



Proportional-pressure regulator VPPI



Highlights

- Silent
- Flexible
- Extremely dynamic (up to 30 Hz)
- Many pressure ranges between -1 and +12 bar
- Free of grease in nominal width 1.8

The new proportional-pressure regulator VPPI is directly actuated in all nominal widths, without preliminary stages or pilot valves. Thanks to the pressure compensating element, the valve regulates dynamically and precisely even in the large nominal widths. The powerful and low-friction moving coil actuator makes the VPPI extremely dynamic. The subordinate position controller ensures excellent stability.

Dynamic

The pressure can be adjusted very dynamically thanks to the direct actuation, i.e. the direct influence of the valves on the output pressure. Three preprogrammed controller presets are available for small and large volumes and applications with a permanent flow. In addition, a further customer-specific preset can be selected so the valve can measure the controlled system and independently define a suitable control behaviour. This allows the setpoint to be adjusted more quickly in many cases.

Flexible

When using a voltage type VPPI, the valve can also be operated with a PWM signal, as provided by any machine controller. When the VPPI recognises a PWM signal, the internal control electronics automatically switch over. The set pressure range can thus be regulated with a high level of 20 ... 100%. The valve can also be switched to digital input via the menu and up to 8 preset pressure values can then be called up. An IO-Link® interface for controlling the valves and an F1a variant for use in

battery cell production will be available soon.



Additional information:

Product page

> www.festo.com/catalogue/vppi



Description

TFT display

Not only can all the necessary settings be made via the full graphic display, but much of the information can now also be read in plain text. Depending on the installation position, the display can be rotated so that it is always easy to read.

Performance

Thanks to being directly actuating, the valve series VPPI can now also cover the vacuum range as well as a higher pressure range up to 12 bar. As the valve uses the same components for pressurisation and exhausting, the same nominal size is now available with both flow directions. The powerful plunger coil actuator gives the valve the dynamic response needed to realise even fast setpoint changes easily and precisely. The maximum frequency of the VPPI has been limited to 30 Hz to protect the system.

Possible applications

Initial lubrication with the food-grade grease NSFH1 also allows the nominal size 5 to be used in many areas where the air flow comes into direct contact with food. The nominal size 1.8, on the other hand, is completely grease-free in the main air flow, which considerably expands the application areas. A long service life ensures the continuing process quality of the application.

Main industry segments

- Special machine building
- ELA
- Textile industry
- AMI
- Plastic
- Food & Packaging

Applications

- Pressure regulation
- Test pressure
- Dispensing applications
- Pressing-on and press-fitting processes
- Web tension control
- Gripper applications



Technical data

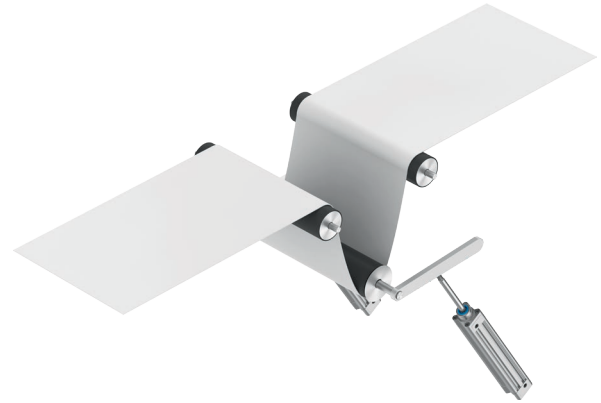
Nominal width	5	1.8
Flow rate 1 → 2	1250 l/min at P1 = 11 bar	280 l/min at P1 = 8 bar
Pressure regulation range	-1 ... 1, -1 ... 0, 0 ... 2, 0 ... 6, 0 ... 10, 0 ... 12 bar	-1 ... 1, -1 ... 0, 0 ... 2, 0 ... 6 bar
Linearity	0.9% FS	0.5% FS
Hysteresis	0.4% FS	0.2% FS
Repetition accuracy	0.4%FS	0.2% FS
Pneumatic connection	G1/8	
Reference value	0 ... 10 V / 4 ... 20 mA / digital / PWM	
Actual value	0 ... 10 V / 4 ... 20 mA / digital	
Electrical connection	M12 x 1	
Lubrication	NSFH1	Free of grease
Degree of protection	IP65	
Display	LED / TFT fully graphic, rotatable	



Application examples

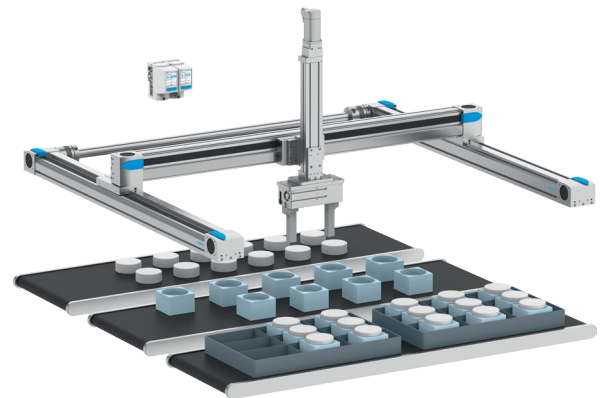
Web tension control

The valve series VPPI is perfect for many applications. It opens up a wide range of applications in pressure and flow control where both standard pneumatics and electric automation are inadequate. Perfect timing in the event of unexpected forces improves process reliability in small to very large web guiding processes. The VPPI is suitable, for example, for web control of battery foils, in the paper industry, in winding processes such as coil winding or yarn winding processes.



Handling and gripper applications

The VPPI can be used very flexibly in handling and gripper applications. It offers high repeat accuracy and a fast response time and can be easily integrated into existing systems. This is perfect for sensitive and dynamic gripping of different materials where the gripping force needs to be individually adjusted.



Pilot valve

The proportional pressure control valve VPPI is used as a pilot valve for process valves and enables precise, infinitely variable control of pressure and flow. Thanks to its compact design, high dynamic response and simple electrical control, it is ideal for applications in process automation, for example for controlling pneumatic control valves in dosing or mixing processes.

