

Miniature flowmeters for analytical process

Installation and Operating Instructions DK 700

Installation

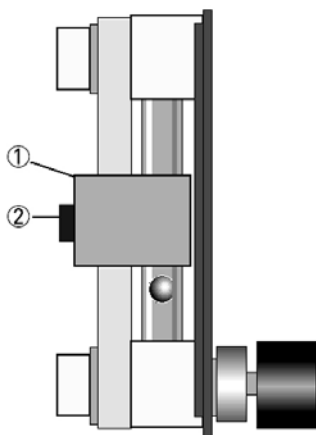
Ensure materials compatibility
The temperature of the product and the allowable operating pressure must not exceed the specified maximum values (see Technical Data).
The measuring section is also permitted to be filled with flammable liquids, provided a potentially explosive atmosphere is not permanently or for prolonged periods present in the measuring tube.
The calculation of the pressurized parts is effected with allowance for corrosion, erosion through abrasion or cavitation.

Installation in the pipeline

The variable area flowmeter has to be installed vertically (float measuring principle - flow direction from bottom to top). Before installing the flowmeter, blow or flush out the pipeline leading to the flowmeter.
Use connectors suitable for the flowmeter version. Align the pipes axially with the bolt holes on the flowmeter without incurring stresses.
If necessary, support the pipeline on both sides of the flowmeter to prevent vibration from being transferred to the flowmeter.

Panel mounting

(see Dimensions and Weights)
Prepare the panel recess as shown in the drawing.
Before installing, remove the clamp clip ① and Allen screw ②, 4mm Allen key, from the flowmeter.
Insert flowmeter into recess and align vertically.
Fasten the flowmeter with the clamp clip and Allen screw (4 mm Allen key).



Initial startup

Close needle valve at the flowmeter.
Open shutoff valves upstream and downstream of flowmeter.
Slowly open needle valve and set the desired flowrate.
Where liquids are involved, carefully vent the pipeline to avoid water hammer that may cause breakage of the glass cone.
On gas service, increase pressure slowly up to the operating pressure. Make sure the float does not accelerate to the upper stop (e.g. in conjunction with solenoid valves) as this may damage the flowmeter.
The flowrate value is read off from the top edge of the float (ball).



Technical Data

Measuring ranges see Flow table

Accuracy to VDI/VDE Code 3513, Sh. 2 ($q_G = 50\%$)	
DK 701	6%
DK 702	4%

Measuring cone

Type	NG 50
Length	60mm (2.36")
Scale division	flow units
Float shape	ball

Operating data

Max. allowable op. pressure	4 bar
Max. product temperature	100°C

Connection

Standard	G 1/8
Option	tube connection 6 mm
Fitting dimension	75 mm

Diameter of needle valve

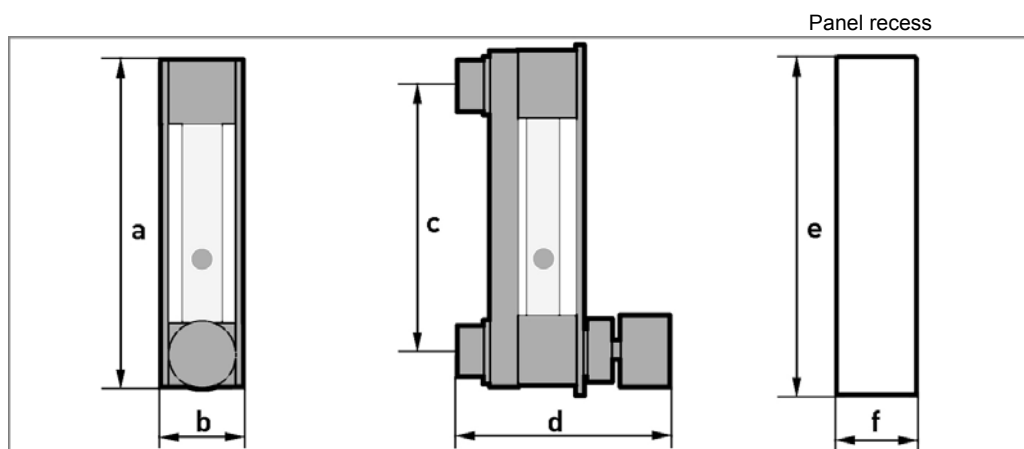
Flow ranges	
< 5 l/h water, ≤ 100 l/h air	1,0 mm
> 5 l/h water, > 100 l/h air	2,5 mm

Materials

Measuring cone	Borosilicate glass
Float	Stainless steel 1.4401, glass
Gaskets	
Standard	FKM / PTFE
Option	FFKM / PTFE
Valve spindle	Stainless steel 1.4571 (316 Ti)
Mount	
Rail	Aluminium anodized
Front plate	Polycarbonat
Top and bottom blocks	PVDF

Dimensions and weights

Dimensions												approx. Weight	
a		b		c		d		e		f		kg	lbs
mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches		
97	3.82	25	0.99	75	2.95	max. 65	max.2.56	94	3.70	23	0.91	0.1	0.22



Flow table

Float material: stainless steel 1.4571 (316 Ti), glass
 Calibration data: Water at 20°C (68°F)
 Air at 20°C, (68°F), 1.2 bar abs. (17.4 psig) (in normal state)

100% flow values
 Rangeability 10 : 1

Ball Ø		Air				Water	
		DK 701 (Scale on frontplate)		DK 702 Scale on glass cone)		DK 702 (Scale on glass cone)	
mm	inches	l/h	SCFH	l/h	SCFH	l/h	US GPM
4	0.16	-	-	5	0.2	-	-
4	0.16	-	-	8	0.3	-	-
4	0.16	-	-	16	0.6	-	-
4	0.16	-	-	25	1	-	-
4	0.16	-	-	40	1.5	-	-
4	0.16	40	1.5	60	2.5	2.5	0.01
6	0.24	100	4	100	4	5	0.02
6	0.24	150	6	250	10	12	0.05
6	0.24	250	10	500	20	25	0.1
6	0.24	-	-	800	30	40	0.16

Product liability and warranty

Responsibility for the suitability and usage to the intended purpose of these flowmeters rests solely with the operator. Improper installation or improper operation of the flowmeters may lead to the loss of warranty. In addition, the "General conditions of sale" which forms the basis of the purchase contract are applicable.

If you need to return the unit for checkout or repair, please pay strict attention to the following points:

Due to statutory regulations concerning protection of the environment and the health and safety of our personnel, KROHNE may only handle, test and repair returned flowmeters that have been in contact with liquids if it is possible to do so without risk to personnel and environment.

This means that KROHNE can only service your unit if it is accompanied by a certificate confirming that the flowmeter is safe to handle.

If the unit has been operated with toxic, caustic, flammable or water-endangering liquids, you are kindly requested:

- To check and ensure, if necessary by rinsing or neutralizing, that all the cavities are free from such dangerous substances.
- To enclose a certificate with the flowmeter confirming that is safe to handle and stating the liquid used.

KROHNE regret that we cannot service your device unless it is accompanied by such a certificate and thank you for your understanding.