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Air Preparation Units, D Series – Overview

Service Units FRC, Filter Regulators LFR, Pressure Regulators LR

FESTO

Service Units FRC



Flow Rate	Pneumatic Connection						Operating Pressure	Filtration Grade	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
Inch Series											
[scfm]	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]	[µm]			
25 … 46	■	■	–	–	–	–	7 … 103, 7 … 176	40	–	■	187
71 … 99	–	–	■	■	–	–			–	■	
293 … 307	–	–	–	–	■	■			–	■	
Metric Series											
[l/min]	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]	[µm]			
700 … 1,300	■	■	–	–	–	–	0.5 … 7, 0.5 … 12	40	–	■	211
2,000 … 2,800	–	–	■	■	–	–			–	■	
8,300 … 8,700	–	–	–	–	■	■			–	■	

Filter Regulators LFR



Flow Rate	Pneumatic Connection							Operating Pressure	Filtration Grade	Lead Time[1]		→ Page
										Same Day/Next Day	3 Days	
Inch Series												
[scfm]	–	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]	[µm]			
23 … 53	–	■	■	–	–	–	–	7 … 103, 7 … 176	5, 40	–	■	189
85 … 138	–	–	–	■	■	–	–			–	■	
268 … 388	–	–	–	–	–	■	■			–	■	
Metric Series												
[l/min]	M5	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]	[µm]			
110 … 410	■	■	–	–	–	–	–	0.5 … 7	5	■	–	213
650 … 1,500	–	■	■	–	–	–	–	0.5 … 7, 0.5 … 12	5, 40	–	■	
2,400 … 3,900	–	–	–	■	■	■	–			–	■	
7,600 … 11,000	–	–	–	–	■	■	■			–	■	

Pressure Regulators LR



Flow Rate	Pneumatic Connection							Operating Pressure	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
Inch Series											
[scfm]	–	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]			
28 … 56	–	■	■	–	–	–	–	7 … 103, 7 … 176	–	■	192
113 … 141	–	–	–	■	■	–	–		–	■	
388 … 441	–	–	–	–	–	■	■		–	■	
Metric Series											
[l/min]	M5	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]			
120 … 230	■	■	–	–	–	–	–	0.5 … 7	■	–	216
800 … 1,600	–	■	■	–	–	–	–	0.5 … 7, 0.5 … 12	–	■	
3,200… 4,000	–	–	–	■	■	–	–		–	■	
11,000… 12,500	–	–	–	–	■	■	■		–	■	

1) Same day lead time when product is purchased with port blocks, seals, and screws as separate items. 3 day lead time when product is purchased with port blocks mounted.
The lead time, from order placement until the item will ship, is approximate only. Actual shipping date to be confirmed upon order placement.

Air Preparation Units, D Series – Overview

Pressure Regulators LRB, Standard Filters LF, Fine and Micro Filters LFMB/LFMA

FESTO

Pressure Regulators LRB (Manifold Assembly)



Flow Rate	Pneumatic Connection							Operating Pressure	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
Metric Series											
[l/min]	M5	G⅛	G¼	G⅜	G½	G¾	G1	[bar]			
1,600… 1,800	–	–	■	■	–	–	–	0.5 … 7, 0.5 … 12	–	■	218
3,200… 3,800	–	–	–	■	■	–	–		–	■	

Standard Filters LF



Flow Rate	Pneumatic Connection							Operating Pressure	Filtration Grade	Lead Time[1]		→ Page
										Same Day/Next Day	3 Days	
Inch Series												
[scfm]	–	⅛ NPT	¼ NPT	⅜ NPT	½ NPT	¾ NPT	1 NPT	[psi]	[µm]			
28 … 42	–	■	■	–	–	–	–	0 … 235	5,	–	■	194
64 … 106	–	–	–	■	■	–	–		40	–	■	
127 … 187	–	–	–	–	–	■	■			–	■	
Metric Series												
[l/min]	M5	G⅛	G¼	G⅜	G½	G¾	G1	[bar]	[µm]			
170 … 290	■	■	–	–	–	–	–	0 … 16	5	■	–	220
800 … 1,200	–	■	■	–	–	–	–		5,	–	■	
1,800 … 3,000	–	–	–	■	■	–	–		40	–	■	
3,600 … 5,300	–	–	–	–	–	■	■			–	■	

Fine and Micro Filters LFMB/LFMA



Flow Rate	Pneumatic Connection						Operating Pressure	Filtration Grade	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
Inch Series											
[scfm]	⅛ NPT	¼ NPT	⅜ NPT	½ NPT	¾ NPT	1 NPT	[psi]	[µm]			
5 … 11	■	■	–	–	–	–	15 … 235	0.01,	–	■	196
13 … 32	–	–	■	■	–	–		1	–	■	
32 … 44	–	–	–	–	■	■			–	■	
Metric Series											
[l/min]	G⅛	G¼	G⅜	G½	G¾	G1	[bar]	[µm]			
130 … 300	■	■	–	–	–	–	1 … 16	0.01,	–	■	222
380 … 900	–	–	■	■	–	–		1	–	■	
900 … 1,250	–	–	–	–	■	■			–	■	

1) Same day lead time when product is purchased with port blocks, seals, and screws as separate items. 3 day lead time when product is purchased with port blocks mounted. The lead time, from order placement until the item will ship, is approximate only. Actual shipping date to be confirmed upon order placement.

Air Preparation Units, D Series – Overview

Lubricators LOE, Manual On/Off Valves HE, Electric On/Off Valves HEE

FESTO

Lubricators LOE

	Flow Rate	Pneumatic Connection							Operating Pressure	Lead Time[1]		→ Page
										Same Day/Next Day	3 Days	
	**Inch Series**											
	[scfm]	–	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]			
	46 ... 81	–	■	■	–	–	–	–	0 ... 235	–	■	198
	194 ... 215	–	–	–	■	■	–	–		–	■	
	297 ... 318	–	–	–	–	–	■	■		–	■	
	Metric Series											
	[l/min]	M5	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]			
	200 ... 410	■	■	–	–	–	–	–	0 ... 16	■	–	224
	1,300 ... 2,300	–	■	■	–	–	–	–		–	■	
	5,500 ... 6,100	–	–	–	■	■	–	–		–	■	
	8,400 ... 9,000	–	–	–	–	–	■	■		–	■	

Manual On/Off Valves HE

	Flow Rate	Pneumatic Connection						Operating Pressure	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
	**Inch Series**										
	[scfm]	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]			
	35 ... 53	■	■	–	–	–	–	0 ... 235	–	■	200
	113 ... 127	–	–	■	■	–	–		–	■	
	212 ... 229	–	–	–	–	■	■		–	■	
	Metric Series										
	[l/min]	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]			
	1,000 ... 1,500	■	■	–	–	–	–	0 ... 16	–	■	226
	3,200 ... 3,600	–	–	■	■	–	–		–	■	
	6,000 ... 6,500	–	–	–	–	■	■		–	■	

Electric On/Off Valves HEE

	Flow Rate	Pneumatic Connection						Operating Pressure	Supply Voltage	Lead Time[1]		→ Page
										Same Day/Next Day	3 Days	
	**Inch Series**											
	[scfm]	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]				
	35 ... 53	■	■	–	–	–	–	37 ... 235	24 V DC, 110 V AC	–	■	202
	113 ... 127	–	–	■	■	–	–			–	■	
	212 ... 229	–	–	–	–	■	■			–	■	
	Metric Series											
	[l/min]	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]				
	1,000 ... 1,500	■	■	–	–	–	–	2.5 ... 16	24 V DC, 110 V AC	–	■	228
	3,200 ... 3,600	–	–	■	■	–	–			–	■	
	6,000 ... 6,500	–	–	–	–	■	■			–	■	

1) Same day lead time when product is purchased with port blocks, seals, and screws as separate items. 3 day lead time when product is purchased with port blocks mounted.
The lead time, from order placement until the item will ship, is approximate only. Actual shipping date to be confirmed upon order placement.

Air Preparation Units, D Series – Overview

Soft-start Valves HEL, Distributor Blocks FRM/FRZ, Pressure Gauges MA

FESTO

Soft-start Valves HEL

	Flow Rate	Pneumatic Connection						Operating Pressure	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
	**Inch Series**										
	[scfm]	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]			
	35 ... 53	■	■	–	–	–	–	44 ... 235	–	■	204
	113 ... 127	–	–	■	■	–	–		–	■	
	212 ... 229	–	–	–	–	■	■		–	■	
	Metric Series										
	[l/min]	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]			
	1,000 ... 1,500	■	■	–	–	–	–	3 ... 16	–	■	230
	3,200 ... 3,600	–	–	■	■	–	–		–	■	
	6,000 ... 6,500	–	–	–	–	■	■		–	■	

Distributor Blocks FRM/FRZ

	Flow Rate	Pneumatic Connection						Operating Pressure	Lead Time[1]		→ Page
									Same Day/Next Day	3 Days	
	**Inch Series**										
	[scfm]	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT	[psi]			
	7.5 ... 20.5	■	–	–	–	–	–	0 ... 235	–	■	206
	46 ... 117	■	■	–	–	–	–		–	■	
	194 ... 290	–	–	■	■	–	–		–	■	
	473.... 706	–	–	–	–	■	■		–	■	
	Metric Series										
	[l/min]	G1/8	G1/4	G3/8	G1/2	G3/4	G1	[bar]			
	210 ... 580	■	–	–	–	–	–	0 ... 16	–	■	232
	1,300 ... 3,300	■	■	–	–	–	–		–	■	
	5,500 ... 8,200	–	–	■	■	–	–		–	■	
	13,400 20,000	–	–	–	–	■	■		–	■	

Pressure Gauges MA

	Pneumatic Connection			Housing ∅	Operating Pressure / Indicating Range		Lead Time		→ Page
	M5	G1/8	G1/4	[mm]	[psi]	[bar]	Same Day/Next Day	3 Days	
	**Metric and Inch Series**								
	■	–	–	27	0 ... 160	0 ... 10	■	–	208
	–	■	–	40	0 ... 145	0 ... 10	■	–	
	–	■	–	40	0 ... 240	0 ... 16	■	–	
	–	–	■	50	0 ... 145	0 ... 10	■	–	
	–	–	■	50	0 ... 240	0 ... 16	■	–	

1) Same day lead time when product is purchased with port blocks, seals, and screws as separate items. 3 day lead time when product is purchased with port blocks mounted.
The lead time, from order placement until the item will ship, is approximate only. Actual shipping date to be confirmed upon order placement.

Air Preparation Units – Inch and Metric Series

Overview



- Sturdy and versatile metal series
- 4 sizes: Micro (Metric Series only), Mini, Midi and Maxi
- 13 connection sizes:
  Inch Series: 1/8NPT, 1/4NPT, 3/8NPT, 1/2NPT, 3/4NPT, 1NPT
  Metric Series: M5, G1/8, G1/4, G3/8, G1/2, G3/4, G1
- 2 pressure ranges:
  7 ... 103 psi / 0.5 ... 7 bar or 7 ... 176 psi / 0.5 ... 12 bar
- Flow rates up to 307 scfm / 8.700 l/min
- Broad range of functions:
  Individual devices or pre-assembled and tested combinations

Detailed product information ➔ www.festo.com/catalog/‹type›

Features

- High-quality and sturdy product
- Metal bowl guard standard
- Wide range of functions in four sizes
- Wealth of options ensures the right solution for every task
- Compressed air qualities to DIN ISO 8573-1:2010
- Reduced maintenance overheads, long service life and easy servicing save time and money

Contents

Inch Series

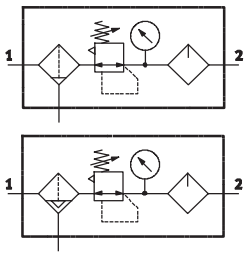
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Service Units FRC – Inch Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Seals: Nitrile rubber
Free of copper and PTFE



The following oils are recommended for Festo components:

Viscosity range to ISO 3448 ,
ISO class VG 32
32 mm^2/s (= cSt) at 104 °F

- Festo special oil OFSW-32
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

Technical Data							Download CAD data ➔ **www.festo.com/us/engineering**
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Filter regulator					
		Proportional standard mist lubricator					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Vertical ±5°					
Grade of filtration	[µm]	40 (air purity class at the output: compressed air in accordance with ISO 8573-1:2010 [7:8:–])					
Pressure regulation range	[psi]	7.5 ... 103					
		7.5 ... 176					
Pressure indication		With pressure gauge					
Length	[in]	3.0		3.7		4.2	
Width	[in]	3.1 (4.1)[1)]		4.3 (5.5)[1)]		5.1 (6.4)[1)]	5.2 (7.2)[1)]
Height	[in]	8.3		10.6		10.7	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1)] qnN [scfm]							
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Pressure regulation range 7.5 ... 103 psi							
Grade of filtration	40 µm	28	46	71	99	300	307
Pressure regulation range 7.5 ... 176 psi							
Grade of filtration	40 µm	25	35	71	92	293	300

1) Measured at p1 = 147 psi, p2 = 88 psi and Δp = 15 psi. A minimum flow rate of 4 scfm is required for flawless functioning.

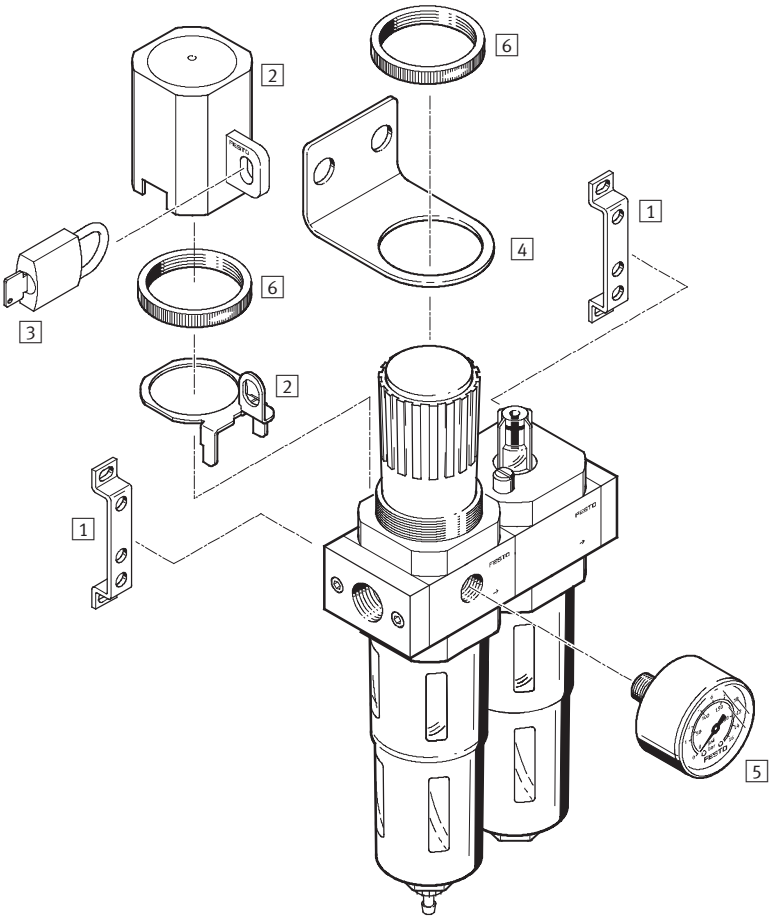
Operating Conditions			
Condensate drain		Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [–:9:–]	Compressed air in accordance with ISO 8573-1:2010 [7:9:–]
		Inert gases	
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Supply pressure	[psi]	15 ... 235	29 ... 176
Ambient temperature	[°F]	14 ... 140	

Ordering Data

Condensate drain	Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
			Part No.	Type			Part No.	Type	
Turned manually	Mini	1/8 NPT	**173834**	**FRC-1/8-D-7-MINI-NPT**	3D		**173828**	**FRC-1/8-D-MINI-NPT**	3D
		1/4 NPT	**173842**	**FRC-1/4-D-7-MINI-NPT**	3D		**173836**	**FRC-1/4-D-MINI-NPT**	3D
	Midi	3/8 NPT	**173858**	**FRC-3/8-D-7-MIDI-NPT**	3D		**173852**	**FRC-3/8-D-MIDI-NPT**	3D
		1/2 NPT	**173866**	**FRC-1/2-D-7-MIDI-NPT**	3D		**173860**	**FRC-1/2-D-MIDI-NPT**	3D
	Maxi	3/4 NPT	**173882**	**FRC-3/4-D-7-MAXI-NPT**	3D		**173876**	**FRC-3/4-D-MAXI-NPT**	3D
		1 NPT	**173890**	**FRC-1-D-7-MAXI-NPT**	3D		**173884**	**FRC-1-D-MAXI-NPT**	3D
Fully automatic	Mini	1/8 NPT	**173835**	**FRC-1/8-D-7-MINI-A-NPT**	3D		**173829**	**FRC-1/8-D-MINI-A-NPT**	3D
		1/4 NPT	**173843**	**FRC-1/4-D-7-MINI-A-NPT**	3D		**173837**	**FRC-1/4-D-MINI-A-NPT**	3D
	Midi	3/8 NPT	**173859**	**FRC-3/8-D-7-MIDI-A-NPT**	3D		**173853**	**FRC-3/8-D-MIDI-A-NPT**	3D
		1/2 NPT	**173867**	**FRC-1/2-D-7-MIDI-A-NPT**	3D		**173861**	**FRC-1/2-D-MIDI-A-NPT**	3D
	Maxi	3/4 NPT	**173883**	**FRC-3/4-D-7-MAXI-A-NPT**	3D		**173877**	**FRC-3/4-D-MAXI-A-NPT**	3D
		1 NPT	**173891**	**FRC-1-D-7-MAXI-A-NPT**	3D		**173885**	**FRC-1-D-MAXI-A-NPT**	3D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

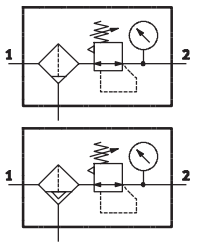


Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
2	Regulator lock LRVS	209
3	Padlock LRVS-D	–

Mounting attachments and accessories		➔ Page/Internet
4	Mounting bracket HR-D	209
5	Pressure gauge MA (included in scope of delivery)	208
6	Knurled nut HMR (included in scope of delivery)	–

Filter Regulators LFR – Inch Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		⅛NPT	¼NPT	⅜NPT	½NPT	¾NPT	1NPT
Design		Filter regulator with pressure gauge					
		Filter regulator without pressure gauge					
Type of mounting		Via accessories					
		In-line installation					
		Front panel mounting					
Mounting position		Vertical ±5°					
Grade of filtration	[µm]	5 or 40					
Pressure regulation range	[psi]	7.5 ... 103					
		7.5 ... 176					
Pressure indication		Via pressure gauge					
Length	[in]	3.0		3.7		4.2	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	8.3		10.6		10.7	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]							
Size		Mini		Midi		Maxi	
Pneumatic connection		⅛NPT	¼NPT	⅜NPT	½NPT	¾NPT	1NPT
Pressure regulation range 7.5 ... 103 psi							
	40 µm	32	53	113	138	353	388
Pressure regulation range 7.5 ... 176 psi							
Grade of filtration	5 µm	23	42	85	92	268	282
	40 µm	26	49	109	120	342	353

1) Measured at p1 = 147 psi, p2 = 88 psi and Δp = 15 psi.

Operating Conditions			
Condensate drain		Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [–:–:–]	
Supply pressure	[psi]	15 ... 235	29 ... 176
Ambient temperature	[°F]	14 ... 140	

Ordering Data – Filtration Grade 40µm

Condensate drain	Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
			Part No.	Type			Part No.	Type	
Directly actuated diaphragm regulator									
Turned manually	Mini	1/8NPT	**173762**	**LFR-1/8-D-7-MINI-NPT**	3D		**173756**	**LFR-1/8-D-MINI-NPT**	3D
		1/4NPT	**173770**	**LFR-1/4-D-7-MINI-NPT**	3D		**173764**	**LFR-1/4-D-MINI-NPT**	3D
	Midi	3/8NPT	**173786**	**LFR-3/8-D-7-MIDI-NPT**	3D		**173780**	**LFR-3/8-D-MIDI-NPT**	3D
		1/2NPT	**173794**	**LFR-1/2-D-7-MIDI-NPT**	3D		**173788**	**LFR-1/2-D-MIDI-NPT**	3D
	Maxi	3/4NPT	**173810**	**LFR-3/4-D-7-MAXI-NPT**	3D		**173804**	**LFR-3/4-D-MAXI-NPT**	3D
		1NPT	**173818**	**LFR-1-D-7-MAXI-NPT**	3D		**173812**	**LFR-1-D-MAXI-NPT**	3D
Fully automatic	Mini	1/8NPT	**173763**	**LFR-1/8-D-7-MINI-A-NPT**	3D		**173757**	**LFR-1/8-D-MINI-A-NPT**	3D
		1/4NPT	**173771**	**LFR-1/4-D-7-MINI-A-NPT**	3D		**173765**	**LFR-1/4-D-MINI-A-NPT**	3D
	Midi	3/8NPT	**173787**	**LFR-3/8-D-7-MIDI-A-NPT**	3D		**173781**	**LFR-3/8-D-MIDI-A-NPT**	3D
		1/2NPT	**173795**	**LFR-1/2-D-7-MIDI-A-NPT**	3D		**173789**	**LFR-1/2-D-MIDI-A-NPT**	3D
	Maxi	3/4NPT	**173811**	**LFR-3/4-D-7-MAXI-A-NPT**	3D		**173805**	**LFR-3/4-D-MAXI-A-NPT**	3D
		1NPT	**173819**	**LFR-1-D-7-MAXI-A-NPT**	3D		**173813**	**LFR-1-D-MAXI-A-NPT**	3D

Ordering Data – Basic Units without Threaded Connecting Plates, Filtration Grade 5µm

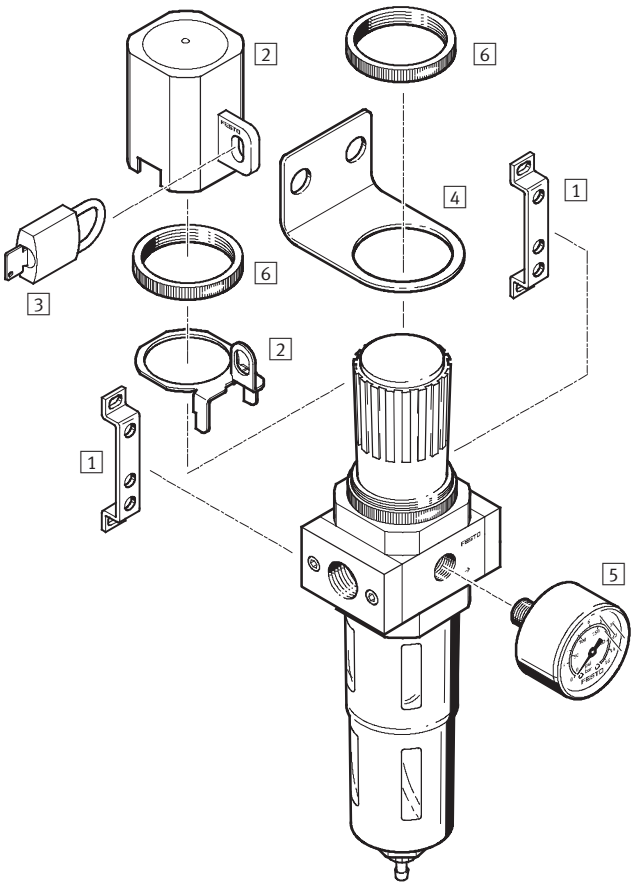
Condensate drain	Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
			Part No.	Type			Part No.	Type	
Basic Unit without pressure gauge									
Turned manually	Mini	–	**546454**	**LFR-D-5M-MINI**	1D		–	–	
	Midi	–	**546455**	**LFR-D-5M-MIDI**	1D		–	–	
	Maxi	–	**546461**	**LFR-D-5M-MAXI**	1D		–	–	
Fully automatic	Mini	–	**546462**	**LFR-D-5M-MINI-A**	1D		–	–	
	Midi	–	**546468**	**LFR-D-5M-MIDI-A**	1D		–	–	
	Maxi	–	**546469**	**LFR-D-5M-MAXI-A**	1D		–	–	

Ordering Data – Basic Units without Threaded Connecting Plates, Filtration Grade 40µm

Condensate drain	Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
			Part No.	Type			Part No.	Type	
Basic Unit without pressure gauge									
Turned manually	Mini	–	**546456**	**LFR-D-7-MINI**	1D		**546432**	**LFR-D-MINI**	1D
	Midi	–	**546463**	**LFR-D-7-MIDI**	1D		**546425**	**LFR-D-MIDI**	1D
	Maxi	–	**546470**	**LFR-D-7-MAXI**	1D		**546437**	**LFR-D-MAXI**	1D
Fully automatic	Mini	–	**546457**	**LFR-D-7-MINI-A**	1D		**546433**	**LFR-D-MINI-A**	1D
	Midi	–	**546464**	**LFR-D-7-MIDI-A**	1D		**546426**	**LFR-D-MIDI-A**	1D
	Maxi	–	**546471**	**LFR-D-7-MAXI-A**	1D		**546438**	**LFR-D-MAXI-A**	1D
Basic Unit without pressure gauge, with integrated return flow function									
Turned manually	Maxi	–	**546514**	**LFR-D-7-DI-MAXI**	1D		**546512**	**LFR-D-DI-MAXI**	1D
Fully automatic	Maxi	–	**546518**	**LFR-D-7-DI-MAXI-A**	1D		**546515**	**LFR-D-DI-MAXI-A**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

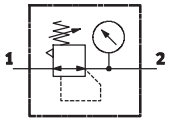
Accessories Overview



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
2	Regulator lock LRVS	209
3	Padlock LRVS-D	lrvs-d
4	Mounting bracket HR-D	209
5	Pressure gauge MA	208
6	Knurled nut HMR (not included in the basic units' scope of delivery)	hmr

Pressure Regulators LR – Inch Series

Technical Data



Materials
Housing: Die-cast zinc/aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Directly actuated diaphragm regulator				Pilot actuated piston regulator	
Type of mounting		Via accessories					
		In-line installation					
		Front panel mounting					
Mounting position		Any					
Max. hysteresis	[psi]	1.5				2.9	
Pressure regulation range	[psi]	7.5 ... 103					
		7.5 ... 176					
Pressure indication		Via pressure gauge					
		G1/8 port		G1/4 port		G1/4 port	
Length	[in]	3.0		3.7		4.2	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	3.8		5.3		4.9	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]							
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Pressure regulation range 7.5 ... 103 psi		35	56	116	141	424	441
Pressure regulation range 7.5 ... 176 psi		28	53	113	124	388	406

1) Measured at p1 = 147 psi, p2 = 88 psi and Δp = 15 psi.

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Supply pressure	[psi]	15 ... 235
Ambient temperature	[°F]	14 ... 140

Pressure Regulators LR – Inch Series

Ordering Data, Accessories

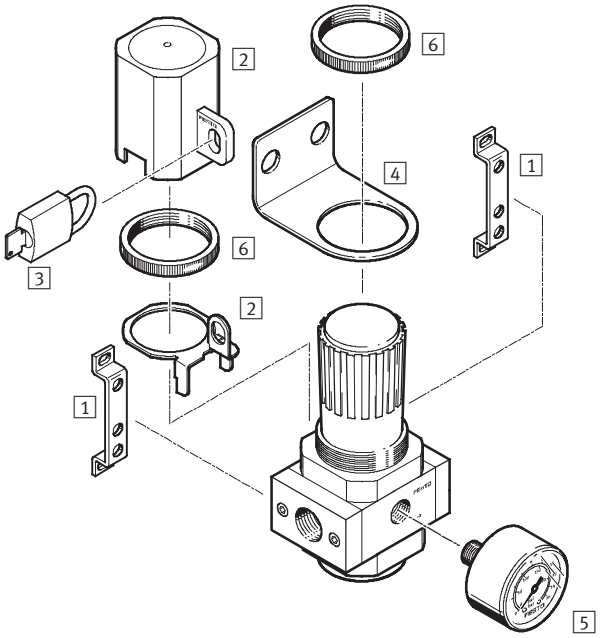
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Ordering Data							
Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
		Part No.	Type			Part No.	Type	
Directly actuated diaphragm regulator								
Mini	1/8 NPT	**173646**	**LR-1/8-D-7-MINI-NPT**	3D		**173644**	**LR-1/8-D-MINI-NPT**	3D
	1/4 NPT	**173650**	**LR-1/4-D-7-MINI-NPT**	3D		**173648**	**LR-1/4-D-MINI-NPT**	3D
Midi	3/8 NPT	**173658**	**LR-3/8-D-7-MIDI-NPT**	3D		**173656**	**LR-3/8-D-MIDI-NPT**	3D
	1/2 NPT	**173662**	**LR-1/2-D-7-MIDI-NPT**	3D		**173660**	**LR-1/2-D-MIDI-NPT**	3D
Pilot actuated piston regulator								
Maxi	3/4 NPT	**173670**	**LR-3/4-D-7-MAXI-NPT**	3D		**173668**	**LR-3/4-D-MAXI-NPT**	3D
	1 NPT	**173674**	**LR-1-D-7-MAXI-NPT**	3D		**173672**	**LR-1-D-MAXI-NPT**	3D

Ordering Data – Basic Units, without Threaded Connecting Plates								
Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 07.5 ... 176 psi		LT
		Part No.	Type			Part No.	Type	
Basic Unit without pressure gauge								
Mini	–	**546452**	**LR-D-7-MINI**	1D		**546430**	**LR-D-MINI**	1D
Midi	–	**546458**	**LR-D-7-MIDI**	1D		**546424**	**LR-D-MIDI**	1D
Maxi	–	**546465**	**LR-D-7-MAXI**	1D		**546436**	**LR-D-MAXI**	1D
Basic Unit without pressure gauge, with integrated return flow function								
Maxi	–	**546513**	**LR-D-7-DI-MAXI**	1D		**546511**	**LR-D-DI-MAXI**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

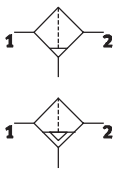
Accessories Overview



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
2	Regulator lock LRVS	209
3	Padlock LRVS-D	lrvs-d
4	Mounting bracket HR-D	209
5	Pressure gauge MA	208
6	Knurled nut HMR (not included in the basic units' scope of delivery)	hmr

Filters LF – Inch Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Sintered filter with centrifugal separation					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Vertical ±5°					
Grade of filtration	[µm]	5 or 40					
Length	[in]	1.6		2.2		2.6	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	6.4		7.8		8.7	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]							
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Grade of filtration	5 µm	28	34	64	71	127	134
	40 µm	35	42	95	106	177	187

1) Measured at p1 = 147 psi, p2 = 88 psi and Δp = 15 psi.
A minimum flow rate of 4.4 scfm is required for flawless functioning.

Operating Conditions			
Condensate drain		Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]	
Supply pressure	[psi]	0 ... 235	29 ... 176
Ambient temperature	[°F]	14 ... 140	

Filters LF – Inch Series

Ordering Data, Accessories

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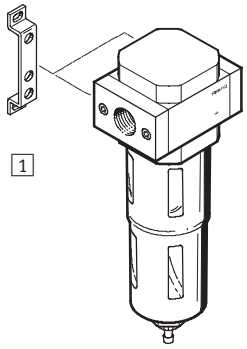
Ordering Data								
Condensate drain	Size	Connection	Grade of filtration 5 µm		LT	Grade of filtration 40 µm		LT
			Part No.	Type		Part No.	Type	
Turned manually	Mini	1/8 NPT	**173678**	**LF-1/8-D-5M-MINI-NPT**	3D	**173676**	**LF-1/8-D-MINI-NPT**	3D
		1/4 NPT	**173682**	**LF-1/4-D-5M-MINI-NPT**	3D	**173680**	**LF-1/4-D-MINI-NPT**	3D
	Midi	3/8 NPT	**173690**	**LF-3/8-D-5M-MIDI-NPT**	3D	**173688**	**LF-3/8-D-MIDI-NPT**	3D
		1/2 NPT	**173694**	**LF-1/2-D-5M-MIDI-NPT**	3D	**173692**	**LF-1/2-D-MIDI-NPT**	3D
	Maxi	3/4 NPT	**173702**	**LF-3/4-D-5M-MAXI-NPT**	3D	**173700**	**LF-3/4-D-MAXI-NPT**	3D
		1 NPT	**173706**	**LF-1-D-5M-MAXI-NPT**	3D	**173704**	**LF-1-D-MAXI-NPT**	3D
Fully automatic	Mini	1/8 NPT	**173679**	**LF-1/8-D-5M-MINI-A-NPT**	3D	**173677**	**LF-1/8-D-MINI-A-NPT**	3D
		1/4 NPT	**173683**	**LF-1/4-D-5M-MINI-A-NPT**	3D	**173681**	**LF-1/4-D-MINI-A-NPT**	3D
	Midi	3/8 NPT	**173691**	**LF-3/8-D-5M-MIDI-A-NPT**	3D	**173689**	**LF-3/8-D-MIDI-A-NPT**	3D
		1/2 NPT	**173695**	**LF-1/2-D-5M-MIDI-A-NPT**	3D	**173693**	**LF-1/2-D-MIDI-A-NPT**	3D
	Maxi	3/4 NPT	**173703**	**LF-3/4-D-5M-MAXI-A-NPT**	3D	**173701**	**LF-3/4-D-MAXI-A-NPT**	3D
		1 NPT	**173707**	**LF-1-D-5M-MAXI-A-NPT**	3D	**173705**	**LF-1-D-MAXI-A-NPT**	3D

Ordering Data – Basic Units, without Threaded Connecting Plates								
Condensate drain	Size	Connection	Grade of filtration 5 µm		LT	Grade of filtration 40 µm		LT
			Part No.	Type		Part No.	Type	
Turned manually	Mini	–	**546451**	**LF-D-5M-MINI-U**	1D	**546428**	**LF-D-MINI-U**	1D
	Midi	–	**546453**	**LF-D-5M-MIDI-U**	1D	**546422**	**LF-D-MIDI-U**	1D
	Maxi	–	**546459**	**LF-D-5M-MAXI-U**	1D	**546434**	**LF-D-MAXI-U**	1D
Fully automatic	Mini	–	**546460**	**LF-D-5M-MINI-A-U**	1D	**546429**	**LF-D-MINI-A-U**	1D
	Midi	–	**546466**	**LF-D-5M-MIDI-A-U**	1D	**546423**	**LF-D-MIDI-A-U**	1D
	Maxi	–	**546467**	**LF-D-5M-MAXI-A-U**	1D	**546435**	**LF-D-MAXI-A-U**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

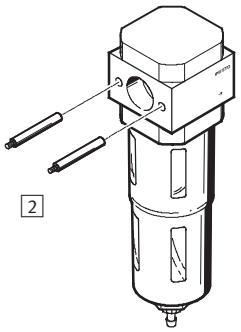
Accessories Overview

Individual device



Mounting attachments and accessories	➔ Page/Internet
1 Mounting bracket HFOE	209

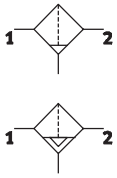
Basic unit for manifold assembly



Mounting attachments and accessories	➔ Page/Internet
2 Threaded bolt FRB (must be ordered separately)	209

Fine and Micro Filters LFMB/LFMA – Inch Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Filter: Borosilicate fibre
Seals: Nitrile rubber
Free of copper and PTFE

- High efficiency filter for special requirements
- Air quality to ISO 8573-1:2010
- Choice of filter cartridges: 0.01 µm or 1 µm



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Fibre filter					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Vertical ±5°					
Length	[in]	3.0		3.7		4.2	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	6.4		7.8		8.7	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]						
Size	Mini		Midi		Maxi	
Pneumatic connection	1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Micro filter LFMA	5	6	13	14	32	34
Fine filter LFMB	9	11	25	32	42	44

1) Measured at p1 = 88 psi and Δp = 70 mbar.
A minimum flow rate of 4.4 scfm is required for flawless functioning.

Operating Conditions					
Type		LFMA		LFMB	
Condensate drain		Manual rotary	Fully automatic	Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]		Compressed air in accordance with ISO 8573-1:2010 [6:4:4]	
Grade of filtration	[µm]	0.01 (air purity class at the output: compressed air in accordance with ISO 8573-1:2010 [2:7:2])		1 (air purity class at the output: compressed air in accordance with ISO 8573-1:2010 [4:7:3])	
Residual oil content	[mg/m³]	≤ 0.01		≤ 0.5	
Supply pressure	[psi]	15 ... 235	22 ... 176	15 ... 235	22 ... 176
Ambient temperature	[°F]	14 ... 140		14 ... 140	

Fine and Micro Filters LFMB/LFMA – Inch Series

Ordering Data, Accessories

Ordering Data – Fine filters LFMB

Grade of filtration 1 µm, metal bowl guard

Size	Connection	Input pressure 15 … 235 psi Condensate drain turned manually Part No. Type	LT		Input pressure 22 … 176 psi Condensate drain fully automatic Part No. Type	LT
With threaded connecting plates						
Mini	1/8 NPT	**173708 LFMB-1/8-D-MINI-NPT**	3D		**173709 LFMB-1/8-D-MINI-A-NPT**	3D
	1/4 NPT	**173710 LFMB-1/4-D-MINI-NPT**	3D		**173711 LFMB-1/4-D-MINI-A-NPT**	3D
Midi	3/8 NPT	**173714 LFMB-3/8-D-MIDI-NPT**	3D		**173715 LFMB-3/8-D-MIDI-A-NPT**	3D
	1/2 NPT	**173716 LFMB-1/2-D-MIDI-NPT**	3D		**173717 LFMB-1/2-D-MIDI-A-NPT**	3D
Maxi	3/4 NPT	**173720 LFMB-3/4-D-MAXI-NPT**	3D		**173721 LFMB-3/4-D-MAXI-A-NPT**	3D
	1 NPT	**173722 LFMB-1-D-MAXI-NPT**	3D		**173723 LFMB-1-D-MAXI-A-NPT**	3D
Basic Units, without Threaded Connecting Plates						
Mini	–	**546440 LFMB-D-MINI-U**	1D		**546442 LFMB-D-MINI-A-U**	1D
Midi	–	**546444 LFMB-D-MIDI-U**	1D		**546445 LFMB-D-MIDI-A-U**	1D
Maxi	–	**546448 LFMB-D-MAXI-U**	1D		**546450 LFMB-D-MAXI-A-U**	1D

Ordering Data – Micro filters LFMA

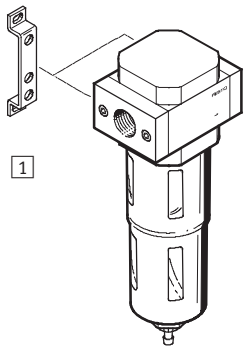
Grade of filtration 0.01 µm, metal bowl guard

Size	Connection	Input pressure 15 … 235 psi Condensate drain turned manually Part No. Type	LT		Input pressure 22 … 176 psi Condensate drain fully automatic Part No. Type	LT
With threaded connecting plates						
Mini	1/8 NPT	**173724 LFMA-1/8-D-MINI-NPT**	3D		**173725 LFMA-1/8-D-MINI-A-NPT**	3D
	1/4 NPT	**173726 LFMA-1/4-D-MINI-NPT**	3D		**173727 LFMA-1/4-D-MINI-A-NPT**	3D
Midi	3/8 NPT	**173730 LFMA-3/8-D-MIDI-NPT**	3D		**173731 LFMA-3/8-D-MIDI-A-NPT**	3D
	1/2 NPT	**173732 LFMA-1/2-D-MIDI-NPT**	3D		**173733 LFMA-1/2-D-MIDI-A-NPT**	3D
Maxi	3/4 NPT	**173736 LFMA-3/4-D-MAXI-NPT**	3D		**173737 LFMA-3/4-D-MAXI-A-NPT**	3D
	1 NPT	**173738 LFMA-1-D-MAXI-NPT**	3D		**173739 LFMA-1-D-MAXI-A-NPT**	3D
Basic Units, without Threaded Connecting Plates						
Mini	–	**546439 LFMA-D-MINI-U**	1D		**546441 LFMA-D-MINI-A-U**	1D
Midi	–	**546443 LFMA-D-MIDI-U**	1D		**546446 LFMA-D-MIDI-A-U**	1D
Maxi	–	**546447 LFMA-D-MAXI-U**	1D		**546449 LFMA-D-MAXI-A-U**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

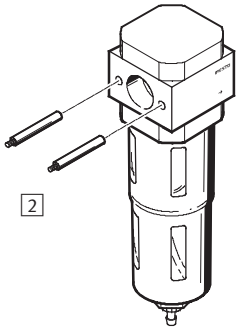
Accessories Overview

Individual device



Mounting attachments and accessories	➔ Page/Internet
1 Mounting bracket HFOE	209

Basic unit for manifold assembly



Mounting attachments and accessories	➔ Page/Internet
2 Threaded bolt FRB (must be ordered separately)	209

Lubricators LOE – Inch Series

Technical Data

FESTO



Materials
Housing: Die-cast zinc/aluminum
Seals: Nitrile rubber
Free of copper and PTFE



The following oils are recommended for Festo components:
Viscosity range to ISO 3448, ISO class VG 32
32 mm^2/s (= cSt) at 40 °C

- Festo special oil OFSW-32
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

Technical Data							Download CAD data ➔ **www.festo.com/us/engineering**
Size	Mini		Midi		Maxi		
Pneumatic connection	⅛NPT	¼NPT	⅜NPT	½NPT	¾NPT	1NPT	
Design	Proportional standard mist lubricator						
Type of mounting	Via accessories						
	In-line installation						
Mounting position	Vertical ±5°						
Minimum flow for lubricator operation [scfm]	0.1		0.3		0.4		
Max. oil capacity [in^3]	2.7		6.7		11.6		
Length [in]	1.6		2.2		2.6		
Width [in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]	
Height [in]	6.7		8		9		

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]						
Size	Mini		Midi		Maxi	
Pneumatic connection	⅛NPT	¼NPT	⅜NPT	½NPT	¾NPT	1NPT
Lubricator LOE	46	81	194	215	297	318

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

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium not possible
Supply pressure	[psi]	0 ... 235
Ambient temperature	[°F]	14 ... 140

Lubricators LOE – Inch Series

Ordering Data, Accessories

FESTO

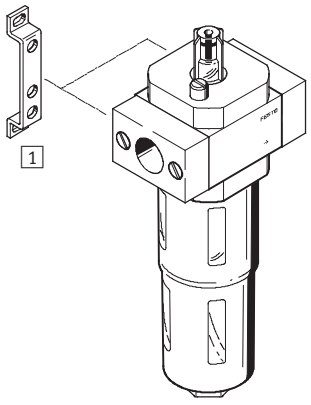
Ordering Data				
Size	Connection	Part No.	Type	LT
Micro	1/8 NPT	**526311**	**LOE-N1/8-D-MICRO**	3D
Mini	1/8 NPT	**173820**	**LOE-1/8-D-MINI-NPT**	3D
	1/4 NPT	**173821**	**LOE-1/4-D-MINI-NPT**	3D
Midi	3/8 NPT	**173823**	**LOE-3/8-D-MIDI-NPT**	3D
	1/2 NPT	**173824**	**LOE-1/2-D-MIDI-NPT**	3D
Maxi	3/4 NPT	**173826**	**LOE-3/4-D-MAXI-NPT**	3D
	1 NPT	**173827**	**LOE-1-D-MAXI-NPT**	3D

Ordering Data – Basic Units, without Threaded Connecting Plates				
Size	Connection	Part No.	Type	LT
Mini	–	**546431**	**LOE-D-MINI-U**	1D
Midi	–	**546427**	**LOE-D-MIDI-U**	1D
Maxi	–	**546517**	**LOE-D-MAXI-U**	1D

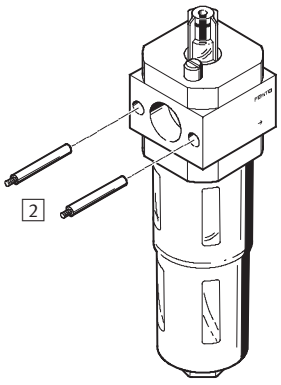
LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

Individual device



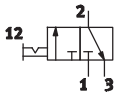
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
2	Threaded bolt FRB (must be ordered separately)	209

Manual On-off Valves HE – Inch Series

Technical Data



Materials
Housing: Die-cast aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Piston spool					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Any					
Valve function		3/2-way					
Exhaust port		G1/8		G1/4		G3/8	
Reset method		Mechanical spring					
Direction of flow		Non-reversible					
Length	[in]	1.6		2.2		2.6	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	3.9		4.8		5.3	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]						
Size	Mini		Midi		Maxi	
Pneumatic connection	1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
On-off valve HE	35	53	113	127	212	229

1) Measured at p1 = 88 psi and Δp = 15 psi

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[psi]	0 ... 235
Ambient temperature	[°F]	14 ... 140

Manual On-off Valves HE – Inch Series

Ordering Data, Accessories

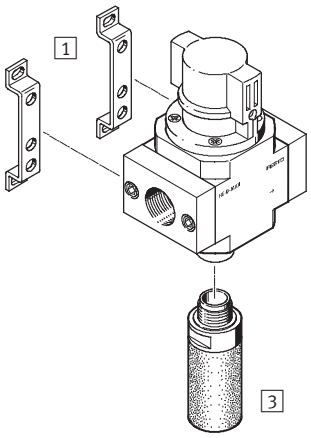
FESTO

Ordering Data				
3/2-way valve, operating pressure 0 ... 235 psi, normally closed				
Size	Connection	Part No.	Type	LT
With threaded connecting plates				
Mini	⅛NPT	**173892**	**HE-⅛-D-MINI-NPT**	3D
	¼NPT	**173893**	**HE-¼-D-MINI-NPT**	3D
Midi	⅜NPT	**173895**	**HE-⅜-D-MIDI-NPT**	3D
	½NPT	**173896**	**HE-½-D-MIDI-NPT**	3D
Maxi	¾NPT	**173898**	**HE-¾-D-MAXI-NPT**	3D
	1NPT	**173899**	**HE-1-D-MAXI-NPT**	3D
Basic Unit, without threaded connecting plates				
Mini	–	**170681**	**HE-D-MINI**	1D
Midi	–	**170682**	**HE-D-MIDI**	1D
Maxi	–	**170683**	**HE-D-MAXI**	1D

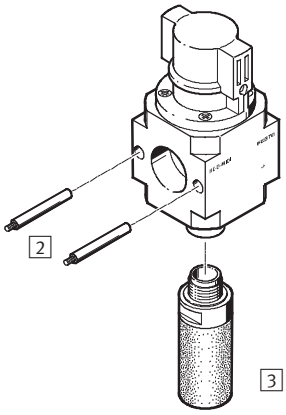
LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

Individual device



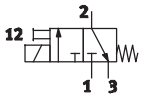
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
2	Threaded bolt FRB (included in scope of delivery)	209
3	Silencer U	210

Electric On-off valves HEE – Inch Series

Technical Data



Materials
Housing: Die-cast aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data		Download CAD data ➔ www.festo.com/us/engineering					
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Piston spool					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Any					
Valve function		3/2-way, single solenoid					
Exhaust port		G1/8		G1/4		G3/8	
Reset method		Mechanical spring					
Direction of flow		Non-reversible					
Operating voltage	[V DC]	24					
	[V AC]	110					
Length	[in]	1.6		2.2		2.6	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	4.1		4.8		5.3	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]							
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
On-off valve HE		35	53	113	127	212	229

1) Measured at p1 = 88 psi and Δp = 15 psi

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[psi]	37 ... 235
Ambient temperature	[°F]	14 ... 140

Electric On-off valves HEE – Inch Series

Ordering Data, Accessories

FESTO

Ordering Data

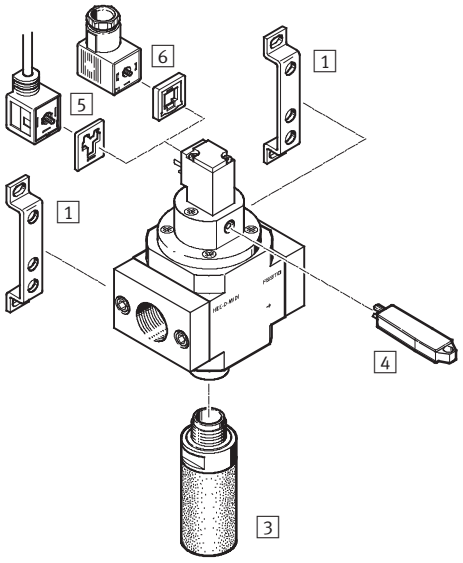
3/2-way valve, operating pressure 37 … 235 psi, normally closed

Size	Connection	24 V DC		LT	110 V AC		LT
		Part No.	Type		Part No.	Type	
With threaded connecting plates							
Mini	1/8NPT	**173900**	**HEE-1/8-D-MINI-24-NPT**	3D	**173901**	**HEE-1/8-D-MINI-110-NPT**	3D
	1/4NPT	**173902**	**HEE-1/4-D-MINI-24-NPT**	3D	**173903**	**HEE-1/4-D-MINI-110-NPT**	3D
Midi	3/8NPT	**173906**	**HEE-3/8-D-MIDI-24-NPT**	3D	**173907**	**HEE-3/8-D-MIDI-110-NPT**	3D
	1/2NPT	**173908**	**HEE-1/2-D-MIDI-24-NPT**	3D	**173909**	**HEE-1/2-D-MIDI-110-NPT**	3D
Maxi	3/4NPT	**173912**	**HEE-3/4-D-MAXI-24-NPT**	3D	**173913**	**HEE-3/4-D-MAXI-110-NPT**	3D
	1NPT	**173914**	**HEE-1-D-MAXI-24-NPT**	3D	**173915**	**HEE-1-D-MAXI-110-NPT**	3D
Without threaded connecting plates							
Mini	–	**172956**	**HEE-D-MINI-24**	1D	**172957**	**HEE-D-MINI-110**	1D
Midi	–	**172959**	**HEE-D-MIDI-24**	1D	**172960**	**HEE-D-MIDI-110**	1D
Maxi	–	**172962**	**HEE-D-MAXI-24**	1D	**172963**	**HEE-D-MAXI-110**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

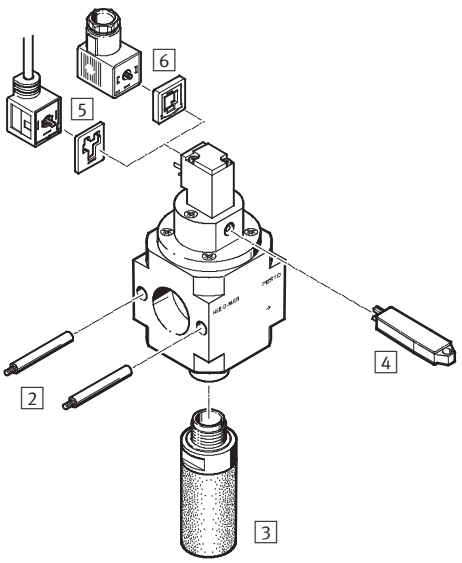
Accessories Overview

Individual device



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
3	Silencer U	210
4	Non-detenting manual override tool AHB-MD/MF/MY	210
5	Plug socket with cable KMEB	kmeb
6	Plug socket MSSD-EB	mssd-eb

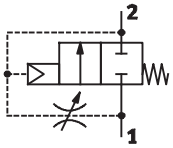
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
2	Threaded bolt FRB (included in scope of delivery)	209
3	Silencer U	210
4	Non-detenting manual override tool AHB-MD/MF/MY	210
5	Plug socket with cable KMEB	kmeb
6	Plug socket MSSD-EB	mssd-eb

Soft-start Valves HEL – Inch Series

Technical Data



Materials
Housing: Die-cast aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							
						Download CAD data ➔ **www.festo.com/us/engineering**	
Size		Mini		Midi		Maxi	
Pneumatic connection		1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
Design		Piston spool					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Any					
Valve function		2/2-way, closed, air operated, adjustable					
Reset method		Mechanical spring					
Actuation method		Direct					
Direction of flow		Non-reversible					
Length	[in]	1.6		2.2		2.6	
Width	[in]	1.6 (2.5)[1]		2.2 (3.3)[1]		2.6 (3.8)[1]	2.6 (4.6)[1]
Height	[in]	2.6		3		3.5	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]						
Size	Mini		Midi		Maxi	
Pneumatic connection	1/8NPT	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT
On-off valve HE	35	53	113	127	212	229

1) Measured at p1 = 88 psi and Δp = 15 psi

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[psi]	44 ... 235
Ambient temperature	[°F]	14 ... 140

Soft-start Valves HEL – Inch Series

Ordering Data, Accessories

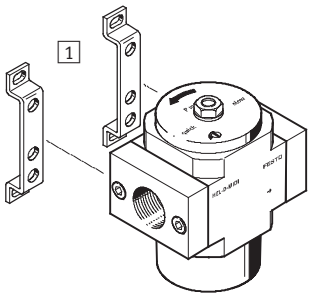
FESTO

Ordering Data				
Gradual pressure build-up, 2/2-way valve, normally closed, operating pressure 44 ... 235 psi				
Size	Connection	Part No.	Type	LT
With threaded connecting plates				
Mini	1/8 NPT	**173916**	**HEL-1/8-D-MINI-NPT**	3D
	1/4 NPT	**173917**	**HEL-1/4-D-MINI-NPT**	3D
Midi	3/8 NPT	**173919**	**HEL-3/8-D-MIDI-NPT**	3D
	1/2 NPT	**173920**	**HEL-1/2-D-MIDI-NPT**	3D
Maxi	3/4 NPT	**173922**	**HEL-3/4-D-MAXI-NPT**	3D
	1 NPT	**173923**	**HEL-1-D-MAXI-NPT**	3D
Basic Unit, without threaded connecting plates				
Mini	–	**170690**	**HEL-D-MINI**	1D
Midi	–	**170691**	**HEL-D-MIDI**	1D
Maxi	–	**170692**	**HEL-D-MAXI**	1D

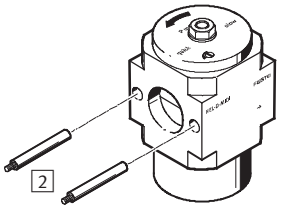
LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

Individual device



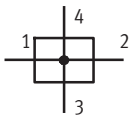
Basic unit for manifold assembly

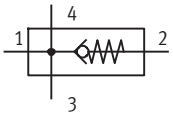


Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
2	Threaded bolt FRB (included in scope of delivery)	209

Branching Modules FRM/FRZ – Inch Series

Technical Data





Materials
Housing: Die-cast zinc
Seals: Nitrile rubber, polyvinyl chloride
Free of copper and PTFE



Technical Data								Download CAD data ➔ www.festo.com/us/engineering
Size		Micro	Mini		Midi		Maxi	
Pneumatic connection 1, 2[1]		⅛NPT	⅛NPT	¼NPT	⅜NPT	½NPT	¾NPT	1NPT
Pneumatic connection 3		⅛NPT	¼NPT		½NPT		¾NPT	
Pneumatic connection 4		10/32 UNF	¼NPT					
Design		Branching module						
Type of mounting		With accessories						
		In-line installation						
Mounting position		Any						
Length	[in]	1	1.6		2.2		2.6	
Width	[in]	1	1.6 (2.5)[2]		2.2 (3.3)[2]		2.6 (3.8)[2]	2.6 (4.6)[2]
Height	[in]	1.2	1.9		2.6		3.1	

1) With connecting plates.
2) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [scfm]								
Connection		Basic Unit Without Connecting Plates	With connecting plates					
			⅛NPT	¼NPT	⅜NPT	½NPT	¾NPT	1NPT
Standard								
In main flow direction	Micro	7.4	–	–	–	–	–	–
	Mini	117	53	117	–	–	–	–
	Midi	290	–	–	247	290	–	–
	Maxi	706	–	–	–	–	706	614
With non-return function								
In main flow direction	Mini	71	46	71	–	–	–	–
	Midi	198	–	–	194	198	–	–
	Maxi	530	–	–	–	–	530	473

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

Operating Conditions					
Size		Micro	Mini	Midi	Maxi
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]			
Ambient temperature	[°F]	14 … 140			
Operating pressure	[psi]				
Standard		0 … 235			
With non-return function		–	2.2 … 235	2.9 … 235	3.7 … 235

Ordering Data – With Connecting Plates

Size	Port	With integrated non-return function		LT
		Part No.	Type	
Mini	1/8NPT	**173932**	**FRM-H-1/8-D-MINI-NPT**	3D
	1/4NPT	**173933**	**FRM-H-1/4-D-MINI-NPT**	3D
Midi	3/8NPT	**173935**	**FRM-H-3/8-D-MIDI-NPT**	3D
	1/2NPT	**173936**	**FRM-H-1/2-D-MIDI-NPT**	3D
Maxi	3/4NPT	**173938**	**FRM-H-3/4-D-MAXI-NPT**	3D
	1NPT	**173939**	**FRM-H-1-D-MAXI-NPT**	3D

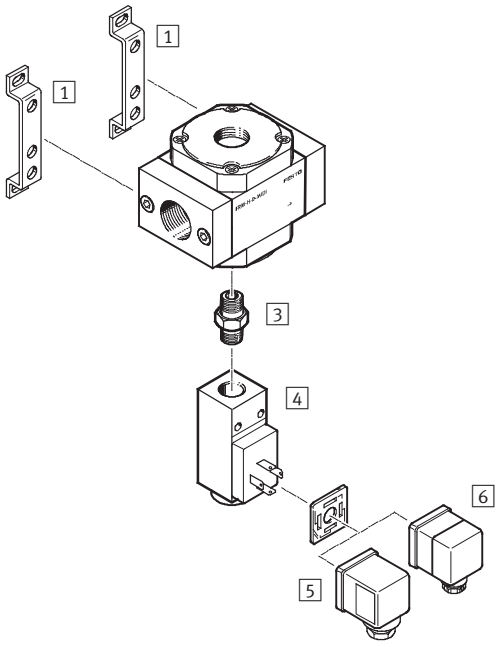
Ordering Data – Basic Unit Without Connecting Plates

Size	Standard		LT		With integrated non-return function		LT
	Part No.	Type			Part No.	Type	
Micro	**526315**	**FRZ-D-MICRO-NPT**	1D		–	–	
Mini	**170684**	**FRM-D-MINI**	1D		**170687**	**FRM-H-D-MINI**	1D
Midi	**170685**	**FRM-D-MIDI**	1D		**170688**	**FRM-H-D-MIDI**	1D
Maxi	**170686**	**FRM-D-MAXI**	1D		**170689**	**FRM-H-D-MAXI**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

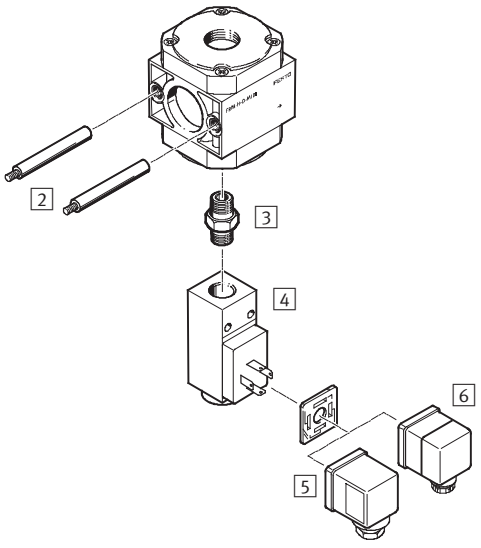
Accessories Overview

Individual device



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	209
3	Double nipple ESK	esk
4	Pressure switch PEV	209
5	Plug socket MSSD-C	mssd-c
6	Angled plug socket PEV-...-WD-LED	pev

Basic unit for manifold assembly



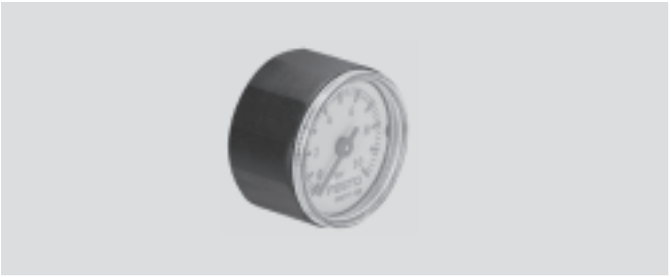
Mounting attachments and accessories		➔ Page/Internet
2	Threaded bolt FRB (included in scope of delivery)	frb
3	Double nipple ESK	esk
4	Pressure switch PEV	209
5	Plug socket MSSD-C	mssd-c
6	Angled plug socket PEV-...-WD-LED	pev

Pressure Gauges MA

Technical Data, Ordering Data



Materials
Housing:
MA-23: Brass
MA-27/40/50: Acrylic butadiene styrene/plastic
MA-63: Steel
Dial cover: Polystyrene/plastic
Threaded plug: Brass



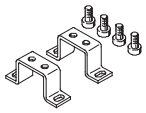
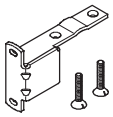
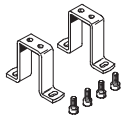
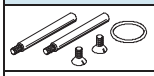
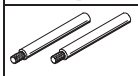
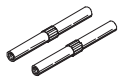
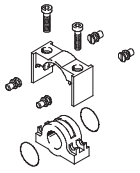
Technical Data				Download CAD data ➔ **www.festo.com/us/engineering**
Nominal size		27	40	50
Pneumatic connection		M5	G1⁄8	G1⁄4
Operating medium		Liquid and gaseous media		
		Not permitted: Oxygen, Acetylene		
Constructional design		Bourdon tube pressure gauge		
Type of mounting		Screw-in		
Connection position		Rear side, center		
Ambient temperature	[°F]	32 ... 140	–4 ... +140	
	[°C]	0 ... +60	–20 ... +60	
Measurement accuracy class		4	2.5	
Continuous load factor		0.75		
Intermittent load factor		0.66		
Protection class		IP43		

Ordering Data

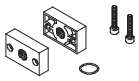
Nominal size	For D Series service units	Pneumatic connection	Indicating range [bar]	Indicating range [psi]	Part No.	Type	LT
27	MICRO	M5	0 ... 10	–	**526323**	**MA-27-10-M5**	1D
			–	0 ... 160	**527405**	**MA-27-160-M5-PSI**	1D
40	MINI	G1⁄8	0 ... 10	0 ... 145	**359874**	**MA-40-10-1/8**	1D
			0 ... 16	0 ... 240	**345395**	**MA-40-16-1/8**	1D
50	MIDI/MAXI	G1⁄4	0 ... 10	0 ... 160	**359873**	**MA-50-10-1/4**	1D
			0 ... 16	0 ... 240	**356759**	**MA-50-16-1/4**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

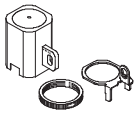
Ordering Data – Mounting attachments

Designation	Size	Part No.	Order code
Mounting bracket HFOE			
	Micro	**526317**	**HFOE-D-MICRO**
	Mini	**159638**	**HFOE-D-MINI**
	Midi/Maxi	**159593**	**HFOE-D-MIDI/MAXI**
Mounting bracket HRBK			
	Mini	**525031**	**HRBK-D-MINI**
	Midi	**525032**	**HRBK-D-MIDI**
Mounting bracket HRB			
	Mini	**525029**	**HRB-D-MINI**
	Midi	**525030**	**HRB-D-MIDI**
Mounting bracket HR-D			
	Micro	**526316**	**HRS-D-MICRO**
	Mini	**164936**	**HR-D-MINI**
	Midi	**162804**	**HR-D-MIDI**
	Maxi	**162805**	**HR-D-MAXI**
Threaded bolt FRB			
	Micro	**526817**	**FRB-D-MICRO**
	Mini	**546481**	**FRB-D-MINI-U**
	Midi	**546480**	**FRB-D-MIDI-U**
	Maxi	**546476**	**FRB-D-MAXI-U**
Threaded bolt LF/LOE			
	Mini	**546483**	**LF/LOE-D-MINI**
	Midi	**546489**	**LF/LOE-D-MIDI**
	Maxi	**546494**	**LF/LOE-D-MAXI**
Metric socket head screws			
	Mini	**562472**	**DIN 912-M4X16-8.8**
	Midi	**562475**	**DIN 912-M5X18-8.8**
	Maxi	**562473**	**DIN 912-M5X20-8.8**
Hex nut HMR			
	Micro	**526816**	**HMR-D-MICRO**
Connecting kit HRBC			
	Mini	**529022**	**HRBC-D-MINI**
	Midi	**529023**	**HRBC-D-MIDI**
Sealings			
	Mini	**546478**	**O-12,42X1,78-N-NBR70**
	Midi	**546474**	**O-26X2-N-NBR75**
	Maxi	**546477**	**LR/LF/LFR/LOE/FRC-D-MAXI**

Ordering Data – Connecting plates

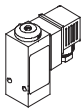
Designation	Size	Connec-tion	Position	Part No.	Order code
Connecting plates PBL					
	Micro	1/8 NPT	Either	**526319**	**PBL-N1/8-D-MICRO**
	Mini	1/8 NPT	Left	**546520**	**PBL-1/8-D-MINI-L-NPT**
			Right	**546521**	**PBL-1/8-D-MINI-R-NPT**
		1/4 NPT	Left	**546522**	**PBL-1/4-D-MINI-L-NPT**
			Right	**546523**	**PBL-1/4-D-MINI-R-NPT**
		3/8 NPT	Left	**546524**	**PBL-3/8-D-MINI-L-NPT**
			Right	**546525**	**PBL-3/8-D-MINI-R-NPT**
	Midi	3/8 NPT	Left	**546530**	**PBL-3/8-D-MIDI-L-NPT**
			Right	**546531**	**PBL-3/8-D-MIDI-R-NPT**
		1/2 NPT	Left	**546526**	**PBL-1/2-D-MIDI-L-NPT**
			Right	**546527**	**PBL-1/2-D-MIDI-R-NPT**
		3/4 NPT	Left	**546528**	**PBL-3/4-D-MIDI-L-NPT**
			Right	**546529**	**PBL-3/4-D-MIDI-R-NPT**
	Maxi	3/4 NPT	Left	**546490**	**PBL-3/4-D-MAXI-NPT-L**
			Right	**546492**	**PBL-3/4-D-MAXI-NPT-R**
		1 NPT	Left	**546491**	**PBL-1-D-MAXI-NPT-L**
			Right	**546493**	**PBL-1-D-MAXI-NPT-R**

Ordering Data – Safety components

Designation	Size	Part No.	Order code
Regulator lock LRVS			
	Mini	**193781**	**LRVS-D-MINI**
	Midi	**193782**	**LRVS-D-MIDI**
	Maxi	**193783**	**LRVS-D-MAXI**

Lead Time LT for all products on this page: **1D** typically ships same day/next day

Ordering Data – Sensors

Designation	Connection	Part No.	Order code
Pressure switch PEV			Technical Data ➔ 150
	G¼	**10773**	**PEV-¼-B**

Ordering Data – Connecting Cables NEBU

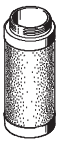
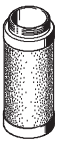
Technical data ➔ Internet: nebu

	Number of wires	Cable length [m]	Part No.	Type
M8x1, straight socket				
	3	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
	4	2.5	**541342**	**NEBU-M8G4-K-2.5-LE4**

Ordering Data – Accessories

Designation	Description	Part No.	Order code
Silencer U			Technical Data ➔ 257
	G⅛	**6841**	**U-⅛-B**
	G¼	**6842**	**U-¼-B**
	G⅜	**6844**	**U-⅜-B**

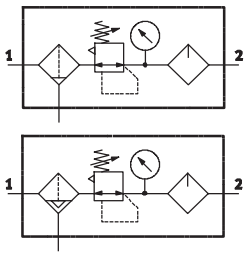
Ordering Data – Filter cartridges

Designation	Size	Part No.	Order code
Grade of filtration 40 µm			
	Mini	**546487**	**LFP-D-MINI-40M-U**
	Midi	**546488**	**LFP-D-MIDI-40M-U**
	Maxi	**546486**	**LFP-D-MAXI-40M-U**
Grade of filtration 5 µm			
	Micro	**526818**	**LFP-D-MICRO-5M**
	Mini	**159640**	**LFP-D-MINI-5M**
	Midi	**159594**	**LFP-D-MIDI-5M**
	Maxi	**159641**	**LFP-D-MAXI-5M**
Grade of filtration 1 µm			
	Mini	**162677**	**MS4/D-MINI-LFM-B**
	Midi	**162678**	**LFMBP-D-MIDI**
	Maxi	**162679**	**LFMBP-D-MAXI**
Grade of filtration 0.01 µm			
	Mini	**162674**	**MS4/D-MINI-LFM-A**
	Midi	**162675**	**LFMAP-D-MIDI**
	Maxi	**162676**	**LFMAP-D-MAXI**

Lead Time LT for all products on this page: **1D** typically ships same day/next day

Service Units FRC – Metric Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Seals: Nitrile rubber
Free of copper and PTFE



The following oils are recommended for Festo components:

Viscosity range to ISO 3448 ,
ISO class VG 32
32 mm^2/s (= cSt) at 104 °F

- Festo special oil OFSW-32
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

Technical Data							Download CAD data ➔ **www.festo.com/us/engineering**
Size		Mini		Midi		Maxi	
Pneumatic connection		G⅛	G¼	G⅜	G½	G¾	G1
Design		Filter regulator					
		Proportional standard mist lubricator					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Vertical ±5°					
Grade of filtration	[µm]	40 (air purity class at the output: compressed air in accordance with ISO 8573-1:2010 [7:8:–])					
Pressure regulation range	[bar]	0.5 ... 7					
		0.5 ... 12					
Pressure indication		With pressure gauge					
Length	[mm]	76		95		107	
Width	[mm]	80 (104)[1)]		110 (140)[1)]		130 (162)[1)]	132 (182)[1)]
Height	[mm]	212		269		271	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1)] qnN [l/min]							
Size		Mini		Midi		Maxi	
Pneumatic connection		G⅛	G¼	G⅜	G½	G¾	G1
Pressure regulation range 0.5 ... 7 bar							
Grade of filtration	40 µm	800	1,300	2,000	2,800	8,500	8,700
Pressure regulation range 0.5 ... 12 bar							
Grade of filtration	40 µm	700	1 000	2 000	2 600	8 300	8 500

1) Measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar. A minimum flow rate of 125 l/min is required for flawless functioning.

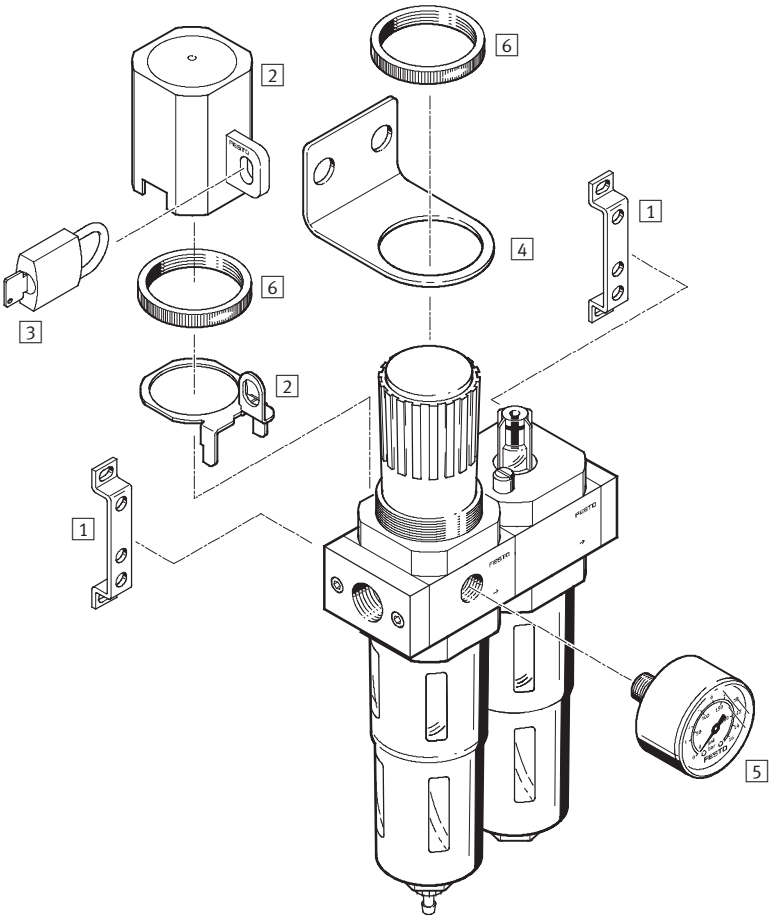
Operating Conditions			
Condensate drain		Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [–:9:–]	Compressed air in accordance with ISO 8573-1:2010 [7:9:–]
		Inert gases	
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Supply pressure	[bar]	1 ... 16	2 ... 12
Ambient temperature	[°C]	–10 ... +60	

Ordering Data

Condensate drain	Size	Connection	Pressure regulation range 0.5 ... 7 bar		LT		Pressure regulation range 0.5 ... 12 bar		LT
			Part No.	Type			Part No.	Type	
Turned manually	Mini	G1/8	**162754**	**FRC-1/8-D-7-MINI**	3D		**159604**	**FRC-1/8-D-MINI**	3D
		G1/4	**162755**	**FRC-1/4-D-7-MINI**	3D		**159605**	**FRC-1/4-D-MINI**	3D
	Midi	G3/8	**162757**	**FRC-3/8-D-7-MIDI**	3D		**159588**	**FRC-3/8-D-MIDI**	3D
		G1/2	**162758**	**FRC-1/2-D-7-MIDI**	3D		**159590**	**FRC-1/2-D-MIDI**	3D
	Maxi	G3/4	**162760**	**FRC-3/4-D-7-MAXI**	3D		**159606**	**FRC-3/4-D-MAXI**	3D
		G1	**162761**	**FRC-1-D-7-MAXI**	3D		**159607**	**FRC-1-D-MAXI**	3D
Fully automatic	Mini	G1/8	**162762**	**FRC-1/8-D-7-MINI-A**	3D		**159608**	**FRC-1/8-D-MINI-A**	3D
		G1/4	**162763**	**FRC-1/4-D-7-MINI-A**	3D		**159609**	**FRC-1/4-D-MINI-A**	3D
	Midi	G3/8	**162765**	**FRC-3/8-D-7-MIDI-A**	3D		**159589**	**FRC-3/8-D-MIDI-A**	3D
		G1/2	**162766**	**FRC-1/2-D-7-MIDI-A**	3D		**159591**	**FRC-1/2-D-MIDI-A**	3D
	Maxi	G3/4	**162768**	**FRC-3/4-D-7-MAXI-A**	3D		**159610**	**FRC-3/4-D-MAXI-A**	3D
		G1	**162769**	**FRC-1-D-7-MAXI-A**	3D		**159611**	**FRC-1-D-MAXI-A**	3D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

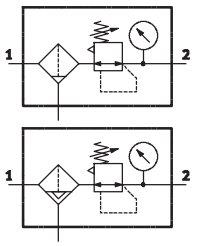


Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
2	Regulator lock LRVS	235
3	Padlock LRVS-D	lrvs-d

Mounting attachments and accessories		➔ Page/Internet
4	Mounting bracket HR-D	235
5	Pressure gauge MA (included in scope of delivery)	208
6	Knurled nut HMR (included in scope of delivery)	hmr

Filter Regulators LFR – Metric Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data									Download CAD data ➔ www.festo.com/us/engineering
Size		Micro		Mini		Midi		Maxi	
Pneumatic connection		M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Filter regulator with pressure gauge							
		–		Filter regulator without pressure gauge					
Type of mounting		Via accessories							
		In-line installation							
		Front panel mounting							
Mounting position		Vertical ±5°							
Grade of filtration	[µm]	5		5 or 40					
Pressure regulation range	[bar]	0,5 ... 7							
		–		0,5 ... 12					
Pressure indication		Via pressure gauge							
Length	[mm]	50		76		95		107	
Width	[mm]	25	45	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	120		212		269		271	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]									
Size		Micro		Mini		Midi		Maxi	
Pneumatic connection		M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Pressure regulation range 0.5 ... 7 bar									
Grade of filtration	5 µm	110	410	–	–	–	–	–	–
	40 µm	–	–	900	1,500	3,200	3,900	10,000	11,000
Pressure regulation range 0.5 ... 12 bar									
Grade of filtration	5 µm	–	–	650	1,200	2,400	2,600	7,600	8,000
	40 µm	–	–	750	1,400	3,100	3,400	9,700	10,000

1) Measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar.

Operating Conditions					
Size		Micro		Mini / Midi / Maxi	
Condensate drain		Manual rotary	Semi-automatic	Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [–:–:–]			
Supply pressure	[bar]	1 ... 10		1 ... 16	2 ... 12
Ambient temperature	[°C]	–10 ... +60		–10 ... +60	

Ordering Data – Filtration Grade 5µm

Condensate drain	Size	Connection	Pressure regulation range 0.5 ... 7 bar		LT		Pressure regulation range 0.5 ... 12 bar		LT
			Part No.	Type			Part No.	Type	
Directly actuated diaphragm regulator									
Turned manually	Micro	M5	**526273**	**LFR-M5-D-7-5M-MICRO**	1D		–	–	
		G1⁄8	**526277**	**LFR-1⁄8-D-7-5M-MICRO**	1D		–	–	
Semi-automatic	Micro	M5	**526274**	**LFR-M5-D-7-5M-MICRO-H**	1D		–	–	
		G1⁄8	**526278**	**LFR-1⁄8-D-7-5M-MICRO-H**	1D		–	–	
Directly actuated diaphragm regulator with integrated return flow function									
Turned manually	Maxi	G1⁄2	**192370**	**LFR-1⁄2-D-5M-DI-MAXI**	3D		–	–	
		G3⁄4	**192376**	**LFR-3⁄4-D-5M-DI-MAXI**	3D		–	–	
		G1	**192382**	**LFR-1-D-5M-DI-MAXI**	3D		–	–	
Fully automatic	Maxi	G1⁄2	**192388**	**LFR-1⁄2-D-5M-DI-MAXI-A**	3D		–	–	
		G3⁄4	**192394**	**LFR-3⁄4-D-5M-DI-MAXI-A**	3D		–	–	
		G1	**192400**	**LFR-1-D-5M-DI-MAXI-A**	3D		–	–	

Ordering Data – Filtration Grade 40µm

Condensate drain	Size	Connection	Pressure regulation range 0.5 ... 7 bar		LT		Pressure regulation range 0.5 ... 12 bar		LT
			Part No.	Type			Part No.	Type	
Directly actuated diaphragm regulator									
Turned manually	Mini	G1⁄8	**162702**	**LFR-1⁄8-D-7-MINI**	3D		**159630**	**LFR-1⁄8-D-MINI**	3D
		G1⁄4	**162703**	**LFR-1⁄4-D-7-MINI**	3D		**159631**	**LFR-1⁄4-D-MINI**	3D
	Midi	G3⁄8	**162705**	**LFR-3⁄8-D-7-MIDI**	3D		**159582**	**LFR-3⁄8-D-MIDI**	3D
		G1⁄2	**162706**	**LFR-1⁄2-D-7-MIDI**	3D		**159584**	**LFR-1⁄2-D-MIDI**	3D
	Maxi	G3⁄4	**162708**	**LFR-3⁄4-D-7-MAXI**	3D		**159632**	**LFR-3⁄4-D-MAXI**	3D
		G1	**162709**	**LFR-1-D-7-MAXI**	3D		**159633**	**LFR-1-D-MAXI**	3D
Fully automatic	Mini	G1⁄8	**162710**	**LFR-1⁄8-D-7-MINI-A**	3D		**159634**	**LFR-1⁄8-D-MINI-A**	3D
		G1⁄4	**162711**	**LFR-1⁄4-D-7-MINI-A**	3D		**159635**	**LFR-1⁄4-D-MINI-A**	3D
	Midi	G3⁄8	**162713**	**LFR-3⁄8-D-7-MIDI-A**	3D		**159583**	**LFR-3⁄8-D-MIDI-A**	3D
		G1⁄2	**162714**	**LFR-1⁄2-D-7-MIDI-A**	3D		**159585**	**LFR-1⁄2-D-MIDI-A**	3D
	Maxi	G3⁄4	**162716**	**LFR-3⁄4-D-7-MAXI-A**	3D		**159636**	**LFR-3⁄4-D-MAXI-A**	3D
		G1	**162717**	**LFR-1-D-7-MAXI-A**	3D		**159637**	**LFR-1-D-MAXI-A**	3D
Directly actuated diaphragm regulator with integrated return flow function									
Turned manually	Maxi	G1⁄2	**192372**	**LFR-1⁄2-D-7-DI-MAXI**	3D		**192368**	**LFR-1⁄2-D-DI-MAXI**	3D
		G3⁄4	**192378**	**LFR-3⁄4-D-7-DI-MAXI**	3D		**192374**	**LFR-3⁄4-D-DI-MAXI**	3D
		G1	**192384**	**LFR-1-D-7-DI-MAXI**	3D		**192380**	**LFR-1-D-DI-MAXI**	3D
Fully automatic	Maxi	G1⁄2	**192390**	**LFR-1⁄2-D-7-DI-MAXI-A**	3D		**192386**	**LFR-1⁄2-D-DI-MAXI-A**	3D
		G3⁄4	**192396**	**LFR-3⁄4-D-7-DI-MAXI-A**	3D		**192392**	**LFR-3⁄4-D-DI-MAXI-A**	3D
		G1	**192402**	**LFR-1-D-7-DI-MAXI-A**	3D		**192398**	**LFR-1-D-DI-MAXI-A**	3D

Ordering Data – Basic Units without Threaded Connecting Plates, Filtration Grade 5µm

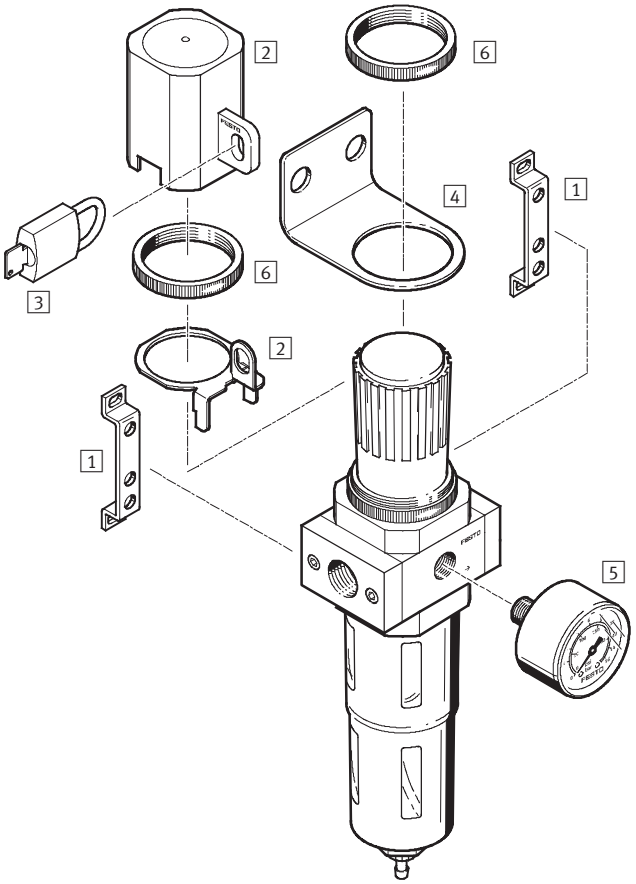
Condensate drain	Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
			Part No.	Type			Part No.	Type	
Basic Unit without pressure gauge									
Turned manually	Mini	–	**546454**	**LFR-D-5M-MINI**	1D		–	–	
	Midi	–	**546455**	**LFR-D-5M-MIDI**	1D		–	–	
	Maxi	–	**546461**	**LFR-D-5M-MAXI**	1D		–	–	
Fully automatic	Mini	–	**546462**	**LFR-D-5M-MINI-A**	1D		–	–	
	Midi	–	**546468**	**LFR-D-5M-MIDI-A**	1D		–	–	
	Maxi	–	**546469**	**LFR-D-5M-MAXI-A**	1D		–	–	

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Ordering Data – Basic Units without Threaded Connecting Plates, Filtration Grade 40µm								
Condensate drain	Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 7.5 ... 176 psi		LT
			Part No.	Type			Part No.	Type	
Basic Unit without pressure gauge									
Turned manually	Mini	–	**546456**	**LFR-D-7-MINI**	1D		**546432**	**LFR-D-MINI**	1D
	Midi	–	**546463**	**LFR-D-7-MIDI**	1D		**546425**	**LFR-D-MIDI**	1D
	Maxi	–	**546470**	**LFR-D-7-MAXI**	1D		**546437**	**LFR-D-MAXI**	1D
Fully automatic	Mini	–	**546457**	**LFR-D-7-MINI-A**	1D		**546433**	**LFR-D-MINI-A**	1D
	Midi	–	**546464**	**LFR-D-7-MIDI-A**	1D		**546426**	**LFR-D-MIDI-A**	1D
	Maxi	–	**546471**	**LFR-D-7-MAXI-A**	1D		**546438**	**LFR-D-MAXI-A**	1D
Basic Unit without pressure gauge, with integrated return flow function									
Turned manually	Maxi	–	**546514**	**LFR-D-7-DI-MAXI**	1D		**546512**	**LFR-D-DI-MAXI**	1D
Fully automatic	Maxi	–	**546518**	**LFR-D-7-DI-MAXI-A**	1D		**546515**	**LFR-D-DI-MAXI-A**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

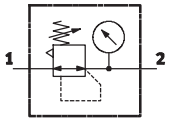
Accessories Overview



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
2	Regulator lock LRVS	235
3	Padlock LRVS-D	lrvs-d
4	Mounting bracket HR-D	235
5	Pressure gauge MA	208
6	Knurled nut HMR (not included in the basic units' scope of delivery)	hmr

Pressure Regulators LR – Metric Series

Technical Data



Materials
Housing: Die-cast zinc/aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data									Download CAD data ➔ www.festo.com/us/engineering
Size		Micro		Mini		Midi		Maxi	
Pneumatic connection		M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Directly actuated diaphragm regulator						Pilot actuated piston regulator	
Type of mounting		Via accessories							
		In-line installation							
		Front panel mounting							
Mounting position		Any							
Max. hysteresis	[bar]	0.2		0.2				0.4	
Pressure regulation range	[bar]	0.5 ... 7		0.5 ... 7					
		–		0.5 ... 12					
Pressure indication		Via pressure gauge							
		M5 port		G1⁄8 port		G1⁄4 port		G1⁄4 port	
Length	[mm]	50		76		95		107	
Width	[mm]	25	45	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	65		96		135		125	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]								
Size	Micro		Mini		Midi		Maxi	
Pneumatic connection	M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Pressure regulation range 0.5 ... 7 bar	120	230	1,000	1,600	3,300	4,000	12,000	12,500
Pressure regulation range 0.5 ... 12 bar	–		800	1,500	3,200	3,500	11,000	11,500

1) Measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar.

Operating Conditions			
		Micro	Mini/Midi/Maxi
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [–:–:–]	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		–	Operation with lubricated medium possible (in which case lubricated operation will always be required)
Supply pressure	[bar]	1 ... 10	1 ... 16
Ambient temperature	[°C]	–10 ... +60	

Pressure Regulators LR – Metric Series

Ordering Data, Accessories

Ordering Data

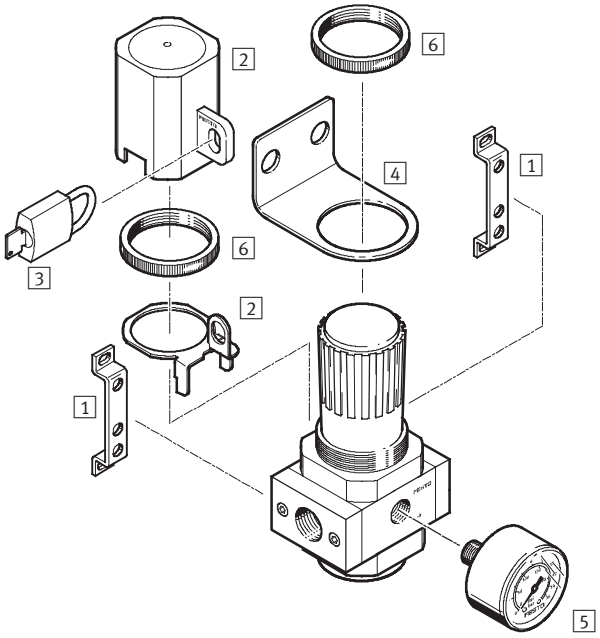
Size	Connection	Pressure regulation range 0.5 ... 7 bar		LT		Pressure regulation range 0.5 ... 12 bar		LT
		Part No.	Type			Part No.	Type	
Directly actuated diaphragm regulator								
Micro	M5	**526261**	**LR-M5-D-7-MICRO**	1D		–	–	
	G1⁄8	**526263**	**LR-1⁄8-D-7-MICRO**	1D		–	–	
Mini	G1⁄8	**162582**	**LR-1⁄8-D-7-MINI**	3D		**159624**	**LR-1⁄8-D-MINI**	3D
	G1⁄4	**162583**	**LR-1⁄4-D-7-MINI**	3D		**159625**	**LR-1⁄4-D-MINI**	3D
Midi	G3⁄8	**162585**	**LR-3⁄8-D-7-MIDI**	3D		**159580**	**LR-3⁄8-D-MIDI**	3D
	G1⁄2	**162586**	**LR-1⁄2-D-7-MIDI**	3D		**159581**	**LR-1⁄2-D-MIDI**	3D
Pilot actuated piston regulator								
Maxi	G3⁄4	**162588**	**LR-3⁄4-D-7-MAXI**	3D		**159626**	**LR-3⁄4-D-MAXI**	3D
	G1	**162589**	**LR-1-D-7-MAXI**	3D		**159627**	**LR-1-D-MAXI**	3D
Directly actuated diaphragm regulator with integrated return flow function								
Maxi	G1⁄2	**192358**	**LR-1⁄2-D-7-DI-MAXI**	3D		**192356**	**LR-1⁄2-D-DI-MAXI**	3D
	G3⁄4	**192362**	**LR-3⁄4-D-7-DI-MAXI**	3D		**192360**	**LR-3⁄4-D-DI-MAXI**	3D
	G1	**192366**	**LR-1-D-7-DI-MAXI**	3D		**192364**	**LR-1-D-DI-MAXI**	3D

Ordering Data – Basic Units, without Threaded Connecting Plates

Size	Connection	Pressure regulation range 7.5 ... 103 psi		LT		Pressure regulation range 07.5 ... 176 psi		LT
		Part No.	Type			Part No.	Type	
Basic Unit without pressure gauge								
Mini	–	**546452**	**LR-D-7-MINI**	1D		**546430**	**LR-D-MINI**	1D
Midi	–	**546458**	**LR-D-7-MIDI**	1D		**546424**	**LR-D-MIDI**	1D
Maxi	–	**546465**	**LR-D-7-MAXI**	1D		**546436**	**LR-D-MAXI**	1D
Basic Unit without pressure gauge, with integrated return flow function								
Maxi	–	**546513**	**LR-D-7-DI-MAXI**	1D		**546511**	**LR-D-DI-MAXI**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

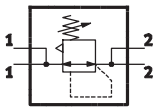
Accessories Overview



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
2	Regulator lock LRVS	235
3	Padlock LRVS-D	lrvs-d
4	Mounting bracket HR-D	235
5	Pressure gauge MA	208
6	Knurled nut HMR (not included in the basic units' scope of delivery)	hmr

Pressure Regulators LRB – Metric Series

Technical Data



Materials
Housing: Die-cast zinc
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data						Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		
Pneumatic connection 1[1]		G¼	G⅜	G⅜	G½	
Pneumatic connection 2 (rear outlet)		G¼		G⅜		
Design		Directly actuated diaphragm regulator with through pressure supply				
Type of mounting		Via accessories				
		In-line installation				
Mounting position		Any				
Max. hysteresis	[bar]	0.2				
Pressure regulation range	[bar]	0.5 ... 7				
		0.5 ... 12				
Pressure indication		G⅛ port		G¼ port		
Length	[mm]	40		55		
Width	[mm]	40		55		
Height	[mm]	96		136		

1) Dependent on connecting plate selected, must be ordered separately as an accessory ➔ 235

Standard Nominal Flow Rate[1] qnN [l/min]		
Size	Mini	Midi
Pressure regulation range 0.5 ... 7 bar	1,800	3,800
Pressure regulation range 0.5 ... 12 bar	1,600	3,200

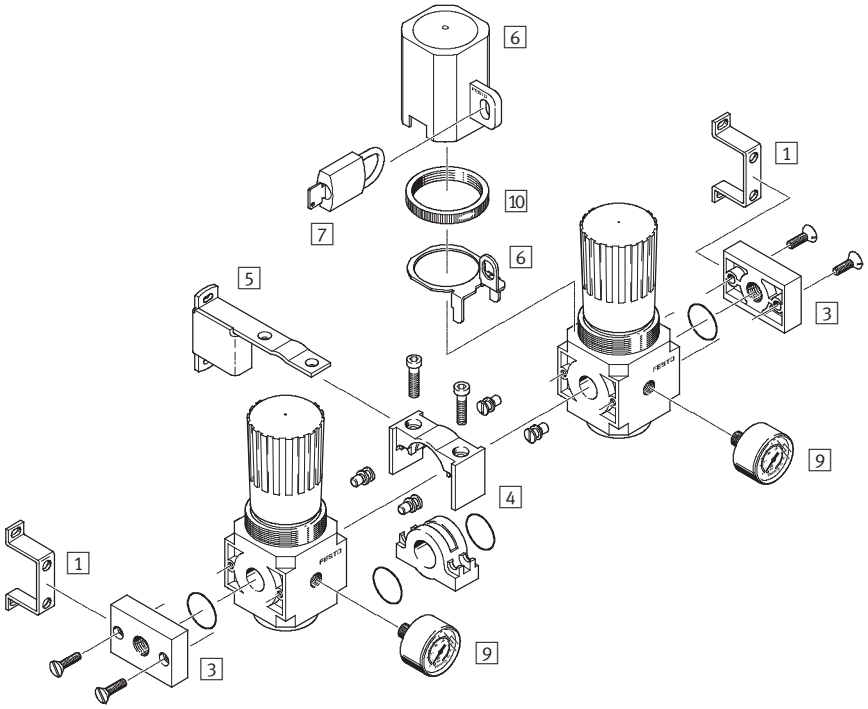
1) Measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar.

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Supply pressure	[bar]	1 ... 16
Ambient temperature	[°C]	–10 ... +60

Ordering Data						
Pressure regulator for manifold assembly						
Size	Pressure regulation range 0.5 ... 7 bar		LT		Pressure regulation range 0.5 ... 12 bar		LT
	Part No.	Type			Part No.	Type	
Mini	**197534**	**LRB-D-7-O-MINI**	1D		**197535**	**LRB-D-O-MINI**	1D
Midi	**197538**	**LRB-D-7-O-MIDI**	1D		**197539**	**LRB-D-O-MIDI**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview



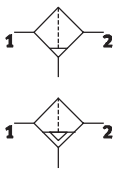
Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HRB	235
3	Connecting plates LRBAS	lrbas
4	Connecting kit HRBC	235
5	Mounting bracket HRBK[1)]	235

Mounting attachments and accessories		➔ Page/Internet
6	Regulator lock LRVS	235
7	Padlock LRVS-D	lrvs-d
9	Pressure gauge MA	208
10	Knurled nut HMR (included in scope of delivery)	hmr

1) The mounting bracket must be mounted after every second pressure regulator.

Filters LF – Metric Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data									Download CAD data ➔ www.festo.com/us/engineering
Size		Micro		Mini		Midi		Maxi	
Pneumatic connection		M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Sintered filter with centrifugal separation							
Type of mounting		Via accessories							
		In-line installation							
Mounting position		Vertical ±5°							
Grade of filtration	[µm]	5		5 or 40					
Length	[mm]	25		40		55		66	
Width	[mm]	25	45	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	88		163		198		222	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]									
Size		Micro		Mini		Midi		Maxi	
Pneumatic connection		M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Grade of filtration	5 µm	170	290	800	950	1,800	2,000	3,600	3,800
	40 µm	–		1,000	1,200	2,700	3,000	5,000	5,300

1) Measured at p1 = 6 bar and Δp = 1 bar.
A minimum flow rate of 125 l/min. is required for flawless functioning.

Operating Conditions					
Size		Micro		Mini / Midi / Maxi	
Condensate drain		Manual rotary	Semi-automatic	Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]			
Supply pressure	[bar]	0 ... 10	1 ... 10	0 ... 16	2 ... 12
Ambient temperature	[°C]	–10 ... +60			

Ordering Data

Condensate drain	Size	Connection	Grade of filtration 5 µm Part No.	Type	LT	Grade of filtration 40 µm Part No.	Type	LT
Input pressure 0 ... 10 bar								
Turned manually	Micro	M5	**526297**	**LF-M5-D-5M-MICRO**	1D	–	–	
		G1/8	**526299**	**LF-1/8-D-5M-MICRO**	1D	–	–	
Semi-automatic	Micro	M5	**526298**	**LF-M5-D-5M-MICRO-H**	1D	–	–	
		G1/8	**526300**	**LF-1/8-D-5M-MICRO-H**	1D	–	–	
Input pressure 0 ... 16 bar, metal bowl guard								
Turned manually	Mini	G1/8	**162610**	**LF-1/8-D-5M-MINI**	3D	**159612**	**LF-1/8-D-MINI**	3D
		G1/4	**162611**	**LF-1/4-D-5M-MINI**	3D	**159613**	**LF-1/4-D-MINI**	3D
	Midi	G3/8	**162613**	**LF-3/8-D-5M-MIDI**	3D	**159576**	**LF-3/8-D-MIDI**	3D
		G1/2	**162614**	**LF-1/2-D-5M-MIDI**	3D	**159578**	**LF-1/2-D-MIDI**	3D
	Maxi	G3/4	**162616**	**LF-3/4-D-5M-MAXI**	3D	**159614**	**LF-3/4-D-MAXI**	3D
		G1	**162617**	**LF-1-D-5M-MAXI**	3D	**159615**	**LF-1-D-MAXI**	3D
Fully automatic	Mini	G1/8	**162618**	**LF-1/8-D-5M-MINI-A**	3D	**159616**	**LF-1/8-D-MINI-A**	3D
		G1/4	**162619**	**LF-1/4-D-5M-MINI-A**	3D	**159617**	**LF-1/4-D-MINI-A**	3D
	Midi	G3/8	**162621**	**LF-3/8-D-5M-MIDI-A**	3D	**159577**	**LF-3/8-D-MIDI-A**	3D
		G1/2	**162622**	**LF-1/2-D-5M-MIDI-A**	3D	**159579**	**LF-1/2-D-MIDI-A**	3D
	Maxi	G3/4	**162624**	**LF-3/4-D-5M-MAXI-A**	3D	**159618**	**LF-3/4-D-MAXI-A**	3D
		G1	**162625**	**LF-1-D-5M-MAXI-A**	3D	**159619**	**LF-1-D-MAXI-A**	3D

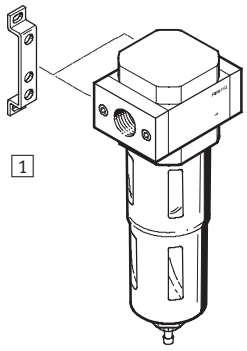
Ordering Data – Basic Units, without Threaded Connecting Plates

Condensate drain	Size	Connection	Grade of filtration 5 µm Part No.	Type	LT	Grade of filtration 40 µm Part No.	Type	LT
Turned manually	Mini	–	**546451**	**LF-D-5M-MINI-U**	1D	**546428**	**LF-D-MINI-U**	1D
	Midi	–	**546453**	**LF-D-5M-MIDI-U**	1D	**546422**	**LF-D-MIDI-U**	1D
	Maxi	–	**546459**	**LF-D-5M-MAXI-U**	1D	**546434**	**LF-D-MAXI-U**	1D
Fully automatic	Mini	–	**546460**	**LF-D-5M-MINI-A-U**	1D	**546429**	**LF-D-MINI-A-U**	1D
	Midi	–	**546466**	**LF-D-5M-MIDI-A-U**	1D	**546423**	**LF-D-MIDI-A-U**	1D
	Maxi	–	**546467**	**LF-D-5M-MAXI-A-U**	1D	**546435**	**LF-D-MAXI-A-U**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

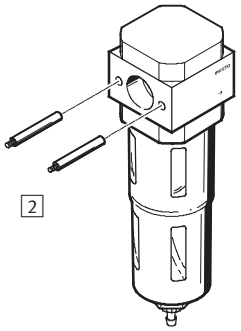
Accessories Overview

Individual device



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235

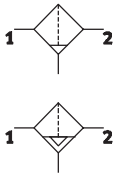
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
2	Threaded bolt FRB (included in scope of delivery)	235

Fine and Micro Filters LFMB/LFMA – Metric Series

Technical Data



Materials
Housing: Die-cast zinc
Bowl: Polycarbonate
Filter: Borosilicate fibre
Seals: Nitrile rubber
Free of copper and PTFE

LFMA
DIN ISO class 1 for particles:
max. particle density 0.1 mg/m³
DIN ISO class 2 for oil aerosols:
max. oil concentration 0.1 mg/m³

LFMB
DIN ISO class 2 for particles:
max. particle density 1 mg/m³
DIN ISO class 3 for oil aerosols:
max. oil concentration 1 mg/m³



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Fibre filter					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Vertical ±5°					
Length	[mm]	40		55		66	
Width	[mm]	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	163		198		222	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]							
Size		Mini		Midi		Maxi	
Pneumatic connection		G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Micro filter LFMA		130	160	380	400	900	950
Fine filter LFMB		250	300	700	900	1,200	1,250

1) Measured at p1 = 6 bar and Δp = 70 mbar.
A minimum flow rate of 125 l/min. is required for flawless functioning.

Operating Conditions					
Type		LFMA		LFMB	
Condensate drain		Manual rotary	Fully automatic	Manual rotary	Fully automatic
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]		Compressed air in accordance with ISO 8573-1:2010 [6:4:4]	
Grade of filtration	[µm]	0.01 (air purity class at the output: compressed air in accordance with ISO 8573-1:2010 [2:7:2])		1 (air purity class at the output: compressed air in accordance with ISO 8573-1:2010 [4:7:3])	
Residual oil content	[mg/m³]	≤ 0.01		≤ 0.5	
Supply pressure	[bar]	1 … 16	1.5 … 12	1 … 16	1.5 … 12
Ambient temperature	[°C]	–10 … +60		–10 … +60	

Fine and Micro Filters LFMB/LFMA – Metric Series

Ordering Data, Accessories

Ordering Data – Fine filters LFMB

Grade of filtration 1 µm, metal bowl guard

Size	Connection	Input pressure 1 … 16 bar Condensate drain turned manually Part No. Type	LT		Input pressure 1.5 … 12 bar Condensate drain fully automatic Part No. Type	LT
With threaded connecting plates						
Mini	G1⁄8	**162626 LFMB-1⁄8-D-MINI**	1D		**162634 LFMB-1⁄8-D-MINI-A**	1D
	G1⁄4	**162627 LFMB-1⁄4-D-MINI**	1D		**162635 LFMB-1⁄4-D-MINI-A**	1D
Midi	G3⁄8	**162629 LFMB-3⁄8-D-MIDI**	1D		**162637 LFMB-3⁄8-D-MIDI-A**	1D
	G1⁄2	**162930 LFMB-1⁄2-D-MIDI**	1D		**162638 LFMB-1⁄2-D-MIDI-A**	1D
Maxi	G3⁄4	**162632 LFMB-3⁄4-D-MAXI**	1D		**162640 LFMB-3⁄4-D-MAXI-A**	1D
	G1	**162633 LFMB-1-D-MAXI**	1D		**162641 LFMB-1-D-MAXI-A**	1D
Basic Units, without Threaded Connecting Plates						
Mini	–	**546440 LFMB-D-MINI-U**	1D		**546442 LFMB-D-MINI-A-U**	1D
Midi	–	**546444 LFMB-D-MIDI-U**	1D		**546445 LFMB-D-MIDI-A-U**	1D
Maxi	–	**546448 LFMB-D-MAXI-U**	1D		**546450 LFMB-D-MAXI-A-U**	1D

Ordering Data – Micro filters LFMA

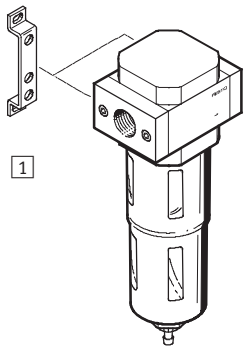
Grade of filtration 0.01 µm, metal bowl guard

Size	Connection	Input pressure 1 … 16 bar Condensate drain turned manually Part No. Type	LT		Input pressure 1.5 … 12 bar Condensate drain fully automatic Part No. Type	LT
With threaded connecting plates						
Mini	G1⁄8	**162642 LFMA-1⁄8-D-MINI**	1D		**162650 LFMA-1⁄8-D-MINI-A**	1D
	G1⁄4	**162643 LFMA-1⁄4-D-MINI**	1D		**162651 LFMA-1⁄4-D-MINI-A**	1D
Midi	G3⁄8	**162645 LFMA-3⁄8-D-MIDI**	1D		**162653 LFMA-3⁄8-D-MIDI-A**	1D
	G1⁄2	**162646 LFMA-1⁄2-D-MIDI**	1D		**162654 LFMA-1⁄2-D-MIDI-A**	1D
Maxi	G3⁄4	**162648 LFMA-3⁄4-D-MAXI**	1D		**162656 LFMA-3⁄4-D-MAXI-A**	1D
	G1	**162649 LFMA-1-D-MAXI**	1D		**162657 LFMA-1-D-MAXI-A**	1D
Basic Units, without Threaded Connecting Plates						
Mini	–	**546439 LFMA-D-MINI-U**	1D		**546441 LFMA-D-MINI-A-U**	1D
Midi	–	**546443 LFMA-D-MIDI-U**	1D		**546446 LFMA-D-MIDI-A-U**	1D
Maxi	–	**546447 LFMA-D-MAXI-U**	1D		**546449 LFMA-D-MAXI-A-U**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

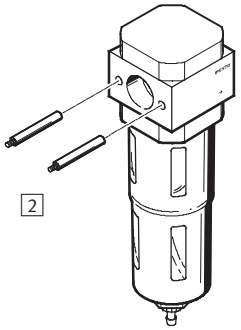
Accessories Overview

Individual device



Mounting attachments and accessories	→ Page/Internet
1 Mounting bracket HFOE	235

Basic unit for manifold assembly



Mounting attachments and accessories	→ Page/Internet
2 Threaded bolt FRB (included in scope of delivery)	235

Lubricators LOE – Metric Series

Technical Data

FESTO

Materials
Housing: Die-cast zinc/aluminum
Seals: Nitrile rubber
Free of copper and PTFE



The following oils are recommended for Festo components:
Viscosity range to ISO 3448, ISO class VG 32
32 mm^2/s (= cSt) at 40 °C

- Festo special oil OFSW-32
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

Technical Data									Download CAD data ➔ **www.festo.com/us/engineering**
Size		Micro		Mini		Midi		Maxi	
Pneumatic connection		M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Proportional standard mist lubricator							
Type of mounting		Via accessories							
		In-line installation							
Mounting position		Vertical ±5°							
Minimum flow for lubricator operation	[l/min]	3		3		8		10	
Max. oil capacity	[cm^3]	6.5		45		110		190	
Length	[mm]	25		40		55		66	
Width	[mm]	25	45	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	96		169		204		228	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]								
Size	Micro		Mini		Midi		Maxi	
Pneumatic connection	M5	G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Lubricator LOE	200	410	1,300	2,300	5,500	6,100	8,400	9,000

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

Operating Conditions			
Size		Micro	Mini / Midi / Maxi
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [6:4:4]	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium not possible	
Supply pressure	[bar]	0 ... 10	0 ... 16
Ambient temperature	[°C]	–10 ... +60	

Lubricators LOE – Metric Series

Ordering Data, Accessories

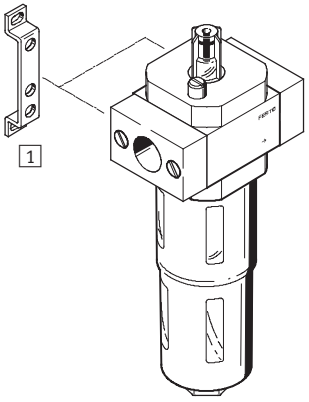
Ordering Data				
Size	Connection	Part No.	Type	LT
Input pressure 0 ... 10 bar				
Micro	M5	**526309**	**LOE-M5-D-MICRO**	1D
	G1⁄8	**526310**	**LOE-1⁄8-D-MICRO**	1D
Input pressure 0 ... 16 bar, metal bowl guard				
Mini	G1⁄8	**159620**	**LOE-1⁄8-D-MINI**	3D
	G1⁄4	**159621**	**LOE-1⁄4-D-MINI**	3D
Midi	G3⁄8	**159586**	**LOE-3⁄8-D-MIDI**	3D
	G1⁄2	**159587**	**LOE-1⁄2-D-MIDI**	3D
Maxi	G3⁄4	**159622**	**LOE-3⁄4-D-MAXI**	3D
	G1	**159623**	**LOE-1-D-MAXI**	3D

Ordering Data – Basic Units, without Threaded Connecting Plates				
Size	Connection	Part No.	Type	LT
Mini	–	**546431**	**LOE-D-MINI-U**	1D
Midi	–	**546427**	**LOE-D-MIDI-U**	1D
Maxi	–	**546517**	**LOE-D-MAXI-U**	1D

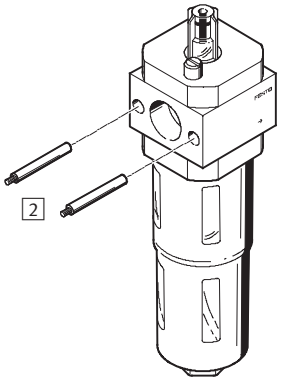
LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

Individual device



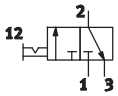
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
2	Threaded bolt FRB (included in scope of delivery)	235

Manual On-off Valves HE – Metric Series

Technical Data



Materials
Housing: Die-cast aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Piston spool					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Any					
Valve function		3/2-way					
Exhaust port		G1⁄8		G1⁄4		G3⁄8	
Reset method		Mechanical spring					
Direction of flow		Non-reversible					
Length	[mm]	40		55		66	
Width	[mm]	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	100		121		134	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]						
Size	Mini		Midi		Maxi	
Pneumatic connection	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
On-off valve HE	1,000	1,500	3,200	3,600	6,000	6,500

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

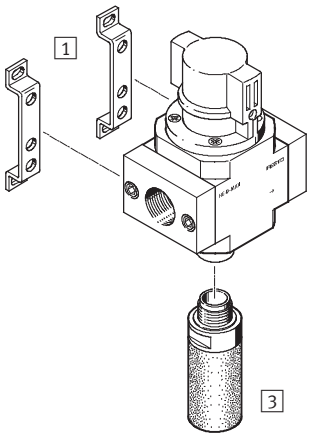
Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	0 ... 16
Ambient temperature	[°C]	–10 ... +60

Ordering Data				
3/2-way valve, operating pressure 0 ... 16 bar, normally closed				
Size	Connection	Part No.	Type	LT
With threaded connecting plates				
Mini	G1⁄8	**162806**	**HE-1⁄8-D-MINI**	3D
	G1⁄4	**162807**	**HE-1⁄4-D-MINI**	3D
Midi	G3⁄8	**162809**	**HE-3⁄8-D-MIDI**	3D
	G1⁄2	**162810**	**HE-1⁄2-D-MIDI**	3D
Maxi	G3⁄4	**162812**	**HE-3⁄4-D-MAXI**	3D
	G1	**162813**	**HE-1-D-MAXI**	3D
Basic Unit, without threaded connecting plates				
Mini	–	**170681**	**HE-D-MINI**	1D
Midi	–	**170682**	**HE-D-MIDI**	1D
Maxi	–	**170683**	**HE-D-MAXI**	1D

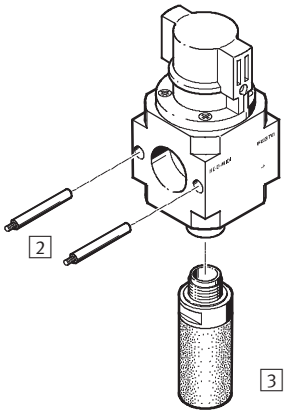
LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

Individual device



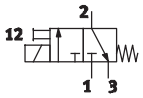
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
2	Threaded bolt FRB (included in scope of delivery)	235
3	Silencer U	236

Electric On-off Valves HEE – Metric Series

Technical Data



Materials
Housing: Die-cast aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data								Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi		
Pneumatic connection		G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1	
Design		Piston spool						
Type of mounting		Via accessories						
		In-line installation						
Mounting position		Any						
Valve function		3/2-way, single solenoid						
Exhaust port		G1⁄8		G1⁄4		G3⁄8		
Reset method		Mechanical spring						
Direction of flow		Non-reversible						
Operating voltage	[V DC]	24						
	[V AC]	110						
Length	[mm]	40		55		66		
Width	[mm]	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]	
Height	[mm]	104		122		135		

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]							
Size	Mini		Midi		Maxi		
Pneumatic connection	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1	
On-off valve HEE	1,000	1,500	3,200	3,600	6,000	6,500	

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

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	2,5 ... 16
Ambient temperature	[°C]	–10 ... +60

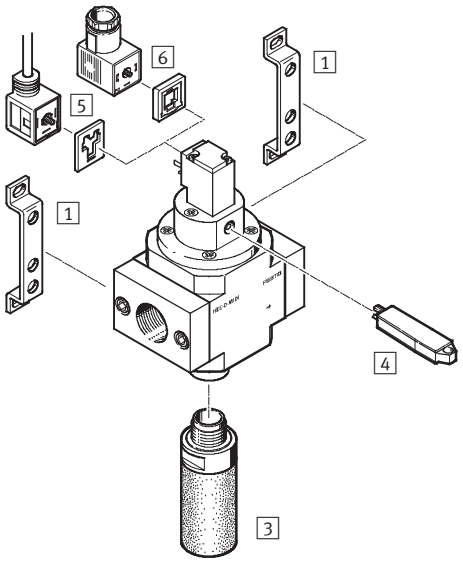
Ordering Data				
3/2-way valve, operating pressure 2.5 ... 16 bar, normally closed, 24 V DC				
Size	Connection	Part No.	Type	LT
With threaded connecting plates				
Mini	G1⁄8	**165068**	**HE-1⁄8-D-MINI-24**	3D
	G1⁄4	**165071**	**HE-1⁄4-D-MINI-24**	3D
Midi	G3⁄8	**165074**	**HE-3⁄8-D-MIDI-24**	3D
	G1⁄2	**186518**	**HE-1⁄2-D-MIDI-24**	3D
Maxi	G3⁄4	**172950**	**HE-3⁄4-D-MAXI-24**	3D
	G1	**172953**	**HE-1-D-MAXI-24**	3D

Ordering Data								
3/2-way valve, operating pressure 2.5 ... 16 bar, normally closed								
Size	Connection	24 V DC		LT		110 V AC		LT
		Part No.	Type			Part No.	Type	
Without threaded connecting plates								
Mini	–	**172956**	**HEE-D-MINI-24**	1D		**172957**	**HEE-D-MINI-110**	1D
Midi	–	**172959**	**HEE-D-MIDI-24**	1D		**172960**	**HEE-D-MIDI-110**	1D
Maxi	–	**172962**	**HEE-D-MAXI-24**	1D		**172963**	**HEE-D-MAXI-110**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

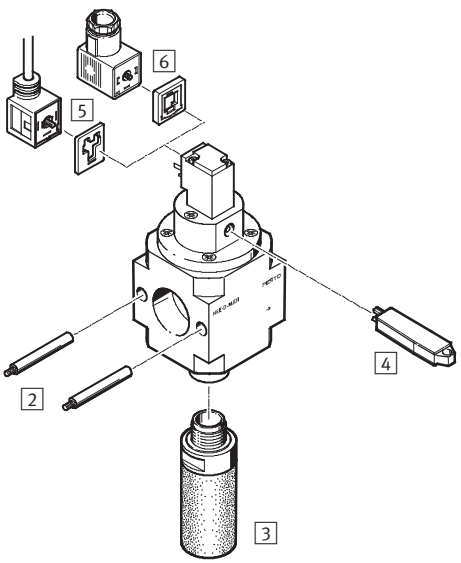
Accessories Overview

Individual device



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
3	Silencer U	236
4	Non-detenting manual override tool AHB-MD/MF/MY	236
5	Plug socket with cable KMEB	kmeb
6	Plug socket MSSD-EB	mssd-eb

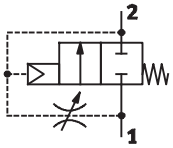
Basic unit for manifold assembly



Mounting attachments and accessories		➔ Page/Internet
2	Threaded bolt FRB (included in scope of delivery)	235
3	Silencer U	236
4	Non-detenting manual override tool AHB-MD/MF/MY	236
5	Plug socket with cable KMEB	kmeb
6	Plug socket MSSD-EB	mssd-eb

Soft-start Valves HEL – Metric Series

Technical Data



Materials
Housing: Die-cast aluminum
Seals: Nitrile rubber
Free of copper and PTFE



Technical Data							Download CAD data ➔ www.festo.com/us/engineering
Size		Mini		Midi		Maxi	
Pneumatic connection		G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Design		Piston spool					
Type of mounting		Via accessories					
		In-line installation					
Mounting position		Any					
Valve function		2/2-way, closed, air operated, adjustable					
Reset method		Mechanical spring					
Actuation method		Direct					
Direction of flow		Non-reversible					
Length	[mm]	40		55		66	
Width	[mm]	40 (64)[1]		55 (85)[1]		66 (96)[1]	66 (116)[1]
Height	[mm]	66		77		89	

1) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]						
Size	Mini		Midi		Maxi	
Pneumatic connection	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Soft-start valve HEL	1,000	1,500	3,200	3,600	6,000	6,500

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

Operating Conditions		
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	3 ... 16
Ambient temperature	[°C]	–10 ... +60

Soft-start Valves HEL – Metric Series

Ordering Data, Accessories

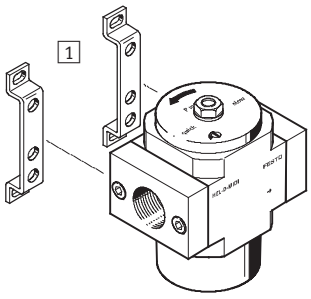
FESTO

Ordering Data				
Gradual pressure build-up, 2/2-way valve, normally closed, operating pressure 3 ... 16 bar				
Size	Connection	Part No.	Type	LT
With threaded connecting plates				
Mini	G1⁄8	**165076**	**HEL-1⁄8-D-MINI**	3D
	G1⁄4	**165077**	**HEL-1⁄4-D-MINI**	3D
Midi	G3⁄8	**165079**	**HEL-3⁄8-D-MIDI**	3D
	G1⁄2	**165080**	**HEL-1⁄2-D-MIDI**	3D
Maxi	G3⁄4	**165082**	**HEL-3⁄4-D-MAXI**	3D
	G1	**165083**	**HEL-1-D-MAXI**	3D
Basic Unit, without threaded connecting plates				
Mini	–	**170690**	**HEL-D-MINI**	1D
Midi	–	**170691**	**HEL-D-MIDI**	1D
Maxi	–	**170692**	**HEL-D-MAXI**	1D

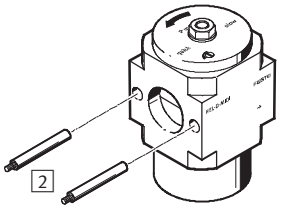
LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

Accessories Overview

Individual device



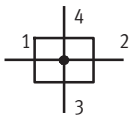
Basic unit for manifold assembly

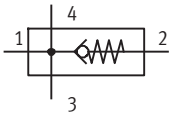


Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
2	Threaded bolt FRB (included in scope of delivery)	235

Branching Modules FRM/FRZ – Metric Series

Technical Data





Materials
Housing: Die-cast zinc
Seals: Nitrile rubber, polyvinyl chloride
Free of copper and PTFE



Technical Data								Download CAD data ➔ www.festo.com/us/engineering
Size		Micro	Mini		Midi		Maxi	
Pneumatic connection 1, 2[1]		G1⁄8	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Pneumatic connection 3		G1⁄8	G1⁄4		G1⁄2		G3⁄4	
Pneumatic connection 4		M5	G1⁄4					
Design		Branching module						
Type of mounting		With accessories						
		In-line installation						
Mounting position		Any						
Length	[mm]	25	40		55		66	
Width	[mm]	25	40 (64)[2]		55 (85)[2]		66 (96)[2]	66 (116)[2]
Height	[mm]	30	49		67		78	

1) With connecting plates.
2) Value in brackets with connecting plates.

Standard Nominal Flow Rate[1] qnN [l/min]								
Connection		Basic Unit Without Connecting Plates	With connecting plates					
			G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	G1
Standard								
In main flow direction	Micro	210	–	–	–	–	–	–
	Mini	3,300	1,500	3,300	–	–	–	–
	Midi	8,200	–	–	7,000	8,200	–	–
	Maxi	20,000	–	–	–	–	20,000	17,400
With non-return function								
In main flow direction	Mini	2,000	1,300	2,000	–	–	–	–
	Midi	5,600	–	–	5,500	5,600	–	–
	Maxi	15,000	–	–	–	–	15,000	13,400

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

Operating Conditions					
Size		Mini	Mini	Midi	Maxi
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]			
Ambient temperature	[°C]	–10 … +60			
Operating pressure	[bar]				
Standard		0 … 16			
With non-return function		–	0.15 … 16	0.2 … 16	0.25 … 16

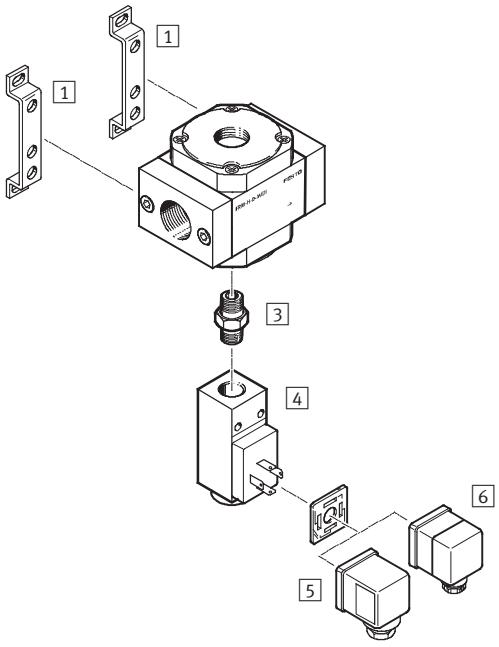
Ordering Data – With Connecting Plates				
Size	Port	With integrated non-return function		LT
		Part No.	Type	
Mini	G1/8	**162788**	**FRM-H-1/8-D-MINI**	3D
	G1/4	**162789**	**FRM-H-1/4-D-MINI**	3D
Midi	G3/8	**162791**	**FRM-H-3/8-D-MIDI**	3D
	G1/2	**162792**	**FRM-H-1/2-D-MIDI**	3D
Maxi	G3/4	**162794**	**FRM-H-3/4-D-MAXI**	3D
	G1	**162795**	**FRM-H-1-D-MAXI**	3D

Ordering Data – Basic Unit Without Connecting Plates							
Size	Standard		LT		With integrated non-return function		LT
	Part No.	Type			Part No.	Type	
Micro	**526815**	**FRZ-D-MICRO**	1D		–	–	
Mini	**170684**	**FRM-D-MINI**	1D		**170687**	**FRM-H-D-MINI**	1D
Midi	**170685**	**FRM-D-MIDI**	1D		**170688**	**FRM-H-D-MIDI**	1D
Maxi	**170686**	**FRM-D-MAXI**	1D		**170689**	**FRM-H-D-MAXI**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

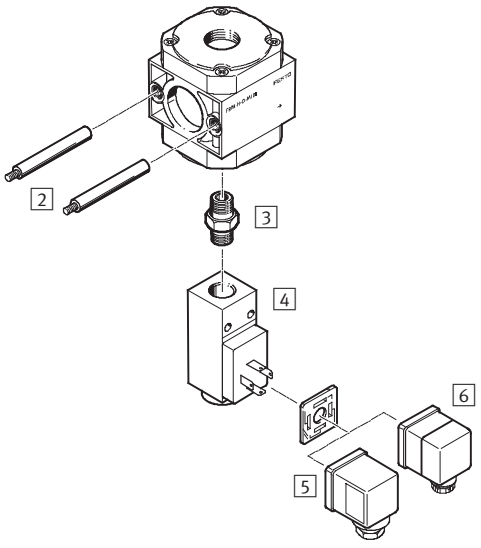
Accessories Overview

Individual device



Mounting attachments and accessories		➔ Page/Internet
1	Mounting bracket HFOE	235
3	Double nipple ESK	esk
4	Pressure switch PEV	236
5	Plug socket MSSD-C	mssd-c
6	Angled plug socket PEV-...-WD-LED	pev

Basic unit for manifold assembly



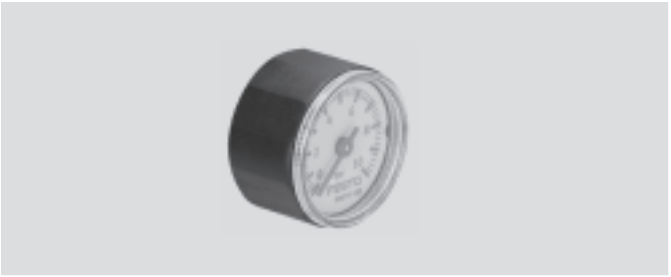
Mounting attachments and accessories		➔ Page/Internet
2	Threaded bolt FRB (included in scope of delivery)	frb
3	Double nipple ESK	esk
4	Pressure switch PEV	236
5	Plug socket MSSD-C	mssd-c
6	Angled plug socket PEV-...-WD-LED	pev

Pressure Gauges MA

Technical Data, Ordering Data



Materials
Housing:
MA-23: Brass
MA-27/40/50: Acrylic butadiene styrene/plastic
MA-63: Steel
Dial cover: Polystyrene/plastic
Threaded plug: Brass



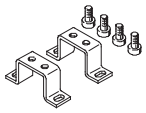
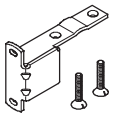
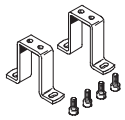
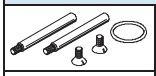
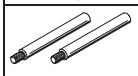
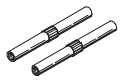
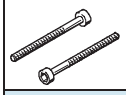
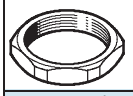
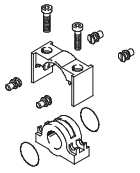
Technical Data				Download CAD data ➔ **www.festo.com/us/engineering**
Nominal size		27	40	50
Pneumatic connection		M5	G1⁄8	G1⁄4
Operating medium		Liquid and gaseous media		
		Not permitted: Oxygen, Acetylene		
Constructional design		Bourdon tube pressure gauge		
Type of mounting		Screw-in		
Connection position		Rear side, center		
Ambient temperature	[°F]	32 ... 140	–4 ... +140	
	[°C]	0 ... +60	–20 ... +60	
Measurement accuracy class		4	2.5	
Continuous load factor		0.75		
Intermittent load factor		0.66		
Protection class		IP43		

Ordering Data

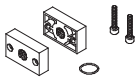
Nominal size	For D Series service units	Pneumatic connection	Indicating range [bar]	Indicating range [psi]	Part No.	Type	LT
27	MICRO	M5	0 ... 10	–	**526323**	**MA-27-10-M5**	1D
			–	0 ... 160	**527405**	**MA-27-160-M5-PSI**	1D
40	MINI	G1⁄8	0 ... 10	0 ... 145	**359874**	**MA-40-10-1/8**	1D
			0 ... 16	0 ... 240	**345395**	**MA-40-16-1/8**	1D
50	MIDI/MAXI	G1⁄4	0 ... 10	0 ... 160	**359873**	**MA-50-10-1/4**	1D
			0 ... 16	0 ... 240	**356759**	**MA-50-16-1/4**	1D

LT = Lead time **1D** typically ships same day/next day **3D** typically ships within 3 days

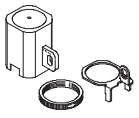
Ordering Data – Mounting attachments

Designation	Size	Part No.	Order code
Mounting bracket HFOE			
	Micro	526317	HFOE-D-MICRO
	Mini	159638	HFOE-D-MINI
	Midi/Maxi	159593	HFOE-D-MIDI/MAXI
Mounting bracket HRBK			
	Mini	525031	HRBK-D-MINI
	Midi	525032	HRBK-D-MIDI
Mounting bracket HRB			
	Mini	525029	HRB-D-MINI
	Midi	525030	HRB-D-MIDI
Mounting bracket HR-D			
	Micro	526316	HRS-D-MICRO
	Mini	164936	HR-D-MINI
	Midi	162804	HR-D-MIDI
	Maxi	162805	HR-D-MAXI
Threaded bolt FRB			
	Micro	526817	FRB-D-MICRO
	Mini	159642	FRB-D-MINI
	Midi	159595	FRB-D-MIDI
	Maxi	159643	FRB-D-MAXI
Threaded bolt LF/LOE			
	Mini	546483	LF/LOE-D-MINI
	Midi	546489	LF/LOE-D-MIDI
	Maxi	546494	LF/LOE-D-MAXI
Metric socket head screws			
	Mini	562472	DIN 912-M4X16-8.8
	Midi	562475	DIN 912-M5X18-8.8
	Maxi	562473	DIN 912-M5X20-8.8
Hex nut HMR			
	Micro	526816	HMR-D-MICRO
Connecting kit HRBC			
	Mini	529022	HRBC-D-MINI
	Midi	529023	HRBC-D-MIDI
Sealings			
	Mini	546478	O-12,42X1,78-N-NBR70
	Midi	546474	O-26X2-N-NBR75
	Maxi	546477	LR/LF/LFR/LOE/FRC-D-MAXI

Ordering Data – Connecting plates

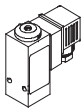
Designation	Size	Connec-tion	Position	Part No.	Order code
Connecting plates PBL					
	Micro	G1⁄8	Either	526318	PBL-1/8-D-MICRO
		QS-4	Either	526321	PBL-QS4-D-MICRO
		QS-6	Either	526322	PBL-QS6-D-MICRO
	Mini	G1⁄8	Left	546495	PBL-1/8-D-MINI-L
			Right	546496	PBL-1/8-D-MINI-R
		G1⁄4	Left	546497	PBL-1/4-D-MINI-L
			Right	546498	PBL-1/4-D-MINI-R
		G3⁄8	Left	546499	PBL-3/8-D-MINI-L
			Right	546500	PBL-3/8-D-MINI-R
	Midi	G1⁄4	Left	546501	PBL-1/4-D-MIDI-L
			Right	546502	PBL-1/4-D-MIDI-R
		G3⁄8	Left	546503	PBL-3/8-D-MIDI-L
			Right	546504	PBL-3/8-D-MIDI-R
		G1⁄2	Left	546505	PBL-1/2-D-MIDI-L
			Right	546506	PBL-1/2-D-MIDI-R
		G3⁄4	Left	546532	PBL-3/4-D-MIDI-L
			Right	546533	PBL-3/4-D-MIDI-R
	Maxi	G1⁄2	Left	546534	PBL-1/2-D-MAXI-L
			Right	546535	PBL-1/2-D-MAXI-R
		G3⁄4	Left	546507	PBL-3/4-D-MAXI-L
			Right	546508	PBL-3/4-D-MAXI-R
		G1	Left	546509	PBL-1-D-MAXI-L
			Right	546510	PBL-1-D-MAXI-R

Ordering Data – Safety components

Designation	Size	Part No.	Order code
Regulator lock LRVS			
	Mini	193781	LRVS-D-MINI
	Midi	193782	LRVS-D-MIDI
	Maxi	193783	LRVS-D-MAXI

Lead Time LT for all products on this page: **1D** typically ships same day/next day

Ordering Data – Sensors

Designation	Connection	Part No.	Order code
Pressure switch PEV			Technical Data ➔ 150
	G¼	**10773**	**PEV-¼-B**

Ordering Data – Connecting Cables NEBU

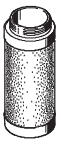
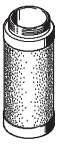
Technical data ➔ Internet: nebu

	Number of wires	Cable length [m]	Part No.	Type
M8x1, straight socket				
	3	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
	4	2.5	**541342**	**NEBU-M8G4-K-2.5-LE4**

Ordering Data – Accessories

Designation	Description	Part No.	Order code
Silencer U			Technical Data ➔ 257
	G⅛	**6841**	**U-⅛-B**
	G¼	**6842**	**U-¼-B**
	G⅜	**6844**	**U-⅜-B**

Ordering Data – Filter cartridges

Designation	Size	Part No.	Order code
Grade of filtration 40 µm			
	Mini	**546487**	**LFP-D-MINI-40M-U**
	Midi	**546488**	**LFP-D-MIDI-40M-U**
	Maxi	**546486**	**LFP-D-MAXI-40M-U**
Grade of filtration 5 µm			
	Micro	**526818**	**LFP-D-MICRO-5M**
	Mini	**159640**	**LFP-D-MINI-5M**
	Midi	**159594**	**LFP-D-MIDI-5M**
	Maxi	**159641**	**LFP-D-MAXI-5M**
Grade of filtration 1 µm			
	Mini	**162677**	**MS4/D-MINI-LFM-B**
	Midi	**162678**	**LFMBP-D-MIDI**
	Maxi	**162679**	**LFMBP-D-MAXI**
Grade of filtration 0.01 µm			
	Mini	**162674**	**MS4/D-MINI-LFM-A**
	Midi	**162675**	**LFMAP-D-MIDI**
	Maxi	**162676**	**LFMAP-D-MAXI**

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1 Festo Inc.

5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

Festo Customer Interaction Center
Tel: 1 877 463 3786
Fax: 1 877 393 3786
Email: customer.service.ca@festo.com

2 Festo Pneumatic

Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalnepantla,
Estado de México

Multinational Contact Center
01 800 337 8669

ventas.mexico@festo.com

3 Festo Corporation

1377 Motor Parkway
Suite 310
Islandia, NY 11749

4 Regional Service Center

7777 Columbia Road
Mason, OH 45040

Festo Customer Interaction Center
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