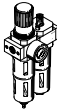
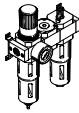
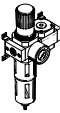
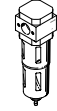
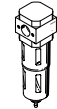
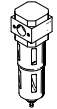
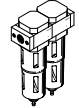
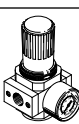


Filter regulators LFR-EX4, D series, metal

FESTO



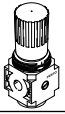
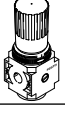
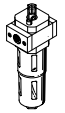
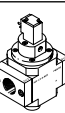
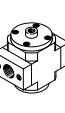
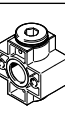
Product range overview Service unit components D series, metal

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		Micro	■	■	■	–	–	–	–	–	■	■	■	–	–	–	–	■	–
		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	■	■
FRC-K		Micro	–																
		Mini	–	–	■	■	–	–	–	–	–	–	–	■	■	–	–	–	■
		Midi	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■
		Maxi	–	–	–	–	–	■	■	–	–	–	–	■	■	–	–	–	■
LFR-K LFRS-K		Micro	–																
		Mini	–	–	■	■	–	–	–	–	–	–	–	■	■	–	–	–	■
		Midi	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■
		Maxi	–	–	–	–	–	■	■	–	–	–	–	■	■	–	–	–	■
Individual devices																			
Filter regulators LFR/LFRS		Micro	■	■	■	–	–	–	–	–	■	■	■	–	–	–	–	■	–
		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	■	■
Filters LF		Micro	■	■	■	–	–	–	–	–	■	■	–	–	–	–	–	■	–
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	■	■
Fine and micro filters LFMA/LFMB		Micro	–																
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	■	■	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	■	■	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–
Activated carbon filters LFX		Micro	–																
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	–	–
Filter combinations LFMBA		Micro	–																
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	■	■	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	■	■	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–
Pressure regulators LR/LRS		Micro	■	■	■	–	–	–	–	–	■	■	■	–	–	–	–	–	–
		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	–	–

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

Type	Size	Bowl guard		Condensate drain			Pressure indication		Actuator lock		Supply voltage			Options			→ Page/ Internet	
		Metal bowl guard	Plastic bowl	Manually rotating	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	Micro	–	■	■	■	–	■	■	■	–	–	–	–	–	–	–	frc	
	Mini	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–		
	Midi	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–		
	Maxi	■	–	■	–	■	■	■	■	■	–	–	–	■	■	–		
FRC-K	Micro	–																frc
	Mini	■	–	■	–	■	■	–	■	–	■	–	–	–	–	–		
	Midi	■	–	■	–	■	■	–	■	–	■	–	–	–	–	–		
	Maxi	■	–	■	–	■	■	–	■	–	■	–	–	■	■	–		
LFR-K LFRS-K	Micro	–																frc
	Mini	■	–	■	–	■	■	–	■	■	■	–	–	–	–	–		
	Midi	■	–	■	–	■	■	–	■	■	■	–	–	–	–	–		
	Maxi	■	–	■	–	■	■	–	■	■	■	–	–	■	■	–		
Individual devices																		
Filter regulators LFR/LFRS	Micro	–	■	■	■	–	■	■	■	–	–	–	–	–	–	–	lfr	
	Mini	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–		
	Midi	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–		
	Maxi	■	–	■	–	■	■	■	■	■	–	–	–	■	■	–		
Filters LF	Micro	–	■	■	■	–	–	–	–	–	–	–	–	–	–	–	lf	
	Mini	■	–	■	–	■	–	–	–	–	–	–	–	–	–	–		
	Midi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	–		
	Maxi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	–		
Fine and micro filters LFMA/LFMB	Micro	–																lfma, lfmb
	Mini	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■		
	Midi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■		
	Maxi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■		
Activated carbon filters LFX	Micro	–																lfx
	Mini	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
	Midi	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
	Maxi	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Filter combinations LFMBA	Micro	–																lfmba
	Mini	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■		
	Midi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■		
	Maxi	■	–	■	–	■	–	–	–	–	–	–	–	–	–	■		
Pressure regulators LR/LRS	Micro	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	lr	
	Mini	–	–	–	–	–	■	■	■	■	–	–	–	■	–	–		
	Midi	–	–	–	–	–	■	■	■	■	–	–	–	■	–	–		
	Maxi	–	–	–	–	–	■	■	■	■	–	–	–	■	■	–		

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

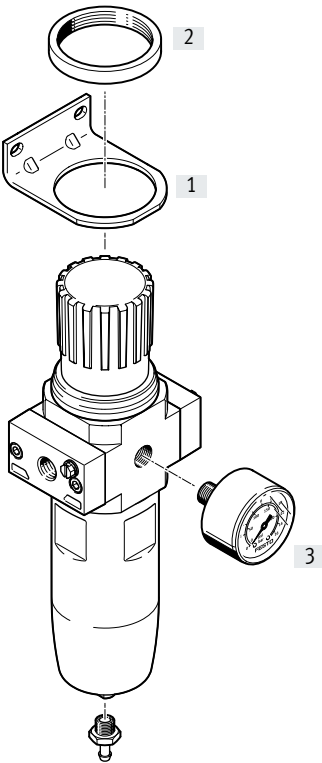
Type		Size	Pneumatic connection										Pressure regulation range [bar]		
													0.5 ... 7	0.5 ... 12	
Individual devices															
Pressure regulators LRB/LRBS		Micro	–												
		Mini	–	–	–	■	–	–	–	–	–	–	■	■	
		Midi	–	–	–	–	■	–	–	–	–	–	–	■	■
		Maxi	–												
Pressure regulator manifolds LRB-K		Micro	–												
		Mini	–	–	–	■	■	–	–	–	–	–	■	■	
		Midi	–	–	–	–	■	■	–	–	–	–	■	■	
		Maxi	–												
Lubricator LOE		Micro	■	■	■	–	–	–	–	–	■	■	–	–	
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
On/off valves HE		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
On/off valves HEE		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
On/off valves HEP		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Soft-start valves HEL		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Membrane air dryer LDM1		Micro	–												
		Mini	–												
		Midi	–												
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Branching modules FRM		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Distributor block FRZ		Micro	–												
		Mini	–	–	–	–	–	–	–	–	–	–	–	–	
		Midi	–	–	–	–	–	–	–	–	–	–	–	–	
		Maxi	–	–	–	–	–	–	–	–	–	–	–	–	

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

Type	Size	Bowl guard		Pressure indication		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	Non-return function	Pressure switch	
Individual devices													
Pressure regulators LRB/LRBS	Micro	–											lrb
	Mini	–	–	–	■	■	■	–	–	–	–	–	
	Midi	–	–	–	■	■	■	–	–	–	–	–	
	Maxi	–	–										
Pressure regulator manifolds LRB-K	Micro	–											lrb
	Mini	–	–	–	■	■	–	–	–	–	–	–	
	Midi	–	–	–	■	■	–	–	–	–	–	–	
	Maxi	–	–										
Lubricator LOE	Micro	–	■	–	■	–	–	–	–	–	–	–	loe
	Mini	■	–	–	■	–	–	–	–	–	–	–	
	Midi	■	–	–	■	–	–	–	–	–	–	–	
	Maxi	■	–	–	■	–	–	–	–	–	–	–	
On/off valves HE	Micro	–											he
	Mini	–	–	–	■	■	–	–	–	–	–	–	
	Midi	–	–	–	■	■	–	–	–	–	–	–	
	Maxi	–	–	–	■	■	–	–	–	–	–	–	
On/off valves HEE	Micro	–											hee
	Mini	–	–	–	■	–	–	■	■	■	–	–	
	Midi	–	–	–	■	–	–	■	■	■	–	–	
	Maxi	–	–	–	■	–	–	■	■	■	–	–	
On/off valves HEP	Micro	–											hep
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	
Soft-start valves HEL	Micro	–											hel
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	
Membrane air dryers LDM1	Micro	–											ldm1
	Mini	–											
	Midi	–											
	Maxi	■	–	–	■	–	–	–	–	–	–	–	
Branching modules FRM	Micro	–											frm
	Mini	–	–	–	■	–	–	–	–	–	■	■	
	Midi	–	–	–	■	–	–	–	–	–	■	■	
	Maxi	–	–	–	■	–	–	–	–	–	■	■	
Distributor block FRZ	Micro	–	–	–	■	–	–	–	–	–	–	–	frz
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	

Peripherals overview

Midi



Mounting attachments and accessories		→ Page/Internet
[1]	Mounting bracket HR-D-R3	12
[2]	Knurled nut (included in the scope of delivery) HMR	–
[3]	Pressure gauge MA	12

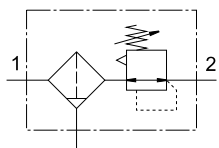
Type codes

001	Series	
LFR	Filter regulator	
002	Pneumatic connection	
1/4	Female thread G1/4	
1/2	Female thread G1/2	
N1/2	Female thread 1/2 NPT	
N1/4	Female thread 1/4 NPT	
003	Version	
D	D series, metal	
004	Pressure regulation range	
	0.5 ... 12 bar (0.05 ... 1.2 MPa)	
16	0.5 ... 16 bar	

005	Grade of filtration	
	40 µm	
5M	5 µm	
006	Pressure gauge	
0	Without pressure gauge	
007	Size	
MIDI	Grid dimension 55 mm (without connecting plates)	
008	Temperature range	
T3	-40 ... +80°C	
T18	-20 ... +80°C	
009	EU certification	
EX4	II 2GD	

Datasheet

Function



-  Flow rate
1150 ... 3400 l/min
-  Temperature range
-40 ... +80 °C
-  Operating pressure
1 ... 20 bar



- Space-saving design with filter and regulator in a single unit
- Good particle separation and high flow rate
- Good regulation characteristics with minimal hysteresis
- Robust housing for the specific requirements of process automation
- Suitable for use outdoors and at temperatures down to -40 °C
- Resistant to UV radiation and corrosive environments
- Two pressure regulation ranges: 0.5... 12 bar and 0.5 ... 16 bar
- Two pressure gauge connections for flexible installation
- Setting values are secured by locking the rotary knob
- Suitable for use in potentially explosive environments in zones 1 and 21
- New filter cartridges → Page 12

General technical data

Size	Midi			
Pneumatic connection 1, 2 ¹⁾	G1/4	G1/2	1/4 NPT-18	1/2 NPT-14
Design	Filter regulator without pressure gauge			
Type of mounting	With accessories In-line installation			
Mounting position	Vertical ±5°			
Grade of filtration [µm]	5 40			
Air quality class at the output	Compressed air to ISO 8573-1:2010 [6:8:4] (grade of filtration 5 µm) Compressed air to ISO 8573-1:2010 [7:8:4] (grade of filtration 40 µm) Inert gases			
Bowl guard	Integrated as metal bowl			
Condensate drain	Manually rotating			
Actuator lock	Rotary knob with latch			
Pressure regulation range [bar]	0.5 ... 12 0.5 ... 16 (0.5 ... 12 in temperature range +60 ... +80 °C)			
Max. pressure hysteresis [bar]	0.2			
Pressure indication	Prepared for G1/4			
Max. condensate volume [cm ³]	42			

1) Connecting plates with female thread

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

Type		LFR...-T18		LFR...-T3	
Pneumatic connection 1, 2		G1/4, 1/4 NPT-18	G1/2, 1/2 NPT-14	G1/4, 1/4 NPT-18	G1/2, 1/2 NPT-14
Pressure regulation range 0.5 ... 12 bar					
Grade of filtration	40 µm	2000	3400	2000	3400
	5 µm	1600	2600	1600	2600
Pressure regulation range 0.5 ... 16 bar					
Grade of filtration	40 µm	1475	1970	1190	1760
	5 µm	1370	1665	1150	1660

1) Measured at $p_1 = 10$ bar, $p_2 = 6$ bar and $\Delta p = 1$ bar.

Datasheet

Operating and environmental conditions		
Type	LFR-...-T18	LFR-...-T3
Operating pressure [bar]	1 ... 20	
Operating medium	Compressed air to ISO 8573-1:2010 [--9:-]	
	Inert gases	
Ambient temperature [°C]	-20 ... +80	-40 ... +80
Temperature of medium [°C]	-20 ... +80	-40 ... +80
Storage temperature [°C]	-20 ... +80	-40 ... +80
Corrosion resistance class CRC ¹⁾	3	

1) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

ATEX		
Type	LFR-...-T18-EX4	LFR-...-T3-EX4
ATEX category for gas	II 2G	
Type of ignition protection for gas	Ex h IIC T6 Gb X	
ATEX category for dust	II 2D	
Type of ignition protection for dust	Ex h IIIC T85°C Db X	
Explosion-proof ambient temperature	-20 °C ≤ Ta ≤ +80 °C	-40 °C ≤ Ta ≤ +80 °C
CE marking (see declaration of conformity) ¹⁾	To EU Explosion Protection Directive (ATEX)	

1) Additional information www.festo.com/catalogue/lfr → Support/Downloads.

Weights [g]	
Size	Midi
Filter regulator LFR-...-EX4	1400

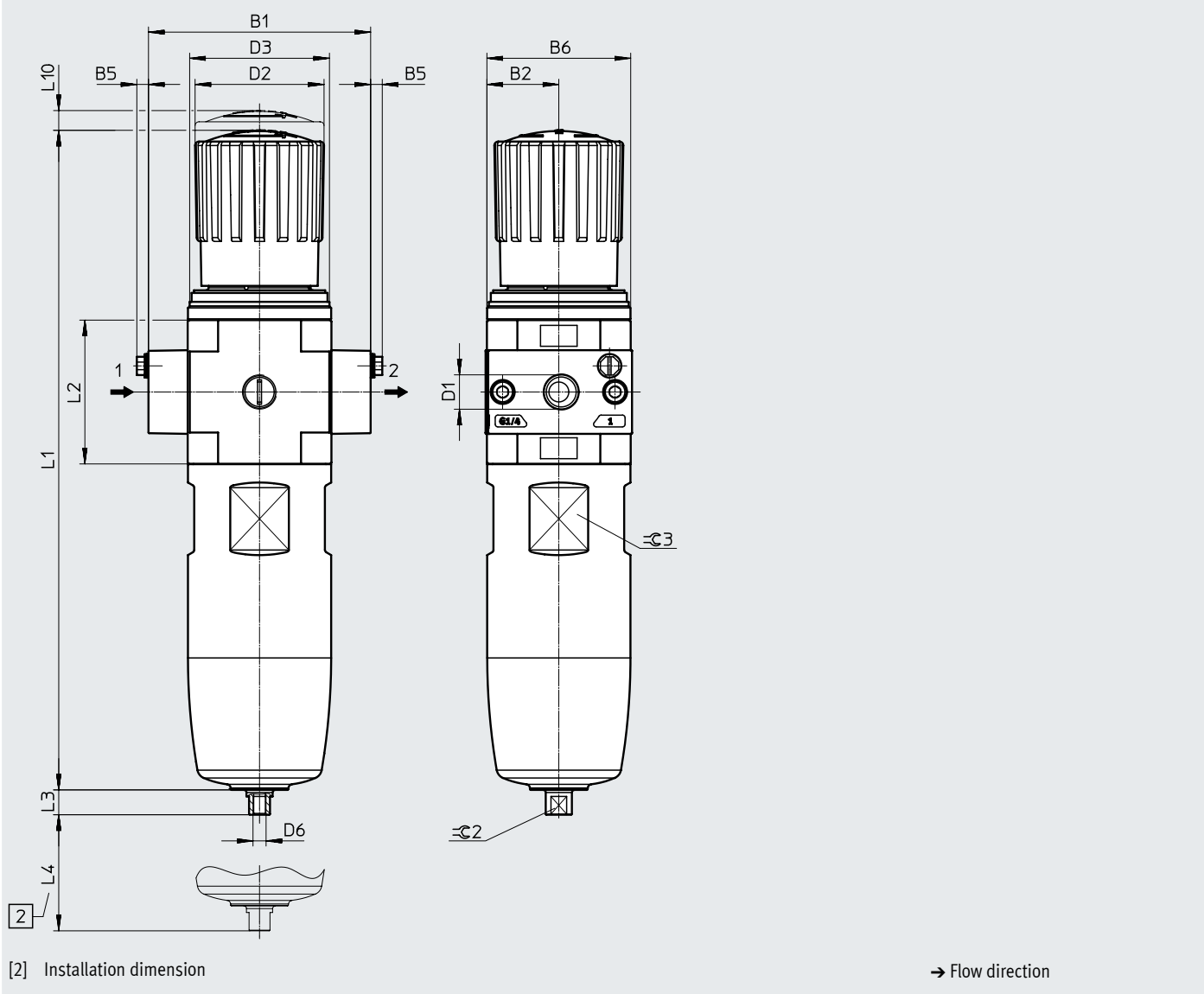
Materials	
Housing	Die-cast zinc
Sub-bases	Die-cast zinc/aluminium
Regulating knob	POM
Knurled nut	Aluminium
Bowl	Wrought aluminium alloy
Seals	NBR
Note on materials	RoHS-compliant

Datasheet

Dimensions

Midi

Download CAD data at www.festo.com



Type	B1	B2	B5	B6	D1	D2 ø	D3	D6
LFR-1/4-...-MIDI	85	27.5	~4.5	55	G1/4	49	M52x1.5	M5
LFR-1/2-...-MIDI					G1/2			
LFR-N1/4-...-MIDI					1/4 NPT-18			
LFR-N1/2-...-MIDI					1/2 NPT-14			

Type	L1	L2	L3	L4 Min.	L10	⌀ 2	⌀ 3
LFR-1/4-...-MIDI	252.5	55	9.5	80	2.5	8	50
LFR-1/2-...-MIDI							
LFR-N1/4-...-MIDI							
LFR-N1/2-...-MIDI							

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

Datasheet

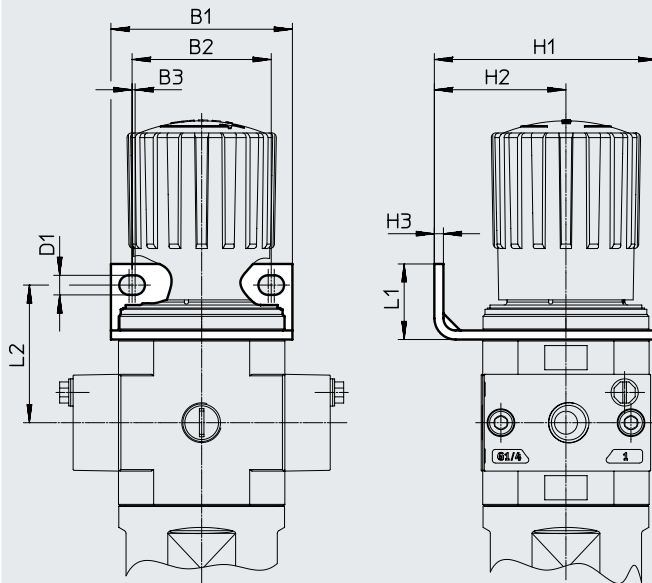
Dimensions – Accessories

Download CAD data at www.festo.com

With mounting bracket HR-D-R3

Mounting bracket HR-D-R3

→ Page 12



B1	B2	B3	D1	H1	H2	H3	L1	L2
60	46	1	6.5	73.5	43.5	3	25	45.5

Ordering data

Temperature range –20 ... +80 °C, rotary knob with latch, connecting plates with threaded connection

Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
		Part no.	Type	Part no.	Type

Pressure regulation range 0.5 ... 12 bar

Midi	G1/4	4772764	LFR-1/4-D-5M-O-MIDI-T18-EX4	4772765	LFR-1/4-D-O-MIDI-T18-EX4
	G1/2	4772768	LFR-1/2-D-5M-O-MIDI-T18-EX4	4772769	LFR-1/2-D-O-MIDI-T18-EX4
	1/4 NPT-18	4772772	LFR-N1/4-D-5M-O-MIDI-T18-EX4	4772773	LFR-N1/4-D-O-MIDI-T18-EX4
	1/2 NPT-14	4772776	LFR-N1/2-D-5M-O-MIDI-T18-EX4	4772777	LFR-N1/2-D-O-MIDI-T18-EX4

Pressure regulation range 0.5 ... 16 bar

Midi	G1/4	4772766	LFR-1/4-D-16-5M-O-MIDI-T18-EX4	4772767	LFR-1/4-D-16-O-MIDI-T18-EX4
	G1/2	4772770	LFR-1/2-D-16-5M-O-MIDI-T18-EX4	4772771	LFR-1/2-D-16-O-MIDI-T18-EX4
	1/4 NPT-18	4772774	LFR-N1/4-D-16-5M-O-MIDI-T18-EX4	4772775	LFR-N1/4-D-16-O-MIDI-T18-EX4
	1/2 NPT-14	4772778	LFR-N1/2-D-16-5M-O-MIDI-T18-EX4	4772779	LFR-N1/2-D-16-O-MIDI-T18-EX4

Ordering data

Temperature range –40 ... +80 °C, rotary knob with latch, connecting plates with threaded connection

Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
		Part no.	Type	Part no.	Type

Pressure regulation range 0.5 ... 12 bar

Midi	G1/4	5271792	LFR-1/4-D-5M-O-MIDI-T3-EX4	5271793	LFR-1/4-D-O-MIDI-T3-EX4
	G1/2	5271796	LFR-1/2-D-5M-O-MIDI-T3-EX4	5271797	LFR-1/2-D-O-MIDI-T3-EX4
	1/4 NPT-18	5271800	LFR-N1/4-D-5M-O-MIDI-T3-EX4	5271801	LFR-N1/4-D-O-MIDI-T3-EX4
	1/2 NPT-14	5271804	LFR-N1/2-D-5M-O-MIDI-T3-EX4	5271805	LFR-N1/2-D-O-MIDI-T3-EX4

Pressure regulation range 0.5 ... 16 bar

Midi	G1/4	5271794	LFR-1/4-D-16-5M-O-MIDI-T3-EX4	5271795	LFR-1/4-D-16-O-MIDI-T3-EX4
	G1/2	5271798	LFR-1/2-D-16-5M-O-MIDI-T3-EX4	5271799	LFR-1/2-D-16-O-MIDI-T3-EX4
	1/4 NPT-18	5271802	LFR-N1/4-D-16-5M-O-MIDI-T3-EX4	5271803	LFR-N1/4-D-16-O-MIDI-T3-EX4
	1/2 NPT-14	5271806	LFR-N1/2-D-16-5M-O-MIDI-T3-EX4	5271807	LFR-N1/2-D-16-O-MIDI-T3-EX4

Accessories

Mounting bracket HR-D-R3

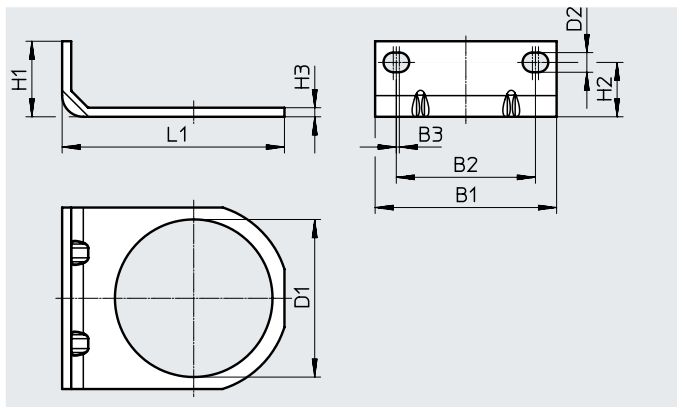
- For wall mounting an individual component

Material:

Steel

Note on materials:

RoHS-compliant



Dimensions								
B1	B2	B3	D1 Ø	D2	H1	H2	H3	L1
60	46	1	52.1	6.5	25	18	3	73.5

Ordering data				
Size	CRC ¹⁾	Weight [g]	Part no.	Type
Midi	3	73	4650310	HR-D-R3

1) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Filter cartridges, D series, metal design



Ordering data			
Size	Grade of filtration [µm]	Part no.	Type
Midi	5 (colour: blue)	159594	LFP-D-MIDI-5M
	40 (colour: white)	363667	LFP-D-MIDI-40M

Ordering data – Pressure gauge MA					Data sheets → Internet: ma	
	Nominal size	Pneumatic connection	Display range		Part no.	Type
			[bar]	[psi]		
 EN 837-1	40	G1/4	0 ... 16	0 ... 232	183901	MA-40-16-G1/4-EN
			0 ... 25	0 ... 360	183902	MA-40-25-G1/4-EN