Advantages/Benefits

- **Measuring range -50 to 500 °C**
- **Pt 100 resistance element**
- **Exchangeable process probe**
- **Two-wire transmitter with 4...20 mA output signal as an option**
- **Accuracy Class B to DIN 43760**
- **Classification standard IP 54**

Design/Function

Generally the entire device consists of the connection head and the process probe. The aluminium die casting connection head conforms to the DIN Type B.

The measuring insert consisting of a stainless steel pipe with a diameter of 6 mm is provided with 1 or 2 Pt100 elements. The internal wires from the measuring element to the electrical terminal block are isolated.

In case that a current signal 4–20mA instead of the Pt100 resistance shall used a transmitter is mounted in place of the terminal socket in the connection head.

Applications

- Industrial platinum resistance thermometer with exchangeable process probe for temperature measurements. The process probe and protective armatures conform to DIN standards and provide simple installation into pipelines and containers.

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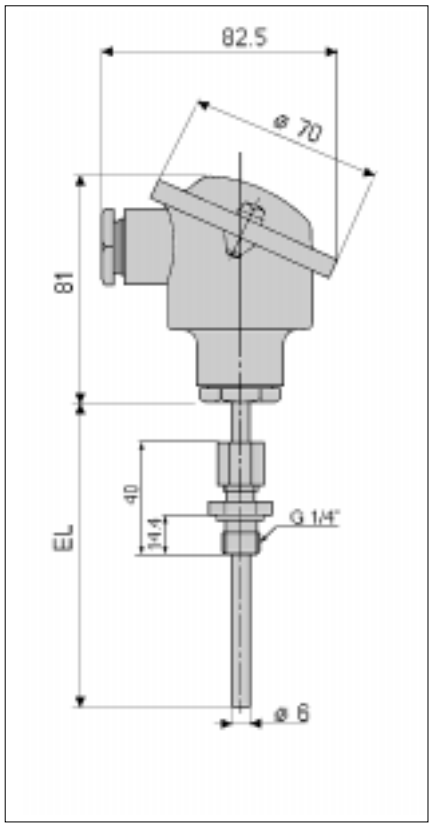
Dimensions



General technical data

Design:	according to DIN 43763
Measuring range:	-50 to 500 °C
Process probe:	1 or 2 Pt 100 resistance elements
Response time up to 50% and up to 90% of full scale in water with 0,4 m/s:	T_{50} = 6.65 s T_{90}= 17.45 s
Tube dimension:	ø 6 mm
Tube material:	stainless steel
Mounting:	compression fitting P_{max} = 100 bar at 20°C
Connection:	aluminium die casting connection head Type B to DIN 43729
Installation:	vertical only

For the model with the two-wire measuring transmitter, the transmitter is directly mounted in the connection head. The transmitter converts the resistance of the Pt100 elements into a temperature linear output current.

Technical Data of Transmitter

Measuring range:	-50 to 500 °C
Span:	adjustable via DIP-switch
Supply voltage:	U_s=12 ... 36 VDC
Input:	Pt100 DIN IEC 751 2-wire connection 3-wire connection
Output:	4...20 mA
Load:	$R = \frac{U_s\text{-}12\ V}{20\ mA}$
Ambient temperature:	-20 °C ... 70 °C for measuring temperatures >150°C a min. installation distance senor to transmitter of 145mm has to be provided

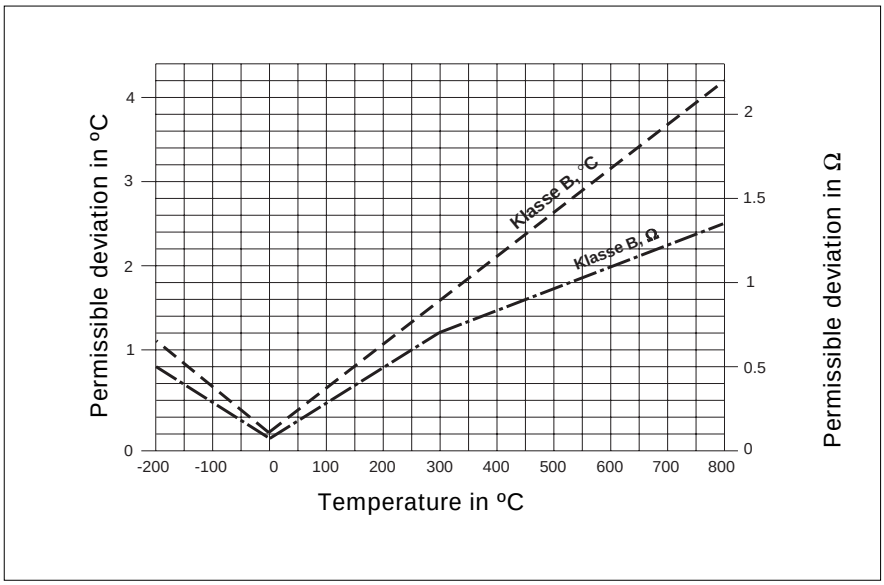
Basic Values and Tolerances

The basic values and tolerances for the Pt100 conform to DIN 43760. This standard classifies the permissible resistance tolerances and the temperature value deviations.
The sensor corresponds to accuracy Class B, which is normally used in industrial applications.

Temperature	Basic Value	Tolerance	Class B
-200 °C	18.49 Ω	±1.3 °C	±0.56 Ω
-100 °C	60.25 Ω	±0.8 °C	±0.32 Ω
0 °C	100.00 Ω	±0.3 °C	±0.12 Ω
100 °C	138.50 Ω	±0.8 °C	±0.30 Ω
200 °C	175.84 Ω	±1.3 °C	±0.48 Ω
300 °C	212.02 Ω	±1.8 °C	±0.64 Ω
400 °C	247.04 Ω	±2.3 °C	±0.79 Ω
500 °C	280.90 Ω	±2.8 °C	±0.93 Ω
600 °C	313.59 Ω	±3.3 °C	±1.06 Ω
650 °C	329.51 Ω	±3.6 °C	±1.13 Ω
700 °C	345.13 Ω	±3.8 °C	±1.17 Ω
800 °C	375.51 Ω	±4.3 °C	±1.28 Ω
850 °C	390.26 Ω	±4.6 °C	±1.34 Ω

Installation

When installing make sure that the sensor takes up the temperature to be measured the most accurately possible. Avoid heat absorption or heat supply.



Ordering Chart (Other Versions on Request)

Version	Length [mm]	Probe Length [mm]		Order-No.
Sensor, 1 x Pt100 2-wire	100	135	without compression fitting	414367 Y
	200	235		414091 G
	300	335		414092 H
	400	435		414093 A
	500	535		414094 B
	100	135	with compression fitting 1.0718,	414713 K
	200	235	screw-in thread G 1/4	413931 D
	300	335		413933 F
	400	435		413935 H
	500	535		413937 B
	100	135	with compression fitting 1.0718,	414977 L
	200	235	screw-in thread NPT 1/4"	414071 K
	300	335		414072 L
	400	435		414073 M
	500	535		414074 N
	100	135	with compression fitting 1.4571,	414978 V
	200	235	screw-in thread G 1/4"	414075 P
	300	335		414076 Q
	400	435		414077 R
	500	535		414078 S
	100	135	with compression fitting 1.4571,	414979 W
	200	235	screw-in thread NPT 1/4"	414079 T
	300	335		414080 R
	400	435		414081 E
	500	535		414082 F
Sensor, 1 x Pt100 3-wire	100	135	without compression fitting	414344 Z
	200	235		414368 H
	300	335		414369 A
	400	435		414370 F
	500	535		414371 U
Sensor, 1 x Pt100 3-wire	100	135	with compression fitting 1.0718,	414980 L
	200	235	screw-in thread G 1/4"	414475 M
	300	335		414981 H
	400	435		414982 A
	500	535		414983 G
	100	135	with compression fitting 1.4571,	414984 C
	200	235	screw-in thread NPT 1/4"	414353 S
	300	335		414985 D
	400	435		414986 E
	500	535		414987 F
Sensor, 2 x Pt100 2-wire	200	235	without compression fitting	414083 G
	300	335		414084 H
	400	435		414085 A
	500	535		414086 B

Ordering Chart (Other Versions on Request)

Version	Length [mm]	Probe Length [mm]		Order-No.
	200	235	with compression fitting 1.0718,	413932 E
	300	335	screw-in thread G 1/4	413934 G
	400	435		413936 A
	500	535		413938 L
	200	235	with compression fitting 1.0718,	414087 C
	300	335	screw-in thread NPT 1/4	414088 M
	400	435		414089 N
	500	535		414090 K
Sensor, 2 x Pt100 2-wire	200	235	with compression fitting 1.4571,	414095 C
	300	335	screw-in thread G 1/4	414096 D
	400	435		414097 E
	500	535		414098 P
	200	235	with compression fitting 1.4571,	414099 Q
	300	335	screw-in thread NPT 1/4	414100 S
	400	435		414101 P
	500	535		414102 Q
Transmitter, 1 x Pt100 2-wire	100	135	without compression fitting	414988 Q
	200	235		414349 E
	300	335		414350 B
	400	435		414351 Y
	500	535		414352 Z
	100	135	with compression fitting 1.0718,	414989 R
	200	235	screw-in thread G 1/4	414990 N
	300	335		414952 K
	400	435		414991 B
	500	535		414992 C
	100	135	with compression fitting 1.4571,	414757 X
	200	235	screw-in thread NPT 1/4	414707 W
	300	335		414993 D
	400	435		414994 E
	500	535		414995 F