

Proportional-pressure regulators MPPES

FESTO

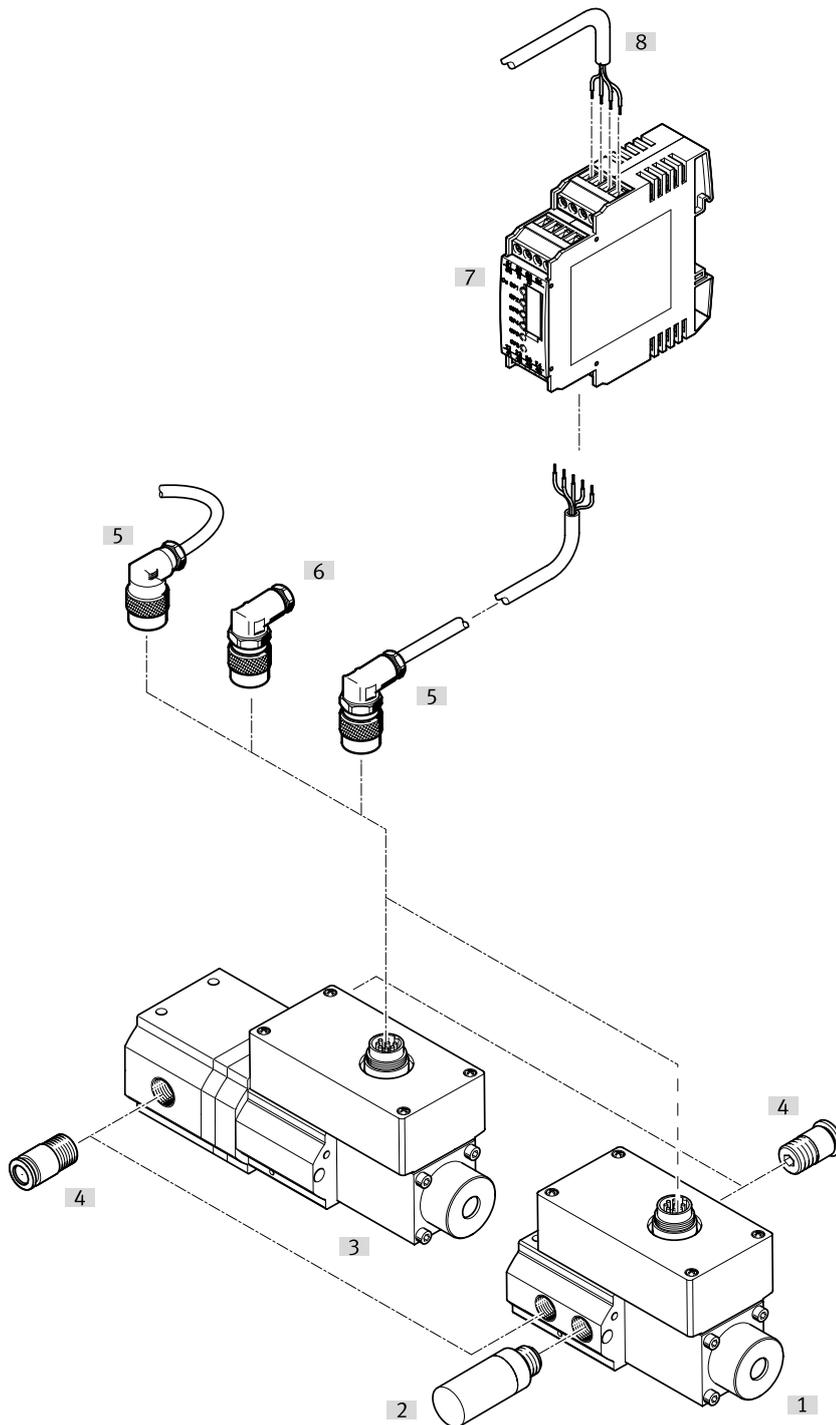


Product range overview

Function	Type	Circuit symbol	Design	Pneumatic connection 1	Nominal width Pressurisation/ exhaust [mm]	Pressure regulation range ¹⁾		Setpoint value input		→ Page/ Internet
						[MPa]	[bar]	Voltage type	Current type	
Proportional-pressure regulators	With proportional solenoid									
	MPPES		Directly actuated valve	G1/8	3/2	0 ... 0.2 0 ... 0.6 0 ... 1	0 ... 2 0 ... 6 0 ... 10	■	■	4
			Pilot-actuated valve	G1/4	7/7			■	■	
				G1/2	1 1/12			■	■	

1) Pressure regulation range also on customer request

Peripherals overview



Accessories

		Type	Description	→ Page/Internet
[1]	Proportional-pressure regulator	MPPES	Directly actuated	5
[2]	Silencer	U	For mounting in exhaust ports	u
[3]	Proportional-pressure regulator	MPPES	Indirectly actuated	5
[4]	Push-in fitting	QS	For connecting compressed air tubing	qs
[5]	Plug socket with cable	KMPE-B	–	12
[6]	Angled plug socket	MPPE-3-B	–	12
[7]	Setpoint module	MPZ	For generating 6+1 analogue voltage signals	12
[8]	Digital input/output	–	For controlling the setpoint module	–

Type codes

001	Series
MPPEs	Proportional pressure regulator with proportional solenoid

002	Valve function
1	3/2-way valve, normally closed

003	Pneumatic connection
G18	G1/8
G14	G1/4
G12	G1/2

004	Upper pressure value of control range
2H	2 bar
10H	10 bar
6H	6 bar

005	Setpoint input for individual valves
A4	4 ... 20 mA
V1	0 ... 10 V

Datasheet

-  Flow rate
230 ... 8500 l/min

-  Voltage
18 ... 30 V DC

-  Pressure regulation ranges
0 ... 0.2 MPa
0 ... 0.6 MPa
0 ... 1 MPa

Variants

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

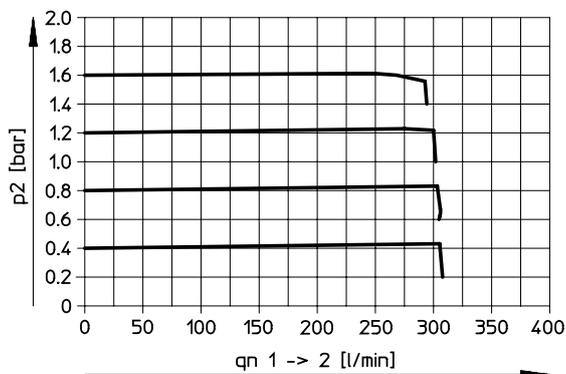


General technical data			G1/8	G1/4	G1/2
Pneumatic connection			G1/8	G1/4	G1/2
Design			Directly actuated piston regulator	Pilot-actuated piston regulator	
Valve function			3-way proportional-pressure regulator, closed		
Pneumatic connection 1, 2, 3			G1/8	G1/4	G1/2
Sealing principle			Soft		
Actuation type			Electrical		
Type of mounting			Via through-hole		
Mounting position			Any		
Nominal width	Pressurisation	[mm]	3	7	11
	Exhausting	[mm]	2	7	12
Standard nominal flow rate			→ Graphs		
Product weight			915	1310	2670

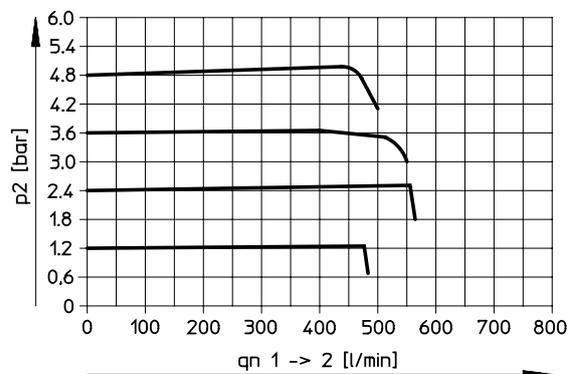
 Flow rate q_n as a function of output pressure p_2

Pneumatic connection G1/8

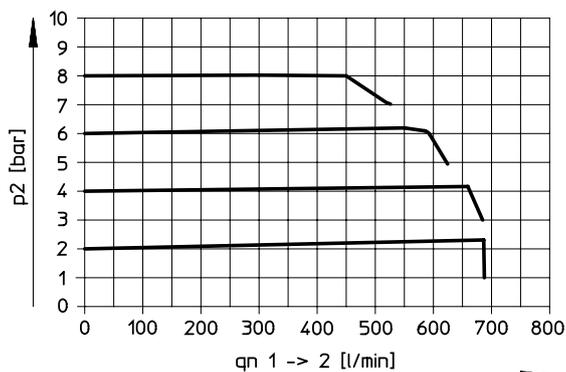
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar

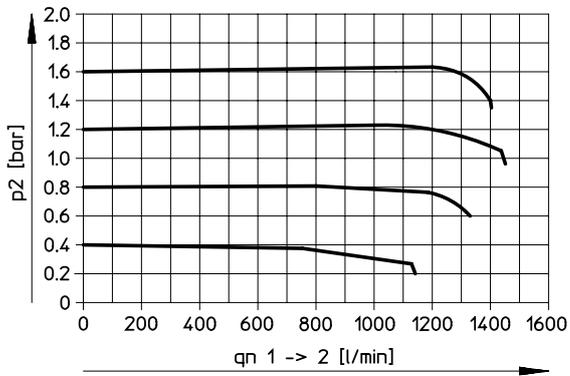


Datasheet

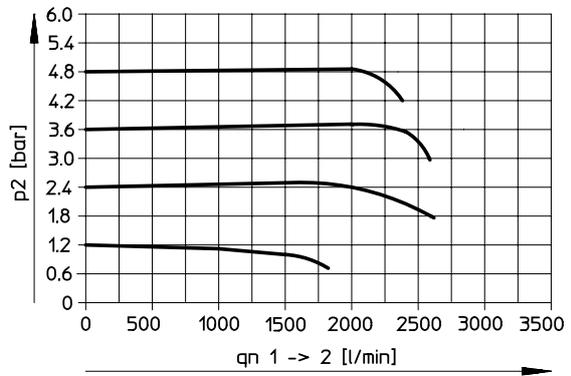
Flow rate q_n as a function of output pressure p_2

Pneumatic connection G1/4

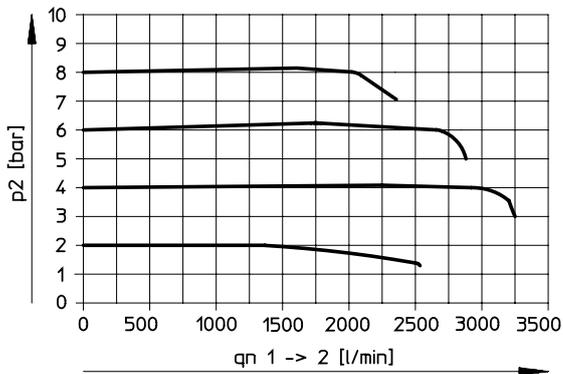
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar

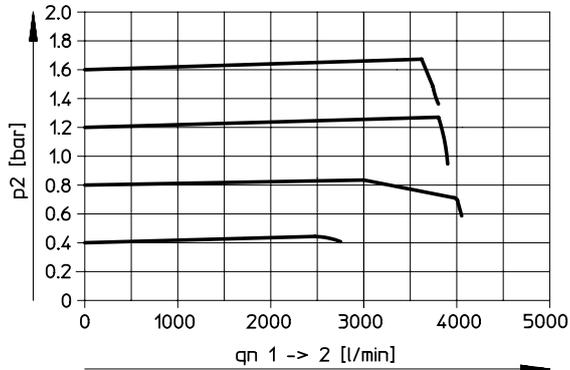


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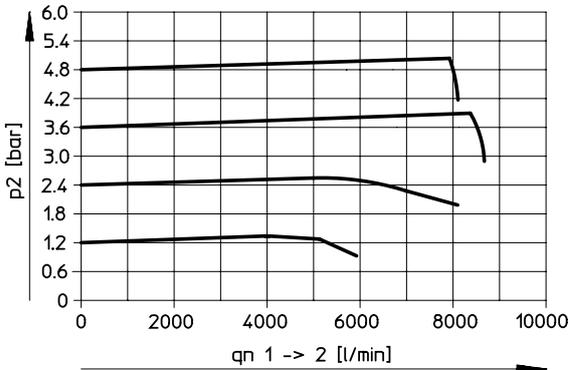
Flow rate q_n as a function of output pressure p_2

Pneumatic connection G1/2

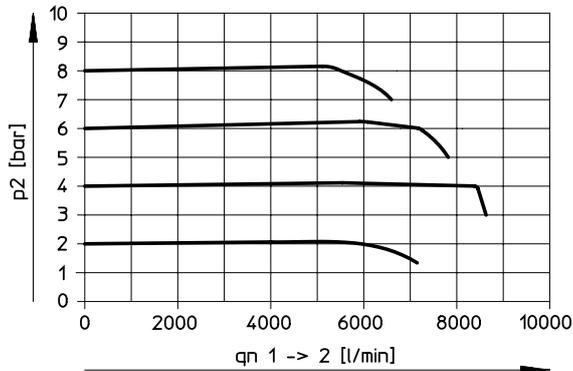
Pressure regulation range 0 ... 2 bar



Pressure regulation range 0 ... 6 bar



Pressure regulation range 0 ... 10 bar



Datasheet

Operating and environmental conditions					
Pressure regulation range		[MPa]	0 ... 0.2	0 ... 0.6	0 ... 1
		[bar]	0 ... 2	0 ... 6	0 ... 10
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]			
		Inert gases			
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)			
Input pressure 1		[MPa]	0.3 ... 0.4	0.7 ... 0.8	1.1 ... 1.2
		[bar]	3 ... 4	7 ... 8	11 ... 12
Max. pressure hysteresis	1/8"	[MPa]	0.001		
		[bar]	0.01		
	1/4"	[MPa]	0.005		
		[bar]	0.05		
	1/2"	[MPa]	0.005		
		[bar]	0.05		
Ambient temperature		[°C]	0 ... 50		
Temperature of medium		[°C]	0 ... 60		
Corrosion resistance class CRC ¹⁾		2 ¹⁾			
Certification		RCM Mark			
CE marking (see declaration of conformity)		To EU EMC Directive ²⁾			
		To EU RoHS Directive ²⁾			
UKCA marking (see declaration of conformity)		To UK EMC regulations ²⁾			
		To UK RoHS regulations ²⁾			
KC marking		KC EMC			

1) More information www.festo.com/x/topic/crc

2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Electrical data					
Pressure regulation range		[MPa]	0 ... 0.2	0 ... 0.6	0 ... 1
		[bar]	0 ... 2	0 ... 6	0 ... 10
Electrical connection		Plug, round design to DIN 45326, M16 x 0.75, 8-pin			
Nominal operating voltage		[V DC]	24		
Operating voltage range		U_B [V DC]	18 ... 30		
Residual ripple		10%			
Setpoint input signal	Voltage	U_w [V DC]	0 ... 10		
	Current	I_w [mA]	4 ... 20		
Actual value output signal	Voltage	U_x [V DC]	0 ... 10		
	Current	I_x [mA]	4 ... 20		
Degree of protection		IP65			
Safety instructions		Safety position MPPES-B: If the setpoint cable (voltage and current variant) and the supply voltage cable break, the output pressure changes to 0 MPa.			
Reverse polarity protection		For all electrical connections			
Short circuit current rating		For all electrical connections			

Pressure range					
Pressure regulation range		[MPa]	0 ... 0.2	0 ... 0.6	0 ... 1
		[bar]	0 ... 2	0 ... 6	0 ... 10
Operating pressure		[MPa]	≤ 0.4	≤ 0.8	≤ 1.2
		[bar]	≤ 4	≤ 8	≤ 12
Input pressure 1		[MPa]	0.3 ... 0.4	0.7 ... 0.8	1.1 ... 1.2
		[bar]	3 ... 4	7 ... 8	11 ... 12
Max. pressure hysteresis	Basic version	[MPa]	0.001 ... 0.005		0.005
		[bar]	0.01 ... 0.05		0.05
	Special adaptation type	[bar]	–	–	0.01
		[bar]	–	–	0.01

Datasheet

Switching times – Basic type					
Pressure regulation range		[MPa]	0 ... 0.2	0 ... 0.6	0 ... 1
		[bar]	0 ... 2	0 ... 6	0 ... 10
Switching time on	G1/8	[ms]	220	210	200
	G1/4	[ms]	200	200	200
	G1/2	[ms]	220	230	230
Switching time off	G1/8	[ms]	410	280	220
	G1/4	[ms]	890	640	360
	G1/2	[ms]	1000	660	450

Switching times – Special adaptation type					
Pressure regulation range		[MPa]	0 ... 1		
		[bar]	0 ... 10		
Switching time on	G1/8	[ms]	220		
	G1/4	[ms]	200		
	G1/2	[ms]	230		
Switching time off	G1/8	[ms]	410		
	G1/4	[ms]	890		
	G1/2	[ms]	1000		

Information on materials	
Housing	Wrought aluminium alloy
Diaphragm	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L

Datasheet

Dimensions

Download CAD data → www.festo.com

MPPES-3-1/8-...

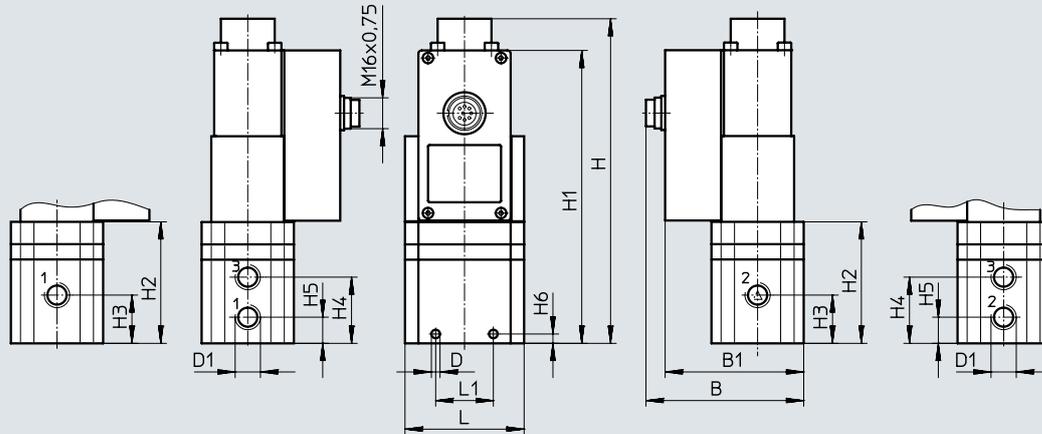
MPPES-3-1/4-...

MPPES-3-1/4-...

MPPES-3-1/8-...

MPPES-3-1/2-...

MPPES-3-1/2-...



Connection D1	B	B1	øD	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

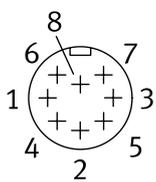
Connections

Terminal allocation

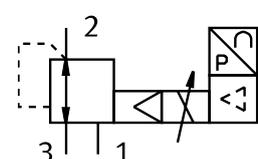
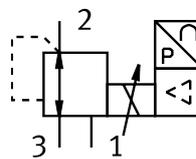
Switching function

MPPES-3-1/8-...

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



- 1 n. c.
- 2 GND
- 3 GND
- 4 W_{in} (setpoint input)
- 5 n. c.
- 6 X_{out} (actual value output)
- 7 24 V DC (supply voltage)
- 8 GND

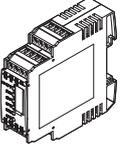


Datasheet

Ordering data						
Pneumatic connection 1, 2, 3	Pressure regulation range		Voltage type 0 ... 10 V		Current type 4 ... 20 mA	
	[MPa]	[bar]	Part no.	Type	Part no.	Type
Basic version						
G1/8	0 ... 0.2	0 ... 2	187350	MPPES-3-1/8-2-010	187351	MPPES-3-1/8-2-420
	00.6	0 ... 6	187352	MPPES-3-1/8-6-010	187353	MPPES-3-1/8-6-420
	0 ... 1	0 ... 10	187348	MPPES-3-1/8-10-010	187349	MPPES-3-1/8-10-420
G1/4	0 ... 0.2	0 ... 2	187335	MPPES-3-1/4-2-010	187336	MPPES-3-1/4-2-420
	00.6	0 ... 6	187337	MPPES-3-1/4-6-010	187338	MPPES-3-1/4-6-420
	0 ... 1	0 ... 10	187333	MPPES-3-1/4-10-010	187334	MPPES-3-1/4-10-420
G1/2	0 ... 0.2	0 ... 2	187328	MPPES-3-1/2-2-010	187329	MPPES-3-1/2-2-420
	00.6	0 ... 6	187330	MPPES-3-1/2-6-010	187331	MPPES-3-1/2-6-420
	0 ... 1	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 value 0 V or 4 mA and an upper pressure PO to be assigned to the setpoint value 10 V or 20 mA.

Accessories

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