

Operating Instructions for Float Flow Meter / Monitor

Model: SWK



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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.

as per PED 2014/68/EU

In acc. with Article 4 Paragraph (3), "Sound Engineering Practice", of the PED 2014/68/EU no CE mark.

Diagram 8, Pipe, Group 1 dangerous fluids

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:

- Float Flow Meter / Monitor Model: SWK

4. Regulation Use

These units, type SWK, are used for the purpose of measuring and monitoring liquid flow. Only clean, low-viscous and homogeneous liquids may be measured which do not chemically attack the materials used in the construction of these units. An attempt to measure high-viscous liquids may lead to considerable measurement errors.

Large dirt-particles can cause the blockage of float and subsequently turn on error indications. Also, ferrite particles, which deposit on float (with embedded magnets), can generate the same effect (we recommend a magnet-filter).

These units are configured in the following manner:

- Housing made of Brass, St. Steel or PVC
- Attached reed contact N/O with 1 m PVC cable (standard version)
- Attached reed contact changeover switch with 1 m PVC cable (option U)
- Attached and aligned pointer display (all SWK-2)

5. Operating Principle

KOBOLD Flow Meter/Monitor of type SWK operates according to the well-known float principle, however without making use of the generally employed extended measuring tube. Inside a cylindrical flow-tube a float with aperture moves in the direction of the flow against the recoiling force of a spring. Within the float, a pair of magnets is located which trigger a potential-free protective-gas reed contact and drives a pointer display. The reed contact is mounted on the exterior of the flow-housing. The springs arrangement allows the unit to be operated without consideration to mounting position and keeps the installation dimensions to a minimum. Flow monitors of type SWK generally find application where small volume flow needs to be measured in a fail-safe manner.

6. Mechanical Connection

Before installation:

- Make sure that the permitted maximum operating pressure and the operating temperature of the device are not exceeded.
- Make sure that the electrical supply for the devices corresponds with the operational data of the device.
- Make sure that no remains of packing material exist within the device.
- The devices should not be installed within an inductive field.
- If possible, it should be checked, after the mechanical installation whether the connection joints/ piping is properly sealed.



Attention! A displacement of switching range occurs if the flow takes place from top to bottom.

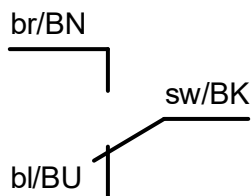
7. Electrical Connection



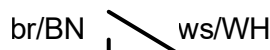
Attention! Make sure that the voltage values of your system correspond with the voltage values of the measuring unit, mentioned on type-label.

- Make sure that the supply wires are de-energized.
- The connection of the bistable reed contact succeeds is accomplished through the cable on the contact housing. The potential-free contact closes on rising level above the adjusted flow value.

Changeover switch



N/O



8. Operation / Configuration / Adjustments

The commissioning of these units is prohibited in machines (as long as the guidelines 2006/42/EC remain enforced), which do not comply with these guidelines.

The unit is supplied in 'ready for operation' condition. The switching point is adjusted on the lowest scale value.

8.1 Adjustment of Limit-Value (SWK-1...)

- Loosen the knurled nut on the reed contact.
- Adjust the marking on the contact for the desired value on the scale. In once positioned the knurled nut should be tightly screwed.

8.2 Adjustment of Limit-Value (SWK-2...)

- Loosen the knurled nut on the reed contact.
- Connect a suitable continuity-tester on cable ends.
- **Case 1: On an installed unit**
- Open the supply line, and let the flow-medium enter slowly, till the pointer display shows the desired flow value- at which the rising flow should operate the switch (the value for the decreasing flow lies below due to the hysteresis).
- **Case 2: On an uninstalled unit** the adjustment may be performed by lifting the float with a suitable tool.
- Switch-housing is repositioned from top to bottom, till the reed contact just closes (electrical continuity). In this position, secure the contact by tightening the knurled nut.

The unit is now adjusted and ready for operation.

On correct adjustment, the limit-value contact performs bistable action. That means, even after on crossing above the adjusted limit-values, the contact remains closed.

Hysteresis

Hysteresis is an indication of difference between switch-on (rising float) and switch-off (falling float) points of a contact. The average hysteresis corresponds to a float-centre movement of about 3 mm.

9. Maintenance

As long as the medium to be measured is not contaminated, the device SWK is almost maintenance-free. With lime or such depositions within inner sections the device should be cleaned regularly.



Attention! Before the commencement of maintenance work, make sure that the supply wires are de-energized.

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

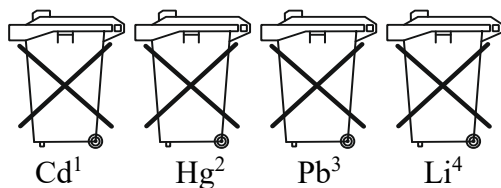
13. Disposal

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.

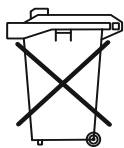
Batteries

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:

Float Flow Meter / Monitor

Model: SWK...

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

2014/35/EU	Low Voltage Directive
2011/65/EU	RoHS (category 9)
2015/863/EU	Delegated Directive (RoHS III)

Also, the following standards are fulfilled:

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 60529:2014 Protection through housing (IP-Code)

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

Hofheim, 28 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:

Low Volume Variable Area Flowmeters/Monitors for liquids
model: SWK -...

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

S.I. 2016/1101 Electrical Equipment (Safety) Regulations 2016
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 61010-1:2010+A1:2019 Safety requirements for electrical equipment
for measurement, control, and laboratory use. General requirements

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.

Hofheim, 28 Feb. 2024

Two handwritten signatures in blue ink. The first signature is on the left, and the second is on the right, connected by a horizontal line.

H. Volz
General Manager

J. Burke
Compliance Manager