Operating Instructions

for

In-line Resistance Thermometers for Hygienic Applications

Model: TWP

We don’t accept warranty and liability claims neither upon this publication nor in case of improper treatment of the described products.

The document may contain technical inaccuracies and typographical errors. The content will be revised on a regular basis. These changes will be implemented in later versions. The described products can be improved and changed at any time without prior notice.

1. Contents

Manufactured and sold by:

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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.
The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC-machine guidelines.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.
Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:
The standard delivery includes:

- In-line Resistance Thermometer model: TWP

4. Regulation Use

Any use of the device, which exceeds the manufacturer's specification, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

The in-line resistance thermometers allow dead-zone-free temperature measurement in piping. The annular cross section generates no additional flow resistance. Suitable for complete cleaning in place (with and without pipeline scrapper).
The selection of materials, the surface condition and the construction of the connections assure secure operation for the most stringent hygienic requirements. Wetted parts in stainless steel can be electro polished as an option.
In addition to standard process connections, thread according to DIN 11857 (DIN 11887), clamp according to ISO 2852 and other types are available.
Pt 100 temperature sensors according to IEC 751, category B are used as standard. In addition to the connection head form B these resistance thermometers can also be fitted with a housing made of stainless steel.
The in-line resistance thermometers are available with an optional transmitter.

6. Mechanical Connection

Before installation

- Remove all packing materials and transport retainers and ensure that no such materials remain in the device.
- Make sure that the maximum operating pressure and temperature of the device are not exceeded. (see Technical Information)

During installation:

- Mount the resistance thermometer tension-free into the system.
- Protect the measuring sensor from mechanical damage within the process.
- Seal the mounting screw respectively the mounting flange with adequate sealant.
- The weld-in of the weld-in sleeve may only be carried out by specialised personnel with adequate welding knowledge.
- If possible, check directly after mechanical installation that the joint to the screw connection, the weld respectively the flange connection is fully sealed.
- By mounting the resistance thermometer into an exposed position the connecting head has to be protected from external damage.

7. Electrical Connection

Caution! Make sure that the voltage values of your system correspond with the voltage values of the measuring unit.

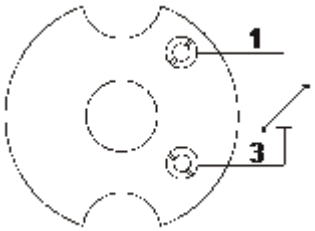
The electrical connection should only be carried out by specialised personnel with adequate technical knowledge.

Wiring diagram for clamp terminal

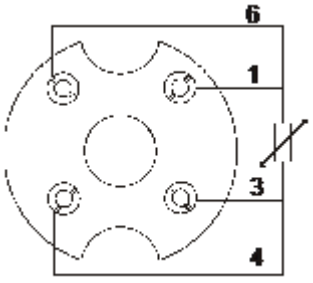
Resistance thermometer

single:

2 wire

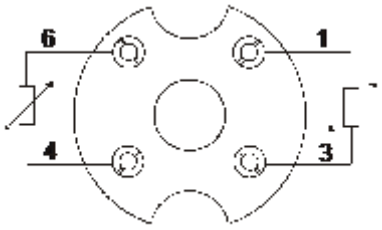


4 wire

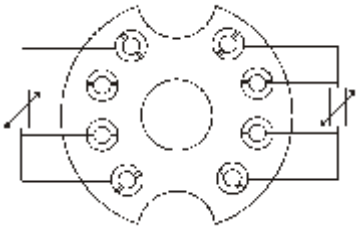


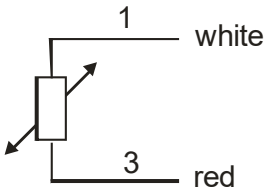
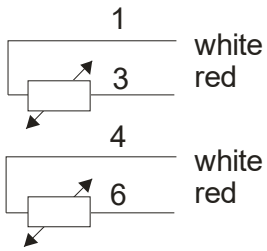
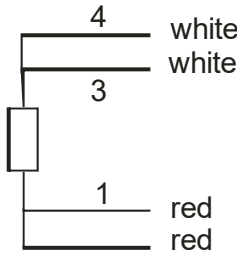
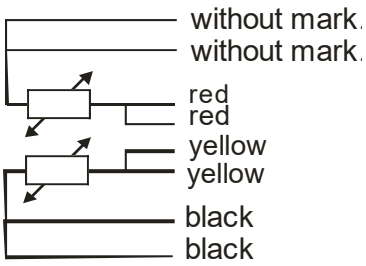
double:

2 wire



4 wire



Resistance thermometer interior wiring: Switching and colour code		
Switching of the interior wiring	Number of windings	
	Pt 100Ω	2xPt 100Ω
2-wire		
4-wire		

8. Technical Information

Protection:	head form B IP 54, painted aluminium Stainless steel housing IP67 max. ambient temperature head: 85 °C
Sensor:	1x Pt100, class B 2x Pt100, class B
Ambient temperature:	-25...+80 °C
Measuring range:	-20...+200 °C
Material:	
Connection A	
DIN 11851 (DIN11887):	1.4571
Connection D	
Clamp ISO2852:	1.4571
Housing:	acc. to DIN form B (painted aluminium) or stainless steel
Option:	wetted parts electropolished st. st.
Transmitter	
Output:	4 - 20 mA
Supply voltage:	8...30 V
Min./Max. measuring range:	-20...+200 °C
Minimum measuring span:	50 K

9. Order Codes

Example: **TWP-MA4D15 12 B 0**
Connection A DIN 11851 (DIN11887), wetted parts 1.4571

Model number	Connection	Sensor/Wiring	Head	Option
TWP-MA4D15..	DN15	**..12..** = 1 x Pt100/ 2-wire **..14..** = 1 x Pt100/ 4-wire **..22..** = 2 x Pt100/ 2-wire	**..B..** = form B **..T..** = form B with transducer for top mounting* **..G..** = stainless steel housing **..H..** = stainless steel housing with transducer for top mounting*	**..0** = without **..P** = wetted parts electropolished
TWP-MA4D25..	DN25			
TWP-MA4D32..	DN32			
TWP-MA4D40..	DN40			
TWP-MA4D50..	DN50			
TWP-MA4D65..	DN65			
TWP-MA4D80..	DN80			

* Please specify measuring range when ordering

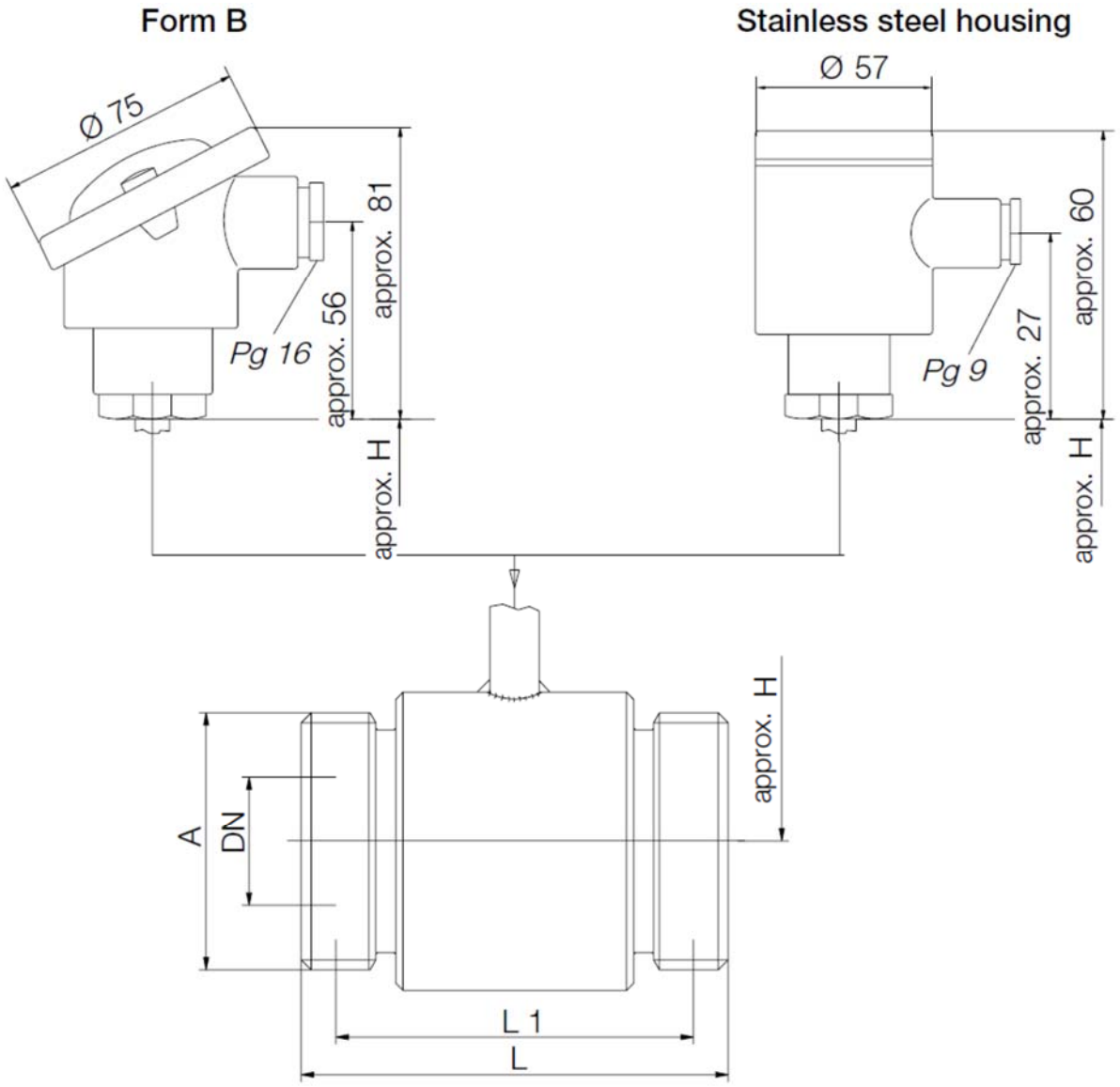
Example: **TWP-LA8D15 12 B 0**
Connection D clamp ISO2852, wetted parts 1.4571

Model number	Connection	Sensor/Wiring	Head	Option
TWP-LA8D15..	½“	**..12..** = 1 x Pt100/ 2-wire **..14..** = 1 x Pt100/ 4-wire **..22..** = 2 x Pt100/ 2-wire	**..B..** = form B **..T..** = form B with transducer for top mounting* **..G..** = stainless steel housing **..H..** = stainless steel housing with transducer for top mounting*	**..0** = without **..P** = wetted parts electropolished
TWP-LA8D20..	¾“			
TWP-LA8D25..	1“			
TWP-LA8D40..	1½“			
TWP-LA8D50..	2“			
TWP-LA8D65..	2½“			

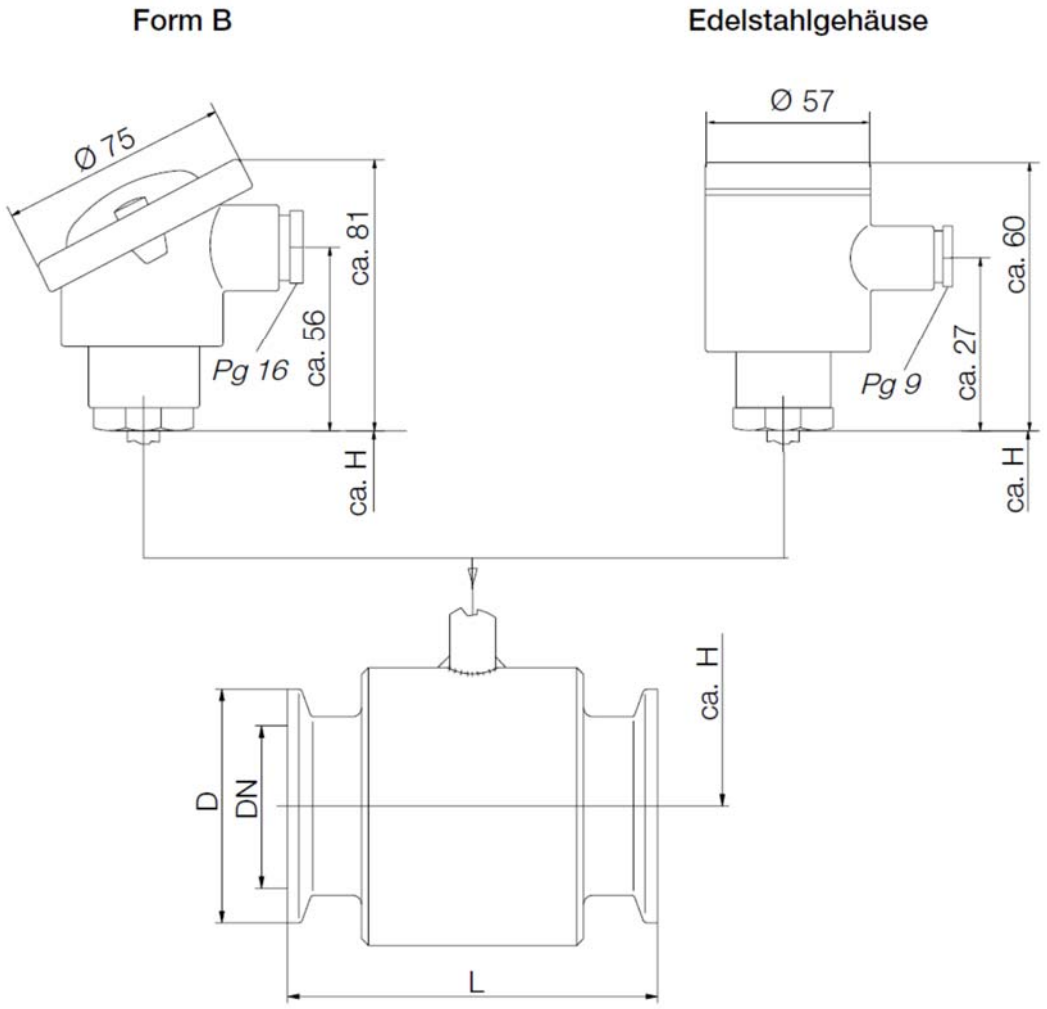
* Please specify measuring range when ordering

10. Dimensions

[mm]



Connection A with thread DIN 11857 (DIN11887)	DN	A	L	L1	Approximately H
TWP-MA4D15..	15	Rd 34 x 1/8“	80	72	60
TWP-MA4D25..	25	Rd 52 x 1/6“	86	72	70
TWP-MA4D32..	32	Rd 58 x 1/6“	86	72	80
TWP-MA4D40..	40	Rd 65 x 1/6“	86	72	80
TWP-MA4D50..	50	Rd 78 x 1/6“	86	72	85
TWP-MA4D65..	65	Rd 95 x 1/6“	90	74	90
TWP-MA4D80..	80	Rd 110 x 1/4“	100	84	105



Connection clamp ISO 2852	DN	D ø	L	L1	Approximately H
TWP-LA4D15..	½“	25	73	-	60
TWP-LA4D25..	¾“	25	73	-	60
TWP-LA4D32..	1“	50,5	73	-	70
TWP-LA4D40..	1½“	50,5	73	-	70
TWP-LA4D50..	2“	64	73	-	80
TWP-LA4D65..	2½“	77,5	73	-	85

11. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

In-line Resistance Thermometer **Model: TWP-...**

to which this declaration relates is in conformity with the standards noted below:

EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Also the following EC guidelines are fulfilled:

2011/65/EU **RoHS (category 9)**

additional for **TWP-..T..** and **TWP-..H..**:

are in conformity with the standards noted below:

EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

EN61326-2-3:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements

Also the following EC guidelines are fulfilled:

2014/30/EU **EMC Directive**

Hofheim, 11 Dec.2018

H. Peters
General Manager

M. Wenzel
Proxy Holder