Variable Area Flow Meter

KD1

- Flow measuring of liquids and gas
- Can be used in the chemical industry or in medical or laboratory engineering.
- Precision, reliability and efficiency are the remarkable features of this device.
- Robust mechanical system with a low rate of wear

Function

The fluid flows from bottom to top through the meter tube of the flow meter. The float is lifted until an annular gap between the measuring cone and the float is produced which corresponds to the flow.
The forces acting on the float are in equilibrium.
The measured value is displayed on the measuring-tube scale with the upper edge or the indicator edge of the float (ball).

The variable-area flowmeter consists of a stainless steel device with an integrated conical measuringtube made of glass and a vertically movable float. The valve for setting the flow rate is built-in

Application

The KD1 meter is suitable for flow measurement of liquid or gaseous products in pipes.
It shows the current flow rate in volume or mass per unit in time.

Applications: flow measurement, dosing, monitoring, adjusting and control of liquid and gaseous products.

The devices are available with additional electrical equipment for process monitoring and control.

- A variety of sealing materials
- Wall mounting possibility (KD1-C, D, E)
- Flow Controller (option)

Technical data

Sensor

Materials:		
Measuring cone:	Borosilicate glass	
Float:	Stainless steel, glass, aluminum	
Armature:	1.4404 (316 L) / 1.4571 (316 Ti) other materials on request	
Sealing:	NBR, Viton, PTFE	
Process connection:	¼" NPT (F), adapter for other connections available special connections on request	
Nominal pressure:	PN 16	
Process temperature:	0°C up to +100°C 0°C up to +70°C	(without switch) (with switch)
Ambient temperature:	0°C up to +80°C	
Weight:	0,6 kg 0,5 kg 0,6 kg	(KD1-K/C) (KD1-M/D) (KD1-L/E)
Ingress protection:	IP 65 (EN60529)	

Certification

Explosion protection:	BVS 03 ATEX H/B 113

Ranges

KD1-K, C, M, D

	Ball-stainless steel		Ball-glass		Pressure drop	
Range	H_2O [l/h]	Air [Nl/h]	H_2O [l/h]	Air [Nl/h]	H_2O [mbar *]	Air [mbar *]
A	0,1-1,0	5,0-50	0,02-0,25	2,0-20	2	1
B	0,25-2,5	10-100	0,08-0,7	4,0-40	3	2
C	0,5-6,5	25-250	0,25-2,5	12-120	3	2
D	1,0-10	30-350	0,4-4,0	20-200	3	2
E	1,5-16	50-450	0,5-5,0	25-250	5	2,5
F	2,5-25	60-800	0,8-8,0	40-400	5	2,5
G	4,0-40	120-1200	1,5-15	60-600	5	2,5
H	5,0-65	200-2000	2,5-25	100-1000	5	2,5
I	10-100	300-3000	4,0-40	150-1600	6	3

KD1-L, E

	Float-stainless steel		Float-aluminum		Pressure drop	
Range	H_2O [l/h]	Air [Nl/h]	H_2O [l/h]	Air [Nl/h]	H_2O [mbar *]	Air [mbar *]
A	0,1-1,0	5,0-50	0,025-0,27	2,0-20	2	2
B	0,25-2,5	15-90	0,08-0,8	5,0-40	3	2
C	0,4-4,0	20-140	0,13-1,3	7,0-70	3	2
D	2,5-25	70-700	1,0-11	40-400	3	2
E	4,0-40	110-1100	2,0-20	70-700	5	2,5
F	5,0-65	180-1800	2,0-30	100-1000	5	2,5

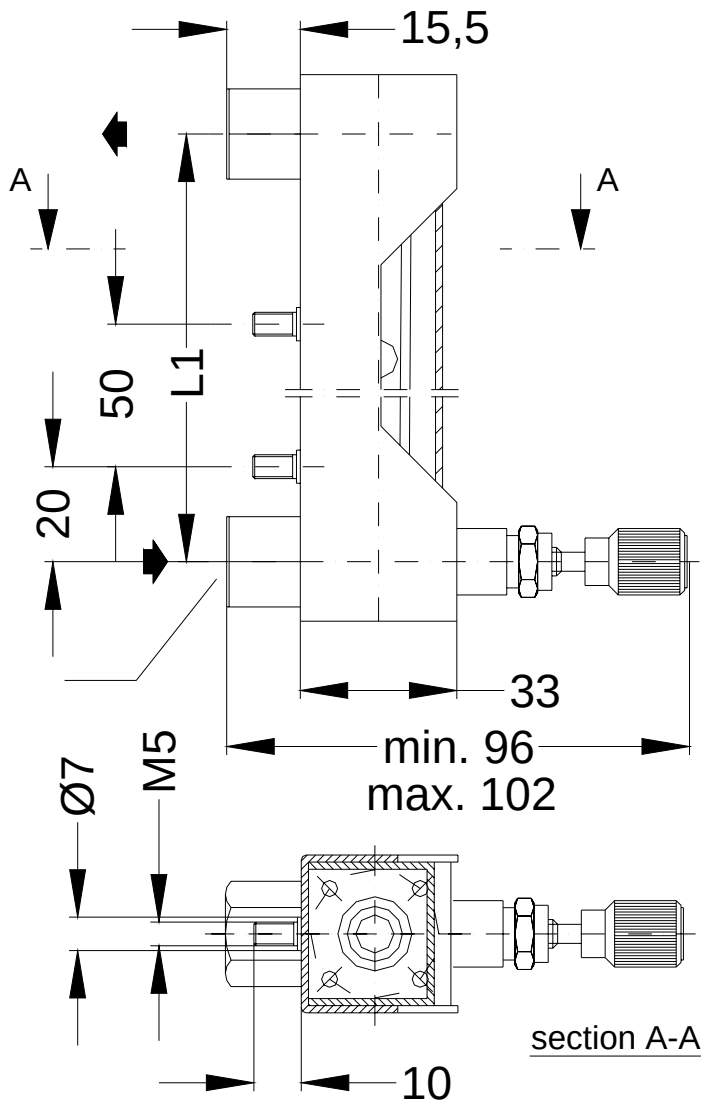
	Ball-stainless steel		Ball-glass		Pressure drop	
Range	H_2O [l/h]	Air [Nl/h]	H_2O [l/h]	Air [Nl/h]	H_2O [mbar *]	Air [mbar *]
A	0,6-7,0	30-250	0,25-2,5	10-130	3	1
B	1,4-11	80-380	0,4-4,0	20-200	3	1
C	1,6-16	50-500	0,5-6,5	20-260	3	1
D	2,5-25	120-850	0,5-9,0	30-410	5	2
E	4,0-40	180-1200	1,0-16	60-600	5	2
F	5,0-65	180-1800	1,0-26	60-1000	5	2

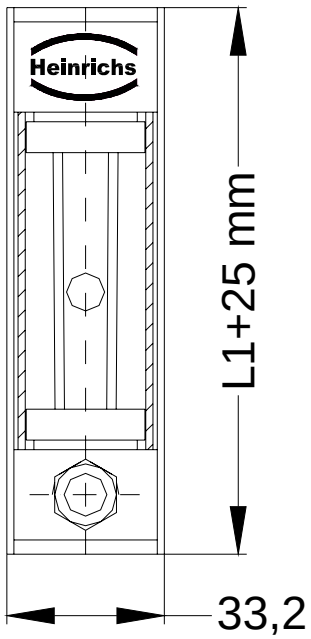
* complete opened valve

Reference condition: according to IEC 770:
Water at 20°C

Display	%-scale Measuring range scale	
Outputs	inductive switches	
Ambient temperature:	0°C up to +70°C	
Accuracy		
Liquid/Gas:	± 3% of upper range value ± 2% of upper range value ± 1% of upper range value	(KD1-K, C) (KD1-M, D) (KD1-L, E)
Certification		
Explosion protection:	PTB 00 ATEX 2128 X	(with switch)
Type of protection:	II 2G EEx ia IIC T6-T4	
CE-Marking:	Explosion Protection Directive 94/9/EC	
Electromagnetic compatibility:	EMC-Directive 89/336/EEC EN 61000-6-3:2001 (emissions residential environments) EN 61000-6-2:1999 (immunity for industrial environments) EN 55011:1998+A1: 1999 Group 1, Class B (radio interference)	

Dimension





Model	L1
KD1-K/C	90 mm
KD1-M/D	170 mm
KD1-L/E	320 mm

File: KD1-Bild1_eng.dwg

For further information see device description KD1_GB_XX_en.
Subjects to change without notice.

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