



Resistance Thermometer for Harsh Operational and Environmental Conditions



measuring
•
monitoring
•
analysing

TNK



- Measuring range: $-80 \dots +150 \text{ }^\circ\text{C}$
- Sensor: Pt100, Pt1000, Ni100, NTC
- Measuring accuracy: class A or B
- p_{max} : 50 bar; t_{max} : $150 \text{ }^\circ\text{C}$
- Process connection:
M18x1,5, G $\frac{1}{2}$, $\frac{1}{2}$ NPT, compression fitting
- Material: brass, saltwater resistant bronze
or stainless steel



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Description

Resistance thermometers are electrical temperature transmitters used in association with the appropriate analysis devices for displaying and regulating temperatures. They contain temperature-dependent measuring resistances fitted in a purpose-built mounting.

The new KOBOLD Type TNK resistance thermometers are a special design for use in shipbuilding and mechanical engineering and meet the high demands for robustness, reliability, impact resistance, shock and vibration resistance in accordance with the specifications set by Germanische Lloyd and Deutsche Bahn (German State Railways). Ideally suited for temperature measurement in diesel engines.

The resistance thermometer's sensor is made of brass, bronze or stainless steel. The terminal head is made of saltwater-resistant aluminium and is available with various different cable entry points. Using various threaded nipple or terminal clamps; the sensor can be mounted in the pipe or on the machine.

The measuring resistances can be replaced without having to remove the mounting. Because it has four terminals it is particularly easy to connect it into 3- or 4-lead technology. For critical applications the sensor is also available as double measuring resistance.

Areas of application

- Shipbuilding
- Diesel engines
- Engine building
- Mechanical engineering
- Power unit construction

Technical Data

Sensor:	Pt100, Ni100, Pt1000, class A or B NTC (5 kΩ at 25 °C) 2-, 3- or 4-lead
Measuring range:	-80 ... +150 °C
Accuracy (Pt):	class A or B
Accuracy (Ni):	class B
Accuracy (NTC):	class B ±0.2 °C in the range 0 - 70 °C)
Max. temperature:	150 °C
Reaction time:	t ₅₀ 8 Sek. (water) t ₅₀ 50 Sek. (air) t ₉₀ 20 Sek. (water)
Ambient temperature:	-30 °C ... +100 °C
Max. pressure:	16 bar (connection code: D5, G4, M5, N4) 50 bar (compression fitting)
Sensor material:	nickel-plated brass, saltwater-resistant bronze or stainless steel 1.4571
Terminal casing:	saltwater-resistant aluminium
Compression fittings:	galvanized steel, stainless steel
Double nipple:	nickel-plated brass, saltwater-resistant bronze, stainless steel
Mech. connection:	M18 x1.5, G ½, ½ NPT
Electr. connection:	screw terminal in the round connection head
Cable input point:	cable clamps for Ø 5-10 mm cable cable connection terminal with 2 m rubber cable (2-wire) according to DIN 89280 with inside thread M18 x1,5 for cable with shielding Ø 8-10.5 (for use in shipbuilding) as per VG 88812 with inside thread M18 x1.5 for cable with shielding Ø 11.5-12.5 (for military use)
Thread for cable entry points:	PG11
Protection type:	IP65
Weight:	approx. 350 g (50 mm sensor)
Approval:	GL approval



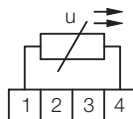
Order Details (Example: TNK-1105 D5 12 P)

Sensor length	Model			Mechanical connection	Sensor type/class	Sensor version	Screwed cable connection
	Nickel-plated brass	Stainless steel	Saltwater-resistant bronze				
50 mm	TNK-1105	TNK-1405	TNK-1705	Rotating thread D5 = M18x1,5 Double nipple M5 = M18 x1,5 G4 = G 1/2 N4 = 1/2 NPT Brass compression fitting, galvanized S5* = M18 x1,5 S4* = G 1/2 P4* = 1/2 NPT Compression fitting st. steel 1.4571 V5* = M18 x1,5 V4* = G 1/2 Q4* = 1/2 NPT	Class B 1 = 1xPt100 2 = 2xPt100 5 = 1 x Pt1000 6 = 2 x Pt1000 7 = 1xNi100 N = 1 x NTC Class A A = 1xPt100 B = 2xPt100 C = 1 x Pt1000 D = 2 x Pt1000	2 = 2-lead 3** = 3-lead 4** = 4-lead	P = for cable-Ø 5-10 mm 2*** = 2 m rubber cable M = according to DIN 89280 V = according to VG 88812
75 mm	TNK-1107	TNK-1407	TNK-1707				
100 mm	TNK-1110	TNK-1410	TNK-1710				
150 mm	TNK-1115	TNK-1415	TNK-1715				
Special length (max. 300 mm)	-	TNK-14xx	-				

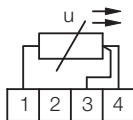
* Compression fitting not if the sensor material is bronze
 ** 3- or 4-lead only with single sensor
 *** only for 1 x 2-lead

Electrical connection

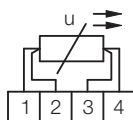
2-lead



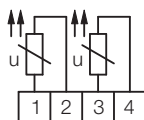
3-lead



4-lead

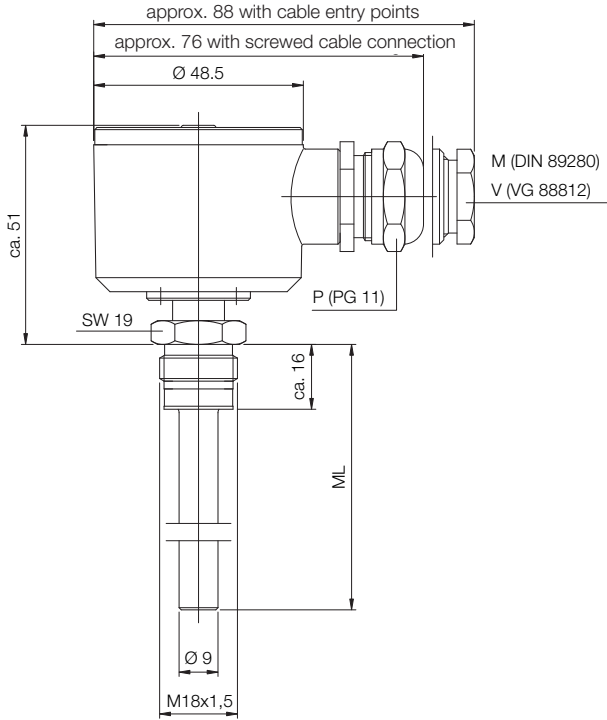


2 x 2-lead

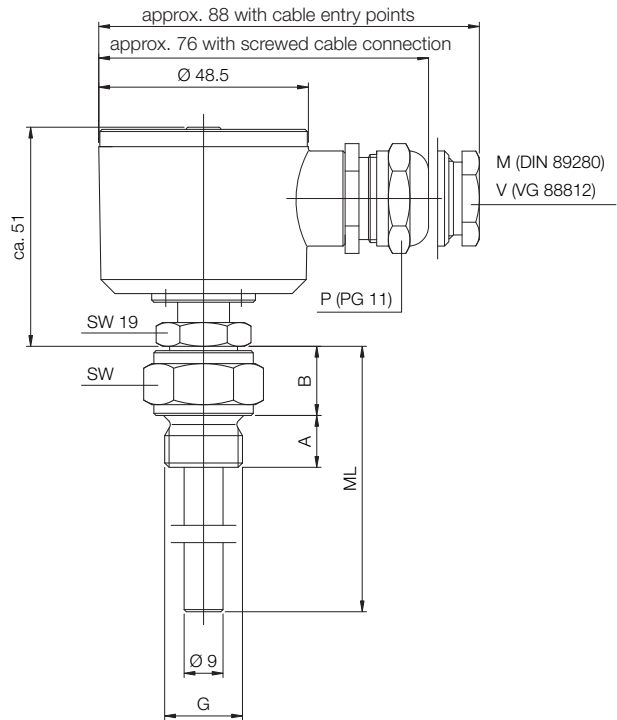


Dimensions

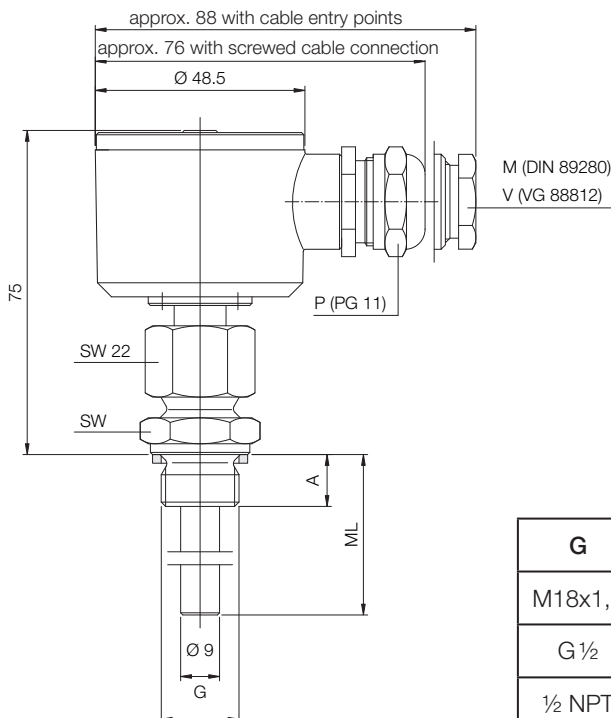
TNK with thread M18 x1,5 (without nipple)



TNK with double nipple



TNK with compression fitting



G	SW	A	B
M18x1,5	24	12	15
G½	27	14	15
½ NPT	24	19	13

G	SW	A
M18x1,5	24	12
G½	27	14
½ NPT	22	19.8