

**Operating Instructions
for
Sight glass flow indicator**

Model: UFJ



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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:

- Sight glass flow indicator model: UFJ

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 flow indicator model UFJ for liquids and gases operates on the suspended float principle; i.e. the installation position is vertical and the direction of flow is from bottom to top.

The instrument consists of a measuring tube in which a section around the set value is cut out. It has a marking in its slot comprising of a set value / switching point and ranging from approximately -1 % ... +5 %, whereby the float indicates the presence of flow.

The apparatus is configured in such a way that when the flow is less than approximately -1 % of the set value, only the float head is visible through the slot. When the flow is around the set value or greater, the float appears in the sight glass.

Set value:

The value given by the customer corresponds to the flow of the medium, where the float top edge is aligned with a line on the sight glass.

Slot range:

It is the surroundings of the switching point, which are visible on the sight glass.

Possible setting range:

The customer can select the set value / switching point within this setting range (see order details).

Limit switches (option)

The flow indicator can be fitted with a limit switch as an option. These limit switches are cylindrical proximity switches. The electrical connection is via 2 m cable.

The monostable switch types are used as N/O or N/C contacts but with bistable behaviour, depending in which contact opening they are placed. There are two openings available at bottom and top behind the slot in order to implement the N/C or N/O function (see Function overview table).

By its special design, this model is particularly suitable for applications where only very small operating pressures are available. Another advantage is offered by the very large sight glass which optically allows direct flow observation.

6. Mechanical Connection

Before Installation:

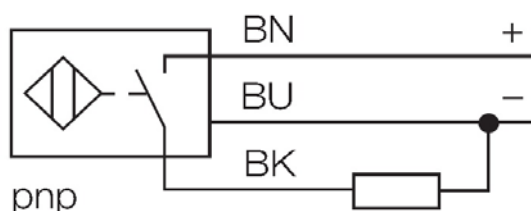
- Remove all transportation safety locks and ensure that no packing material remains within the unit.
- Be sure that the maximum allowable operating pressure and temperature is not exceeded (see Technical data).
- Install the flow indicator in the piping system, ensure the instrument is under no mechanical stress/tension (install support bracing if necessary).
- Protect the measuring tube from external damage.
- Avoid pressure peaks in the measuring tube, e.g. from sudden surges or stoppage of flow.
- If possible, immediately after making mechanical connections, check whether the connections are properly sealed with no evidence of leakage

7. Electrical Connection

7.1 Inductive switch (option)

- Make sure that the supply wires are de-energized.
- housing.

Wiring diagram



8. Operation / Configuration / Adjustments

Adjustment of limit-values

The switching point can only be set at the factory. When ordering, a set point within the given measuring range must be specified. This value is set by a horizontal line on the measuring tube. The float appears through the instrument's sight glass when the set point is reached.

Overranging

With non-pulsating flow, the maximum flow rate can be exceeded. Only an increase in pressure loss will result (max. permissible operating pressure must not be exceeded!)

9. Maintenance

If the medium to be measured is clean, the series UFJ is virtually maintenance-free. If deposits form on the inner housing or parts, periodic cleaning of the unit is recommended. Remove the units from the piping with a suitable tool; clean the flow meter with a suitable cleaning agent or make use of an ultrasonic bath.

10. Technical Information

Installation position: vertical, flow from bottom
 Max. pressure: 6 bar
 Process temperature: UFJ-0: 65 °C
 UFJ-1: 100 °C
 UFJ-3: 120 °C
 UFJ-5: 120 °C
 Protective category: IP 65
 Connections: G ¼ ... G 1½
 Accuracy: ± 4% of set value

Materials

Housing: stainless steel (1.4404, 1.4301) or POM-C or PVC
 Measuring tube: borosilicate glass
 Float: stainless steel (1.4404,1.4301)
 Gasket: NBR, FPM,

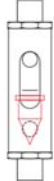
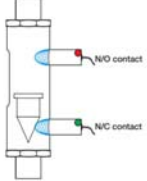
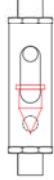
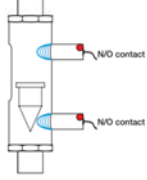

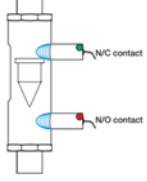

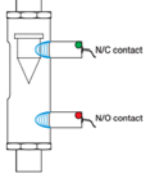
Contact (optional)

Proximity open collector
 (monostable): PNP
 Ambient temperature: -25 ... +70 °C
 Supply voltage: 12 ... 24 VDC
 Current consumption: max. 10 mA
 Cable: 2 m, PVC
 Protection: IP 67
 Hysteresis: approx. 1% of reading

Material combinations

Model	Housing	Connection	Float	Gaskets	Measuring tube
UFJ-0	PVC	PVC	1.4301	NBR	borosilicate glass
UFJ-1	POM-C	POM-C	1.4301	NBR	
UFJ-3	1.4301	1.4301	1.4301	FPM	
UFJ-5	1.4404	1.4404	1.4404	FPM	

11. Function overview

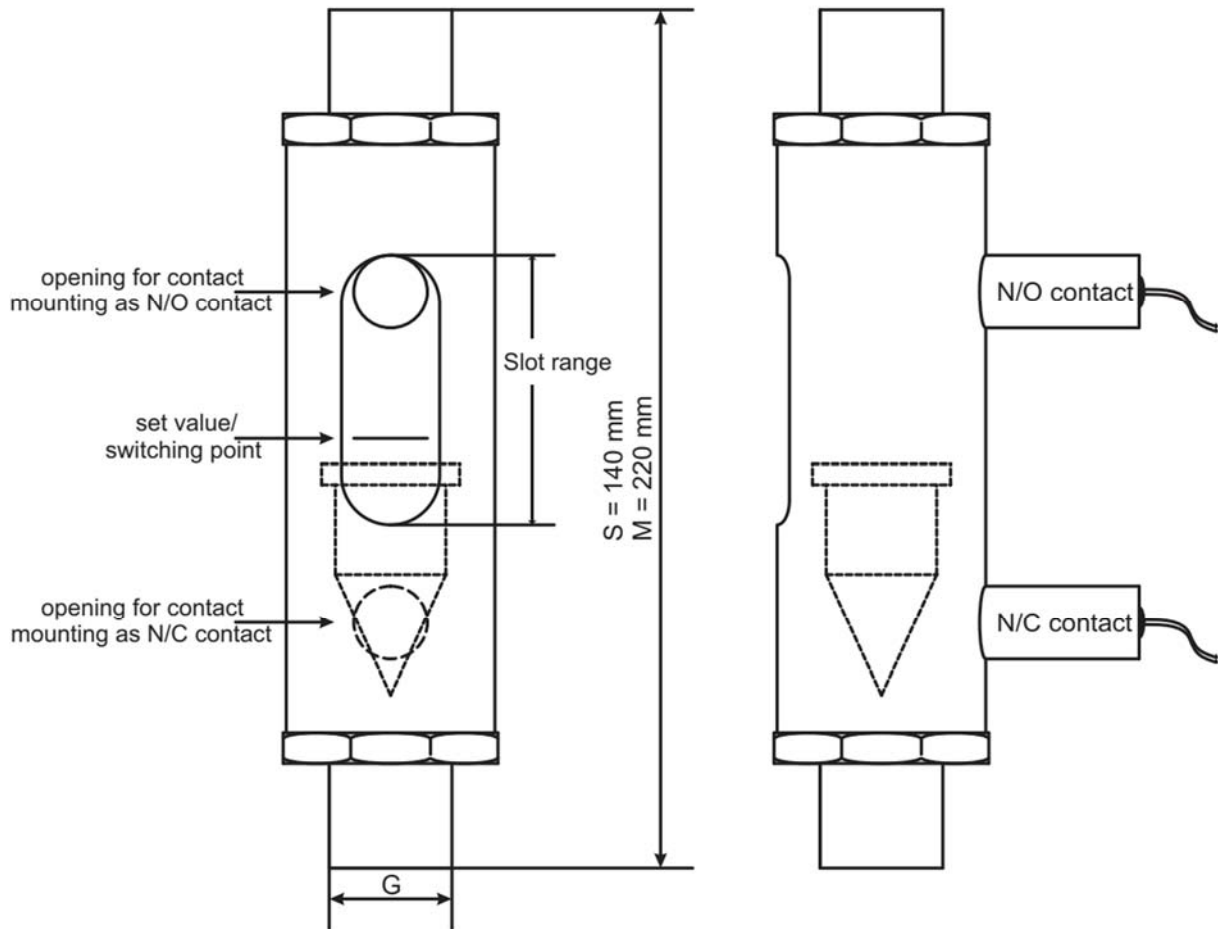
Serial number	Description	Front	Side
1	<p>Bottom switch point/lower limit point</p> <ul style="list-style-type: none"> • The flow is less than the set value indicated by a line on the scale • The switch in top holder is inactive • The switch in bottom holder is active 		
2	<p>Set value</p> <ul style="list-style-type: none"> • The flow is equal to the set value indicated by a line on the scale • The switch in top holder is inactive • The switch in bottom holder is inactive 		
3	<p>Top switch point</p> <ul style="list-style-type: none"> • The flow is a little bit more than the set value indicated by a line on the scale • The switch in top holder is active • The switch in bottom holder is inactive 		
4	<p>Upper limit point</p> <ul style="list-style-type: none"> • The flow is more than even 20 times of the set value indicated by a line on the scale • The switch in top holder is active • The switch in bottom holder is inactive 		

12. Order Codes

Model	Length	Possible setting ranges ¹⁾		Connection (male)	Connection (female)	Options
		Water [l/h]	Gas [Nm ³ /h]			
UFJ-0 UFJ-1	S = 140 mm	11H = 10-63	11L = 0.2-2	G2 = G ¼ G3 = G ⅜ G4 = G ½ G5 = G ¾	I2 = G ¼ I3 = G ⅜ I4 = G ½	0 = none P ¹⁾ = 1 PNP contact
		21H = 63-250	21L = 2-8	G4 = G ½ G5 = G ¾ G6 = G 1 G7 = G 1 ¼	I4 = G ½ I5 = G ¾ I6 = G 1	
		31H = 250-1000	31L = 8-32	G6 = G 1 G7 = G 1 ¼ G8 = G 1 ½	I5 = G ¾ I6 = G 1 I7 = G 1 ¼	
UFJ-3 UFJ-5	S = 140 mm	11H = 10-63	11L = 0.2-2	G2 = G ¼ G3 = G ⅜	I2 = G ¼	0 = none P ¹⁾ = 1 PNP contact
		21H = 63-250	21L = 2-8	G3 = G ⅜ G4 = G ½	I2 = G ¼ I3 = G ⅜	
		31H = 250-1000	31L = 8-32	G4 = G ½ G5 = G ¾	I3 = G ⅜ I4 = G ½	
		41H = 1000-3200	41L = 32-100	G5 = G ¾ G6 = G 1	I4 = G ½ I5 = G ¾	
	M = 220 mm	51H = 3200-8000	51L = 100-250	G6 = G 1 G7 = G 1 ¼ G8 = G 1 ½	I5 = G ¾ I6 = G 1 I7 = G 1 ¼	

¹⁾ Set value/switching point within possible setting range should be specified in clear text, while ordering

13. Dimensions



Model (plastic)	Male							Female						
	G¼	G½	G¾	G1	G1¼	G1½	G1¾	G¼	G½	G¾	G1	G1¼	G1½	G1¾
UFJ-xxx11x	yes	yes	yes	yes	-	-	-	yes	yes	yes	-	-	-	-
UFJ-xxx21x	-	-	yes	yes	yes	yes	-	-	yes	yes	yes	yes	yes	-
UFJ-xxx31x	-	-	-	-	yes	yes	yes	-	-	-	yes	yes	yes	yes
Model (stainless steel)	Male							Female						
	G¼	G½	G¾	G1	G1¼	G1½	G1¾	G¼	G½	G¾	G1	G1¼	G1½	G1¾
UFJ-xxx11x	yes	yes	-	-	-	-	-	yes	-	-	-	-	-	-
UFJ-xxx21x	-	yes	yes	-	-	-	-	yes	yes	-	-	-	-	-
UFJ-xxx31x	-	-	yes	yes	-	-	-	-	yes	yes	-	-	-	-
UFJ-xxx41x	-	-	-	yes	yes	-	-	-	-	yes	yes	-	-	-
UFJ-xxx51x	-	-	-	-	yes	yes	yes	-	-	-	yes	yes	yes	yes

14. EU Declaration of Conformance

We, KOBOLD Unirota Kft. Nyíregyháza Hungary, declare under our sole responsibility that the product:

Sight glass flow indicator **Model: UFJ-...**

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

EN IEC 63000:2018 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)
2015/863/EU Delegated Directive (RoHS III)

Nyíregyháza, 10 May 2022



Dénes Szabó
General Manager

15. EU Declaration of Conformance (contact)

EU-Konformitätserklärung Nr.: 5020-2M

EU Declaration of Conformity No.:

TURCK

Wir/ We: HANS TURCK GMBH & CO KG
WITZLEBENSTR. 7, 45472 MÜLHEIM A.D. RUHR

erklären in alleiniger Verantwortung, dass die Produkte
declare under our sole responsibility that the products

Induktive, kapazitive, magnetische
und Ultraschall- Näherungsschalter:
Inductive, capacitive, magnetic
and ultrasonic proximity
switches:

Der Typen beginnend mit:
types starting with:
BI, NI, S32SR, SI, WI, BR, MP, DBI, DNI, DTBI, DTNI, BC, NC, RU, WIM,
BIM

auf die sich die Erklärung bezieht, den Anforderungen der folgenden EU-Richtlinien durch Einhaltung der
folgenden Normen genügen:
to which this declaration relates are in conformity with the requirements of the following EU-directives by compliance with the following
standards:

EMV - Richtlinie /EMC Directive EN 60947-5-2:2007/A1:2012	2014 / 30 / EU	26.02.2014
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RoHS – Richtlinie /RoHS Directive EN 50581:2012	2011 / 65 / EU	08.06.2011
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Niederspannungsrichtlinie /Low Voltage Directive EN 60947-5-2:2007/A1:2012 (für die Geräte mit Versorgungsspannung / for equipment with supply voltage: >50V AC bzw. >75V DC)	2014 / 35 / EU	26.02.2014
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Weitere Normen, Bemerkungen:
additional standards, remarks:

Zusätzliche Informationen:
Supplementary information:

Mülheim a. d. Ruhr, den 29.01.2019

Ort und Datum der Ausstellung /
Place and date of issue



i.V. Dr. M. Linde, Leiter Zulassungen /Manager Approvals
Name, Funktion und Unterschrift des Befugten /
Name, function and signature of authorized person