Branching modules FRM/distributor blocks FRZ, D series

FESTO
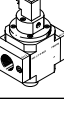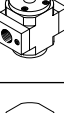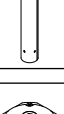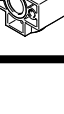
Product range overview – Service unit components, D series, metal

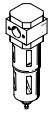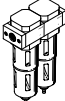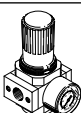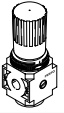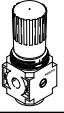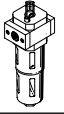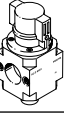| Type		Size	Pneumatic connection										Pressure regulation range [bar]			Grade of filtration [µm]			
			M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	0.5 ... 7	0.5 ... 12	2.5 ... 12	0.01	1	5	40
Service units																			
FRC/FRCS		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	■	■
FRC-K		Mini	–	–	■	■	–	–	–	–	–	–	–	■	■	–	–	–	■
		Midi	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■
		Maxi	–	–	–	–	–	■	■	–	–	–	–	■	■	–	–	–	■
LFR-K		Mini	–	–	■	■	–	–	–	–	–	–	–	■	■	–	–	–	■
		Midi	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■
		Maxi	–	–	–	–	–	■	■	–	–	–	–	■	■	–	–	–	■
Individual devices																			
Filter regulators **LFR/LFRS**		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	■	■
Filters **LF**		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	■	■
Fine and micro filters **LFMA/LFMB**		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	■	■	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	■	■	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–
Activated carbon filters **LFX**		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	–	–
Filter combinations **LFMBA**		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	■	■	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	■	■	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–
Druckregelventile **LR/LRS**		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	–	–

Product range overview – Service unit components, D series, metal

Type	Size	Bowl guard		Condensate drain			Pressure indicator		Actuator lock		Supply voltage			Options			→ Page/Internet
		Metal bowl guard	Plastic bowl	Manual	Semi-automatic	Fully automatic	With pressure gauge	Without pressure gauge	Rotary knob with latch	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	Directly actuated pressure regulator with integrated return flow function	Pilot actuated pressure regulator with integrated return flow function	Differential pressure display	
Service units																	
FRC/FRCS	Mini	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–	frc
	Midi	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	■	■	■	–	–	–	■	■	–	
FRC-K	Mini	■	–	■	–	■	■	–	■	–	■	–	–	–	–	–	<?>
	Midi	■	–	■	–	■	■	–	■	–	■	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	–	■	–	■	–	–	■	■	–	
LFR-K	Mini	■	–	■	–	■	■	–	■	■	■	–	–	–	–	–	lfr
	Midi	■	–	■	–	■	■	–	■	■	■	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	–	■	■	■	–	–	■	■	–	
Individual devices																	
Filter regulators **LFR/LFRS**	Mini	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–	lfr
	Midi	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	■	■	■	–	–	–	■	■	–	
Filters **LF**	Mini	■	–	■	–	■	–	–	–	–	–	–	–	–	–	–	lf
	Midi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	–	
	Maxi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	–	
Fine and micro filters **LFMA/LFMB**	Mini	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■	lfma, lfmb
	Midi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■	
	Maxi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■	
Activated carbon filters **LFX**	Mini	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lfx
	Midi	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Maxi	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Filter combinations **LFMBA**	Mini	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■	lfmba
	Midi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■	
	Maxi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■	
Pressure regulators **LR/LRS**	Mini	–	–	–	–	–	■	■	■	■	–	–	–	■	–	–	lr
	Midi	–	–	–	–	–	■	■	■	■	–	–	–	■	–	–	
	Maxi	–	–	–	–	–	■	■	■	■	–	–	–	■	■	–	

Product range overview – Service unit components, D series, metal

Type		Size	Pneumatic Connection										Pressure regulation range [bar]	
													0.5 ... 7	0.5 ... 12
			M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6		
Individual devices														
Pressure regulators **LRB/LRBS**		Mini	–	–	–	■	–	–	–	–	–	–	■	■
		Midi	–	–	–	–	■	–	–	–	–	–	■	■
		Maxi	–											
Pressure regulator manifolds **LRB-K**		Mini	–	–	–	■	■	–	–	–	–	–	■	■
		Midi	–	–	–	–	■	■	–	–	–	–	■	■
		Maxi	–											
Lubricators **LOE**		Mini	–	–	■	■	■	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
On/off valves **HE**		Mini	–	–	■	■	■	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
On/off valves **HEE**		Mini	–	–	■	■	■	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
On/off valves **HEP**		Micro	–											
		Mini	–	–	■	■	■	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
Soft-start valves **HEL**		Micro	–											
		Mini	–	–	■	■	■	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
Membrane air dryers **LDM1**		Mini	–											
		Midi	–											
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
Branching modules **FRM**		Mini	–	–	■	■	■	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–
Distributor block **FRZ**		Mini	–	–	–	–	–	–	–	–	–	–	–	–
		Midi	–	–	–	–	–	–	–	–	–	–	–	–
		Maxi	–	–	–	–	–	–	–	–	–	–	–	–

Product range overview – Service unit components, D series, metal

Type	Size	Bowl guard		Pressure indicator		Actuator lock		Supply voltage			Options		→ Page/Internet
		Metal bowl guard	Plastic bowl	With pressure gauge	Without pressure gauge	Rotary knob with latch	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	With non-return function	Pressure switch	
Individual devices													
Pressure regulators **LRB/LRBS**	Micro	–	–	–	■	■	■	–	–	–	–	–	lrb
	Mini	–	–	–	■	■	■	–	–	–	–	–	
	Midi	–	–										
Pressure regulator manifolds **LRB-K**	Mini	–	–	–	■	■	–	–	–	–	–	–	lrb
	Midi	–	–	–	■	■	–	–	–	–	–	–	
	Maxi	–	–										
Lubricators **LOE**	Mini	■	–	–	■	–	–	–	–	–	–	–	loe
	Midi	■	–	–	■	–	–	–	–	–	–	–	
	Maxi	■	–	–	■	–	–	–	–	–	–	–	
On/off valves **HE**	Mini	–	–	–	■	■	–	–	–	–	–	–	he
	Midi	–	–	–	■	■	–	–	–	–	–	–	
	Maxi	–	–	–	■	■	–	–	–	–	–	–	
On/off valves **HEE**	Mini	–	–	–	■	–	–	■	■	■	–	–	hee
	Midi	–	–	–	■	–	–	■	■	■	–	–	
	Maxi	–	–	–	■	–	–	■	■	■	–	–	
On/off valves **HEP**	Micro	–											hep
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	
Soft-start valves **HEL**	Micro	–											hel
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	
Membrane air dryers **LDM1**	Mini	–											ldm1
	Midi	–											
	Maxi	■	–	–	■	–	–	–	–	–	–	–	
Branching modules **FRM**	Mini	–	–	–	■	–	–	–	–	–	■	■	frm
	Midi	–	–	–	■	–	–	–	–	–	■	■	
	Maxi	–	–	–	■	–	–	–	–	–	■	■	
Distributor block **FRZ**	Mini	–	–	–	■	–	–	–	–	–	–	–	frz
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	

Peripherals overview

Mini/Midi/Maxi

| Individual unit with connecting plates | Individual unit without connecting plates, for service unit combination |
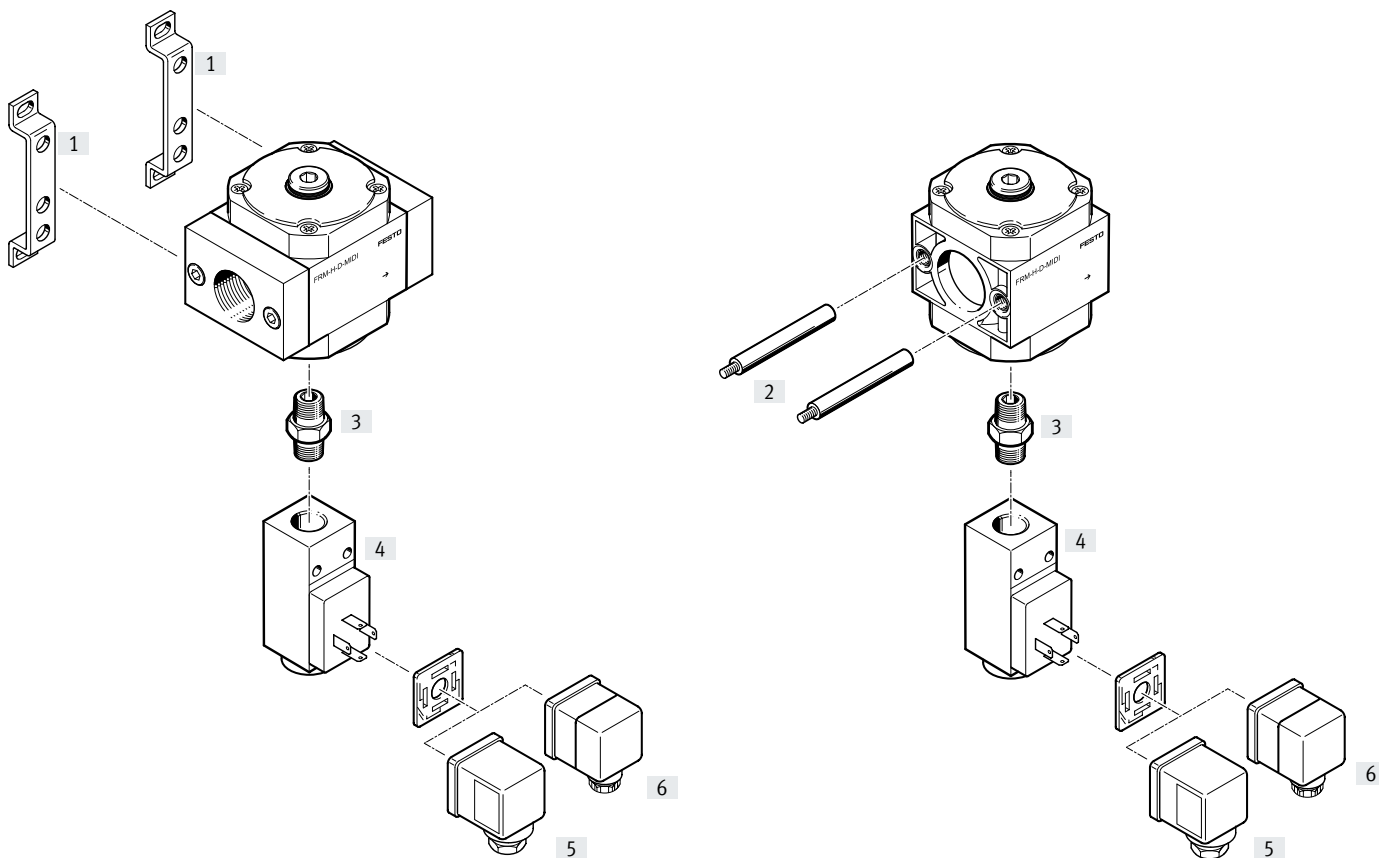
Mounting attachments and accessories		Single device		Combination		→ Page/Internet
		With connecting plates	Without connecting plates	With connecting plates	Without connecting plates	
[1]	Mounting bracket HFOE	■	–	■	–	hfoe-d
[2]	Threaded bolt (included in the scope of delivery) FRB	–	–	■	■	frb-d
[3]	Double nipple ESK	■	■	■	■	14
[4]	Pressure switch PEV	■	■	■	■	14
[5]	Plug socket MSSD-C	■	■	■	■	14
[6]	Angled plug socket PEV-...-WD-LED	■	■	■	■	14

Type codes

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

Function
Branching module, standard
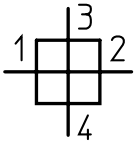
Branching module with integrated
non-return function
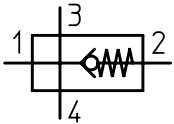
- ‖ - Flow rate
1100 ... 20000 l/min

- 🌡 - Temperature range
−10 ... +60 °C

- ⏚ - Operating pressure
0 ... 16 bar

- Branching module for compressed air distribution for attachment of auxiliary modules (pressure regulator, pressure switch, etc.)

- An integrated check valve prevents the return flow of lubricated compressed air

- Several additional air connections for greater flexibility
- Can be used as an intermediate distributor for varying air qualities

General technical data

Size	Mini				Midi					Maxi			
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	−[1]	G1/4	G3/8	G1/2	G3/4	−[1]	G1/2	G3/4	G1	−[1]
Pneumatic connection 3	G1/4				G1/2					G3/4			
Pneumatic connection 4	G1/4												
Design	Branching module												
Type of mounting	Via accessories												
	In-line installation												
Mounting position	Any												
Air purity class at the output	Compressed air to ISO 8573-1:2010 [7:–:–]												
	Inert gases												

1) Without connecting plates.

- ‖ - Note: This product conforms to ISO 1179-1 and ISO 228-1.

Standard nominal flow rate q_{nN}[1] [l/min]

Size	Mini				Midi					Maxi			
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	−[2]	G1/4	G3/8	G1/2	G3/4	−[2]	G1/2	G3/4	G1	−[2]
Branching module, standard													
In main flow direction 1 → 2	1400	3300	2900	3300	3300	6700	8200	8800	8200	11700	20000	17400	20000
Branching module with integrated non-return function													
In main flow direction 1 → 2	1100	2000	2100	2000	3100	4900	5100	5000	5100	9000	13500	12300	13500
Branching module with pressure switch													
In main flow direction 1 → 2	–		3300	–				8200	–				20000

1) Measured at p1 = 6 bar and Δp = 1 bar.
2) Without connecting plates.

Datasheet

Operating and environmental conditions

Branching module		Standard	With integrated non-return function				With pressure switch
Size		Mini/Midi/Maxi	Mini	Midi	Maxi		Mini/Midi/Maxi
Operating pressure	[MPa]	0 ... 1.6	0.015 ... 1.6	0.02 ... 1.6	0.025 ... 1.6		0 ... 1.2
	[bar]	0 ... 16	0.15 ... 16	0.2 ... 16	0.25 ... 16		0 ... 12
	[psi]	0 ... 232	2.175 ... 232	2.9 ... 232	3.625 ... 232		0 ... 174
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]					
		Inert gases					
Ambient temperature	[°C]	−10 ... +60					
Temperature of medium	[°C]	−10 ... +60					
Storage temperature	[°C]	−10 ... +60					
Corrosion resistance class CRC[1]		2					

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

Weight [g]

Size	Mini				Midi					Maxi			
Pneumatic connection 1, 2	G1/8	G1/4	G3/8	–[1]	G1/4	G3/8	G1/2	G3/4	–[1]	G1/2	G3/4	G1	–[1]
Branching module, standard													
FRM-D	322	321	322	230	532	522	502	472	382	702	662	772	442
Branching module with integrated non-return function													
FRM-H-D	325	324	325	233	536	526	506	476	386	706	666	776	446
Branching module with pressure switch													
FRM-Y-D	–		507	–					662	–			822

1)   Without connecting plates.

Materials

Sectional view
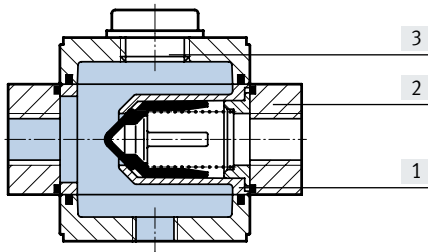
Branching module		
[1]	Housing	Die-cast aluminium FRM-H-...-D-MAXI: Die-cast zinc
[2]	Connecting plates	Die-cast zinc
[3]	Plug screw	Galvanised steel
–	Seals	NBR
Note on materials		RoHS-compliant
LABS (PWIS) conformity		VDMA24364-B1/B2-L

Datasheet

Dimensions
Connecting plates with threaded connection
Mini/Maxi

Download CAD data ➔ www.festo.com
Without connecting plates

Midi
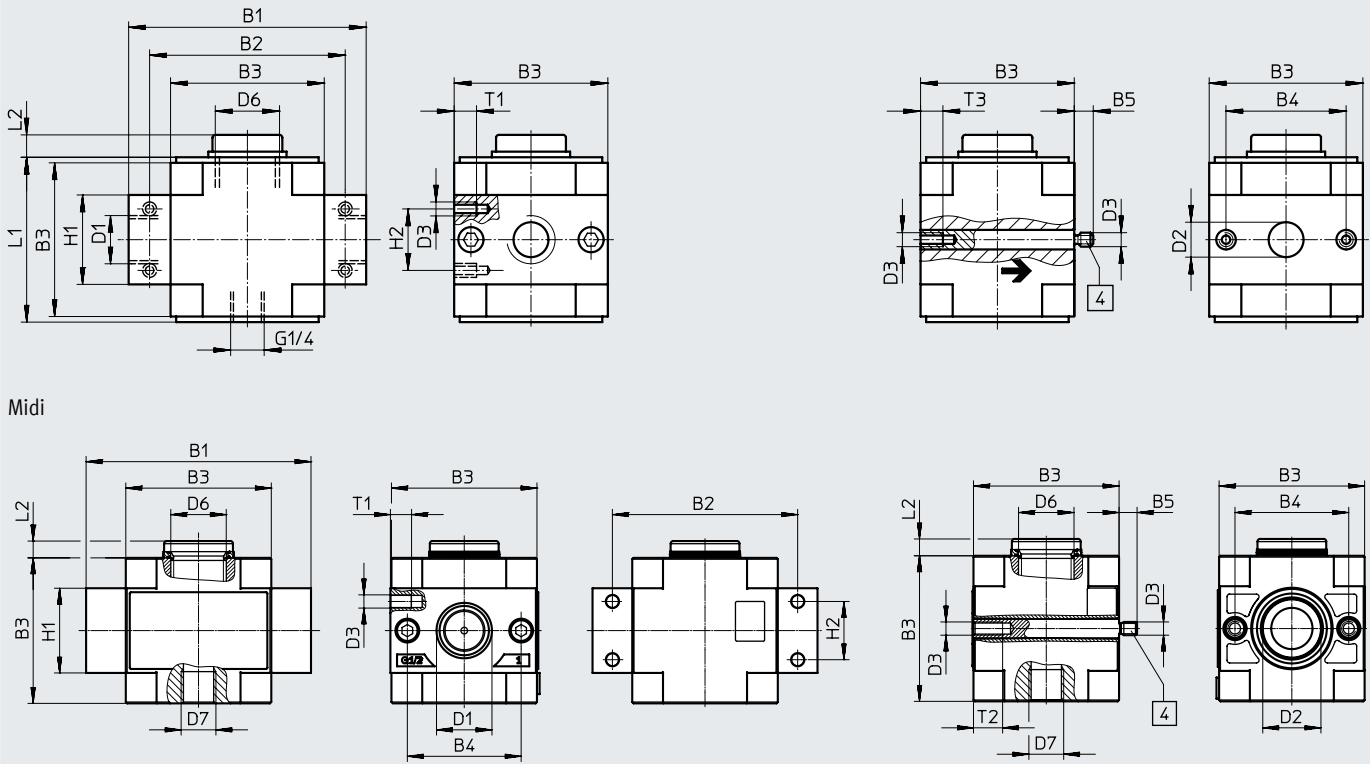
[4]   Threaded bolt (exchangeable)

➔   Flow direction

Type	B1	B2	B3	B4	B5	D1	D2 Ø	D3	D6	D7	H1	H2	L1	L2	T1	T2
Mini																
FRM-1/8-D-MINI	64	52	40	30	–	G1/8	–	M4	G1/4	G1/4	20	11	42	7	7	–
FRM-1/4-D-MINI						G1/4										
FRM-3/8-D-MINI	70					G3/8										
FRM-D-MINI	–	–			5.8	–	11				–	–			–	10
Midi																
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										
FRM-D-MIDI	–	–			6.8	–	22				–	–			–	11
Maxi																
FRM-1/2-D-MAXI	96	80	66	46	–	G1/2	–	M5	G3/4	G1/4	32	22	70	8	8	–
FRM-3/4-D-MAXI						G3/4										
FRM-1-D-MAXI	116	91				G1					40					
FRM-D-MAXI	–	–			6.8	–	30				–	–			–	11

Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet

Dimensions – Pressure switch

Download CAD data ➔ www.festo.com

Pressure switch with adjustable pressure switching point

Datasheets ➔ Internet: pev-1/4
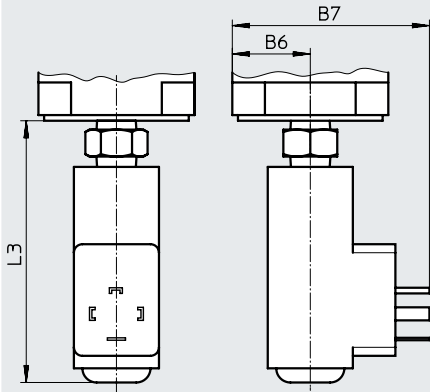
Pressure switch PEV-1/4-B-0D with adjustable pressure switching point, plug, square design to EN 175 301, type A

Type	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

Ordering data

Size	Connection	Branching module, standard		Branching module with integrated non-return function		Branching module with pressure switch PEV-1/4-B-0D	
		Part no.	Type	Part no.	Type	Part no.	Type
Without connecting plates							
Mini	–	170684	FRM-D-MINI	170687	FRM-H-D-MINI	542184	FRM-Y-D-MINI
Midi	–	170685	FRM-D-MIDI	170688	FRM-H-D-MIDI	542185	FRM-Y-D-MIDI
Maxi	–	170686	FRM-D-MAXI	170689	FRM-H-D-MAXI	542186	FRM-Y-D-MAXI
Connecting plates with threaded connection							
Mini	G1/8	164949	FRM-1/8-D-MINI	162788	FRM-H-1/8-D-MINI	–	
	G1/4	164950	FRM-1/4-D-MINI	162789	FRM-H-1/4-D-MINI		
	G3/8	164951	FRM-3/8-D-MINI	162790	FRM-H-3/8-D-MINI		
Midi	G1/4	186523	FRM-1/4-D-MIDI	186525	FRM-H-1/4-D-MIDI		
	G3/8	164952	FRM-3/8-D-MIDI	162791	FRM-H-3/8-D-MIDI		
	G1/2	164953	FRM-1/2-D-MIDI	162792	FRM-H-1/2-D-MIDI		
	G3/4	164954	FRM-3/4-D-MIDI	162793	FRM-H-3/4-D-MIDI		
Maxi	G1/2	186524	FRM-1/2-D-MAXI	186526	FRM-H-1/2-D-MAXI		
	G3/4	164955	FRM-3/4-D-MAXI	162794	FRM-H-3/4-D-MAXI		
	G1	164956	FRM-1-D-MAXI	162795	FRM-H-1-D-MAXI		

Type codes

001	Series	
FRZ	Distributor block	

002	Version	
D	D series, metal	

003	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

Function
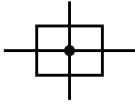
Filtered, unlubricated compressed air can be branched via additional air connections, e.g. to supply compressed air to air barriers, sensors and controllers or, for especially clean compressed air, in combination with micro filter LFM.

Materials:
Housing: Aluminium
Plug screw: Galvanised steel
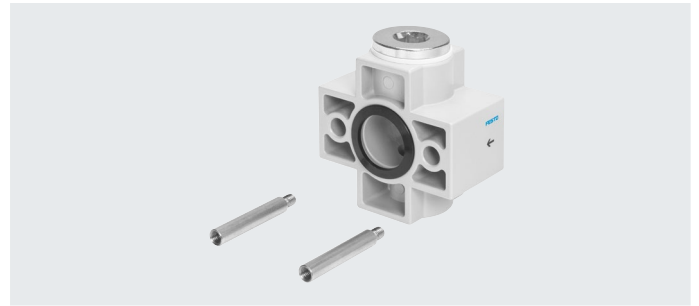
Dimensions Download CAD data ➜ www.festo.com

➜ Flow direction
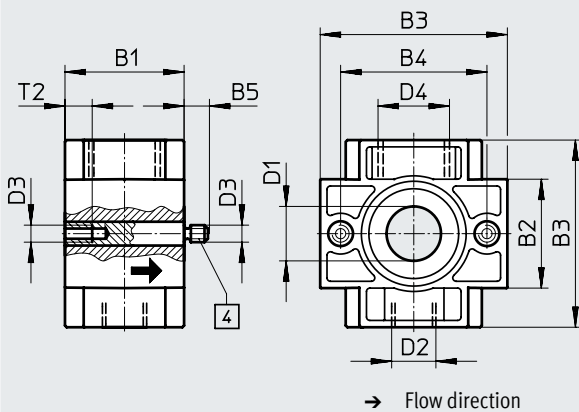
Type	B1	B2	B3	B4	B5	D1 Ø	D2	D3	D4	T2
Mini										
FRZ-D-MINI	30	20	40	30	6	12	G1/4	M4	G1/4	12
Midi										
FRZ-D-MIDI	35	32	55	43	7	16	G1/4	M5	G1/2	8
Maxi										
FRZ-D-MAXI	40	32	65	46	7	22	G1/4	M5	G3/4	10

ⁱ · Note: This product conforms to ISO 1179-1 and ISO 228-1.
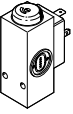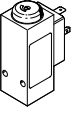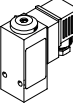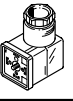
Ordering data
Distributor block

Size	Part no.	Type
Without connecting plates		
Mini	162786	**FRZ-D-MINI**
Midi	159592	**FRZ-D-MIDI**
Maxi	162787	**FRZ-D-MAXI**

Accessories

Ordering data – Pressure switches PEV Datasheets ➔ Internet: pev-1/4

	Pneumatic connection	Pressure switching point	Electrical connection	Part no.	Type
	G1/4	Adjustable With visual scale	Plug, square design to DIN EN 175 301, type A	**161760**	**PEV-1/4-SC-0D**
	G1/4	Adjustable	Plug, square design to DIN EN 175 301, type A	**175250**	**PEV-1/4-B-0D**
	G1/4	Adjustable	Plug socket MSSD-C-4P	**10773**	**PEV-1/4-B**

Ordering data – Angled plug socket PEV Datasheets ➔ Internet: pev-1/4

	Description	Operating voltage range	Electrical connection	Switching status indication	Part no.	Type
	For PEV-1/4-...-OD	15 .... 30 V DC	4-pin	Yellow LED	**164274**	**PEV-1/4-WD-LED-24**
		≤ 230 V AC ≤ 180 V DC	4-pin	Yellow LED	**164275**	**PEV-1/4-WD-LED-230**

Ordering data – Plug socket MSSD-C-4P Datasheets ➔ Internet: mssd-c-4p

	Description	Operating voltage range	Electrical connection	Type of mounting for cable connection	Part no.	Type
	For PEV-1/4-...-OD	≤ 250 V AC/DC	3-pin	Clamping screws	**171157**	**MSSD-C-4P**

Ordering data – Double nipple ESK

	Description	Pneumatic connection		Part no.	Type
	Adjustable for angular compensation • For subsequent mounting of pressure switch PEV on branching module FRM	R1/4	R1/4	**151521**	**ESK-1/4-1/4**