

Mass flow controller: Proportional flow control valve VEMD

FESTO



High tech at a low price

Highlights

- Best in class: price
- Best in class: dynamics
- Best in class: energy efficiency
- Silent
- No heat dissipation
- Minimal weight
- Linear control characteristics
- Robust and long service life

The trend in life sciences is towards ever smaller production batches and medical devices. Especially in mobile applications such as portable oxygen concentrators the emphasis is on minimal energy consumption and low weight. This is coupled with high standards for reliability and performance. A key technology that offers decisive advantages at surprisingly low costs is piezo technology.

Proportional control

The gas flow at the output of the mass flow controller can be adjusted very simply and controlled in linear mode by entering a setpoint between 0.2 ... 10 V.

Dynamic and precise

The integrated control circuit with thermal sensor makes the VEMD dynamic and precise. It reacts very quickly to a setpoint change and is virtually immediately ready for operation.

Small space requirement and low energy consumption

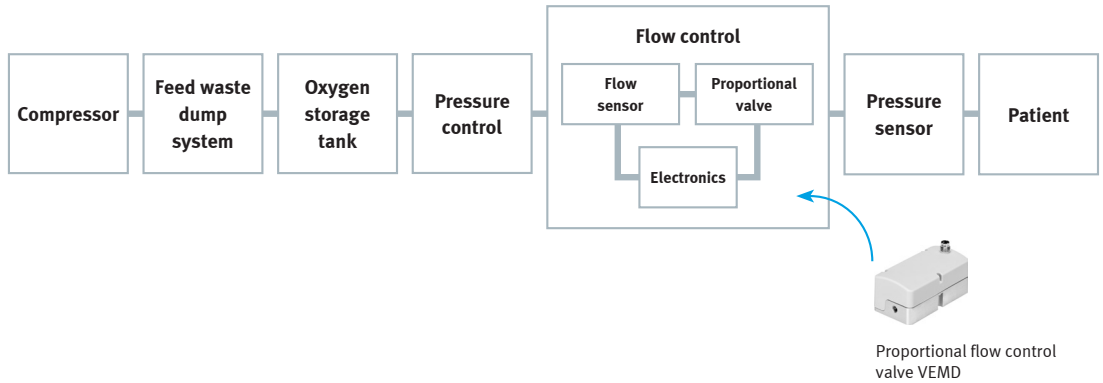
The VEMD has compact installation dimensions. Its light weight makes it ideal for installation in portable devices.

Silent

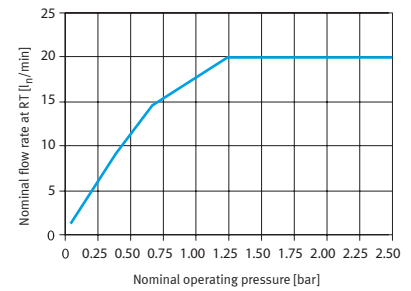
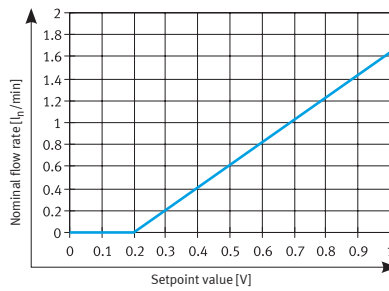
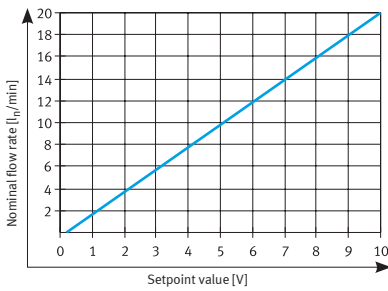
Thanks to the piezo technology, no pulse-width-modulated signal is required to control the flow rates, which means that the proportional flow control valve VEMD operates silently.

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Sample application: portable oxygen concentrator



Characteristic curves

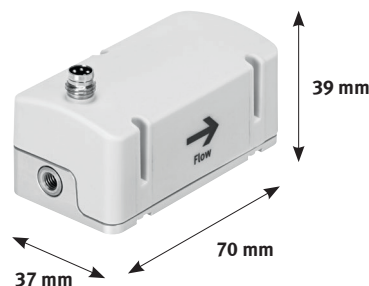
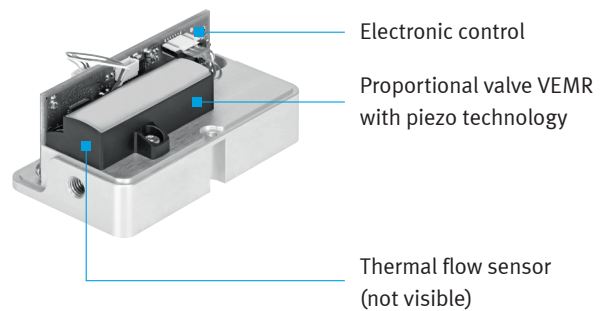


$$\text{Setpoint value} = \frac{9.8 \cdot (\text{nominal flow rate} + 4/9.8)}{20}$$

Formula for calculating the setpoint value depending on the required nominal flow rate

Technical data

| Proportional flow control valve VEMD | |
|--|---|
| Flow rate range [l _p /min]* | 0 ... 20 |
| Accuracy of flow rate value [%] | ± (4% o.m.v. + 1.25% FS) |
| Repetition accuracy FS [%] | 1 |
| Setpoint value [V] | 0.2 ... 10 |
| Actual value [V] | 0.2 ... 10 |
| Nominal operating voltage [V DC] | 24 |
| Max. electr. power consumption [W] | 1 |
| Nominal operating pressure [bar] | <2.5 |
| Nominal width [mm] | 1.4 |
| Material of the seals | NBR, EPDM |
| Operating medium | Oxygen (oxygen applications to IEC 60601-1 only on request), compressed air to ISO 8573-1:2010 [6:4:4], inert gases, nitrogen |
| Connection | Female thread M5 |
| Weight [g] | 92 |
| Temperature of medium [°C] | 5 ... 40 |
| Ambient temperature [°C] | 0 ... 50 |



*The flow is calibrated at the factory to the physical standard conditions in accordance with DIN 1343 (1013 mbar, 0°C)

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