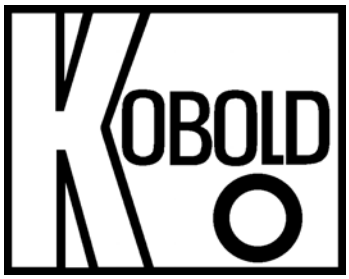
Operating Instruction

for

Flow Detector

Model: DAF



1. Instructions

Please read this service manual carefully before unpacking and setting this unit for operation. Follow the instructions precisely as described herein.
These devices may only be installed, used and maintained by skilled personnel who are familiar with this service manual and can observe applicable regulations regarding industrial safety and accident-prevention.

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3. Suggested Application

These units of model DAF are employed with a view to display liquid flow by means of optical method.

Only low-viscosity liquids may be measured, against which the materials used in transducer chamber can withstand (chemically).

If used with high viscous media, significant deviations from specified display range may result. Long fibre particles can lead to jamming of rotor

Ordering number and Material combination			
I	II	III	IV
DAF-1101	DAF-1201	DAF-1301	DAF-1401
DAF-1102	DAF-1202	DAF-1302	DAF-1402
DAF-1103	DAF-1203	DAF-1303	DAF-1403
DAF-1104	DAF-1204	DAF-1304	DAF-1404
DAF-1105	DAF-1205	DAF-1305	DAF-1405
DAF-1106	DAF-1206	DAF-1306	DAF-1406
DAF-1107	DAF-1207	DAF-1307	DAF-1407

Material combinations

Material combination	**I**	**II**	**III**	**IV***
Connection type	pipe-thread	pipe-thread	pipe-thread	pipe-thread Flange
Housing	Trogamide T	Polysulfone	Brass, Ni-Polished	St. Steel
Housing cover	Trogamide T	Polysulfone	Polysulfone	Polysulfone
Connection	Brass, Ni-Polished	St. Steel	Brass, Ni-Polished	St. Steel
Safety pins	Brass	Brass	Brass	--
O-rings	Perbunane	Viton	Perbunane	Viton
Rotating vane	POM	Teflon	POM	Teflon
Axle	St. Steel	St. Steel	St. Steel	St. Steel
Axle-bearings1	Teflon	Teflon	Teflon	Teflon
Aperture	Teflon	Teflon[2]	Teflon[2]	Teflon[2]
Max. operating pressure (bar)	10.00	10.00	16.00	16.00
Max. operating temperature	60°C	110°C	110°C	110°C

Display ranges

Model	Flow		Δp (bar) at max. Flow	Diameter of Aperture (mm)
	min. l/min. Water	max. l/min. Water		
DAF-0.1	0.03	0.10	0.25	0.50
DAF-0.5	0.03	0.50	0.80	1.00
DAF-3	0.20	3.00	0.85	2.00
DAF-12	0.50	12.00	0.55	5.00
DAF-25	1.00	25.00	0.35	8.00
DAF-50	2.00	50.00	0.35	12.50
DAF-150	5.00	150.00	1.25	18.50

4. Operating Principle

A rotating vane composed of plastic and mounted on an axle rotates, depending upon the flow velocity. This rotary motion indicates the presence of any measurable flow within the device

5. Instrument Inspection

These devices are checked before dispatch and sent away in perfect condition. Should the damage to a device be visible, we recommend a thorough inspection of the delivery packing. In case of damage, please inform your parcel service/ forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:
All parts falling under standard scope of delivery are firmly attached with the device.

6. Mechanical Connection

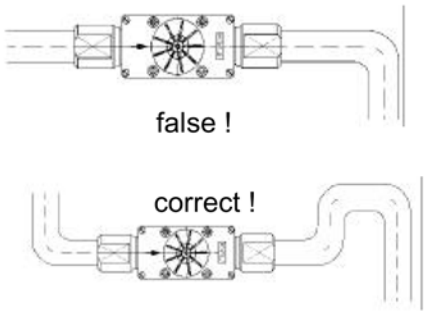
Before installation:

Please ensure that the actual flow-volume is in agreement with the measuring range of the unit. The measuring range can be read from the model label.

Attention! On over-stepping of measuring range (more than 20 %), may cause damage to bearings and significant measurement errors may result.

Make sure that the permitted max. operating pressure and temperature of the device are not violated. Remove all the transportation-safety locks etc. and ensure, that there exist no packing-material parts inside the unit. These units can be mounted without regard to position. Thereby, the flow must always be in the direction of arrow, and the front-side of the unit remains in the vertical plain.

In particular, attention must be paid to flow from top to bottom, such that the flow chamber is completely filled with the liquid. Additional inlet and outlet lengths are not required. The sealing of connection screw joints is succeeded through Teflon tape or similar material. Sealing of units with flange connections succeeds by means of a suitable flat seal, provided by the customer.
During installation of the unit, attention must be paid to see that no high pressure or tensile loads exert on the connection screw joints.



We recommend to fasten an inlet and outlet pipe mechanically at a distance of approx. 50 mm from the connection screw joint. If possible, after mechanical installation, check whether the sealing of connection-joints/piping is adequate

Note! The union fittings (connection screw joints) of the device must be absolutely countered when screwing in by means of a suitable fork wrench. Otherwise voltages will be transferred to the transducer housing, which can lead to destruction of the device.

7. Commissioning

In order to avoid pressure peaks, the flow medium should flow slowly into the device

Note! Pressure peaks by sudden flowing, caused by single solenoid valves, ball valves or the like, can lead to the destruction of the device (water hammer!). In the operating condition, it is to be made certain that the sensor is constantly filled with the medium.

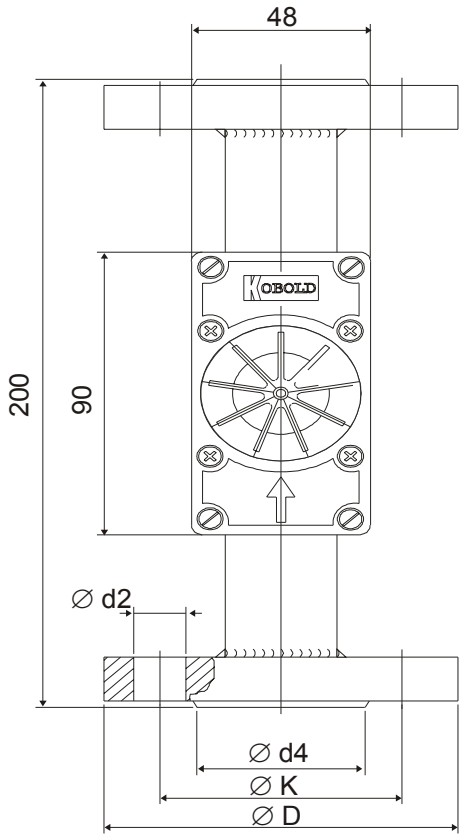
Larger bubbles in the measuring chamber can lead to measurement errors or destruction of bearings.

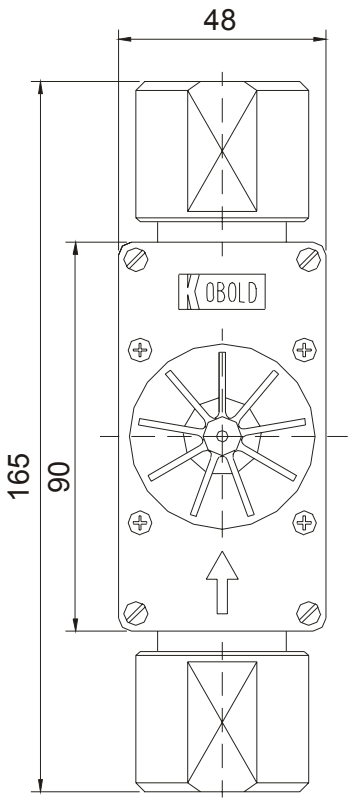
8. Maintenance

In case, the medium to be measured is not contaminated, the unit is maintenance-free. Should the cleaning of a device be deemed necessary, it can be done easily by removing housing cover and making the interior of housing accessible. After cleaning, the unit can be simply assembled together.

9. Dimensions

DN	D (mm)	K (mm)	d4 (mm)	d2 (mm)	No. of screws
15	95	65	45	14	4
25	115	85	68	14	4
40	150	110	88	18	4
50	165	125	102	18	4





10. Recommended Spare-parts

1.1) Rotating vane: Teflon
1.2) Rotating vane: POM
2.1) St. Steel axle with Teflon bearing
2.2) Ceramic axle with Teflon bearing
3.1) Transducer chamber cover: Trogamide T
3.2) Transducer chamber cover: Polysulfone
4.1) O-Rings (Perbunane)
4.2) O-Rings (Viton)