

Branching module FRM

FESTO



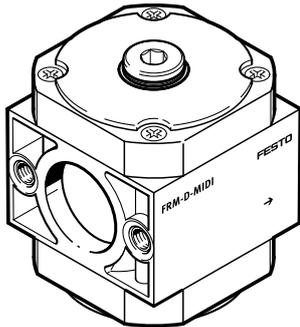
Characteristics

At a glance

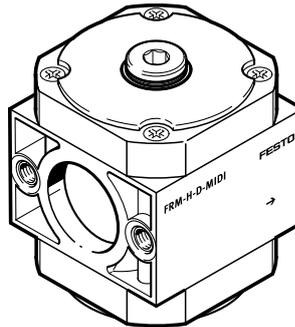
- Outlet at top and bottom
- Can be used as an intermediate distributor for varying air qualities
- Optionally with integrated non-return function and pressure switch
- Product complies with ISO 1179-1 and ISO 228-1

Additional function

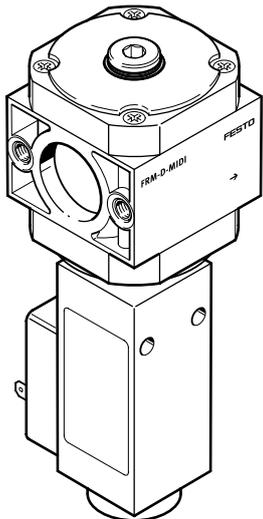
[] None



[H] With integrated non-return function



[Y] Pressure switch, connection A1



Pneumatic connection

Depending on the size, different connection types can be selected:

- Individual fittings that are fastened via a female thread
- Connecting plates with female thread

Version

Metal design

Size

Sizes Mini, Midi, Maxi

- Grid dimension: 40 mm; 55 mm; 66 mm

Type code

001	Series
FRM	Branching module

002	Additional function
	None
H	With integrated non-return function
Y	Pressure switch, connection A1

003	Pneumatic connection
	None
1/8	Female thread G1/8
1/4	Female thread G1/4
3/8	Female thread G3/8
1/2	Female thread G1/2
3/4	Female thread G3/4
1	Female thread G1

004	Version
D	D series, metal

005	Size
MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)
MAXI	Grid dimension 66 mm (without connecting plates)

Datasheet

General technical data – Mini

Pneumatic connection, port 1 ¹⁾	G1/8	G1/4	G3/8	1/4 NPT
Pneumatic connection, port 2	G1/8	G1/4	G3/8	1/4 NPT
Pneumatic connection, port 3	G1/4			
Pneumatic connection, port 4	G1/4			
Design	Branching module			
Mounting position	optional			
Air purity class at output	Compressed air to ISO 8573-1:2010 [7:::], Inert gases			

1) NPT: not available in all markets

General technical data – Midi

Pneumatic connection, port 1 ¹⁾	G1/4	G3/8	G1/2	G3/4	3/8 NPT	1/2 NPT	3/4 NPT
Pneumatic connection, port 2	G1/4	G3/8	G1/2	G3/4	3/8 NPT	1/2 NPT	3/4 NPT
Pneumatic connection, port 3	G1/2						
Pneumatic connection, port 4	G1/4						
Design	Branching module						
Mounting position	optional						
Air purity class at output	Compressed air to ISO 8573-1:2010 [7:::] Inert gases						

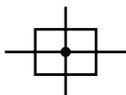
1) NPT: not available in all markets

General technical data – Maxi

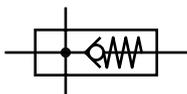
Pneumatic connection, port 1 ¹⁾	G1/2	G3/4	G1	3/4 NPT	1 NPT
Pneumatic connection, port 2	G1/2	G3/4	G1	3/4 NPT	1 NPT
Pneumatic connection, port 3	G3/4				
Pneumatic connection, port 4	G1/4				
Design	Branching module				
Mounting position	optional				
Air purity class at output	Compressed air to ISO 8573-1:2010 [7:::] Inert gases				

1) NPT: not available in all markets

Function branching module, standard



Function of branching module with integrated non-return function



prevents the return flow, e.g. of lubricated compressed air

Standard nominal flow rate – Mini; Standard branching module

Pneumatic connection, port 1	G1/8	G1/4	G3/8
Standard nominal flow rate in main flow direction 1->2	1,400 l/min	3,300 l/min	2,900 l/min

1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Mini; branching module with integrated non-return function

Pneumatic connection, port 1	G1/8	G1/4	G3/8
Standard nominal flow rate in main flow direction 1->2 ¹⁾	1,100 l/min	2,000 l/min	2,100 l/min

1) Measured at p1 = 6 bar and Δp = 1 bar.

Datasheet

Standard nominal flow rate – Mini; branching module with pressure switch PEV-1/4-B-0D

Standard nominal flow rate in main flow direction 1->2 ¹⁾	3,300 l/min
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1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Midi; Standard branching module

Pneumatic connection, port 1	G1/4	G3/8	G1/2	G3/4
Standard nominal flow rate in main flow direction 1->2	3,300 l/min	6,700 l/min	8,200 l/min	8,800 l/min

1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Midi; branching module with integrated non-return function

Pneumatic connection, port 1	G1/4	G3/8	G1/2	G3/4
Standard nominal flow rate in main flow direction 1->2 ¹⁾	3,100 l/min	4,900 l/min	5,100 l/min	5,000 l/min

1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Midi; branching module with pressure switch PEV-1/4-B-0D

Standard nominal flow rate in main flow direction 1->2 ¹⁾	8,200 l/min
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1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Maxi; Standard branching module

Pneumatic connection, port 1	G1/2	G3/4	G1
Standard nominal flow rate in main flow direction 1->2	11,700 l/min	20,000 l/min	17,400 l/min

1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Maxi; branching module with integrated non-return function

Pneumatic connection, port 1	G1/2	G3/4	G1
Standard nominal flow rate in main flow direction 1->2 ¹⁾	9,000 l/min	13,500 l/min	12,300 l/min

1) Measured at p1 = 6 bar and Δp = 1 bar.

Standard nominal flow rate – Maxi; branching module with pressure switch PEV-1/4-B-0D

Standard nominal flow rate in main flow direction 1->2 ¹⁾	20,000 l/min
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1) Measured at p1 = 6 bar and Δp = 1 bar.

Operating and environmental conditions – Standard branching module

Operating pressure	0 ... 1.6 MPa
Operating pressure	0 ... 16 bar
Operating pressure	0 ... 232 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:::] Inert gases
Ambient temperature	-10 ... 60°C
Media temperature	-10 ... 60°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress

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

Datasheet

Operating and environmental conditions – Branching module with integrated non-return function

Size	Grid dimension 40 mm (without connecting plates)	Grid dimension 55 mm (without connecting plates)	Grid dimension 66 mm (without connecting plates)
Operating pressure	0.015 ... 1.6 MPa	0.02 ... 1.6 MPa	0.025 ... 1.6 MPa
Operating pressure	0.15 ... 16 bar	0.2 ... 16 bar	0.25 ... 16 bar
Operating pressure	2.175 ... 232 psi	2.9 ... 232 psi	3.625 ... 232 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:] Inert gases		
Ambient temperature	-10 ... 60°C		
Media temperature	-10 ... 60°C		
Storage temperature	-10 ... 60°C		
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress		

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

Operating and environmental conditions – Branching module with pressure switch PEV-1/4-B-0D

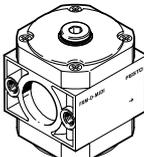
Operating pressure	0 ... 1.2 MPa
Operating pressure	0 ... 12 bar
Operating pressure	0 ... 174 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:] Inert gases
Ambient temperature	-10 ... 60°C
Media temperature	-10 ... 60°C
Storage temperature	-10 ... 60°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress

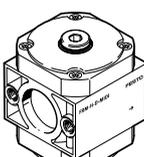
1) More information: www.festo.com/x/topic/crc

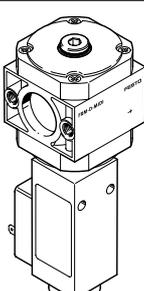
Materials

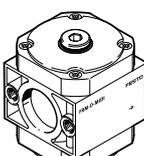
Material housing	Die-cast aluminium, Die-cast zinc
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Ordering data

Branching module, standard						
	Pneumatic connection, port 1	Operating pressure	Product weight	Part no.	Type	
		0 ... 16 bar	127 g	170684	FRM-D-MINI	
			382 g	170685	FRM-D-MIDI	
			442 g	170686	FRM-D-MAXI	
	G1/8			207 g	164949	FRM-1/8-D-MINI
	G1/4			197 g	164950	FRM-1/4-D-MINI
				532 g	186523	FRM-1/4-D-MIDI
	G3/8			207 g	164951	FRM-3/8-D-MINI
				522 g	164952	FRM-3/8-D-MIDI
	G1/2			502 g	164953	FRM-1/2-D-MIDI
				706 g	186524	FRM-1/2-D-MAXI
	G3/4			472 g	164954	FRM-3/4-D-MIDI
				662 g	164955	FRM-3/4-D-MAXI
G1			762 g	164956	FRM-1-D-MAXI	

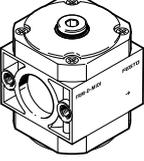
Branching module with integrated non-return function						
	Pneumatic connection, port 1	Operating pressure	Product weight	Part no.	Type	
		0.15 ... 16 bar	233 g	170687	FRM-H-D-MINI	
			386 g	170688	FRM-H-D-MIDI	
			446 g	170689	FRM-H-D-MAXI	
	G1/8		0.15 ... 16 bar	325 g	162788	FRM-H-1/8-D-MINI
	G1/4			324 g	162789	FRM-H-1/4-D-MINI
			0.2 ... 16 bar	536 g	186525	FRM-H-1/4-D-MIDI
	G3/8		0.15 ... 16 bar	325 g	162790	FRM-H-3/8-D-MINI
			0.2 ... 16 bar	526 g	162791	FRM-H-3/8-D-MIDI
	G1/2			506 g	162792	FRM-H-1/2-D-MIDI
			0.25 ... 16 bar	706 g	186526	FRM-H-1/2-D-MAXI
	G3/4		0.2 ... 16 bar	476 g	162793	FRM-H-3/4-D-MIDI
			0.25 ... 16 bar	666 g	162794	FRM-H-3/4-D-MAXI
G1			776 g	162795	FRM-H-1-D-MAXI	

Branching module with pressure switch PEV-1/4-B-0D					
	Operating pressure	Product weight	Part no.	Type	
	0 ... 12 bar	507 g	542184	FRM-Y-D-MINI	
		662 g	542185	FRM-Y-D-MIDI	
		822 g	542186	FRM-Y-D-MAXI	

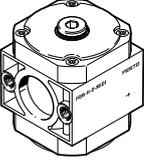
Branching module standard (NPT – not available in all markets)					
	Pneumatic connection, port 1	Operating pressure	Product weight	Part no.	Type
	1/4 NPT	0 ... 16 bar	197 g	173925	FRM-1/4-D-MINI-NPT

Ordering data

Branching module standard (NPT – not available in all markets)

	Pneumatic connection, port 1	Operating pressure	Product weight	Part no.	Type
	3/8 NPT	0 ... 16 bar	522 g	173927	FRM-3/8-D-MIDI-NPT
	1/2 NPT		502 g	173928	FRM-1/2-D-MIDI-NPT
	3/4 NPT		472 g	173929	FRM-3/4-D-MIDI-NPT
			662 g	173930	FRM-3/4-D-MAXI-NPT
	1 NPT		772 g	173931	FRM-1-D-MAXI-NPT

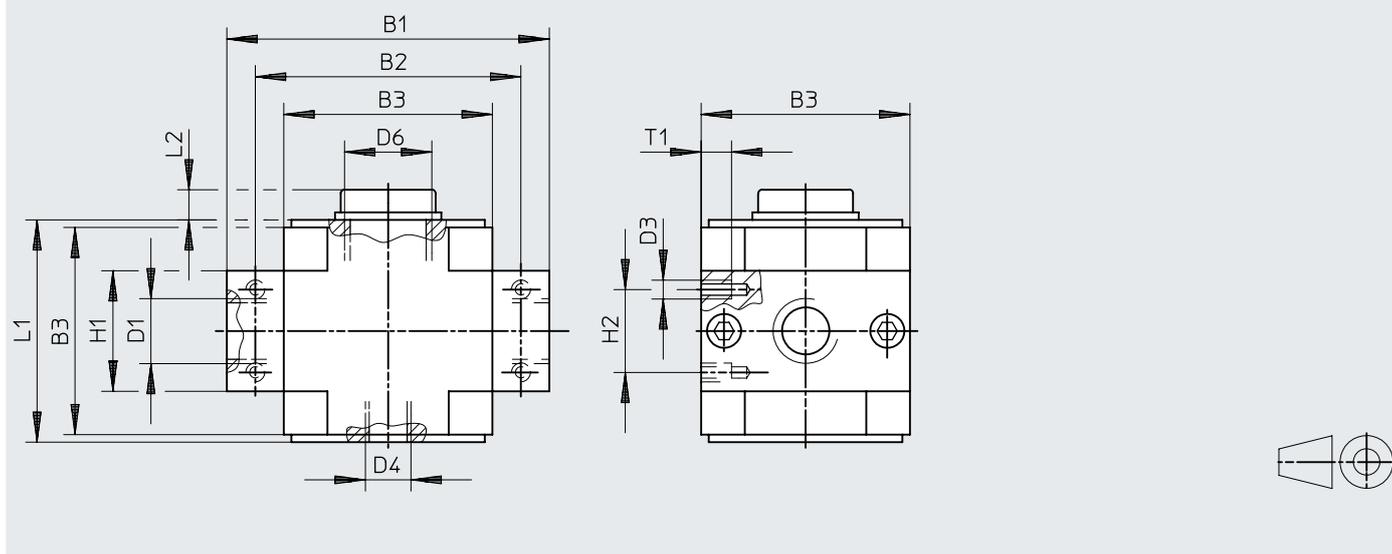
Branching module with integrated non-return function (NPT – not available in all markets)

	Pneumatic connection, port 1	Operating pressure	Product weight	Part no.	Type
	1/4 NPT	0.15 ... 16 bar	198 g	173933	FRM-H-1/4-D-MINI-NPT

Dimensions

Dimensions – Connecting plate with threaded connection/without connecting plate, Mini/Maxi

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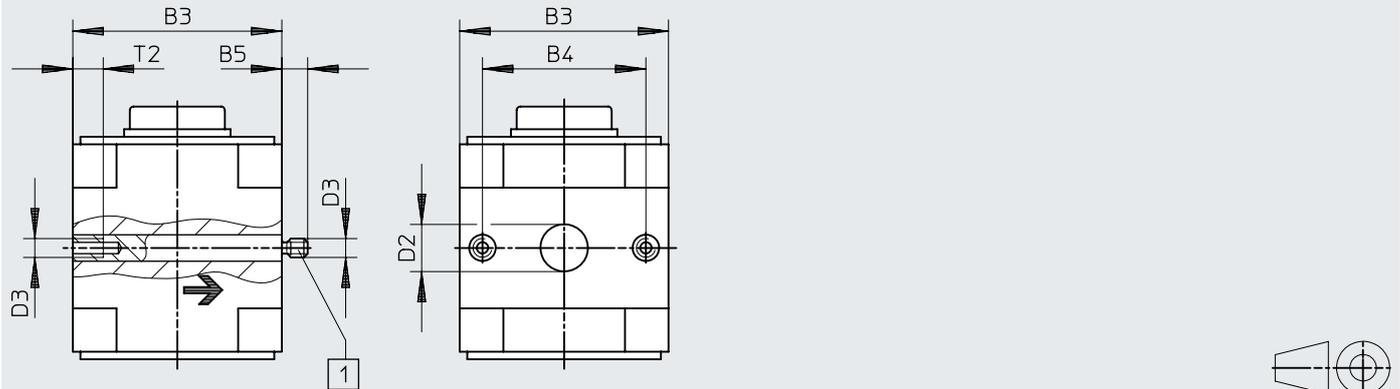
	B1	B2	B3	D1	D3	D4	D6	H1	H2	L1	L2	T1
FRM-1/8-D-MINI	64	52	40	G1/8	M4	G1/4	G1/4	20	11	42	7	7
FRM-1/4-D-MINI				G1/4								
FRM-3/8-D-MINI				G3/8								
FRM-D-MINI	-	-	-	-	-	-	-	-	-	-	-	-

	B1	B2	B3	D1	D3	D4	D6	H1	H2	L1	L2	T1
FRM-1/2-D-MAXI	96	80	66	G1/2	M5	G1/4	G3/4	32	22	70	8	8
FRM-3/4-D-MAXI				G3/4								
FRM-1-D-MAXI				G1								
FRM-D-MAXI	-	-	-	-	-	-	-	-	-	-	-	-

Dimensions

Dimensions – Without connecting plates, Mini/Maxi

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[1] Threaded bolt (exchangeable)

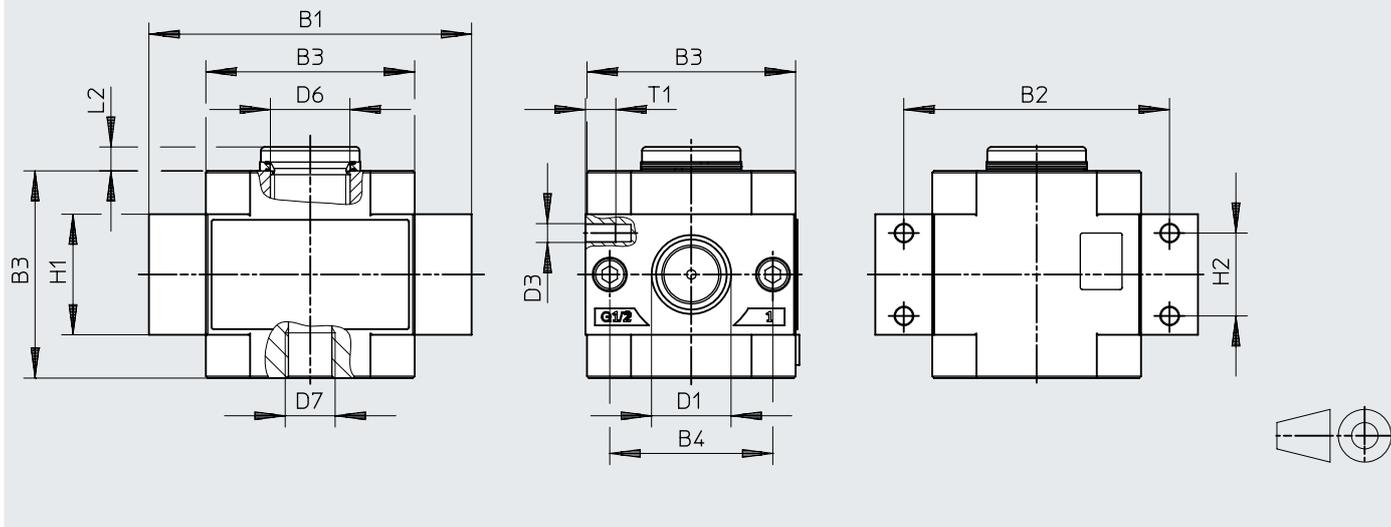
	B3	B4	B5	D2 ∅	D3	T2
FRM-1/8-D-MINI	40	30	-	-	M4	-
FRM-1/4-D-MINI			-	-		-
FRM-3/8-D-MINI			5,8	11		10
FRM-D-MINI			5,8	11		10

	B3	B4	B5	D2 ∅	D3	T2
FRM-1/2-D-MAXI	66	46	-	-	M5	-
FRM-3/4-D-MAXI			-	-		-
FRM-1-D-MAXI			6,8	30		11
FRM-D-MAXI			6,8	30		11

Dimensions

Dimensions – Sub-base with threaded connection, Midi

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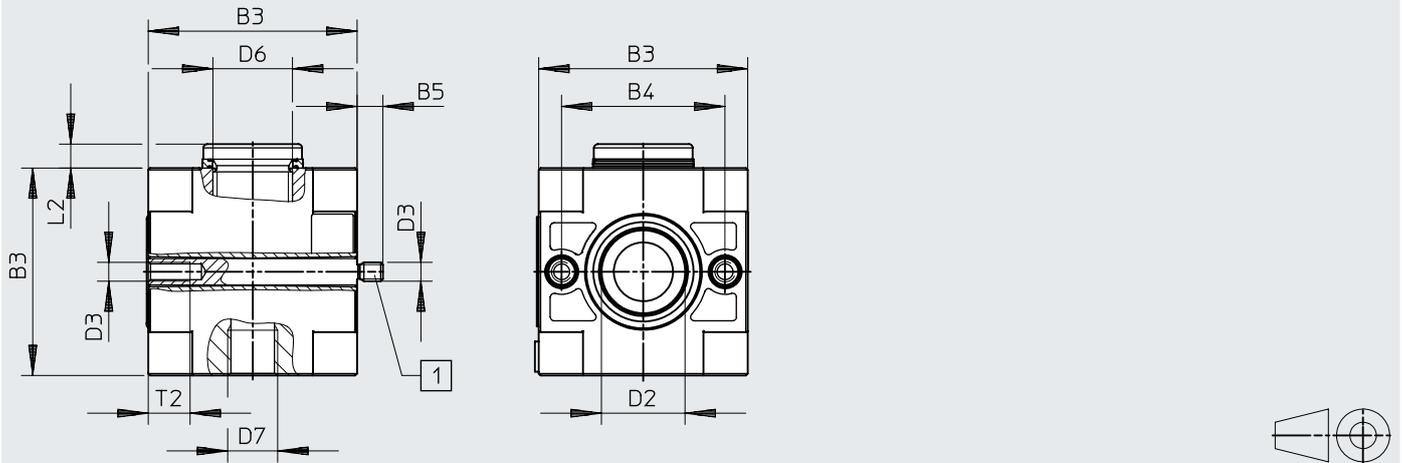


	B1	B2	B3	B4	D1	D3	D6	D7	H1	H2	L2	T1
FRM-1/4-D-MIDI	85	70	55	43	G1/4	M5	G1/2	G1/4	32	22	6,4	8
FRM-3/8-D-MIDI					G3/8							
FRM-1/2-D-MIDI					G1/2							
FRM-3/4-D-MIDI					G3/4							

Dimensions

Dimensions – Without connecting plates, Midi

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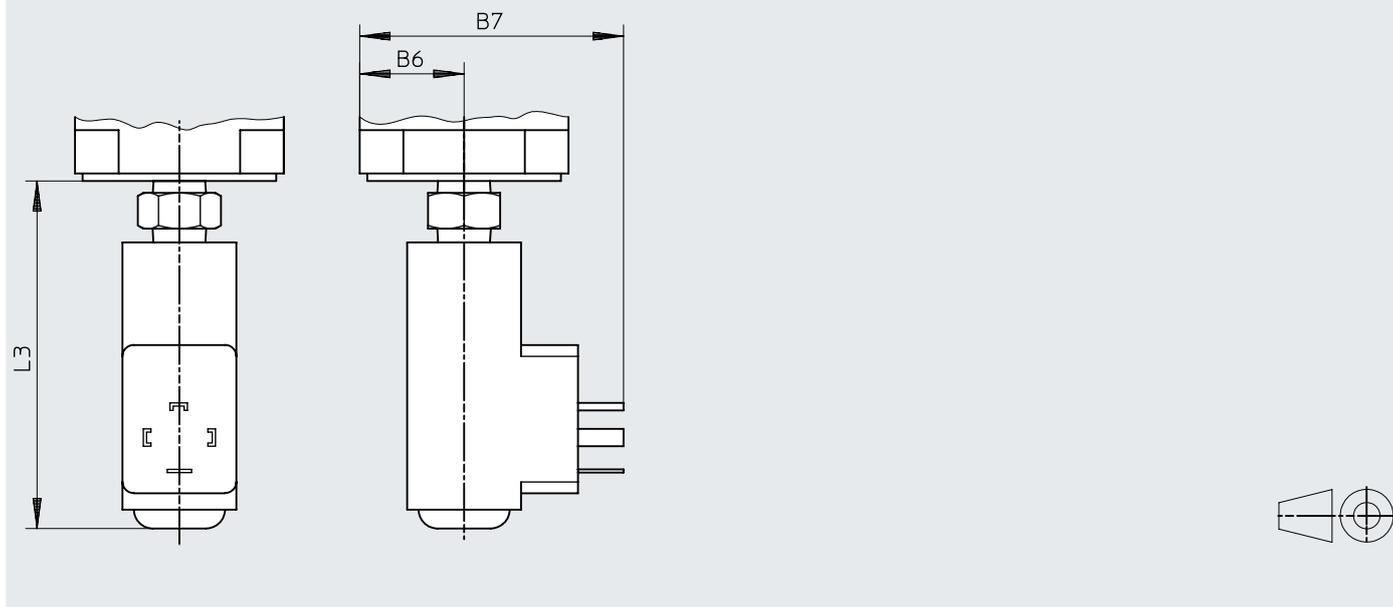
[1] Threaded bolt (exchangeable)

	B3	B4	B5	D2 ∅	D3	D6	D7	L2	T2
FRM-D-MIDI	55	43	6,8	22	M5	G1/2	G1/4	6,4	11

Dimensions

Dimensions – Pressure switch with adjustable pressure switching point

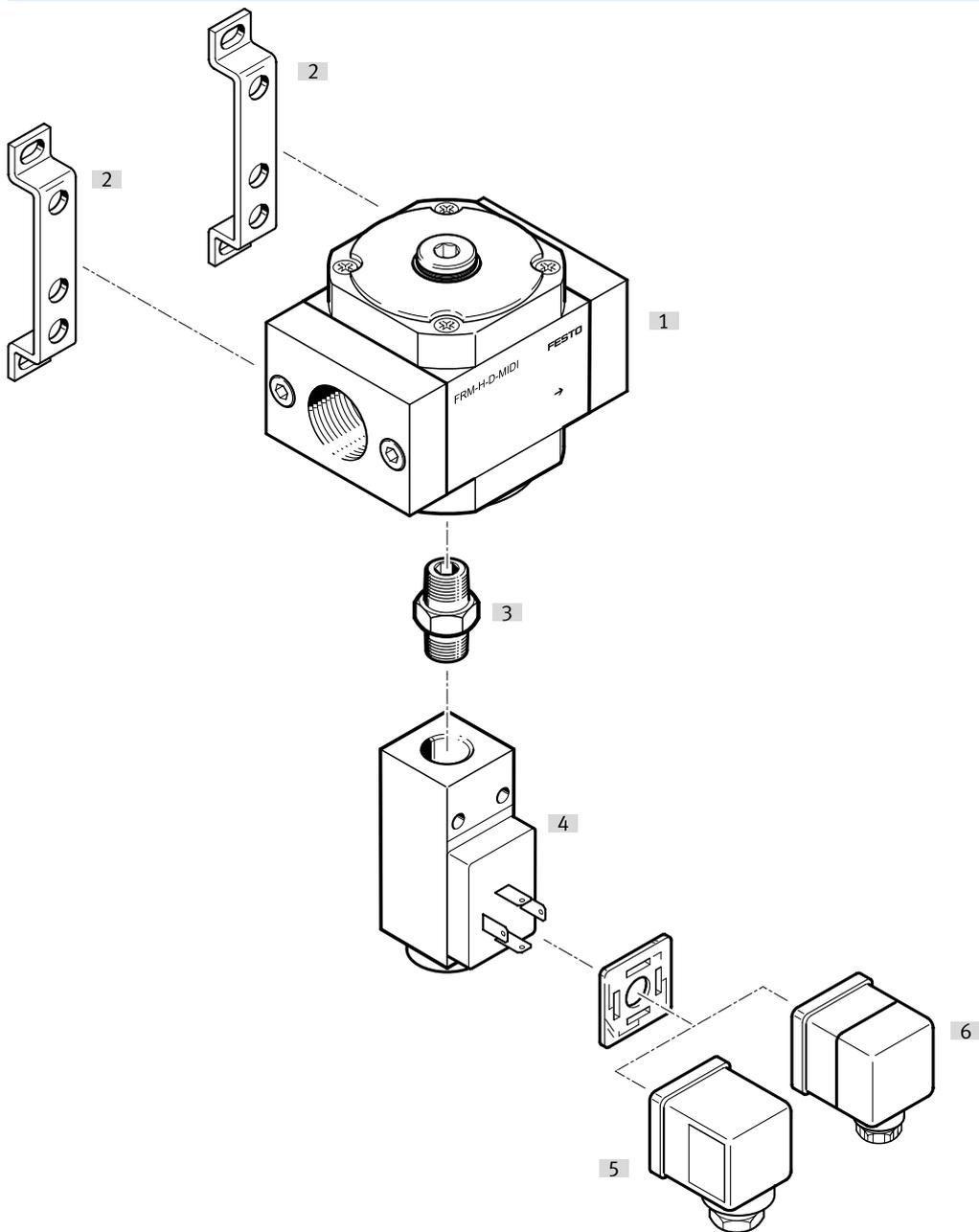
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	B6	B7	L3
FRM-Y-D-MINI	20	62	92,3
FRM-Y-D-MIDI	27,5	69,5	92,3
FRM-Y-D-MAXI	33	75	92,3

Peripherals

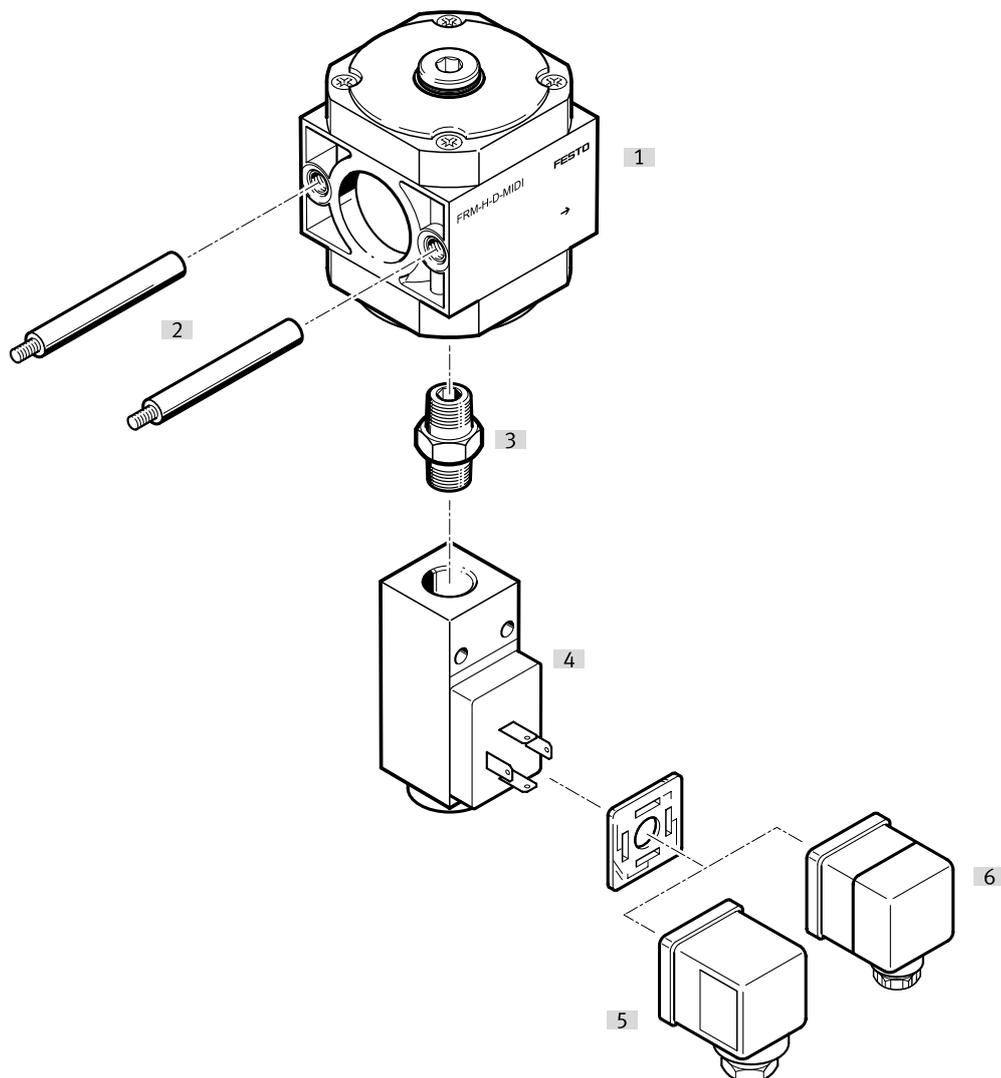
Individual unit with connecting plates



Accessories			→ Link
Type/order code	Description		
[1]	Branching modules FRM	frm-d	frm-d
[2]	Mounting bracket HFOE		16
[3]	Double nipple ESK		16
[4]	Pressure switch PEV	Order code [X], [Y], [M12] Double nipple [21] is included in the scope of delivery.	16
[5]	Plug socket MSSD-C-4P		16
[6]	Angled plug socket PEV-1/4-WD-LED-...		16

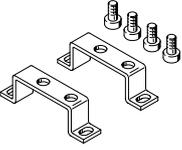
Peripherals

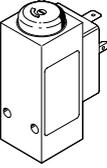
Individual unit without connecting plates, for service unit combination

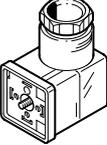


Accessories			→ Link
Type/order code	Description		
[1] Branching modules FRM	frm-d		frm-d
[2] Threaded bolt FRB	Included in the scope of delivery		16
[3] Double nipple ESK			16
[4] Pressure switch PEV	Order code [X], [Y], [M12] Double nipple [21] is included in the scope of delivery.		16
[5] Plug socket MSSD-C-4P			16
[6] Angled plug socket PEV-1/4-WD-LED-...			16

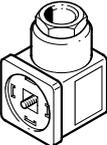
Accessories

Mounting bracket HFOE			
	Short type code	Part no.	Type
	HFOE	159638	HFOE-D-MINI
		159593	HFOE-D-MIDI/MAXI

Pressure switch PEV						
	Pneumatic connection	Measurement method	Electrical connection	Product weight	Part no.	Type
	G1/4	Pneumatic/electric pressure transducer with setting scale	Type A, Plugs, To DIN 43650, Square design	144 g	161760	PEV-1/4-SC-OD
				194 g	175250	PEV-1/4-B-OD
					10773	PEV-1/4-B

Angled plug socket PEV						
	Operational voltage range DC ¹⁾	Electrical connection 1, used connections/cores	Switching status indication	Part no.	Type	
	15 ... 30 V	4	Yellow LED Green LED	164274	PEV-1/4-WD-LED-24	
	140 ... 180 V			164275	PEV-1/4-WD-LED-230	

1) For PEV-1/4-...-OD

Plug socket MSSD-C-4P						
	Electrical connection	Type of mounting	Product weight	Part no.	Type	
	3-pin Angled socket Type A To DIN EN 175301-803 Square design MSC Square design MSN1	On solenoid valve via M3 central screw	22 g	171157	MSSD-C-4P	

Double nipple ESK					
	Pneumatic connection, port 1 ¹⁾	Pneumatic connection, port 2	Part no.	Type	
	R1/4	R1/4	151521	ESK-1/4-1/4	

1) Adjustable for angle compensation; for retrofitting pressure switch PEV to branching module FRM

Threaded bolt FRB			
	Size	Part no.	Type
	Grid dimension 40 mm (without sub-bases)	159642	FRB-D-MINI
	Grid dimension 55 mm (without sub-bases)	159595	FRB-D-MIDI
	Grid dimension 66 mm (without sub-bases)	159643	FRB-D-MAXI