

Proportional directional control valves VPWS

FESTO



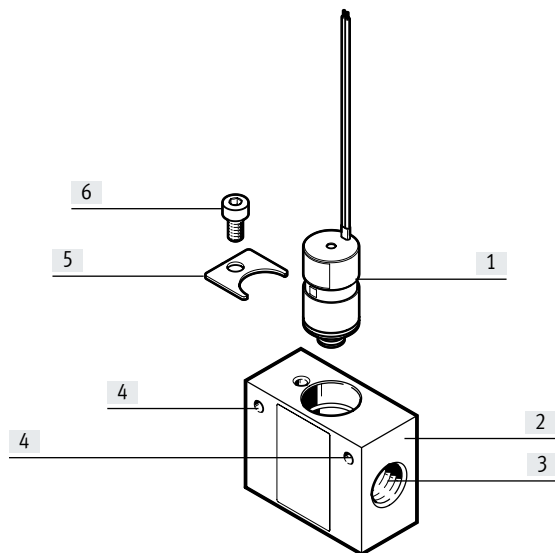
Characteristics

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.

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.

Overview of valve with manifold block



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






Note

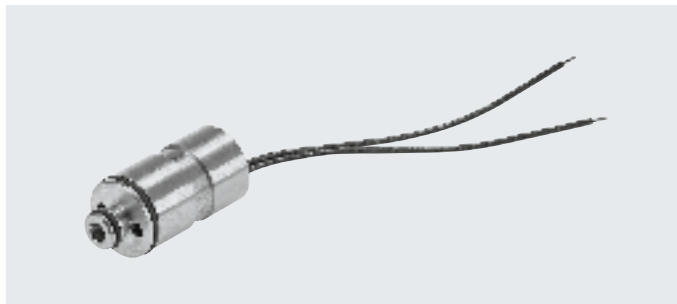
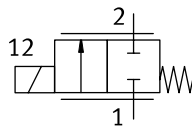
The product has no redundancy and no error detection. Where required, malfunctions must be detected by measures in the customer product.

Type codes

001	Series		005	Pneumatic connection	
VPWS	Proportional directional control valve		PC15	Cartridge 15 mm	
002	Nominal width [mm]		006	Pressure range [bar]	
1.5	1.5		3	0 ... 3	
2.2	2.2		8	0 - 8	
003	Directional control valve type		007	Sealant	
B	Sub-base valve		V	FPM	
004	Valve function				
6	2/2-way valve, normally closed				

Data sheet

-  - Flow rate
46 ... 98 l/min
-  - Diameter of cartridge
15 mm
-  - 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).

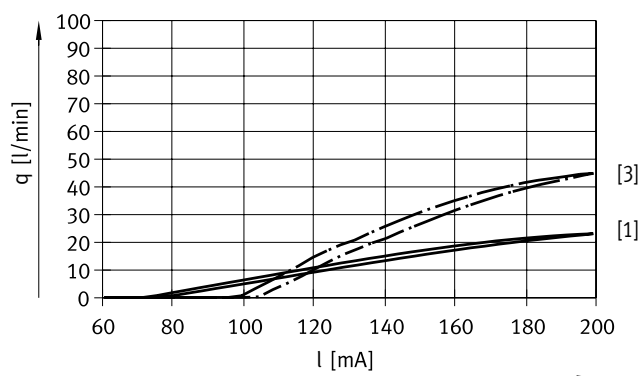
Data sheet

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

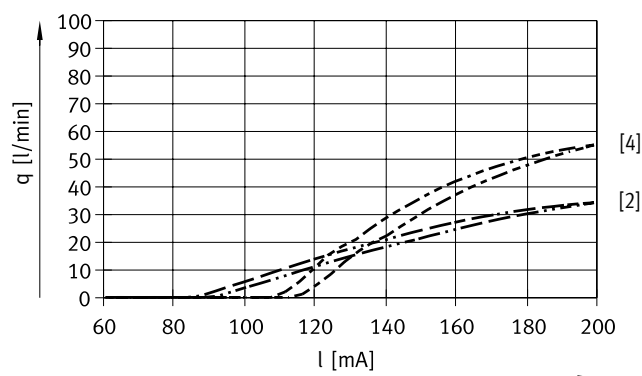
Flow rate/current characteristic curves

Nominal width 1.5



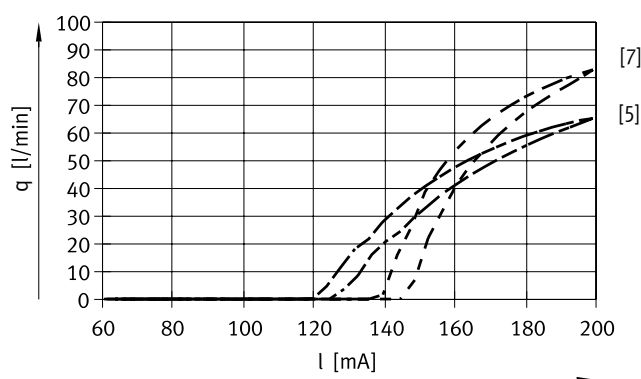
[1] Characteristic curve for 1 bar

[3] Characteristic curve for 3 bar



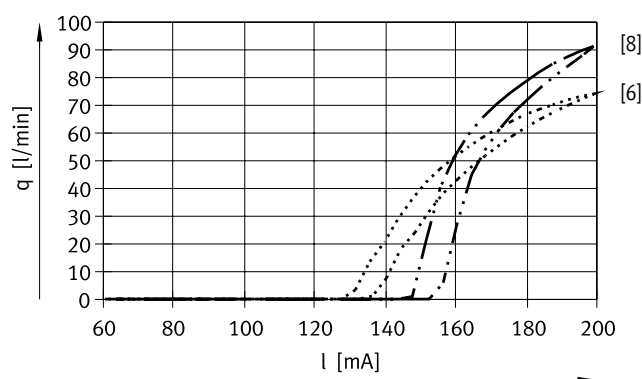
[2] Characteristic curve for 2 bar

[4] Characteristic curve for 4 bar



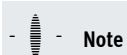
[5] Characteristic curve for 5 bar

[7] Characteristic curve for 7 bar



[6] Characteristic curve for 6 bar

[8] Characteristic curve for 8 bar



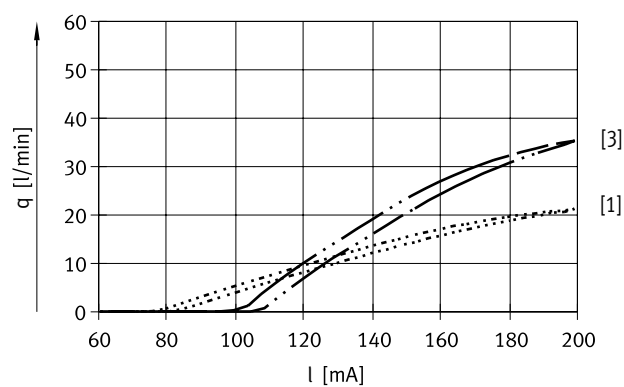
Note

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.

Data sheet

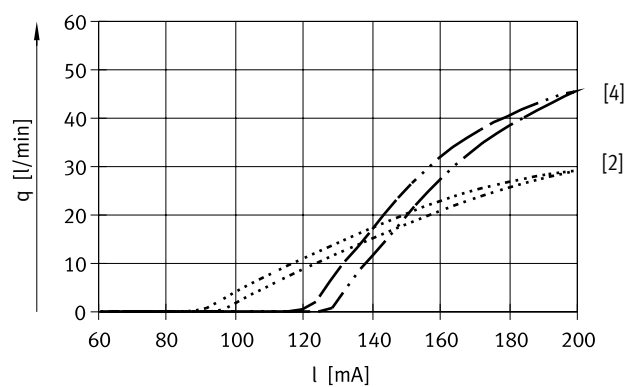
Flow rate/current characteristic curves

Nominal width 2.2



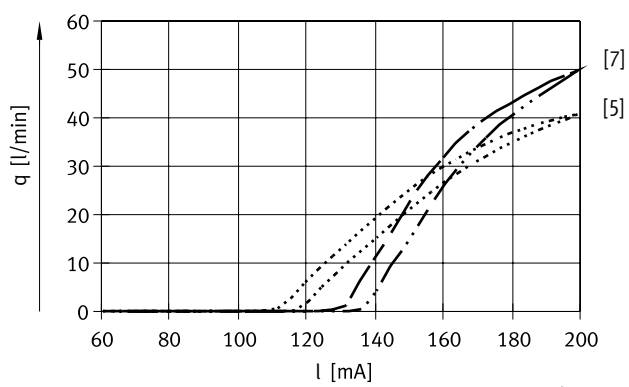
[1] Characteristic curve for 0.5 bar

[3] Characteristic curve for 1.5 bar



[2] Characteristic curve for 1.0 bar

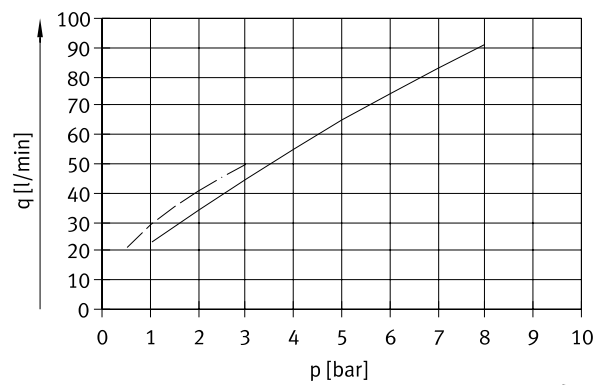
[4] Characteristic curve for 2.5 bar



[5] Characteristic curve for 2.0 bar

[7] Characteristic curve for 3.0 bar

Flow rate/pressure characteristic curve at 200 mA



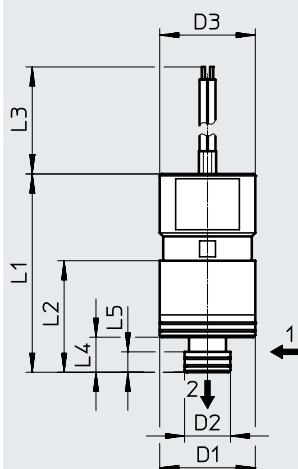
— VPWS-DN 1.5
 - - - VPWS-DN 2.2

Data sheet

Dimensions

Download CAD data → www.festo.com

Proportional directional control valve



[1] Pneumatic connection 1

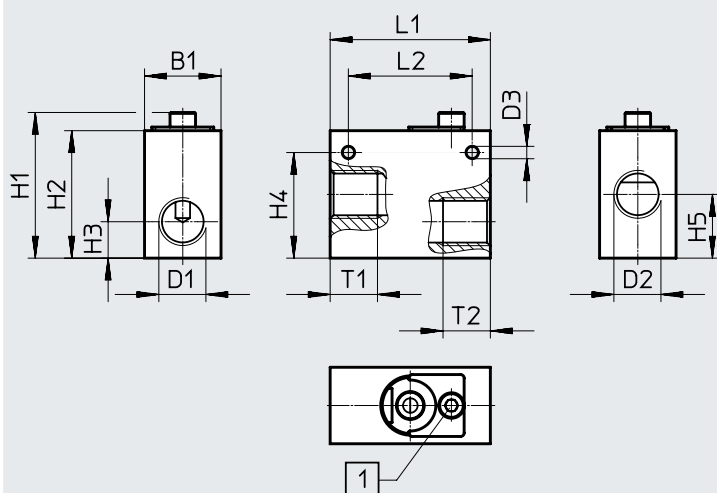
[2] Pneumatic connection 2

Type	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

Download CAD data → www.festo.com

Manifold block



[1] Socket head screw M4X8

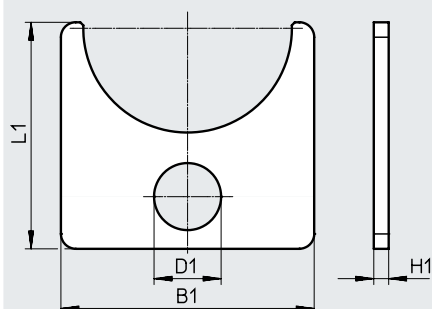
Type	B1	D1	D2	D3 ø	H1	H2	H3	H4	H5	L1	L2	T1	T2
VABS-P4-10S-G14	21	G1/4	G1/4	3.4	40	35	10	29	17.5	44	34	13	13

Data sheet

Dimensions

Download CAD data → www.festo.com

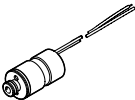
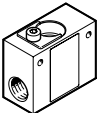

Mounting



[1] Socket head screw M4x8

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

Ordering data

Ordering data			Part no.	Type	PE ¹⁾
Proportional directional control valve					
	2/2 proportional directional control valve, closed	Nominal width 1.5 mm	8074075	VPWS-1.5-B-6-PC15-8-V	1
		Nominal width 2.2 mm	8074074	VPWS-2.2-B-6-PC15-3-V	1
Manifold block					
	Suitable for proportional directional control valves with nominal width 1.5 and 2.2 mm Set for 2/2 proportional directional control valve VPWS, comprising: <ul style="list-style-type: none">• Manifold block VABS-P4-10S-G14• 1 mounting component from set VAME-P4-PC15-P-P10• Socket head screw M4x8		8087327	VABS-P4-10S-G14	1
Mounting					
	For 2/2 proportional directional control valve VPWS in manifold block VABS (set comprises 10 mountings for 10 proportional directional control valves VPWS)		8087347	VAME-P4-PC15-P-P10	1

1) Packaging unit quantity.