

# SONIC VIEW

The compact and solid state ultrasonic flow sensor for measuring water and aqueous solutions

## > Introduction

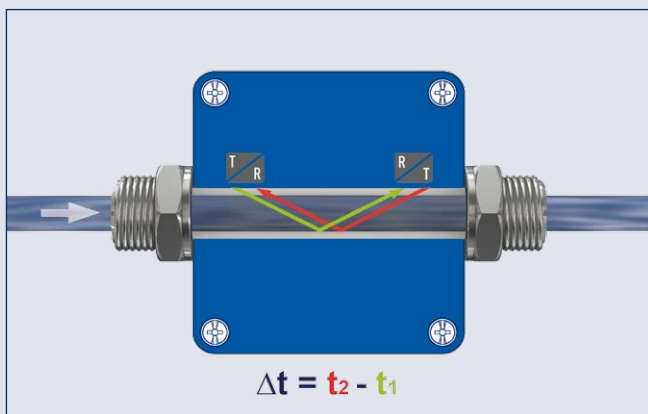
Mass Flow ONLINE B.V., sells flow measuring and controlling products through the internet. From the website [www.massflow-online.com](http://www.massflow-online.com) flow meters or controllers can be ordered 24 hours a day 7 days a week. Most products are on stock and will be shipped world wide within two working days.

## > Description

The new SONIC-VIEW series flow meters offer a compact, solid state solution for measuring flow in areas where flow sensors with moving parts cannot be applied. Its interference free operation, combined with a long-life cycle and the wide independence to the inlet and outlet pipes makes SONIC-VIEW the perfect solution even in compact machines with cramped confines.

## > SONIC-VIEW series

The SONIC-VIEW series operate on the transit time principle. Two ultrasonic transducers are positioned on the outer surface of the measuring pipe. The advantage of this method of metering is that the transducers will not be in contact with the medium and also the complete absence of moving parts. These transducers are used alternately as transmitter (T) and receiver (R). Thus the sonic signal is transmitted in the flow direction (→) and reverse to the flow direction (←). The difference of both transit times ( $\Delta t$ ) is proportional to the average flow velocity.



## > SONIC-VIEW features

- ◆ Make liquid flows visible by:
  - Pulse / frequency output
  - Analog output (4...20 mA)
  - Blinking LED (red/green)
- ◆ No mechanical wear
- ◆ No moving parts
- ◆ Just one chemically resistant wetted part (stainless steel)
- ◆ Alarm output, can be set by rotary switch
- ◆ Ease of mounting and operation
- ◆ Independent of pipe and installation position
- ◆ Suitable for electrically non-conductive liquids, e.g. DI water
- ◆ Fast response
- ◆ Air detection
- ◆ Insensitive against pressure peaks and particles in the medium because of protected transducers
- ◆ Ideal solution for interference free operation combined with a long-life cycle
- ◆ Can be used in areas where flow sensors with moving parts cannot be applied
- ◆ Wide independence to the inlet and outlet pipes enable installation in compact machines with cramped confines

## > Technical specifications

Performance	SVM-030	SVM-110
Flow range	1.5...30 l/min	5...110 l/min
Accuracy*	3...30 l/min $\pm 4\%$ RD 1.5...3 l/min $\pm 10\%$ RD	10...110 l/min $\pm 4\%$ RD 5...10 l/min $\pm 10\%$ RD
Signal output starting from	1 l/min	2 l/min
Reproducibility	1 %	
Rangeability	1:20	1:22
Medium	Water and aqueous solutions	
Operating temperature	5...60 °C	
Nominal pressure	PN16	
Diameter	DN 10	DN 20
Process connection	3/4" BSP male thread	1" BSP male thread
Flow / alarm indication	LED green / red	

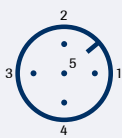
### Mechanical specifications

Ingress protection	IP54
Materials	
Housing	Aluminium casting
Wetted parts	Process connection : stainless steel 1.4404 Measuring pipe : stainless steel 1.4404

### Electrical specifications

Frequency output	
Pulse rate / K-factor	855 pulses/l
Resolution	1,2 ml/pulse
Signal shape	Square wave signal PNP open collector
Signal current	Max. 100 mA, short-circuit-proof
Max. pull-up voltage	30 VDC
Analog output signal	4...20 mA NAMUR NE43 compliant, max. burden = $\frac{(+U - 10V)}{23 \text{ mA}}$
Alarm output signal	- Alarm in case of lack of flow or air in the pipe - PNP open collector, max. 100 mA short-circuit-proof - 16 different setpoints selectable with rotary switch
Electrical connection	5 pin plug connector M12x1
Power supply	10...30 VDC
Current consumption	Max. 80 mA
Electrical protection	Short-circuit proof (up to 30 V) and polarity protection (up to -30 V)

### Pin assignment



PIN 1:	+U
PIN 2:	alarm output PNP
PIN 3:	GND
PIN 4:	frequency output
PIN 5:	analog output 4...20 mA

#### \* Test conditions

Water 20...60 °C at 5 l/min (SVM-030), 10 l/min (SVM-110)

Adjustment 30 °C at 3 and 27 l/min (SVM-030), 11 and 100 l/min (SVM-110)

All information is subject to change without notice.

## > Available models

Modelcode	Nom. Diameter	Flow range	Max flow rate
SVM-030	DN10	1.5 ...30 l/min	33 l/min
SVM-110	DN20	5 .. 110 l/min	140 l/min

## > Setpoint table for the alarm output

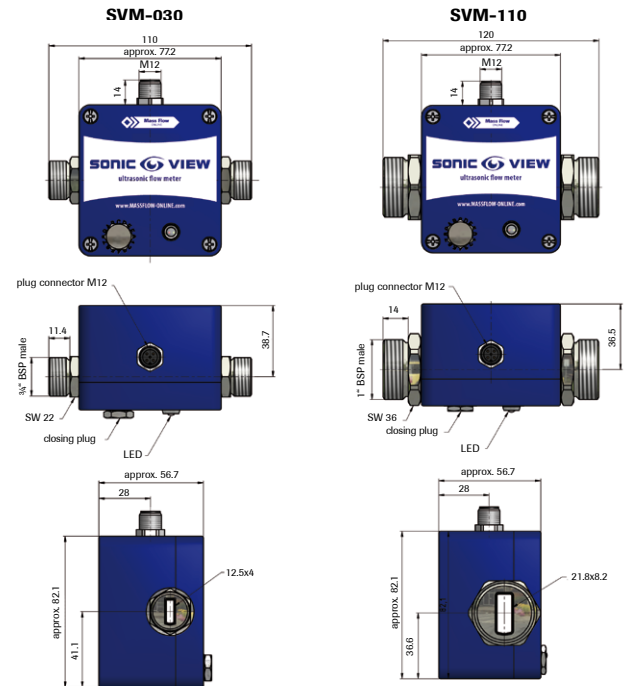
### SVM-030

Switch position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Setpoint decreasing flow (l/min)	2	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24
Setpoint increasing flow	0,5 l/min above the setpoint decreasing flow															

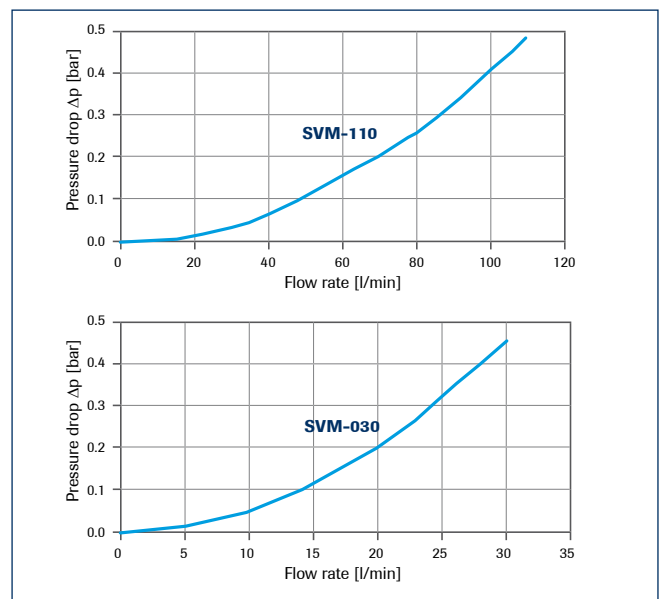
### SVM-110

Switch position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Setpoint decreasing flow (l/min)	3	5	6	8	10	12	15	18	20	25	30	35	40	50	70	100
Setpoint increasing flow	5	7	8	10	12	14	17	20	22	27	33	38	44	55	75	105

## > Dimensional drawings



## > Pressure drop



Bronkhorst distributor



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