

FRODE PEDERSEN

Application

- Measurement of temperature in ducts and furnaces with air and flue gasses
- The operating range is up to 600°C in the low-pressure range
- Fields of application
 - Heat and ventilation (HVAC)
 - Drying equipment
 - Machine construction and environmental engineering

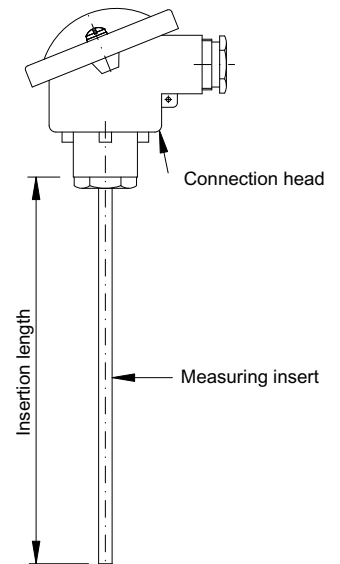
Technical features

- Pt100 resistance thermometer acc. to IEC 751
- Built as a measuring insert acc. to DIN 43769
- 3-wire connection is standard
- Connected to the process by adjustable flange or compression fittings
- Measuring insert in either ceramic powder filled tube, or mineral insulated MK40/60, vibrationproof
- Modular design and standard length minimize the necessary number of spares
- Can be supplied with head mounted transmitter as an option

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 shall do our utmost to solve your specific measuring task



Ordering information

Specification number	Sensor										Transmitter			
											4mA:	°C	20mA:	°C 1)
Measuring insert diameter SS, acidproof steel, W.no. 1.4571 (AISI 316Ti) Max. 800°C											Transmitter, 2-wire, 4-20mA output			
6mm OD (Mineral insulated)	0										0			None
8mm OD (Standard tube powder filled):	1										1			FPTM as terminal block (Sensor only 3-wire)
Special:	s										2			FPTM in high cap, B-head. (Sensor only 3-wire)
											3			FPTU standard version. As terminal block
											4			FPTU standard version. In high cap, B-head
											5			FPTU galvanic isolated. As terminal block
											6			FPTU galvanic isolated. In high cap, B-head
											7			FPTU galvanic isolated. EEXialCT4/6. As terminal block
											8			FPTU galvanic isolated. EEXialCT4/6. In high cap, B-head
											s			Special:
														Note 1: Please specify measuring range in °C
Insertion length (mm)											Connection. Wiring configuration			
200	0	1	0	0							0			3-wire
250	0	2	5	0							1			4-wire
300	0	3	0	0							2			2-wire
450	0	4	5	0										
Interim lengths (Min. 50, max. 3000):	x	x	x	x										
											Tolerance acc. to IEC 751			
Process connection (see page 2)											0			Class B, i.e. ± (0.3°C + 0.005 x t _{actual}) °C
None	0										1			Class A, i.e. ± (0.15°C + 0.002 x t _{actual}) °C
Fig. 1 1/4" BSP compression fittings. Stainless steel	1										2			1/3 Class B @ 0°C, i.e. ± (0.10°C + 0.005 x t _{actual}) °C
Fig. 1 3/8" BSP compression fittings. Stainless steel	2										3			1/6 Class B @ 0°C, i.e. ± (0.05°C + 0.005 x t _{actual}) °C
Fig. 1 1/2" BSP compression fittings. Stainless steel	3										4			Paired in groups, deviation ± 0.1°C @ 0°C og 100°C
Fig. 1 1/4" BSP compression fittings. Galvanized steel	4										5			Special, i.e. ± (0.045°C + 0.001 x t _{actual}) °C (Max 400 °C)
Fig. 1 3/8" BSP compression fittings. Galvanized steel	5										s			Special:
Fig. 1 1/2" BSP compression fittings. Galvanized steel	6													
Fig. 2 Adjustable flange	7										0			Resistance value (ohm) acc. to IEC 751
Special:	s										1			1xPt100
											2			2xPt100
											s			1xPt1000
														Special:
Connection head											Measuring insert: Type and measuring range			
B: Degree of protection IP 53	0										MK60:	-50 +600°C	Mineral insulated.	(Only tolerance 0 and 1)
BM (Mignon) Only MK60/MK40, 2- wire and no transmitter	1	0									MK40:	-50 +400°C	Mineral insulated.	(Only tolerance 2, 3, 4, 5)
Special:	s	1									M40:	-50 +400°C	Std. version, tube w/powder.	(All tolerances)
		2												
		s												

Accessories

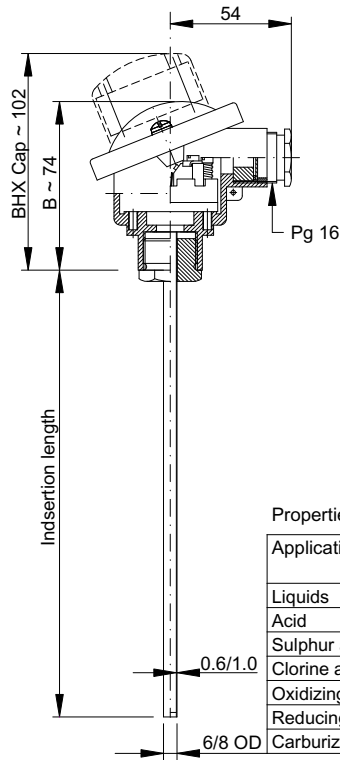
Process connection: See data sheet 9113 Measuring insert: See data sheet 9108-02
Transmitter: See data sheet 9168

Customer information

Name:
Tel.:

Dimensions

Complete resistance thermometer assembly BF
Type B / B+BHX Cap (for transmitter)

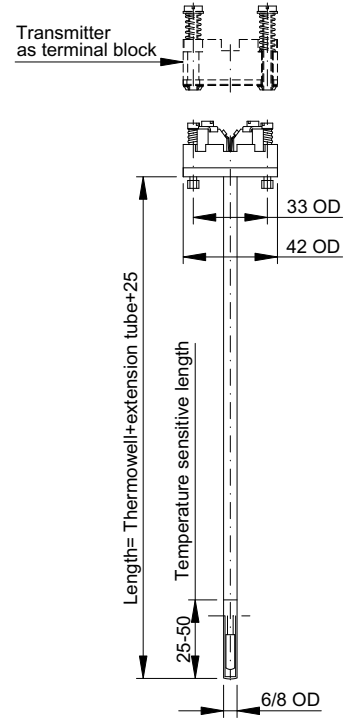


Properties for sheath

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

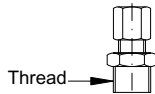
Measuring insert

Type M40 / MK60



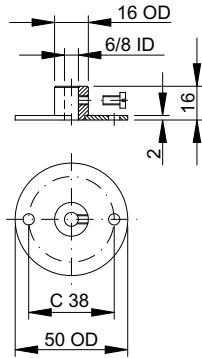
Process connection

Fig. 1



Compression fitting with steel ferrule			
Protective tube	Thread	Material	
6/8 OD	1/4" BSP	SS steel	
	3/8" BSP	W.no. 1.4571	
	1/2" BSP		
6/8 OD	1/4" BSP	Steel	
	3/8" BSP	galvanized	
	1/2" BSP		

Fig. 2



Adjustable flange	
Protective tube	Material
6/8 OD	Steel AISI 316

Response time

Sheath diameter	Response time in seconds (guidelines)			
	In water @ 0.4m/sec.		In air @ 3m/sec.	
	t _{0.5}	t _{0.9}	t _{0.5}	t _{0.9}
OD 6	7	20	48	151
OD 8	9	26	60	190

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

