

Ground-breaking piezo proportional flow control valve from Festo

The new VEMD proportional flow control valve from Festo uses the latest piezo technology to deliver highly dynamic control for numerous medical and other industrial control applications.

The VEMD is a mass flow controller integrating a flow sensor with a proportional valve and controller and is designed to proportionally control the flow of compressed air and inert gases within a small, neat and calibrated package. It compares the required signal value with the actual, sensor-measured value within its closed loop electronic controller and then adjusts the output using the piezo pilot valve. The piezo pilot valve provides a wide variety of advantages including silent operation, the absence of heat generation, a compact and lightweight design and long service life – as well as an unmatched low power consumption of only one Watt.

These characteristics make the VEMD eminently suitable for life sciences and mobile applications, ranging from ventilators and anaesthesia to operating equipment for ophthalmology and dental drills. Its small size, energy efficiency and silent operation make it ideal for patient-side operation for those who are bed bound and need rest uninterrupted by noisy solenoids. It is also very attractive for patients reliant on portable oxygen delivery systems where it is less socially intrusive than alternative designs. An additional benefit is that it is non-magnetic and so does not interfere with other medical equipment.

Other industries can also benefit for the VEMD's unique characteristics, including applications in semiconductor / electronics manufacture (control of combustive gases), food and beverage (quality inspection, protective gas delivery) and pharma (bioreactors and fermenters). In special purpose machine building, the VEMD can be specified for a wide variety of tasks, such as mixing of air into test stations, controlling humidity, inert gas welding, 3D printing, mass spectrometry and many more.

Easy to control, precise dynamics

The VEMD is designed to control flows of up to 20 l/m at a maximum pressure of 2.5 bar. The modular design of the VEMD addresses the needs of OEM customers as well as end users.

The gas flow at the output of the valve can be adjusted very easily and controlled in linear mode by entering a setpoint between 0 and 10 V. An integrated control circuit with thermal sensor makes the VEMD precise and dynamic. It responds up to 35 times faster than comparable products to a setpoint change, and is ready for operation straight out of the box.

The VEMD proportional flow control valve is part of Festo's high performance piezo technology gas handling range, which includes a selection of proportional valves and pressure regulators. Based on this technology platform Festo's specialist application engineering team has worked closely with clients in medical, semi-conductor and other sectors to provide application specific solutions e.g. for oxygen and other volatile gases.

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VEMD: proportional control valve

The new VEMD proportional flow control valve from Festo offers extremely high control dynamics combined with minimal space and power consumption requirements.



VEMD: proportional control valve pic 2

Extremely high control dynamics: the VEMD proportional flow control valve is ideal for regulating gas flows in ventilation treatment.

About Festo GB & IE

Festo is a global leader in automation technology setting international standards in industrial automation and technical education. The company provides pneumatic and electric automation solutions for factory and process automation across a wide range of industries. Digitalisation, artificial intelligence and the rapidly growing LifeTech sector, including medical technology and laboratory automation, are becoming increasingly important areas of innovation for Festo. Sustainability, reducing its CO₂ footprint, digital learning, innovation, performance and speed are key drivers for the company's future.

Festo products and services are available in 176 countries. With around 20,600 employees in more than 250 branch offices in around 60 countries, the company achieved a turnover of €3.33 billion in 2025. More than 8% of this is reinvested in research and development, and as a learning company, 1.5% of turnover is invested in basic and further training.

Festo Didactic, the company's technical education and training division, is a leading global provider of technical training solutions, offering comprehensive digital and physical learning environments for industrial skills development.

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