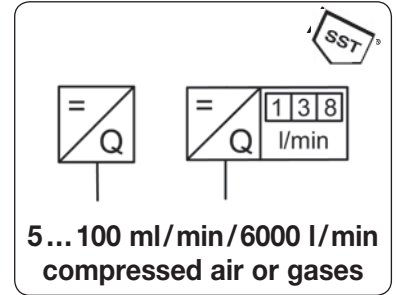


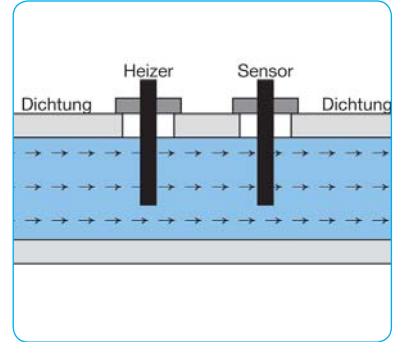
### Technical features

- Benefits:**
- suitable for nearly all gases and gas mixtures
  - no moving parts
  - short response time
  - unaffected of mounting position
  - optionally with unit counter and / or flow meter
  - maintenance-free
  - low pressure drop



## General technical features

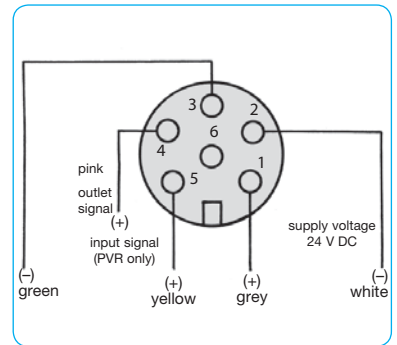
<b>Mounting position</b>	any
<b>Protection class</b>	IP 40
<b>Temperature range</b>	0 °C to 50 °C / 32 °F to 122 °F
<b>Material</b>	Body: aluminium, optionally stainless steel 316L Elastomer: FKM, optionally EPDM or Kalrez Sensor: stainless steel 316L Filter/strainer: stainless steel



functional principle

## Pneumatic features

<b>Media</b>	compressed air as well as virtually all gases and mixtures of gases
<b>Operating pressure</b>	max. 10 bar
<b>Differential pressure</b>	max. 5 bar
<b>Mass flow rate</b>	0 ... 100 ml/min / 2000 l/min, for PVR 0 ... 100 ml/min / 6000 l/min, for PVM



PVM and PVR connecting plan

## Electrical features

<b>Supply voltage</b>	24 V DC + 10%
<b>Current consumption</b>	max. 75 mA for PVM 11, all other devices max. 250 mA
<b>Signal ranges</b>	4-20 mA, optionally 0 ... 5 V DC
<b>Impedance</b>	> 10 kΩ at voltage signal, < 375 Ω at current signal
<b>Connection</b>	round connector M16x1, 6-pin
<b>EMC</b>	according to CE
<b>Note</b>	at < 100 mbar inlet path is required (PVM only)

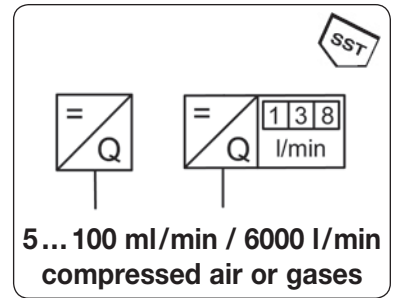
## Accuracy

<b>Linearity / Hysteresis</b>	> ± 3 % FS
<b>Repeatability</b>	> ± 0.5% FS
<b>Pressure sensitivity</b>	> ± 0.3% FS/bar typ. (air)
<b>Temperature sensitivity</b>	< ± 0.3% / °C (air)
<b>Mounting sensitivity</b>	< 0.3% FS at 90°
<b>Operating time</b>	25 s at 100% of the range
<b>Tightness</b>	< 2 x 10 <sup>-8</sup> mbar l/s He

model	PVM23 - PVM27	PVM11
gas		
air	1.00	1.00
argon	2.01	1.40
CO <sub>2</sub>	1.20	0.74
helium	/	1.41
hydrogen	/	1.01
NH <sub>3</sub>	0.80	0.77
N <sub>2</sub> O <sub>2</sub>	1.00	1.00
C <sub>2</sub> H <sub>2</sub>	0.75	0.61
C <sub>3</sub> H <sub>6</sub>	/	0.34
C <sub>3</sub> H <sub>8</sub>	0.63	0.34
CH <sub>4</sub>	0.67	0.76
CO	1.04	1.00
C <sub>2</sub> H <sub>4</sub>	0.89	0.60
NO	1.02	0.97
HCL	1.58	0.99

conversion factors for max. flow rate for other gases

<b>Description</b>	Mass flow meter directly measuring flow according to constant temperature anemometer principle. PVM 11 measures via a bypass, the other types measure the flow directly.
<b>Features</b>	Low pressure drop and immunity against dirt and humidity. Measurement unaffected by pressure and temperature changes. No moving parts, installation in virtually any position.
<b>Principle</b>	Two stainless steel probes - a heater and temperature probe - protrude inside the bore. A constant difference in temperature is created. The energy required is proportional to flow.
<b>Media</b>	compressed air, air as well as virtually all gases and gas mixtures
<b>Compensation</b>	Neither temperature nor pressure have to be compensated. There are no moving parts within the flow meter, therefore it is virtually wear-free.
<b>Pressure drop</b>	Low pressure drop because solely two stainless steel probes protrude inside the smooth, round measurement cell. The use of screw connections with a nominal size as big as possible is suggested.
<b>Temperature range</b>	0 °C to 50 °C / 32 °F to 122 °F <b>Operating press.</b> max. 10 bar <b>Differential press.</b> max. 5 bar
<b>Material</b>	Body: aluminium, optionally SST 316L <b>Elastomer:</b> FKM, optionally EPDM or Kalrez Sensor: stainless steel 316L <b>Filter/strainer:</b> stainless steel



Dimensions			Operating pressure max. bar	Connection thread G	Flow rate ml/min*1 / l/min*1	Order number
A	B	C				

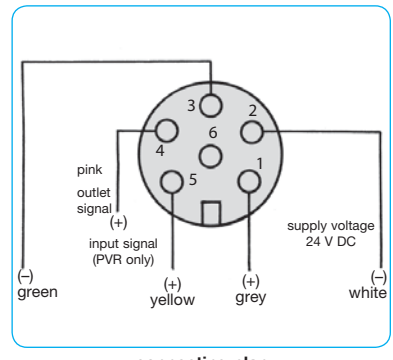
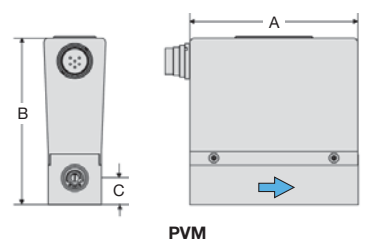
Mass flow meter				4-20 mA output signal, supply voltage 24 V DC, w/o display, with coupling socket, for compressed air		PVM*2	
95	94.5	15	10	G1/4	5 ... 100 ml/min 10 ... 200 ml/min 25 ... 500 ml/min 50 ... 1 000 ml/min	PVM11-12 PVM11-22 PVM11-52 PVM11-13	
95	94.5	15	10	G1/4	0.10 ... 2 l/min 0.25 ... 5 l/min 0.50 ... 10 l/min	PVM11-23 PVM11-53 PVM11-14	
95	94.5	15	10	G1/4	1 ... 20 l/min 2 ... 50 l/min 5 ... 100 l/min	PVM23-24 PVM23-54 PVM23-15	
95	98.5	15	10	G1/2	5 ... 100 l/min 10 ... 200 l/min 20 ... 400 l/min	PVM25-15 PVM25-25 PVM25-45	
116	123	25	10	G1/2	20 ... 400 l/min 50 ... 1 000 l/min 100 ... 2 000 l/min	PVM27-45 PVM27-16 PVM27-26	
130	143	35	10	G1	150 ... 2 000 l/min 200 ... 4 000 l/min 250 ... 5 000 l/min	PVM28-26 PVM28-46 PVM28-56	
160	172	55	10	G1	250 ... 5 000 l/min 300 ... 6 000 l/min	PVM29-56 PVM29-66	



Special options, add the appropriate letter order number							
special calibration	range or gas to be indicated on order					PVM . . . . Y	
monitor signal	0-5 V, load resistance > 10 kΩ					PVM . . . . U	
stainless steel body	316L			for PVM11 to PVM28 PVM29		PVM . . . . S	
EPDM elastomer						PVM . . . . S	
Kalrez elastomer						PVM . . . . E	
LCD display				for flow, 3 1/2-digit		PVM . . . . K	
free of oil and grease	for oxygen and different gases					PVM . . . . L	
carbon dioxide CO <sub>2</sub> :	03	argon Ar:	05	nitrogen N <sub>2</sub> :		PVM . . . . 07	
helium He:	09	hydrogen H <sub>2</sub> :	11	methane CH <sub>4</sub> :		PVM . . . . 13	
oxygen O <sub>2</sub> :	15	propane C <sub>3</sub> H <sub>8</sub> :	16	nitrous oxide N <sub>2</sub> O:		PVM . . . . 17	

## Accessories

coupling socket	M16x1, 6-pin with 3 m Kabel	straight	<b>KM16-A6-3</b>
other cable length	5 m or 10 m available		



\*1 valid for compressed air at Δp= 5 bar and open outlet. For other gases please apply conversion factor