



Design and applications

Measuring units RA 65 and FA 65 are based on the variable area float principle.

In pipelines the RA 65 is installed by means of screwed pipe joints and the FA 65 is mounted between flanges. The borosilicate glass measuring cone is located inside a protective steel tube with an inspection window.

VA flow meters RA 65 and FA 65 are most suitable for the flow measurement of transparent fluids, and gases. Each unit is customized with a scale specific for the medium to be measured. RA 65 and FA 65 are used in plant engineering (e.g. furnace construction and water treatment).

By installation of electrical limit switches, which are adjustable throughout the entire measuring range, these units can be employed as detectors too.



- calibrated borosilicate measuring glass
- armature with protective steel tube
- reliable due to simple mode of operation
- with limit switches usable as detectors
- scales specific for the media to be measured
- CE 0085BN0045



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RA 65/FA 65

Technical data

Nominal pressure rating	RA 65: PN 10 at 20 °C FA 65: PN 10 at 20 °C
max. operating pressure	see table of measur. ranges on page 3
Temperature resistance	80 °C at 5 bar overpressure
Measuring range	1:10
Accuracy class	1,6 acc. to VDI/VDE 3513
Connection RA 65	Two-part pipe fitting: Insert with cylindrical female thread acc. to ISO 7-1
Connection FA 65	Flange PN 10 acc. to DIN 2501, other connections on request

Dimensions

RA 65					
Size	Pipe fitting	S	L	d ¹⁾	H
9,5	Rp 1/4	28	308	12	25
	Rp 3/8	32	310	16	
	Rp 1/2	39	312	20	
19	Rp 1/2	39	413	20	45
	Rp 3/4	48	420	25	
	Rp 1	55	424	32	
30	Rp 1	55	424	32	60
	Rp 1 1/4	67	428	40	
	Rp 1 1/2	74	430	50	
36	Rp 1 1/4	67	428	40	70
	Rp 1 1/2	74	430	50	
	Rp 2	90	445	63	
43	Rp 1 1/2	74	430	50	90
	Rp 2	90	445	63	
	Rp 2 1/2	111	446	75	
	Rp 3	131	450	90	

¹⁾ d with gluing or welding sleeves

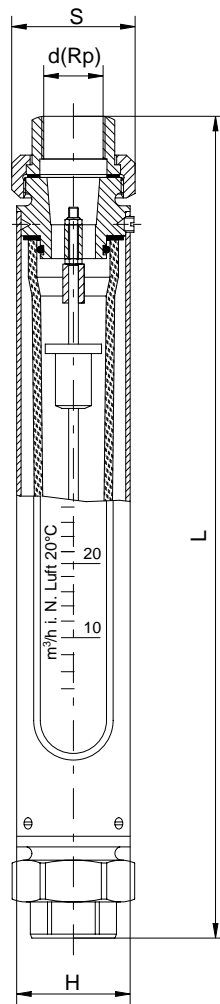
Materials

Protective tube	Precision steel tube of steel St. 35
Heads RA 65	Grey cast iron, size 9.5 steel
Fitting	Malleable cast iron, galvanized
Flanges FA 65	Grey cast iron, size 9.5 steel
Measuring cone	Borosilicate glass
Seals	Standard NBR optionally Viton, EPDM, silicone
Float for fluids ¹⁾	Standard: 1.4305 optionally: 1.4571, PVC, PP, PVDF or PTFE with lead core
Float for gases ¹⁾	Standard: Aluminium optionally: PVC, PP, PTFE, PVDF or 1.4571
float for limit switches ¹⁾	Standard: 1.4571 with magnetic core or PVC with magnetic core

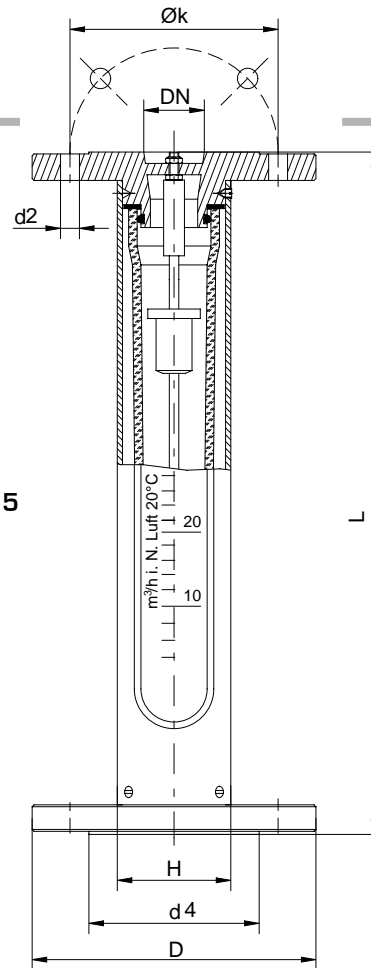
¹⁾ With small sizes VA flow meters floats unguided, from size 30 B partly with guide rod. We will send you a detailed table on request.

FA 65									
Size	DN	L	H	D	d ₄	k	Screws Qty.	Thread	d ₂
9,5	10	260	25	90	40	60	4	M 12	14
	15			95	45	65	4	M 12	14
19	15	360	45	95	45	65	4	M 12	14
	20			105	58	75	4	M 12	14
	25			115	68	85	4	M 12	14
30	20	360	60	105	58	75	4	M 12	M 12
	25			115	68	85	4	M 12	14
	40			150	88	110	4	M 16	18
36	25	360	70	115	68	85	4	M 12	M 12
	40			150	88	110	4	M 16	18
	50			165	102	125	4	M 16	18
43	50	360	90	165	102	125	4	M 16	18
	65			185	122	145	4	M 16	18

RA 65



FA 65



Measuring ranges (min. and max. measuring range; all intermediate measuring ranges are possible)

Size	Measuring range m ³ /h H ₂ O	Measuring range m ³ /h at s.c. air ¹⁾	RA 65 pipe fitting	Connections RA 65 gluing or welding sleeves	FA 65 Flange connection DN	max. oper. pressure in bar bei 20 °C
9.5	0.5 – 5 l/h	0.006 – 0.06	Rp 1/4	d 12	10	10
	20 – 200 l/h	0.3 – 3.3	Rp 1/4 Rp 1/2	d 16 d 20	15	
19	0.012 – 0.12	0.15 – 1.5	Rp 1/2	d 20	10	10
	0.12 – 1.2	1.6 – 16	Rp 3/4 Rp 1	d 25 d 32	15 20 25	
30	0.1 – 1	1.3 – 13	Rp 1	d 32	25	10
	0.3 – 3	3.6 – 36	Rp 1 1/4 Rp 1 1/2	d 40 d 50	40	
36	0.4 – 4	4 – 40	Rp 1 1/4	d 40	40	8
	0.8 – 8	8 – 80	Rp 1 1/2 Rp 2	d 50 d 63	50	
43	0.9 – 9	5 – 50	Rp 1 1/2	d 50	50	8
	1.6 – 16	16 – 160	Rp 2 Rp 2 1/2 Rp 3	d 63 d 75 d 90	65	

Measuring ranges for other measuring substances and operating conditions on request.

¹⁾ at s.c.: at standard conditions (0 °C and 1.013 bar abs.)

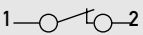
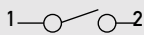


RA 65/FA 65

Limit switches MSK 1/MSK 12

In order to realize a local display with a monitoring function the flowmeter can be equipped with limit switches. The limit switch consists of a bistable reed contact switched by the magnet integrated in the float. The switch is guided in a guide slot on the back of the protective tube and can be adjusted throughout the entire measuring range. In case of inductive or capacitive load applications, e.g. caused by contactors or solenoid valves, uncontrolled current and voltage peaks may occur. In dependence on their geometry such peaks also occur in lines, if they exceed a certain length. It is therefore recommended to use an additionally available arc suppression relay "MSR". This increases the switching capacity and avoids the appearance of inductive and capacitive peaks. It thereby ensures a long lifetime of the contact.

Technical data of the limit switches

Design	MSK 1	MSK 12
Switching voltage	230 V AC/DC	230 V AC/DC
Switched current	0.5 A	0.5 A
Switching capacity	10 W/VA	10 W/VA
Dielectric strength	400 V	400 V
Temperature range	- 40 to + 50 °C the temperature resistance of the flow meter is decisive	
Switching function	Normally closed contact 	Normally open contact 

Notes on safety

For safety reasons we recommend to use the VA flow meters with glass measuring tubes only in combination with a protective shield in front of the measuring tube.

Avoid extreme pressure shocks.

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

The respective declaration of conformity is available on request.

The KIRCHNER QM-System is certified in accordance with DIN-EN-ISO 9001:2000. The quality is systematically adapted to the continuously increasing demands.



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