Operating Instructions

for

Flow Indicator

Model: DAA

1. Contents

Manufactured and sold 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 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:
- Flow Indicator model: DAA
- Operating Instructions

4. Regulation Use

The DAA Flow Indicators are designed for liquid flows in pipework.
Only such fluids may be sued that are resistant to the materials used in the Flow Indicator (see 8. Technical Information).

5. Operating Principle

The fluid flow is indicated by a plastic rotor installed inside a hard glass body (borosilicate glass).
With a twist of 180° of the sight glass, integral wipers clean the viewing area to allow unobstructed observation of the rotor. The offending contaminants are then simply washed away by the medium flow. The device is kept tight and rotatable by hand by the use of low friction O-rings.

6. Mechanical Connection

6.1 Before installation

- Be sure the maximum allowable working pressures or temperatures specified for the instrument are not exceeded.
  (see 9. Order Codes)

Model	Nominal diameter DN [mm]	Female thread G	Threaded length [mm]	Female thread NPT	Threaded length [mm]
DAA-..01H	8	¼	12	1/4	9
DAA-..02H	10	3/8	12	3/8	9
DAA-..03H	15	½	12	1/2	12
DAA-..04H	20	¾	12	3/4	12
DAA-..05H	25	1	14	1	16
DAA-..06H	32	1 ¼	18	1 ¼	21
DAA-..07H	40	1 ½	20	1 ½	21

6.2 Installation

Install this Flow Indicator in the direction of flow (as per the stamped arrow).

Attention: Suddenly opening the inflow may cause pressure peaks exceeding the working pressure of the instrument; this may result in water hammer, causing the measuring glass to break.

Attention: Remove any coarse foreign matter before installing the instrument in the pipe.

To install the indicator, put an open end wrench on the hexagon flats on the side of the indicator being connected to prevent rotation, and tighten the fitting into the end cap. Do not turn the hexagon end cap.

Attention: Applying torque to both hexagon end caps may cause the internal support bars to be sheared off, or the connection nut to be twisted.

During installation, protect the inspection glass against external damage (Attention: Glass is brittle) !

Attention: Be sure to avoid deforming the indicator by improper fastening during installation.

7. Maintenance

7.1 General

Clean the inspection glass if it gets soiled during operation. To clean, merely rotate the glass while fluid is flowing, if possible, so that any dirt particles will be carried off by the fluid.

Attention: A maximum temperature of 40 °C should not be exceeded for cleaning; failing this, be sure to wear protective gloves. For the DAA model with a rotor, periodic cleaning of the flow space may be necessary depending on the quality of the fluid to maintain smooth rotor operation.

The inspection glass is difficult to rotate while it is dry, and the wipers may be damaged by entrained particles.

7.2 Replacing the measuring glass

Attention! The upper and lower sections of the DAA Flow Indicator are attached with screw sealing lacquer. Be sure to remove the upper section from the lower section while warm only.

- Fix the lower hexagon of the Flow Indicator ("PN16" marking).
- Heat the upper section with a hot-air dryer (specifically in the area of the connecting bars) until the upper section can be removed using an appropriate open end wrench without applying much force.
- Remove the broken glass and clean the connecting threads of the upper and lower sections using a wire brush.
- Replace the O-rings and the wiper rubbers, and slip the new, moistened measuring glass onto the lower section.
- Apply some releasable screw sealing lacquer (such as Weicon no. 302-42) onto the connecting threads, and carefully screw the upper section onto the lower section.
- Having tightened the said components, align the wrench surfaces in parallel.

8. Technical Information

Materials

Housing:	nickel plated brass (DAA-11..) stainless steel 1.4305 (DAA-12..)
Inlet:	nickel-plated brass (DAA-11..) stainless steel 1.4305 (DAA-12..)
Inspection glass:	borosilicate glass
O-rings:	NBR (DAA-11..) FPM (DAA-12..)
Orifice:	nickel-plated brass (DAA-11..) stainless steel 1.4301 (DAA-12..)
Rotor:	POM (DAA-11..) PTFE (DAA-12..)
Rotor spindle:	stainless steel 1.4305
Support bars:	nickel-plated brass (DAA-11..) stainless steel 1.4305 (DAA-12..)
Wiper carrier:	stainless steel 1.4310
Wiper:	Polyolefin (DAA-11..) FPM (DAA-12..)

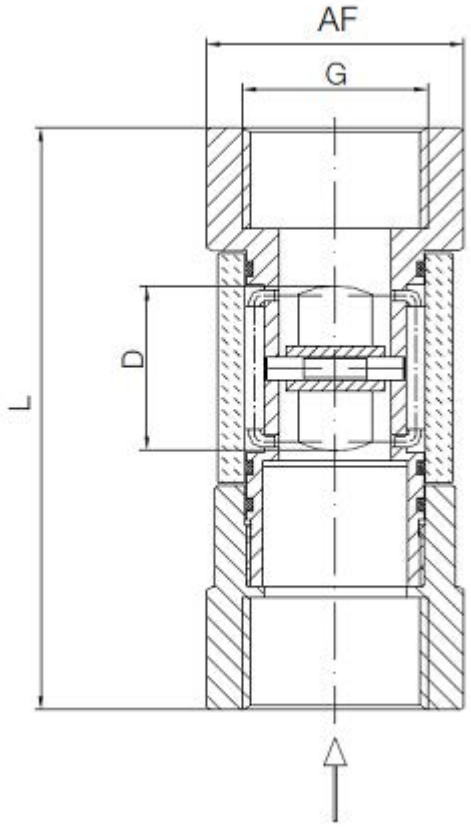
9. Order Codes

Note: See KOBOLD USA Datasheet for USA Order Codes

Example: **DAA-1101HR08**

Indicating range	Δp at Q_{max}	pmax	tmax	Weight	Model		Connection thread		
l/min water	bar	PN	°C	Kg	Nickel-plated brass with rotor/ wiper	Stainless steel with rotor/ wiper		G	NPT
0.4 to 4	0.25	16	100	0.3	**DAA-1101H..**	**DAA-1201H..**	1/4	**R08**	**N08**
0.6 to 8	0.25	16	100	0.28	**DAA-1102H..**	**DAA-1202H..**	3/8	**R10**	**N10**
1 to 12	0.25	16	100	0.6	**DAA-1103H..**	**DAA-1203H..**	1/2	**R15**	**N15**
1 to 25	0.25	16	100	0.65	**DAA-1104H..**	**DAA-1204H..**	3/4	**R20**	**N20**
1.6 to 40	0.25	16	100	0.7	**DAA-1105H..**	**DAA-1205H..**	1	**R25**	**N25**
8 to 80	0.25	16	100	1.5	**DAA-1106H..**	**DAA-1206H..**	1 ¼	**R32**	**N32**
8 to 100	0.25	16	100	1.6	**DAA-1107H..**	**DAA-1207H..**	1½	**R40**	**N40**

10. Dimensions



Model	Nominal size DN [mm]	Female thread G	Female thread NPT	Total length L [mm]	Width across flats AF [mm]	Rotor-diameter D [mm]
DAA-...01H	8	1/4	1/4	71	36	23
DAA-...02H	10	3/8	3/8	71	36	23
DAA-...03H	15	1/2	1/2	86	46	29.5
DAA-...04H	20	1/4	1/4	94	46	29.5
DAA-...05H	25	1	1	104	46	29.5
DAA-...06H	32	1¼	1¼	120	65	37.6
DAA-...07H	40	1½	1½	130	65	37.6

11. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Flow Indicator **Model: DAA-...**

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

EN 50581:2012 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)

Hofheim, 13. Feb 2018

H. Peters
General Manager

M. Wenzel
Proxy Holder