

Proportional pressure regulators VEAB



Proportional pressure regulators VEAB

Key features

FESTO



Innovative

- Silent operation
- Very low power consumption
- High precision
- Short switching times
- 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
- Durable

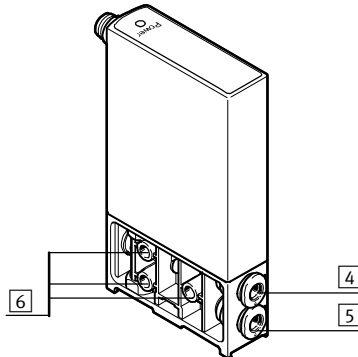
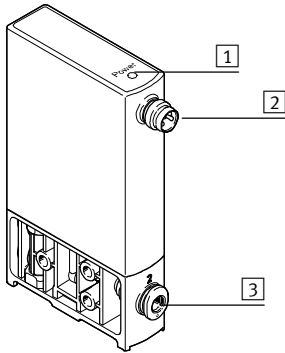
Easy to install

- Mounting the in-line valve via three lateral through-holes
- Secure mounting on wall or H-rail

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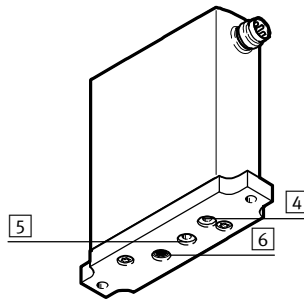
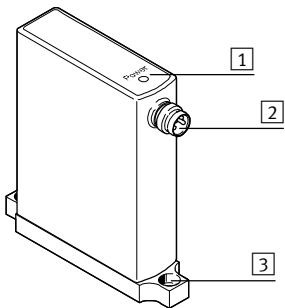
Key features – Display and operation

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



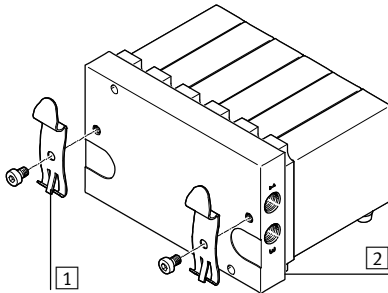
- 1 Power LED (green), fault LED (red)
- 2 Electrical connection, plug M8
- 3 Through-holes for mounting the valve on the sub-base
- 4 Port 2, working air
- 5 Port 3, exhaust air
- 6 Port 1, compressed air

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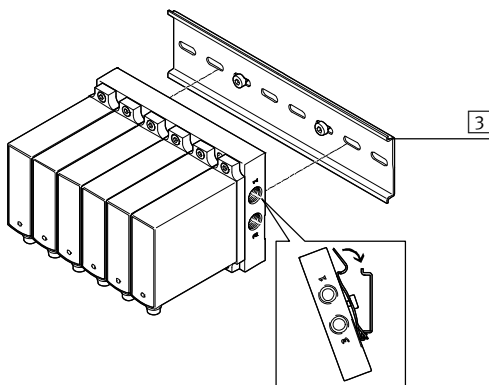
Key features – Assembly

Mounting the valve manifold

H-rail mounting

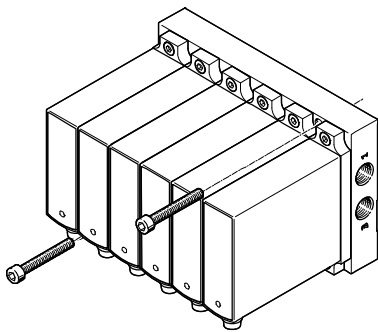


The H-rail mounting **1** can be used to mount the manifold rail **2** on H-rails in accordance with EN 60715.



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

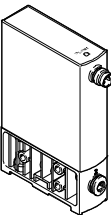
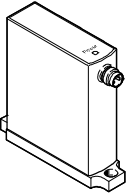
Wall mounting



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

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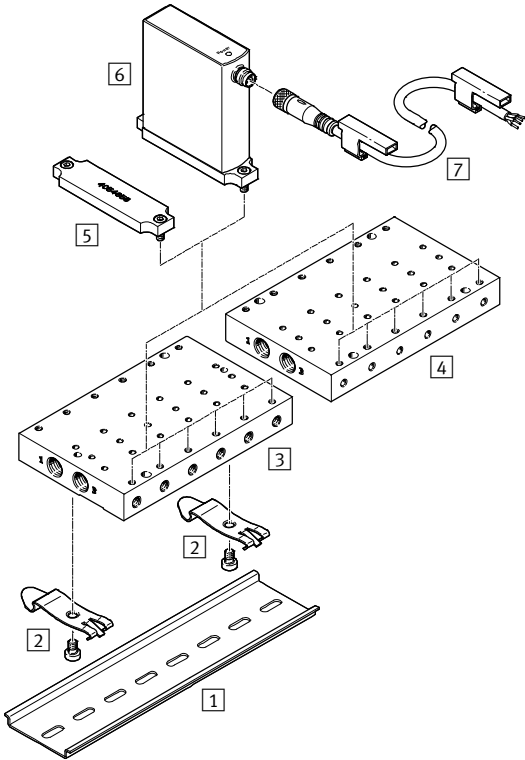
Product range overview

Version	Valve function	Pneumatic connection 1, 2, 3	Pressure regulation range [bar]	Setpoint value input		→ Page/ Internet
				Voltage type	Current type	
				0 ... 10 V	4 ... 20 mA	
Pressure regulator	In-line valve					
	 3-way proportional pressure regulator	QS 4	-1 ... -0.005 0.001 ... 0.2 0.005 ... 1 0.01 ... 2 0.03 ... 6	■	■	8
	Sub-base valve					
	 3-way proportional pressure regulator	Flange	-1 ... -0.005 0.001 ... 0.2 0.005 ... 1 0.01 ... 2 0.03 ... 6	■	■	8

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Peripherals overview

Valve manifold VEAB



Accessories			
	Description	→ Page/Internet	
1	H-rail NRH-35-2000	For control cabinet installation	20
2	H-rail mounting VAME	For assembly of the H-rail	20
3	Manifold rail VABM-P7-G18M	Connection direction at side, for control cabinet installation	19
4	Manifold rail VABM-P7-G18MB	Connection direction underneath, for wall mounting and control cabinet installation	19
5	Cover plate VABB	–	19
6	Proportional pressure regulator VEAB	–	19
7	Connecting cable NEBU	–	20

Proportional pressure regulators VEAB

Type codes

VEAB - [] - 26 - [] - [] - [] - 1 - R1

Type code

VEAB	Proportional pressure regulator
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Valve type

L	In-line valve
B	Sub-base valve

Valve function

26	3-way proportional pressure regulator
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Pressure range

D14	-1 ... -0.005 bar
D12	0.001 ... 0.2 bar
D7	0.005 ... 1 bar
D2	0.01 ... 2 bar
D9	0.03 ... 6 bar

Pneumatic connection

F	Flange/sub-base
Q4	Push-in connector 4 mm

Setpoint input

V1	Voltage type 0 ... 10 V
A4	Current type 4 ... 20 mA

Operating voltage


1	24 V DC
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Electrical connection


R1	Plug, M8x1, 4-pin
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Proportional pressure regulators VEAB

Technical data

 Flow rate
5 ... 20 l/min


 Voltage
24 V DC

 Pressure regulation range
-1 ... -0.005 bar
0.001 ... 0.2 bar
0.005 ... 1 bar
0.01 ... 2 bar
0.03 ... 6 bar



General technical data		
Type code	VEAB-L	VEAB-B
Valve type	In-line valve	Sub-base valve
Valve function	3-way proportional pressure regulator	
Dimensions W x L x H	[mm] 18 x 60.5 x 85	18 x 67 x 66
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	Direct	
Type of reset	Mechanical spring	
Type of mounting	Via through-hole, via accessories	
Mounting position	Any	
Product weight	[g] 70	

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	
Short circuit protection	For all electrical connections	
Reverse polarity protection	For all electrical connections	
Degree of protection	IP65	

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

Proportional pressure regulators VEAB

Technical data

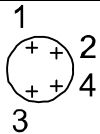
Operating and environmental conditions						
Pressure regulation range	[bar]	-1 ... -0.005	0.001 ... 0.2	0.005 ... 1	0.01 ... 2	0.03 ... 6
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases				
Note on operating/pilot medium		Lubricated operation not possible				
Inlet pressure at port 1 ¹⁾	[bar]	-	0 ... 1	0 ... 3	0 ... 4	0 ... 6.5
Inlet pressure at port 3	[bar]	-1	-	-	-	-
FS (full scale) hysteresis	[%]	0.25	0.5	0.25		
FS (full scale) linearity error	[%]	± 0.5	± 0.8	± 0.5		
FS (full scale) repetition accuracy	[%]	± 0.4				
FS (full scale) absolute accuracy	[%]	Max. 0.5	Max. 0.8	Max. 0.5		
FS (full scale) accuracy of analogue output	[%]	2				
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.

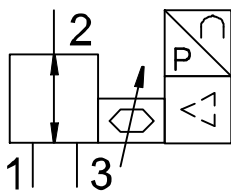
2) Corrosion resistance class CRC 2 to Festo standard FN 940070

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 Contains paint-wetting impairment substances

Pin allocation		
	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.

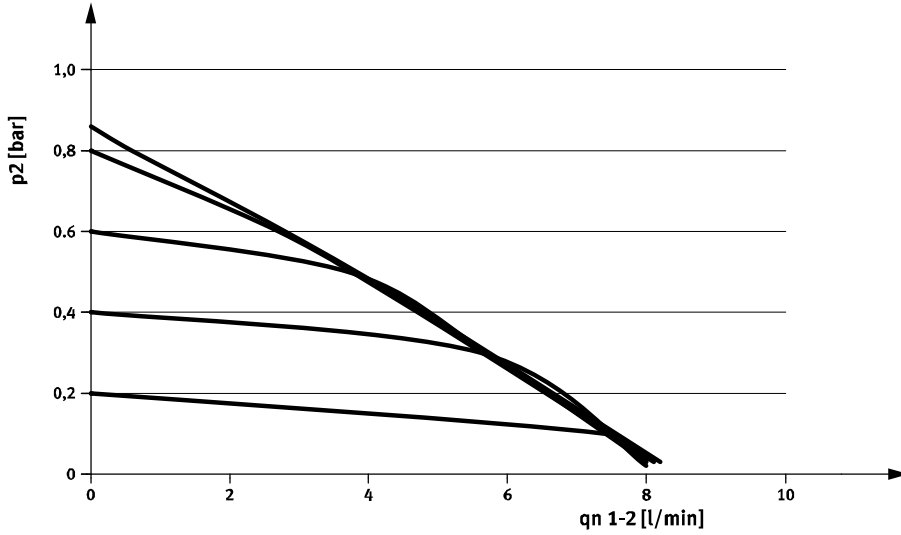
The pressure is automatically readjusted in the event of deviations.

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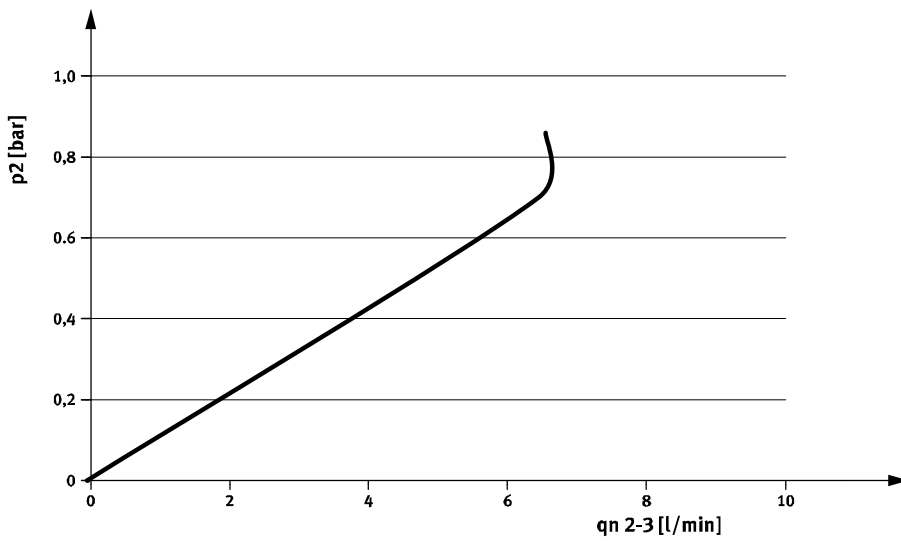
Technical data

VEAB-...-D14-..., pressure regulation range -1 ... -0.005

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

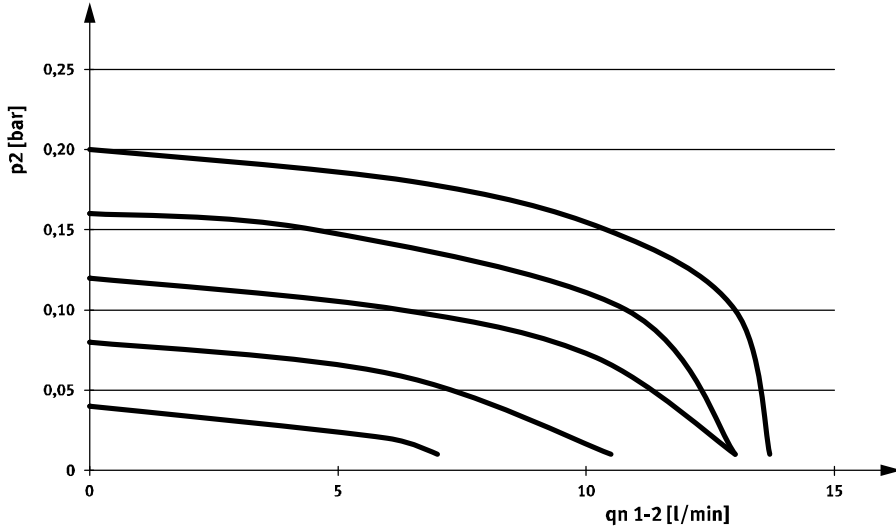


Proportional pressure regulators VEAB

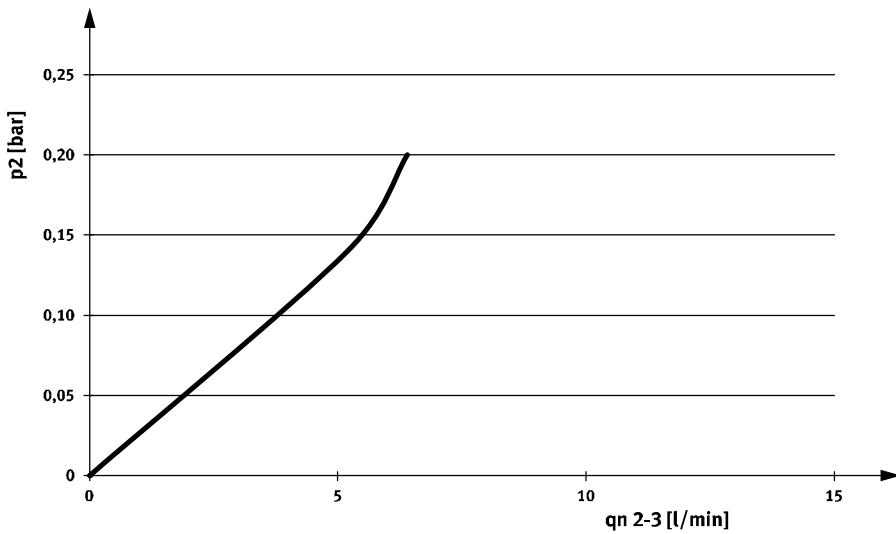
Technical data

VEAB-...-D12-..., pressure regulation range 0.001 ... 0.2

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

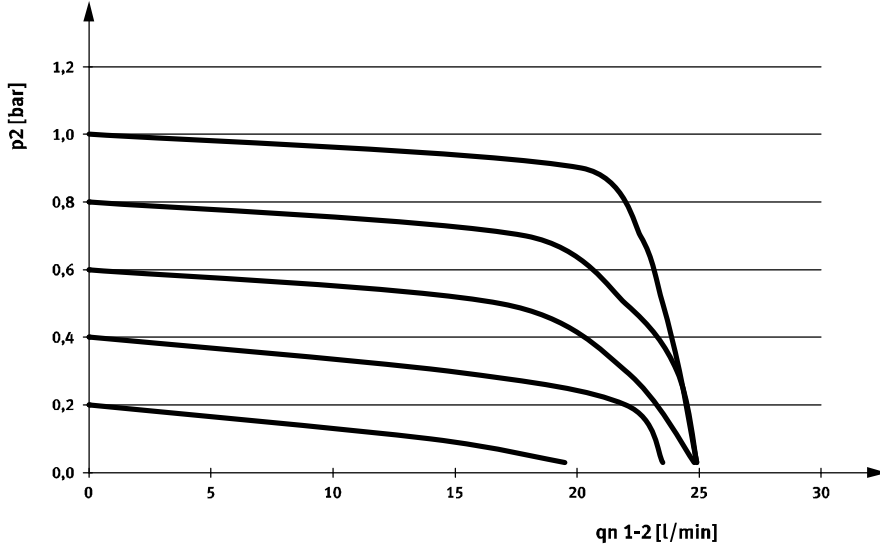


Proportional pressure regulators VEAB

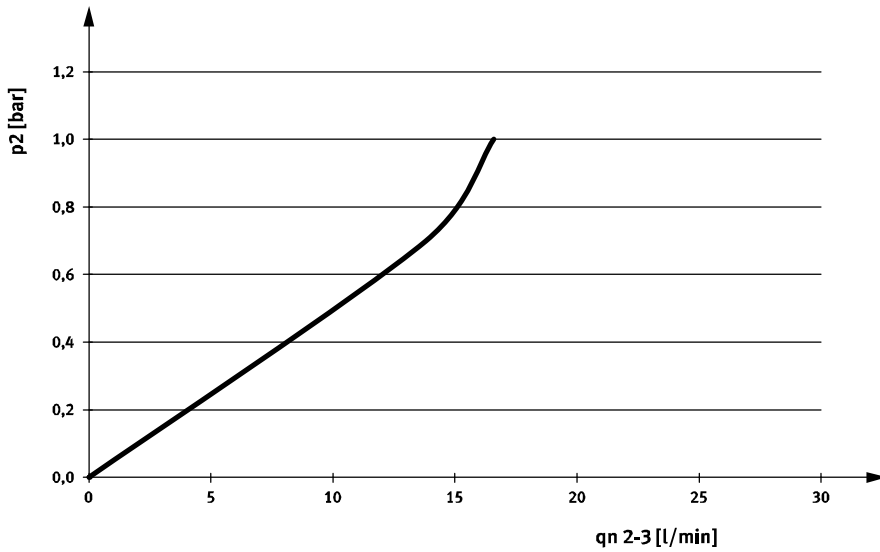
Technical data

VEAB-...-D7-..., pressure regulation range 0.005 ... 1

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

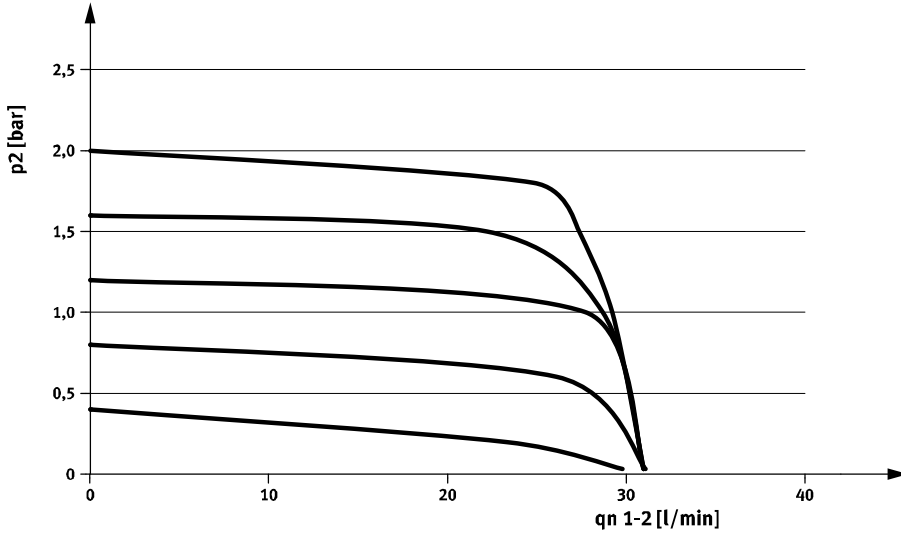


Proportional pressure regulators VEAB

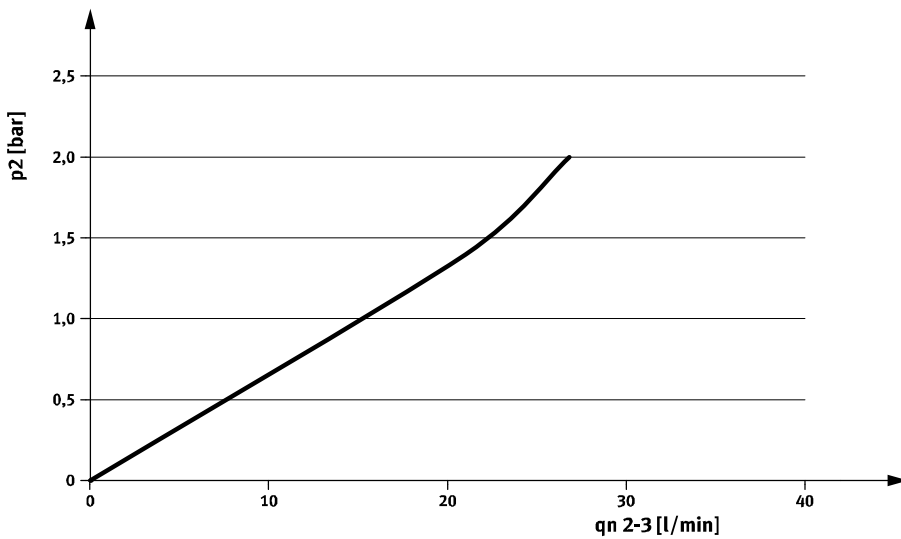
Technical data

VEAB-...-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

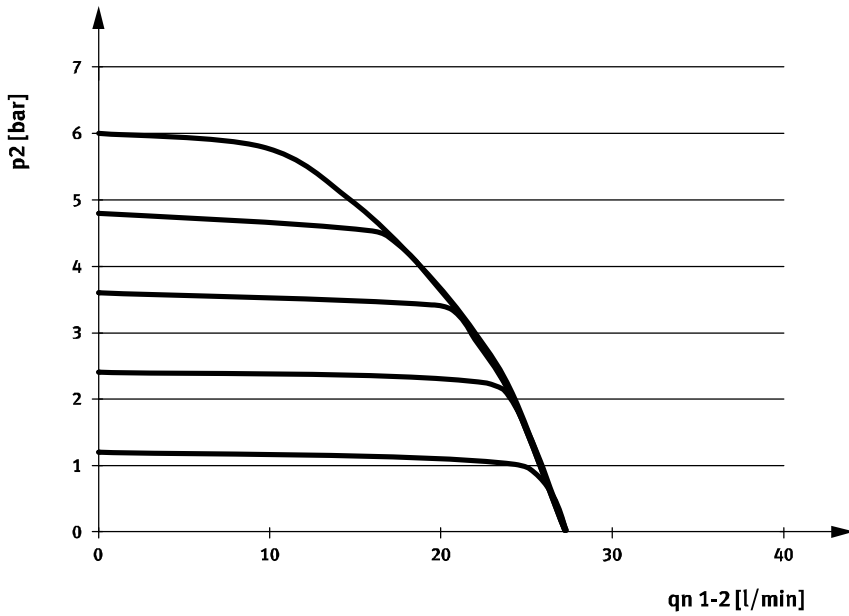


Proportional pressure regulators VEAB

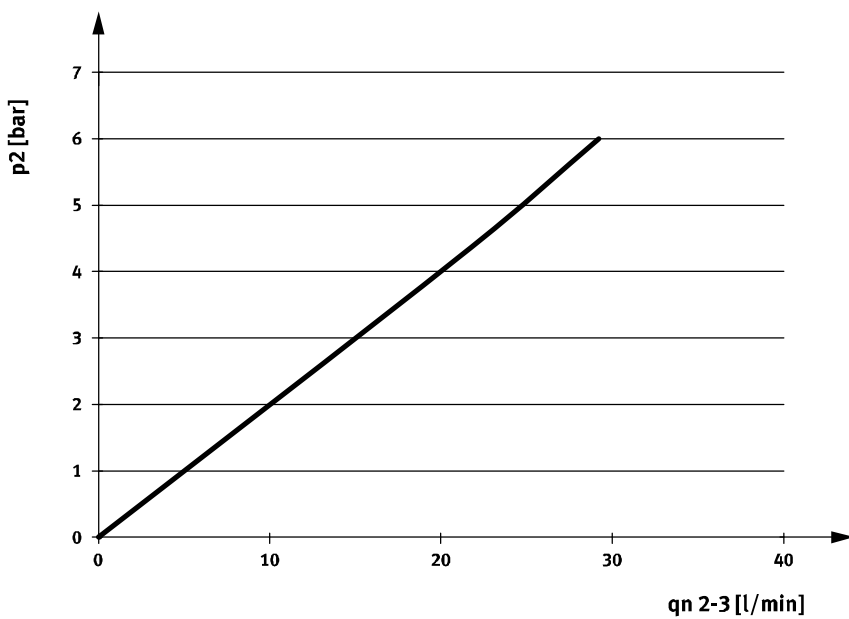
Technical data

VEAB-...-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



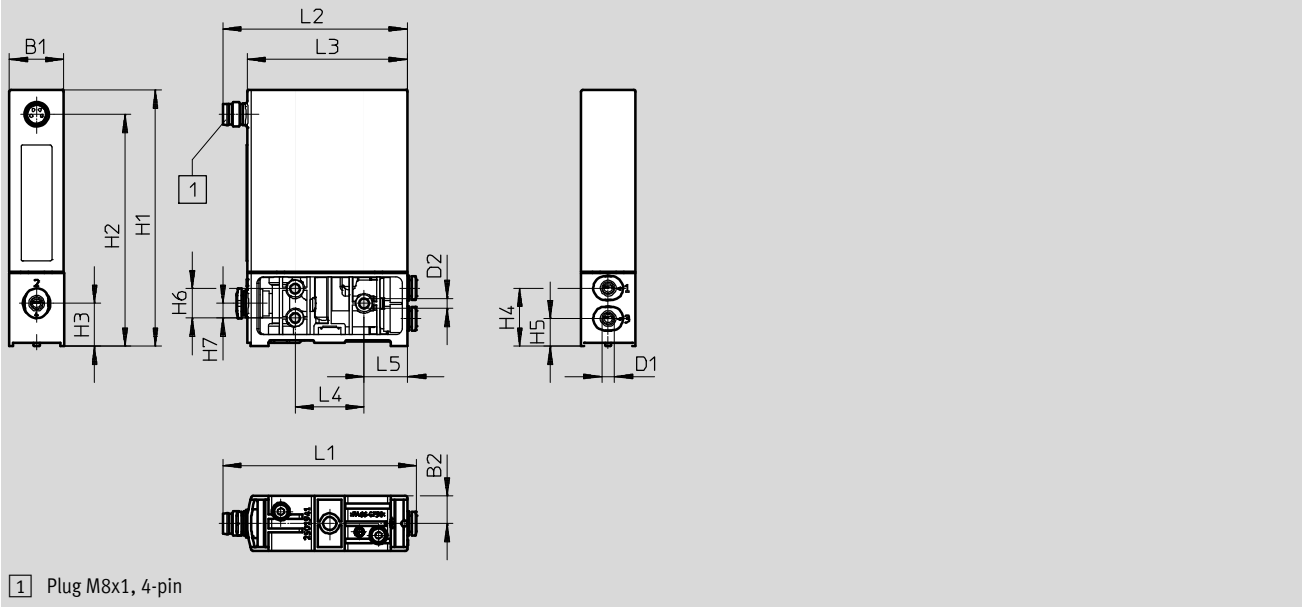
Proportional pressure regulators VEAB

Technical data

Dimensions

Download CAD data → www.festo.com

In-line valve



Type code	B1	B2	D1 ∅	D2 ∅	H1	H2	H3	H4	H5	H6	H7
VEAB-L	18	9	4	3.2	85	76	14	19	9.5	9.6	4.8

Type code	L1	L2	L3	L4	L5
VEAB-L	64	60.5	52.5	22.6	14.2

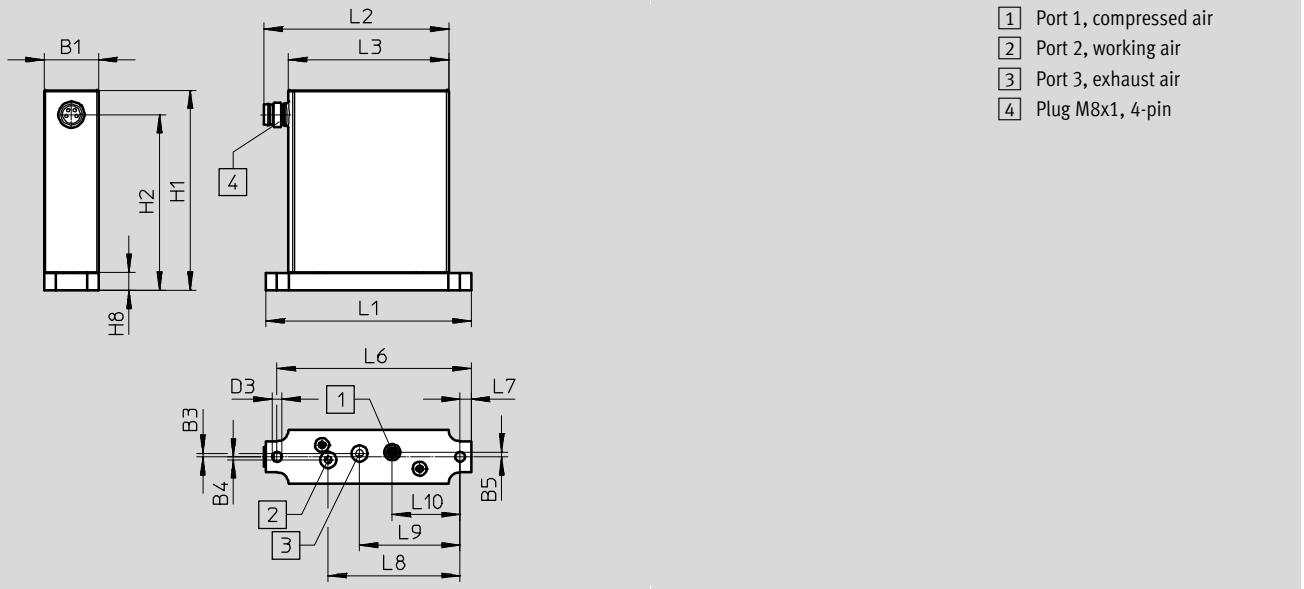
Proportional pressure regulators VEAB

Technical data

Dimensions

Download CAD data → www.festo.com

Sub-base valve



Type code	B1	B3	B4	B5	D3 Ø	H1	H2	H8
VEAB-B	18	1.1	1	1.5	3.2	65.6	57.6	5.9

Type code	L1	L2	L3	L6	L7	L8	L9	L10
VEAB-B	67.2	60.5	52.5	63.6	3.6	43.3	33	22.3

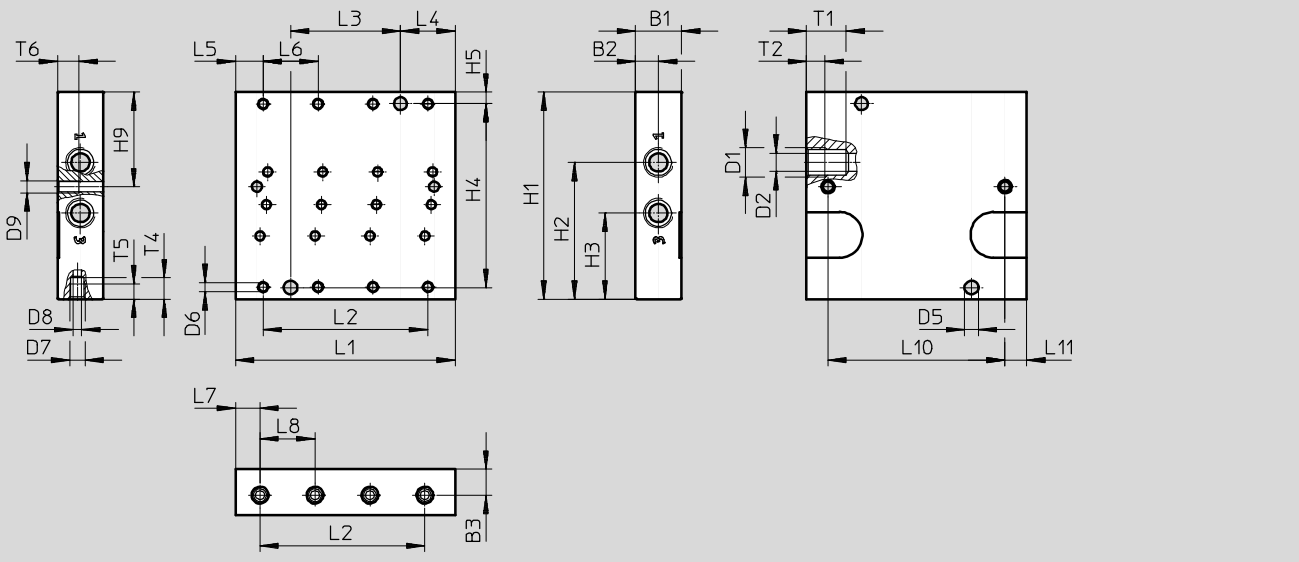
Proportional pressure regulators VEAB

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-P7-18M-G18-M5-4	15	7.5	8.5	G1/8	6	4.5	M3	M5	2.9	M4	67.8	44.8	28.2	60.2	3.8	31
VABM-P7-18M-G18-M5-5																
VABM-P7-18M-G18-M5-6																

Type code	L1	L2	L3	L4	L5	L6	L7	L8	L10	L11	T1	T2	T4	T5	T6
VABM-P7-18M-G18-M5-4	72	54	36	18	9	18	8	18	58	7	13	13	7	5	7
VABM-P7-18M-G18-M5-5	108	90	72						94						
VABM-P7-18M-G18-M5-6	144	126	108						130						

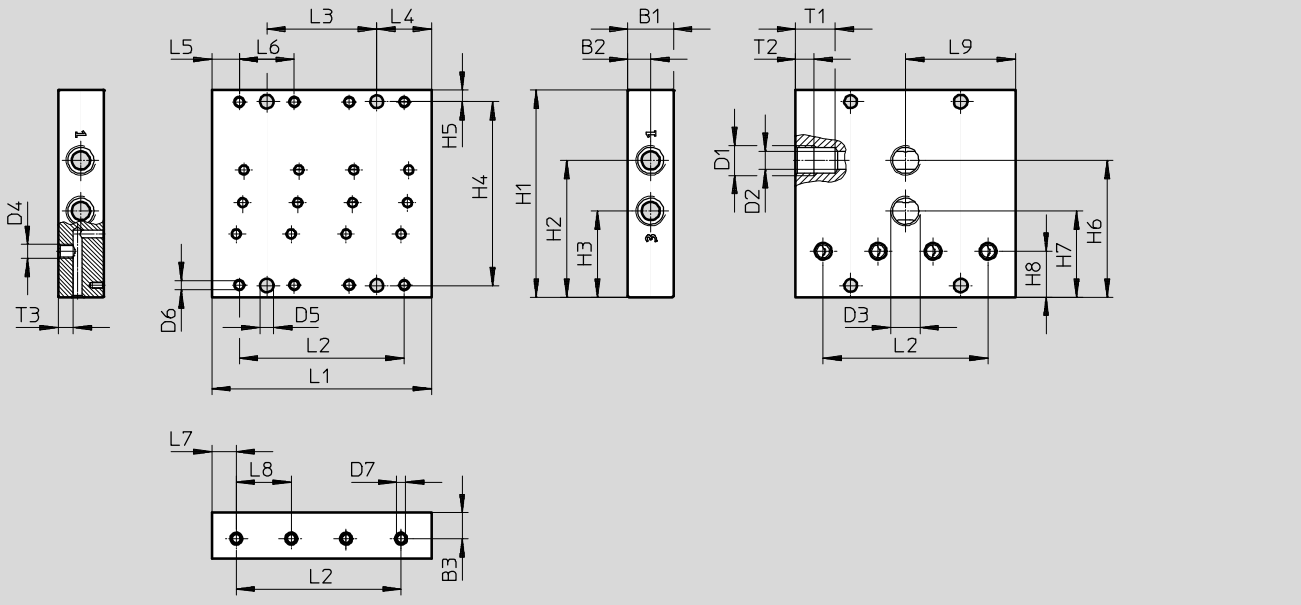
Proportional pressure regulators VEAB

Technical data

Dimensions

Download CAD data → www.festo.com

Connection direction underneath

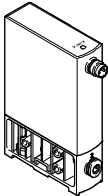
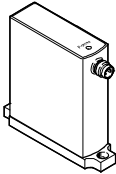
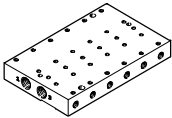
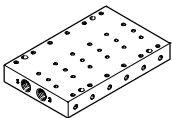



Type code	B1	B2	B3	D1	D2 Ø	D3	D4	D5 Ø	D6	D7 Ø	H1	H2	H3	H4	H5	H6
VABM-P7-18MB-G18-M5-4	15	7.5	8.5	G1/8	6	G1/8	M5	4.5	M3	2.9	67.8	44.8	28.2	60.2	3.8	44.8
VABM-P7-18MB-G18-M5-5																
VABM-P7-18MB-G18-M5-6																

Type code	H7	H8	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1	T2	T3
VABM-P7-18MB-G18-M5-4	28.2	45	72	54	36	18	9	18	8	18	36	13	6	5
VABM-P7-18MB-G18-M5-5			108	90	72									
VABM-P7-18MB-G18-M5-6			144	126	108									

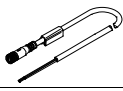
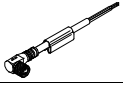
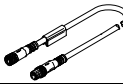
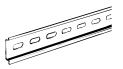
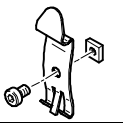
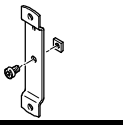
Proportional pressure regulators VEAB

Accessories

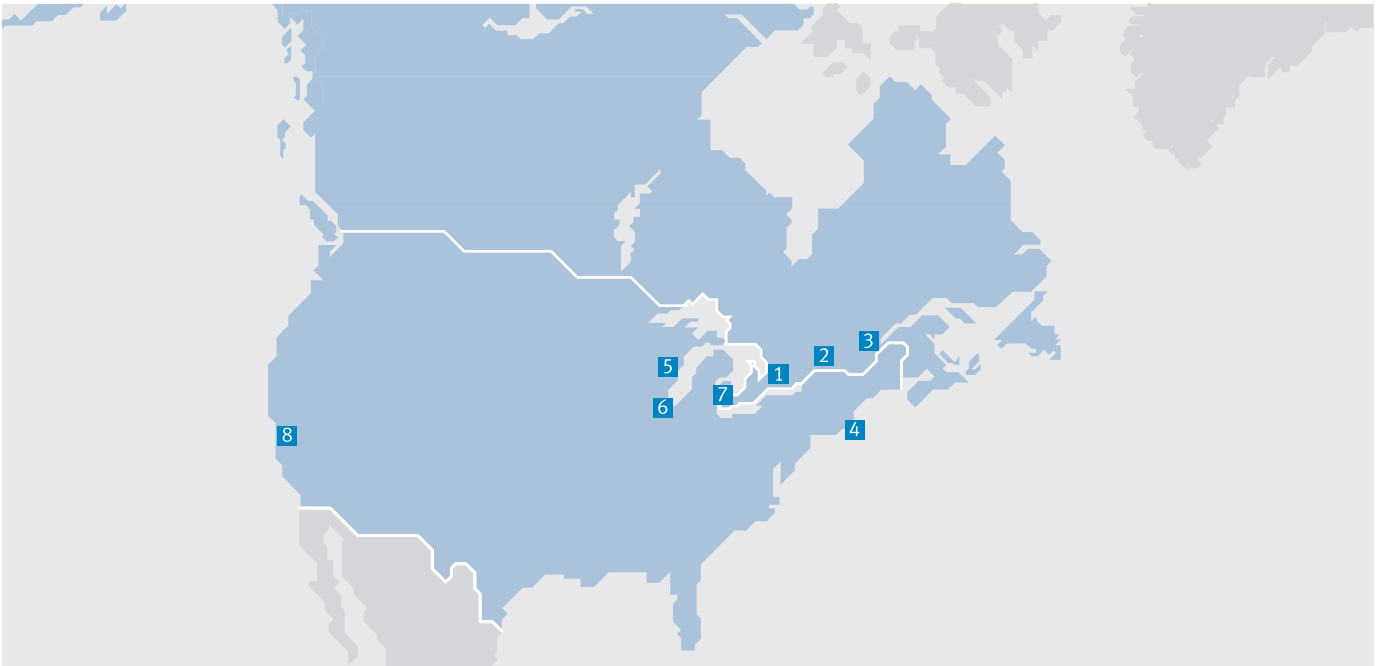
Ordering data		Pressure regulation range [bar]	Part No.	Type code	
In-line valve					
	Voltage type, 0 ... 10 V	-1 ... -0.005	8046307	VEAB-L-26-D14-Q4-V1-1R1	
		0.001 ... 0.2	8046301	VEAB-L-26-D12-Q4-V1-1R1	
		0.005 ... 1	8046303	VEAB-L-26-D7-Q4-V1-1R1	
		0.01 ... 2	8046305	VEAB-L-26-D2-Q4-V1-1R1	
		0.03 ... 6	8046299	VEAB-L-26-D9-Q4-V1-1R1	
		Current type, 4 ... 20 mA	-1 ... -0.005	8046308	VEAB-L-26-D14-Q4-A4-1R1
	0.001 ... 0.2		8046302	VEAB-L-26-D12-Q4-A4-1R1	
	0.005 ... 1		8046304	VEAB-L-26-D7-Q4-A4-1R1	
	0.01 ... 2		8046306	VEAB-L-26-D2-Q4-A4-1R1	
	0.03 ... 6		8046300	VEAB-L-26-D9-Q4-A4-1R1	
	Sub-base valve				
		Voltage type, 0 ... 10 V	-1 ... -0.005	8046271	VEAB-B-26-D14-F-V1-1R1
0.001 ... 0.2			8046265	VEAB-B-26-D12-F-V1-1R1	
0.005 ... 1			8046267	VEAB-B-26-D7-F-V1-1R1	
0.01 ... 2			8046269	VEAB-B-26-D2-F-V1-1R1	
0.03 ... 6			8046263	VEAB-B-26-D9-F-V1-1R1	
Current type, 4 ... 20 mA			-1 ... -0.005	8046272	VEAB-B-26-D14-F-A4-1R1
		0.001 ... 0.2	8046266	VEAB-B-26-D12-F-A4-1R1	
		0.005 ... 1	8046268	VEAB-B-26-D7-F-A4-1R1	
		0.01 ... 2	8046270	VEAB-B-26-D2-F-A4-1R1	
		0.03 ... 6	8046264	VEAB-B-26-D9-F-A4-1R1	
		Manifold rail			
		Connection direction at side	4 valve positions	8076386	VABM-P7-18M-G18-M5-4
	6 valve positions		8076388	VABM-P7-18M-G18-M5-6	
	8 valve positions		8076390	VABM-P7-18M-G18-M5-8	
	Connection direction underneath	4 valve positions	8076387	VABM-P7-18MB-G18-M5-4	
		6 valve positions	8076389	VABM-P7-18MB-G18-M5-6	
		8 valve positions	8076391	VABM-P7-18MB-G18-M5-8	
Cover plate					
	Including screws (2) and O-rings (3, preassembled)		4054658	VABB-P7-M	

Proportional pressure regulators VEAB

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	4054656	VAME-P7-Y

Festo North America



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