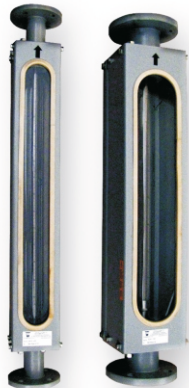


## INDUSTRIAL ROTAMETERS RIN TYPES



The rotameters RIN are designed for volume or mass flux measurement of gases and liquids in experimental and industrial installations.

### EXEMPLARY MEASURING RANGES

Type	Air dm <sup>3</sup> /h 293 K, 0,1013 MPa		Water dm <sup>3</sup> /h 293 K, 0,1013 MPa		Permissible conditions			Length of pipe
	min	max	min	max	temperature K	pressure, MPa		
						liquid	gas	
RIN-06	1	10	1,6	16	363	0,6	0,4	300
	2	20	2	20				
	3	30	2,5	25				
	7	70	3,15	31,5				
	10	100	4	40				
	14	140	2,5	25				
	18	180						
	22	220						
	30	300						
	40	400						
	50	500						
60	600							
80	800							
100	1 000							
RIN-10	100	1 000	4	40	363	0,6	0,4	300
	120	1 200	5	50				
	160	1 600	6,3	63				
	200	2 000	8	80				
	250	2 500	10	100				
			6,3	63				
RIN-16 B	250	2 500	10	100	363	0,6	0,4	600
	320	3 200	12,5	125				
	400	4 000	16	160				
	500	5 000	20	200				
	630	6 300	25	250				
			16	160				

<b>RIN-16</b>	400	4 000	16	160	363	0,6	0,4	600
	500	5 000	20	200				
	630	6 300	25	250				
	800	8 000	31,5	315				
	1 000	10 000	40	400				
<b>RIN-25</b>	1 000	10 000	40	400	363	0,6	0,4	600
	1 200	12 000	50	500				
	1 600	16 000	63	630				
	2 000	20 000	63	630				
	2 500	25 000	100	1000				
<b>RIN-40</b>	2 500	25 000	80	800	363	0,6	0,4	600
	3 200	32 000	100	1 000				
	4 000	40 000	125	1 250				
	5 000	50 000	160	1 600				
	6 300	63 000	200	2 000				
<b>RIN-60</b>	6 300	63 000	200	2 000	363	0,6	0,4	600
	8 000	80 000	250	2 500				
	10 000	100 000	315	3 150				
	12 500	125 000	400	4 000				
	13 000	130 000	500	5 000				
		630	6 300					

On demand it is possible to fit the measuring range to individual needs of customer.

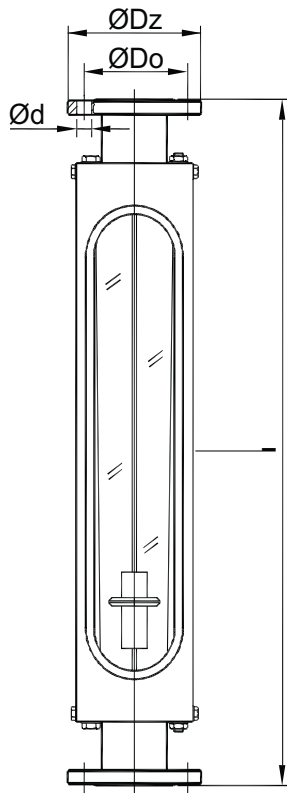


Fig. 1 Rotameter RIN-16, -25, -40, -60

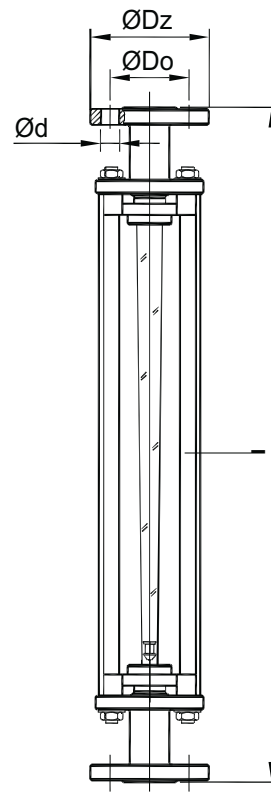


Fig. 2 Rotameter RIN-06, -10



Type	L	D <sub>z</sub>	D <sub>o</sub>	d	Mass, kg
RIN-06 RIN-10	420	75	50	12	10
RIN-16 RIN-25	810	115	85	14	12
RIN-40 RIN-60	810	165	125	18	27

## COSNTRUCTION MATERIALS

Basic elements of rotameters are glass pipe and float.

Material of pipe: glass (alloy of boron and silicon) in sort simax or termisil.

Float's material: alloy of Al, chromium-nickel steel sort 1H18N9T, tarflen, PCV, ebonite, teflon.

Seal of glass pipe: rings for suitable factor.

The rotameters RIN-40 and RIN-60 are executed:

- for liquids, with float on leading rod or with free float,
- for gases, only with float on leading rod

Permissible ambient temperature 0.....50°C

## ACCURACY OF READING

The standard accuracy class is 2,5 according with PN-85/M-42371.

On demand there is possible to execute the rotameter in higher accuracy class with calibration certificate from our laboratory, Weights and Measures Office or from Accredited Laboratory.

## INSTALLATION DIRECTIONS

Rotameter type RIN joins with pipeline with the aid of flanges. These rotameters have to be install in vertical position. It is possible to exchange the rotameter without interrupting the technical process.

The valve must be closed, very tight that the measurement will be true.

The rotameter type RIN mustn't be expose to stresses and vibrations

- 1)The rotameter should be install in vertical position. The permissible deviation: 1.
- 2)In all types of rotameters the most profitable is (in case of industrial rotameters it is necessary) shunt of rotameters (fig.3). It makes possible to exchange rotameter without the interruption in technological process. The detour valve in closed condition must be completely tight.
- 3)The rotameter's stresses and vibrations are not allowed. In industrial constructions it is necessary ( in front of and behind of rotameter ) to join the pipeline with supporting structure and installing the elastic parts in adjoining segments.
- 4)For rotameter reading we used the biggest dimension of float. Very often it is the upper edge of float. In reading time the float has to assume a steady position without vertical oscillation. The flux of fluid can not contains the gas bubbles.

- 5) Pollutants which flows through the rotameter creating the sediments on measuring elements so it is necessary disassemble the rotameter and flush it by dissolving substances. If the user is not able to clean up the rotameter there is possible to clean the rotamater by producent. The sediments in rotameter causes false measurements.
- 6) The strong blows of floats by buffer can cause breakage of glass pipe. We can avoid this situation by installing additional cut-off valve (fig.4). In periods, in which occur strong changes of flux the cut-off valve should be open. After fixing of flux the cut-off valve has to be closed and the rotameter indication should be read.
- 7) The rotameter which works in higher temperature should be protected against sudden cooling down for example treated by cold water

