



Design and applications

Wherever a robust and reliable device for the indication of momentary values and the monitoring of flows in pipelines is required in plant engineering, the flap-type flowmeter is the right choice as a reliable device for the measurement of fluids.

Both meters from the KLA product range are based on the same principle. Inside the meter a flap moves up and down in analogy to the amount of fluid flowing through.

In the KLA Standard version, a magnet directly transfers the flap movement to an externally mounted pointer, that indicates the flow quantity on a resopal disk.

In the KLA GS version, the quantity is directly indicated by the flap. The flap-type flowmeter is equipped with hard glass screens at the front and the back. The flow rate is taken from a scale engraved into the front hard glass screen.

Beside this indication of the flow rate, the low-cost variant of the meter also provides a direct visual display.

For photo-technical reasons, in this case the scale on the glass screen is printed in black. However, the inscription is actually in white.

For a process control, the measuring device can be equipped with limit value switches and an electrical output.



- robust device for a vertical and a horizontal installation
- suitable for measuring flows of H₂O, with NBR-lining for acids and alkaline solutions
- wide measuring range per nominal width
- low pressure loss
- designed for easy maintenance
- optionally: a limit value switch
- almost viscosity independent
- large choice of material
- C€ 0085BN0050



Kirchner und Tochter

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Flap-type flowmeter



KLA

Type series

Version	Description
KLA	flap-type flowmeter with pointer
KLA-GS	flap-type flowmeter with glass screen
KLA-IK1	with one inductive switch (SJ 3,5-N)
KLA-IKS1	with one electronic switch (SB 3,5-E2)
KLA-IK2	with two inductive switches
KLA-IKS2	with two electronic switches

Materials

Type/fitting	valve	bearing	disc	blind flange	seal	DN
KLA						
Cast iron	1.4571	1.4571	1.4301	cast iron/steel	NBR	15 – 150
Cast iron	Rg 5	1.4571	1.4301	cast iron/steel	NBR	32 – 150
Welded steel	Rg 5	1.4571	1.4301	steel	NBR	200
KLA-GS				ring		
Cast iron	1.4571	1.4571	glass	steel	NBR	15 – 25
Cast iron	Rg 5	1.4571	glass	steel	NBR	32 – 150
KLA rubber lined design				blind flange		
Cast iron, rubber lined	1.4571	1.4571	1.4571	cast iron/steel rubber lined	sil-C8200	32 – 150
Cast iron, rubber lined	Hastelloy C4	Hastelloy C4	VA-Teflon	cast iron/steel rubber lined	sil-C8200	32 – 150
Cast iron, rubber lined	Teflon	Hastelloy C4	VA-Teflon	cast iron/steel rubber lined	sil-C8200	80 – 150
Cast iron, rubber lined	Teflon	Teflon	VA-Teflon	cast iron/steel rubber lined	sil-C8200	80 – 150

We quote other designs on request:

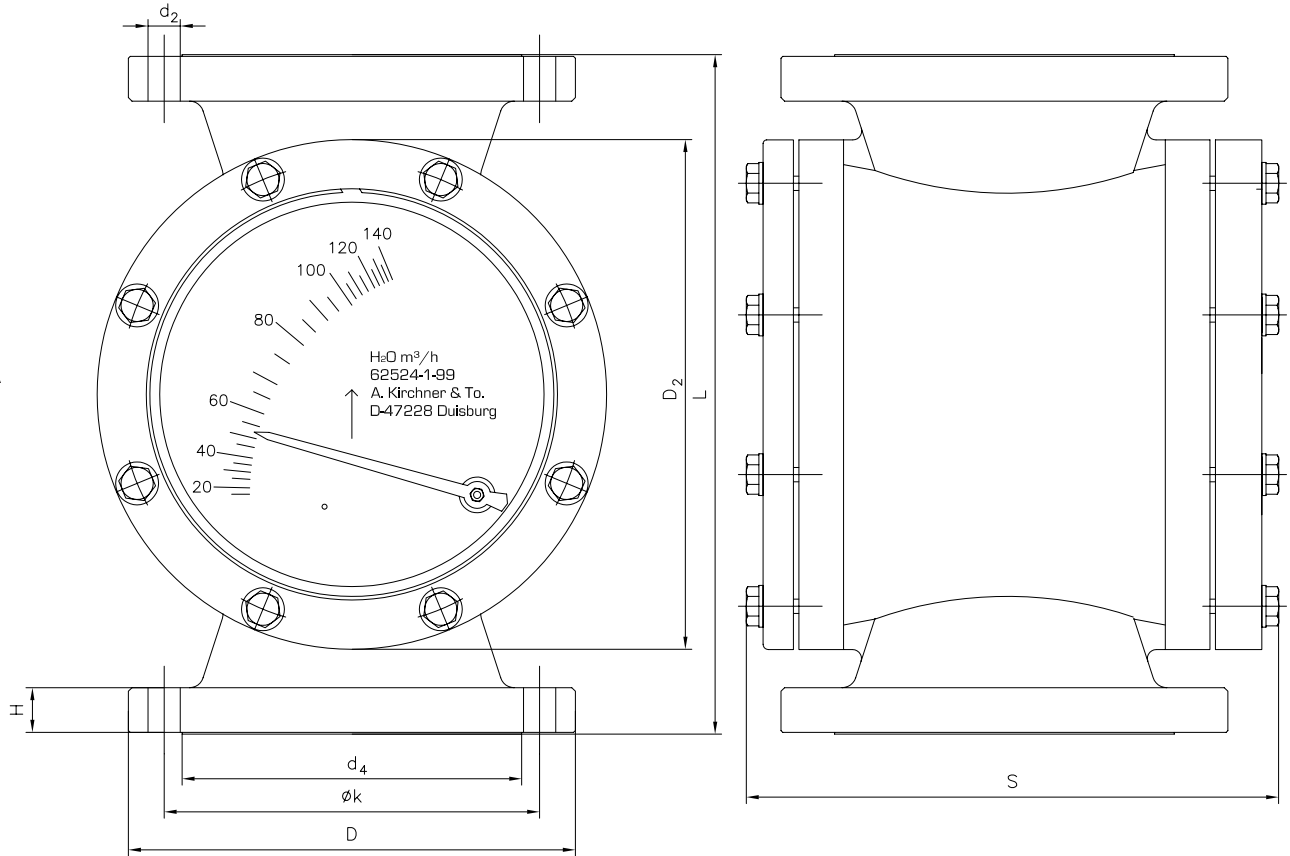
- rubber lining (also with the approval for drinking water)
- cast qualities: cast steel, cast bronze, cast sst, RG-5

Technical data

Connection	acc. to DIN 2501 optional: ASA 150 lbs
Pressure ranges	PN 10 (Standard) in special design PN 6
Connection sizes	DN 15 – 200 / 1/2" – 8"
Installation length	see table
Corrosion protection	epoxy resin, traffic blue, RAL 5017, baked
Rubber lining	NR-isoprene quality
Temperature resistance ¹⁾	standard max. 100 °C with rubber lining max. 90 °C special design up to 250 °C
Measuring range	normally 1:10
Uncertainty of measurement	5% FS
Degree of protection	following IP 54, switch IP 53

¹⁾ The medium to be measured must not freeze.

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Dimensions and weights

DN	dimensions					L	D_2	d_2 in mm	number of screws	standard/GS S	weight kg
	D	ϕk	d_4	H	D_2						
15	95	65	45	16	170	119	M12	4	145/132	8	
20	105	75	58	16	170	119	M12	4	145/132	8,5	
25	115	85	68	16	170	119	$\emptyset 14$	4	145/132	8,5	
32	140	100	78	21	240	165	$\emptyset 18$	4	176/186	16	
40	150	110	88	21	240	165	$\emptyset 18$	4	176/186	16	
50	165	125	102	21	240	165	$\emptyset 18$	4	176/186	17	
65	185	145	122	21	280	185	$\emptyset 18$	4	201/217	22	
80	200	160	138	22	320	225	$\emptyset 18$	8	214/227	34	
100	220	180	158	24	350	245	$\emptyset 18$	8	267/278	43	
125	250	210	188	24	380	285	$\emptyset 18$	8	299/310	58	
150	285	240	212	24	380	295	$\emptyset 22$	8	299/310	64	
200	340	295	268	27	550	370	$\emptyset 22$	12	386/ ---	104	

All dimensions in mm

If a switch is installed the dimension „S“ of the DN 32 - DN 200 increases by 14mm.



Flap-type flowmeter

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Measuring ranges

DN	Measuring range m ³ /h H ₂ O horizontal flow	Measuring range m ³ /h H ₂ O vertikal flow	max. operating pressure standard version	max. operating pressure unit with display on glas
			in bar	
15	0.2 – 1	0.2 – 1.5	10	10
	0.3 – 6	1.0 – 6.5		
20	0.2 – 1	0.2 – 1.5	10	10
	0.3 – 6	1.0 – 6.5		
25	0.2 – 1	0.2 – 1.5	10	10
	0.3 – 6	1.0 – 6.5		
32	0.5 – 4*	0.5 – 4*	10	9
	0.7 – 7	0.6 – 6		
	3.0 – 30	2.5 – 25		
40	0.5 – 4*	0.5 – 4*	10	9
	0.7 – 7	0.6 – 6		
	3.0 – 30	2.5 – 25		
50	0.5 – 4*	0.5 – 4*	10	9
	0.7 – 7	0.6 – 6		
	3.0 – 30	2.5 – 25		
65	1.0 – 8*	2.0 – 15*	10	10
	2.0 – 15	4.0 – 15		
	4.0 – 50	5.0 – 40		
80	1.0 – 10*	2.0 – 10*	10	10
	2.0 – 20	3.0 – 20		
	7.0 – 70	5.0 – 50		
100	1.5 – 15	1.5 – 15	10	10
	12 – 120	10 – 100		
125	2.0 – 20	2.0 – 20	10	7
	14 – 140	12 – 120		
150	2.0 – 25*	4.0 – 25*	10	6.5
	5.0 – 50	10 – 80		
	16 – 160	15 – 140		
	15 – 200**	--		
200	8.0 – 80	15 – 150	10	---
	25 – 250	20 – 200		

The table shows the minimum and maximum measuring range, all intermediate measuring ranges on request.
Pressure loss 20 - 30 mbar, depending on the volume.

With* identified measuring-range only with stainless steel flap.

With** identified measuring-range only with glass screen.

Flap-type flowmeter



Options

Limit value switch

IK1 SJ 3.5-N	2-wire technology (NAMUR)
IKS1 SB 3.5-E2	3-wire technology (no Ex)

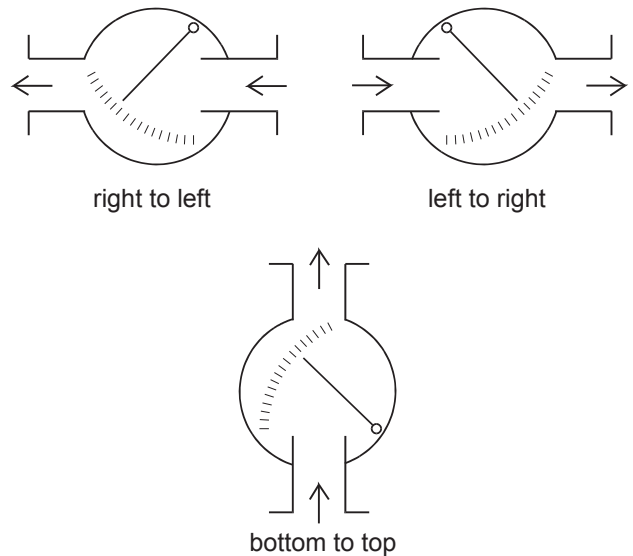
2-wire SJ 3.5-N	
Properties	adjustable, bistabile
Switching function	break
Switching voltage (max.)	8 V DC
Current consumption:	
Pointer vane not sensed	≥ 3 mA
Pointer vane sensed	≤ 1 mA
Ambient temperature	- 25°C bis + 70°C
Max. number of contacts	2
EMV according to	NE21
SIL according to	IEC 61508
Degree of protection	IP 67
3-wire SB 3.5-E2	
Properties	adjustable, bistabile
Switching function	make contact
Power supply, pulse out	10...30 V DC
Current consumption:	
Pointer vane not sensed	≤ 0,3 V
Pointer vane sensed	U _b - 3 V
Ambient temperature	- 25°C bis + 70°C
Max. number of contacts	2
Continuous current	max. 100 mA
No-load current I ₀	≤ 15 mA
EMV according to	EN 60947-5-2
Degree of protection	IP 67

Installation

When installing, the connecting flanges of the KLA must be fitted with appropriate gaskets. These gaskets are not included in the scope of delivery.

Flaps and valves may be installed before and behind the meter at a distance of at least **3 times the diameter**.

Flow directions:





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Safety notes

Operate the flowmeters only up to the specified permitted operating pressure and the permitted operating temperature.

Avoid extreme pressure shocks.

Accessories

Electrical accessories such as arc suppression relays found in our separate product data sheets.

The KIRCHNER equipment has been tested in compliance with the applicable CE-regulations of the European Community.

The respective declaration of conformity is available on request.

The KIRCHNER QM-System will be certified in accordance with DIN-EN-ISO 9001:2000.

The quality is systematically adapted to the continuously increasing demands.



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