

### FRODE PEDERSEN

#### Application

- For installation/exchange in protective tubes and thenowells
- For the following complete sensors
  - Data sheet 1305/1307 Fig. 1 Sensor type BH, DS
  - Data sheet 1304/1306/1308 Fig. 2 Sensor type B, D, AF
  - Data sheet 1301/1304 (15mm) Fig. 3 Sensor type A, B
  - Data sheet 1803 Fig. 4 Sensor type UST 3

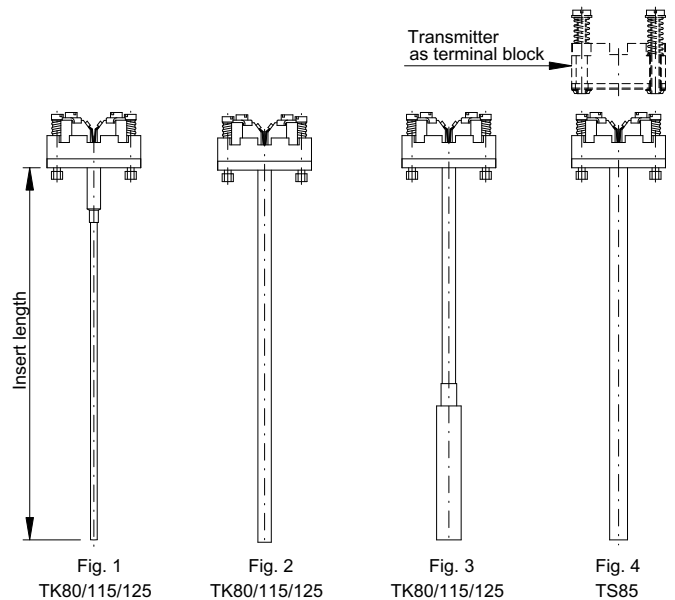
#### Technical features

- Thermocouple type J, K and N acc. to IEC-584-1
- Type TK is a mineral insulated type, vibrationproof
- Type TS85 is specially constructed for exhaust sensor UST 3 (ships)
- Type T80/85 (tube+ceramic powder) is for older protective tubes w/ID 9 mm
- 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 specialists in temperature measurement. Please contact us and we shall do our utmost to solve your specific measuring tasks



#### Ordering information

Specification number	Measuring insert										Transmitter			
	9108-01-										4mA:	°C	20mA:	°C 4)

#### Type

Fig.	Diam.	Data sheet	Sensor type
Fig. 1	3	1305/1307	BH, DS
Fig. 2	6	1304/1306/1308	B, D, AF
Fig. 3	11	1301/1304	A, B
Fig. 4	8	1803	UST 3
T80/85	8	Std. tube w/ powder	A,B (old type)
Special:			

#### Length (mm)

Length = Insertion/nominal length + neck length + x mm 1)

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 1: x=25mm for 1301/1304/1305/1308  
x=23mm for 1306/1307/1803

0	None. With terminal block
1	FPTU standard version. As terminal block
2	FPTU galvanic isolated. As terminal block
3	FPTU galvanic isolated. EEXiallCT4/6. As terminal block
a	FPTT galvanic isolated. As terminal block
b	FPTU galvanic isolated. EEXiallCT4/6. As terminal block
4	None. Without terminal block. Long flying leads for transmitter
5	None. With terminal block, interchangeable w/transmitter via leads
s	Special

Note 4: Please specify measuring range

#### Tolerance acc. to IEC 584-2

0	Class 2, for J, K and N, i.e. ±2.5°C or 0.0075 x t actual (°C) 3)
1	Class 1, for J, K and N, i.e. ±1.5°C or 0.0040 x t actual (°C) 3)

Note 3: The highest value applies

#### Hot Junction

0	Insulated from outer sheath
1	Grounded (thermocouple bonded to outer sheath)

#### Number of thermocouples

0	1
1	2 Only type J and K

#### Measuring insert

Model	Thermocouple	Type	Max. temperature 2)	
			Continuously	Shortly
TK80	Fe-CuNi	J	800°C	850°C
TK115	NiCr-Ni	K	1000°C	1150°C
TK125	NiCrosil-Nisil	N	1000°C	1250°C
TS85	NiCr-Ni	K	800°C	850°C
T80	Fe-CuNi	J	800°C	850°C
T85	NiCr-Ni	K	800°C	850°C

Special:

Note 2: The values apply for the thermocouple.

#### Accessories

Transmitter: See data sheet 9168

#### Customer information

Name:

Tel.:

Dimensions

Measuring inserts

Fig. 1  
TK80/115/125

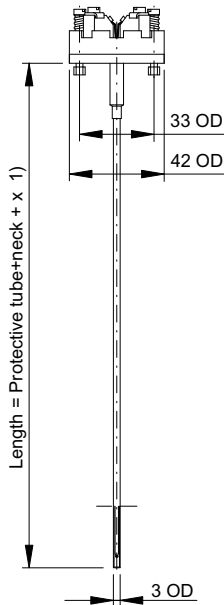


Fig. 2  
TK80/115/125

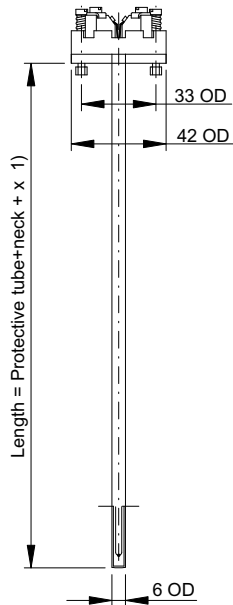


Fig. 3  
TK80/115/125

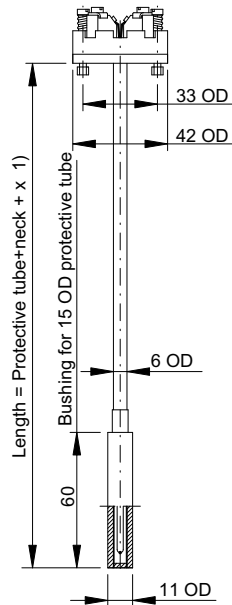
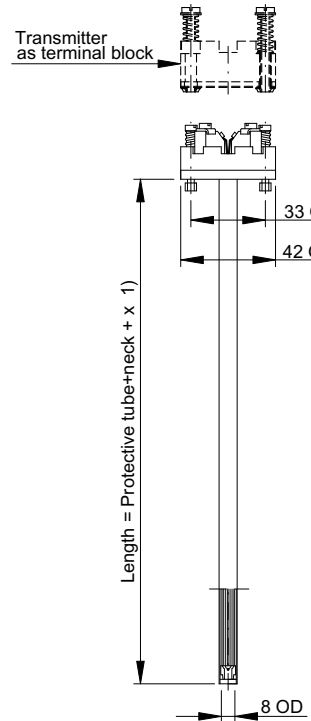


Fig. 4  
TS85



Note 1: x=25mm for 1301/1304/1305/1308  
x=23mm for 1306/1307/1803

Hot Junction

Thermocouple insulated from sheath

Insulation resistance and test voltage

Depending of temperature and length acc. to IEC 1515

Thermo-couple	Length m	Test temperature °C	Insulation resistance minimum	
			M ohm x m	M ohm
All	≥1	20 ±15	1000	-
	<1	20 ±15	-	1000
J, K, N	All lengths	500 ±15	-	5

Depending of test voltage, diameter, and number of thermocouple

Diameter mm	Number of thermocouples			
	1		2	
	U Volt	Rmin M ohm x m	U Volt	Rmin M ohm x m
3-8	500 ±50	1000	250 ±50	1000

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

