




Proportional pressure regulators MPPES

Technical data

-  - Flow rate
230 ... 5,500 l/min
-  - Voltage
18 ... 30 V DC
-  - Pressure regulation ranges
0 ... 2 bar
0 ... 6 bar
0 ... 10 bar

- Variants
- Setpoint value input as analogue voltage signal 0 ... 10 V
 - Setpoint value input as analogue current signal 4 ... 20 mA

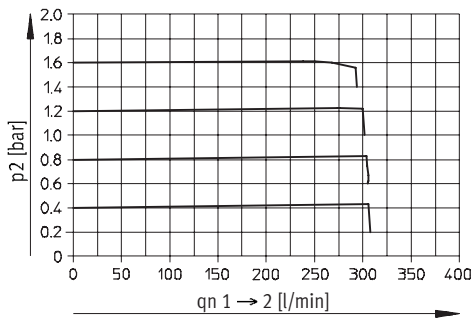


General technical data			
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ¹ / ₂
Constructional design	Directly actuated piston regulator	Pilot actuated piston regulator	
Sealing principle	Soft		
Actuation type	Electrical		
Type of pilot control	Direct	Pilot actuated	
Type of mounting	Via through-holes		
Mounting position	Any		
Nominal size	Ventilation [mm]	3	7
	Exhaust [mm]	2	7
Standard nominal flow rate	[l/min]	→ Diagrams	
Product weight	[g]	915	2 670

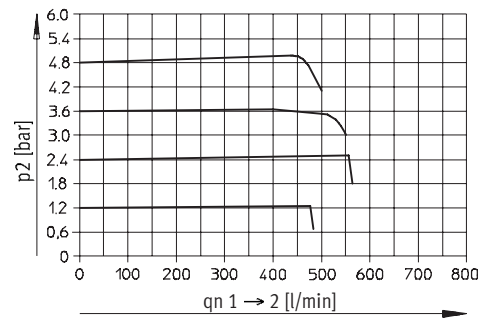
Flow rate qn as a function of the output pressure p2

Pneumatic connection G¹/₈

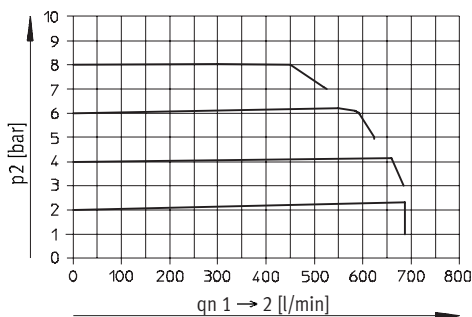
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



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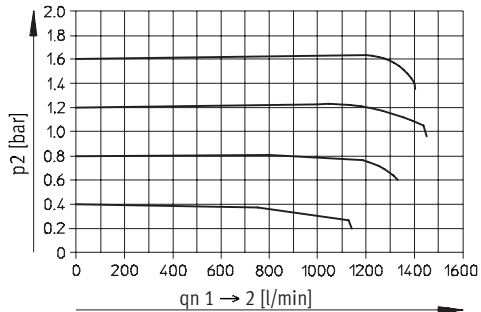
Technical data

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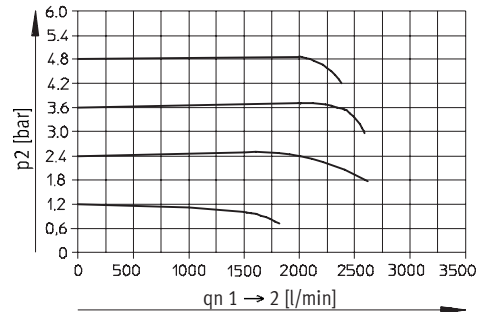
Flow rate q_n as a function of the output pressure p_2

Pneumatic connection $G\frac{1}{4}$

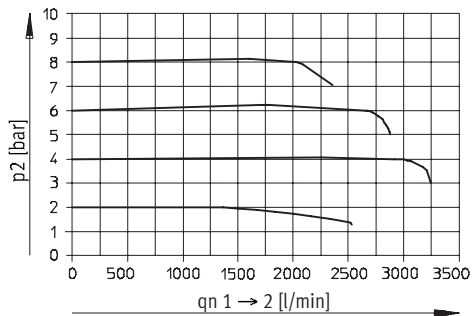
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar

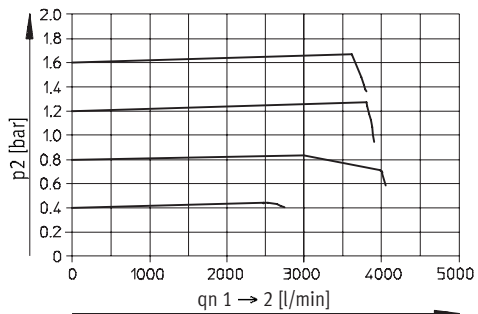


Pressure regulation range 0 ... 10 bar

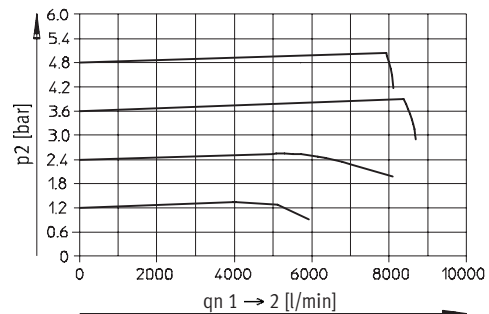


Pneumatic connection $G\frac{1}{2}$

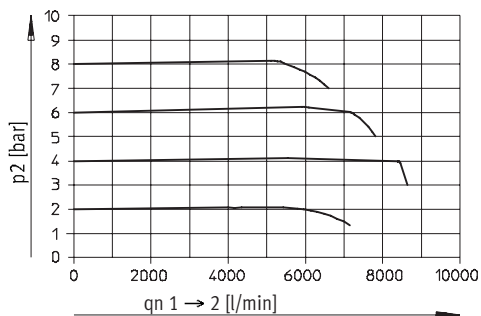
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



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Operating and environmental conditions				
Pressure regulation range	[bar]	0 ... 2	0 ... 6	0 ... 10
Operating medium		Filtered compressed air, lubricated or unlubricated Neutral gases		
Input pressure 1	[bar]	3 ... 4	7 ... 8	11 ... 12
Max. hysteresis	[mbar]	10	50	50
Ambient temperature	[°C]	0 ... 50		
Temperature of medium	[°C]	0 ... 60		
Corrosion resistance class CRC ¹⁾		2	2	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 surrounding industrial atmosphere or media such as cooling or lubricating agents.

Response times/step responses to output 2 at p _{1max} [s]							
Pressure regulation range [bar]	Volume to output 2	0 ... 2		0 ... 6		0 ... 10	
		On ¹⁾	Off ²⁾	On ¹⁾	Off ²⁾	On ¹⁾	Off ²⁾
0 l	G1/8	0.220	0.410	0.210	0.280	0.200	0.290
	G1/4	0.200	0.890	0.200	0.640	0.200	0.360
	G1/2	0.220	1.000	0.230	0.660	0.230	0.450
2 l	G1/8	0.660	2.530	1.200	5.760	1.370	6.300
	G1/4	0.200	1.000	0.450	0.760	0.460	0.900
	G1/2	0.320	1.000	0.340	0.570	0.350	0.630
10 l	G1/8	2.700	2.800	5.150	24.000	5.800	27.000
	G1/4	0.900	2.700	1.500	3.000	1.900	3.400
	G1/2	0.800	1.400	1.100	1.500	1.300	1.800

- 1) On = 0 ... 90% p_{2max}.
2) Off = 100 ... 10% p_{2max}.

Electrical data				
Pressure regulation range	[bar]	0 ... 2	0 ... 6	0 ... 10
Electrical connection		Plug, round design to DIN 45 326, M16 x 0.75, 8-pin		
Operating voltage range	U _B	[V DC]	18 ... 30	
Residual ripple			10%	
Power consumption	P _{max.}	[W]	20 (at 30 V DC)	
Signal setpoint value input	Voltage	U _w	[V DC]	0 ... 10
	Current	I _w	[mA]	4 ... 20
Signal actual value input	Voltage	U _x	[V DC]	0 ... 10
	Current	I _x	[mA]	4 ... 20
Signal actual value input external	Voltage	U _{x,ext.}	[V DC]	0 ... 10
	Current	I _{x,ext.}	[mA]	4 ... 20
Protection class to DIN 60 529			IP65 (with connection socket)	
Safety note			If the power supply cable is interrupted, output pressure is maintained unregulated.	
Protection against polarity reversal	Setpoint value input	For all electrical connections		
	Voltage signal 0 ... 10 V	Setpoint value input	For operating voltage	
Protection against short circuit	Current signal 4 ... 20 mA			
		No		

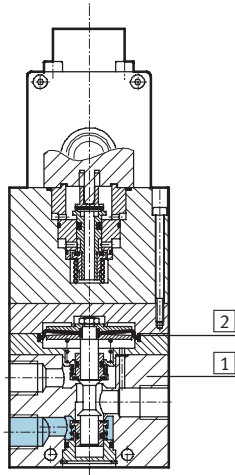
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Technical data


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Materials

Sectional view



1	Housing	Wrought aluminium alloy
2	Diaphragm	Nitrile rubber

-  - Note

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

Dimensions

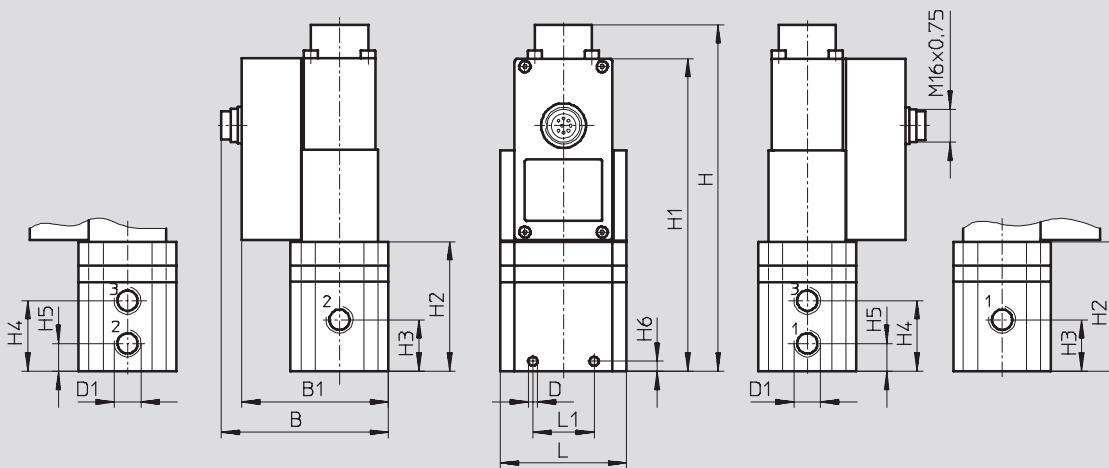
Download CAD data → www.festo.com

MPPES-3-1/8-...

MPPES-3-1/4-...
MPPES-3-1/2-...

MPPES-3-1/4-...
MPPES-3-1/2-...

MPPES-3-1/8-...



Pneumatic connection D1	B	B1	D Ø	H	H1	H2	H3	H4	H5	H6	L	L1
G1/8	77.1	67.1	4.4	116.5	100	55	34	45	23	4	62	34
G1/4	82.1	72.1	4.5	170.2	153.7	63.7	25.3	34.8	13.8	5	62	30
G1/2	96.1	86.1	7	227.1	210.6	120.6	53	74	32	18	86	50

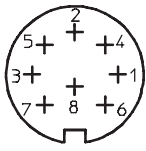
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Connections

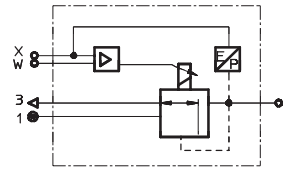
Terminal allocation



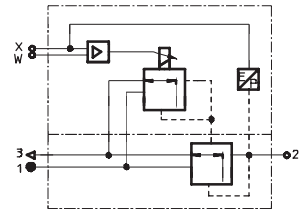
1	WH	n. c.
2	BN	GND
3	GN	GND
4	YE	W_{in} (setpoint value input)
5	GY	n. c.
6	PK	X_{out} (actual value output)
7	RD	24 V DC (supply voltage)
8	BU	GND

Switching function

MPPES-3-1/8-...



MPPES-3-1/4-.../MPPES-3-1/2-...



Ordering data

Pneumatic connection	Pressure regulation range [bar]	Voltage type 0 ... 10 V		Current type 4 ... 20 mA	
		Part No.	Type	Part No.	Type
Basic version					
G ¹ / ₈	0 ... 2	187 350	MPPES-3-1/8-2-010	187 351	MPPES-3-1/8-2-420
	0 ... 6	187 352	MPPES-3-1/8-6-010	187 353	MPPES-3-1/8-6-420
	0 ... 10	187 348	MPPES-3-1/8-10-010	187 349	MPPES-3-1/8-10-420
G ¹ / ₄	0 ... 2	187 335	MPPES-3-1/4-2-010	187 336	MPPES-3-1/4-2-420
	0 ... 6	187 337	MPPES-3-1/4-6-010	187 338	MPPES-3-1/4-6-420
	0 ... 10	187 333	MPPES-3-1/4-10-010	187 334	MPPES-3-1/4-10-420
G ¹ / ₂	0 ... 2	187 328	MPPES-3-1/2-2-010	187 329	MPPES-3-1/2-2-420
	0 ... 6	187 330	MPPES-3-1/2-6-010	187 331	MPPES-3-1/2-6-420
	0 ... 10	187 326	MPPES-3-1/2-10-010	187 327	MPPES-3-1/2-10-420
Special adaptation type¹⁾					
G ¹ / ₈	0 ... 10	187 347	MPPES-3-1/8-PU-PO-010	187 762	MPPES-3-1/8-PU-PO-420
G ¹ / ₄	0 ... 10	187 339	MPPES-3-1/4-PU-PO-010	187 744	MPPES-3-1/4-PU-PO-420
G ¹ / ₂	0 ... 10	187 332	MPPES-3-1/2-PU-PO-010	187 735	MPPES-3-1/2-PU-PO-420

1) The special adaptation type allows a lower pressure PU to be assigned to the setpoint value 0 V or 4 mA and an upper pressure PO to be assigned to the setpoint value 10 V or 20 mA. PU and PO by customer request.