Operating Instruction

for

Rotating Vane Flow Meter

Model: DRG-...

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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.

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

PED 2014/68/EU
In acc. with Article 4 Paragraph (3), "Sound Engineering Practice", of the PED 2014/68/EU no CE mark.
Table 8, Pipe, Group 1 dangerous fluids

3. Regulation Use

The Model DRG-..., rotating vane flow meter is to be installed only in applications that are within the specified operating limits. An use which exceeds the specifications is prohibited. Any damages resulting therefrom are not the responsibility of the manufacturer. The user assumes all risk for such usage. The application specifications include the installation, start-up and service requirements specified by the manufacturer.

4. Operating Principle

KOBOLD rotating vane flow meters series DRG are used for measuring and monitoring low viscosity liquids. Series DRG flow meters are working according the well-known rotating vane principle. A magnet fitted in the vane and hermetically sealed from the medium transfers the rotary motion of the vane to a Hall-effect sensor mounted in the housing. The sensor converts the rotary motion which is proportional to the flow to a frequency signal. The frequency is therefore proportional to flowrate. A series-connected electronics unit converts the signal to an analogue output, limit contacts or display.

5. Instrument Inspection

These devices are checked before dispatch and sent away in perfect condition. Should the damage to a device be visible, we recommend a thorough inspection of the delivery packing. In case of damage, please inform your parcel service/ forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

- Rotating Vane Flow Meter model: DRG

6. Mechanical Connection

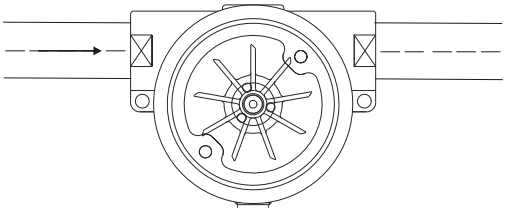
6.1. Operational conditions check up:

- Max. flowrate
- Max. operational pressure
- Max. operational temperature

Attention! In case, specified range is over-violated, bearings may get damaged and considerable measurement errors may result.

6.2. Installation

- It must be ensured that the instrument housing is continuously filled with the flow medium, especially for flows from top to bottom. No straight lengths are necessary at inlet and outlet connections.
- Flow in the direction of arrow pointer (position independent), front side of the unit must stand in a vertical plane.
- Pressure and tensile loading should be avoided.
  Inlet and outlet (piping) should be braced at a distance of 50 mm from the connection location.
- Sealing of connections should be checked.



7. Electrical Connection

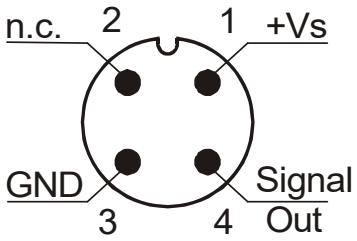
7.1. General

Attention! Please ensure that the voltage levels of your system are in agreement with that of the flow meter.

- Make sure that the electric supply lines are de-energized.
- Connect the power supply and output signal on the plug-pins as shown below.
- We recommend a cross-sectional area of 0.25 mm² of power supply cable.

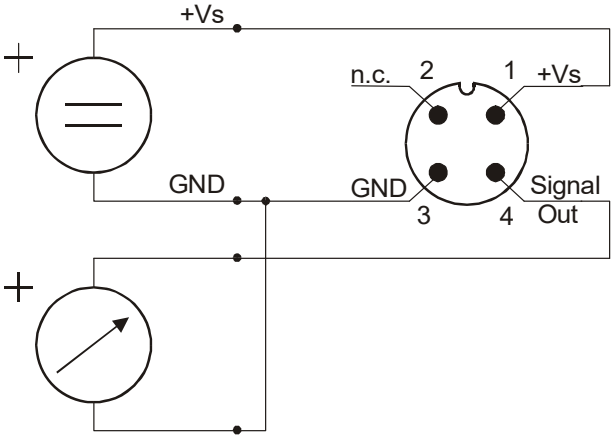
Attention! A wrong plug-connection can lead to destruction of unit's electronics.

7.2. Evaluation electronics: Frequency output (..F300; ..F320, ..F340)

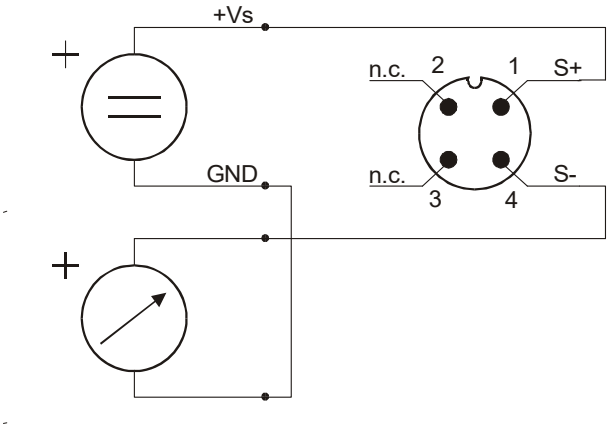


7.3. Evaluation electronics: Analogue output (..L303, ..L342, ..L343, ..L442)

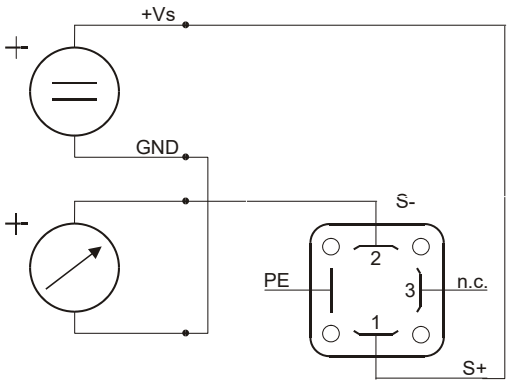
3-wire (..L303, ..L343)



2-wire (..L342)

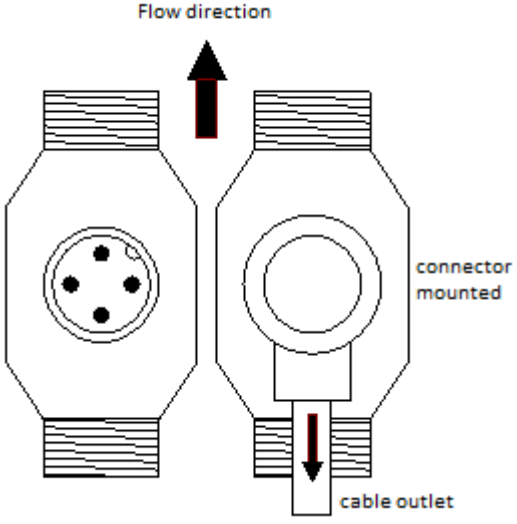


2-wire, DIN-plug (..L442)



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)

Please see
Instruction Manual-Supplement
for Compact Electronics

8. Commissioning – Evaluation Electronics

8.1. General

The measuring units are pre-adjusted and ready for use after electrical connection.

8.2. Adjustment – Evaluation Electronics

Please see
Instruction Manual-Supplement
for Compact Electronics with frequency output

9. Technical Information

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

10. Order Codes

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

11. Dimensions

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

12. Maintenance

If the medium to be measured is not contaminated, the measuring unit is maintenance-free. In order to avoid problems, we recommend installation of a filter, such as magnet filter, model MFR.
Should cleaning of sensor be deemed necessary, the sensor may be opened and inner parts may be accessed. Please be attentive during dismantling so that the sensor and in particular, the vane is not damaged. During assembly the right placement and the mounting direction of the vane should not be overlooked.
Electronic repairs may only be carried out by the manufacturer to prevent voiding of warranty.

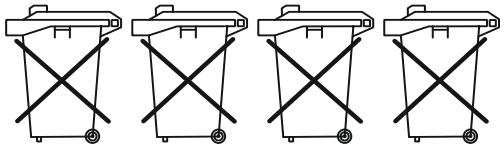
13. Disposal

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:



Cd[1] Hg[2] Pb[3] Li[4]

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:

Rotating Vane Flow Meter Model: DRG -...

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

2011/65/EU **RoHS** (category 9)
2015/863/EU Delegated Directive (RoHS III)

Also, the following standards are fulfilled:

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 compact electronics ...C…:

2014/30/EU **EMC Directive**

EN IEC 61326-1:2021 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements, industrial area

Additionally for devices with frequency output ..F…, analogue output and ..L…:

2014/30/EU **EMC Directive**

EN IEC 61326-1:2021 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements, industrial area, measurement of interference immunity to HF fields up to 1 GHz

Hofheim, 10 October 2023

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:

Rotating Vane Flow Meter Model: DRG -...

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

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

Also, the following standards are fulfilled:

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 compact electronics ...C…:

S.I. 2016/1091 Electromagnetic Compatibility Regulations 2016

BS EN IEC 61326-1:2021 Electrical equipment for measurement, control and laboratory use. EMC requirements - General requirements, industrial area

Additionally for devices with frequency output ..F and analogue output ..L…:

S.I. 2016/1091 Electromagnetic Compatibility Regulations 2016

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

Hofheim, 10 October 2023

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