

Measuring inserts for resistance thermometer

Type series GA213.



Application area

- Complete measurement technology

Features

- Measuring insert per DIN 43735
- Measuring resistor per EN 60751
- Model
 - rigid
 - flexible
- Sensor limiting error: class A
- Pt 100 connection 3- and 4-wire technology

Options

- Explosion protection
- As per UKCA regulations
- Classification per SIL 2
- Prepared for transmitter mounting

Application

The measuring inserts per DIN 43735 are designed for installation in resistance thermometers. Two models are available:

- a) rigid measuring insert
- b) flexible measuring insert as sheathed element for high vibration level application

The measuring insert is spring loaded to ensure that the measuring insert is pressed down on the bottom of the thermowell. Instead of the terminal socket a transmitter can be installed, or the measuring insert is prepared with flying leads for transmitter mounting.

Technical data

Mechanical design

measuring insert with connection socket per DIN 43735, measuring insert: stainless steel mat.-no. 1.4571 (316 Ti), length and Ø see order details. Connection socket Ø 42, max. 6 terminals or prepared for transmitter mounting

Measuring resistor

measuring resistor Pt 100 per DIN EN 60751
nominal value of Pt 100 sensor:
100 Ohm at 0 °C

Application

-200 to max. 850 °C
standard: -50...+400 °C
see order details

Sensor limiting error (DIN EN 60751)
the limiting error is defined for classes:

class	limiting error in °C
A	$0.15 + 0.002 \cdot (t)^1$
B ²	$0.3 + 0.005 \cdot (t)$

¹ (t) is the value of the temperature in °C without consideration to the prefix

² class B upon request

Please check table (page 2) for limiting errors.

Ex-approval

BVS 04 ATEX E 144 X
Ⓔ II 2G EEx ia IIC T4/T6

$U_i \leq 30 \text{ V}$

$P_i \leq 200 \text{ mW}$

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

More technical information see XA_001.

Functional safety

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

Measuring insert length

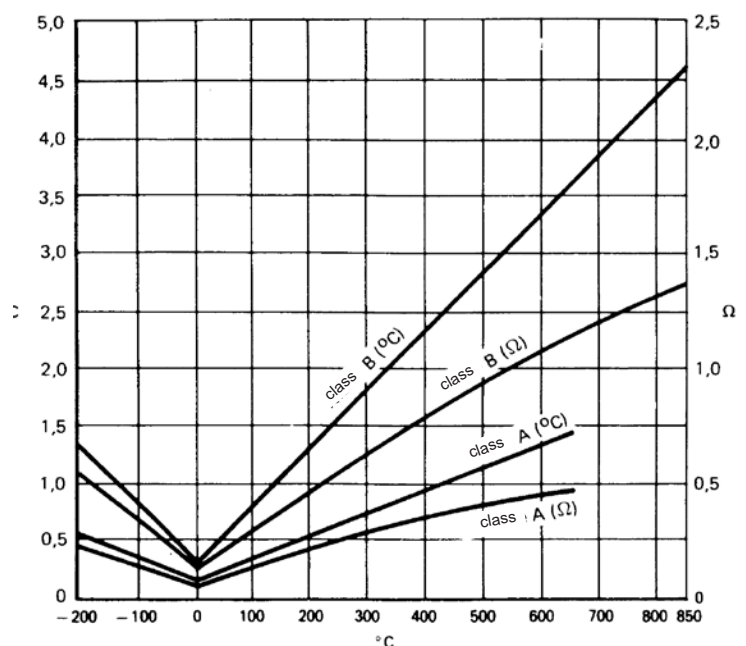
Please select standard lengths. The length of the measuring insert is to be selected so that the measuring insert stands on the thermowell bottom. This ensures good heat transfer. The measuring inserts are spring loaded (spring travel: max. 10 mm) to ensure that they are pressed down on the bottom of the thermowell. We recommend the use of thermolube. Standard lengths see order details. Special lengths are possible.

Mounting of transmitter

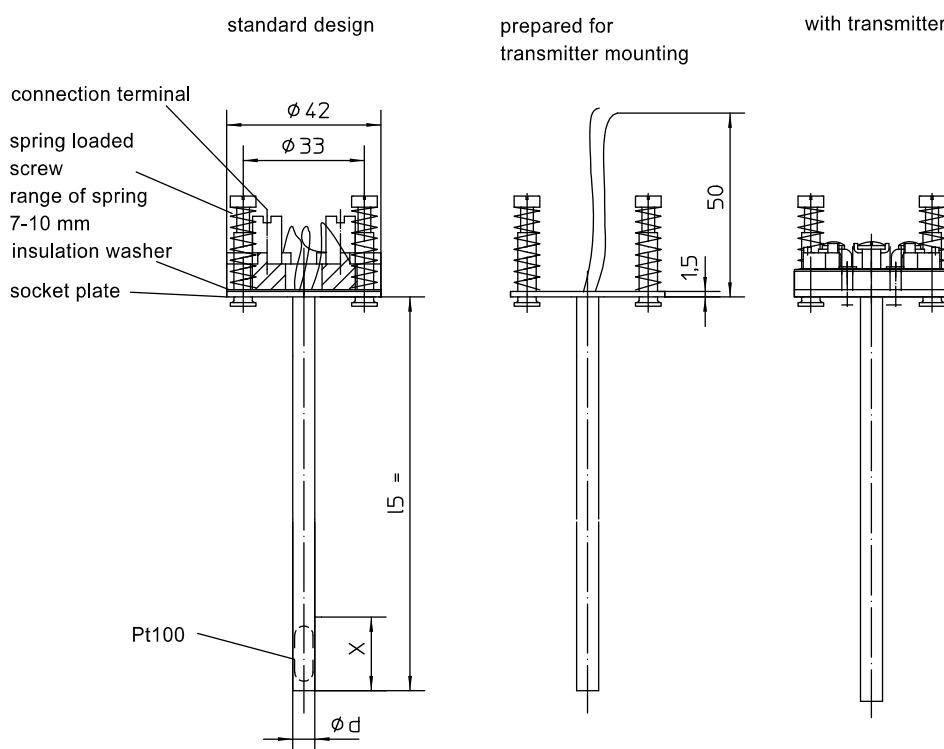
Pt 100 transmitter for head mounting can be mounted instead of terminal socket.

Limiting errors

limiting errors for 100-Ω-thermometer				
	limiting errors			
temperature	class A		class B	
°C	°C	Ω	°C	Ω
-200	± 0.55	± 0.24	± 1.3	± 0.56
-100	± 0.35	± 0.14	± 0.8	± 0.32
0	± 0.15	± 0.06	± 0.3	± 0.12
100	± 0.35	± 0.13	± 0.8	± 0.30
200	± 0.55	± 0.20	± 1.3	± 0.48
300	± 0.75	± 0.27	± 1.8	± 0.64
400	± 0.95	± 0.33	± 2.3	± 0.79
500	± 1.15	± 0.38	± 2.8	± 0.93
600	± 1.35	± 0.43	± 3.3	± 1.06
650	± 1.45	± 0.46	± 3.6	± 1.13
700	-	-	± 3.8	± 1.17
800	-	-	± 4.3	± 1.28
850	-	-	± 4.6	± 1.34

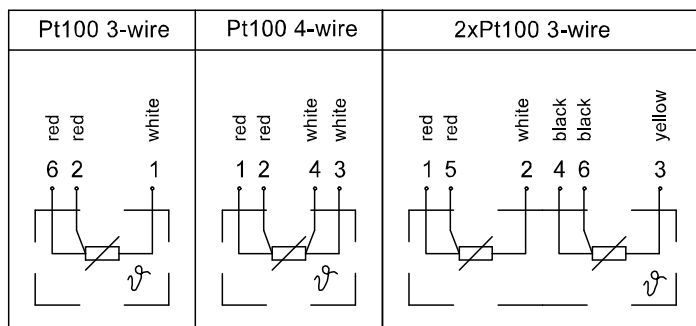


Dimensions




dimensions (mm)		
x	ϕd	range
10	3/6	-50...400 °C
25	6	-200...+600 °C
30	6	-200...+850 °C

Connection diagram



Order details

Measuring inserts for resistance thermometers				GA213 .			
ex-protection	· without			0			
	· explosion protection, type of ex-protection s. below			1			
length l5 of measuring insert	standard lengths						
	105 mm					B10	
	125 mm					B13	
	140 mm					B16	
	190 mm					B19	
	205 mm					B22	
	250 mm					B25	
	255 mm					B28	
	275 mm					B31	
	290 mm					B34	
	315 mm					B37	
	375 mm					B40	
	405 mm					B43	
	435 mm					B46	
	525 mm					B49	
	555 mm					B52	
	varying					B99	
meas. insert as per DIN EN 60751 (classe A)	diameter, design, material	meas. element	operating range				
	· 6 mm, rigid, standard	thin film	-50...+400 °C			D2-M22	
	· 6 mm, sheathed element, st. steel	ceramic	-200...+600 °C			D6-M21	
type of sensor	· 1 x Pt 100 3-wire technology, standard ¹						N2
	· 1 x Pt 100 4-wire technology						N3
	· 2 x Pt 100 3-wire technology						N5
additional features (to be indicated in case of need, only)							
type of ex-protection	·  II 2G EEx ia IIC T4/T6 ²						S68
	· intrinsically safe per EN 60079-11, P5.7 simple electrical apparatus (UK)						S52
incl. transmitter prepared for transmitter mounting	· for head mounting, mounting on the measuring insert (instead of terminal block)						Z1
	· approx. 50 mm connection line (instead of terminal block)						Z3
functional safety per EN 61508, classification per SIL 2							W2604
as per UKCA regulations							W2660
transmitter with resistance thermometer calibrated, incl. calibration certificate with 3 meas. points							W4057
order code (example):				GA2130	B31	D2-M22	N2

¹ also with 2-wire technology

² only with sheathed element