

General Specifications

Model RAQN Plastic Rotameter

This type of Rotameter is designed for measurement of liquids and gases. The conical glass metering tube has a free rotating float. This float is mounted in a vertical pipeline with flow direction upwards.

The flow is indicated by the top of the float and can be read on the standard scale of the metering tube or on a pin-on scale.

FEATURES

- Breaking proof
- Easy to handle
- Highly corrosion resistant
- Low pressure loss
- Visible monitoring of the measured medium
- Local indication without power supply
- Selectable scale

STANDARD SPECIFICATIONS

Measurable flow rates :

Water (20°C) : 10 l/h to 10 m³/h

Air (20°C)(1 bar abs.) : 160 l/h to 250 m³/h

Measuring range : 10 : 1

Accuracy class

According VDI 3513 : Class 4 (2.5)

Max. Pressure : 10 bar

Max. Temperature :

Polyamide metering tube : -10°C to + 60°C

Polysulphone metering tube: -10°C to + 60°C

Material Process connection :

Inner thread Rp : Steel

Glue socket : PVC (< 60°C)

Material of metering tubes

: Polyamide or Polysulphone

Installation length : see page 4

Weight : 0.4 to 2.1 kg (see page 4)

TECHNICAL SPECIFICATIONS OF OPTIONS

LIMIT SWITCH (OPTION CODE: /GM1 AND /GM2)

(for float with magnet only and flow $Q_{min} > 16$ l/h water or 630 l/h air)

Type : reed contact with bistable switching

Max. switching voltage : 230 V

Max. switching current : 0.6 A

Max. switching capacity : 12 VA or 12 W

Temperature range : -10 °C to +70 °C

Protection : IP 65

Internal capacity : 0 nF

Internal inductivity : 0 mH

Electrical connection : LIYY 2 x 0.34mm²; 1 m long

Housing : Polystyrol

Weight : 35 g



Explosion proof :
Intrinsic safe acc. EN50020 chapter 5.4 "Simple electrical instruments"
Group : IIC
Category : 2
Expl. atmosphere : G
Temperature class : T6
Entity parameter : $U_i = 15V$; $I_i = 50mA$; $P_i = 187mW$
 $L_i \approx 0mH$; $C_i \approx 0nF$

POWER SUPPLY FOR LIMIT SWITCH (OPTIONCODE: /W__)

Type : transistor relay according to DIN EN 50227 (NAMUR)
Power supply : 230 V AC; 115 V AC; 24 V DC
Relay output : 1 changeover contact or 2 potential-free changeover contacts
Switching capacity : max. 250 V AC; max. 4 A or max. 500 VA
Control circuit : intrinsically safe [EEx ia] IIC acc. declaration of conformity PTB 00 ATEX 2081 (230V AC) PTB 00 ATEX 2080 (24V DC)

MODEL SPECIFICATIONS

Diameter process connection		Model	Process connection		Material Process - connection	Material Rotameter	Design	Metering tube length/diameter
Unit without valve			Inner - thread	Glue - socket				
Inner thread	Glue socket	Code	Code	Code	Code	Code	Code	Code
Rp 3/8 inch		RAQN42	R1	–	ST; PC	PA; PS	NNN	Q1
Rp 1/2 inch		RAQN01	R1	–	ST; PC	PA; PS	NNN	Q1
Rp 3/4 inch		RAQN23	R1	–	ST; PC	PA; PS	NNN	Q1
Rp 1 inch	32 mm	RAQN02	R1	–	ST; PC	PA; PS	NNN	Q1
		RAQN02	–	K1	PC	PA; PS	NNN	Q1
Rp 1 inch		RAQN02	R1	–	ST; PC	PA; PS	NNN	Q2
Rp 1 1/4 inch	40 mm	RAQN03	R1	–	ST; PC	PA; PS	NNN	Q2
		RAQN03	–	K1	PC	PA; PS	NNN	Q2
Rp 1 1/2 inch		RAQN04	R1	–	ST; PC	PA; PS	NNN	Q4
Rp 2 inch	63 mm	RAQN05	R1	–	ST; PC	PA; PS	NNN	Q4
		RAQN05	–	K1	PC	PA; PS	NNN	Q4
Process connection: Inner thread Rp.			-R1					
Glue socket (only in PVC).				-K1				
Material of process connection:		Steel.			ST			
		PVC.			PC			
Material of Rotameter :		Polyamide.				– PA		
		Polysulphone.				– PS		
Design :		Without valve.					NNN	
The suffix code of the combination metering tube - float can be read from the flow tables on page 3								xxxxx-xxxxx
Options (see table below)								/xx

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OPTIONS

Options	Option code	Description	Restrictions
Marking	/B1 /B4 /B8 /BG	Tag plate (SS) Neutral version Customer provided marking on label Customer specific notes on scale	Plate 12 x 40 mm; max. 45 digits
Limit switches	/GM1 /GM2	Magnetic contact MIN Magnetic contact MAX	Only with float with magnet Only with float with magnet
Test and certificates	/H1 /P2 /P3 /PP /PT	Certificate of degrease Certificate of Compliance with the order acc. to EN 10204: 2004- 2.1 As /P2 +Test report acc. to EN 10204: 2004- 2.2 Pressure test report for measuring system With flow table for recalculation	
Power supply for limit switch(es) (transmitter relay)	/W1A /W1B /W2A /W2B /W4A /W4B	KFA5-SR2-Ex1.W / 115 V AC, 1 channel KFA5-SR2-Ex2.W / 115 V AC, 2 channels KFA6-SR2-Ex1.W / 230 V AC, 1 channel KFA6-SR2-Ex2.W / 230 V AC, 2 channels KFD2-SR2-Ex1.W / 24 V DC, 1 channel KFD2-SR2-Ex2.W / 24 V DC, 2 channels	

FLOW TABLE WITH THE METERING TUBE - FLOAT COMBINATION

Flow table				Suffix code of the metering tube - float combination							
Water 20°C / Liquids				Metering tube				Float			
Recommended comb. Row A		Alternative comb. Row B		- X	X	XX	X	- XX	X	X	X
Max. flow [l/h]	Pressure loss *) [mbar]	Max. flow [l/h]	Pressure loss *) [mbar]	Length Code	Diameter Code	Metering tube cone Code	Scale Code	Material Code	Diameter Code	Flow mark Code	Insertion Code
-	-	100	2,5	Q	1	53	A; N	PP; PC	1	1	N
250	15	160	6	Q	1	53		Row A= SS		Row A= 3	M ²⁾
400	16	250	7	Q	1	54		Row B= PP; PC		Row B= 2	N
630	18	400	8	Q	1	57					
1 000	26	630	10	Q	1	61					
-	-	1 000	6	Q	2	63		PP; PC	2	1	N
2 500	30	-	-	Q	2	63		Row A= SS		Row A= 3	M ²⁾
-	-	1 600	15	Q	2	63		Row B= PP; PC	Row B= 2	N	
-	-	4 000	13	Q	4	71		PP; PC	4	1	N
10 000	50	-	-	Q	4	71		Row A= SS		Row A= 3	M ²⁾
-	-	6 300	25	Q	4	71		Row B= PP; PC		Row B= 2	N

Flow table				Suffix code of the metering tube - float combination							
Air 20°C, 1 bar abs. / Gas				Metering tube				Float			
Recommended comb. Row A		Alternative comb. Row B		- X	X	XX	X	- XX	X	X	X
Max. flow [l/h]	Pressure loss *) [mbar]	Max. flow [l/h]	Pressure loss *) [mbar]	Length Code	Diameter Code	Metering tube cone Code	Scale Code	Material Code	Diameter Code	Flow mark Code	Insertion Code
-	-	1 600	1	Q	1	53	A; N	PP; PC	1	4	N
2 500	2	6 300	11	Q	1	53				Row A= 5	Row A
4 000	2	10 000	14	Q	1	54				Row B= 7	Row B
6 300	3	16 000	16	Q	1	57				M ²⁾ ; N	
10 000	3	25 000	19	Q	1	61					
-	-	40 000	12	Q	2	63		PP; PC	2	6	N
25 000	5	-	-	Q	2	63				Row A= 5	Row A
-	-	63 000	26	Q	2	63		Row B= 7	Row B		
-	-	63 000	3	Q	4	71		PP; PC	4	4	N
-	-	160 000	16	Q	4	71				6	M ²⁾ ; N
100 000	7	-	-	Q	4	71				Row A= 5	Row A
-	-	250 000	34	Q	4	71				Row B= 7	Row B

Length metering tube	350 mm.	Q									
Diameter metering tube	R1½ bis R2¼ inch.		X								
Cone metering tube	see flow table.			X							
Medium scale metering tube	Connection scale (recommended). Metering tube %-indication only.						A N				
Float material	1.4571. Polypropylen. PVC.							SS PP PC			
Diameter metering tube	21.6 mm to 54.1 mm.								X		
Flow mark	Factor 0.4 bis 1 (water) (Code 1 bis 3). Factor 6.3 bis 25 (air) (Code 4 bis 7).									X	
Float insertion	Without magnet. With magnet.										N M ²⁾

²⁾ For option limit switch /GM1 and /GM2

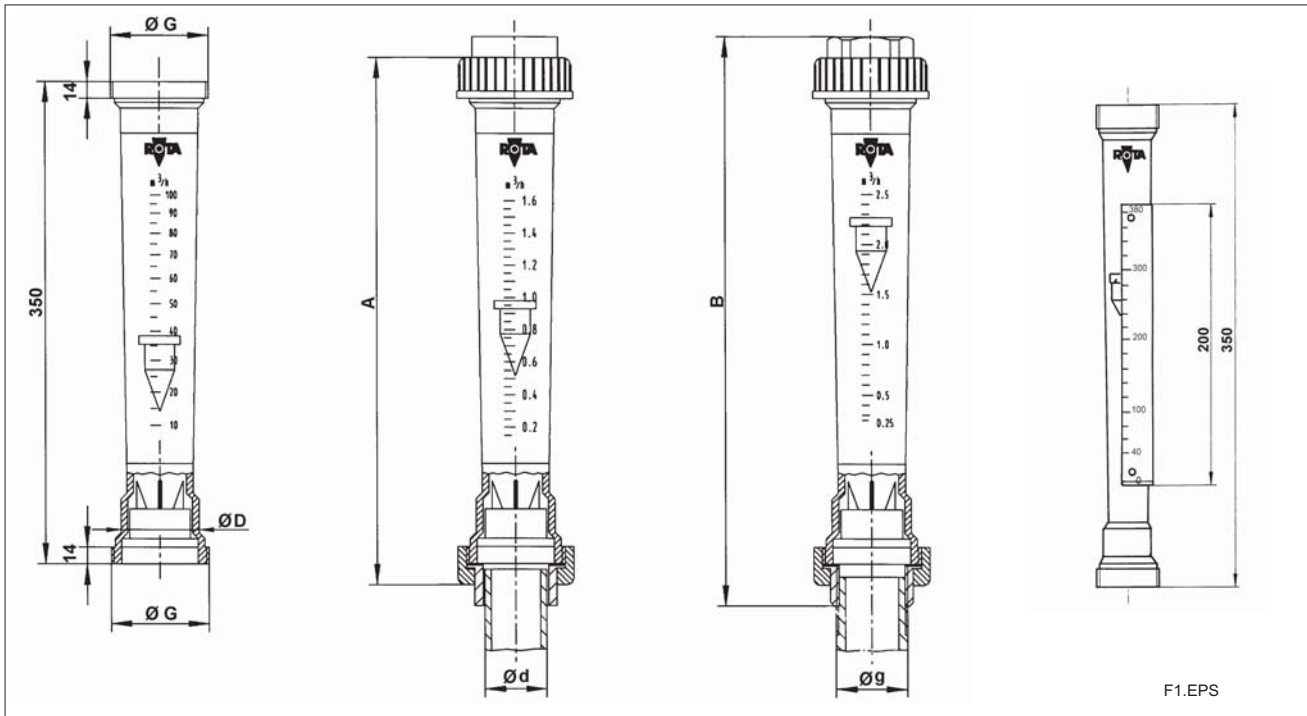
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*) The indicated flow pressure loss is a target value and may deviate based on the type of Rotameter.

Other metering tube - float combinations with other flow materials and a variety of measuring ranges are available on request.

For applications for different medium- or process conditions use the Sizing Software Durep_v.

DIMENSIONS



Dimensions and weights

Metering tube	Dimension [mm]						Weight [kg]
	G	D	A	d	B	g	
Q1	G 1½"	34	366	32	400	Rp 1"	0.4
Q2	G 2"	48	372	40	410	Rp 1¼"	0.7
Q4	G 2¾"	81	370	63	418	Rp 2"	2.1

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