

Proportional pressure regulators VEAA



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Key features



Innovative

- Silent operation
- Very low power consumption
- High precision
- Integrated piezo technology

Versatile

- In-line valves
- Sub-base valves
- Simple electrical and pneumatic interfaces
- Choice of different setpoint specifications
 - Current input
 - Voltage input

Reliable

- Integrated pressure sensor with separate output
- Diagnostics:
 - Operating voltage: over- and undervoltage
 - Setpoint value: falling below and exceeding
- Consistent pressure regulation performance with long-term stability

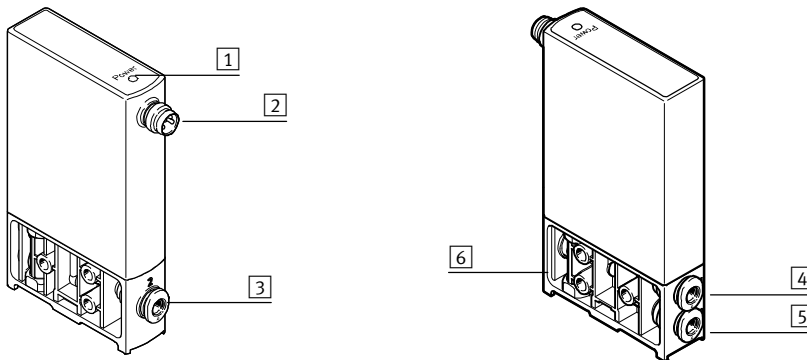
Easy to install

- Mounting the in-line valve via three lateral through-holes
- H-rail mounting
- Attaching the in-line valve to the mounting plate
- Mounting the sub-base valve using the sub-base

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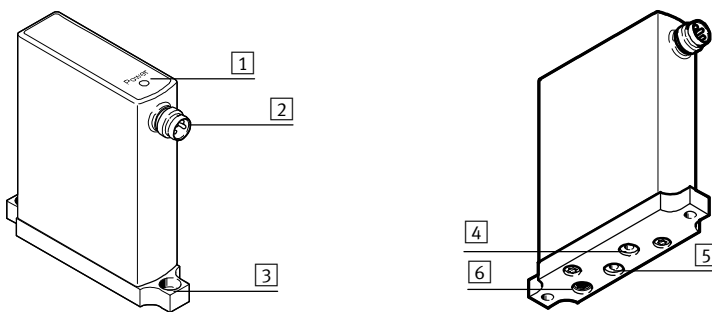
Key features

In-line valve



- 1 Power LED (green), fault LED (red)
- 2 Electrical connection, plug M8
- 3 Port 2, working air
- 4 Port 1, compressed air
- 5 Port 3, exhaust air
- 6 Through-holes for mounting the valve

Sub-base valve



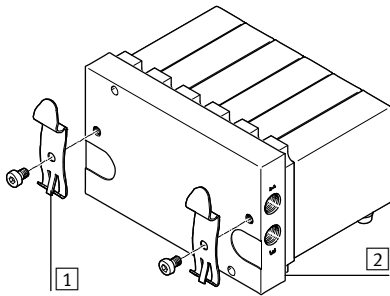
- 1 Power LED (green), fault LED (red)
- 2 Electrical connection, plug M8
- 3 Through-holes for mounting the valve on the sub-base
- 4 Port 2, working air
- 5 Port 3, exhaust air
- 6 Port 1, compressed air

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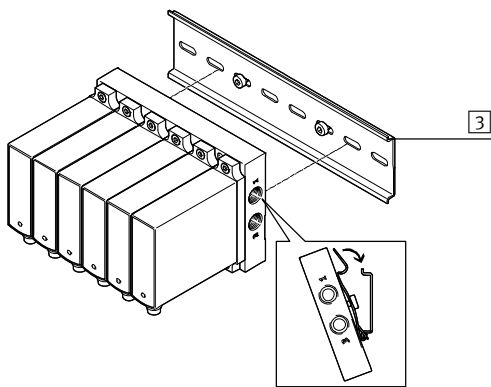
Key features

Mounting the valve manifold

H-rail mounting

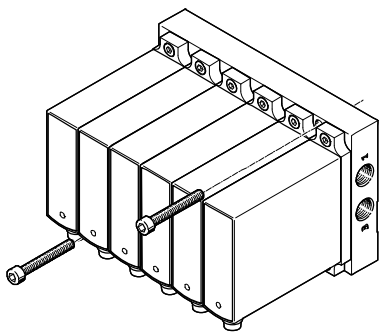


The H-rail mounting **1** can be used to mount the manifold rail **2** on H-rails in accordance with EN 60715.



To do this, the manifold rail with the H-rail mounting attached is mounted on the H-rail **3** and latched in place.

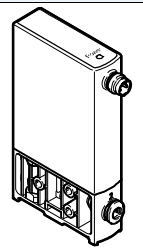
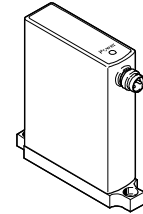
Wall mounting



Through-holes for wall mounting are located on the manifold rail.

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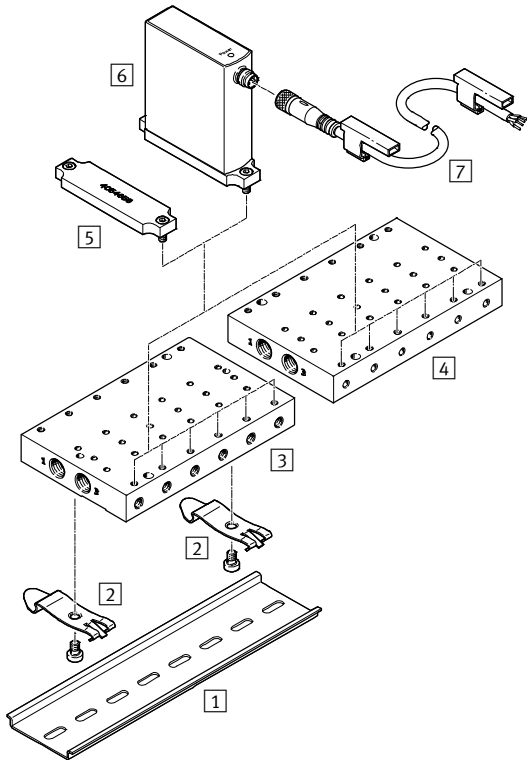
Product range overview

Version	Valve function	Pneumatic connection 1, 2, 3	Pressure regulation range [bar]	Setpoint value input		
				Voltage type	Current type	
				0 ... 10 V	4 ... 20 mA	
Pressure regulator	In-line valve					
		3/3-way valve, normally closed	QS 4	0.01 ... 2 0.03 ... 6 0.05 ... 10	■	■
	Sub-base valve					
		3/3-way valve, normally closed	Flange	0.01 ... 2 0.03 ... 6 0.05 ... 10	■	■

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Peripherals overview

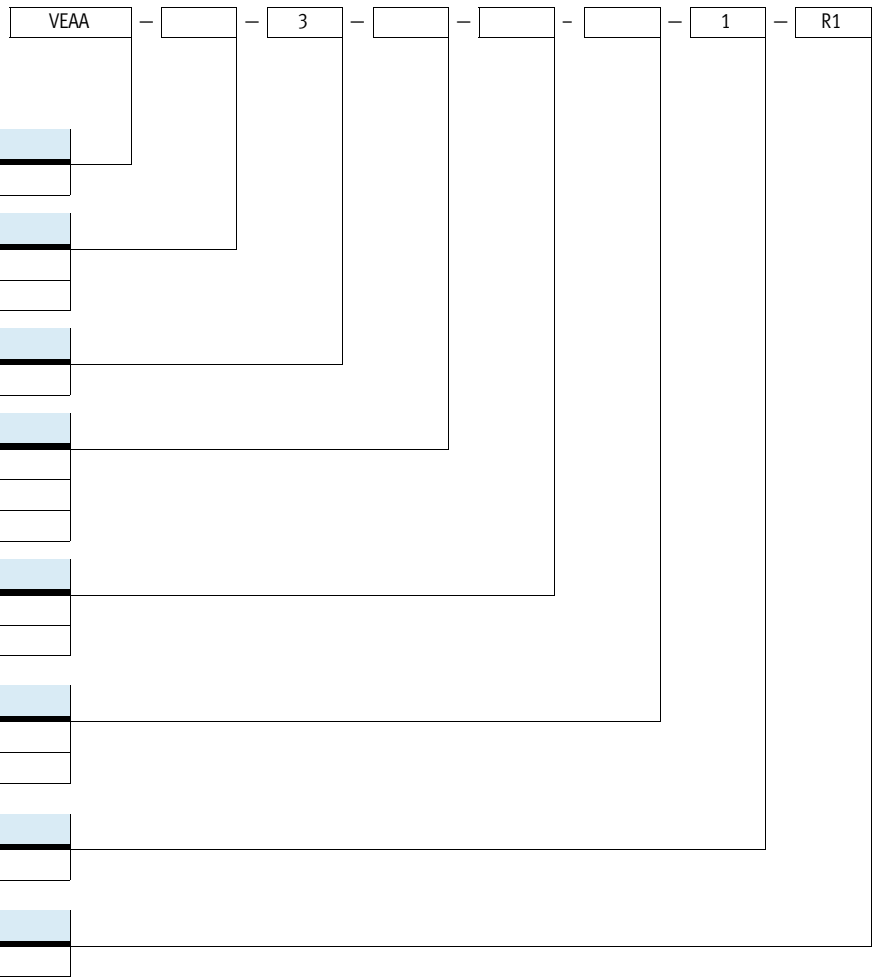
Manifold assembly VEAA



Accessories			
	Description	→ Page/Internet	
1	H-rail NRH-35-2000	For control cabinet installation	18
2	H-rail mounting VAME	For assembly of the H-rail	18
3	Manifold rail VABM-P6-15M	Connection direction at side, for control cabinet installation	17
4	Manifold rail VABM-P6-15MB	Connection direction underneath, for wall mounting and control cabinet installation	17
5	Cover plate VABB	–	17
6	Proportional pressure regulator VEAA	–	17
7	Connecting cable NEBU	–	18


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Type codes



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Technical data

 Flow rate
7 ... 13 l/min


 Pressure regulation range
0.01 ... 2 bar
0.03 ... 6 bar
0.05 ... 10 bar

 Voltage
24 V DC



General technical data		
Type code	VEAA-L	VEAA-B
Valve type	In-line valve	Sub-base valve
Valve function	3-way proportional pressure regulator	
Dimensions W x L x H	[mm]	15 x 54.5 x 85
Standard nominal flow rate	→ Page 10	
Pneumatic connection 1, 2, 3	QS-4	Flange
Sealing principle	Soft	
Actuation type	Electrical with piezo element	
Display type	LED	
Type of control	Directly controlled	
Type of reset	Mechanical spring	
Type of mounting	Via through-hole, via accessories	
Mounting position	Any	
Product weight	[g]	55

Electrical data		
Electrical connection	Plug M8x1, 4-pin, to EN 60947-5-2	
Nominal operating voltage	[V DC]	24
Operating voltage range	[V DC]	19 ... 29
Residual ripple	[%]	10
Max. electrical power consumption	[W]	1
Setpoint input signal	Voltage	[V DC] 0 ... 10
	Current	[mA] 4 ... 20
Accuracy of analogue output	[%]	2
Short circuit protection	For all electrical connections	
Reverse polarity protection	For all electrical connections	
Degree of protection	IP65	

 **Note**
Safety position, VEAA:
If the electrical power supply fails, the outlet pressure is maintained unregulated and may rise or fall – valve blocked.

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Technical data

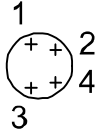
Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases
Note on operating/pilot medium	Lubricated operation not possible
Inlet pressure at port 1 ¹⁾	[bar] 0 ... 11
FS (full scale) hysteresis	[%] 0.25
FS (full scale) linearity error	[%] ± 0.5
FS (full scale) repetition accuracy	[%] ± 0.4
FS (full scale) absolute accuracy	[%] Max. 0.7
Temperature coefficient	[%/K] 0.05
Ambient temperature	[°C] 0 ... 50
Temperature of medium	[°C] 5 ... 50
Storage temperature	[°C] -20 ... 70
Corrosion resistance class CRC ²⁾	2
CE marking (see declaration of conformity)	To EU EMC Directive
Certification	RCM compliance mark

1) Inlet pressure 1 should always be 1 bar higher than the maximum regulated outlet pressure.

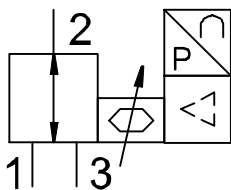
2) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Materials	
Seals	NBR
Housing	PA-reinforced
Note on materials	RoHS-compliant

Pin allocation, electrical connection		
	Pin	Function
	1	+24 V DC supply voltage
	2	+ Setpoint value
	3	GND
	4	+ Actual value

Function



An integrated pressure sensor records the pressure at the working port and compares this value with the setpoint value.

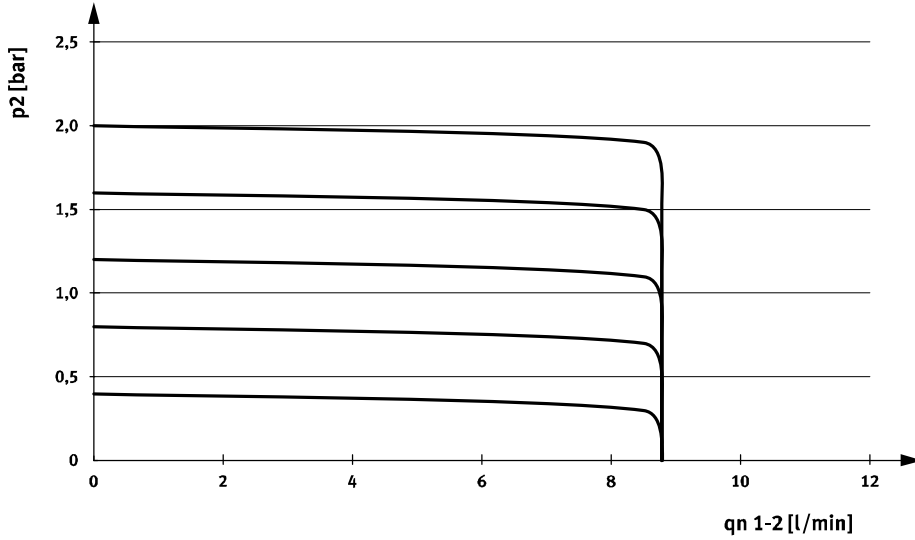
The pressure is automatically readjusted in the event of deviations.

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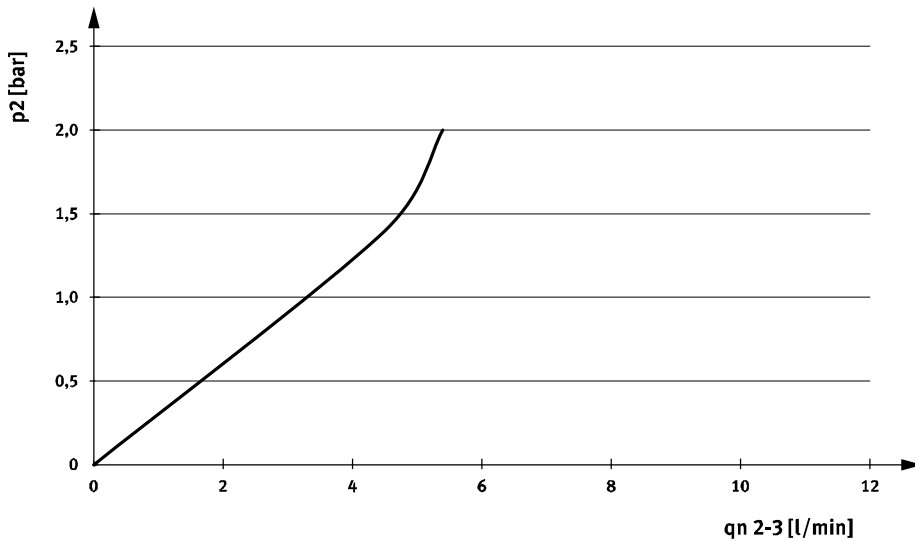
Technical data

VEAA-...-D2-..., pressure regulation range 0.01 ... 2

Flow rate q_n from 1 → 2 as a function of outlet pressure p_2



Flow rate q_n from 2 → 3 as a function of outlet pressure p_2

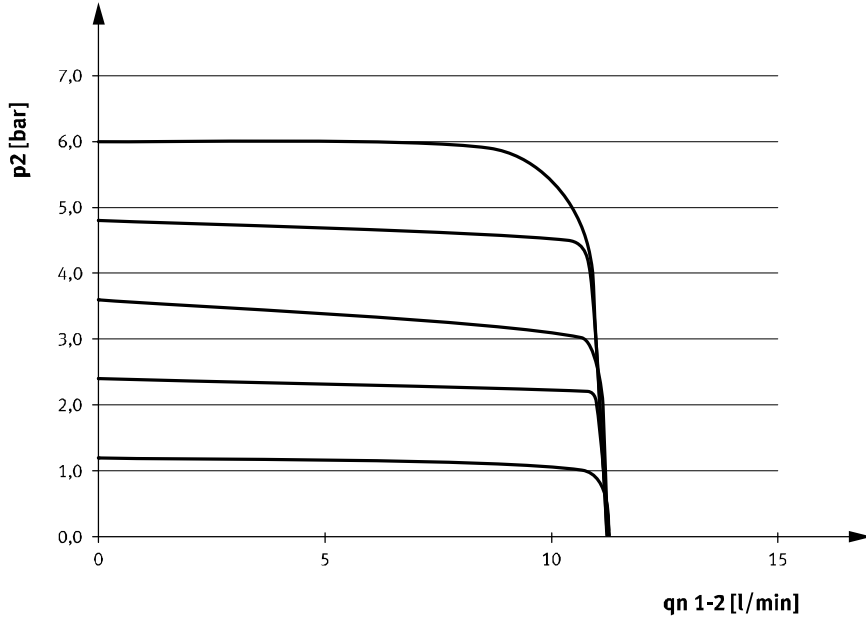


Proportional pressure regulators VEAA

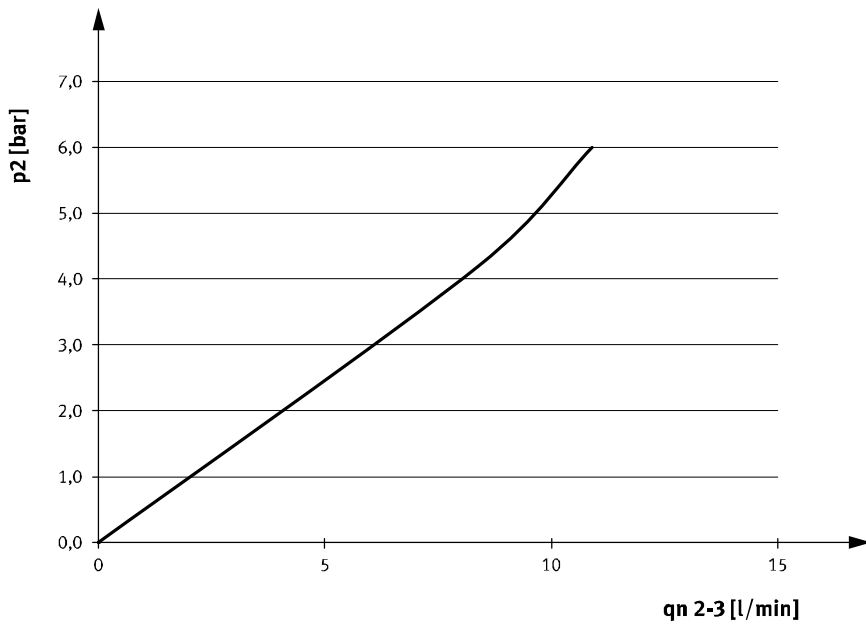
Technical data

VEAA-...-D9-..., pressure regulation range 0.03 ... 6

Flow rate q_n from 1 → 2 as a function of outlet pressure p_2



Flow rate q_n from 2 → 3 as a function of outlet pressure p_2

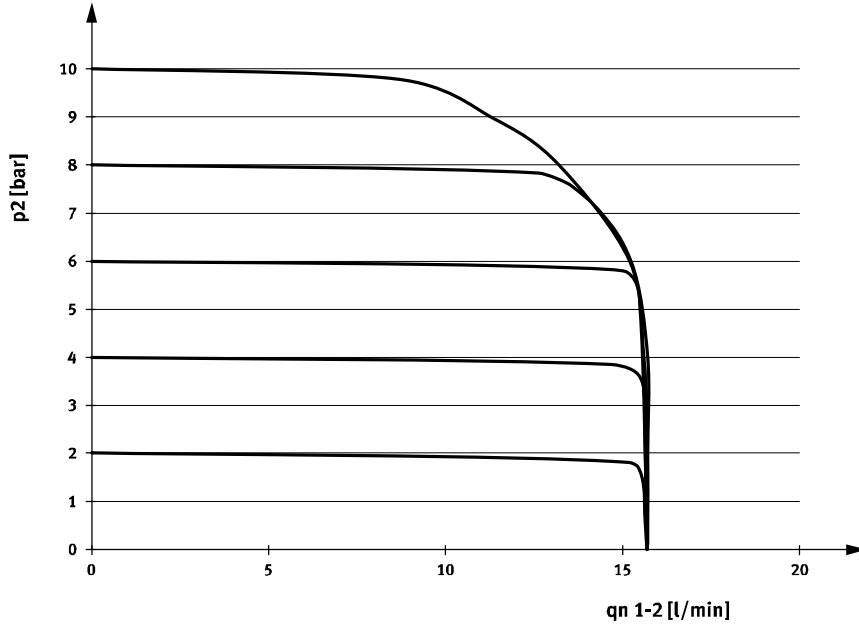


Proportional pressure regulators VEAA

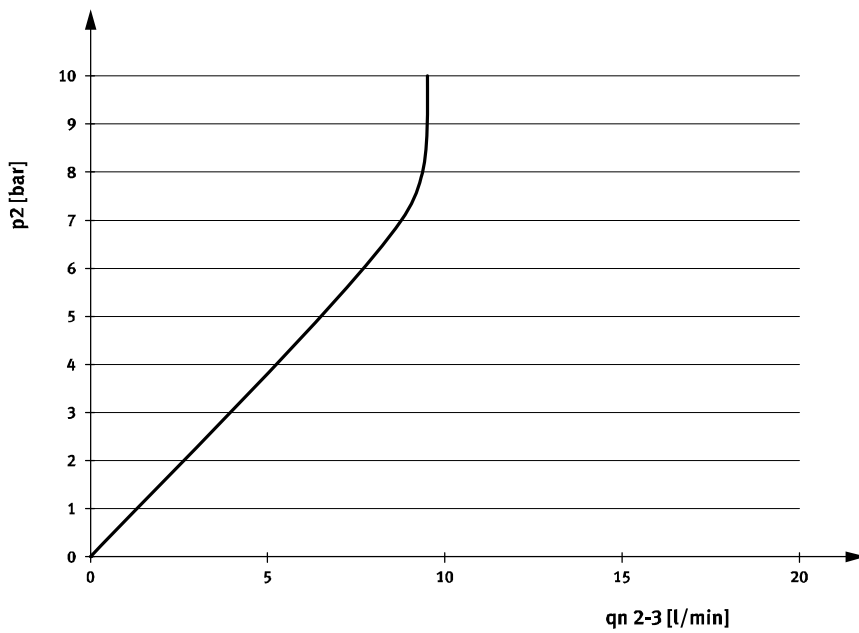
Technical data

VEAA-...-D11-..., pressure regulation range 0.05 ... 10

Flow rate q_n from 1 → 2 as a function of outlet pressure p_2



Flow rate q_n from 2 → 3 as a function of outlet pressure p_2



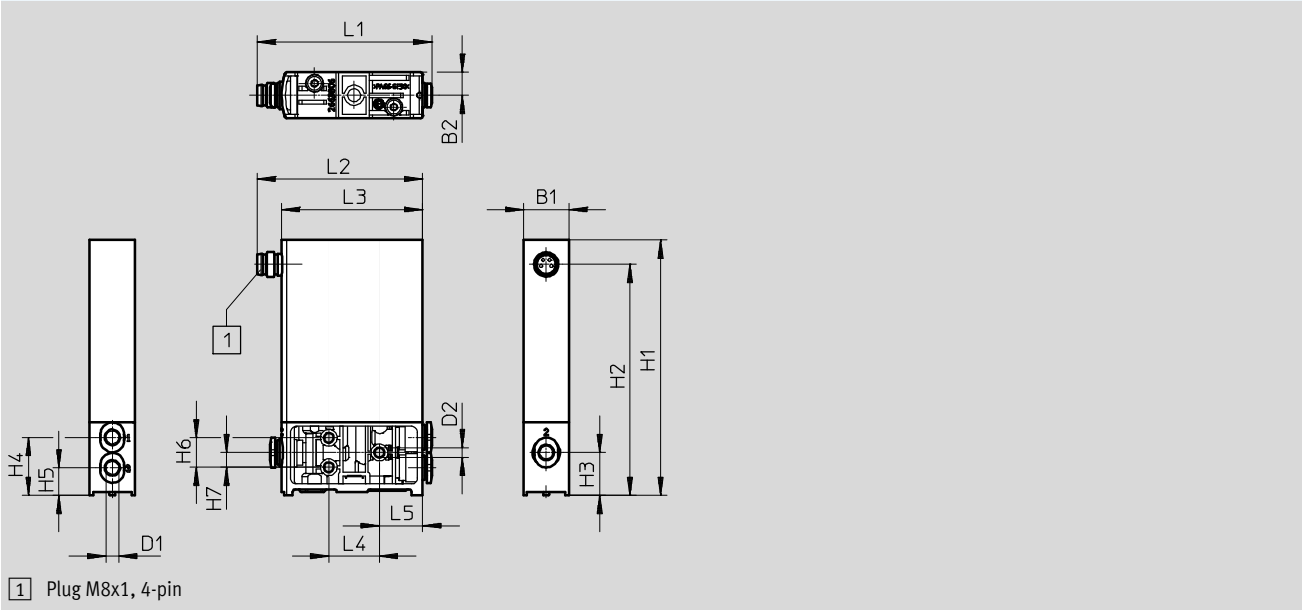
Proportional pressure regulators VEAA

Technical data

Dimensions

Download CAD data → www.festo.com

In-line valve



Type code	B1	B2	D1 Ø	D2 Ø	H1	H2	H3	H4	H5	H6	H7
VEAA-L	15	9	4	3.2	85	76	14	19	9.5	9.6	4.8

Type code	L1	L2	L3	L4	L5
VEAA-L	58	54.5	46.5	16.6	14.2

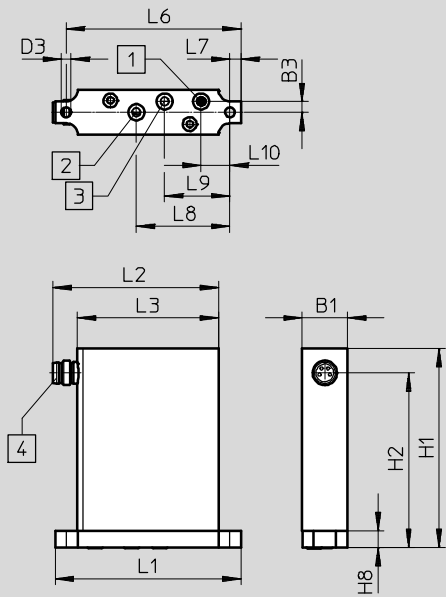
Proportional pressure regulators VEAA

Technical data

Dimensions

Download CAD data → www.festo.com

Sub-base valve



- 1 Port 1, compressed air
- 2 Port 2, working air
- 3 Port 3, exhaust air
- 4 Plug M8x1, 4-pin

Type code	B1	B3	D3 ∅	H1	H2	H8
VEAA-B	15	3.6	3.2	66	58	6

Type code	L1	L2	L3	L6	L7	L8	L9	L10
VEAA-B	61	54.5	46.5	57.3	3.6	30.7	21.4	9.5

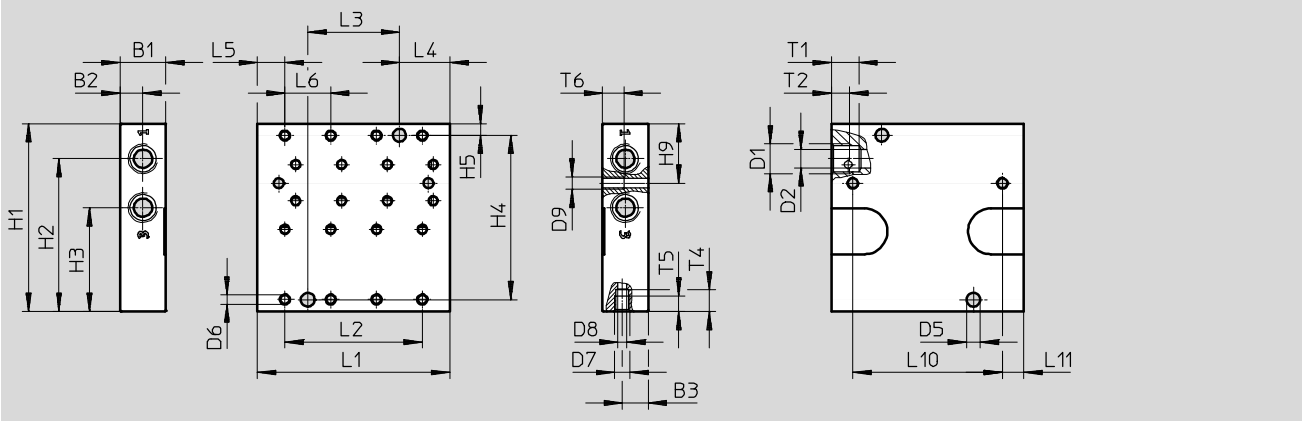
Proportional pressure regulators VEAA

Technical data

Dimensions

Download CAD data → www.festo.com

Connection direction at side



Type code	B1	B2	B3	D1	D2	D5	D6	D7	D8	D9	H1	H2	H3	H4	H5	H9
VABM-P6-15M-G18-M5-4	15	7.5	8.5	G1/8	6	4.5	M3	M5	2.9	M4	61.5	50	34	53.9	3.8	19.5
VABM-P6-15M-G18-M5-6																
VABM-P6-15M-G18-M5-8																

Type code	L1	L2	L3	L4	L5	L6	L10	L11	T1	T2	T4	T5	T6
VABM-P6-15M-G18-M5-4	63	45	30	16.5	9	15	49	7	9	6	7	5	7
VABM-P6-15M-G18-M5-6							79						
VABM-P6-15M-G18-M5-8							130						

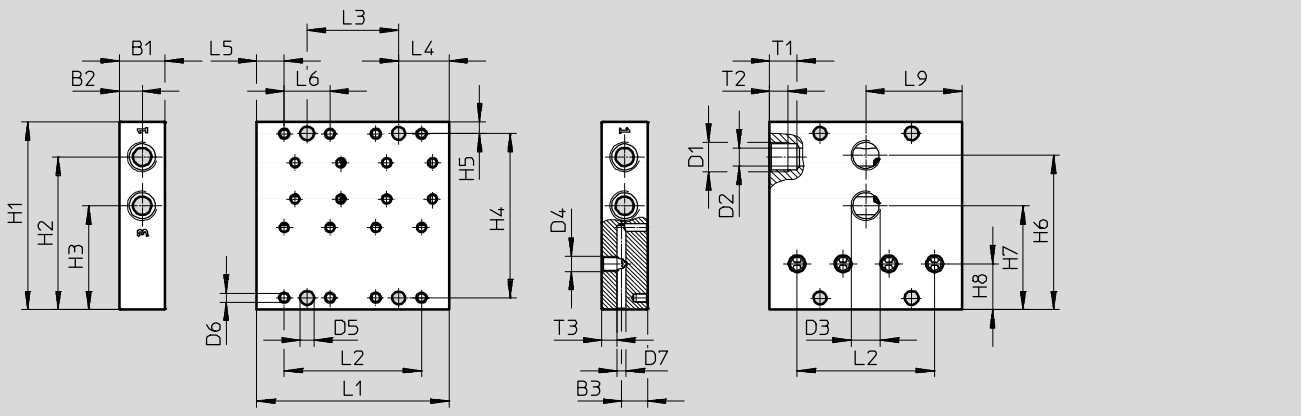
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Technical data

Dimensions

Download CAD data → www.festo.com

Connection direction underneath

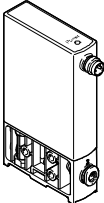
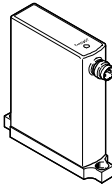
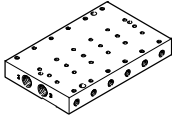
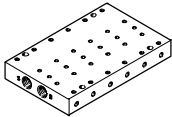



Type code	B1	B2	B3	D1	D2 Ø	D3	D4	D5 Ø	D6	D7 Ø	H1	H2	H3	H4	H5	H6
VABM-P6-15MB-G18-M5-4	15	7.5	8.5	G1/8	6	G1/8	M5	4.5	M3	2.9	61.5	50	34	53.9	3.8	50.5
VABM-P6-15MB-G18-M5-6																
VABM-P6-15MB-G18-M5-8																

Type code	H7	H8	L1	L2	L3	L4	L5	L6	L9	T1	T2	T3
VABM-P6-15MB-G18-M5-4	34	15	63	45	30	16.5	9	15	31.5	9	6	5
VABM-P6-15MB-G18-M5-6			93	75	60							
VABM-P6-15MB-G18-M5-8			123	105	90							

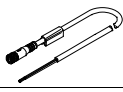
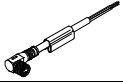

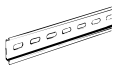
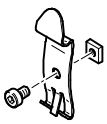
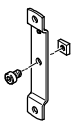
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Accessories

Ordering data		Pressure regulation range [bar]	Part No.	Type code
In-line valve				
	Voltage type, 0 ... 10 V	0.05 ... 10	8046905	VEAA-L-3-D11-Q4-V1-1R1
		0.01 ... 2	8046901	VEAA-L-3-D2-Q4-V1-1R1
		0.03 ... 6	8046903	VEAA-L-3-D9-Q4-V1-1R1
	Current type, 4 ... 20 mA	0.05 ... 10	8046906	VEAA-L-3-D11-Q4-A4-1R1
		0.01 ... 2	8046902	VEAA-L-3-D2-Q4-A4-1R1
		0.03 ... 6	8046904	VEAA-L-3-D9-Q4-A4-1R1
Sub-base valve				
	Voltage type, 0 ... 10 V	0.05 ... 10	8046896	VEAA-B-3-D11-F-V1-1R1
		0.01 ... 2	8046892	VEAA-B-3-D2-F-V1-1R1
		0.03 ... 6	8046894	VEAA-B-3-D9-F-V1-1R1
	Current type, 4 ... 20 mA	0.05 ... 10	8046897	VEAA-B-3-D11-F-A4-1R1
		0.01 ... 2	8046893	VEAA-B-3-D2-F-A4-1R1
		0.03 ... 6	8046895	VEAA-B-3-D9-F-A4-1R1
Manifold rail				
	Connection direction at side	4 valve positions	8083543	VABM-P6-15M-G18-M5-4
		6 valve positions	8083545	VABM-P6-15M-G18-M5-6
		8 valve positions	8083547	VABM-P6-15M-G18-M5-8
	Connection direction underneath	4 valve positions	8083544	VABM-P6-15MB-G18-M5-4
		6 valve positions	8083546	VABM-P6-15MB-G18-M5-6
		8 valve positions	8083548	VABM-P6-15MB-G18-M5-8
Cover plate				
	Including screws (2) and O-rings (3, preassembled)		4054657	VABB-P6-M

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Accessories

Ordering data			
	Description	Part No.	Type code
Connecting cable Technical data → Internet: nebu			
	Straight socket, M8x1, 4-pin Open end, 4-wire	2.5 m	541342 NEBU-M8G4-K-2.5-LE4
		5 m	541343 NEBU-M8G4-K-5-LE4
	Angled socket, M8x1, 4-pin Open end, 4-wire	2.5 m	541344 NEBU-M8W4-K-2.5-LE4
		5 m	541345 NEBU-M8W4-K-5-LE4
	Straight socket, M8x1, 4-pin Straight plug, M8x1, 4-pin	2.5 m	554035 NEBU-M8G4-K-2.5-M8G4
H-rail			
	To EN 60715, 35 x 7.5 (WxH), for control cabinet installation	35430	NRH-35-2000
H-rail mounting			
	For H-rail NRH-35-2000	4054652	VAME-P7-T
Mounting plate			
	For in-line valve	4054655	VAME-P6-Y