Resistance thermometer MiniTherm

for installation in a separate thermowell,Type series GA2730

Application area

- Pharmaceutical industry
- Food industry
- Biotechnology

Features

- Resistance thermometer for the installation in a separate thermowell
- Measuring insert spring loaded
- Compact and small design
- Measuring resistor 1 x Pt100 in 3- wire technology, class A
- Fast response
- Circular connector M12 or field housing

Options

- Approvals/Certificates
  - Explosion protection
  - Classification per SIL2
  - Certificate of measuring equipment for Russian Federation
- Transmitter can be integrated
- Extended neck tube
- Process connection union nut G3/8“

Application

The resistance thermometer MiniTherm is designed for the installation in a separate thermowell (suitable thermowells see data sheet T5-051 and T5-050). Because of its compact design MiniTherm is suitable for use in a great number of technological processes.

Technical data

Constructional design / case

Design:	Measuring insert Ø 3 mm spring loaded and union nut M12x1 Alternative with extended neck tube
Material:	Measuring insert: Stainless steel mat.-no. 1.4404 (316L) Union nut: Stainless steel mat.-no. 1.4301 (304)
Length of measuring insert:	See order details
Degree of protection:	IP 67 per EN 60529
Electrical connection:	■ circular connector with screw connection M12 ■ Field housing with screw cap Mat.: stainless steel mat.-no. 1.4305 (303)
Measuring resistor:	Pt100 per EN 60751, connection: 3-wire technology

Accuracy

Pt100:	per EN 60751, class A
Response time:	per EN 60751 Test procedure with flowing water, including separate thermowell 6 x1 mm a) without heat sink compound t_{90}= 16 s b) with heat sink compound t_{90}= 11 s

We recommend the use of heat sink compound (Data sheet T6-030).

Temperature ranges

Design with circular connector M12 and field housing:

Ambient:	-40…85 °C
Media:	-50…200 °C
Storage:	-40…85 °C

Design with transmitter:

Ambient:	-20…80 °C
Media:	-50…200 °C
Storage:	-20…80 °C

Transmitter

Integration: Suitable Pt 100 transmitter can be mounted

- Transmitter head mounted, Type series PA210., 4…20 mA, programmable
- Transmitter head mounted, Type series PA220., electrically isolated, classification per SIL 2
- Transmitter head mounted, Type series PA230., electrically isolated, classification per SIL 2, HART
- Transmitter, Type series PA 2430, for circular connector M12

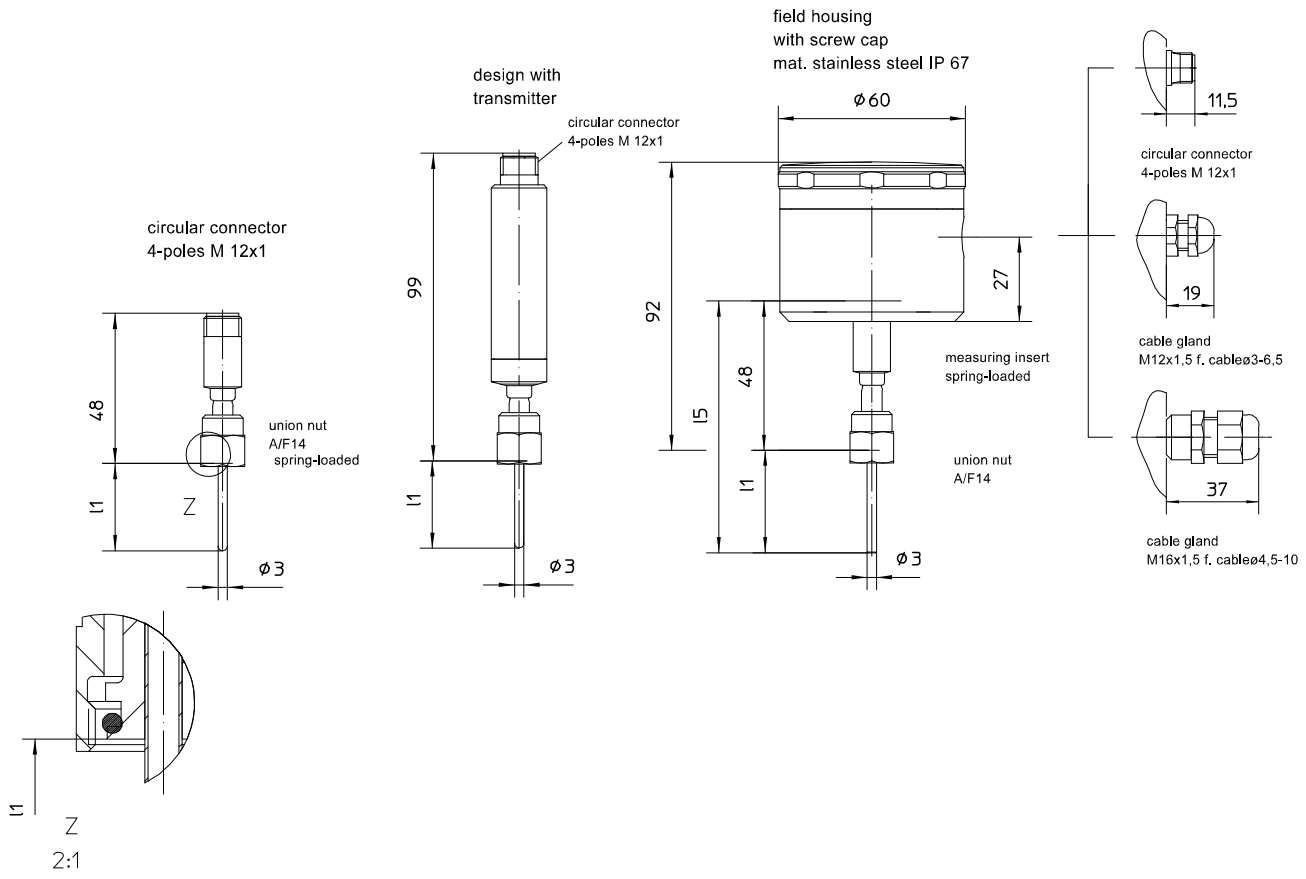
Approvals/Certificates

SIL 2: Functional safety:
per EN 61508, classification of Pt100 sensor per SIL2, suitable transmitter upon request

Ex approval: TÜV 08 ATEX 554093 X
Ⓔx II 1G Ex ia IIC /T6 /T5/T4
Ⓔx II 2G Ex ia IIC /T6 /T5/T4
Ⓔx II 1D Ex iaD 20 T89°C
Ⓔx II 2D Ex iaD 21 T129°C
$U_i \leq 30$ V
$P_i \leq 200$ mW

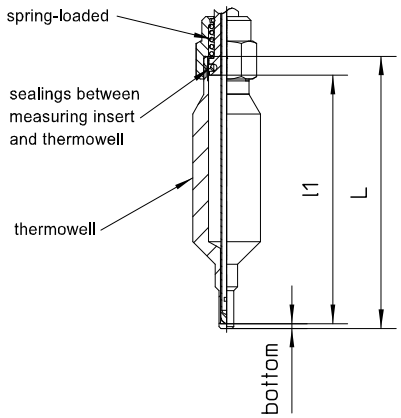
- EAC declaration upon request
- Certificate of measuring equipment for Russian Federation

Dimensions



All dimensions are in mm

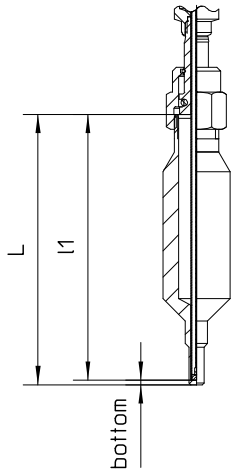
Design with circular connector



L = Total length thermowell

l_1 = Insertion length measuring insert

Design with field housing

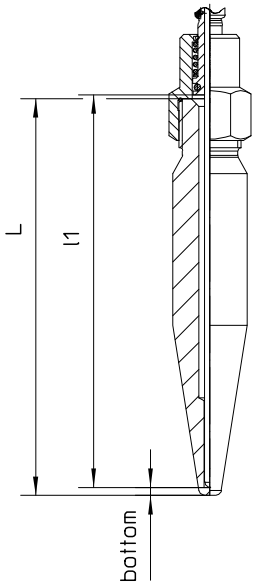


Calculation of insertion length for the measuring insert:

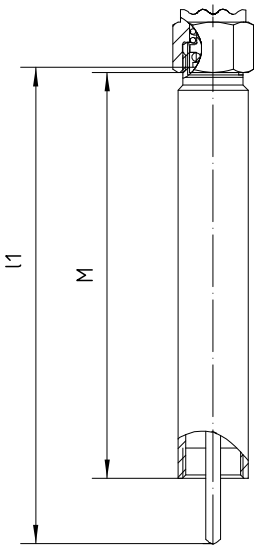
Data sheet T5-050 (thermowells HP1100)

Data sheet T5-051 (thermowells HP1200)

Design with G 3/8“ installation system



Design with neck tube

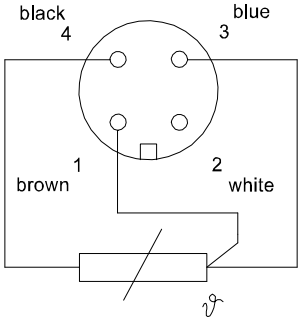


connection M12x1
for thermowell

For this design the insertion length of the measuring insert has to be extended by M.

Connection diagram

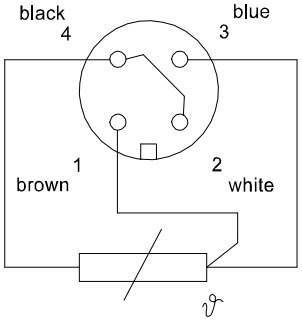
pin connection
transducer 3-wire technology



1xPt100

standard

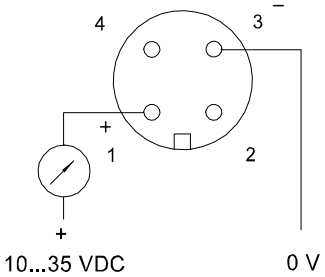
pin connection
transducer 4-wire technology



1xPt100

option

pin connection
transmitter



2-wire technology 4...20 mA

Order details

Resistance thermometer MiniTherm for installation in a separate thermowell, Type series GA2730

Order details GA2730			
GA2730	resistance thermometer MiniTherm for installation in a separate thermowell		
A10	instrument connection	union nut M12x1	
A50		union nut G3/8“	
C3…	temperature sensor	Ø 3 mm	
029	insertion length l1 [1]	29 mm	
039		39 mm	
060		60 mm	
084		84 mm	
161		161 mm	
…		required insertion length up to 250 mm can directly be ordered, e.g. l1: 100 mm, order code 100	
M2	tolerance	class A per EN 60751	
N2	measuring insert spring loaded	1 x Pt100 in 3-wire technology	
N3		1 x Pt100 in 4-wire technology (3-wire bridged)	
T150	electrical connection	circular connector M12 x 1 (4-pin), standard	
T47		field housing Ø 60 mm	cable gland polyamide black for cable Ø 3-6.5
T47.40			cable gland polyamide black for cable Ø 4.5-10
T47.21			cable gland stainless steel for cable Ø 3-6.5
T47.51			with circular connector M12 x 1 (4-pin)

Additional features (to be indicated in case of need, only)		
V1070	neck tube (M12 x 1)	length of neck tube M = 70 mm
V1080		length of neck tube M = 80 mm
V1999		length of neck tube M (in mm)
S71	Ex-protection	Ⓔx II 1G Ex ia IIC T6/T5/T4
S72		Ⓔx II 2G Ex ib IIC T6/T5/T4
S73		Ⓔx II 1D Ex iaD 20 T89 °C
S74		Ⓔx II 2D Ex ibD 21 T129 °C
Z1	incl. transmitter	mounting in the field housing (selection of transmitter see product group T4)
Z52		integrated in the circular connector M12 (Type PA2430) [2]
W2604	functional safety per IEC/EN 61508, classification of Pt100 element per SIL 2	
W2673	certificate of measuring equipment for Russian Federation	

Order code (example): GA2730 – A10 – D1209 – T47 - ...

[1] insertion length > 250 mm upon requesta sheet T4-082-1)
[2] not with Ex-protection and not with SIL2 (see data sheet T4-082-1)