

Operating Instructions for Turbine-Wheel Flow Meter Model: DPE-...



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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.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

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.

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

As per the “Pressure Equipment Directive 2014/68/EU”

No CE marking, see Article 4, Section 3 "Sound Engineering Practice", Directive 2014/68/EU

	Piping	
	Diagram 8 Group 1 Dangerous Fluids	Diagram 9 Group 2 Non-dangerous Fluids
DPE-xx05...DPE-xx25	Article 4, Section 3	Article 4, Section 3
DPE-1130	Not available	Article 4, Section 3
DPE-1230	Category II	Article 4, Section 3

3. Instrument Inspection

All 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:

- Turbine-wheel Flow Meter model: DPE-...

4. Regulation Use

Any use of the Turbine-Wheel Flow Meter, model: DPE-..., 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 Principles

The Kobold flow meter model DPE is used for measuring and monitoring liquids. The device works according to the well-known blade wheel principle. The six vane blade wheel is retained axially in a high-quality sapphire bearing. The sensor is supplied ready-to-install with pipe fittings or with weld-on sleeves. The blade wheel is set in motion by the flowing medium. Hermetically sealed magnets are embedded in the ends of the blade wheels. The magnets generate electrical pulses in a Hall-effect sensor mounted outside the flow area.

6. Mechanical Connection

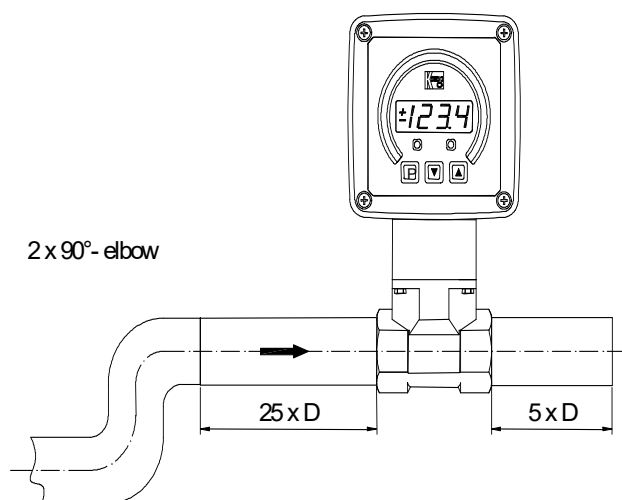
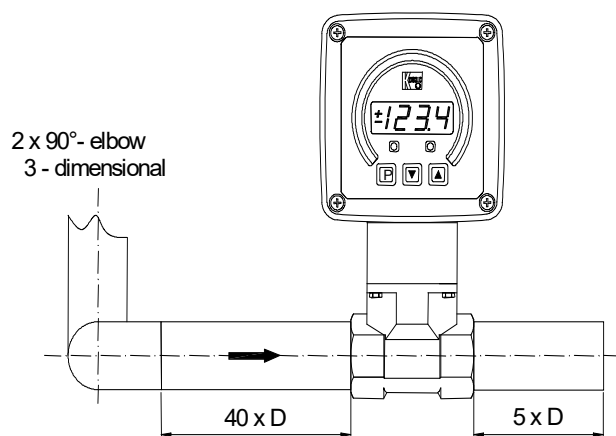
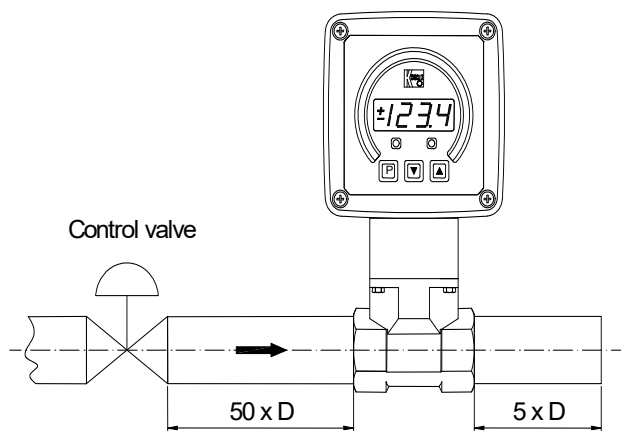
6.1. Check the installation conditions:

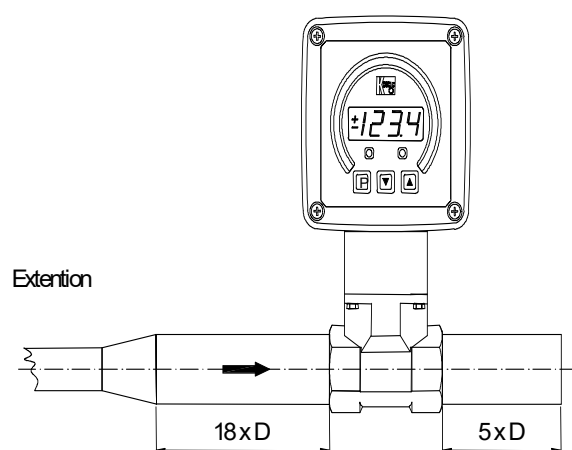
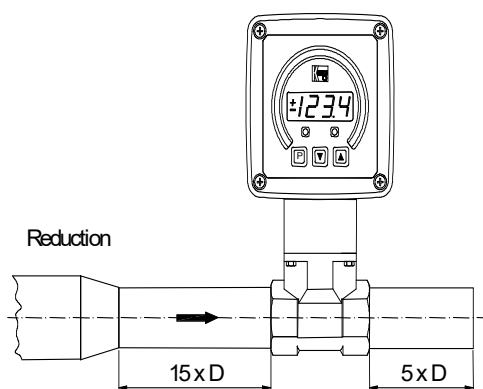
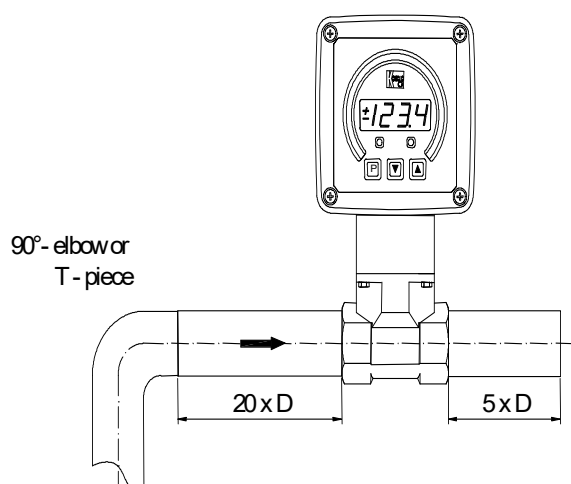
- Flow volume
- Max. operating pressures
- Max. operating temperature



Caution! Exceeding the measuring range will damage the bearings in the device and lead to significant errors in measurement.

6.2. Inlet and outlet path straight piping requirements





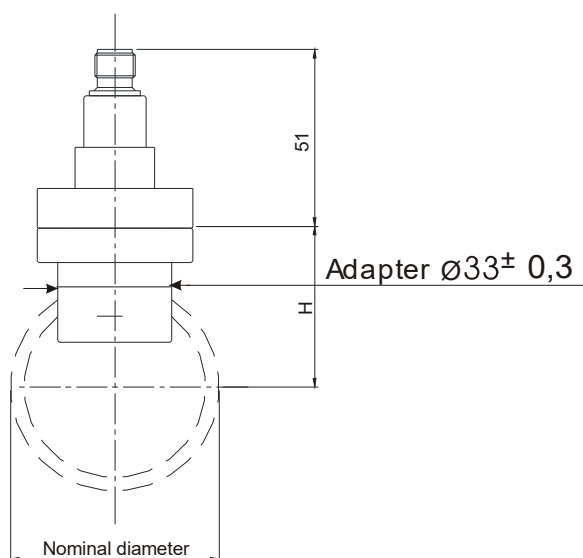
Standard installation

- Ensure that the flow is in the direction of the arrow (universal positioning).
- Avoid pressure and tension loads on the device.
Mechanically secure the inlet and outlet lines at a distance of 50 mm from the connections.
- Check the connections for leaks.

Installation with mounting adapter:

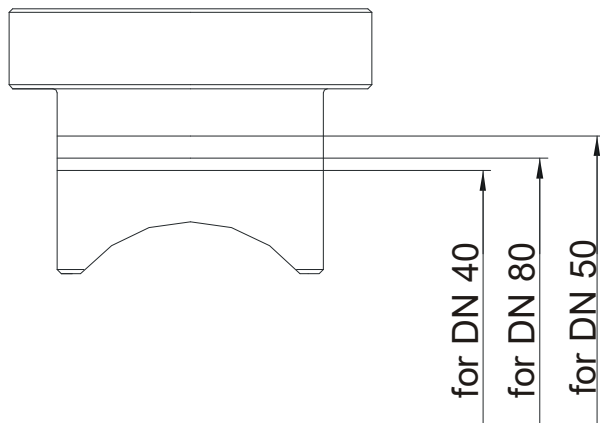
(DPE-1200W...)

Weld the adapter to the piping (to the proper depth, using **H** reference) as shown in the drawing (flow is in direction of arrow).



Nominal Size	H
DN 25	30
DN 40	44
DN 50	46
DN 80	63

Position and weld-in the mounting adapter according to the nominal diameter suitable marking. The marking on the adapter must be in line with the outer diameter of the pipe. Also pay attention to the later position of the rotating vane (shaft of the vane shifted by 90° to the direction of flow).



7. Electrical Connection

7.1. General information



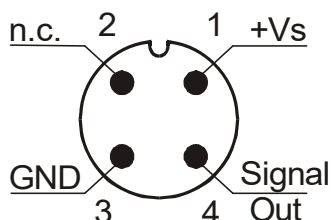
Attention! Make sure that the voltage values of your system correspond with the voltage values of the measuring unit.

- Make sure that the supply wires are de-energized.
- Connect and plug in the system according to the connecting plans.
- We recommend to use wires with cross sectional area of min. 0,25 mm²



Attention! Wrong wiring will lead into damage of the unit's electronic.

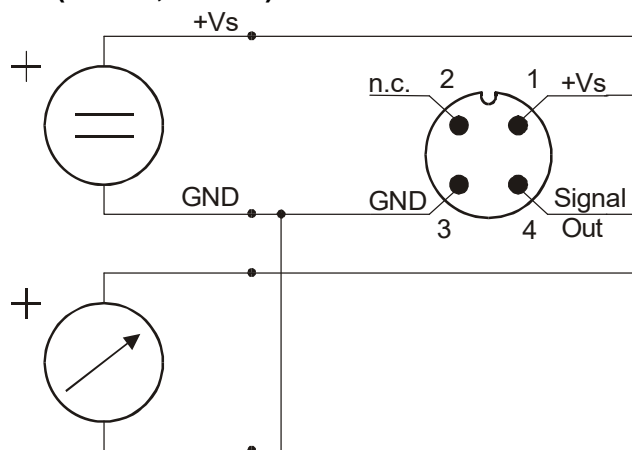
7.2. Electronic analyzer: Frequency output (..F300; ..F320, ..F340)



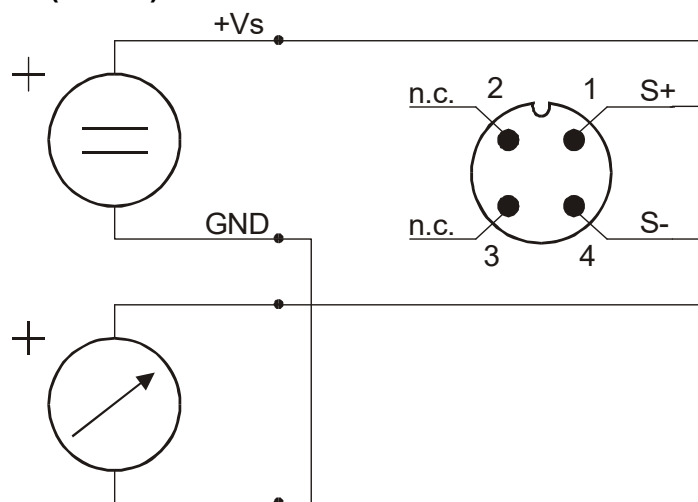
7.3. Electronic analyzer:

Analog output (..L303, ..L342, ..L343, ..L442)

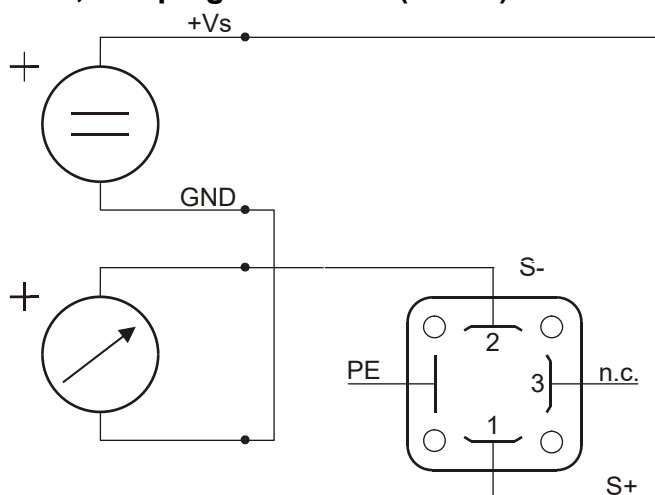
3-wire (..L303, ..L343)



2-wire (..L342)

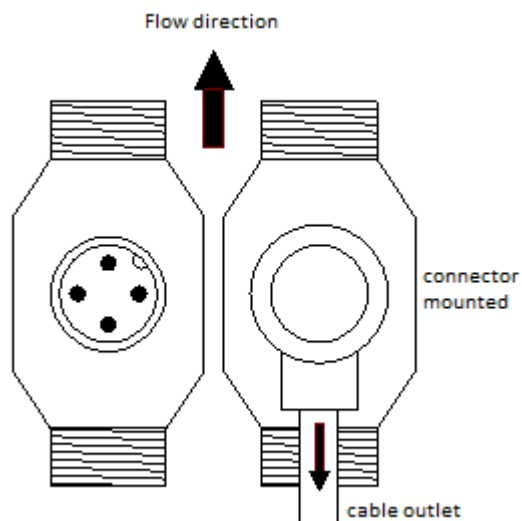


2-wire, DIN plug connector (..L442)



7.4. Cable outlet with M12x1 angle plug electronic options F3x and L3x

When using a pre-assembled M12x1 connection cable with angled plug, the cable outlet is always aligned opposite to the flow direction.



7.5. Compact electronics: (..C30R, ..C30M, ..C34P, ..C34N)

See

Operating instructions supplement for compact electronics with frequency output

7.6. ADI electronic analyzer

See

Operating instructions supplement for ADI electronic analyzer

8. Commissioning - Electronic Analyzer

8.1. General

These measuring devices are preset at the factory and ready for operation after the electric connection is completed.

8.2. Settings - Compact electronics

See
Operating instructions supplement for compact electronics with frequency output

8.3. Settings - ADI electronic analyzer

See
Operating instructions supplement for ADI electronic analyzer

9. Maintenance

This measuring device is maintenance-free when used in fluids that do not leave deposits. To prevent contamination problems, we recommend installation of a filter, such as a model MFR magnetic filter.

If the sensor has to be cleaned, it can be opened to access the internal parts. Make sure that the sensor and especially the turbine blades are not damaged. During reassembly, make sure that the turbine is positioned and oriented correctly. All work on the sensor electronics must be performed by the supplier; otherwise, the guarantee will be voided.

10. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

11. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

12. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

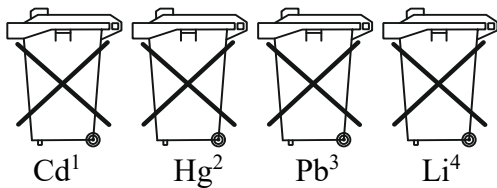
13. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

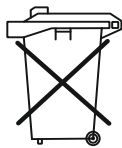
Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



14. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Turbine-Wheel Flow Meter Model: DPE -...

to which this declaration relates is in conformity with the following EU directives stated below:

2014/30/EU	EMC Directive
2011/65/EU	RoHS (category 9)
2015/863/EU	Delegated Directive (RoHS III)

Additionally, for **DPE-1230...**:

2014/68/EU	PED
<ul style="list-style-type: none">• Category II, Diagram 8, piping, group 1 dangerous fluids• Module D, marking CE0575• Notified body: DNV GL• Certificate No. PEDD000000R	

Additionally, for devices with ADI electronics:

2014/35/EU	Low Voltage Directive
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Also, the following standards are fulfilled:

EN 60529:2014
Degrees of protection provided by enclosures (IP Code)

EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Additionally for devices with analog or frequency output:

EN IEC 61326-1:2021
Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements, Industrial area (measurement of immunity to HF field up to 1 GHz)

Additionally for devices with compact electronics:

EN IEC 61326-1:2021

Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements, Industrial area

Additionally for devices with ADI electronics:

EN 61010-1:2010 + A1:2019 + A1:2019/AC:2019

Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

EN 61326-1:2013

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

Hofheim, 12 Feb. 2024



H. Volz
General Manager



J. Burke
Compliance Manager

15. UK Declaration of Conformity

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Turbine-Wheel Flow Meter Model: DPE -...

to which this declaration relates is in conformity with the following UK directives stated below:

S.I. 2016/1091	Electromagnetic Compatibility Regulations 2016
S.I. 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Additionally, for **DPE-1230...**:

S.I. 2016/1105	The Pressure Equipment (Safety) Regulations 2016
	<ul style="list-style-type: none">• Category II, Diagram 8, piping, group 1 dangerous fluids• Module D, marking CE0575• Notified body: DNV GL• Certificate No. PEDD000000R

Additionally, for devices with ADI electronics:

S.I. 2016/1101	Electrical Equipment (Safety) Regulations 2016
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Also, the following standards are fulfilled:

BS EN 60529:1992+A2:2013
Degrees of protection provided by enclosures (IP-Code)

BS EN IEC 63000:2018
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Additionally for devices with analog or frequency output:

BS EN IEC 61326-1:2021
Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements, Industrial area (measurement of immunity to HF field up to 1 GHz)

Additionally for devices with compact electronics:

BS EN IEC 61326-1:2021

Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements, Industrial area

Additionally for devices with ADI electronics:

BS EN 61010-1:2010+A1:2019

Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements

BS EN IEC 61326-1:2013

Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

Hofheim, 16 Feb. 2024



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General Manager

J. Burke
Compliance Manager