Operating Instructions

for

Variable area flow meter

Model: URM

1. Contents

Manufactured by:

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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:

- Variable area flow meter model: URM

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 URM 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 URM 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:

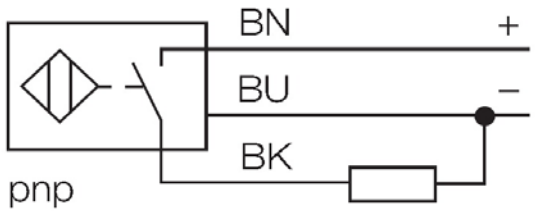
- Remove all transportation safety locks and ensure that no packing material remains within the unit.
- Be sure that the maximum allowable operating pressure and temperature is not exceeded (see Technical data).
- Install the flow meter in the piping system, ensure the instrument is under no mechanical 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

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 URM 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
Accuracy class:	4 acc. to VDI
Max. temperature:	100°C (65°C for PVC)
Max. pressure:	01H (L)…37H (L) 16 bar
	43H…57H 12 bar
	43L…55L 10 bar
	63H…65H 8 bar
	63L…65L 6 bar
Calibration conditions:	water: 20°C, air: 20°C,
	air pressure: 1.013 bar abs.
Ambient temperature:	-25…+70°C
Protective category:	IP 67
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
switching state:	LED, yellow

Material combinations

Ordering code	Connection	Float	Seal	Ring	Measuring cone	Housing
33	1.4301	1.4301	NBR	PVC	borosilicate glass	st.st. 1.4301
55	1.4404	1.4404	FPM	PTFE		
99**	1.4301 1.4404	1.4301 1.4404 aluminium PTFE PVC PP	NBR EPDM FPM PTFE	PVC PTFE 1.4301		

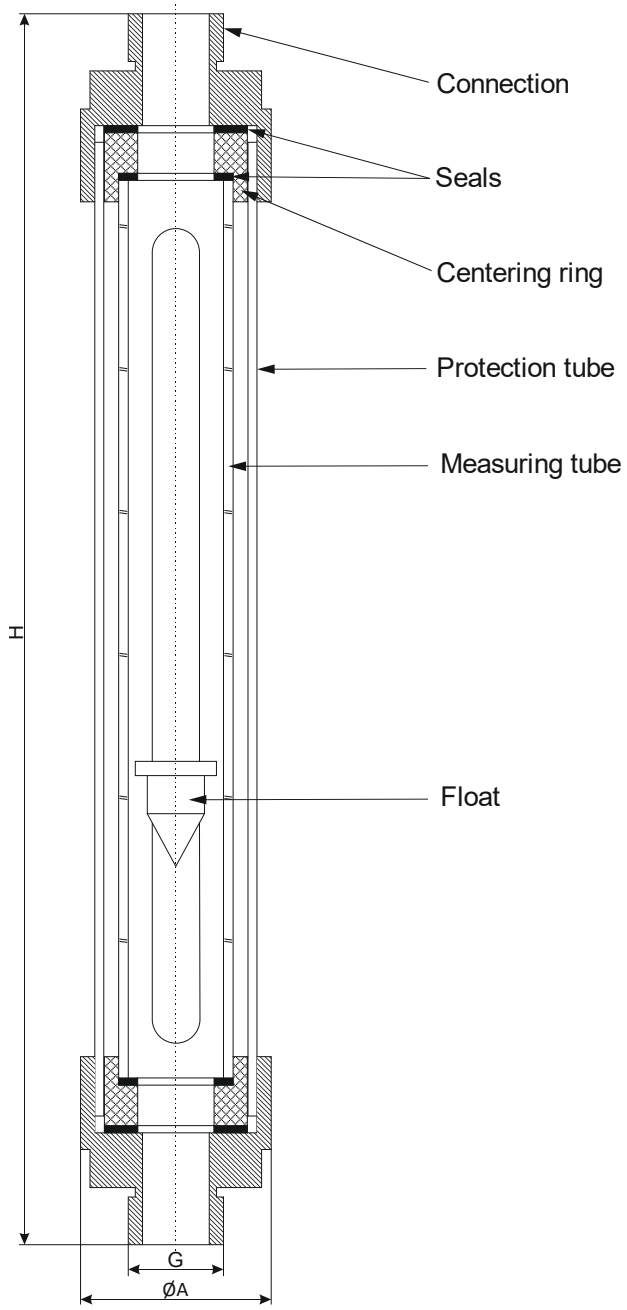
** Customer specification on request

11. Order Codes

Model	Material combination	Instrument length	Measuring range		Pressure loss [mbar]	Thread connection[3]		Contacts[1]
			water [l/h]	air [Nm³/h]		female	male	
URM-	33 55 99[2]	210 mm	01H = 0.25…2.5	01L = 0.0032…0.032	6	I2 = G ¼ I3 = G ⅜	G2 = G ¼ G3 = G ⅜	00 = no contact
			03H = 0.4…4	03L = 0.008…0.08	6			
			05H = 0.63…6.3	05L = 0.02…0.2	8			
			07H = 1…10	07L = 0.032…0.32	10			
			09H = 1.6…16	09L = 0.05…0.5	10			
		360 mm		11L = 0.02…0.2	10	I2 = G ¼ I3 = G ⅜	G2 = G ¼ G3 = G ⅜ G4 = G ½	
			13H = 1…10	13L = 0.032…0.32	10			
			15H = 1.6…16	15L = 0.05…0.5	10			
			17H = 2.5…25	17L = 0.08…0.8	12			
			19H = 4.0…40	19L = 0.13…1.3	12			
		360 mm	22H = 6.3…63	22L = 0.2…2.0	17	I3 = G ⅜ I4 = G ½	G3 = G ⅜ G4 = G ½ G5 = G ¾	00 = none 1A = 1x N/O, PNP 2A = 2x N/O, PNP
			24H = 10…100	24L = 0.32…3.2	24			
			26H = 16…160	26L = 0.5…5.0	28			
			28H = 25…250	28L = 0.8…8.0	25			
		360 mm	33H = 40…400	33L = 1.3…13	36	I4 = G ½ I5 = G ¾	G4 = G ½ G5 = G ¾ G6 = G 1	00 = none 1B = 1x N/O, PNP 2B = 2x N/O, PNP
			35H = 63…630	35L = 2.0…20	34			
			37H = 100…1000	37L = 3.2…32	43			
		440 mm	43H = 100…1000	43L = 3.2…32	43	I5 = G ¾ I6 = G 1 I7 = G 1 ¼	G5 = G ¾ G6 = G 1 G7 = G 1¼ G8 = G 1½	
			45H = 160…1600	45L = 5.0…50	48			
			47H = 250…2500	47L = 8.0…80	51			
		440 mm	3H = 400…4000	53L = 13…130	51	I6 = G 1 I7 = G 1¼ I8 = G 1½ I9 = G 2	G6 = G 1 G7 = G 1¼ G8 = G 1½ G9 = G 2	00 = none 1C = 1x N/O, PNP 2C = 2x N/O, PNP
			55H = 630…6300	55L = 20…200	57			
			57H = 1000…10 000		70			
		600 mm	63H = 1600…16 000	63L = 32…320	93	I8 = G 1 ½ I9 = G 2 IA = G 2 ½ IB = G 3	G8 = G 1 ½ G9 = G 2 GA = G 2 ½ GB = G 3	
			65H = 2500…25 000		102			
		on request	YYY = others		on request			

*Other switching functions on request
**Customer specification on request

12. Dimensions



URM with female/male thread (F = female / M = male)												
Model	H [mm]	A [mm]	¼"	⅜"	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"
URM-xx 0...	210	29,5	F/M	F/M	-	-	-	-	-	-	-	-
URM-xx 1...	360		F/M	F/M	-/M	-	-	-	-	-	-	-
URM-xx 2...		40,0	-	F/M	F/M	-/M	-	-	-	-	-	-
URM-xx 3...		49,5	-	-	F/M	F/M	-/M	-	-	-	-	-
URM-xx 4...	440	62,0	-	-	-	F/M	F/M	F/M	-/M	-	-	-
URM-xx 5...		82,0	-	-	-	-	F/M	F/M	F/M	F/M	-	-
URM-xx 6...	600	122,0	-	-	-	-	-	-	F/M	F/M	F/M	F/M

13. EU Declaration of Conformance

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

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

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