Resistance Thermometer KM5

cable sensor with fixed thread or swivel

Data sheet 1711

FRODE PEDERSEN

Application

- Measurement of temperature in ducts, pockets, machine construction, containers, enviromental chambers and test
- Operating range is in solid, fluid and gaseous medias up to 400°C
- Fields of application
  - Cooling systems, pipelines, chemical apparatus
  - Energy
  - Machinery

Technical features

- Pt100 resistance thermometer acc. to IEC 751
- 3-wire connection is standard
- Different types of cable types adapted to the actual application
- The protective tube is in stainless and acid proof steel
- Connected to the process by fixed thread or swivel- male or female

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 will do our best to solve your specific measuring task

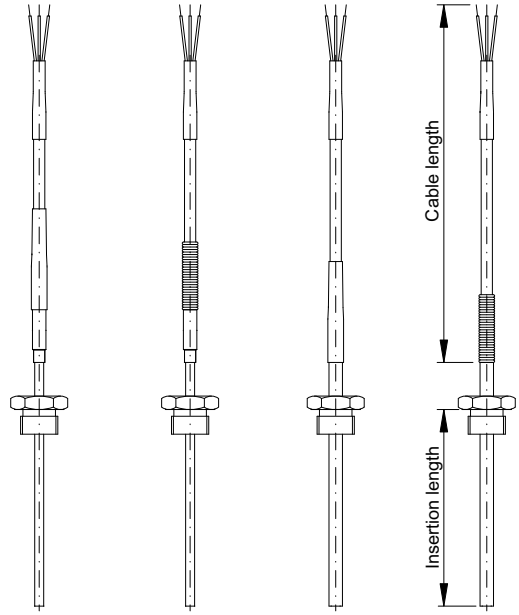


Fig. 1 Fig. 2 Fig. 3 Fig. 4

Ordering information — Sensor

Specification number 1711- [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Type

Fig. 1, 4 OD w/shrinkable sleeve at tube and cable	0
Fig. 2 4 OD w/spring at tube and cable	1
Fig. 3, 6 OD w/shrinkable sleeve at tube and cable	2
Fig. 4, 6 OD w/spring at tube and cable	3
Special:	s

Protective tube

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

4mm OD. 0.5mm wall	0
6mm OD. 0.3mm wall	1
Special:	s

Insertion length (mm)

60	0 6 0
120	1 2 0
200	2 0 0
Interim lengths (Min. 40, max. 400mm)	x x x

Process connection (see page 2)

Fig. 5	1/4" BSP. Fixed thread	0
Fig. 5	3/8" BSP. Fixed thread	1
Fig. 5	1/2" BSP. Fixed thread (only for 6mm OD)	2
Fig. 6	1/4" BSP. Swivel nipple	3
Fig. 6	3/8" BSP. Swivel nipple	4
Fig. 6	1/2" BSP. Swivel nipple (only for 6mm OD)	5
Fig. 7	1/4" BSP. Swivel socket	6
Fig. 7	3/8" BSP. Swivel socket	7
Fig. 7	1/2" BSP. Swivel socket (only for 6mm OD)	8
Special:		s

Cable length (meter)

0 2	1 meter
x x.x	Special (Min 0.1 meter)

Measuring range and cable type

	Temp.	mm²	Insulation	Screened 1)
0	-5 +70°C	0,25	PVC, grey	Yes
1	-50 +180°C	0,25	Silicone, red	No
2	-50 +200°C	0,382	Teflon FEP, black	Yes
3	-20 +400°C	0,5	Fibreglass+steel braid	No
4	-50 +200°C	0,14	Teflon FEP, black	Yes
5	-50 +200°C	0,6	Teflon FEP, black	Yes
s	Special:			

Note 1: Braided inner screen

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
4	Paired in groups, deviation ± 0.1°C @ 0°C and 100°C
5	Special, i.e. ± (0.045°C + 0.001x t_{actual})°C
s	Special:

Connection. Wiring configuration

0	3-wire (only 1xPt100)
1	4-wire (only 1xPt100)
2	2-wire (allways for 2xPt100)

Resistance value (ohm) acc. to IEC 751

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

Accessesories

Customer information

Name:

Tel.:

TECHNICAL DATA

All dimensions in mm

Dimensions

Fig. 1

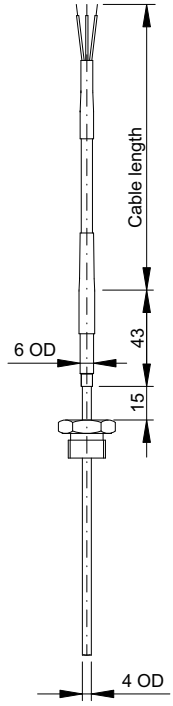


Fig. 2

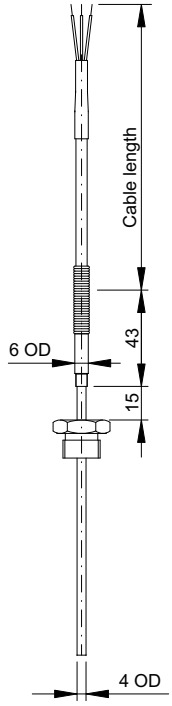


Fig. 3

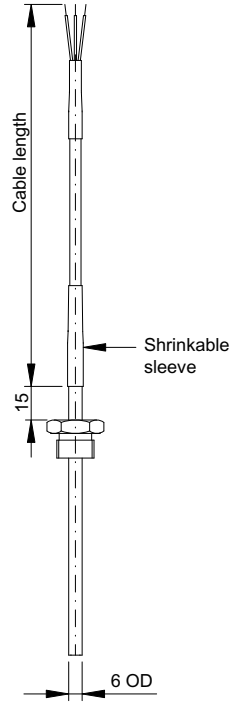
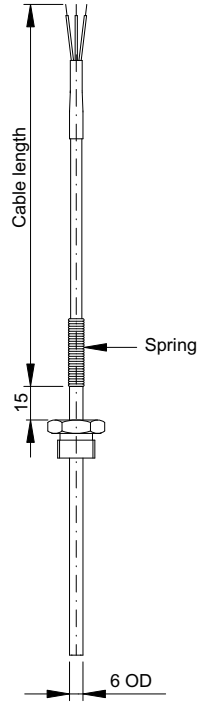
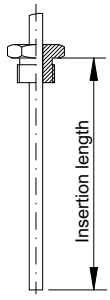


Fig. 4



Process connection

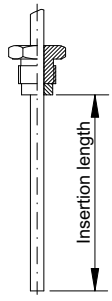
Fig. 5



Fixed screwed connection, brazed to the tube

Fixed screwed connection		
Diameter	Thread	A/F
4	1/4" BSP	19
4	3/8" BSP	22
6	1/4" BSP	19
6	3/8" BSP	22
6	1/2" BSP	27

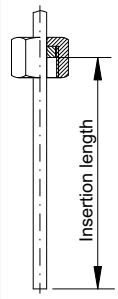
Fig. 6



Guard ring brazed to tube

Swivel nipple		
Diameter	Thread	A/F
4	1/4" BSP	19
4	3/8" BSP	22
6	1/4" BSP	19
6	3/8" BSP	22
6	1/2" BSP	27

Fig. 7



Guard ring brazed to tube

Swivel socket		
Diameter	Thread	A/F
4	1/4" BSP	19
4	3/8" BSP	22
6	1/4" BSP	19
6	3/8" BSP	22
6	1/2" BSP	27

Properties for cable

Insulation	Temperature range	Application
PVC	- 5 + 70°C	General use
Silicone	-50 +180°C	Flexible, heat resistance
Teflon (FEP)	-50 +200°C	Corrosion and heat resistance
GLGLO, Fiberglass+steel braid	-20 +400°C	High temperature, not water tight

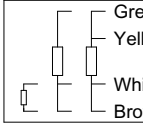
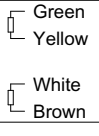
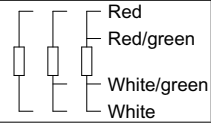
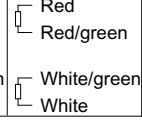
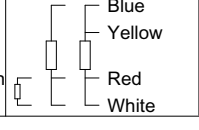
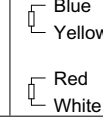
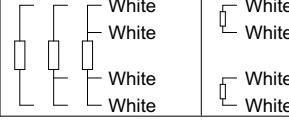
Response time

Protective tube Diameter	Response time in seconds (guidelines)			
	In water @ 0.4m/sec.		In air @ 3m/sec.	
	$t_{0.5}$	$t_{0.9}$	$t_{0.5}$	$t_{0.9}$
4	3	15	40	120
6	5	15	60	180

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 - cable

PVC w/screen Screen connected to outer sheath		Teflon w/screen Screen connected to outer sheath		Silicone		GLGLO	
1xPt100 2- 3- 4-wire	2xPt100 2-wire	1xPt100 2- 3- 4-wire	2xPt100 2-wire	1xPt100 2- 3- 4-wire	2xPt100 2-wire	1xPt100 2- 3- 4-wire	2xPt100 2-wire
							

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