

FRODE PEDERSEN

Application

- Measurement of temperature in air and liquids media, where a fast response time is required, but also in closed pipes and containers with an optional screw-in pocket.
- The operating range is up to 400°C, max. 50 bar and flow velocity up to 25m/sec (air)
- Fields of application
 - Heat and ventilation (HVAC)
 - Heat distribution (district heating)
 - Machine construction and environmental engineering

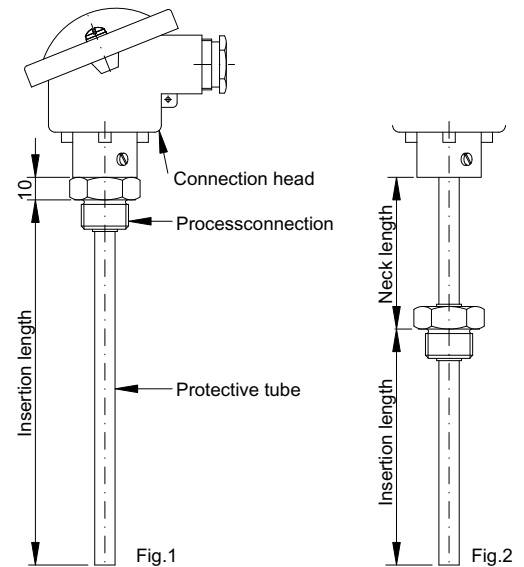
Technical features

- 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 to the protective tube or in a separate screw-in pocket
- Fixed measuring insert with fast response time
- Protective tube stainless and acidproof steel
- 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	1402-	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. 400°C												1 FPTM as terminal block (Sensor only 3-wire)			
9mm OD. 1mm wall	0											2 FPTM in high cap, B-head. (Sensor only 3-wire)			
8mm OD. 1mm wall	1											3 FPTU standard version. As terminal block			
Special	s											4 FPTU standard version. In high cap, B-head			
Neck length (mm)												5 FPTU galvanic isolated. As terminal block			
10 (Fig. 1)	0											6 FPTU galvanic isolated. In high cap, B-head			
50 (Fig. 2)	1											7 FPTU galvanic isolated. EEXiallCT4/6. As terminal block			
100 (Fig. 2)	2											8 FPTU galvanic isolated. EEXiallCT4/6. In high cap, B-head			
150 (Fig. 2)	3											s Special:			
Special:	9											Note 1: Please specify measuring range in °C			
Insertion length (mm)												Connection. Wiring configuration			
50												0 3-wire			
100		0	0	5	0							1 4-wire			
150		0	1	0	0							2 2-wire			
200		0	1	5	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. 50, 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												5 Special, i.e. ± (0.045°C + 0.001 x t _{actual}) °C (Max 400 °C)			
3/4" BSP												s Special:			
Special:												Resistance value (ohm) acc. to IEC 751			
Connection head												0 1xPt100			
B: Degree of protection IP 53												1 2xPt100			
BHS: Degree of protection IP 53												2 1xPt1000			
BHSH: Degree of protection IP 53, high cap for transmitter												s Special:			
Special:												Measuring range			
												-50 +400°C			
												Special:			

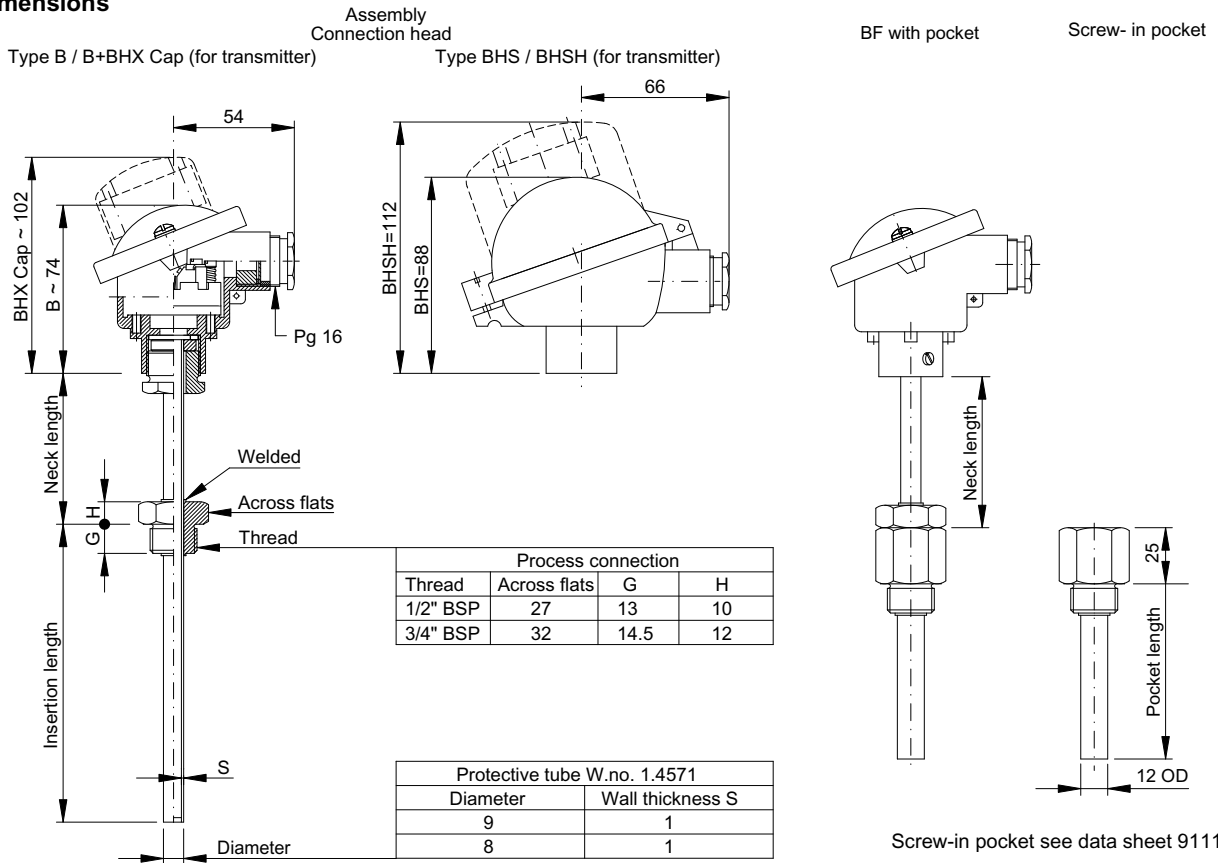
Accessories

Pocket ISM: See data sheet 9111
Transmitter: See data sheet 9168

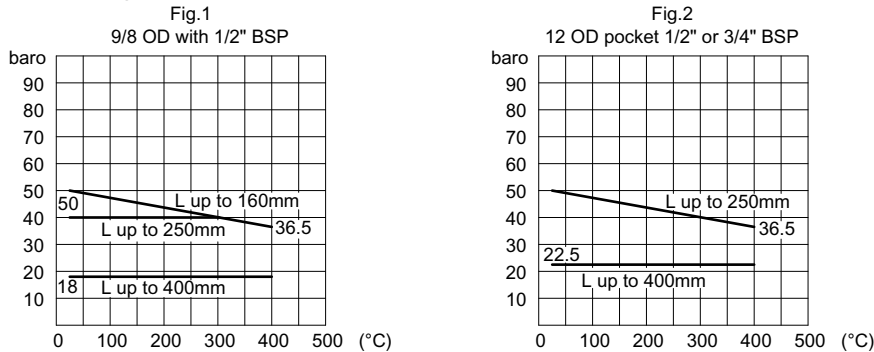
Customer information

Name:
Tel.:

Dimensions



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



Permissible stress diagram		Fig.1	Fig.2 (pocket)	
Protective tube		OD 9x1	OD 12x1	
Process connection		1/2" BSP	1/2" or 3/4" BSP	
Torque on installation (max.)		50Nm	50Nm	50Nm
Maximum flow velocity (m/sec)	Air	25	25	25
	Superheated steam	25	25	25
	Water	3	3	3

L=Insertion length

Response time

Protective tube	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
9/8 OD	9	26	60	190
With 12 OD pocket	32	108	155	510

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

