AMETEK

Resistance Thermometer BFM
Screw - in type with fixed insert. Classified

Data Sheet
1809

FRODE PEDERSEN

Application

- Measurement of temperature in gasses, vapours and fluids in pipes and cooling systems. Threaded connection to the process directly or with separate screw - in pocket.
- The operating range is up to 250°C, max. 50 bar and flow velocity up to 25m/sec (air)
- Fields of application
  - Marine sector
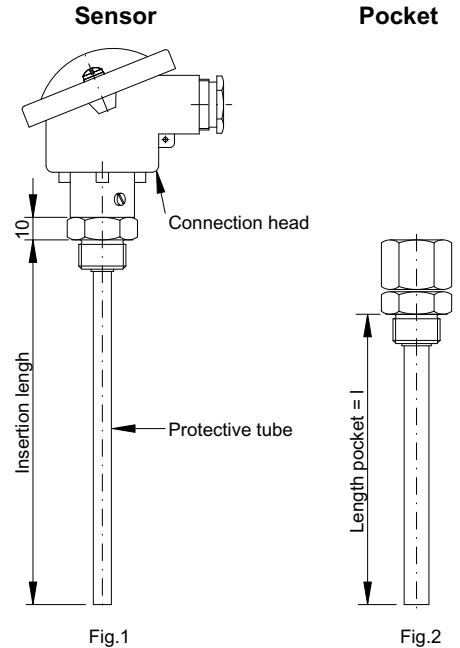 - Diesel engines for generators

Technical features

- Pt100 resistance thermometer acc. to IEC 751
- 3-wire configuration is standard
- Easy connection and removal with special screw-in thermowell with female swivel for the sensor, allowing to rotate the cable entry of the sensor in the desired direction
- Solid construction with high resistance against vibration acc. to IEC 68-2-6
- Type approved by classification societies (see page 2)
- Standard modules and lengths means that few spare parts need to be kept in stock
- 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 materials. We are specialist in temperature measurement. Please contact us and we will do our utmost to solve your specific measuring task

Sensor   **Pocket**

Fig.1   Fig.2

Ordering information

	Sensor	Transmitter
Specification number **1809-**		**4mA:** **°C** **20mA:** **°C** 2)

Protective tube

Stainless, acidproof steel, W.no. 1.4571 (AISI 316Ti)

8mm OD. 1mm wall	**0**

Insertion length (mm) (fig.1 sensor)

100	1	0	0
125	1	2	5
150	1	5	0
200	2	0	0
Special (min. 50, max. 400) 1)	x	x	x

Note 1: Insertion length > 200mm is not type approved

Screw - in pocket (fig. 2)

Stainless, acidproof steel, W.no. 1.4571 (AISI 316Ti) 11mm OD

None	0
For 100mm sensor l = 67mm	1
For 125mm sensor l = 92mm	2
For 150mm sensor l = 117mm	3
For 200mm sensor l = 167mm	4
Special (l = Insertion length for sensor - 33mm)	9

Process connection - screw-in pocket (see page 2)

1/2" BSP	0
3/4" BSP	1
None: (Without pocket)	2
Special:	s

Connection head

B: Degree of protection IP 67	0
Special:	s

Transmitter, 2-wire, 4-20mA output

0	None
1	FPTM as terminal block (Sensor only 3-wire)
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. EEXiallCT4/6. As terminal block
8	FPTU galvanic isolated. EEXiallCT4/6. In high cap, B-head
s	Special:

Note 2: Please specify measuring range in °C

Connection. Wiring configuration

0	. . . 3-wire
1	. . . 4-wire
2	. . . Special

Tolerance acc. to IEC 751

0	. . . . . . Class B, i.e. ± (0.3°C + 0.005 x t_{actual})°C
1	. . . . . . Class A, i.e. ± (0.15°C + 0.002 x t_{actual})°C
2	. . . . . . 1/3 Class B @ 0°C, i.e. ± (0.10°C + 0.005 x t_{actual})°C
3	. . . . . . 1/6 Class B @ 0°C, i.e. ± (0.05°C + 0.005 x t_{actual})°C
s	. . . . . . Special:

Resistance value (ohm) acc. to IEC 751

0	. . . . 1xPt100
1	. . . . 2xPt100
s	. . . . Special:

Measuring insert: Type and measuring range

0	0	. . . . -50 +250°C. Fixed insert
s	s	. . . . Special:

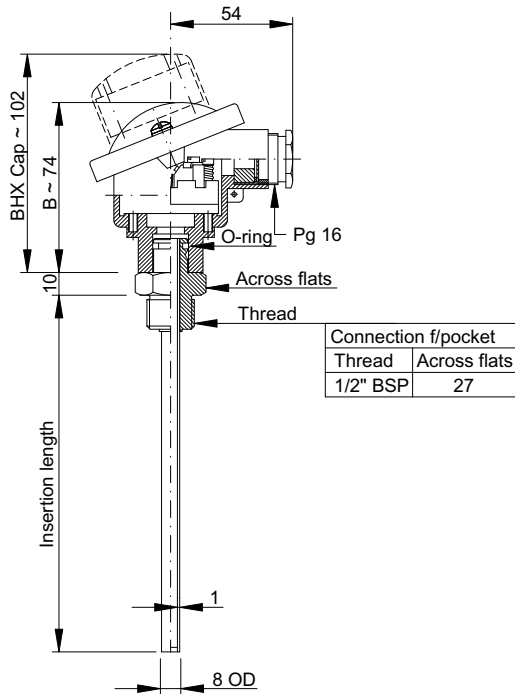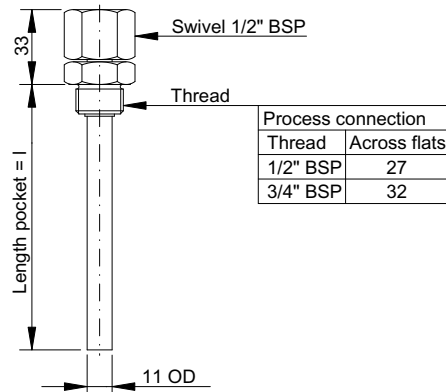| **Accessesories**	**Customer information**
	Name:
Transmitter: Ses data sheet 9168	Tel.:

Dimensions

Resistance thermometer BFM
Connection head
Type B / B+BHX Cap (for transmitter)

Pocket

BFM with pocket

54

BHX Cap ~ 102

B ~ 74

10

O-ring Pg 16

Across flats

Thread

Connection f/pocket	
Thread	Across flats
1/2" BSP	27

Insertion length

1

8 OD

33

Swivel 1/2" BSP

Thread

Length pocket = I

Process connection	
Thread	Across flats
1/2" BSP	27
3/4" BSP	32
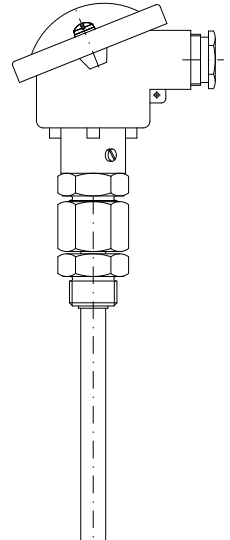
11 OD

Length pocket I = Insertion length sensor minus 33mm

Response time

Protective tube	Response time in seconds (guidelines)			
	In water @ med 0.4m/sec.		In air @ 3m/sec.	
	$t_{0,5}$	$t_{0,9}$	$t_{0,5}$	$t_{0,9}$
8 OD	9	27	50	150
With 11 OD pocket	25	75	140	430

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.

Type approvals

- Lloyd's Register of Shipping

Connection diagram

3-wire configuration				4-wire configuration		
Pt100 resistance		Transmitter FPTU	Transmitter FPTM	Pt100 resistance		Transmitter FPTU
1xPt100 3-wire	2xPt100 3-wire			1xPt100 4-wire	2xPt100 4-wire	

V supply

4-20mA

V supply

4-20mA

V supply

4-20mA

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