Operating Instructions

for

Variable area flowmeter

Model: URK

1. Contents

Manufactured by:

Kobold-Unirota Ltd.
4400 Nyíregyháza
Derkovits út 132-136.
Tel.: +36-42-342-215
Fax: +36-42-500-175
E-Mail: info.hu@kobold.com
Internet: www.unirota.hu

Sold by:

Kobold Messring GmbH
Nordring 22-24
D-65719 Hofheim
Tel.: +49(0)6192-2990
Fax: +49(0)6192-23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

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.

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.

pipeline filled with		
gas	liquids	
group 2	group 1	group 2
table 7	table 8	table 9

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:
- Variable area flow meter model: URK

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 Kobold URK model flowmeter/monitor works on the basis of the suspended float principle. It is used for measuring the flow rates in closed pipe line systems.

The medium flows from below through a glass measuring cone that gets wider on top. Thus, the float is raised and indicates the respective flow rate on the scale provided on the measuring cone. To monitor flow rate limits, the URK meters can be optionally furnished with "open collector" proximity switches.

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:

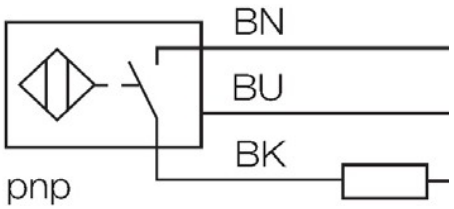
- Remove all transportation safety locks and ensure that no packing material remains within the unit.
- Be sure that the maximum allowable operating pressure and temperature is not exceeded (see Technical data).
- Install the by-pass level indicator at the side of the round containers, ensure the instrument 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.
- Make sure that the connections are in plain.

7. Electrical Connection

7.1 Inductive switch (option)

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

Wiring diagram



8. Operation

In order to initialise the inductive switch function, it is essential that the float activates the contact once in each direction.

Adjustment of limit-values
The switch-point can be adjusted to the desired levels by using.
Reference edge: approx. the middle of the sensor.
Slide the switch housing up or down until the reference edge coincides with the desired switch-point scale reading.

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 URL 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

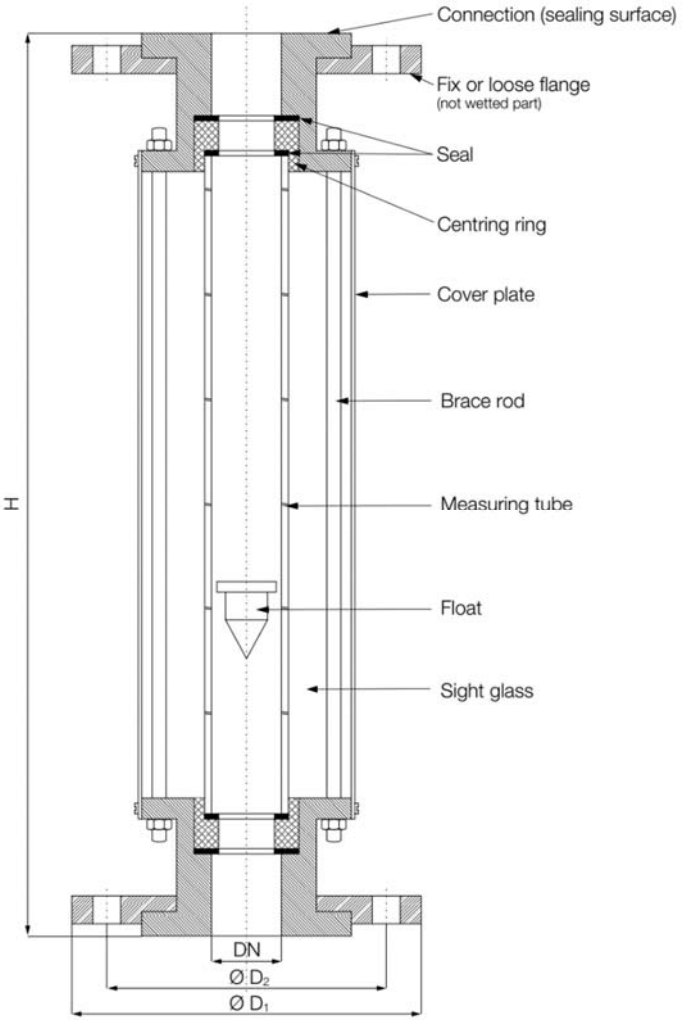
Installation position:	vertical (flow from bottom to top)
Accuracy class:	4 according to VDI
Max. temperature:	100°C (65°C for PVC)
Max. pressure:	03H…23H; 16 bar (with PN 16 flange) 25H…33H; 12 bar (with PN 16 flange) 35H…41H; 8 bar (with PN 16 flange) 01L…23L; 16 bar (with PN 16 flange) 25L…33L; 10 bar (with PN 16 flange) in all other cases 6 bar
Calibration conditions:	
water:	20°C, air: 20°C,
air pressure:	1.013 bar abs.
Contact (optional):	proximity switch: PNP open collector, n/o contact
Supply voltage:	10…30 V_{DC}
Current consumption:	≤ 200 mA
Cable:	2 m, PVC-insulated
Ambient temperature:	-25…+70°C
Protective category:	IP 67

11. Order Codes

Model	Material combi-nation	Measuring range		Pressure loss [mbar]	Flange				Contacts[3]
		water [l/h]	air [Nm³/h]		type	DIN 2526, form C, PN6	DIN 2526, form C, PN16	ANSI 150 lbs	
URK-	73 33 55 99[2]		01L = 0.02…0.2	10	F=fixed flange L=loose flange	F4 = DN 15 F5 = DN 20	B4 = DN 15	A4 = ½" A5 = ¾"	00 = none 1A = 1x N/O, PNP 2A = 2x N/O, PNP
		03H = 1…10	03L = 0.032…0.32	10					
		05H = 1.6…16	05L = 0.05…0.5	10					
		07H = 2.5…25	07L = 0.08…0.8	12					
		09H = 4.0…40	09L = 0.13…1.3	9					
		11H = 6.3…63	11L = 0.2…2.0	17					
		13H = 10…100	13L = 0.32…3.2	24					
		15H = 16…160	15L = 0.5…5	28		F6 = DN 25	B5 = DN 20 B6 = DN 25	A6 = 1" A7 = 1¼"	00 = none 1B = 1x N/O, PNP 2B = 2x N/O, PNP
		17H = 25…250	17L = 0.8…8	28					
		19H = 40…400	19L = 1.3…13	36					
		21H = 63…630	21L = 2.0…20	34					
		23H = 100…1 000	23L = 3.2…32	43					
		25H = 160…1 600	25L = 5…50	48		F7 = DN 32	B7 = DN 32	A8 = 1½"	00 = none 1C[1] = 1x N/O, PNP 2C[1] = 2x N/O, PNP
		27H = 250…2 500	27L = 8…80	48					
		29H = 400…4 000	29L = 13…130	51		F8 = DN 40	B8 = DN 40	A9 = 2"	
		31H = 630…6 300	31L = 20…200	57					
		33H = 1 000…10 000	33L = 25…250	70		F9 = DN 50	B9 = DN 50		
		35H = 1 600…16 000	35L = 32…320	93		FA = DN 65	BA = DN 65	AA = 2½" AB = 3"	
		37H = 2 500…25 000	37L = 40…400	102					
		39H = 10000…40000	39L = 50…500	95		FB = DN 80	BB = DN 80	–	
		41H = 15000…50000		102					
		YYY = others		on request					on request

[1] For URK range 39H(L) … 41H the limit switch is only available as a min. contact.
[2] Customer specification on request
[3] Monostable switch. Other switching functions on request

12. Dimensions



DIN									ANSI				
	PN6				PN16					Class 150 RF			
DN	Model	D_1 [mm]	D_2 [mm]	H [mm]	Model	D_1 [mm]	D_2 [mm]	H [mm]	Size	Model	D_1 [mm]	D_2 [mm]	H [mm]
15	URK-..F4	80	55	380	URK-..B4	95	65	380	½"	URK-..A4	88,9	60,5	380
20	URK-..F5	90	65		URK-..B5	105	75	390	¾"	URK-..A5	98,6	69,9	
25	URK-..F6	100	75	390	URK-..B6	115	85		1"	URK-..A6	108,0	79,2	390
32	URK-..F7	120	90	400	URK-..B7	140	100	400	1¼"	URK-..A7	117,3	88,9	
40	URK-..F8	130	100	410	URK-..B8	150	110	410	1½"	URK-..A8	127,0	98,6	400
50	URK-..F9	140	110		URK-..B9	165	125		2"	URK-..A9	152,0	120,7	410
65	URK-..FA	160	130	550	URK-..BA	185	145	550	2½"	URK-..AA	177,8	139,7	550
80	URK-..FB	190	150	560	URK-..BB	200	160	560	3"	URK-..AB	190,5	152,4	

Material combination URK

Ordering code	Connection	Float	Seal	Centring ring	Flange (fixed or loose)*	Cover plate*	Sight glass*	Measuring tube
73	cast iron	1.4301	NBR	PVC	cast iron	stainless steel 1.4301	plexiglass	borosilicate glass
33	1.4301	1.4301	FPM	PTFE	1.4301			
55	1.4404	1.4404	FPM	PTFE				
99**	cast iron 1.4301 1.4404	1.4301 1.4404 aluminium PTFE PVC PP	NBR EPDM FPM PTFE	PVC PTFE 1.4301				

* Not wetted part

** Customer specification on request

13. EU Declaration of Conformance

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

Variable area flow meter **Model: URK-…**

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

14. 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
RoHS – Richtlinie /RoHS Directive EN 50581:2012	2011 / 65 / EU	08.06.2011
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

Weitere Normen, Bemerkungen:
additional standards, remarks:

Zusätzliche Informationen:
Supplementary infomation:

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