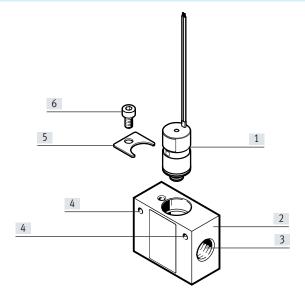


Characteristics

General information

The VPWS solenoid valves are proportional directional control valves. This means that the flow rate of suitable media can be controlled proportionally. Approved operating media include air, oxygen and inert gases.

Overview of valve with manifold block



The VPWS solenoid valve is designed to be installed in machines and devices and automated technical systems. It should only be operated within the limits defined in the technical data. The specific on-site operating conditions are to be observed.

- [1] VPWS solenoid valve
- [2] Manifold block
- [3] Pneumatic connection
- [4] Mounting hole for M3 screws
- [5] Mounting
- [6] Socket head screw M4

- 🕴 - Note

The product has no redundancy and no error detection. Where required, malfunctions must be detected by measures in the customer product.

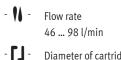
Type codes

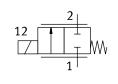
| 001 | Series |
|------|--|
| VPWS | Proportional directional control valve |
| 002 | Nominal width [mm] |
| 1.5 | 1.5 |
| 2.2 | 2.2 |
| 003 | Directional control valve type |
| В | Sub-base valve |
| 004 | Valve function |
| 6 | 2/2-way valve, normally closed |

| 005 | Pneumatic connection |
|------|----------------------|
| PC15 | Cartridge 15 mm |
| 006 | Pressure range [bar] |
| 3 | 03 |
| 8 | 0 - 8 |
| 007 | Sealant |
| V | FPM |

NEW

Data sheet





Diameter of cartridge

- **└** - Voltage ≤19 V DC



General technical data

| Nominal width DN | | 1.5 mm | 2.2 mm | | | |
|----------------------------------|---------|--|--------|--|--|--|
| Valve function | | 2/2 proportional directional control valve, closed | | | | |
| Reset method | | Mechanical spring | | | | |
| Design | | Directly actuated poppet valve | | | | |
| Sealing principle | | Soft | | | | |
| Actuation type | | Electrical | | | | |
| Type of control | | Direct | | | | |
| Flow direction | | Non-reversible | | | | |
| Mounting position | | Any | | | | |
| Type of mounting | | On sub-base | | | | |
| | | Plug-in | | | | |
| | | With accessories | | | | |
| Pneumatic connection 1 | | Cartridge 15 mm | | | | |
| Pneumatic connection 2 | | Cartridge 7.2 mm | | | | |
| Flow rate q | [l/min] | 82 98 | 46 56 | | | |
| Product weight | [g] | 23 | | | | |
| Degree of protection to EN 60529 | | IP60 | | | | |
| Note on degree of protection | | In assembled state | | | | |
| | | IP65 with suitable plug | | | | |

Operating and environmental conditions

| Nominal width DN | | 1.5 mm | 2.2 mm | |
|---|-------|---------------------------|---------------------|--|
| Medium | | Air | | |
| | | Oxygen | | |
| | | Inert gases | | |
| Note on the medium | | Operation with lubricated | medium not possible | |
| Note on the medium, maximum particle size | [µm] | 10 | | |
| Operating pressure | [bar] | 0 8 | 0 3 | |
| Nominal operating pressure | [bar] | 8 | 3 | |
| Ambient temperature | [°C] | +5 +50 | | |
| Temperature of medium | [°C] | +5 +50 | | |
| Storage temperature | [°C] | -40 +80 | | |
| Corrosion resistance CRC ¹⁾ | | 1 | | |

1) Corrosion resistance class CRC 1 to Festo standard FN 940070 $\,$

Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

1

Data sheet

| Electrical data | | |
|---|--------|--------|
| Continuous operating voltage at 20 °C without inflow | [V DC] | ≤ 16.5 |
| Continuous operating voltage at 50 °C without inflow | [V DC] | ≤ 14.5 |
| Typical continuous operating voltage at 50 °C with inflow | [V DC] | ≤ 19.0 |
| Max. switching frequency | [Hz] | 18 |
| Hysteresis | [mA] | 16 |
| Coil resistance | [Ω] | 60.5 |
| Max. electrical power consumption | [W] | 2.5 |
| Current regulating range | [mA] | 0 200 |
| Duty cycle (at operating current < 155 mA) | [%] | 100 |

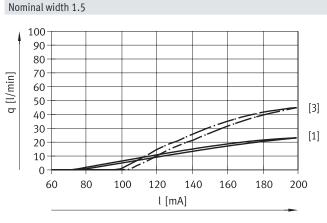
Electrical connection

| Electrical connection | Connection technology | Open end |
|-----------------------|-----------------------|----------|
| | Number of pins/wires | 2 |
| | Connection type | Cable |
| Cable length | [mm] | 70 80 |

| Materials | | | | |
|-------------------|--|--|--|--|
| Housing | High-alloy steel | | | |
| Seals | FPM | | | |
| Note on materials | RoHS-compliant | | | |
| | Contains paint-wetting impairment substances | | | |

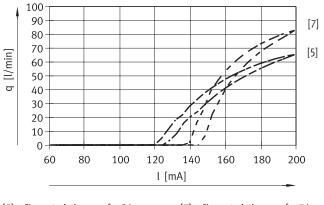
Data sheet

Flow rate/current characteristic curves



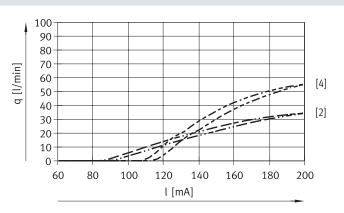


[3] Characteristic curve for 3 bar



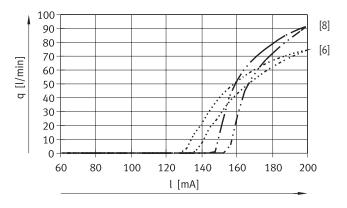
[5] Characteristic curve for 5 bar [7] Cha

[7] Characteristic curve for 7 bar



[2] Characteristic curve for 2 bar

[4] Characteristic curve for 4 bar



[6] Characteristic curve for 6 bar [8] Characteristic curve for 8 bar

- Note

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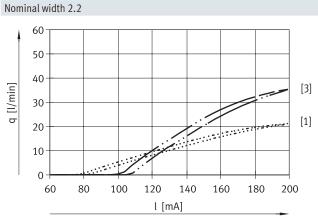
Resonance may occur during operation at a low frequency and this may affect the flow rate. Operation at very low flow rates may generate noise. No resonance occurs during operation at a frequency of 0.3 Hz or higher.

Subject to change - 2020/10

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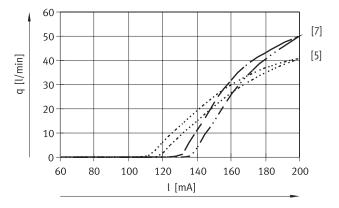
Flow rate/current characteristic curves

Data sheet



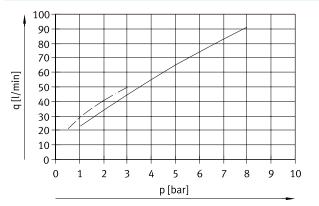
[1] Characteristic curve for 0.5 bar

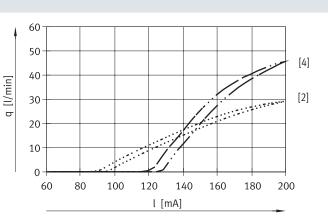
[3] Characteristic curve for 1.5 bar



[5] Characteristic curve for 2.0 bar [7] Characteristic curve for 3.0 bar

Flow rate/pressure characteristic curve at 200 mA





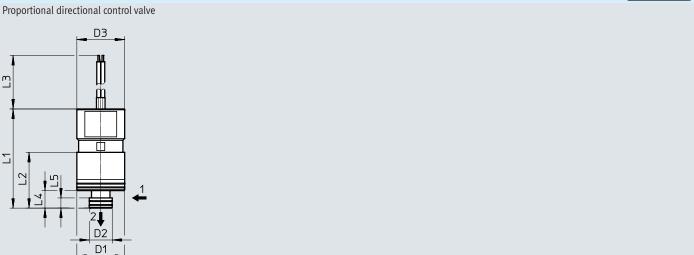
[2] Characteristic curve for 1.0 bar [4] Characteristic curve for 2.5 bar

VPWS-DN 1.5

VPWS-DN 2.2

Data sheet

Dimensions



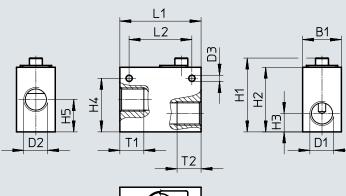
[1] Pneumatic connection 1

[2] Pneumatic connection 2

| Туре | D1 Ø | D2 Ø | D3 Ø | L1 | L2 | L3 | L4 | L5 |
|------|---------|---------|---------|----|------|-------|-----|-----|
| VPWS | 15 | 7.2 | 15 | 31 | 17.5 | 70 80 | 5.5 | 3.2 |

Dimensions

Manifold block





[1] Socket head screw M4X8

| Туре | B1 | D1 | D2 | D3 Ø | H1 | H2 | H3 | H4 | H5 | L1 | L2 | T1 | T2 |
|-----------------|----|------|------|---------|----|----|----|----|------|----|----|----|----|
| VABS-P4-10S-G14 | 21 | G1/4 | G1/4 | 3.4 | 40 | 35 | 10 | 29 | 17.5 | 44 | 34 | 13 | 13 |

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Download CAD data → <u>www.festo.com</u>

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Data sheet

Dimensions Mounting I Socket head screw M4X8

| Туре | B1 | D1 | H1 | L1 |
|--------------------|----|-----|----|------|
| VAME-P4-PC15-P-P10 | 17 | 4.5 | 1 | 15.2 |

| Ordering data | | | | | |
|------------------------|---|--|----------|-----------------------|------------------|
| | | | Part no. | Туре | PE ¹⁾ |
| Proportional direction | nal control valve | | | | |
| M | 2/2 proportional directional control valve, | Nominal width 1.5 mm | 8074075 | VPWS-1.5-B-6-PC15-8-V | 1 |
| | closed | Nominal width 2.2 mm | 8074074 | VPWS-2.2-B-6-PC15-3-V | 1 |
| D | | | | | |
| Manifold block | | | | | |
| | Suitable for proportional directional control | Suitable for proportional directional control valves with nominal width 1.5 and 2.2 mm | | | 1 |
| (CONTO | Set for 2/2 proportional directional control | valve VPWS, comprising: | | | |
| 0 | Manifold block VABS-P4-10S-G14 | | | | |
| | 1 mounting component from set VAME-P4 | 4-PC15-P-P10 | | | |
| | Socket head screw M4x8 | | | | |
| Mounting | | | | | |
| 1 | For 2/2 proportional directional control valv | ve VPWS in manifold block VABS (set | 8087347 | VAME-P4-PC15-P-P10 | 1 |
| \checkmark | comprises 10 mountings for 10 proportiona | al directional control valves VPWS) | | | |

1) Packaging unit quantity.

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1 Festo Inc.

5300 Explorer Drive Mississauga, ON L4W 5G4 Canada

Festo Customer Interaction Center Tel: 18774633786 Fax: 18773933786 Email: customer.service.ca@festo.com ventas.mexico@festo.com



2 Festo Pneumatic

Av. Ceylán 3, Col. Tequesquináhuac 54020 Tlalnepantla, Estado de México

Multinational Contact Center 01 800 337 8669



3 Festo Corporation 1377 Motor Parkway Suite 310 Islandia, NY 11749



4 **Regional Service Center** 7777 Columbia Road Mason, OH 45040

Festo Customer Interaction Center 1 800 993 3786 1 800 963 3786 customer.service.us@festo.com

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