

FRODE PEDERSEN

Application

- Measurement of temperature in pipes and containers with gaseous and liquids media, such as air, vapour, gasses, water and oil
- The operating range is up to 600°C, max. 50 bar and flow velocity up to 25m/sec (air)
- Fields of application
 - Chemical process engineering
 - Machine construction and environmental engineering
 - Heat distribution (district heating)

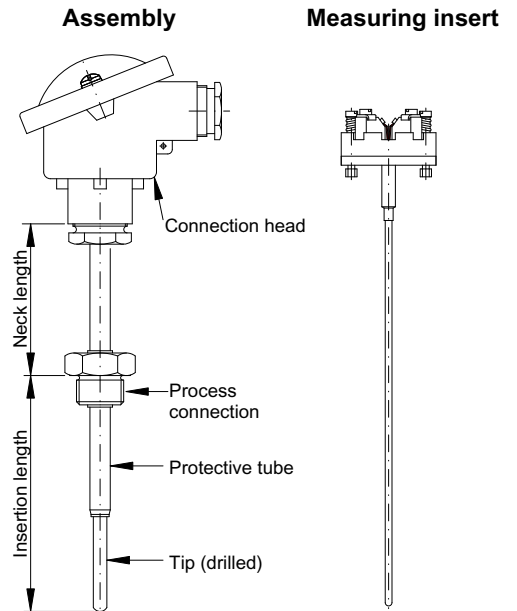
Technical features

- Pt100 resistance thermometer acc. to IEC 751
- Permissible mechanical and thermal stress acc. to DIN 43763
- 3-wire connection is standard
- Connected to the process with a screwed attachment welded on the protective tube
- The measuring insert can be exchanged or calibrated without closing down the process
- Measuring insert is a mineral insulated type MK40/60, vibrationproof
- Protective tube in stainless and acidproof steel with 6mm OD tip, i.e. fast response time
- 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	1407-	Sensor								Transmitter			
										4mA:	°C	20mA:	°C 1)
Protective tube										Transmitter, 2-wire, 4-20mA output			
SS, acidproof steel, W.no. 1.4571 (AISI 316Ti)										0	None		
Max. 800°C										1	FPTM as terminal block (Sensor only 3-wire)		
9mm OD. 1mm wall. Tip: OD/ID=6/3.2mm	0									2	FPTM in high cap, B-head. (Sensor only 3-wire)		
11mm OD. 2mm wall. Tip: OD/ID=6/3.2mm	1									3	FPTU standard version. As terminal block		
15mm OD. 1.5mm wall. Tip: OD/ID=6/3.2mm	2									4	FPTU standard version. In high cap, B-head		
Special:	s									5	FPTU galvanic isolated. As terminal block		
Neck length (mm)										6	FPTU galvanic isolated. In high cap, B-head		
25 (min.)	0									7	FPTU galvanic isolated. EEXiallCT4/6. As terminal block		
50	1									8	FPTU galvanic isolated. EEXiallCT4/6. In high cap, B-head		
100	2									s	Special:		
150	3									Note 1: Please specify measuring range in °C			
Special:	9									Connection. Wiring configuration			
Insertion length (mm)										0	3-wire		
PS. for length > 400mm 15mm OD protective tube and 3/4"BSP are recommended										1	4-wire		
100		0	1	0	0					2	2-wire		
150		0	1	5	0					Tolerance acc. to IEC 751			
200		0	2	0	0					0	Class B, i.e. ± (0.3°C + 0.005 x t _{actual}) °C		
250		0	2	5	0					1	Class A, i.e. ± (0.15°C + 0.002 x t _{actual}) °C		
400		0	4	0	0					2	1/3 Class B @ 0°C, i.e. ± (0.10°C + 0.005 x t _{actual}) °C		
Interim lengths (Min. 80, max. 3000)		x	x	x	x					3	1/6 Class B @ 0°C, i.e. ± (0.05°C + 0.005 x t _{actual}) °C		
Process connection (see page 2)										4	Paired in groups, deviation ± 0.1°C @ 0°C og 100°C		
1/2" BSP (not recommended for 15 OD tube)										5	Special, i.e. ± (0.045°C + 0.001x t _{actual}) °C (Max 400 °C)		
3/4" BSP										s	Special:		
1" BSP										Resistance value (ohm) acc. to IEC 751			
Special:										0	1xPt100		
Connection head										1	2xPt100		
B: Degree of protection IP 65										2	1xPt1000		
BHS: Degree of protection IP 65										s	Special:		
BHSH: Degree of protection IP 65, high cap for transmitter										Measuring insert: Type and measuring range			
Special:										0	MK60: 0 +600°C Mineral insulated. (Only tolerance 0 and 1)		
										1	MK40: -50 +400°C Mineral insulated. (Only tolerance 2, 3, 4, 5)		
										2	Special:		
										s	Special:		

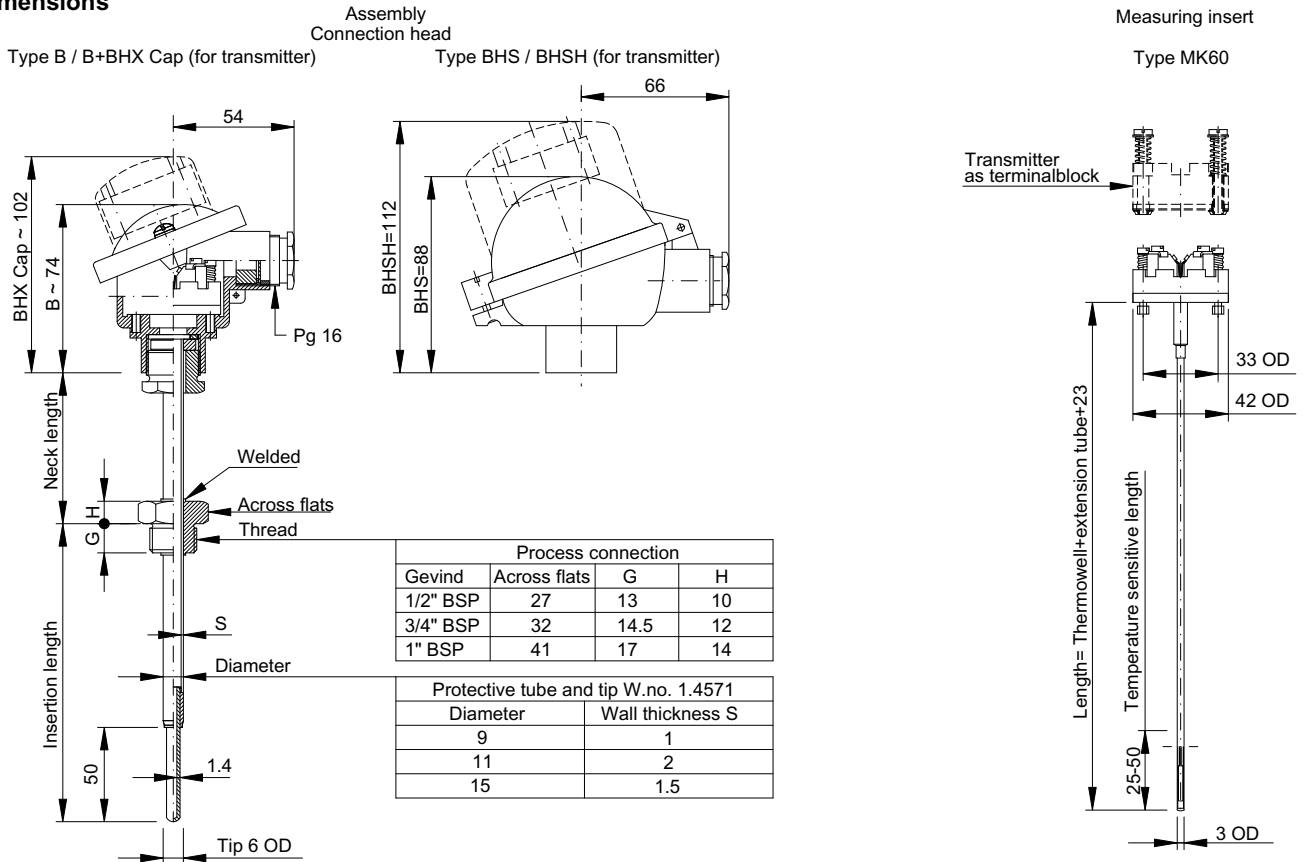
Accessories

Measuring insert: See data sheet 9108-02
Transmitter: See data sheet 9168

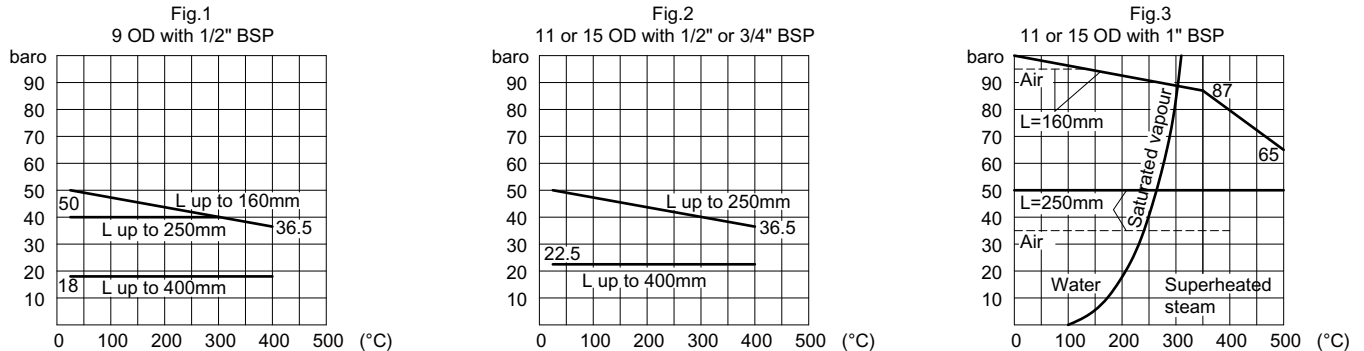
Customer information

Name:
Tel.:

Dimensions



Stress diagram for protective tube acc. to DIN 43763, material W.no. 1.4571



Permissible stress diagram		Fig.1	Fig.2		Fig.3	
Protective tube		OD 9x1	OD 11x2	OD 15x1.5	OD 11x2	OD 15x1.5
Process connection		1/2" BSP	1/2" or 3/4" BSP		1" BSP	
Torque on installation, max.		50Nm	50Nm	50Nm	100Nm	100Nm
Maximum flow velocity (m/sec)	Air	25	25	25	40	40
	Superheated steam	25	25	25	40	40
	Water	3	3	3	5	5

L=Insertion length

Response time

Protective tube 9/11/15 OD with 6mm OD tip	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}
	6	18	85	255

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

