



# Flow Monitors DUM

## Operation

The flow monitors DUM operate on the principle of the float type flow indicator. The magnetic float is positioned in a cylindrical control tube with tapered metering slots. It activates a reed switch, which is contained in an adjustable switch housing, external to the flow circuit. The movement of the float is restricted by means of an endstop to prevent it from going beyond the range of the reed switch, thus ensuring the bistable character of the flow switch.

## 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.

## Switching 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.

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.



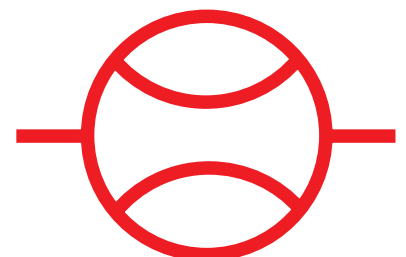
**DUM flow monitors are flow and not pressure dependent.**

## 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.

## Universal mounting

The new DUM series is a development of our well proven DWM series, where a vertically upward flow was requested. Due to an integral float return spring, the DUM can be mounted in any position.

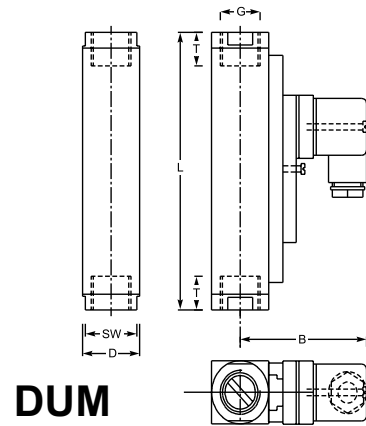
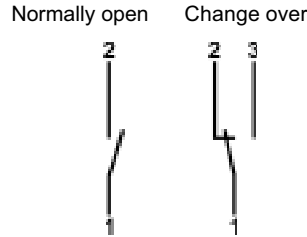


**Installation:**

- 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 SF, 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 DUM**

Type	Switch range* l/min H <sub>2</sub> O	SW	D	Overall dimensions mm				Weight approx. g	
				B	G	DN	T	L	
DUM - 4	0,2 - 4	27	30	71	1/4"	8	14	130	
DUM - 4,5	0,4 - 4,5								
DUM - 5	0,6 - 5								
DUM - 8	0,5 - 8								
DUM - 14	1 - 14								
DUM - 28	2 - 28	27	30	71	1/2"	15	14	148	
DUM - 40	3 - 40								
DUM - 55	4 - 55								
DUM - 70	1 - 70								
DUM - 90	8 - 90								
DUM - 110	10 - 110	34	40	76	3/4"	20	18	152	1400
DUM - 150	10 - 150	40	40	76	1"	25	19	156	1100
DUM - 220	35 - 220	50	50	81	1 1/4"	32	21	200	3000
DUM - 250	35 - 250	60	60	86	1 1/2"	40	24	200	3800

\* Other switch ranges on request

**Operating Data: DUM**

Maximum pressure:	PN 200 bar (brass)	PN 300 bar (SS)
Pressure drop:	0,02 - 0,8 bar	
Maximum temperature:	120°C (optional 160°C)	
Accuracy:	± 5% of final value	

Electrical data:	Normally open SPST N.O.	Change over SPDT
IP 65 (plug connection DIN 43650)	max. 250V • 3A • 100VA	max. 250V • 1,5A • 50VA
IP 67 (with sealed in 1m cable)		
EEx m II T6 (with sealed in 2m cable)	max. 250V • 2A • 60VA	max. 250V • 1A • 30VA
EEx ia IIC T6 (with sealed in 2m cable)	max. 45V • 1A	max. 45V • 1A
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	
Seals: (wetted parts)	Perbunan (optional Viton, EPDM) *	Viton (optional Perbunan, EPDM) *
Housing: (wetted parts)	brass nickel-plated	st.st. 1.4571

\* Other seal materials on request

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