

### Application

- Measurement of temperature in ducts and furnaces with air and flue gasses
- The operating range is up to 800°C in the low-pressure range
- Fields of application
  - Power plants
  - Incinerators
  - Chemical process engineering

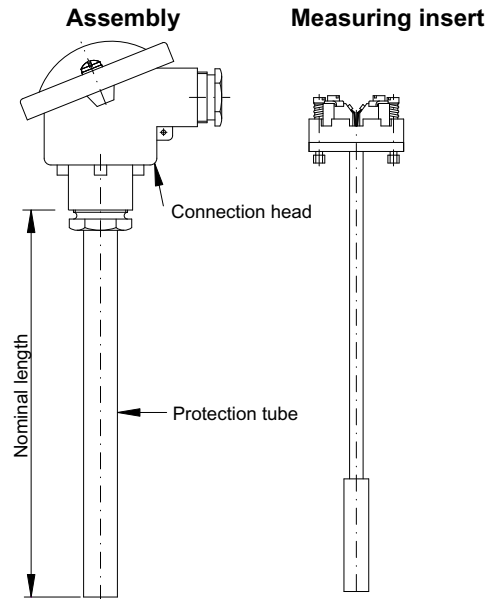
### Technical features

- Thermocouple type J, K and N acc. to IEC-584-1
- Built acc. to DIN 43764
- Connected to the process by adjustable flange or compression fittings
- The measuring insert can be exchanged or calibrated without closing down the process
- Protective tube in stainless and acid proof steel
- Modular design and standard length minimize the necessary number of spares
- Optionally, can be supplied with head mounted transmitter

### Ordering

The requested sensor is selected from the table below  
The colour code means:

- Standard: Built of standard modules (short delivery time)
- Variant: Modified standard modules
- Special: Special versions and material. We are specialist in temperature measurement. Please contact us and we will do our best to solve your specific measuring task



### Ordering information

Specification number	1301-	Sensor								4mA:	°C	20mA:	°C 4)
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#### Protective tube

Stainless, acid proof steel, W.no.1.4571 (AISI 316Ti)  
Max. 800°C  
15mm OD. 1.5 mm wall ..... 0  
Special ..... s

#### Nominal length (mm)

500 .....	0	5	0	0
710 .....	0	7	1	0
1000 .....	1	0	0	0
1400 .....	1	4	0	0
2000 .....	2	0	0	0
Interim lengths (Min.100, max. 3000) .....	x	x	x	x

#### Process connection (see page 2)

None .....	0
Fig. 1 Adjustable flange .....	1
Fig. 1+2 Adjustable flange + counter flange .....	2
Fig. 3 3/4" BSP compression fitting w/ceramic sealing .....	3
Fig. 4 3/4" BSP compression fittings, SS steel .....	4
Fig. 4 3/4" BSP compression fitting, galvanized steel .....	5
Andet: .....	s

#### Connection head

B: Degree of protection IP 65 .....	0	0
BHS: Degree of protection IP 65 .....	1	1
BHSH: Degree of protection IP 65, high cap for transmitter .....	2	2
Special: .....	s	s

#### Transmitter, 2-wire, 4-20mA output

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">0</span>	None
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">1</span>	FPTU Standard version. As terminal block
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">2</span>	FPTU Standard version. In high cap (B-head)
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">3</span>	FPTU galvanic isolated. As terminal block
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">4</span>	FPTU galvanic isolated. In high cap (B-head)
<span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">5</span>	FPTU galvanic isolated. EEXiallCT4/6. As terminal block
<span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">6</span>	FPTU galvanic isolated. EEXiallCT4/6. In high cap (B-head)
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">a</span>	FPTT galvanic isolated. As terminal block
<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">b</span>	FPTT galvanic isolated. In high cap (B-head)
<span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">c</span>	FPTT galvanic isolated. EEXiallCT4/6. As terminal block
<span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">d</span>	FPTT galvanic isolated. EEXiallCT4/6. In high cap (B-head)
<span style="background-color: #FF0000; border: 1px solid black; padding: 2px;">s</span>	Special

Note 4: Please specify measuring range

#### Tolerance acc to IEC 584-2

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">0</span>	Class 2, for J, K and N, i.e. $\pm 2.5^\circ\text{C}$ or $0.0075 \times t_{\text{actual}} (^\circ\text{C})$ 3)
<span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">1</span>	Class 1, for J, K and N, i.e. $\pm 1.5^\circ\text{C}$ or $0.0040 \times t_{\text{actual}} (^\circ\text{C})$ 3)

Note 3: The highest value apply

#### Number of thermocouples

<span style="background-color: #90EE90; border: 1px solid black; padding: 2px;">0</span>	1
<span style="background-color: #FFFF00; border: 1px solid black; padding: 2px;">1</span>	2

#### Measuring insert

#### Max. temperature 1)

Model	Thermocouple	Type	Diam./type	Continuously	Shortly
TK80	Fe-CuNi	J	6 MI 2)	800°C	850°C
TK115	NiCr-Ni	K	6 MI 2)	1000°C	1150°C
TK125	Nicrosil-Nisil	N	6 MI 2)	1100°C	1250°C
Special:					

Note 1: The values apply for the thermocouple.

Note 2: MI= Mineral insulated.

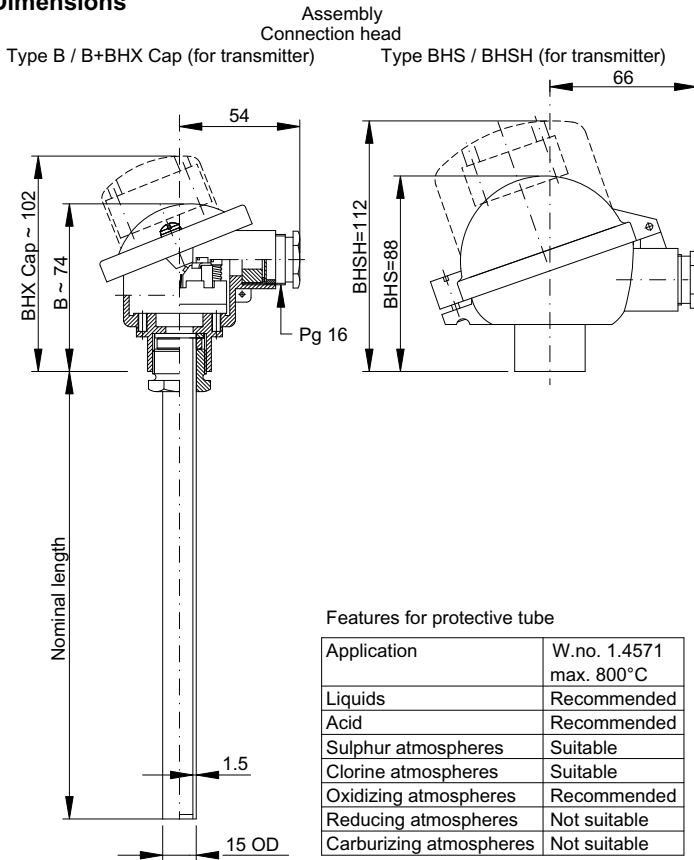
### Accessories

Process connection: See data sheet 9113  
Transmitter: See data sheet 9168

### Customer information

Name:  
Tel.:

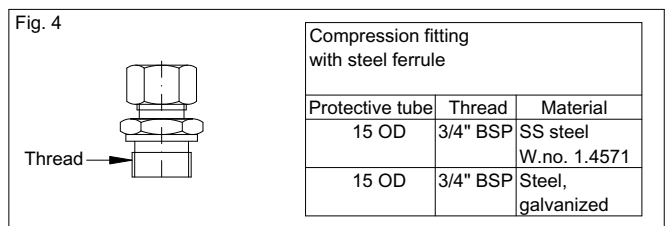
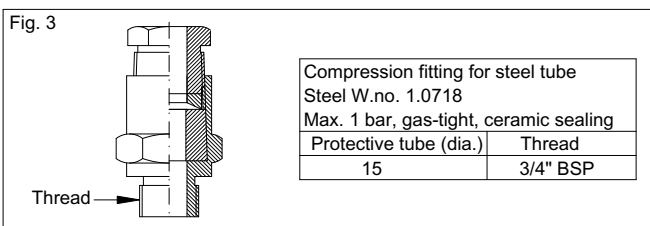
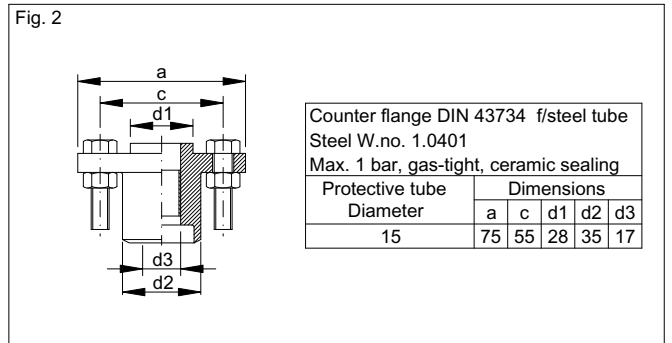
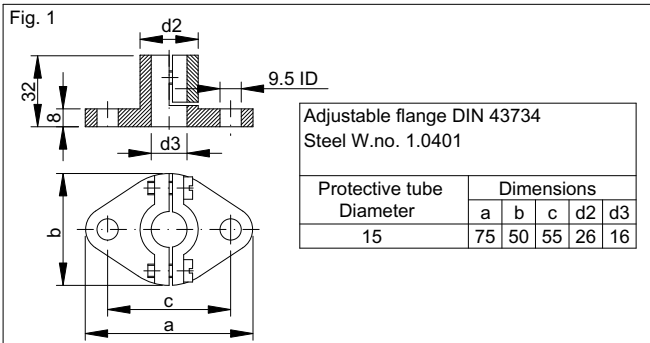
Dimensions



Features for protective tube

Application	W.no. 1.4571 max. 800°C
Liquids	Recommended
Acid	Recommended
Sulphur atmospheres	Suitable
Chlorine atmospheres	Suitable
Oxidizing atmospheres	Recommended
Reducing atmospheres	Not suitable
Carburizing atmospheres	Not suitable

Process connection



Response time

Protective tube Diameter	Response time in seconds (guidelines)			
	In water @ 0.4m/sec.		In air @ 3m/sec.	
	t <sub>0.5</sub>	t <sub>0.9</sub>	t <sub>0.5</sub>	t <sub>0.9</sub>
15	26	80	115	350

Note:

The 0.5/0.9 time is the time that it takes the sensor to reach 50%/90% of the final value of a temperature change of a medium. If media and velocity are different from the ones stated, the time can change significantly.

Connection diagram

