Proportional pressure regulator MPPES

FESTO

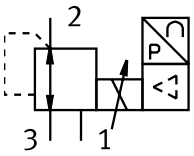
Characteristics

At a glance

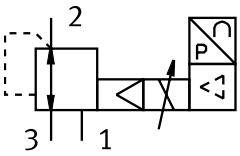
Choice of variants:
- Setpoint input as analogue voltage signal 0 ... 10 V
- Setpoint value input as analogue current signal 4 ... 20 mA

Pneumatic connection

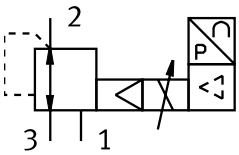
[G18] G1/8



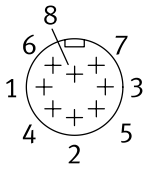
[G14] G1/4



[G12] G1/2



Switching input/output



Pin 1: n. c.
Pin 2: GND
Pin 3: GND
Pin 4: W[in] in (setpoint input)
Pin 5: n. c.
Pin 6: X [out] (actual value output)
Pin 7: 24 V DC (supply voltage)
Pin 8: GND

Diagrams

Link mppes

The diagrams shown in this document are also available online. These can be used to display precise values.

Type code

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	
2	2 bar	
6	6 bar	
10	10 bar	

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

Datasheet

General technical data			
Pneumatic connection, port 1	G1/8	G1/4	G1/2
Pneumatic connection, port 2	G1/8	G1/4	G1/2
Pneumatic connection, port 3	G1/8	G1/4	G1/2
Design	Directly actuated piston regulator	Piloted piston regulator	
Valve function	3-way proportional-pressure regulator, closed		
Sealing principle	Soft		
Type of actuation	Electrical		
Type of mounting	With through-hole		
Mounting position	Any		
Nominal size, supply	3 mm	7 mm	11 mm
Nominal size, exhaust	2 mm	7 mm	12 mm
Product weight	915 g	1,310 g	2,670 g

Operating and environmental conditions									
Pressure regulation range	0 ... 1 MPa			0 ... 0.2 MPa			0 ... 0.6 MPa		
Pressure regulation range	0 ... 10 bar			0 ... 2 bar			0 ... 6 bar		
Pneumatic connection, port 1	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4] Inert gas								
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)								
Inlet pressure 1	1.1 ... 1.2 MPa			0.3 ... 0.4 MPa			0.7 ... 0.8 MPa		
Inlet pressure 1	11 ... 12 bar			3 ... 4 bar			7 ... 8 bar		
Max. pressure hysteresis	0.001 ... 0.005 MPa	0.005 MPa		0.001 MPa	0.005 MPa		0.001 MPa	0.005 MPa	
Max. pressure hysteresis	0.01 bar	0.05 bar		0.01 bar	0.05 bar		0.01 bar	0.05 bar	
Ambient temperature	0 ... 50°C								
Media temperature	0 ... 60°C								
Corrosion resistance class CRC [1]	2 - Moderate corrosion stress								
Approval	RCM								
CE mark (see declaration of conformity) [2]	To EU EMC Directive In accordance with EU RoHS Directive								
UKCA marking (see declaration of conformity) [3]	To UK instructions for EMC To UK RoHS instructions								
KC mark	KC-EMV								

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

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

3) For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... d 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	0 ... 1 MPa	0 ... 0.2 MPa	0 ... 0.6 MPa
Pressure regulation range	0 ... 10 bar	0 ... 2 bar	0 ... 6 bar
Electrical connection	8-pin M16x0.75 Plug To DIN 45326 Round design		
Operational voltage range DC	18 ... 30 V		
Residual ripple	10%		
SETPOINT/ACTUAL values	Current type 4-20 mA		
Degree of protection	IP65		
Safety instructions	Safety position MPPES: if the power supply cable is interrupted, the output pressure drops to 0 bar.		
Reverse polarity protection	For all electrical connections		
Short circuit current rating	For all electrical connections		
Reference voltage	–		

Datasheet

Pressure range - basic type			
Pressure regulation range	0 ... 1 MPa	0 ... 0.2 MPa	0 ... 0.6 MPa
Pressure regulation range	0 ... 10 bar	0 ... 2 bar	0 ... 6 bar
Operating pressure	≤1.2 MPa	≤0.4 MPa	≤0.8 MPa
Operating pressure	≤12 bar	≤4 bar	≤8 bar

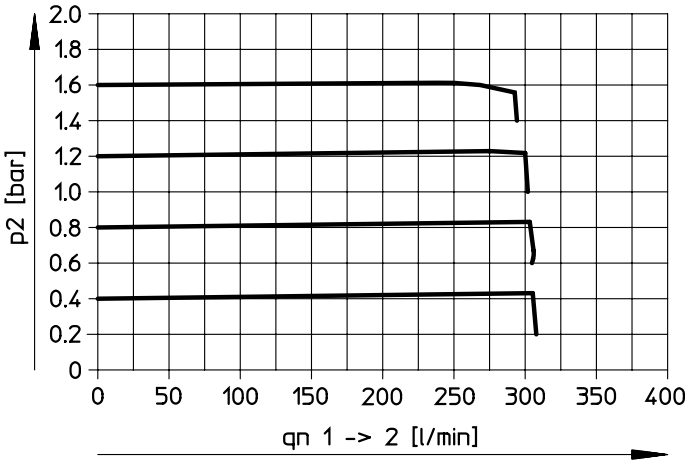
Pressure range - special adjustment type	
Pressure regulation range	0 ... 1 MPa
Pressure regulation range	0 ... 10 bar
Operating pressure	≤1.2 MPa
Operating pressure	≤12 bar

Switching times - basic type									
Pressure regulation range	0 ... 1 MPa			0 ... 0.2 MPa			0 ... 0.6 MPa		
Pressure regulation range	0 ... 10 bar			0 ... 2 bar			0 ... 6 bar		
Pneumatic connection, port 1	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2
Switching time on	200 ms		230 ms	220 ms	200 ms	220 ms	210 ms	200 ms	230 ms
Switching time off	290 ms	360 ms	450 ms	410 ms	890 ms	1,000 ms	280 ms	640 ms	660 ms

Switching times - special adjustment type			
Pressure regulation range	0 ... 10 bar		
Pneumatic connection, port 1	G1/8	G1/4	G1/2
Switching time on	220 ms	200 ms	230 ms
Switching time off	410 ms	890 ms	1,000 ms

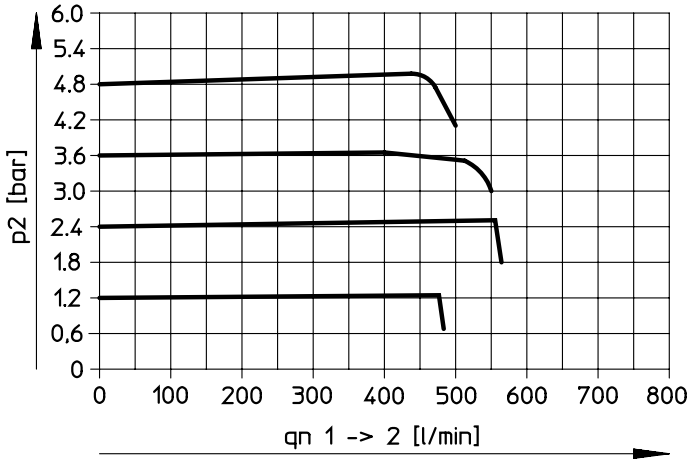
Materials	
Material housing	Wrought aluminium alloy
Material membrane	NBR
Note on materials	RoHS compliant
LABS (PWIS) conformity	VDMA24364-B2-L

Flow rate qn as a function of output pressure p2, pneumatic connection G1/8, pressure regulation range 0... 2 bar

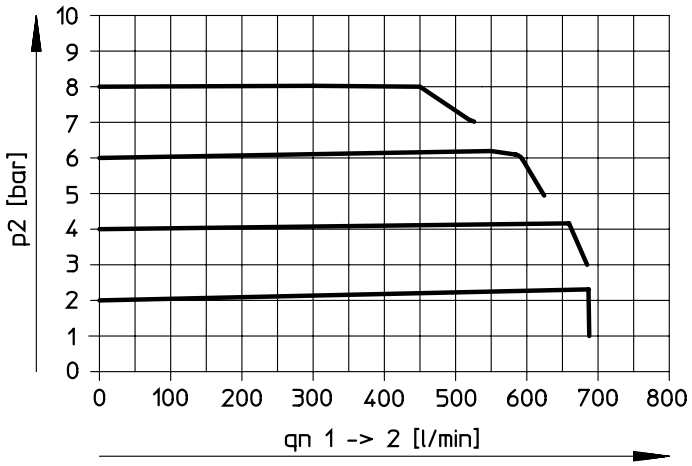


Datasheet

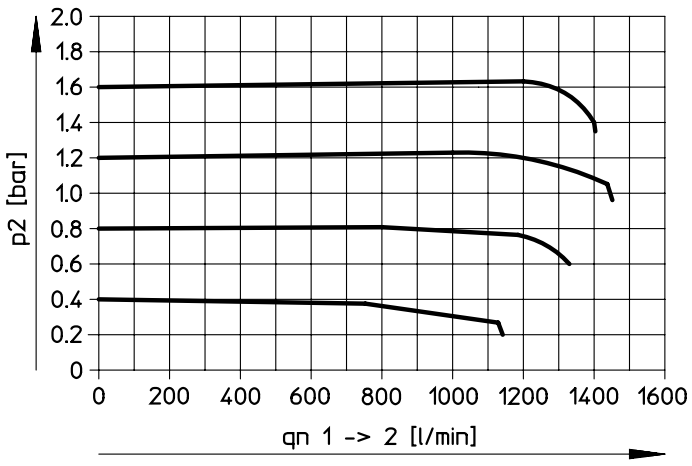
Flow rate qn as a function of output pressure p2, pneumatic connection G1/8, pressure regulation range 0... 6 bar



Flow rate qn as a function of output pressure p2, pneumatic connection G1/8, pressure regulation range 0... 10 bar

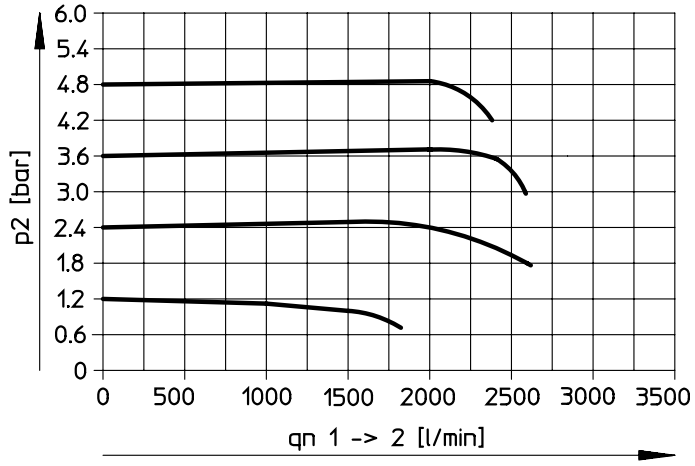


Flow rate qn as a function of output pressure p2, pneumatic connection G1/4, pressure regulation range 0... 2 bar

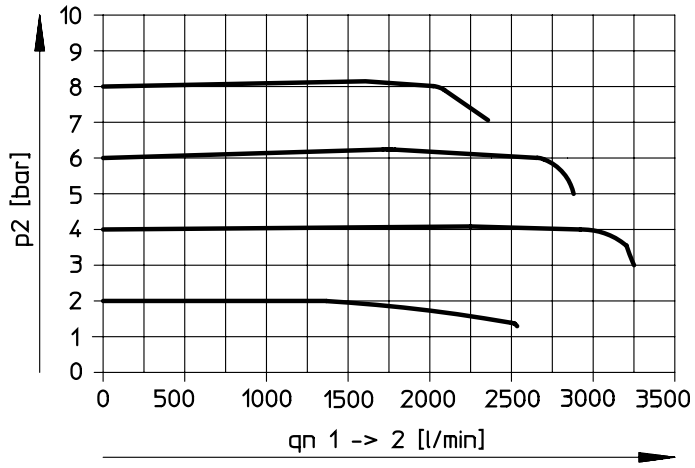


Datasheet

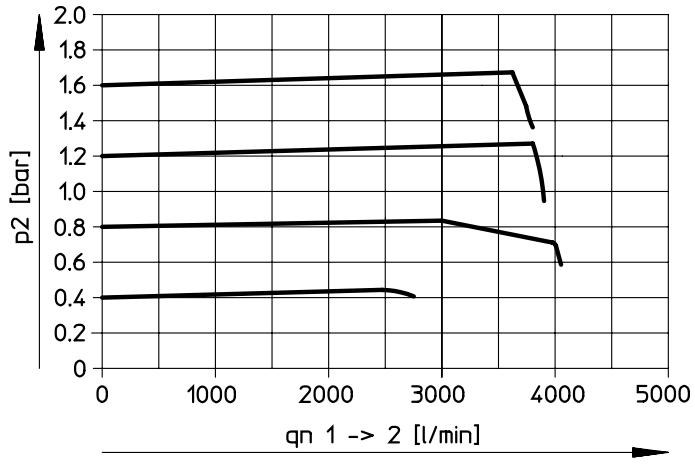
Flow rate qn as a function of output pressure p2, pneumatic connection G1/4, pressure regulation range 0... 6 bar



Flow rate qn as a function of output pressure p2, pneumatic connection G1/4, pressure regulation range 0... 10 bar

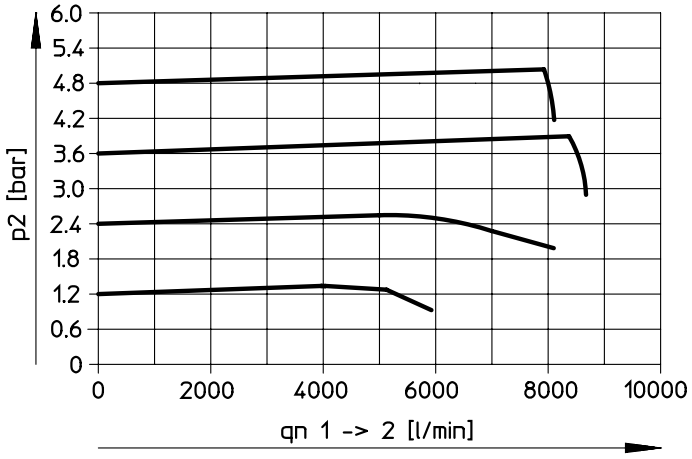


Flow rate qn as a function of output pressure p2, pneumatic connection G1/2, pressure regulation range 0... 2 bar

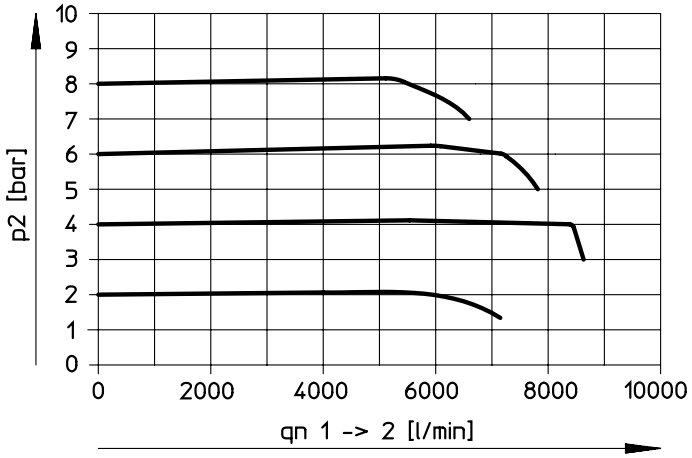


Datasheet

Flow rate qn as a function of output pressure p2, pneumatic connection G1/2, pressure regulation range 0... 6 bar



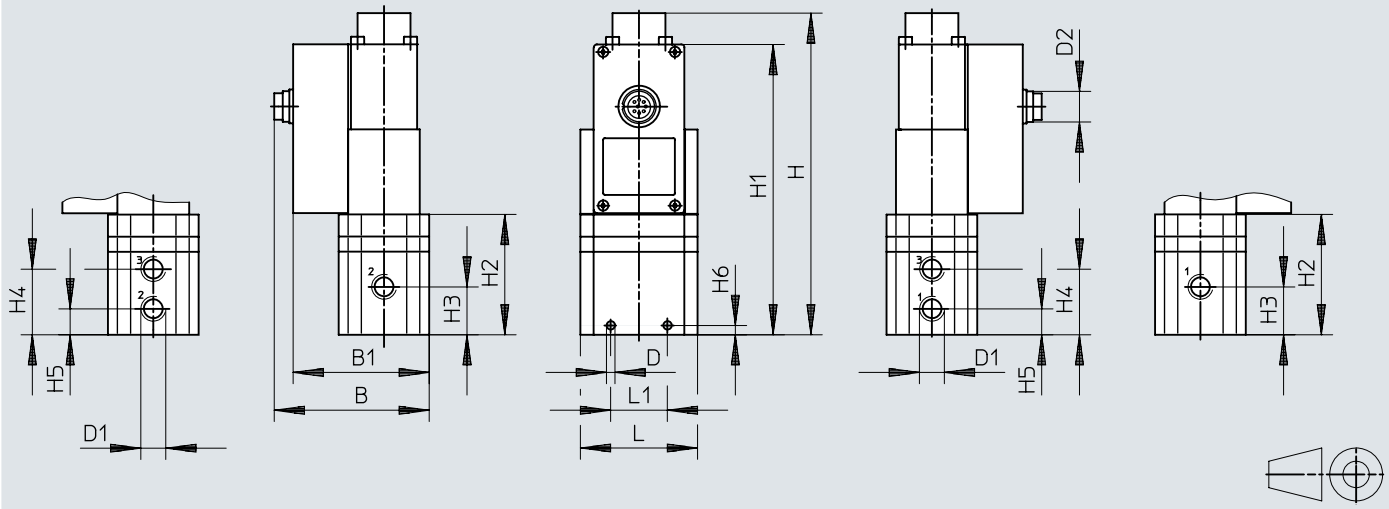
Flow rate qn as a function of output pressure p2, pneumatic connection G1/2, pressure regulation range 0... 10 bar



Dimensions

Dimensions – Proportional-pressure regulator MPPES-3-... 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-...



	D1	B	B1	D ø	D2	H	H1
MPPES-3-1/8	G1/8	77,1	67,1	4,4	M16x0,75	116,5	100
MPPES-3-1/4	G1/4	82,1	72,1	4,5	M16x0,75	170,2	153,7
MPPES-3-1/2	G1/2	96,1	86,1	7	M16x0,75	227,1	210,6

	H2	H3	H4	H5	H6	L	L1
MPPES-3-1/8	55	34	45	23	4	62	34
MPPES-3-1/4	63,7	25,3	34,8	13,8	5	62	30
MPPES-3-1/2	120,6	53	74	32	18	86	50

Ordering data

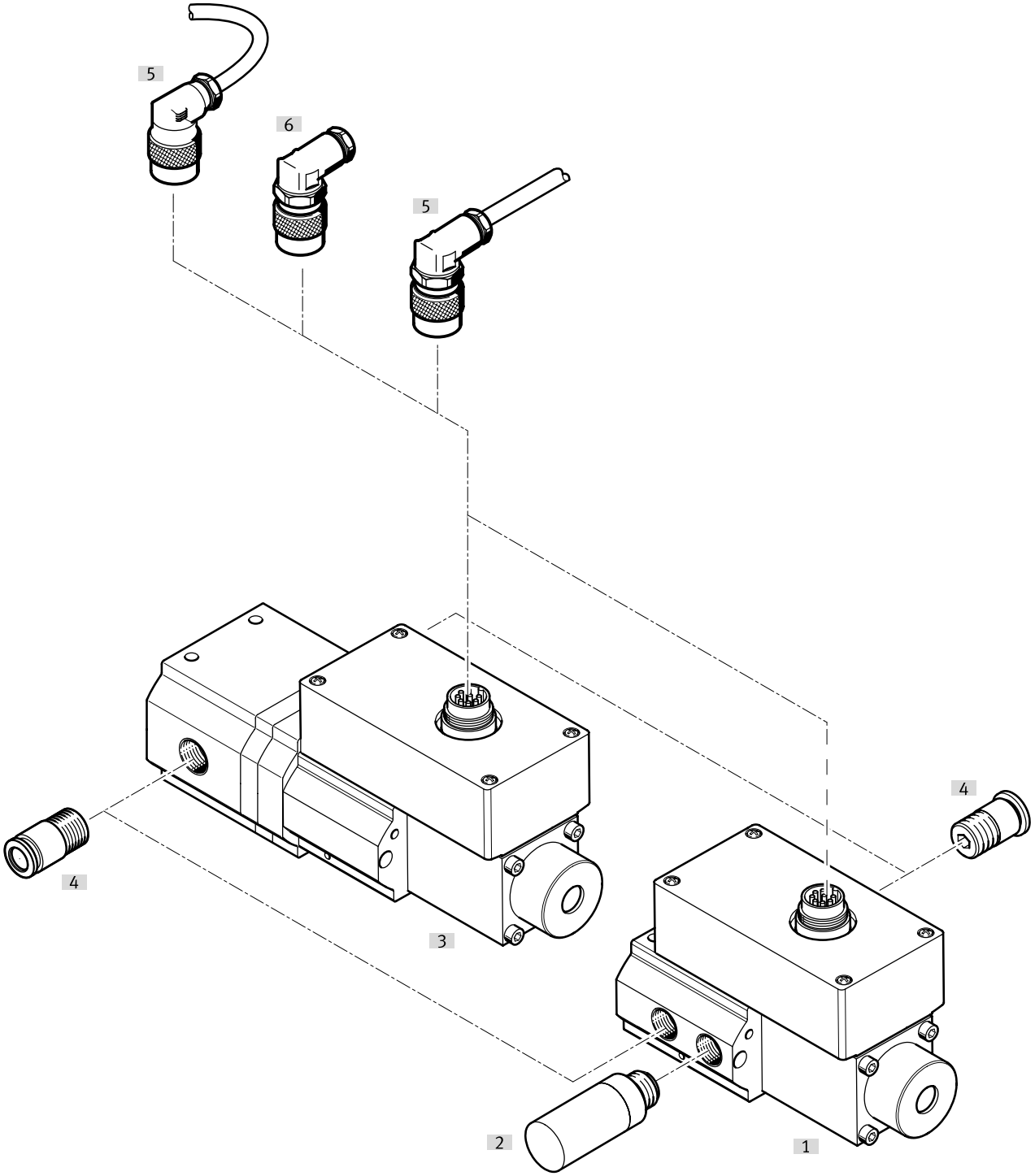
Basic type					
Pneumatic connection, port 1	SETPOINT/ACTUAL values	Pressure regulation range	Pressure regulation range	Part no.	Type
G1/8	Current type 4-20 mA	0 ... 0.2 MPa	0 ... 2 bar	**187351**	**MPPES-3-1/8-2-420**
		0 ... 0.6 MPa	0 ... 6 bar	**187353**	**MPPES-3-1/8-6-420**
		0 ... 1 MPa	0 ... 10 bar	**187349**	**MPPES-3-1/8-10-420**
G1/4		0 ... 0.2 MPa	0 ... 2 bar	**187336**	**MPPES-3-1/4-2-420**
		0 ... 0.6 MPa	0 ... 6 bar	**187338**	**MPPES-3-1/4-6-420**
		0 ... 1 MPa	0 ... 10 bar	**187334**	**MPPES-3-1/4-10-420**
G1/2		0 ... 0.2 MPa	0 ... 2 bar	**187329**	**MPPES-3-1/2-2-420**
		0 ... 0.6 MPa	0 ... 6 bar	**187331**	**MPPES-3-1/2-6-420**
		0 ... 1 MPa	0 ... 10 bar	**187327**	**MPPES-3-1/2-10-420**

Special adaptation type					
Pneumatic connection, port 1	SETPOINT/ACTUAL values [1]	Pressure regulation range	Pressure regulation range	Part no.	Type
G1/8	Current type 4-20 mA	0 ... 1 MPa	0 ... 10 bar	**187762**	**MPPES-3-1/8-PU-PO-420**
G1/4				**187744**	**MPPES-3-1/4-PU-PO-420**
G1/2				**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.

Peripherals

Peripherals overview



Accessories			→ Link
	Type/order code	Description	
[1]	Proportional-pressure regulator MPPES, directly controlled	Directly actuated	🔗 –
[2]	Silencer	For mounting in exhaust ports	🔗 u
[3]	Proportional-pressure regulator MPPES, indirectly actuated	Indirectly actuated	🔗 –
[4]	Push-in fitting	For connecting compressed air tubing	🔗 qs
[5]	Plug socket with cable	–	12
[6]	Angled plug socket	–	12

Accessories

Plug socket with cable

Electrical connection 1, connection type	Electrical connection 1, cable outlet	Electrical connection 1, number of connections/ cores	Electrical connection 2, connector system	Electrical connection 2, number of connections/ cores	Cable length	Part no.	Type
Socket	Angled	8	Open end	8	2.5 m	**161879**	**KMPPE-B-2,5**
					5 m	**161878**	**KMPPE-B-5**

Angled plug socket

Electrical connection	Part no.	Type
8-pin, Angled socket, Solderable	**161839**	**MPPE-3-B**