



# Flow Monitors RVM/U

## Operation

The flow monitors operate on the principle of the float type flow indicator.

The float contains permanent magnets. The reed switch is contained in an adjustable switch housing external to the flow circuit. The flowing medium raises the float in the direction of flow. As soon as the float with its permanent magnets reaches the contact position, the reeds close together. As the flow increases, the float rises further range i.e. the contact remains closed thus ensuring bistable switching.

## Switch range

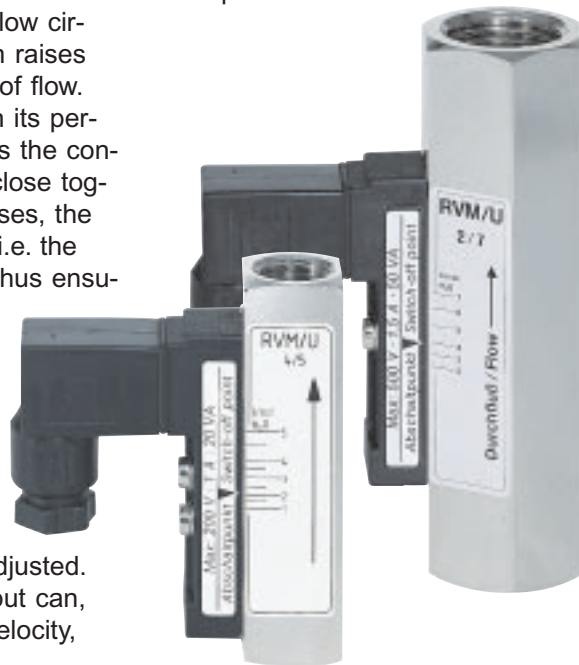
The switch ranges given below refer to the limits within which the switch point may be infinitely adjusted. The actual flow throughput can, depending on the flow velocity, be much greater.

## Areas of application

Monitoring of cooling circuits in welding machines, compressors, heat exchangers and centrifuges. Monitoring of sealing media for seals and pump dry running, motor cooling systems etc.

## Switch hysteresis

Hysteresis is the difference in flow between the switch closing and opening again. The difference is the result of the movement required by the float to reclose the open contact.



**The flow monitors are flow and not pressure dependent.**

The shorter the distance, the smaller the hysteresis and therefore the more accurate the instrument.

By means of the careful choice of magnets and reed switches with especially close tolerances, hysteresis is kept to an absolute minimum.

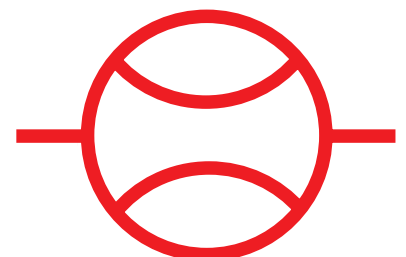
Low hysteresis is of great advantage where particular accuracy is demanded, especially in flow systems where only small increases in flow throughput above the necessary minimum can be achieved.

## Universal mounting

Is achieved by means of a spring, which acts upon the float.

## Special advantages

- universal mounting
- high reliability
- small switch hysteresis
- infinitely adjustable switch point
- high pressure

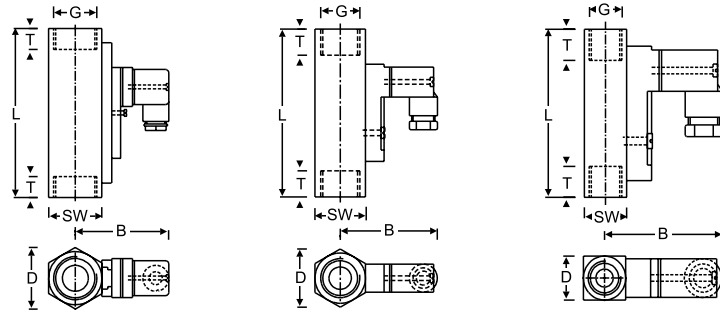
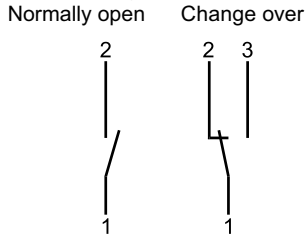


**Installation:**

- The installation position is freely selectable.
- Flow direction is from low to high scale value.
- Flow straightening sections of 10x DN upstream and 5x DN downstream are strongly recommended.
- The medium should not contain any solid particles. We recommend the installation of strainers, model SFD or SFM.
- Do not install the equipment within inductive fields.
- Do not exceed the max.electrical ratings of the switch contact under no circumstances.

For installation and set-up assistance please "refer" to instruction manual.

**Connection Diagram:**



**Summary of Types RVM/U**

Type	Switch range* l/min H <sub>2</sub> O	Overall dimensions mm							Weight approx. g
		SW	D	B	G	DN	T	L	
RVM/U-4/01	0,005 - 0,06	17	17	47	1/4"	8	10	65	140
RVM/U-4/02	0,02 - 0,14								
RVM/U-4/06	0,1 - 0,6								
RVM/U-4/1	0,2 - 1,2								
RVM/U-4/2	0,4 - 2,0								
RVM/U-4/3	0,5 - 3,0	27	31	52	1/2"	15	14	90	350
RVM/U-4/5	1,0 - 5,0								
RVM/U-2/02	0,02 - 0,2								
RVM/U-2/06	0,1 - 0,6								
RVM/U-2/1	0,4 - 1,8								
RVM/U-2/3	0,8 - 3,2	41	47	76	3/4"	20	21	152	1100
RVM/U-2/7	2 - 7								
RVM/U-2/13	3 - 13								
RVM/U-2/20	4 - 20								
RVM/U-2/30	8 - 30								
RVM/U-1/45	15 - 45	41	47	76	1"	25	17	130	1200
RVM/U-1/90	30 - 90								
RVM/U-1/150	60 - 150								

\* Other switch ranges on request

Operating Data:	RVM/U-1	RVM/U-2	RVM/U-4
Maximum pressure: brass	PN 250 bar	PN 300 bar	PN 300 bar
Maximum pressure: stainless steel	PN 300 bar	PN 350 bar	PN 350 bar
Pressure drop:	0,02 - 0,4 bar	0,02 - 0,3 bar	0,02 - 0,2 bar
Maximum temperature:	120°C (optional 160°C)		
Accuracy:	10% of final value		
<b>Electrical data:</b>			
Normally open: SPST N.O.	max. 250V • 3A • 100VA	max. 230V • 3A • 60VA	max. 200V • 1A • 20VA
Change over: SPDT	max. 250V • 1,5A • 50VA	max. 250V • 1,5A • 50VA	max. 200V • 1A • 20VA
EEx m II T6	Change over: 250V • 1A • 30VA, Normally open: 250V • 2A • 60 VA		X
EEx ia IIC T6	Change over / Normally open: 45V • 1A		X
Protection class:	IP65 (plug connection DIN43650), IP67 (with sealed in 1m cable)		
Output signal:	The contact switches off, if minimum flow is below setpoint		
Power supply:	Not necessary (reed contacts)		
Other plug types or cable lengths on request			
<b>Materials:</b>	<b>brass</b>	<b>stainless steel</b>	
Wetted parts:	brass nickel-plated	st.st. 1.4571	
Spring: (wetted parts)	st.st. 1.4571		
Magnet: (wetted parts)	Hartferrit		
Housing: (wetted parts)	brass nickel-plated	st.st. 1.4571	

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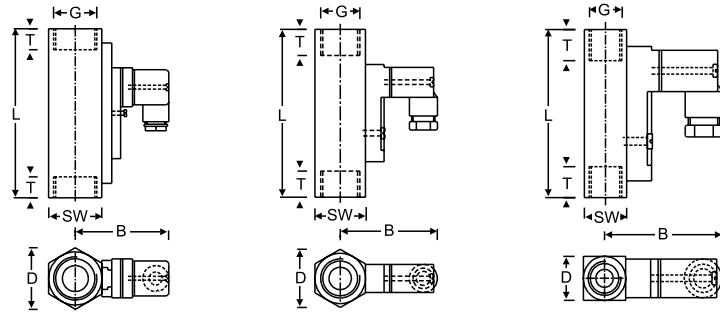
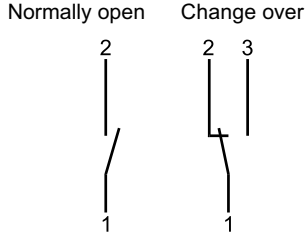


**Installation:**

- The installation position is freely selectable.
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- Flow straightening sections of 10x DN upstream and 5x DN downstream are strongly recommended.
- The medium should not contain any solid particles. We recommend the installation of strainers, model SFD or SFM.
- Do not install the equipment within inductive fields.
- Do not exceed the max.electrical ratings of the switch contact under no circumstances.

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**Connection Diagram:**



**Summary of Types RVM/U - Air**

Type	Switch range* NI/min Air	Overall dimensions mm							Weight approx. g
		SW	D	B	G	DN	T	L	
RVM/U-L40002	0,6 - 2,2	17	17	47	1/4"	8	10	65	140
RVM/U-L40006	1,7 - 6								
RVM/U-L40008	2,5 - 8								
RVM/U-L40012	3 - 12								
RVM/U-4/06L	3 - 22								
RVM/U-L40024	7 - 24								
RVM/U-L40034	12 - 34								
RVM/U-4/2L	16 - 56								
RVM/U-4/3L	20 - 80								
RVM/U-L20010	2,5 - 10	27	31	52	1/2"	15	14	90	350
RVM/U-L20020	5,5 - 20								
RVM/U-L20030	8 - 30								
RVM/U-L20035	10 - 35								
RVM/U-2/3L	24 - 90								
RVM/U-L20220	55 - 220								
RVM/U-L20240	65 - 240								
RVM/U-L20300	80 - 300								
RVM/U-2/20L	140 - 525								
RVM/U-L10180	60 - 180	41	47	76	3/4"	20	21	152	1100
RVM/U-L10300	100 - 300								
RVM/U-L10650	200 - 650				1"	25	17	130	1200

\* Other switch ranges on request / NI/min at 1 bar abs. 20°C

Operating Data:	RVM/U-L1	RVM/U-L2	RVM/U-L4
Maximum pressure: brass	PN 250 bar	PN 300 bar	PN 300 bar
Maximum pressure: stainless steel	PN 300 bar	PN 350 bar	PN 350 bar
Pressure drop:	0,02 - 0,4 bar	0,02 - 0,3 bar	0,02 - 0,2 bar
Maximum temperature:	120°C (optional 160°C)		
Accuracy:	10% of final value		
Electrical data:			
Normally open: SPST N.O.	max. 250V • 3A • 100VA	max. 230V • 3A • 60VA	max. 200V • 1A • 20VA
Change over: SPDT	max. 250V • 1,5A • 50VA	max. 250V • 1,5A • 50VA	max. 200V • 1A • 20VA
EEx m II T6	Change over: 250V • 1A • 30VA, Normally open: 250V • 2A • 60 VA		X
EEx ia IIC T6	Change over / Normally open: 45V • 1A		X
Protection class:	IP65 (plug connection DIN43650), IP67 (with sealed in 1m cable)		
Output signal:	The contact switches off, if minimum flow is below setpoint		
Power supply:	Not necessary (reed contacts)		
Other plug types or cable lengths on request			
Materials:	brass	stainless steel	
Wetted parts:	brass nickel-plated	st.st. 1.4571	
Spring:	(wetted parts)	st.st. 1.4571	
Magnet:	(wetted parts)	Hartferrit	
Housing:	(wetted parts)	brass nickel-plated	st.st. 1.4571

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