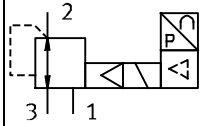
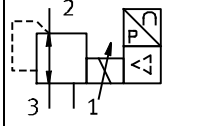


Proportional pressure regulators MPPE/MPPES



Proportional pressure regulators MPPE/MPPEs

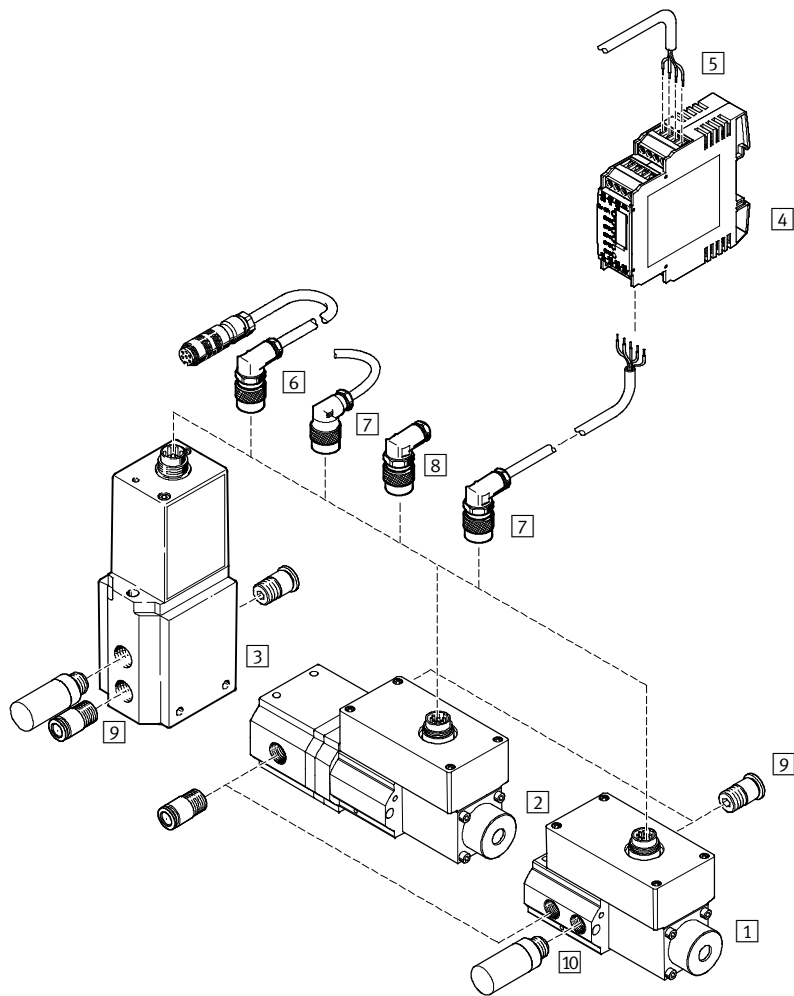
Product range overview

Function	Type	Circuit symbol	Design	Pneumatic connection 1	Nominal size pressurise/exhaust [mm]	Pressure regulation range ¹⁾ [bar]	Setpoint input		→ Page/Internet
							Voltage type 0 ... 10 V	Current type 4 ... 20 mA	
Proportional pressure regulators	With pilot control via 2/2-way valves (switching valves)								
	MPPE		Pilot-actuated valve	G1/8	5/5	0 ... 1	<input type="checkbox"/>	<input type="checkbox"/>	5
				G1/4	7/7	0 ... 2.5	<input type="checkbox"/>	<input type="checkbox"/>	
				G1/2	11/12	0 ... 6 0 ... 10	<input type="checkbox"/>	<input type="checkbox"/>	
	With proportional solenoid								
	MPPEs		Directly actuated valve	G1/8	3/2	0 ... 2	<input type="checkbox"/>	<input type="checkbox"/>	10
Pilot-actuated valve				G1/4	7/7	0 ... 6	<input type="checkbox"/>	<input type="checkbox"/>	
				G1/2	11/12	0 ... 10	<input type="checkbox"/>	<input type="checkbox"/>	

1) Pressure regulation range also by customer request

Proportional pressure regulators MPPE/MPPES

Peripherals overview



Accessories				
		Type	Brief description	→ Page/Internet
1	Proportional pressure regulator	MPPES	Directly controlled	10
2	Proportional pressure regulator	MPPES	Indirectly controlled	10
3	Proportional pressure regulator	MPPE	–	5
4	Setpoint module MPZ	MPZ	For generating 6+1 analogue voltage signals	14
5	Digital input/output	–	For controlling the setpoint module	–
6	Connecting cable	KVIA-MPPE	–	14
7	Plug socket with cable	KMPE-B	–	
8	Angled socket	MPPE-3-B	–	
9	Push-in fitting	QS	For connecting compressed air tubing	quick star
10	Silencer	U	For fitting in exhaust ports	u

Proportional pressure regulators MPPE

Type codes

Basic version

MPPE - 3 - 1/8 - 1 - 010 - B

Type

MPPE	Proportional pressure regulator with switching valve head
------	---

Valve function

3	3-way pressure regulator
---	--------------------------

Pneumatic connection

1/8	Female thread G1/8
1/4	Female thread G1/4
1/2	Female thread G1/2

Pressure regulation range

1	0 ... 1 bar
2,5	0 ... 2.5 bar
6	0 ... 6 bar
10	0 ... 10 bar

Analogue setpoint input

010	0 ... 10 V
420	4 ... 20 mA

Generation

B	B series
---	----------

Special pressure regulation range by customer request

MPPE - 3 - 1/8 - 2 - 4 - 010 - B

Type

MPPE	Proportional pressure regulator with switching valve head
------	---

Valve function

3	3-way pressure regulator
---	--------------------------

Pneumatic connection

1/8	Female thread G1/8
1/4	Female thread G1/4
1/2	Female thread G1/2

Required pressure at 0 V or 4 mA [bar]

Required pressure at 10 V or 20 mA [bar]

Analogue setpoint input


010	0 ... 10 V
420	4 ... 20 mA


Generation


B	B series
---	----------

Proportional pressure regulators MPPE

Technical data

 Flow rate
350 ... 8,800 l/min

 Voltage
18 ... 30 V DC

 Pressure regulation range
0 ... 1 bar
0 ... 2.5 bar
0 ... 6 bar
0 ... 10 bar

Variants

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

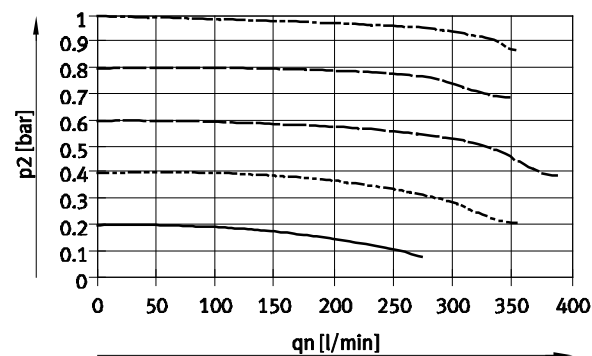


General technical data					
Pneumatic connection		G ¹ / ₈	G ¹ / ₄	G ¹ / ₂	
Design	Pilot-actuated piston regulator				
Sealing principle	Soft				
Actuation type	Electrical				
Type of control	Pilot-actuated via 2/2-way valves				
Type of mounting	Via through-hole				
Mounting position	Any				
Nominal size	Pressurisation	[mm]	5	7	11
	Exhaust	[mm]	5	7	12
Standard nominal flow rate	[l/min]	→ Graphs			
Product weight	[g]	710	920	2,400	

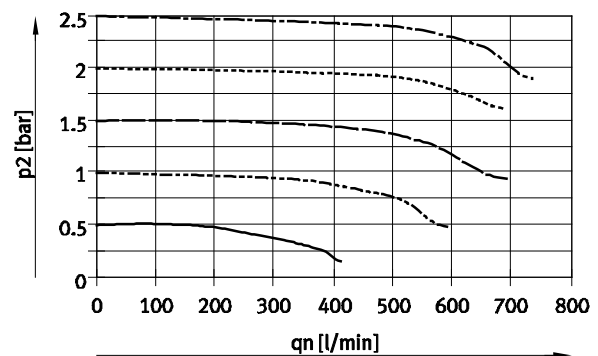
Flow rate qn as a function of output pressure p2

Pneumatic connection G¹/₈

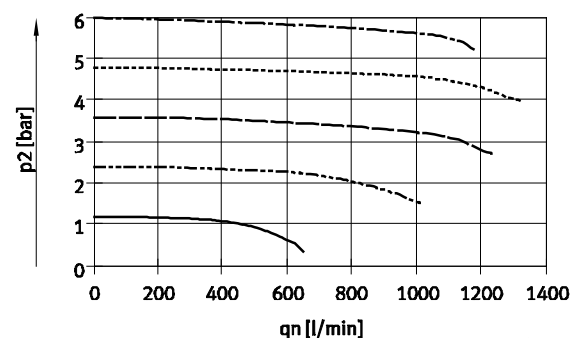
Pressure regulation range 0 ... 1 bar



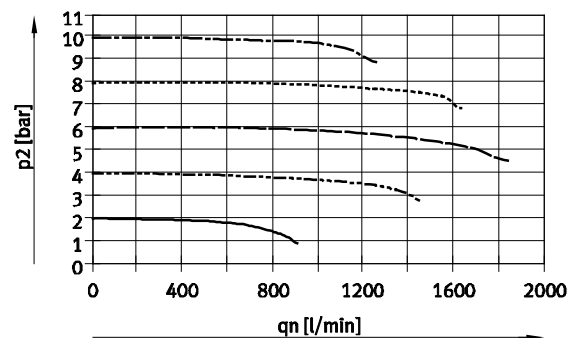
Pressure regulation range 0 ... 2.5 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



Proportional pressure regulators MPPE

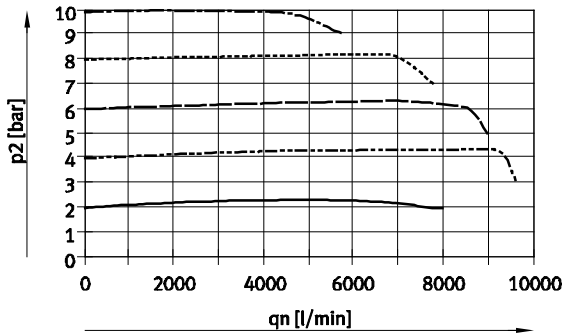
Technical data

FESTO

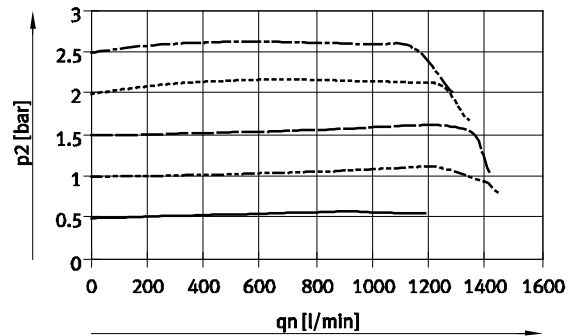
Flow rate q_n as a function of output pressure p_2

Pneumatic connection G $\frac{3}{4}$

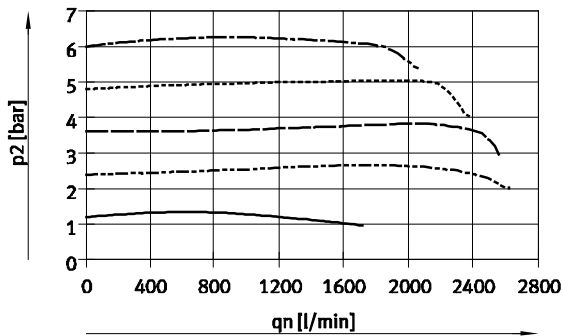
Pressure regulation range 0 ... 1 bar



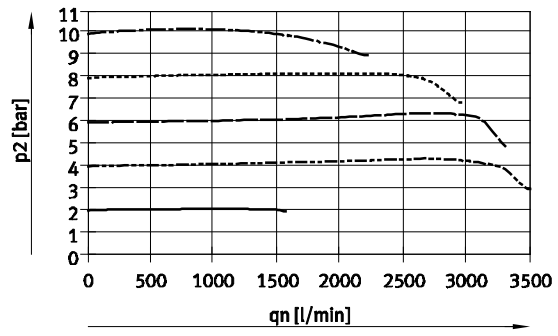
Pressure regulation range 0 ... 2.5 bar



Pressure regulation range 0 ... 6 bar

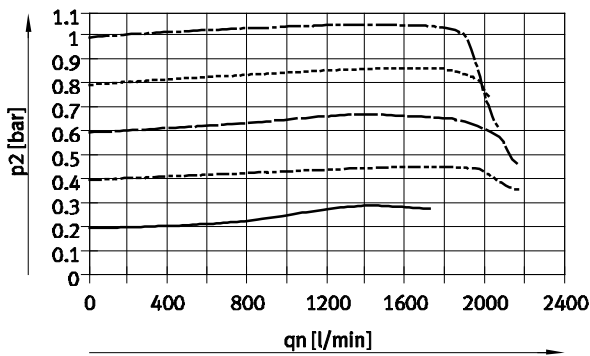


Pressure regulation range 0 ... 10 bar

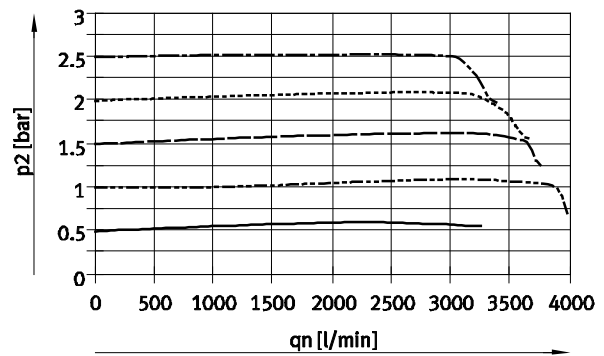


Pneumatic connection G $\frac{1}{2}$

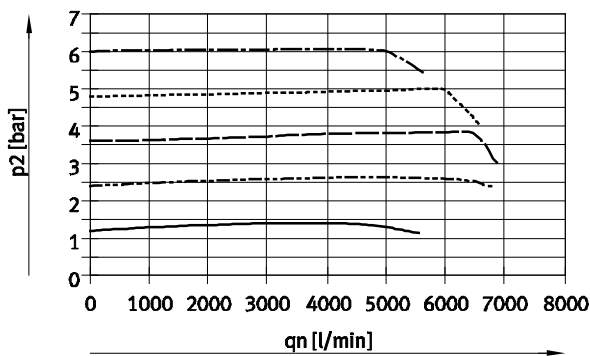
Pressure regulation range 0 ... 1 bar



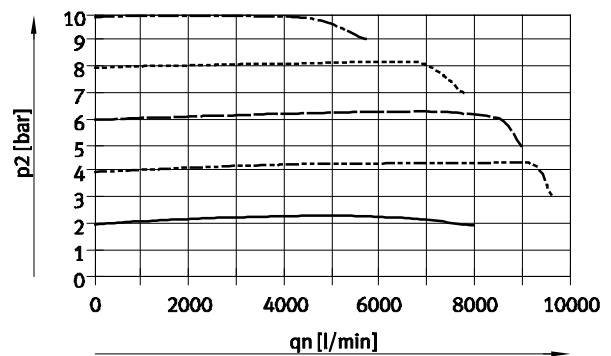
Pressure regulation range 0 ... 2.5 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



Proportional pressure regulators MPPE

Technical data

Operating and environmental conditions					
Pressure regulation range	[bar]	0 ... 1	0 ... 2.5	0 ... 6	0 ... 10
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4] Inert gases			
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Supply pressure 1	[bar]	1.5 ... 2	3.5 ... 4.5	7 ... 8	11 ... 12
Max. pressure hysteresis	[mbar]	30	40	40	50
Ambient temperature	[°C]	0 ... 50			
Temperature of medium	[°C]	0 ... 60			
Corrosion resistance class	[CRC]	2 ¹⁾			
Certification		C-Tick			

1) Corrosion resistance class 2 according to 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.

Electrical data					
Pressure regulation range	[bar]	0 ... 1	0 ... 2.5	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]	3.6 (at 30 V DC and 100% duty cycle)		
Setpoint input signal	Voltage	V_w	[V DC]	0 ... 10	
	Current	I_w	[mA]	4 ... 20	
Actual value output signal	Voltage	V_x	[V DC]	0 ... 10	
	Current	I_x	[mA]	4 ... 20	
Actual value input signal, external	Voltage	$V_{x,ext.}$	[V DC]	0 ... 10	
	Current	$I_{x,ext.}$	[mA]	4 ... 20	
Protection class to DIN 60 529		IP65 (with connection socket)			
Safety note		In the event of a broken supply power wire or setpoint wire, output pressure remains and is uncontrolled. In the long-term, leakage results in pressure drop.			
Reverse polarity protection	Setpoint input, voltage signal 0 ... 10 V	For all electrical connections			
	Setpoint input, current signal 4 ... 20 mA	For operating voltage			
Protection against short circuit		Yes, for the types with voltage signal as setpoint input			

Materials	
Housing	Wrought aluminium alloy
Seals	NBR

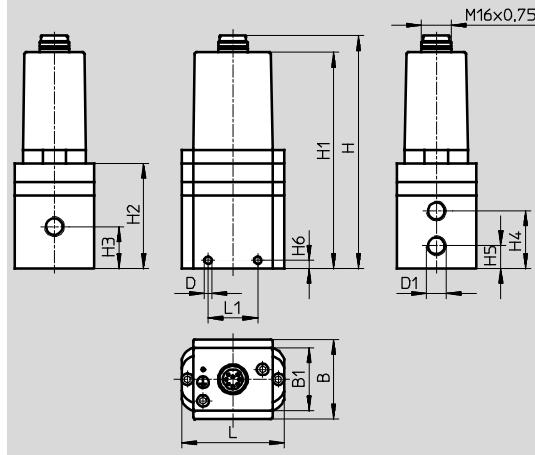
Proportional pressure regulators MPPE

Technical data

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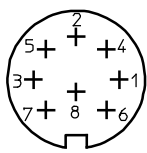
Dimensions

Download CAD data → www.festo.com



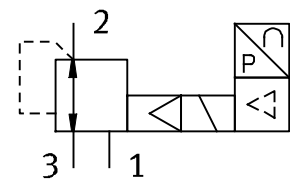
Connection D1	B	B1	∅D	H	H1	H2	H3	H4	H5	H6	L	L1
G ¹ / ₈	38	–	4.5	129.1	119.1	60.2	18.8	26.8	9.3	4	62	34
G ¹ / ₄	48	38	4.5	140.7	130.7	63.6	25.3	34.8	13.8	5	62	30
G ¹ / ₂	76	38	7	194.6	184.6	117.5	53	74	32	18	86	50

Pin allocation



1	WH	X _{ext,in} (external actual value input)
2	BN	GND
3	GN	GND
4	YE	W _{in} (setpoint input)
5	GY	10 V _{out} (external potentiometer supply)
6	PK	X _{out} (actual value output)
7	RD	24 V DC (supply voltage)
8	BU	GND

Switching function



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 ... 1	161160	MPPE-3-1/8-1-010-B	161163	MPPE-3-1/8-1-420-B
	0 ... 2.5	164315	MPPE-3-1/8-2,5-010-B	164316	MPPE-3-1/8-2,5-420-B
	0 ... 6	161161	MPPE-3-1/8-6-010-B	161164	MPPE-3-1/8-6-420-B
	0 ... 10	161162	MPPE-3-1/8-10-010-B	161165	MPPE-3-1/8-10-420-B
G ¹ / ₄	0 ... 1	161166	MPPE-3-1/4-1-010-B	161169	MPPE-3-1/4-1-420-B
	0 ... 2.5	164317	MPPE-3-1/4-2,5-010-B	164318	MPPE-3-1/4-2,5-420-B
	0 ... 6	161167	MPPE-3-1/4-6-010-B	161170	MPPE-3-1/4-6-420-B
	0 ... 10	161168	MPPE-3-1/4-10-010-B	161171	MPPE-3-1/4-10-420-B
G ¹ / ₂	0 ... 1	161172	MPPE-3-1/2-1-010-B	161175	MPPE-3-1/2-1-420-B
	0 ... 2.5	164319	MPPE-3-1/2-2,5-010-B	164320	MPPE-3-1/2-2,5-420-B
	0 ... 6	161173	MPPE-3-1/2-6-010-B	161176	MPPE-3-1/2-6-420-B
	0 ... 10	161174	MPPE-3-1/2-10-010-B	161177	MPPE-3-1/2-10-420-B
Special adaptation type¹⁾					
G ¹ / ₈	0 ... 10	164330	MPPE-3-1/8-...-...-010-B ¹⁾	164330	MPPE-3-1/8-...-...-420-B ¹⁾
G ¹ / ₄	0 ... 10	164331	MPPE-3-1/4-...-...-010-B ¹⁾	164331	MPPE-3-1/4-...-...-420-B ¹⁾
G ¹ / ₂	0 ... 10	164332	MPPE-3-1/2-...-...-010-B ¹⁾	164332	MPPE-3-1/2-...-...-420-B ¹⁾

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

Proportional pressure regulators MPPES

Type codes

Basic version

		MPPES	-	3	-	1/8	-	1	-	010
Type										
MPPES	Proportional pressure regulator with proportional solenoid									
Valve function										
3	3-way pressure regulator									
Pneumatic connection										
1/8	Female thread G1/8									
1/4	Female thread G1/4									
1/2	Female thread G1/2									
Pressure regulation range										
2	0 ... 2 bar									
6	0 ... 6 bar									
10	0 ... 10 bar									
Analogue setpoint input										
010	0 ... 10 V									
420	4 ... 20 mA									




Special pressure regulation range by customer request

		MPPES	-	3	-	1/8	-	2	-	4	-	010
Type												
MPPES	Proportional pressure regulator with proportional solenoid											
Valve function												
3	3-way pressure regulator											
Pneumatic connection												
1/8	Female thread G1/8											
1/4	Female thread G1/4											
1/2	Female thread G1/2											
Required pressure at 0 V or 4 mA [bar]												
Required pressure at 10 V or 20 mA [bar]												
Analogue setpoint input												
010	0 ... 10 V											
420	4 ... 20 mA											

Proportional pressure regulators MPPES

Technical data

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-  Flow rate
230 ... 8,500 l/min
-  Voltage
18 ... 30 V DC
-  Pressure regulation range
0 ... 2 bar
0 ... 6 bar
0 ... 10 bar

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

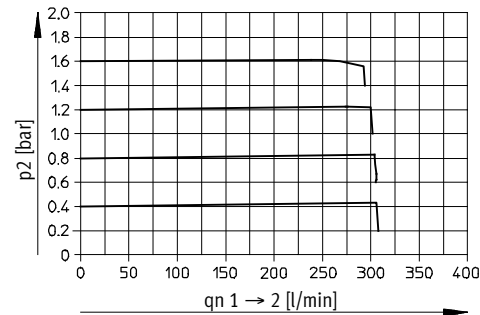


General technical data			
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ¹ / ₂
Design	Directly actuated piston regulator	Pilot-actuated piston regulator	
Sealing principle	Soft		
Actuation type	Electrical		
Type of mounting	Via through-hole		
Mounting position	Any		
Nominal size	Pressurisation [mm]	3	7
	Exhaust [mm]	2	7
Standard nominal flow rate	[l/min]	→ Graphs	
Product weight	[g]	915	1,310
			2,670

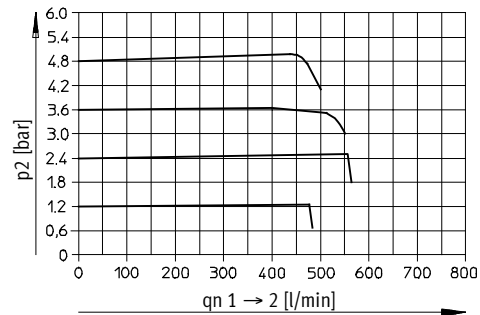
Flow rate qn as a function of output pressure p2

Pneumatic connection G¹/₈

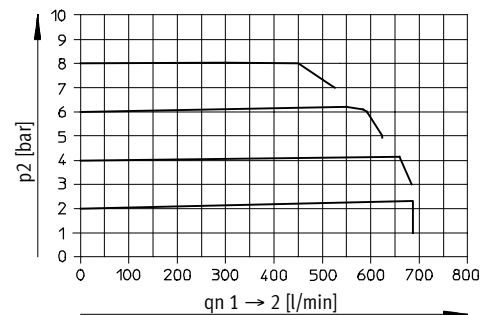
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



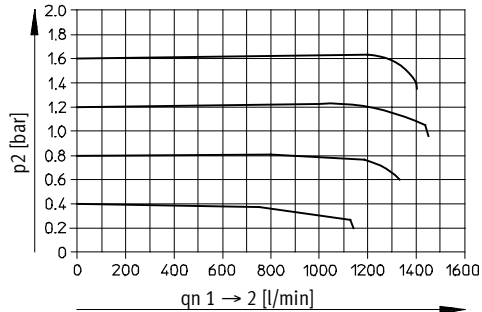
Proportional pressure regulators MPPES

Technical data

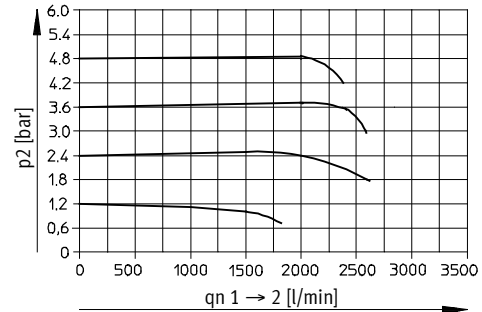
Flow rate q_n as a function of output pressure p_2

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

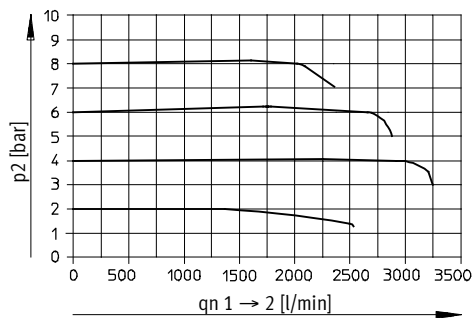
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar

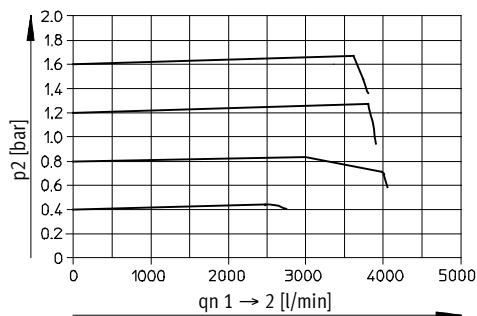


Pressure regulation range 0 ... 10 bar

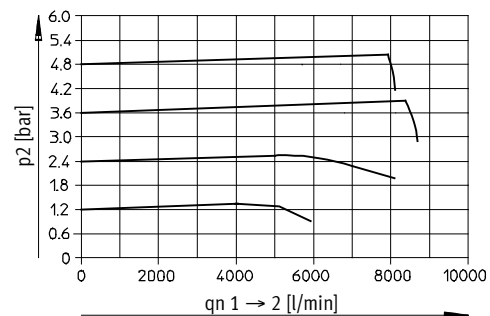


Pneumatic connection G $\frac{1}{2}$

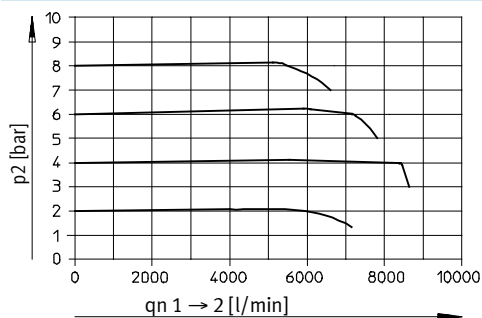
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



Proportional pressure regulators MPPES

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Technical data


Operating and environmental conditions				
Pressure regulation range	[bar]	0 ... 2	0 ... 6	0 ... 10
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4] Inert gases		
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Supply pressure 1	[bar]	3 ... 4	7 ... 8	11 ... 12
Max. pressure hysteresis	1/8"	[mbar]	10	
	1/4"	[mbar]	50	
	1/2"	[mbar]	50	
Ambient temperature	[°C]	0 ... 50		
Temperature of medium	[°C]	0 ... 60		
Corrosion resistance class CRC		2 ¹⁾		
Certification		C-Tick		

1) Corrosion resistance class 2 according to 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.

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)	
Setpoint input signal	Voltage	V_w	[V DC]	0 ... 10
	Current	I_w	[mA]	4 ... 20
Actual value output signal	Voltage	V_x	[V DC]	0 ... 10
	Current	I_x	[mA]	4 ... 20
Protection class to DIN 60 529			IP65 (with connection socket)	
Safety note			Output pressure is not maintained if the power supply cable is interrupted	
Reverse polarity protection	Setpoint input, voltage signal	0 ... 10 V		For all electrical connections
	Setpoint input, current signal	4 ... 20 mA		
Protection against short circuit			Yes, for the types with voltage signal as setpoint input	

Materials	
Housing	Wrought aluminium alloy
Seals	NBR

-  - Note
The working line is vented if the power supply cable is interrupted.

Proportional pressure regulators MPPES

Technical data

Dimensions Download CAD data → www.festo.com

Connection D1	B	B1	∅D	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

Connections

Pin allocation

- 1 WH n.c.
- 2 BN GND
- 3 GN GND
- 4 YE W_{in} (setpoint 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-...

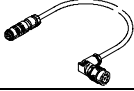


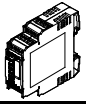
Ordering data

Pneumatic connection	Pressure regulation range [bar]	Voltage type 0 ... 10 V		Current type 4 ... 20 mA	
		Part No.	Type	Part No.	Type
Basic version					
G1/8	0 ... 2	187350	MPPES-3-1/8-2-010	187351	MPPES-3-1/8-2-420
	0 ... 6	187352	MPPES-3-1/8-6-010	187353	MPPES-3-1/8-6-420
	0 ... 10	187348	MPPES-3-1/8-10-010	187349	MPPES-3-1/8-10-420
G1/4	0 ... 2	187335	MPPES-3-1/4-2-010	187336	MPPES-3-1/4-2-420
	0 ... 6	187337	MPPES-3-1/4-6-010	187338	MPPES-3-1/4-6-420
	0 ... 10	187333	MPPES-3-1/4-10-010	187334	MPPES-3-1/4-10-420
G1/2	0 ... 2	187328	MPPES-3-1/2-2-010	187329	MPPES-3-1/2-2-420
	0 ... 6	187330	MPPES-3-1/2-6-010	187331	MPPES-3-1/2-6-420
	0 ... 10	187326	MPPES-3-1/2-10-010	187327	MPPES-3-1/2-10-420
Special adaptation type¹⁾					
G1/8	0 ... 10	187347	MPPES-3-1/8-PU-PO-010	187762	MPPES-3-1/8-PU-PO-420
G1/4	0 ... 10	187339	MPPES-3-1/4-PU-PO-010	187744	MPPES-3-1/4-PU-PO-420
G1/2	0 ... 10	187332	MPPES-3-1/2-PU-PO-010	187735	MPPES-3-1/2-PU-PO-420

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

Proportional pressure regulators MPPE/MPPEs

Accessories

Ordering data				
	Description	Cable length [m]	Part No.	Type
Connecting cable Technical data → Internet: kvia-mppe				
 <ul style="list-style-type: none"> • Straight plug, M16x0.75, 6-pin • Angled socket, M16x0.75, 8-pin 		5	163882	KVIA-MPPE-5
			10	163883
Plug socket with cable Technical data → Internet: kmppe-b				
 <ul style="list-style-type: none"> • Angled socket, M16x0.75, 8-pin • Open end, 8-wire 		2.5	161879	KMPPE-B-2,5
			5	161878
Angled socket Technical data → Internet: mppe				
 <ul style="list-style-type: none"> • Angled socket, M16x0.75, 8-pin • Soldered connection, 8-pin 		–	161839	MPPE-3-B
Setpoint module Technical data → Internet: mpz				
	Setpoint module for generating 6 + 1 analogue voltage signals	–	546224	MPZ-1-24DC-SGH-6-SW