

### FRODE PEDERSEN

#### Application

- For installation/exchange in protective tubes and thermowells
- For the following complete sensors
  - Data sheet 1406/1407 Fig. 1 Sensor type DS, BH
  - Data sheet 1403/1405/1810 Fig. 2 Sensor type B, D, BM
  - Data sheet 1401/1403 (15mm) Fig. 3 Sensor type A, B

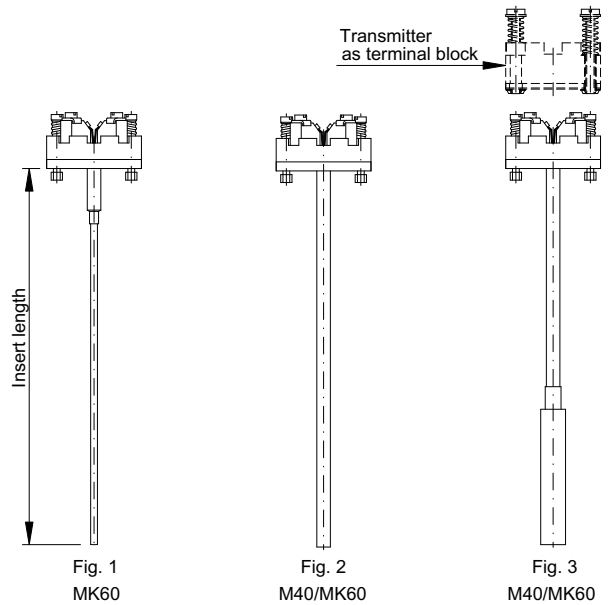
#### Technical features

- Pt100 resistance thermometer acc. to IEC 751
- 3-wire connection is standard
- Type MK40/60 is a mineral insulated type, vibrationproof
- Type M40 is in a standard steel tube filled with ceramic powder
- Mounted into the connection head by two spring loaded screws, thus ensuring a good thermal contact to the bottom of the protective tube (response time), and at the same time reducing vibration effects and compensating for expansions

#### Ordering

Please select the requested sensor 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	9108-02-	Measuring insert	Transmitter
			4mA: °C 20mA: °C 4)

#### Insert type

Type	Fig.	Diam.	Temperature	Data sheet	Sensor type	
MK60	Fig. 1	3	-50 +600°C	1406/1407	DS, BH <sup>1)</sup>	0
M40	Fig. 2	6	-50 +400°C	1403/1405/1810	B, D, BM	1
MK60	Fig. 2	6	-50 +600°C	1403/1405/1810	B, D, BM <sup>1)</sup>	2
M40	Fig. 3	6/11	-50 +400°C	1401/1403	A, B	3
MK60	Fig. 3	6/11	-50 +600°C	1401/1403	A, B <sup>1)</sup>	4
M40	Fig. 2	8	-50 +400°C	Old type	A,B	5
MK40	Fig. 1	3	-50 +400°C	1406/1407	DS, BH <sup>2)</sup>	6
MK40	Fig. 2	6	-50 +400°C	1403/1405/1810	B, D, BM <sup>2)</sup>	7
MK60	Fig. 3	6/8	-50 +600°C	1403/1405/1810	B, D, BM <sup>1)</sup>	8
Special:						s

Note 1: Only tolerance 0 and 1 Note 2: Only tolerance 2, 3, 4 or 5)

#### Length (mm)

Length = Insertion/nominal length + neck length + x mm 3)

175	0	1	7	5
225	0	2	2	5
275	0	2	7	5
290	0	2	9	0
315	0	3	1	5
325	0	3	2	5
375	0	3	7	5
435	0	4	3	5
475	0	4	7	5
525	0	5	2	5
735	0	7	3	5
1025	1	0	2	5
Interim lengths (Min. 100, max. 3025)	x	x	x	x

Note 3 x=25mm for 1401/1403/1407/1810  
x=23mm for 1405/1406

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

- 0 None
  - 1 FPTM as terminal block (Sensor only 3-wire)
  - 2 FPTU standard version. As terminal block
  - 3 FPTU galvanic isolated. As terminal block
  - 4 FPTU galvanic isolated. EEXialICT4/6. As terminal block
  - 5 None. Without terminal block. Long flying leads for transmitter
  - 6 None. With terminal block, interchangeable w/transmitter via leads
  - s Special:
- Note 4: Please specify measuring range in °C

#### Connection. Wiring configuration

- 0 ... 3-wire
- 1 ... 4-wire
- 2 ... 2-wire (always for 2xPt100 and OD 3mm)

#### Tolerance acc. to IEC 751

- 0 ... Class B, i.e.  $\pm (0.3^\circ\text{C} + 0.005 \times t_{\text{actual}})^\circ\text{C}$
- 1 ... Class A, i.e.  $\pm (0.15^\circ\text{C} + 0.002 \times t_{\text{actual}})^\circ\text{C}$
- 2 ... 1/3 Class B @ 0°C, i.e.  $\pm (0.10^\circ\text{C} + 0.005 \times t_{\text{actual}})^\circ\text{C}$
- 3 ... 1/6 Class B @ 0°C, i.e.  $\pm (0.05^\circ\text{C} + 0.005 \times t_{\text{actual}})^\circ\text{C}$
- 4 ... Paired in groups, deviation  $\pm 0.1^\circ\text{C}$  @ 0°C og 100°C
- 5 ... Special, i.e.  $\pm (0.045^\circ\text{C} + 0.001 \times t_{\text{actual}})^\circ\text{C}$  (Max 400 °C)
- s Special:

#### Resistance value (ohm) acc. to IEC 751

- 0 ... 1xPt100
- 1 ... 2xPt100
- 2 ... 1xPt1000
- s Special:

#### Accessories

Transmitter: See data sheet 9168

#### Customer information

Name:  
Tel.:

Dimensions

Measuring inserts

Fig. 1  
MK60

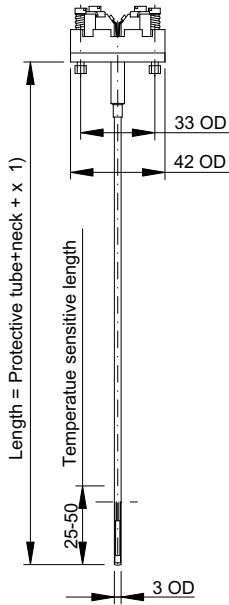


Fig. 2  
M40/MK60

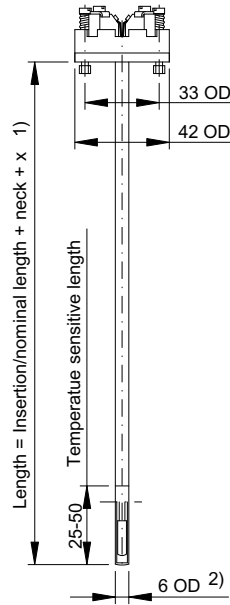
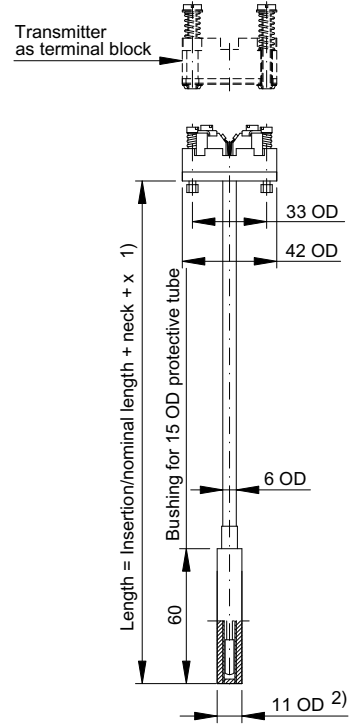


Fig. 3  
M40/MK60



Note 1: x=25mm for 1401/1403/1407/1810  
x=23mm for 1405/1406

Note 2: 8 OD for older types

Insulation resistance

Depending of test voltage and diameter

Diameter mm	U Volt	Rmin M ohm x m
3 - 6	250	100

Note:

The insulation resistance depends on the length of the insert. Therefore, it is listed as a length related resistance in Mohm x m for length > 1 meter and Mohm for length < 1 meter

Connection diagram

