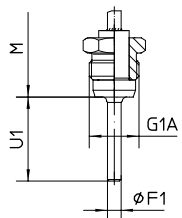
clamp connection
per DIN 32676
or ISO 2852



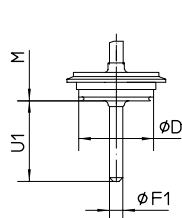
thermowell with
welding ball 30x40 mm



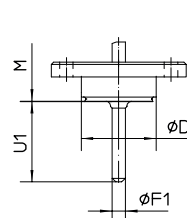
G1A dead-zone free
(conical taper of metall)



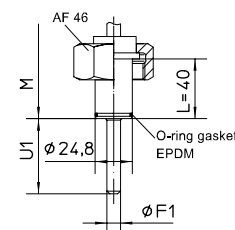
Varivent connection



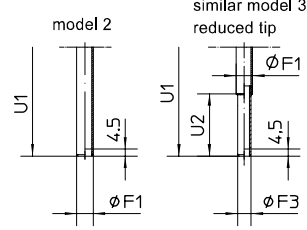
NEUMO BioControl



connection per INGOLD
DN 25 with coupling nut



neck tube according to DIN 43772

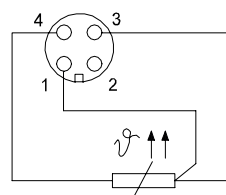


Connection diagram

connection head

Pt100 3-wire	Pt100 4-wire	2xPt100 3-wire

circular connector
M12x1



Order details

¹ EHEDG certified only in connection with hygienic design (order code option HY)
² EHEDG certificate valid only if gaskets are used that are listed in the "EHEDG position paper"³ for In-process calibration
⁴ for devices with Ex protection only with sheathed element