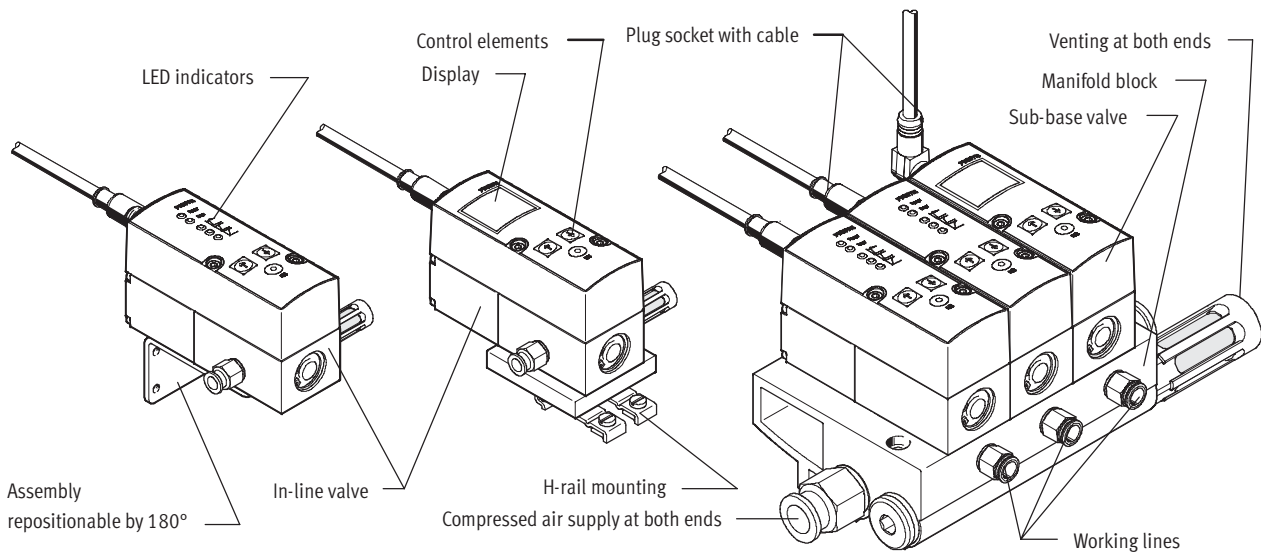


# Proportional pressure regulators VPPM



# Proportional pressure regulators VPPM

General information



## Innovative

- Multi-sensor control (cascade control)
- Diagnostics
- Choice of regulation characteristics
- Temperature compensated
- High dynamic response
- High repetition accuracy
- Modular product system

## Versatile

- Individual valves (in-line valve)
- Manifold valves (sub-base/flange valve)
- Various user interfaces
  - LED indicators
  - LCD display
  - Adjustment/selection buttons
- A choice of valves with different pressure ranges
- Pressure range can be modified on the valve
- Choice of different setpoint specifications
  - Current input
  - Voltage input

## Reliable

- Integrated pressure sensor
  - with independent output
- Open circuit monitoring
- Pressure is maintained if the controller fails

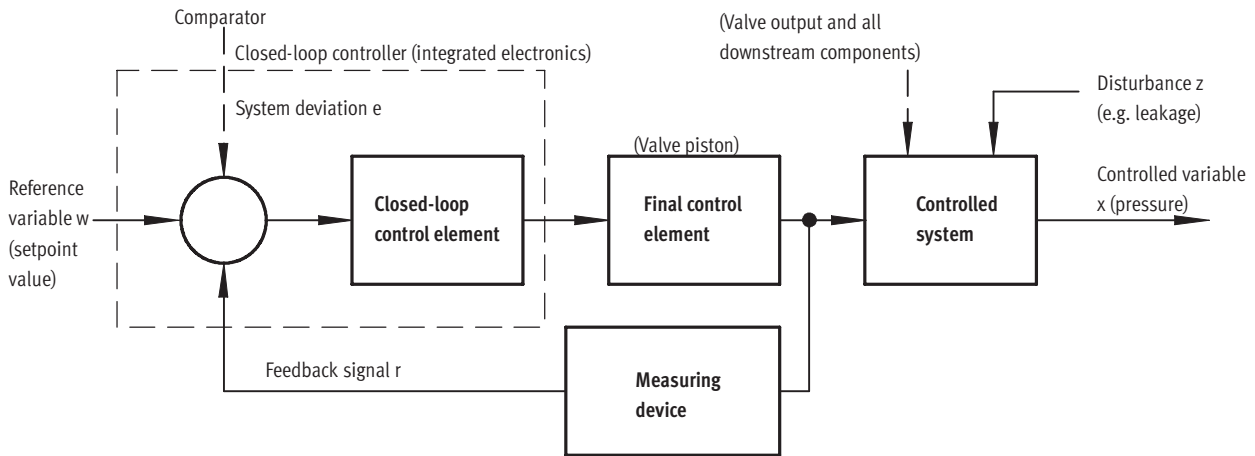
## Easy to mount

- Manifold block
- H-rail mounting
- Individually via mounting bracket
- QS fittings

# Proportional pressure regulators VPPM

General information

## Layout of a control circuit



### Layout

The figure shows a closed-loop control circuit. The reference variable  $w$  (setpoint value, e.g. 5 volts or 8 mA) initially acts on a comparator. The measuring device sends the controlled variable  $x$  value (actual value, e.g. 3 bar) to the comparator as a feedback signal  $r$ . The closed-loop control element detects the system

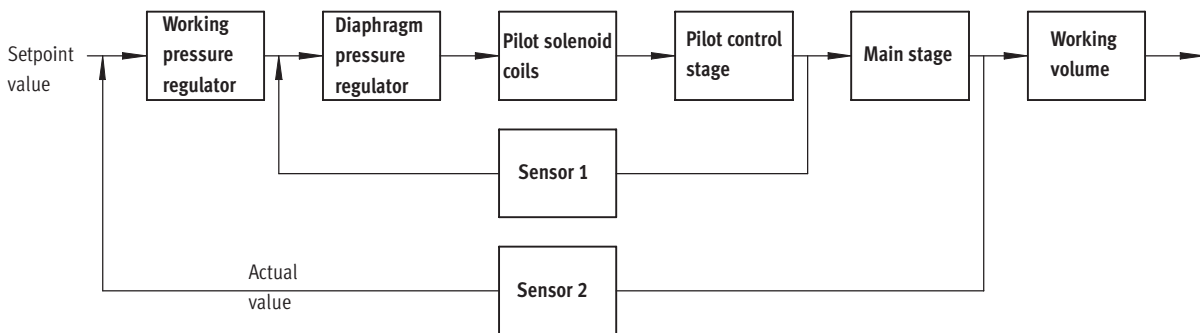
deviation  $e$  and actuates the final control element. The output of the final control element acts on the controlled system. The closed-loop control element thus attempts to compensate for the difference between the reference variable  $w$  and the controlled variable  $x$  by using the final control element.

### Method of operation

This process runs continuously so changes in the reference variable are always detected. However, a system deviation will also appear if the reference variable is constant but the controlled variable changes. This happens when the flow through the valve changes in response to a switching action, a cylinder movement

or a change in load. The disturbance variable  $z$  will also cause a system deviation. An example of this is when the pressure drops in the air supply. The disturbance variable  $z$  acts on the controlled variable  $x$  unintentionally. In all cases, the regulator attempts to readjust the controlled variable  $x$  to the reference variable  $w$ .

## Multi-sensor control (cascade control) of the VPPM



### Cascade control

Unlike conventional direct-acting regulators, with multi-sensor control several control circuits are nested inside each other. The overall controlled

system is divided into smaller sub-controlled circuits that are easier to control for the specific task.

### Control precision

Multi-sensor control significantly improves control precision and dynamic

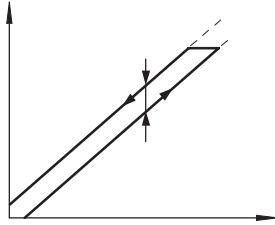
response in comparison with single-acting regulators.

# Proportional pressure regulators VPPM

General information

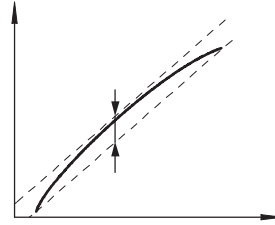
## Terms related to the proportional pressure regulator

### Hysteresis



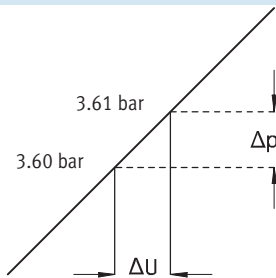
There is always a linear relationship within a certain tolerance between the setpoint value entered and the pressure output. Nevertheless it makes a difference whether the setpoint value is entered as rising or falling. The difference between the maximum deviations is referred to as hysteresis.

### Linearity error



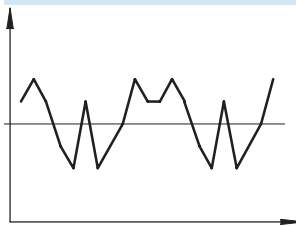
A perfectly linear progression of the control characteristic of the output pressure is theoretical. The maximum percentage deviation from this theoretical control characteristic is referred to as the linearity error. The percentage value refers to the maximum output pressure (full scale).

### Response sensitivity



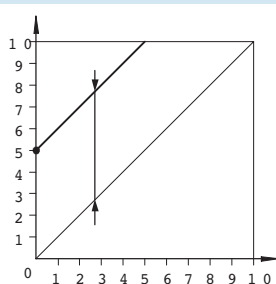
The response sensitivity of the device determines how sensitively one can change, i.e. adjust, a pressure. The smallest setpoint value difference that results in a change in the output pressure is referred to as the response sensitivity. In this case, 0.01 bar.

### Repetition accuracy (reproducibility)



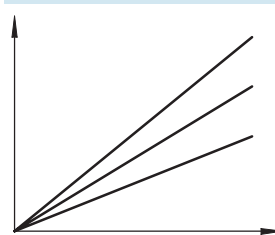
The repetition accuracy is the margin within which the fluid output variables are scattered when the same electrical input signal coming from the same direction is repeatedly adjusted. The repetition accuracy is expressed as a percentage of the maximum fluid output signal.

### Zero offset



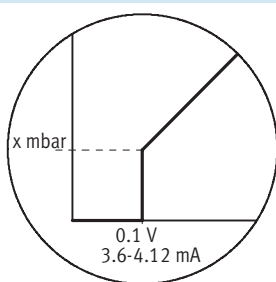
If, for example, a VPPM cannot be vented for safety reasons, the minimum pressure can be increased from the zero point. The smallest setpoint value is then assigned an output pressure of 5 bar, for example, and the largest setpoint value an output pressure of 10 bar. Zero suppression is automatically switched off if zero offsetting is used.

### Pressure range adaptation



In the delivery condition, 100% setpoint value equals 100% fluid output signal. Pressure range adaptation or adjustment enables the fluid output variable to be matched to the setpoint value.

### Zero point suppression

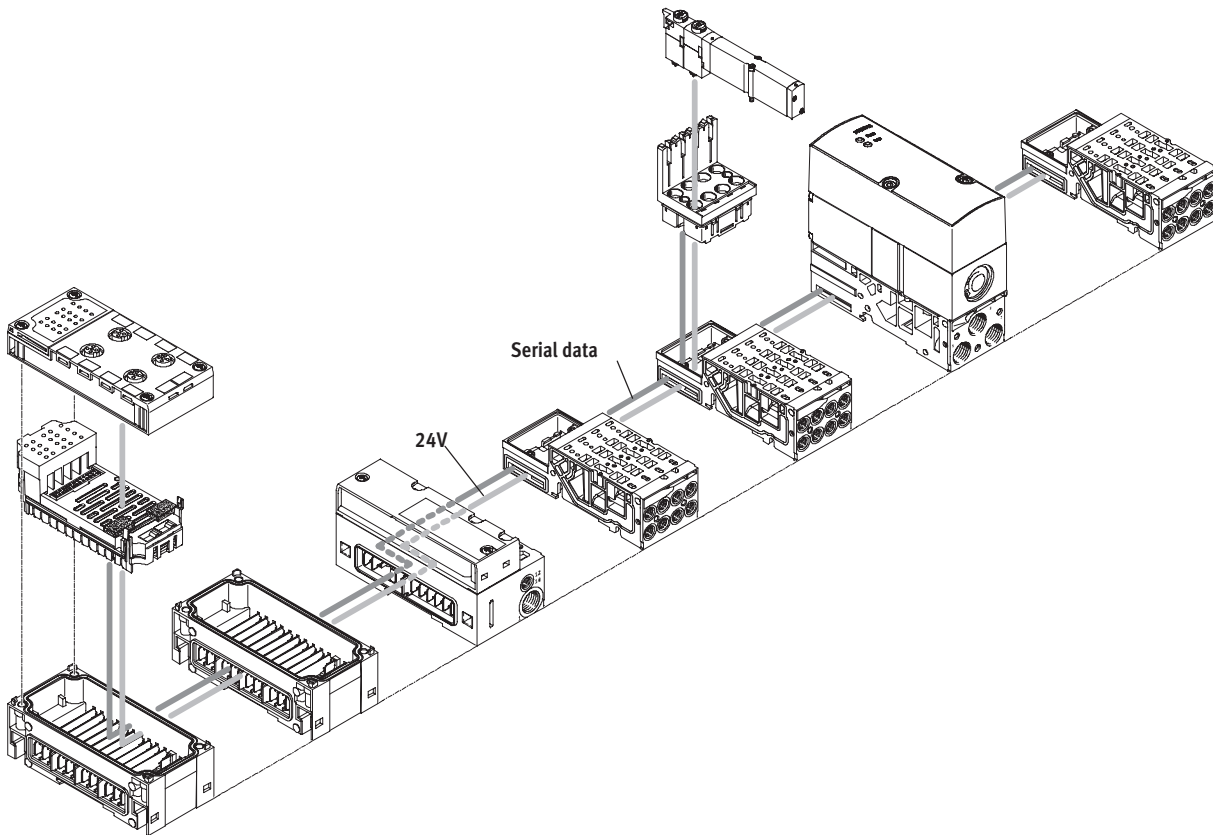


In practice there exists the possibility of residual voltage or residual current at the setpoint input of the VPPM via the setpoint generator. Zero point suppression is used so that the valve is reliably vented at a setpoint value of zero.

# Proportional pressure regulators VPPM

General information

## VPPM on the valve terminal MPA



### Innovative

- Multi-sensor control
- Diagnostics via bus
- Choice of regulation characteristics
- High dynamic response
- 2 accuracy levels

### Versatile

- For all common protocols
- As an individual pressure regulator
- As a pressure zone regulator
- Choice of 3 valves with different pressure ranges
- 3 pressure ranges (presets) can be set via the bus
- Internal or external compressed air supply possible

### Reliable

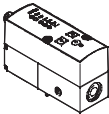
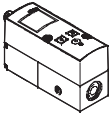
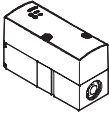
- Long service life
- LED display for the operating status
- Pressure is maintained if the supply voltage fails
- Fast troubleshooting thanks to LEDs on the valves and diagnostics via fieldbus
- Ease of servicing through replaceable valves

### Easy to mount

- Simple replacement of the valves
- Tested units
- Easy extension of the valve terminal

# Proportional pressure regulators VPPM

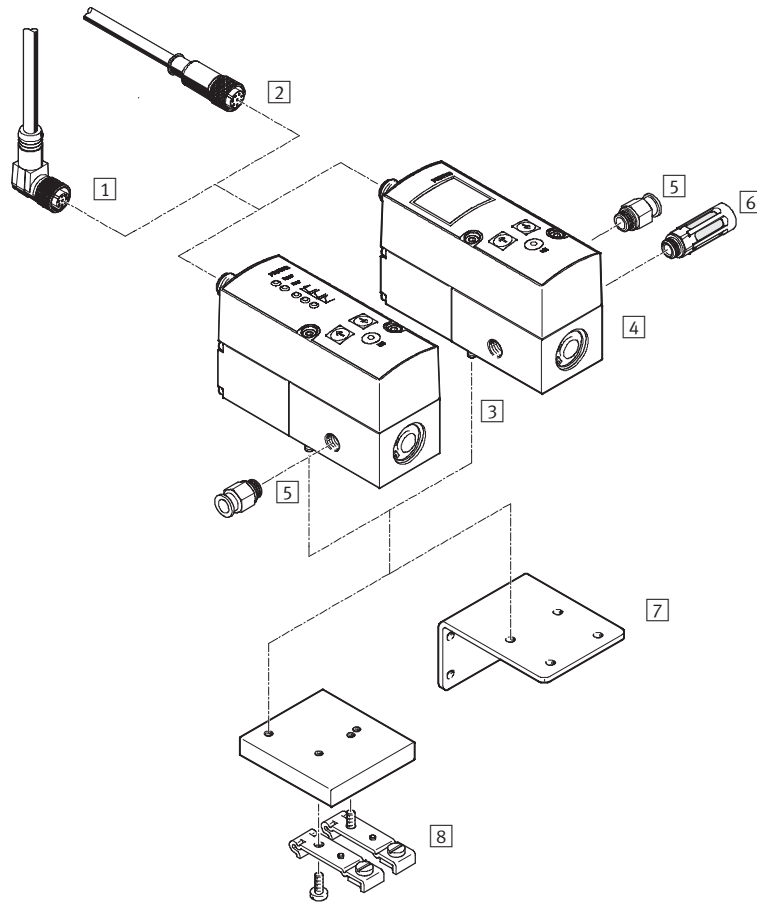
Product range overview

Function	Version	Construc-tional design	Pneumatic connection 1, 2, 3	Nominal diameter pressurise/ exhaust [mm]	Pressure regulation range [bar]	Setpoint value input			→ Page/ Internet
						Voltage type	Current type	Digital	
						0 ... 10 V	4 ... 20 mA	-	
Pressure regulators	<b>With LED</b>								
		Pilot actuated diaphragm valve	G1/8	6/4.5	0.02 ... 2 0.06 ... 6 0.1 ... 10	■	■	-	11
			Sub-base	6/4.5	0.02 ... 2 0.06 ... 6 0.1 ... 10	■	■	-	
	<b>With LCD</b>								
		Pilot actuated diaphragm valve	G1/8	6/4.5	0.02 ... 2 0.06 ... 6 0.1 ... 10	■	■	-	11
			Sub-base	6/4.5	0.02 ... 2 0.06 ... 6 0.1 ... 10	■	■	-	
	<b>With LED for valve terminal MPA</b>								
		Pilot actuated diaphragm valve	Manifold block MPA	6/4.5	0.02 ... 2 0.06 ... 6 0.1 ... 10	-	-	■	11

# Proportional pressure regulators VPPM

Peripherals overview

## Individual valve

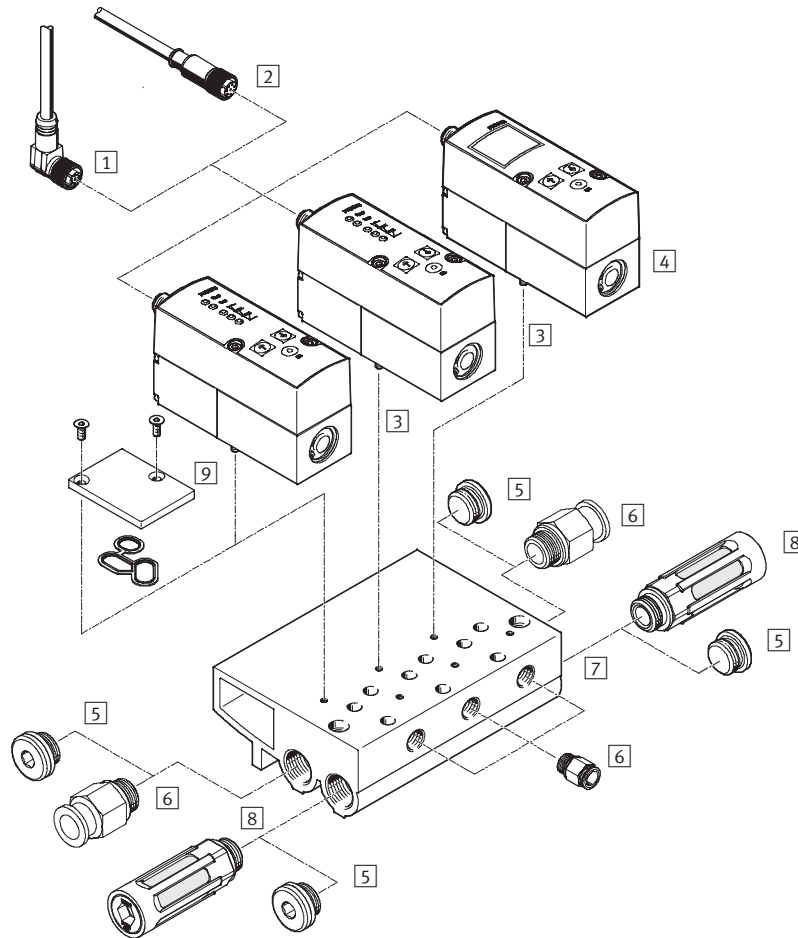


Accessories		
	Brief description	→ Page/Internet
1	Plug socket with cable, angled NEBU-M12W8-...	25
2	Plug socket with cable, straight SIM-M12-8GD-...	25
3	Proportional pressure regulator VPPM	Operator unit with LED 11
4	Proportional pressure regulator VPPM	Operator unit with LCD 11
5	Push-in fitting QS	For connecting compressed air tubing with standard outside diameter qs
6	Silencer	For fitting on exhaust ports u
7	Mounting bracket VAME-P1-A	For attaching the valve 22
8	H-rail mounting VAME-P1-T	For mounting on a H-rail 20

# Proportional pressure regulators VPPM

Peripherals overview

## Valve manifold



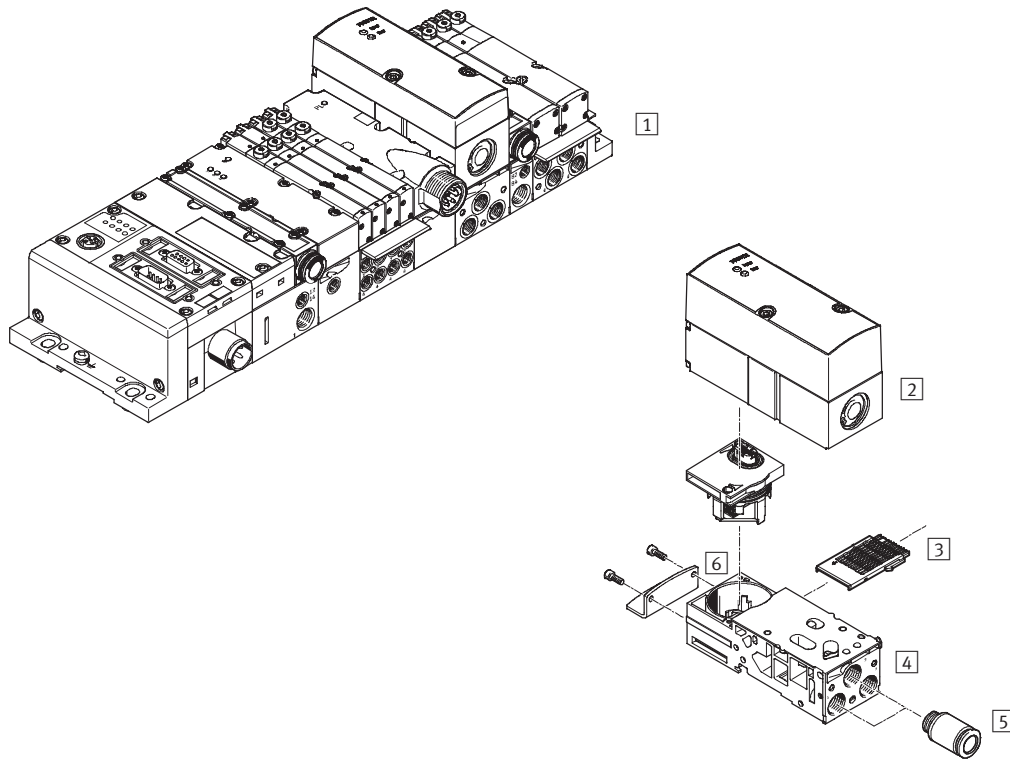
Accessories		
	Brief description	→ Page/Internet
1	Plug socket with cable, angled NEBU-M12W8-...	25
2	Plug socket with cable, straight SIM-M12-8GD-...	25
3	Proportional pressure regulator VPPM	Operator unit with LED 11
4	Proportional pressure regulator VPPM	Operator unit with LCD 11
5	Blanking plug B	- b
6	Push-in fitting QS	For connecting compressed air tubing with standard outside diameter qs
7	Manifold block VABM	- 20
8	Silencer	For fitting on exhaust ports u
9	Blanking plate VABB-P1	For vacant position; seal and countersunk screws included in the scope of delivery 21



# Proportional pressure regulators VPPM

System overview

**VPPM for valve terminal MPA**



Accessories			
	Brief description	→ Page/Internet	
1	Valve terminal MPA	With fieldbus connection and VPPM	mpa
2	Proportional pressure regulator VPPM	For valve terminal MPA	mpa
3	Electrical manifold module VMPA1-FB-EV-AB	For sub-base of the proportional pressure regulator	mpa
4	Sub-base VMPA-FB-AP-P1	Without electrical manifold module and electrical module	mpa
5	Push-in fitting QS	–	qs
6	Attachment VMPA-BG	–	mpa




# Proportional pressure regulators VPPM

Type codes

		VPPM	-	6	L		-	L	-	1	-	G18	-	0L	6H	-	V1	N	-	S1	-	
<b>Type</b>		VPPM	Modular proportional pressure regulator																			
<b>Nominal diameter</b>		6	6 mm																			
<b>Design</b>		L	In-line valve																			
		F	Flanged valve																			
<b>Mounting method</b>			Freely mountable																			
<b>Dynamic response class</b>		L	Low																			
<b>Valve function</b>		1	3/2-way valve, normally closed																			
<b>Pneumatic connection</b>		G18	Thread G $\frac{1}{8}$																			
		F	Flange/sub-base																			
<b>Lower pressure value of regulation range</b>		0L	0 bar																			
<b>Upper pressure value of regulation range</b>		2H	2 bar																			
		6H	6 bar																			
		10H	10 bar																			
<b>Setpoint specification for individual valve</b>		V1	0 ... 10 V																			
		A4	4 ... 20 mA																			
<b>Switching output</b>		N	Negative switching																			
		P	Positive switching																			
<b>Accuracy</b>			2% (standard)																			
		S1	1%																			
<b>Operator unit</b>			LED (standard)																			
		C1	With LCD, pressure unit variable																			

## Proportional pressure regulators VPPM

### Technical data

-  - Flow rate  
380 ... 1,400 l/min
-  - Voltage  
21.6 ... 26.4 V DC
-  - Pressure regulation range  
0.02 ... 10 bar


#### Variants

- Setpoint input as analogue voltage signal 0 ... 10 V
- Setpoint input as analogue current signal 4 ... 20 mA
- LED version
- With LCD display
- NPN or PNP switching output
- Integration in valve terminal via fieldbus



General technical data			G $\frac{1}{8}$	Sub-base	Valve terminal MPA
Constructional design			Pilot actuated diaphragm regulator		
Sealing principle			Soft		
Actuation type			Electric		
Type of control			Pilot actuated via 2/2-way valves		
Type of mounting			Via through-hole, via accessories		
Mounting position			Any		
Nominal diameter	Pressurisation	[mm]	6		
	Exhaust	[mm]	4.5		
Standard nominal flow rate		[l/min]	→ Graphs		
Product weight		[g]	400		

Electrical data			G $\frac{1}{8}$	Sub-base	Valve terminal MPA
Electrical connection			Plug, round design, 8-pin, M12		Terminal linking
Operating voltage range		[V DC]	24 ± 10% = 21.6 ... 26.4		
Residual ripple			10%		
Max. electrical power consumption		[W]	7		
Signal setpoint input	Voltage	[V DC]	0 ... 10		Digitally via fieldbus
	Current	[mA]	4 ... 20		
Protection against short circuit			For all electrical connections		
Protection against polarity reversal			For all electrical connections		
Protection class			IP65		
CE mark			EU conformity in accordance with the directive 89/336/EEC (EMC)		

-  - Note  
If the power supply cable is interrupted, output pressure is maintained unregulated.

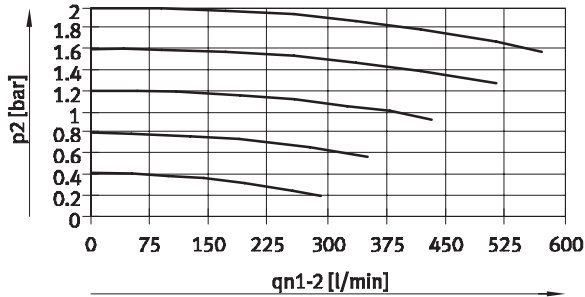
# Proportional pressure regulators VPPM

Technical data

## Flow rate $q_n$ from 1 → as a function of output pressure $p_2$

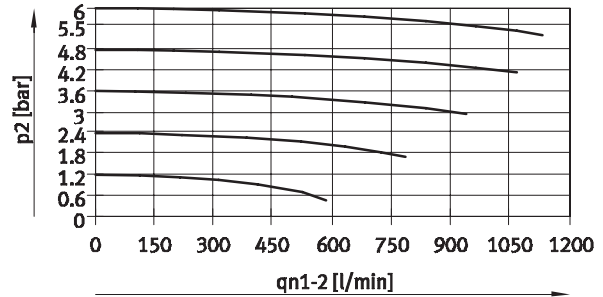
VPPM-6L-...-0L2H-...

(2 bar)



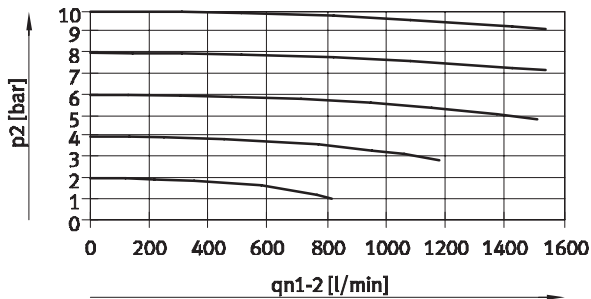
VPPM-6L-...-0L6H-...

(6 bar)



VPPM-6L-...-0L10H-...

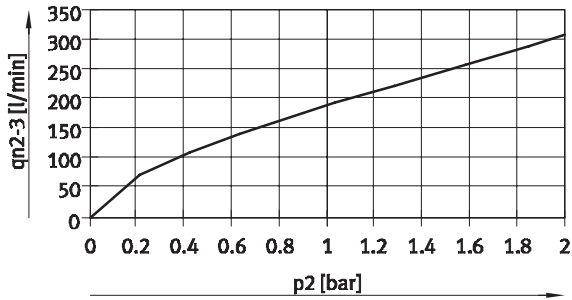
(10 bar)



## Flow rate $q_n$ from 2 → 3 as a function of output pressure $p_2$

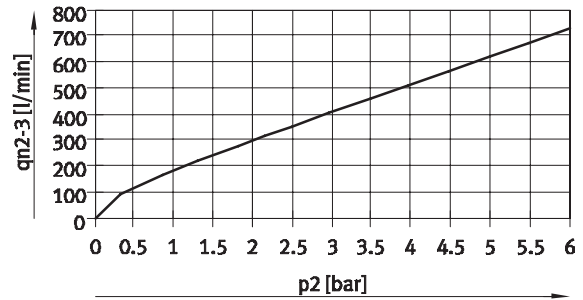
VPPM-6L-...-0L2H-...

(2 bar)



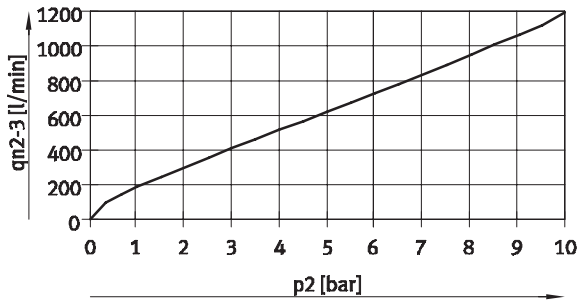
VPPM-6L-...-0L6H-...

(6 bar)



VPPM-6L-...-0L10H-...

(10 bar)



# Proportional pressure regulators VPPM

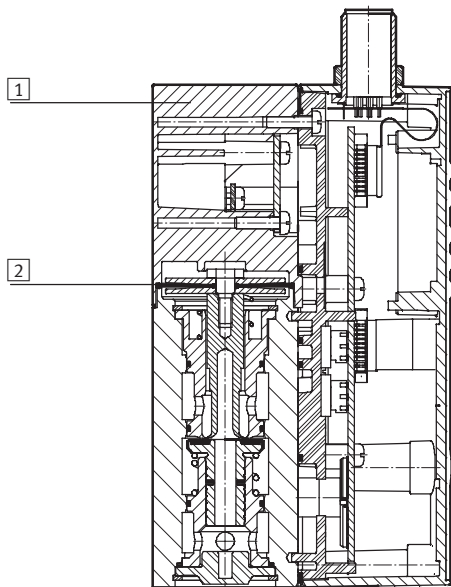
Technical data

Operating and environmental conditions				
Pressure regulation range	[bar]	0.02 ... 2	0.06 ... 6	0.1 ... 10
Operating medium		Compressed air, filtered, unlubricated, grade of filtration 40 µm Neutral gases		
Supply pressure 1	[bar]	0 ... 4 <sup>2)</sup>	0 ... 8 <sup>2)</sup>	0 ... 11 <sup>2)</sup>
Max. hysteresis	[mbar]	10	30	50
FS (full scale) linearity error	[%]	± 0.5		
FS (full scale) repetition accuracy	[%]	0.5		
Temperature coefficient	[%/°C]	0.04/1		
Ambient temperature	[°C]	0 ... 60		
Temperature of medium	[°C]	10 ... 50		
Corrosion resistance	[CRC]	2 <sup>1)</sup>		

- 1) Corrosion resistance class 2 as per Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
- 2) Supply pressure 1 should always be 1 bar greater than the maximum regulated output pressure.

## Materials

Sectional view



1	Housing	Wrought aluminium alloy
2	Diaphragm	Nitrile rubber

# Proportional pressure regulators VPPM

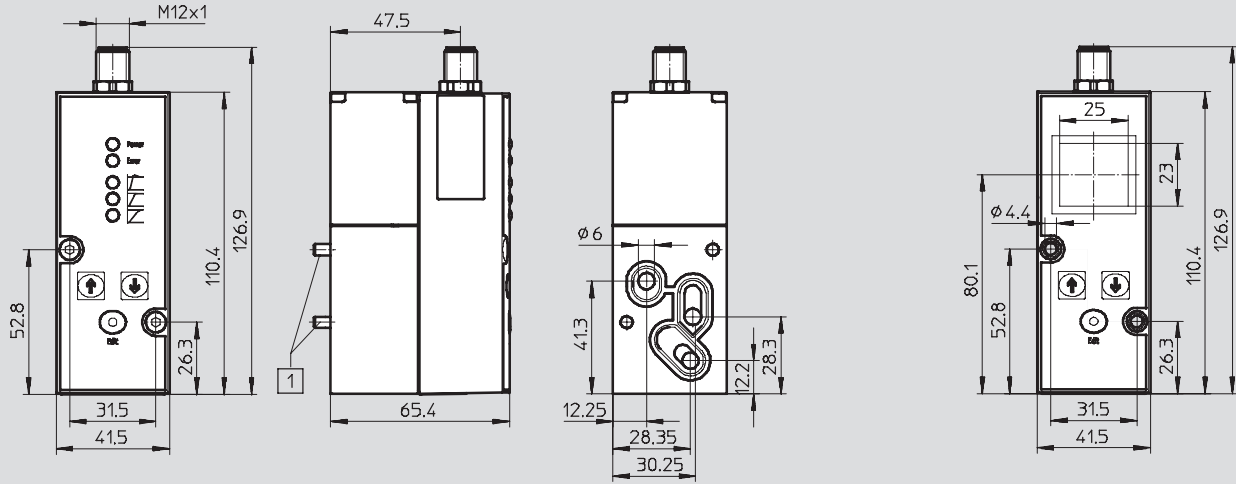
Technical data

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

VPPM-6F

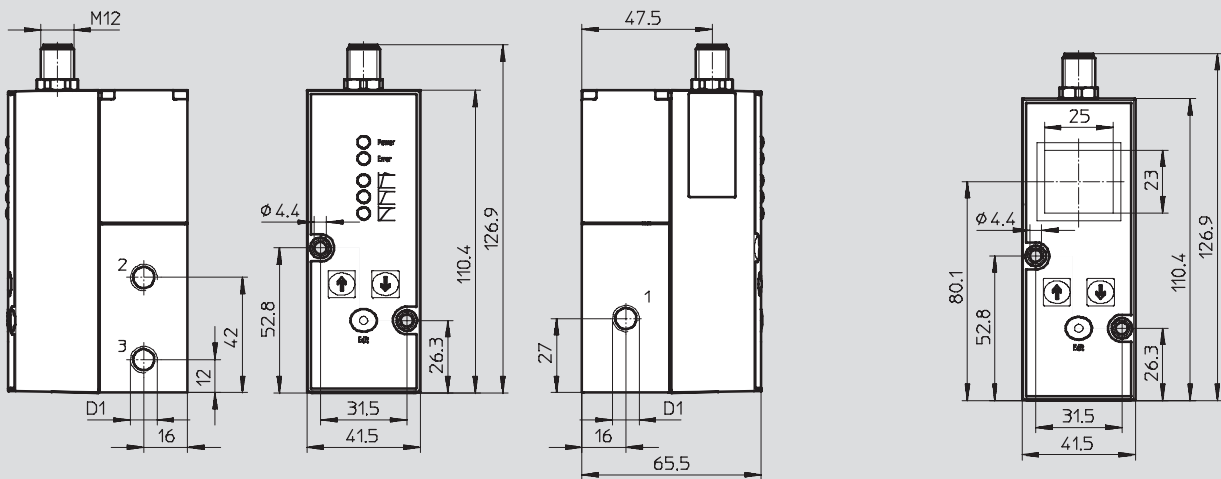
With LCD



1 Socket head screw M5x65

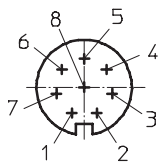
VPPM-6L

With LCD



D1 = G1/8

**M12 – Pin allocation**



- 1 Digital input D1
- 2 DC +24 V supply voltage
- 3 Analogue input W-
- 4 Analogue input W+
- 5 Digital input D2
- 6 Analogue output X
- 7 DC 0 V or GND
- 8 Digital output D3

# Proportional pressure regulators VPPM

Technical data

Ordering data					
Pneumatic connection	Pressure regulation range [bar]	Voltage type 0 ... 10 V		Current type 4 ... 20 mA	
		Part No.	Type	Part No.	Type
Overall accuracy 2%					
G $\frac{1}{8}$	0.02 ... 2	542 233	VPPM-6L-L-1-G18-0L2H-V1N	542 236	VPPM-6L-L-1-G18-0L2H-A4N
		542 234	VPPM-6L-L-1-G18-0L6H-V1N	542 237	VPPM-6L-L-1-G18-0L6H-A4N
	0.06 ... 6	554 043	VPPM-6L-L-1-G18-0L6H-V1P	554 045	VPPM-6L-L-1-G18-0L6H-A4P
		558 337	VPPM-6L-L-1-G18-0L6H-V1P-C1	558 338	VPPM-6L-L-1-G18-0L6H-A4P-C1
		542 235	VPPM-6L-L-1-G18-0L10H-V1N	542 238	VPPM-6L-L-1-G18-0L10H-A4N
	0.1 ... 10	554 044	VPPM-6L-L-1-G18-0L10H-V1P	554 046	VPPM-6L-L-1-G18-0L10H-A4P
Sub-base		0.02 ... 2	542 245	VPPM-6F-L-1-F-0L2H-V1N	542 248
	542 246		VPPM-6F-L-1-F-0L6H-V1N	542 249	VPPM-6F-L-1-F-0L6H-A4N
	0.06 ... 6	558 339	VPPM-6F-L-1-F-0L6H-V1P-C1	558 340	VPPM-6F-L-1-F-0L6H-A4P-C1
		558 347	VPPM-6F-L-1-F-0L6H-V1N-C1		
		542 247	VPPM-6F-L-1-F-0L10H-V1N	542 250	VPPM-6F-L-1-F-0L10H-A4N
	0.1 ... 10				
Overall accuracy 1%					
G $\frac{1}{8}$	0.02 ... 2	542 227	VPPM-6L-L-1-G18-0L2H-V1N-S1	542 230	VPPM-6L-L-1-G18-0L2H-A4N-S1
		542 228	VPPM-6L-L-1-G18-0L6H-V1N-S1	542 231	VPPM-6L-L-1-G18-0L6H-A4N-S1
	0.06 ... 6	554 039	VPPM-6L-L-1-G18-0L6H-V1P-S1	554 041	VPPM-6L-L-1-G18-0L6H-A4P-S1
		542 229	VPPM-6L-L-1-G18-0L10H-V1N-S1	542 232	VPPM-6L-L-1-G18-0L10H-A4N-S1
		554 040	VPPM-6L-L-1-G18-0L10H-V1P-S1	554 042	VPPM-6L-L-1-G18-0L10H-A4P-S1
	0.1 ... 10	558 335	VPPM-6L-L-1-G18-0L10H-V1P-S1-C1	558 336	VPPM-6L-L-1-G18-0L10H-A4P-S1-C1
Sub-base		0.02 ... 2	542 239	VPPM-6F-L-1-F-0L2H-V1N-S1	542 242
	0.06 ... 6	542 240	VPPM-6F-L-1-F-0L6H-V1N-S1	542 243	VPPM-6F-L-1-F-0L6H-A4N-S1
	0.1 ... 10	542 241	VPPM-6F-L-1-F-0L10H-V1N-S1	542 244	VPPM-6F-L-1-F-0L10H-A4N-S1

 Note

Further variants can be ordered using the modular system.

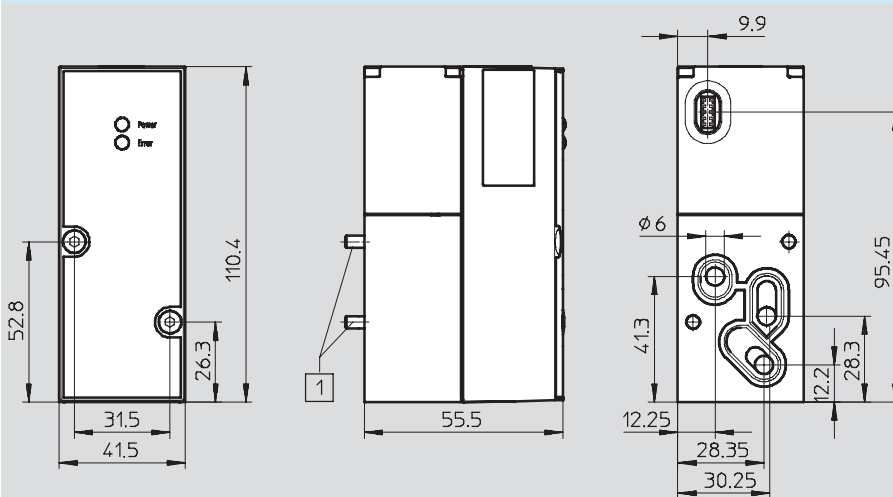
→ 16

VPPM for MPA fieldbus variant must be ordered together with the valve terminal.

## Dimensions

 Download CAD data → [www.festo.com](http://www.festo.com)

VPPM for valve terminal MPA



[1] Socket head screw M4x55

# Proportional pressure regulators VPPM

Ordering data – Modular products

**M** **Mandatory data** →

Module No.	Design	Nominal diameter	Valve type	Dynamic response	Valve mode	Type of connection
543 432	VPPM	6	L F	L	1	G18 F
<b>Order example</b>						
543 432	VPPM	- 6	F	- L	- 1	- F

**Ordering table**

Size	6	Condi- tions	Code	Enter code
<b>M</b> Module No.	543 432			
Design	Modular pressure regulator		VPPM	VPPM
Nominal diameter	6		-6	-6
Valve type	In-line	[1]	L	
	Flanged valve	[2]	F	
Dynamic response	Low dynamic response (pilot-actuated, soft-sealing)		-L	-L
Valve mode	3/2-way valve, normally closed		-1	-1
Type of connection	G $\frac{1}{8}$ thread		-G18	
	Flange/sub-base		-F	

[1] L Only with connection type G18 (G $\frac{1}{8}$  thread)

[2] F Only with connection type F (flange/sub-base)

**Transfer order code**

543 432	VPPM	- 6		- L	- 1	-
---------	------	-----	--	-----	-----	---



# Proportional pressure regulators VPPM

Ordering data – Modular products

Mandatory data					Options	
Pressure regulation range	Alternative lower pressure regulation range	Alternative upper pressure regulation range	Setpoint specification	Switching output	Overall accuracy	Operator unit
0L2H 0L6H 0L10H	0.1 ... 10L	0.1 ... 10H	V1 A4	P N	S1	C1
	<b>6.5L</b>	<b>7.1H</b>	<b>A4</b>	<b>P</b>	<b>S1</b>	<b>C1</b>

Ordering table					
Size	6	Condi- tions	Code	Enter code	
↓ Pressure regulation range [M]	0 ... 2 bar		-0L2H		
	0 ... 6 bar		-0L6H		
	0 ... 10 bar		-0L10H		
	Alternative lower pressure regulation range	0.1 ... 10 bar	[3]	-...L	
	Alternative upper pressure regulation range	0.1 ... 10 bar	[4]	...H	
	Setpoint specification	Voltage (standard 0 ... 10 V)		-V1	
		Current (standard 4 ... 20 mA)		-A4	
Switching output	Positive switching		P		
	Negative switching		N		
[O] Overall accuracy	1%		-S1		
Operator unit	With LCD, pressure unit variable		C1		

[3] ...L Not with pressure regulation range (0L2H, 0L6H, 0L10H).  
Must always be less than alternative upper pressure regulation range H

[4] ...H Not with pressure regulation range (0L2H, 0L6H, 0L10H).  
Must always be greater than alternative lower pressure regulation range L

Transfer order code

-    -   -

# Proportional pressure regulators MPPE/VPPE/MPPES

FESTO

Accessories

## Setpoint module MPZ

 Voltage  
20 ... 30 V DC

### Function

- Generation of 6+1 analogue setpoint values for the proportional pressure regulators MPPE, MPPES and MPYE
- Digital controller
- Output voltage adjustable via spindle potentiometer



General technical data			
Mode of operation		Digital-analogue circuit with analogue output	
Electrical connection		Screw terminal	
Connection cross section		[mm <sup>2</sup> ]	2.5
Operating voltage range		[V DC]	20 ... 30
Adjustable output voltage		[V DC]	0 ... 10
Max. output current		[mA]	27
Power consumption at 24 V DC		[W]	1.5
Supply setpoint value adjustment	Voltage	[V]	10 ... 10.6
	Current	[mA]	6 ... 6.36
External setpoint input	Voltage	[V DC]	0 ... 10
	Potentiometer	[kΩ]	2.5 ... 10
Setpoint controller	Input resistance	[kΩ]	3
Residual ripple		[%]	Max. 10
Display	Ready	Green LED	
	Setpoint active	Yellow LED	
Type of mounting		On H-rail	
Assembly position		Any	
Product weight		[g]	80

Operating and environmental conditions			
Ambient temperature		[°C]	0 ... 60
Protection class		IP20	
CE symbol (declaration of conformity)		In accordance with EU EMC directive	
Corrosion resistance class CRC <sup>1)</sup>		2	

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

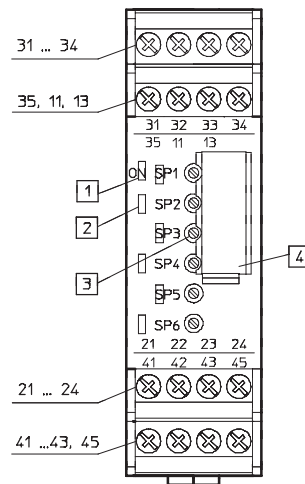
# Proportional pressure regulators MPPE/VPPE/MPPES

Accessories



## Connections and control elements

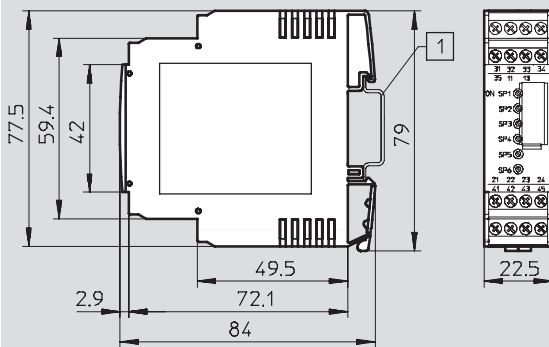
Connections			Priority
31	Activate setpoint 1	SP1	1 (highest)
32	Activate setpoint 2	SP2	2
33	Activate setpoint 3	SP3	3
34	Activate setpoint 4	SP4	4
35	Activate setpoint 5	SP5	5
11	Activate setpoint 6	SP6	6
13	Control line	0 V	-
21	Control line	0 V	-
22	External setpoint input	$U_{w, in} = 0 \dots 10 \text{ V DC}$	7 (lowest)
23	Control line	10 V DC	-
24	Screening	PE	-
41	Control line	0 V DC	-
42	Setpoint output	$U_{w, out}$	-
43	Power supply	-	-
45	Power supply	+	-



- 1 Operational status display, green LED
- 2 Setpoint display active (SP1 ... SP6), yellow LED
- 3 Setpoint potentiometer SP1 ... SP6
- 4 Inscription label

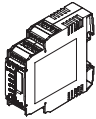
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



- 1 H-rail to DIN EN 60715

## Ordering data

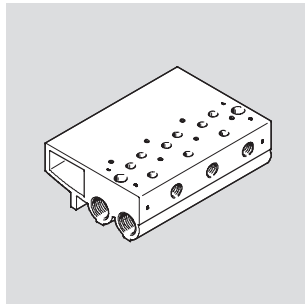
	Description	Part No.	Type
	Setpoint module for generating 6 + 1 analogue voltage signals	546 224	MPZ-1-24DC-SGH-6-SW

# Proportional pressure regulators VPPM

Accessories

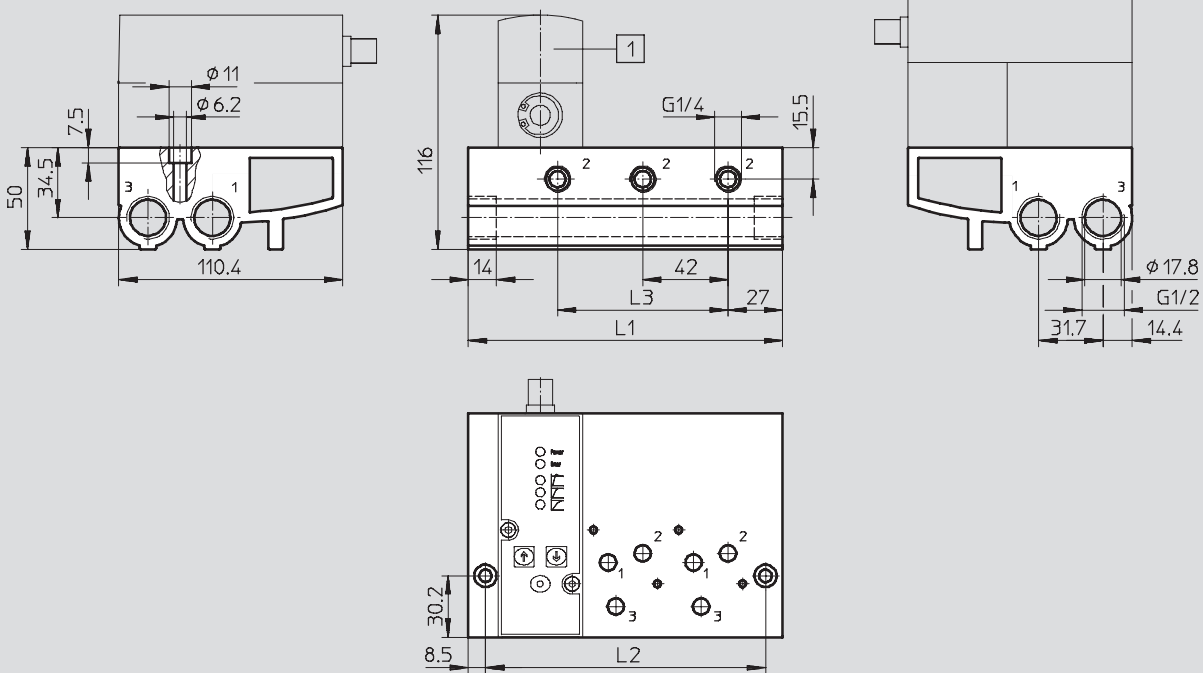
## Sub-base VABM-P1

Material:  
Wrought aluminium alloy



### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



1 Proportional pressure regulator VPPM

### Dimensions and ordering data

Valve positions	L1	L2	L3	Weight [g]	CRC <sup>1)</sup>	Part No.	Type
2	113	96	42	900	2	542 252	VABM-P1-SF-G18-2-P3
3	155	138	84	1,230	2	542 253	VABM-P1-SF-G18-3-P3
4	197	180	126	1,565	2	542 254	VABM-P1-SF-G18-4-P3

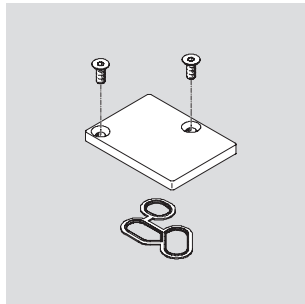
1) Corrosion resistance class 2 as per Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Proportional pressure regulators VPPM

Accessories

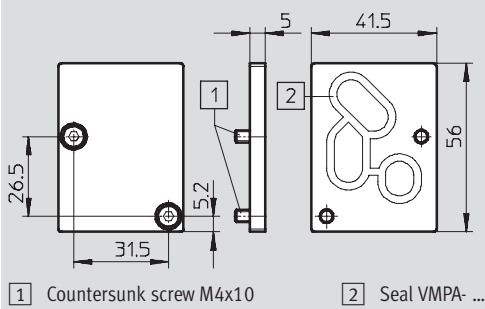
## Blanking plate VABB-P1

Material:  
Wrought aluminium alloy, NBR, steel



### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



### Ordering data

Weight [g]	CRC	Part No.	Type
35	1 <sup>1)</sup>	558 350	VABB-P1

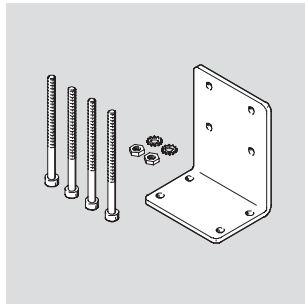
1) Corrosion resistance class 1 as per Festo standard 940 070  
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Proportional pressure regulators VPPM

Accessories

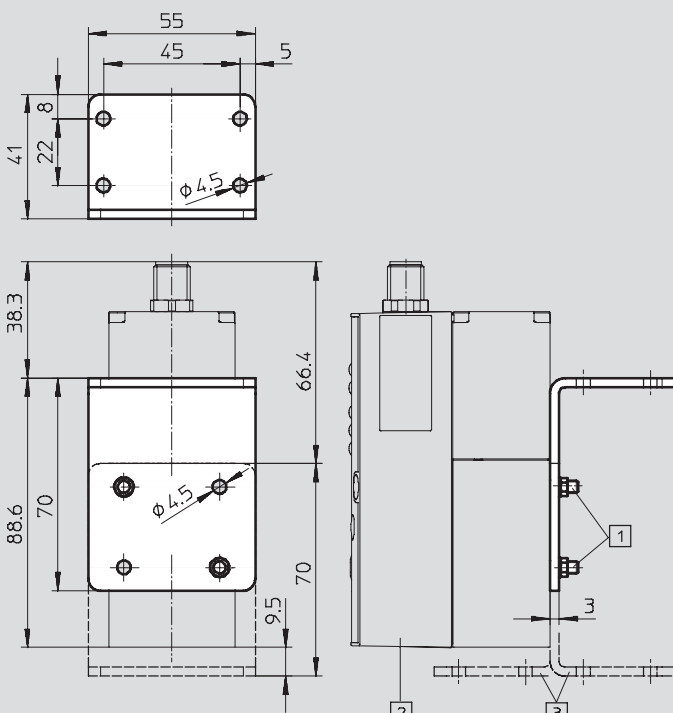
## Mounting bracket VAME-P1-A

Material:  
Wrought aluminium alloy, steel



### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



1 Socket head screw M4

2 Proportional pressure regulator VPPM

3 Mounting bracket can be reversed if required

### Ordering data

Weight [g]	CRC	Part No.	Type
71	1 <sup>1)</sup>	542 251	VAME-P1-A

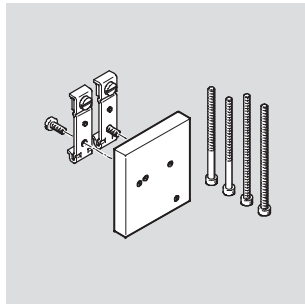
1) Corrosion resistance class 1 as per Festo standard 940 070  
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Proportional pressure regulators VPPM

Accessories

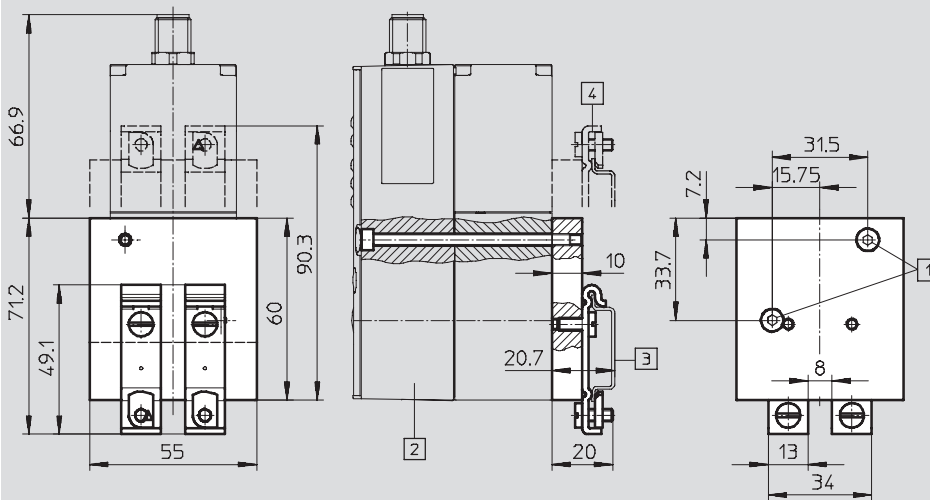
## H-rail mounting VAME-P1-T

Material:  
Wrought aluminium alloy, steel



### Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



- 1) Socket head screw M4
- 2) Proportional pressure regulator VPPM
- 3) H-rail NRH
- 4) H-rail mounting can be rotated by 180° if required

### Ordering data

Weight [g]	CRC	Part No.	Type
150	1 <sup>1)</sup>	542 255	VAME-P1-T

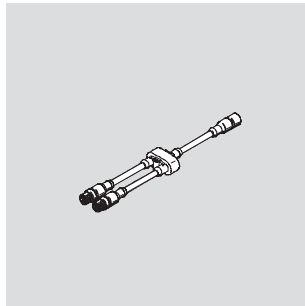
1) Corrosion resistance class 1 as per Festo standard 940 070  
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Proportional pressure regulators VPPM

Accessories

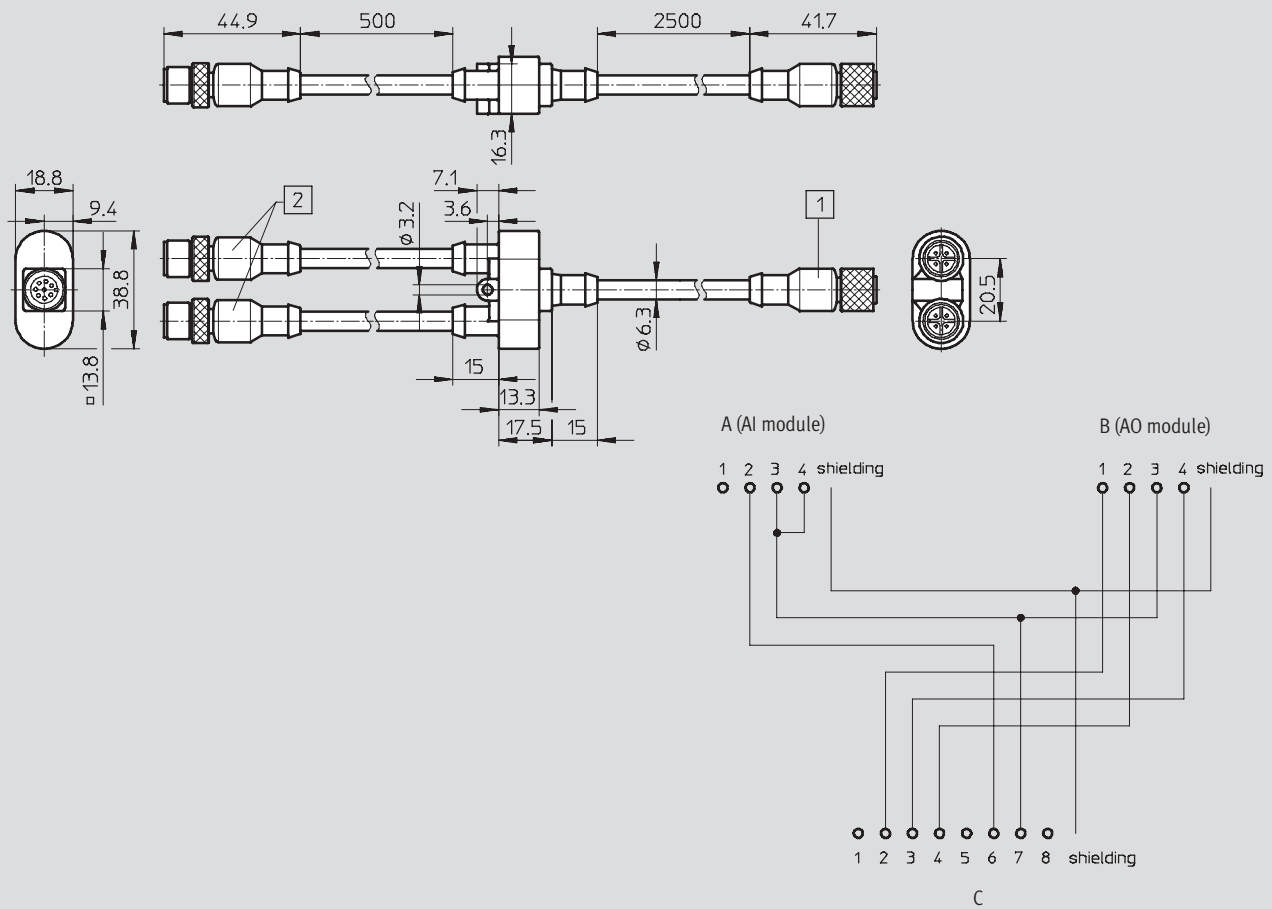
## Plug socket with cable NEBV-M12G8-KD-3-M12G4

For connecting the VPPM with the analogue input and output modules of the controller CPX.



### Dimensions and pin allocation

Download CAD data → [www.festo.com](http://www.festo.com)



- 1 Straight socket, 8-pin, to VPPM
- 2 Straight plug, 4-pin, to CPX modules

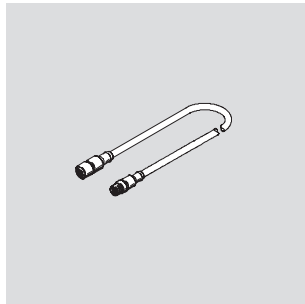


# Proportional pressure regulators VPPM

Accessories

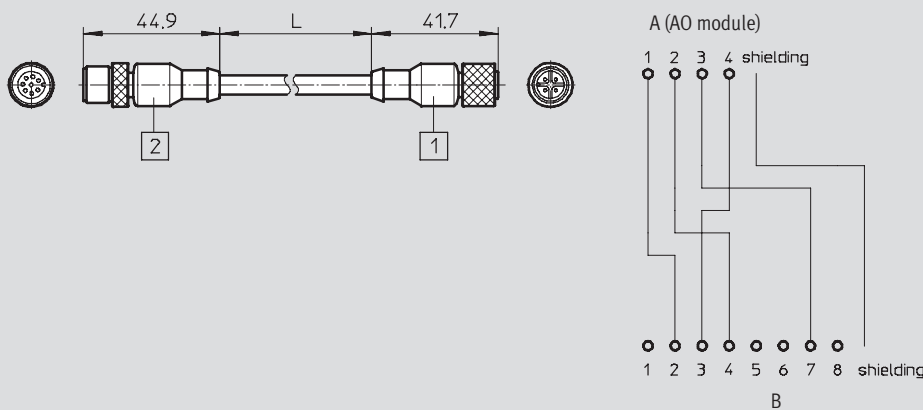
**Plug socket with cable**  
**NEBV-M12G8-K-2-M12G4**  
**NEBV-M12G8-K-5-M12G4**

For connecting the VPPM with the analogue output modules of the controller CPX.



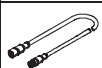



## Dimensions and pin allocation

Download CAD data → [www.festo.com](http://www.festo.com)



Type	2	1	L1
NEBV-M12G8-K-2-M12G4	Straight socket, M12, 8-pin to VPPM	Straight plug, M12, 4-pin to CPX module	2 m
NEBV-M12G8-K-5-M12G4			5 m

Ordering data				
	Description	Cable length [m]	Part No.	Type
Plug socket with cable		Technical data → Internet: plug socket with cable		
	Straight socket, 8-pin, M12	2	525 616	SIM-M12-8GD-2-PU
		5	525 618	SIM-M12-8GD-5-PU
	Angled socket, 8-pin, M12	2	542 256	NEBU-M12W8-2-N-LE8
		5	542 257	NEBU-M12W8-5-N-LE8
	One straight socket, 8-pin, and one straight plug, 4-pin	2	553 575	NEBV-M12G8-K-2-M12G4
		5	553 576	NEBV-M12G8-K-5-M12G4
	One straight socket, 8-pin, and two straight plugs, 4-pin	–	547 888	NEBV-M12G8-KD-3-M12G4