




Air Preparation Units, D Series – Overview

Service Units FRC, Filter Regulators LFR, Pressure Regulators LR

| 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, | 5, 40 | – | ■ | |
| | 2,400 ... 3,900 | – | – | – | ■ | ■ | ■ | – | 0.5 ... 12 | | – | ■ | |
| 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, | – | ■ | 192 |
| | 113 ... 141 | – | – | – | ■ | ■ | – | – | 7 ... 176 | – | ■ | |
| | 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, | – | ■ | |
| | 3,200... 4,000 | – | – | – | ■ | ■ | – | – | 0.5 ... 12 | – | ■ | |
| 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

| 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 | G1⁄8 | G1⁄4 | G3⁄8 | G1⁄2 | G3⁄4 | 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] | – | 1/8 NPT | 1/4 NPT | 3/8 NPT | 1/2 NPT | 3/4 NPT | 1 NPT | [psi] | [μm] | | | | |
| | 28 ... 42 | – | ■ | ■ | – | – | – | – | 0 ... 235 | 5, 40 | – | ■ | 194 | |
| | 64 ... 106 | – | – | – | ■ | ■ | – | – | | | – | ■ | | |
| | 127 ... 187 | – | – | – | – | – | ■ | ■ | | | – | ■ | | |
| | Metric Series | | | | | | | | | | | | | |
| | [l/min] | M5 | G1/8 | G1/4 | G3/8 | G1/2 | G3/4 | G1 | [bar] | [μm] | | | | |
| | 170 ... 290 | ■ | ■ | – | – | – | – | – | 0 ... 16 | 5 | ■ | – | 220 | |
| | 800 ... 1,200 | – | ■ | ■ | – | – | – | – | | 5, 40 | – | ■ | | |
| | 1,800 ... 3,000 | – | – | – | ■ | ■ | – | – | | | – | ■ | | |
| 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] | 1/8 NPT | 1/4 NPT | 3/8 NPT | 1/2 NPT | 3/4 NPT | 1 NPT | [psi] | [μm] | | | |
| | 5 ... 11 | ■ | ■ | – | – | – | – | 15 ... 235 | 0.01, 1 | – | ■ | 196 |
| | 13 ... 32 | – | – | ■ | ■ | – | – | | | – | ■ | |
| | 32 ... 44 | – | – | – | – | ■ | ■ | | | – | ■ | |
| | Metric Series | | | | | | | | | | | |
| | [l/min] | G1/8 | G1/4 | G3/8 | G1/2 | G3/4 | G1 | [bar] | [μm] | | | |
| | 130 ... 300 | ■ | ■ | – | – | – | – | 1 ... 16 | 0.01, 1 | – | ■ | 222 |
| | 380 ... 900 | – | – | ■ | ■ | – | – | | | – | ■ | |
| | 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

| 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

FESTO

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

| 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 ∅ [mm] | Operating Pressure / Indicating Range | | Lead Time | | → Page |
| | M5 | G¼ | G¼ | | [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

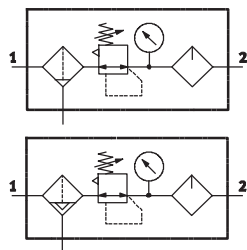
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Service Units FRC – Inch Series

Technical Data

FESTO



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 mm²/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 | |

Service Units FRC – Inch Series

Ordering Data, Accessories

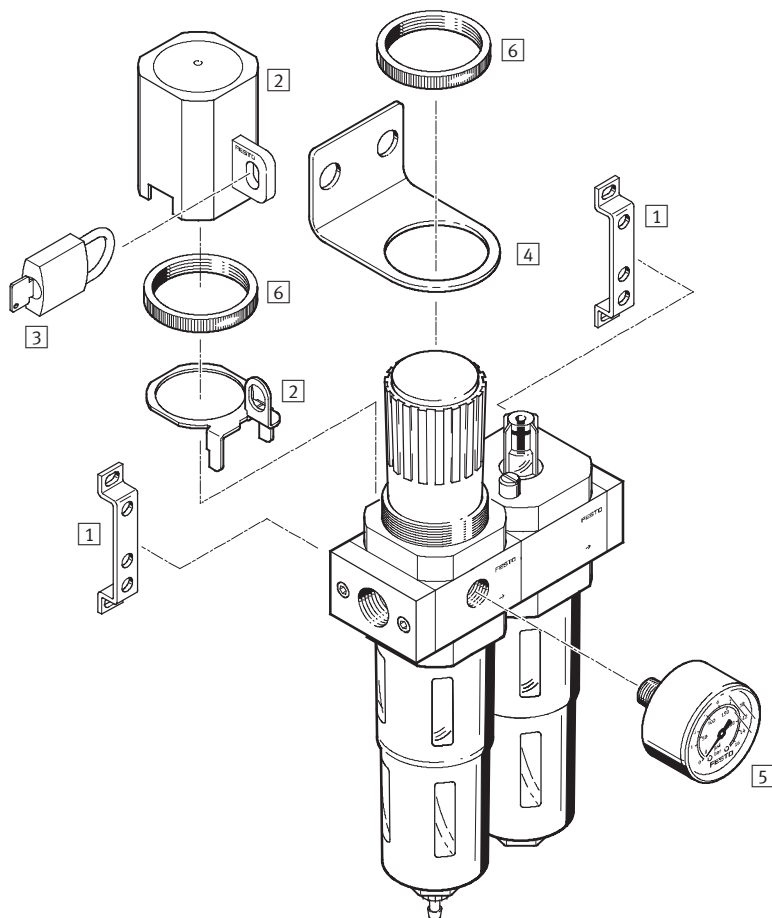
| Ordering Data | | | | | | | | |
|------------------|------|------------|---|------------------------|----|---|----------------------|----|
| Condensate drain | Size | Connection | Pressure regulation range 7.5 ... 103 psi | | LT | Pressure regulation range 7.5 ... 176 psi | | LT |
| | | | Part No.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



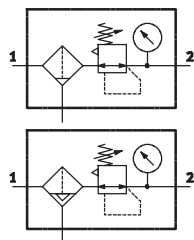
| Mounting attachments and accessories | → Page/Internet |
|--------------------------------------|-----------------|
| 1 Mounting bracket HFOE | 209 |
| 2 Regulator lock LRVS | 209 |
| 3 Padlock LRVS-D | – |

| 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

FESTO



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 | 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⁾ q _N [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 | | | | | | | |
| 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 |
| Ambient temperature | [°F] | 29 ... 176 |

Filter Regulators LFR – Inch Series

FESTO

Ordering Data

| Ordering Data – Filtration Grade 40µm | | | | | | | | | | |
|---------------------------------------|------|------------|---|------------------------|--|----|---|----------------------|--|----|
| Condensate drain | Size | Connection | Pressure regulation range 7.5 ... 103 psi | | | LT | Pressure regulation range 7.5 ... 176 psi | | | |
| | | | 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

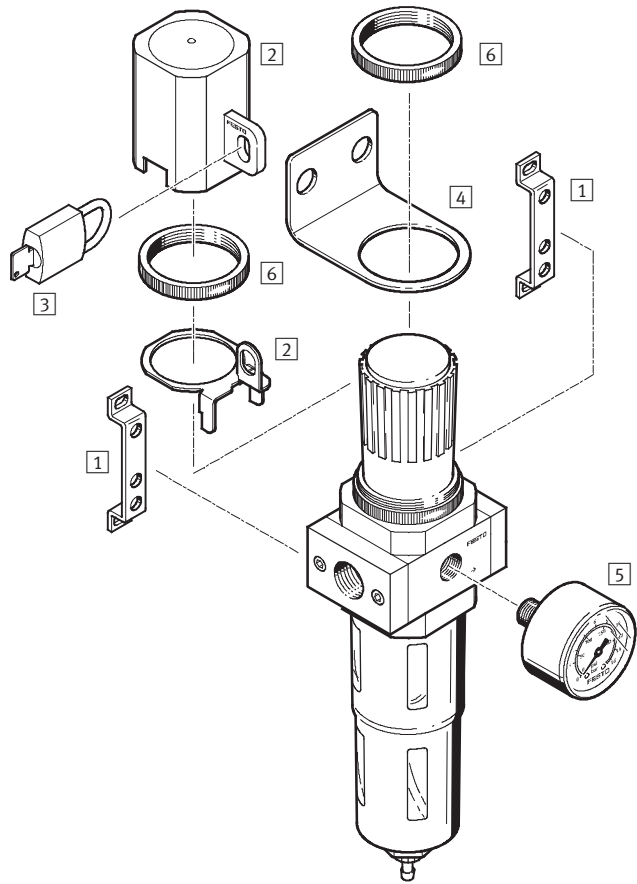
3D typically ships within 3 days

Filter Regulators LFR – Inch Series

Accessories



Accessories Overview

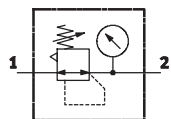


| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|---|-----------------|
| 1 | Mounting bracket HFOE | 209 |
| 2 | Regulator lock LRVS | 209 |
| 3 | Padlock LRVS-D | lrvs-d |
| 4 | Mounting bracket HR-D | 209 |
| 5 | Pressure gauge MA | 208 |
| 6 | Knurled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

Pressure Regulators LR – Inch Series

Technical Data

FESTO



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

| 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 | 1/8NPT | 173646 | LR-1/8-D-7-MINI-NPT | 3D | | 173644 | LR-1/8-D-MINI-NPT | 3D |
| | 1/4NPT | 173650 | LR-1/4-D-7-MINI-NPT | 3D | | 173648 | LR-1/4-D-MINI-NPT | 3D |
| Midi | 3/8NPT | 173658 | LR-3/8-D-7-MIDI-NPT | 3D | | 173656 | LR-3/8-D-MIDI-NPT | 3D |
| | 1/2NPT | 173662 | LR-1/2-D-7-MIDI-NPT | 3D | | 173660 | LR-1/2-D-MIDI-NPT | 3D |
| Pilot actuated piston regulator | | | | | | | | |
| Maxi | 3/4NPT | 173670 | LR-3/4-D-7-MAXI-NPT | 3D | | 173668 | LR-3/4-D-MAXI-NPT | 3D |
| | 1NPT | 173674 | LR-1-D-7-MAXI-NPT | 3D | | 173672 | LR-1-D-MAXI-NPT | 3D |

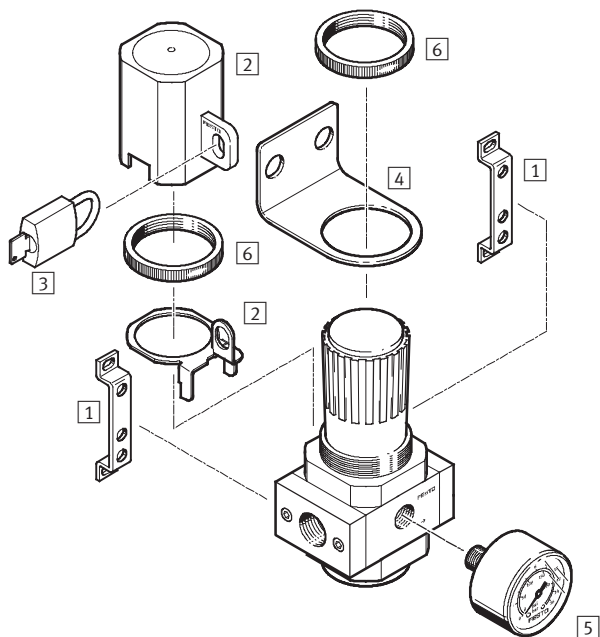
| Ordering Data – Basic Units, without Threaded Connecting Plates | | | | | | | | |
|---|------------|---|----------------|----|--|--|--------------|----|
| Size | Connection | Pressure regulation range 7.5 ... 103 psi | | LT | | Pressure regulation range 07.5 ... 176 psi | | LT |
| | | Part No. | Type | | | Part No. | Type | |
| Basic Unit without pressure gauge | | | | | | | | |
| Mini | – | 546452 | LR-D-7-MINI | 1D | | 546424 | LR-D-MINI | 1D |
| Midi | – | 546458 | LR-D-7-MIDI | 1D | | 546430 | 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

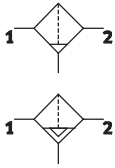
Accessories Overview



| 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⁾ q _N [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

FESTO

| 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 | 1/8NPT | 173678 | LF-1/8-D-5M-MINI-NPT | 3D | 173676 | LF-1/8-D-MINI-NPT | 3D |
| | | 1/4NPT | 173682 | LF-1/4-D-5M-MINI-NPT | 3D | 173680 | LF-1/4-D-MINI-NPT | 3D |
| | Midi | 3/8NPT | 173690 | LF-3/8-D-5M-MIDI-NPT | 3D | 173688 | LF-3/8-D-MIDI-NPT | 3D |
| | | 1/2NPT | 173694 | LF-1/2-D-5M-MIDI-NPT | 3D | 173692 | LF-1/2-D-MIDI-NPT | 3D |
| | Maxi | 3/4NPT | 173702 | LF-3/4-D-5M-MAXI-NPT | 3D | 173700 | LF-3/4-D-MAXI-NPT | 3D |
| | | 1NPT | 173706 | LF-1-D-5M-MAXI-NPT | 3D | 173704 | LF-1-D-MAXI-NPT | 3D |
| Fully automatic | Mini | 1/8NPT | 173679 | LF-1/8-D-5M-MINI-A-NPT | 3D | 173677 | LF-1/8-D-MINI-A-NPT | 3D |
| | | 1/4NPT | 173683 | LF-1/4-D-5M-MINI-A-NPT | 3D | 173681 | LF-1/4-D-MINI-A-NPT | 3D |
| | Midi | 3/8NPT | 173691 | LF-3/8-D-5M-MIDI-A-NPT | 3D | 173689 | LF-3/8-D-MIDI-A-NPT | 3D |
| | | 1/2NPT | 173695 | LF-1/2-D-5M-MIDI-A-NPT | 3D | 173693 | LF-1/2-D-MIDI-A-NPT | 3D |
| | Maxi | 3/4NPT | 173703 | LF-3/4-D-5M-MAXI-A-NPT | 3D | 173701 | LF-3/4-D-MAXI-A-NPT | 3D |
| | | 1NPT | 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

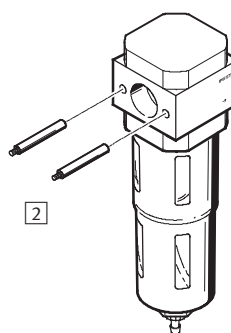
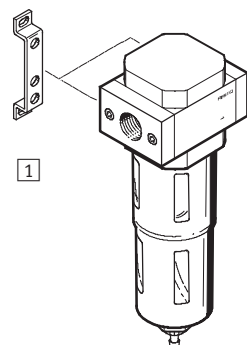
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

Basic unit for manifold assembly

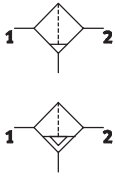


| Mounting attachments and accessories | → Page/Internet |
|--------------------------------------|-----------------|
| 1 Mounting bracket HFOE | 209 |

| 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 (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⁾ q _N [scfm] | | | | | | |
|--|--------|--------|--------|--------|--------|------|
| Size | Mini | Midi | Maxi | | | |
| Pneumatic connection | 1/8NPT | 1/4NPT | 3/8NPT | 1/2NPT | 3/4NPT | 1NPT |
| Micro filter LFMA | 5 | 13 | 14 | 32 | 34 | |
| Fine filter LFMB | 9 | 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/m ³] | ≤ 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

FESTO

| Ordering Data – Fine filters LFMB | | | | | | | | | | | |
|---|------------|----------------------------------|---------------------|------|--|----|----------------------------------|-----------------------|------|--|----|
| Grade of filtration 1 µm, metal bowl guard | | | | | | | | | | | |
| Size | Connection | Input pressure 15 ... 235 psi | | | | LT | Input pressure 22 ... 176 psi | | | | LT |
| | | Condensate drain turned manually | | | | | Condensate drain fully automatic | | | | |
| | | Part No. | | Type | | | Part No. | | Type | | |
| With threaded connecting plates | | | | | | | | | | | |
| Mini | 1/8NPT | 173708 | LFMB-1/8-D-MINI-NPT | | | 3D | 173709 | LFMB-1/8-D-MINI-A-NPT | | | 3D |
| | 1/4NPT | 173710 | LFMB-1/4-D-MINI-NPT | | | 3D | 173711 | LFMB-1/4-D-MINI-A-NPT | | | 3D |
| Midi | 3/8NPT | 173714 | LFMB-3/8-D-MIDI-NPT | | | 3D | 173715 | LFMB-3/8-D-MIDI-A-NPT | | | 3D |
| | 1/2NPT | 173716 | LFMB-1/2-D-MIDI-NPT | | | 3D | 173717 | LFMB-1/2-D-MIDI-A-NPT | | | 3D |
| Maxi | 3/4NPT | 173720 | LFMB-3/4-D-MAXI-NPT | | | 3D | 173721 | LFMB-3/4-D-MAXI-A-NPT | | | 3D |
| | 1NPT | 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 | | | | LT | Input pressure 22 ... 176 psi | | | | LT |
| | | Condensate drain turned manually | | | | | Condensate drain fully automatic | | | | |
| | | Part No. | Type | | | | Part No. | Type | | | |
| With threaded connecting plates | | | | | | | | | | | |
| Mini | 1/8NPT | 173724 | LFMA-1/8-D-MINI-NPT | | | 3D | 173725 | LFMA-1/8-D-MINI-A-NPT | | | 3D |
| | 1/4NPT | 173726 | LFMA-1/4-D-MINI-NPT | | | 3D | 173727 | LFMA-1/4-D-MINI-A-NPT | | | 3D |
| Midi | 3/8NPT | 173730 | LFMA-3/8-D-MIDI-NPT | | | 3D | 173731 | LFMA-3/8-D-MIDI-A-NPT | | | 3D |
| | 1/2NPT | 173732 | LFMA-1/2-D-MIDI-NPT | | | 3D | 173733 | LFMA-1/2-D-MIDI-A-NPT | | | 3D |
| Maxi | 3/4NPT | 173736 | LFMA-3/4-D-MAXI-NPT | | | 3D | 173737 | LFMA-3/4-D-MAXI-A-NPT | | | 3D |
| | 1NPT | 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

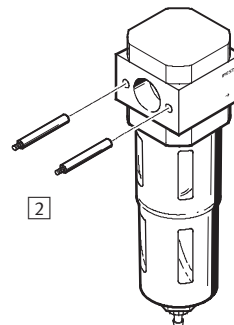
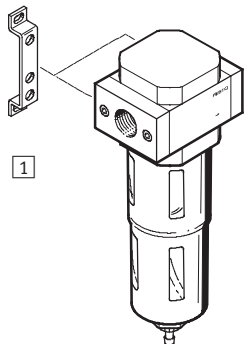
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

Basic unit for manifold assembly



| Mounting attachments and accessories | → Page/Internet |
|--------------------------------------|-----------------|
| 1 Mounting bracket HFOE | 209 |

| 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 mm²/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 | 1/8NPT | 1/4NPT | 3/8NPT | 1/2NPT | 3/4NPT | 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⁾ q _N [scfm] | | | | | | |
|--|--------|--------|--------|--------|--------|------|
| Size | Mini | | Midi | | Maxi | |
| Pneumatic connection | 1/8NPT | 1/4NPT | 3/8NPT | 1/2NPT | 3/4NPT | 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

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

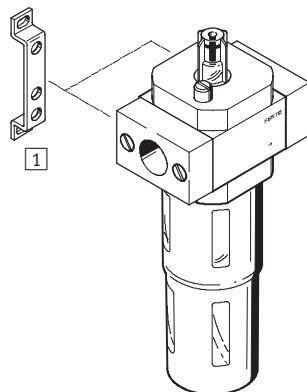
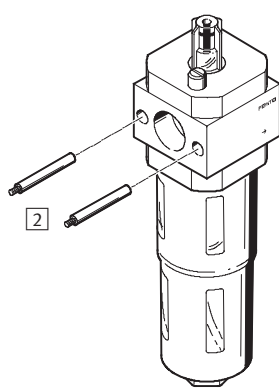
| Ordering Data – Basic Units, without Threaded Connecting Plates | | | | |
|---|------------|----------|--------------|----|
| Size | Connection | Part No. | Type | LT |
| Mini | – | 546431 | LOE-D-MINI-U | 1D |
| Midi | – | 546427 | LOE-D-MIDI-U | 1D |
| Maxi | – | 546517 | LOE-D-MAXI-U | 1D |

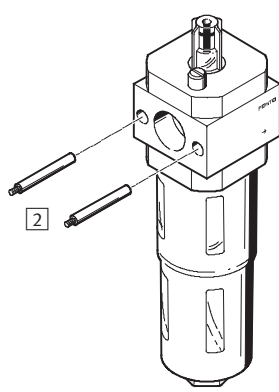
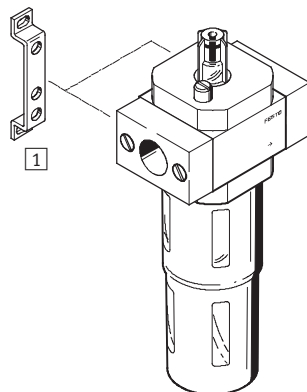
LT = Lead time

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 |
| | | 2 | Threaded bolt FRB (must be ordered separately) |

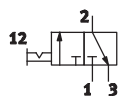


| Mounting attachments and accessories | → Page/Internet |
|--------------------------------------|--|
| 1 | Mounting bracket HFOE |
| 2 | Threaded bolt FRB (must be ordered separately) |

Manual On-off Valves HE – Inch Series

Technical Data

FESTO



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 |

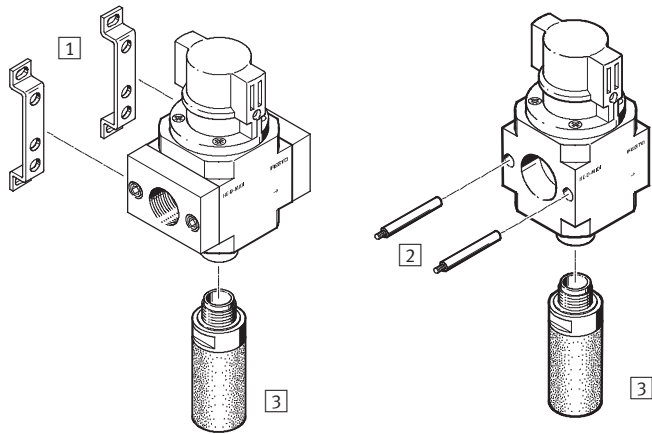
Manual On-off Valves HE – Inch Series

Ordering Data, Accessories

| Ordering Data | | | | | |
|--|------------|----------|-------------------|--|----|
| 3/2-way valve, operating pressure 0 ... 235 psi, normally closed | | | | | |
| Size | Connection | Part No. | Type | | LT |
| With threaded connecting plates | | | | | |
| Mini | 1/8NPT | 173892 | HE-1/8-D-MINI-NPT | | 3D |
| | 1/4NPT | 173893 | HE-1/4-D-MINI-NPT | | 3D |
| Midi | 3/8NPT | 173895 | HE-3/8-D-MIDI-NPT | | 3D |
| | 1/2NPT | 173896 | HE-1/2-D-MIDI-NPT | | 3D |
| Maxi | 3/4NPT | 173898 | HE-3/4-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

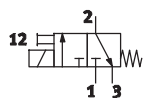
| Accessories Overview | | |
|--------------------------------------|---|-----------------|
| Individual device | Basic unit for manifold assembly | |
| Mounting attachments and accessories | | → Page/Internet |
| 1 | Mounting bracket HFOE | 209 |
| 2 | Threaded bolt FRB (included in scope of delivery) | 209 |
| 3 | Silencer U | 210 |



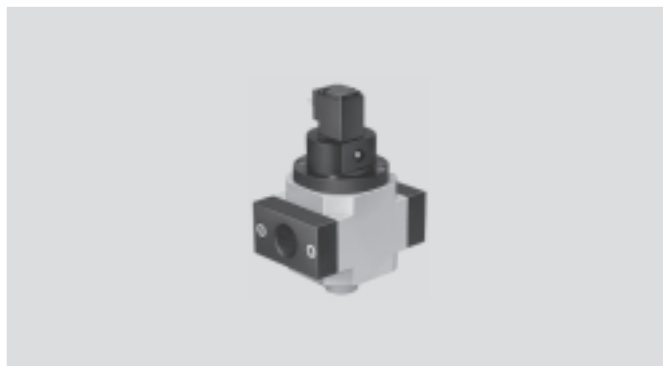
Electric On-off valves HEE – Inch Series

Technical Data

FESTO



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⁾ q _N [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

| 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 |

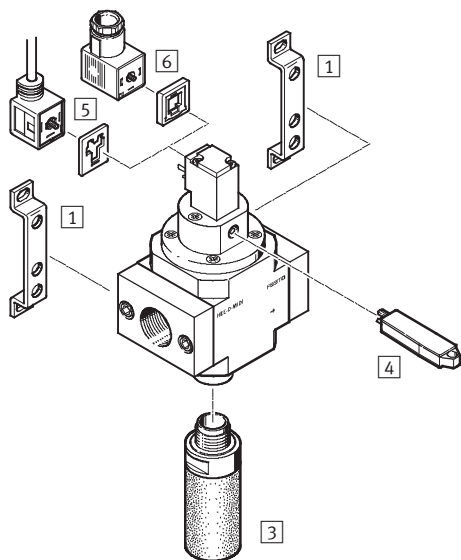
LT = Lead time

1D typically ships same day/next day

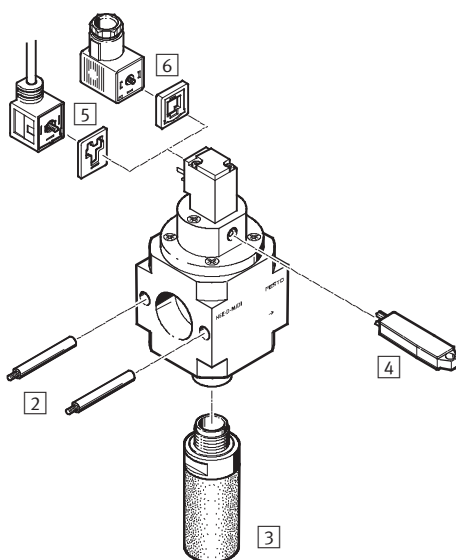
3D typically ships within 3 days

Accessories Overview

Individual device



Basic unit for manifold assembly



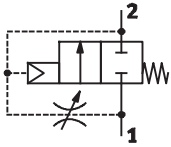
| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|---|-----------------|
| 1 | Mounting bracket HFOE | 209 |
| 3 | Silencer U | 210 |
| 4 | Non-detenting manual override tool AHB-MD/MF/MY | 210 |
| 5 | Plug socket with cable KMEB | kmeb |
| 6 | Plug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

| 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

FESTO



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⁾ q _N [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

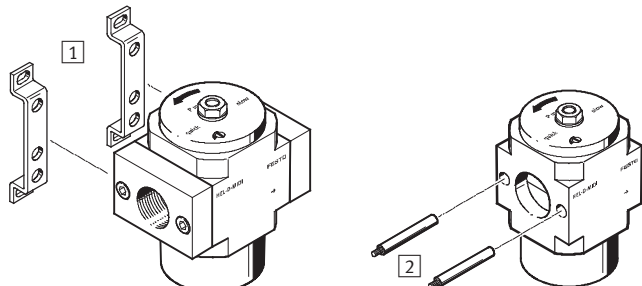
| Ordering Data | | | | |
|--|------------|----------|--------------------|----|
| Gradual pressure build-up, 2/2-way valve, normally closed, operating pressure 44 ... 235 psi | | | | |
| Size | Connection | Part No. | Type | LT |
| With threaded connecting plates | | | | |
| Mini | 1/8NPT | 173916 | HEL-1/8-D-MINI-NPT | 3D |
| | 1/4NPT | 173917 | HEL-1/4-D-MINI-NPT | 3D |
| Midi | 3/8NPT | 173919 | HEL-3/8-D-MIDI-NPT | 3D |
| | 1/2NPT | 173920 | HEL-1/2-D-MIDI-NPT | 3D |
| Maxi | 3/4NPT | 173922 | HEL-3/4-D-MAXI-NPT | 3D |
| | 1NPT | 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

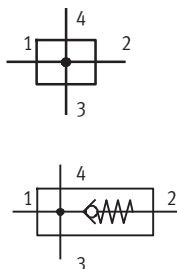
Accessories Overview

| 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

FESTO



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⁾ | | 1/8NPT | 1/8NPT 1/4NPT | 3/8NPT 1/2NPT | 3/4NPT 1NPT | | |
| Pneumatic connection 3 | | 1/8NPT | 1/4NPT | 1/2NPT | 3/4NPT | | |
| Pneumatic connection 4 | | 10/32 UNF | 1/4NPT | | | | |
| 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⁾ q _{nN} [scfm] | | | | | | | | |
|---|-------|--------------------------------------|------------------------|--------|--------|--------|--------|------|
| Connection | | Basic Unit Without Connecting Plates | With connecting plates | | | | | |
| | | | 1/8NPT | 1/4NPT | 3/8NPT | 1/2NPT | 3/4NPT | 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 |

Branching Modules FRM/FRZ – Inch Series

Ordering Data, Accessories

FESTO

| 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 |
| | Part No. | Type | | LT |
| 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

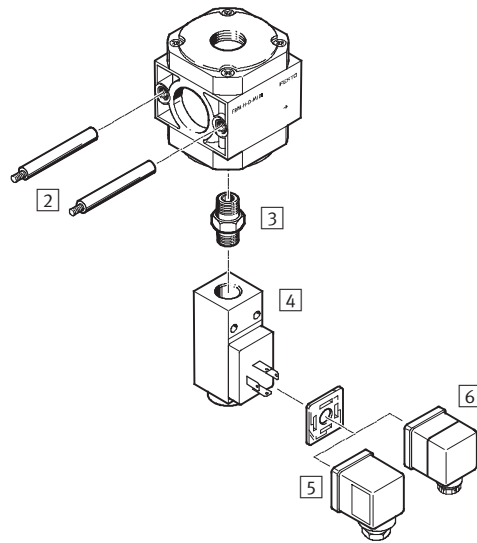
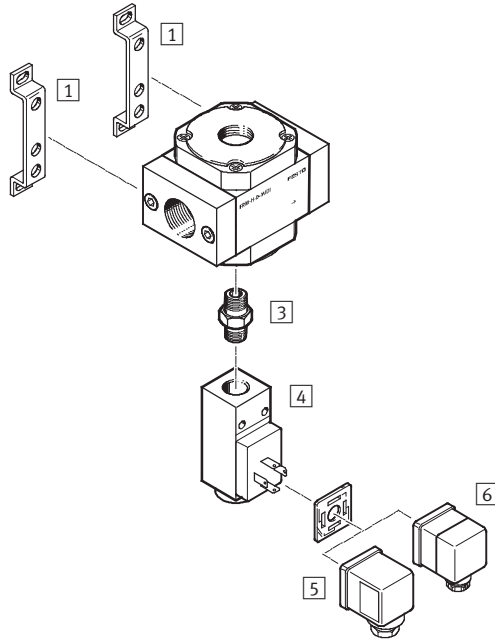
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

Basic unit for manifold assembly



| 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 |

| 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

FESTO



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 | G $\frac{1}{8}$ | G $\frac{1}{4}$ | |
| 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 | | Part No. | Type |
| | | | [bar] | [psi] | | |
| 27 | MICRO | M5 | 0 ... 10 | – | 526323 | MA-27-10-M5 |
| | | | – | 0 ... 160 | 527405 | MA-27-160-M5-PSI |
| 40 | MINI | G $\frac{1}{8}$ | 0 ... 10 | 0 ... 145 | 359874 | MA-40-10-1/8 |
| | | | 0 ... 16 | 0 ... 240 | 345395 | MA-40-16-1/8 |
| 50 | MIDI/MAXI | G $\frac{1}{4}$ | 0 ... 10 | 0 ... 160 | 359873 | MA-50-10-1/4 |
| | | | 0 ... 16 | 0 ... 240 | 356759 | MA-50-16-1/4 |

LT = Lead time

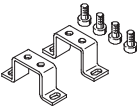
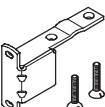
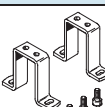

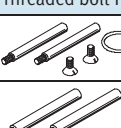
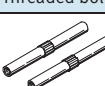
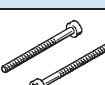
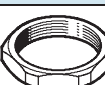


1D typically ships same day/next day


3D typically ships within 3 days


Accessories – Inch Series

Ordering Data

FESTO

| 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


Accessories – Inch Series



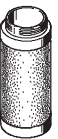

Ordering Data

FESTO

| Ordering Data – Sensors | | | |
|---|-----------------|----------|-----------------------|
| Designation | Connection | Part No. | Order code |
| Pressure switch PEV Technical Data → 150 | | | |
|  | G $\frac{1}{4}$ | 10773 | PEV- $\frac{1}{4}$ -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 |

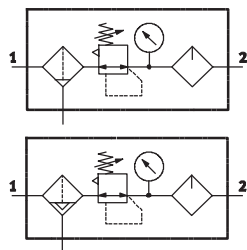
| Ordering Data – Accessories | | | |
|---|-----------------|----------|---------------------|
| Designation | Description | Part No. | Order code |
| Silencer U Technical Data → 257 | | | |
|  | G $\frac{1}{8}$ | 6841 | U- $\frac{1}{8}$ -B |
| | G $\frac{1}{4}$ | 6842 | U- $\frac{1}{4}$ -B |
| | G $\frac{3}{8}$ | 6844 | U- $\frac{3}{8}$ -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 |

Service Units FRC – Metric Series

Technical Data

FESTO



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 mm²/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 | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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 | G1/8 | G1/4 | G3/8 | G1/2 | G3/4 | 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:-] | |
| | 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 | |

Service Units FRC – Metric Series

Ordering Data, Accessories

FESTO

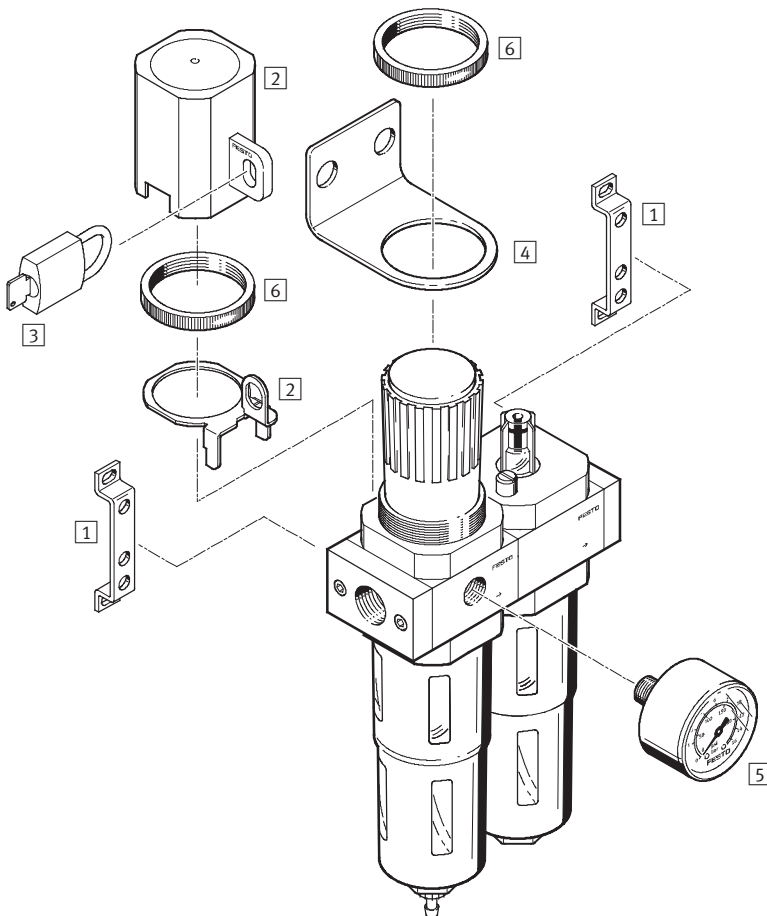
| Ordering Data | | | | | | | | |
|------------------|------|-----------------|---|--------------------------------|----|--|------------------------------|----|
| Condensate drain | Size | Connection | Pressure regulation range 0.5 ... 7 bar | | LT | Pressure regulation range 0.5 ... 12 bar | | LT |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



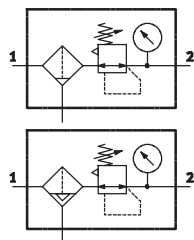
| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|-----------------------|-----------------|
| 1 | Mounting bracket HFOE | 235 |
| 2 | Regulator lock LRVS | 235 |
| 3 | Padlock LRVS-D | lrvs-d |

| 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

FESTO



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⁾ q _N [l/min] | | | | | | | | | |
|---|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|--------|
| Size | Micro | | Mini | | Midi | | Maxi | | |
| Pneumatic connection | M5 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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 |

Filter Regulators LFR – Metric Series

Ordering Data

FESTO

| 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 | | |
| | | | 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 | |
| | | G1/4 | 162703 | LFR-1/4-D-7-MINI | | 3D | 159631 | LFR-1/4-D-MINI | |
| | Midi | G3/8 | 162705 | LFR-3/8-D-7-MIDI | | 3D | 159582 | LFR-3/8-D-MIDI | |
| | | G1/2 | 162706 | LFR-1/2-D-7-MIDI | | 3D | 159584 | LFR-1/2-D-MIDI | |
| | Maxi | G3/4 | 162708 | LFR-3/4-D-7-MAXI | | 3D | 159632 | LFR-3/4-D-MAXI | |
| | | G1 | 162709 | LFR-1-D-7-MAXI | | 3D | 159633 | LFR-1-D-MAXI | |
| Fully automatic | Mini | G1/8 | 162710 | LFR-1/8-D-7-MINI-A | | 3D | 159634 | LFR-1/8-D-MINI-A | |
| | | G1/4 | 162711 | LFR-1/4-D-7-MINI-A | | 3D | 159635 | LFR-1/4-D-MINI-A | |
| | Midi | G3/8 | 162713 | LFR-3/8-D-7-MIDI-A | | 3D | 159583 | LFR-3/8-D-MIDI-A | |
| | | G1/2 | 162714 | LFR-1/2-D-7-MIDI-A | | 3D | 159585 | LFR-1/2-D-MIDI-A | |
| | Maxi | G3/4 | 162716 | LFR-3/4-D-7-MAXI-A | | 3D | 159636 | LFR-3/4-D-MAXI-A | |
| | | G1 | 162717 | LFR-1-D-7-MAXI-A | | 3D | 159637 | LFR-1-D-MAXI-A | |
| 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 | |
| | | G3/4 | 192378 | LFR-3/4-D-7-DI-MAXI | | 3D | 192374 | LFR-3/4-D-DI-MAXI | |
| | | G1 | 192384 | LFR-1-D-7-DI-MAXI | | 3D | 192380 | LFR-1-D-DI-MAXI | |
| Fully automatic | Maxi | G1/2 | 192390 | LFR-1/2-D-7-DI-MAXI-A | | 3D | 192386 | LFR-1/2-D-DI-MAXI-A | |
| | | G3/4 | 192396 | LFR-3/4-D-7-DI-MAXI-A | | 3D | 192392 | LFR-3/4-D-DI-MAXI-A | |
| | | G1 | 192402 | LFR-1-D-7-DI-MAXI-A | | 3D | 192398 | LFR-1-D-DI-MAXI-A | |

| 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

Filter Regulators LFR – Metric Series

Ordering Data, Accessories

FESTO

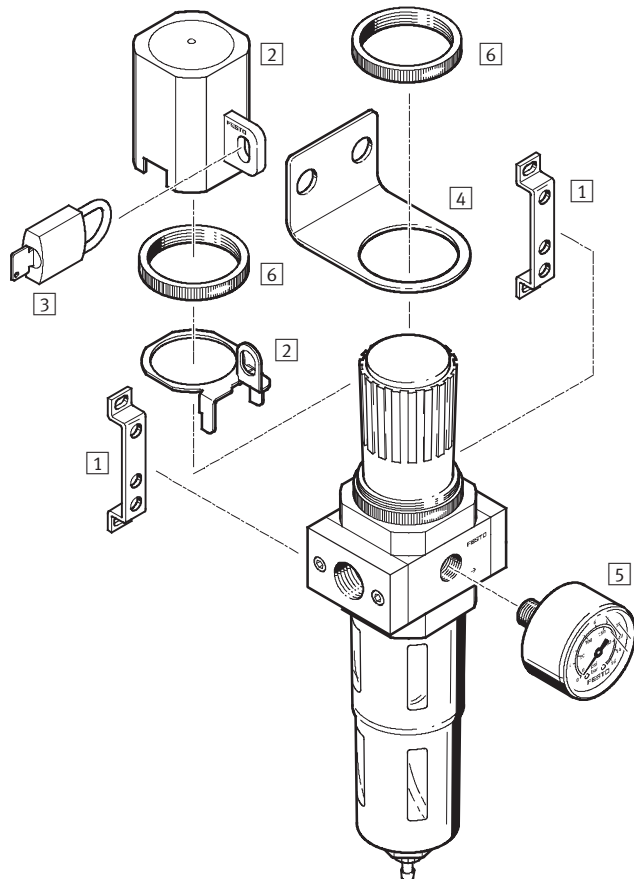
| Ordering Data – Basic Units without Threaded Connecting Plates, Filtration Grade 40µm | | | | | | | | |
|---|------|------------|---|-------------------|----|---|-----------------|----|
| Condensate drain | Size | Connection | Pressure regulation range 7.5 ... 103 psi | | LT | Pressure regulation range 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

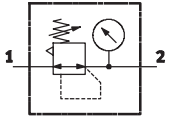


| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|---|-----------------|
| 1 | Mounting bracket HFOE | 235 |
| 2 | Regulator lock LRVS | 235 |
| 3 | Padlock LRVS-D | lrvs-d |
| 4 | Mounting bracket HR-D | 235 |
| 5 | Pressure gauge MA | 208 |
| 6 | Knurled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

Pressure Regulators LR – Metric Series

Technical Data

FESTO



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 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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

FESTO

| 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 |

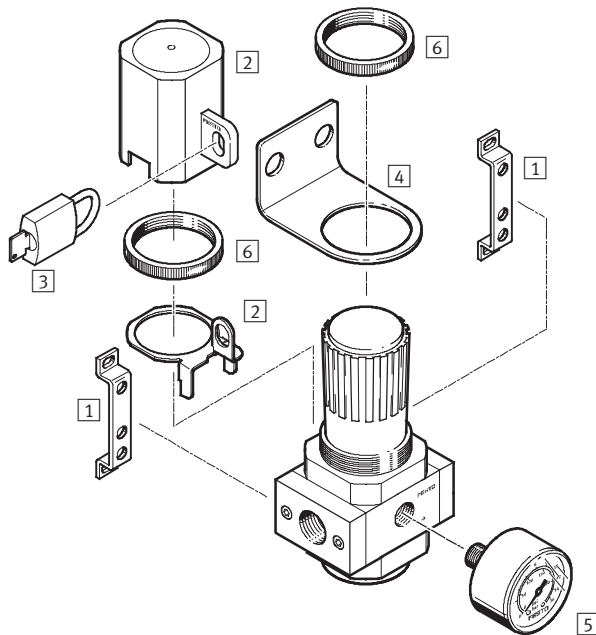
| Ordering Data – Basic Units, without Threaded Connecting Plates | | | | | | | | |
|---|------------|---|----------------|----|--|--|--------------|----|
| Size | Connection | Pressure regulation range 7.5 ... 103 psi | | LT | | Pressure regulation range 07.5 ... 176 psi | | LT |
| | | Part No. | Type | | | Part No. | Type | |
| Basic Unit without pressure gauge | | | | | | | | |
| Mini | – | 546452 | LR-D-7-MINI | 1D | | 546424 | LR-D-MINI | 1D |
| Midi | – | 546458 | LR-D-7-MIDI | 1D | | 546430 | 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

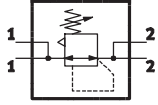


| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|---|-----------------|
| 1 | Mounting bracket HFOE | 235 |
| 2 | Regulator lock LRVS | 235 |
| 3 | Padlock LRVS-D | lrvs-d |
| 4 | Mounting bracket HR-D | 235 |
| 5 | Pressure gauge MA | 208 |
| 6 | Knurled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

Pressure Regulators LRB – Metric Series

Technical Data

FESTO



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 |

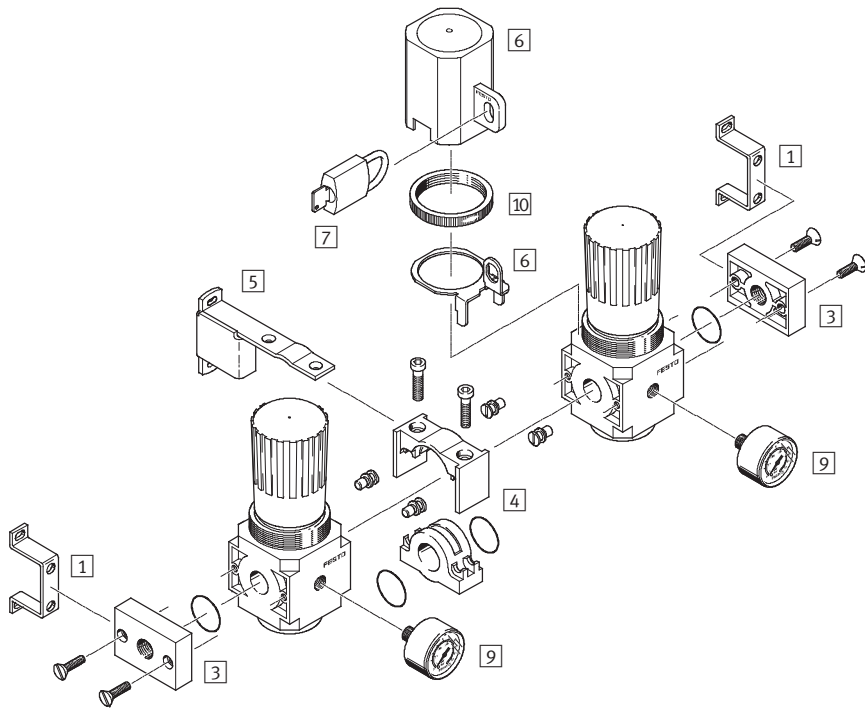
Pressure Regulators LRB – Metric Series

Ordering Data, Accessories

| 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



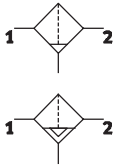
| Mounting attachments and accessories | → Page/Internet |
|---------------------------------------|-----------------|
| 1 Mounting bracket HRB | 235 |
| 3 Connecting plates LRBAS | lrbas |
| 4 Connecting kit HRBC | 235 |
| 5 Mounting bracket HRBK ¹⁾ | 235 |

| 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 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | G1 |
| Design | Sintered filter with centrifugal separation | | | | | | | |
| Type of mounting | Via accessories | | | | | | | |
| | In-line installation | | | | | | | |
| Mounting position | Vertical $\pm 5^\circ$ | | | | | | | |
| 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⁾ q _N [l/min] | | | | | | | | |
|---|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| Size | Micro | | Mini | | Midi | | Maxi | |
| Pneumatic connection | M5 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | G1 |
| Grade of filtration | 5 μm | 170 | 290 | 800 | 950 | 1,800 | 2,000 | 3,600 |
| | 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 | | Manual rotary / Fully automatic |
| Operating medium | Compressed air in accordance with ISO 8573-1:2010 [7:-:-] | | |
| Supply pressure [bar] | 0 ... 10 | | 0 ... 16 / 2 ... 12 |
| Ambient temperature [°C] | -10 ... +60 | | |

Filters LF – Metric Series

Ordering Data, Accessories

FESTO

| Ordering Data | | | | | | | | | |
|---|-------|------------|--------------------------|---------------------|----|---------------------------|-----------------|----|--|
| Condensate drain | Size | Connection | Grade of filtration 5 µm | | LT | Grade of filtration 40 µm | | LT | |
| | | | Part No. | Type | | Part No. | Type | | |
| 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 | | 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

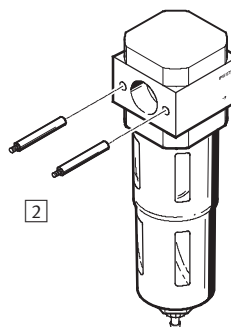
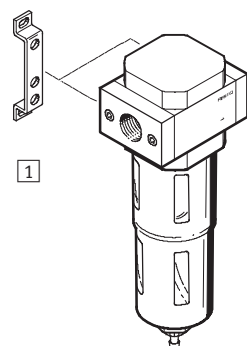
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

Basic unit for manifold assembly



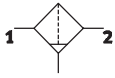
| Mounting attachments and accessories | → Page/Internet |
|--------------------------------------|-----------------|
| 1 Mounting bracket HFOE | 235 |

| 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

FESTO



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 | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | G1 |
| Design | Fibre filter | | | | | |
| Type of mounting | Via accessories | | | | | |
| | In-line installation | | | | | |
| Mounting position | Vertical $\pm 5^\circ$ | | | | | |
| Length [mm] | 40 | | 55 | | 66 | |
| Width [mm] | 40 (64) ¹⁾ | | 55 (85) ¹⁾ | | 66 (96) 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 | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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/m ³] | ≤ 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

FESTO

Ordering Data, Accessories

| Ordering Data – Fine filters LFMB | | | | | | | | | | | |
|---|------------|----------------------------------|-----------------|--|--|----|----------------------------------|-------------------|--|--|----|
| Grade of filtration 1 µm, metal bowl guard | | | | | | | | | | | |
| Size | Connection | Input pressure 1 ... 16 bar | | | | LT | Input pressure 1.5 ... 12 bar | | | | LT |
| | | Condensate drain turned manually | | | | | Condensate drain fully automatic | | | | |
| | | Part No. | Type | | | | Part No. | Type | | | |
| 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 | | | | LT | Input pressure 1.5 ... 12 bar | | | | LT |
| | | Condensate drain turned manually | | | | | Condensate drain fully automatic | | | | |
| | | Part No. | Type | | | | Part No. | Type | | | |
| 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

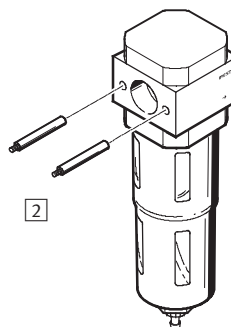
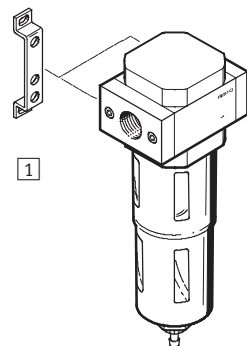
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

Basic unit for manifold assembly



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

| 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 mm²/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 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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⁾ q _N [l/min] | | | | | | | | |
|---|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| Size | Micro | | Mini | | Midi | | Maxi | |
| Pneumatic connection | M5 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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] | |
| Note on operating/pilot medium | Operation with lubricated medium not possible | |
| Supply pressure [bar] | 0 ... 10 | |
| 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 |

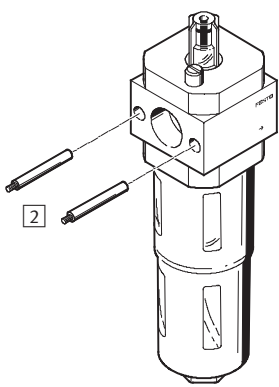
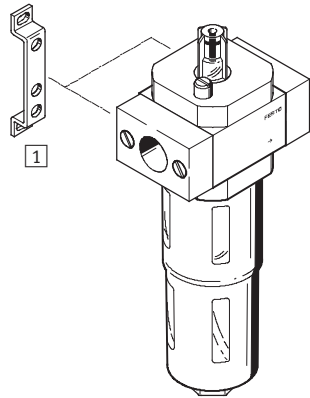
| Ordering Data – Basic Units, without Threaded Connecting Plates | | | | |
|---|------------|----------|--------------|----|
| Size | Connection | Part No. | Type | LT |
| Mini | – | 546431 | LOE-D-MINI-U | 1D |
| Midi | – | 546427 | LOE-D-MIDI-U | 1D |
| Maxi | – | 546517 | LOE-D-MAXI-U | 1D |

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

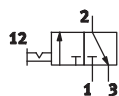


| Mounting attachments and accessories | | → Page/Internet |
|--------------------------------------|---|-----------------|
| 1 | Mounting bracket HFOE | 235 |
| 2 | Threaded bolt FRB (included in scope of delivery) | 235 |

Manual On-off Valves HE – Metric Series

Technical Data

FESTO



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 |

Manual On-off Valves HE – Metric Series

Ordering Data, Accessories

FESTO

| 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

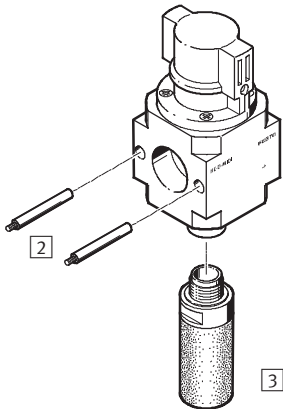
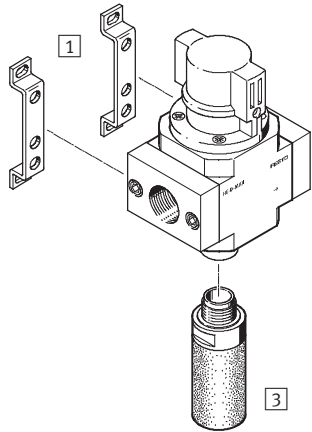
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

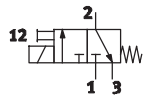
Basic unit for manifold assembly



| 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 |

Electric On-off Valves HEE – Metric Series

Ordering Data, Accessories

FESTO

| 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 |
| Midi | – | 172959 | HEE-D-MIDI-24 | 1D | 172960 | HEE-D-MIDI-110 |
| Maxi | – | 172962 | HEE-D-MAXI-24 | 1D | 172963 | HEE-D-MAXI-110 |

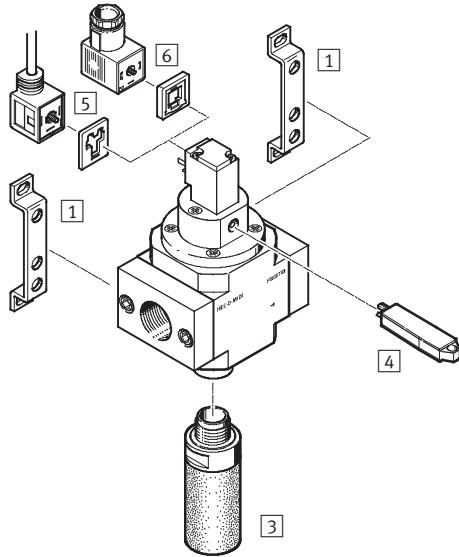
LT = Lead time

1D typically ships same day/next day

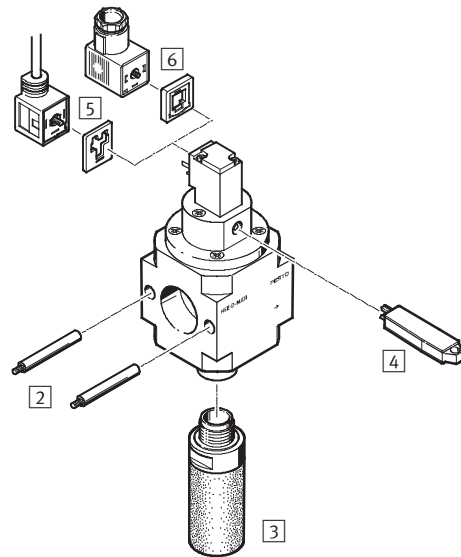
3D typically ships within 3 days

Accessories Overview

Individual device



Basic unit for manifold assembly



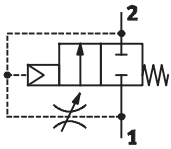
| Mounting attachments and accessories | → Page/Internet |
|---|-----------------|
| 1 Mounting bracket HFOE | 235 |
| 3 Silencer U | 236 |
| 4 Non-detenting manual override tool AHB-MD/MF/MY | 236 |
| 5 Plug socket with cable KMEB | kmeb |
| 6 Plug socket MSSD-EB | mssd-eb |

| 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

FESTO



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 | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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⁾ q _N [l/min] | | | | | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| Size | Mini | | Midi | | Maxi | |
| Pneumatic connection | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | 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

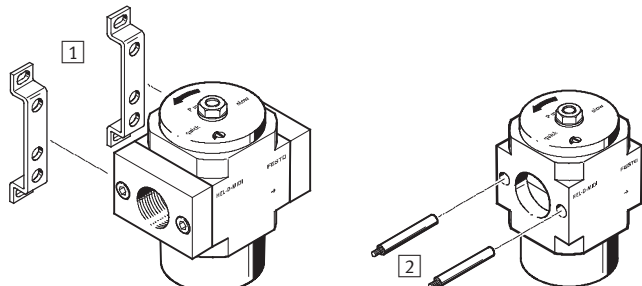
| Ordering Data | | | | |
|--|------------|----------|----------------|----|
| Gradual pressure build-up, 2/2-way valve, normally closed, operating pressure 3 ... 16 bar | | | | |
| Size | Connection | Part No. | Type | LT |
| With threaded connecting plates | | | | |
| Mini | G1/8 | 165076 | HEL-1/8-D-MINI | 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

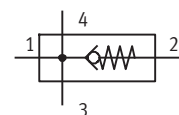
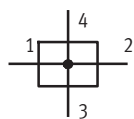
Accessories Overview

| 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

FESTO



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⁾ | | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ G1 |
| Pneumatic connection 3 | | G $\frac{1}{8}$ | G $\frac{1}{4}$ | | G $\frac{1}{2}$ | | G $\frac{3}{4}$ |
| Pneumatic connection 4 | | M5 | G $\frac{1}{4}$ | | | | |
| 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⁾ qn [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 |

Branching Modules FRM/FRZ – Metric Series

Ordering Data, Accessories

FESTO

| 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 |
| | Part No. | Type | | LT |
| 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

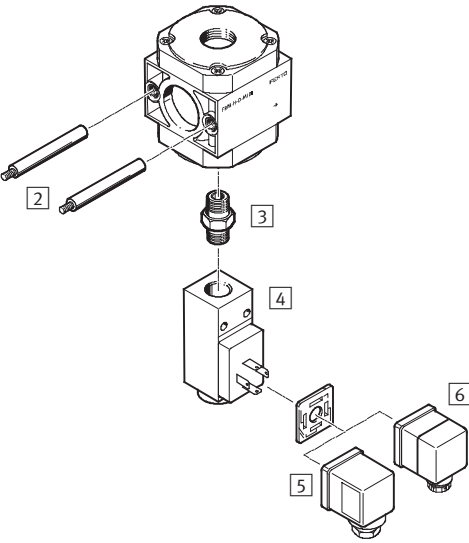
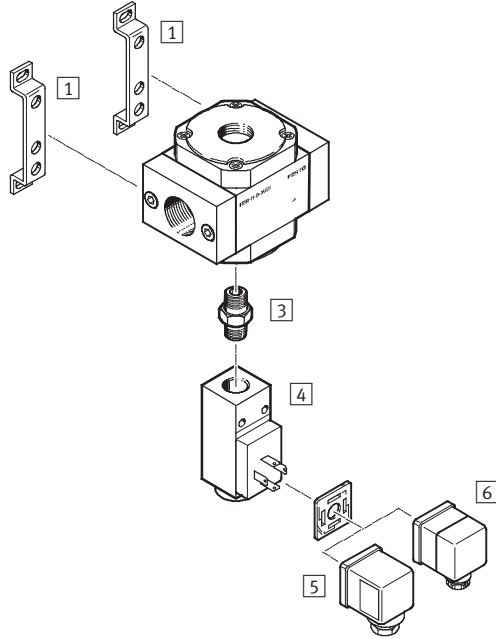
1D typically ships same day/next day

3D typically ships within 3 days

Accessories Overview

Individual device

Basic unit for manifold assembly



| 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 |

| 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

FESTO



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 | | Part No. | Type |
| | | | [bar] | [psi] | | |
| 27 | MICRO | M5 | 0 ... 10 | – | 526323 | MA-27-10-M5 |
| | | | – | 0 ... 160 | 527405 | MA-27-160-M5-PSI |
| 40 | MINI | G $\frac{1}{8}$ | 0 ... 10 | 0 ... 145 | 359874 | MA-40-10-1/8 |
| | | | 0 ... 16 | 0 ... 240 | 345395 | MA-40-16-1/8 |
| 50 | MIDI/MAXI | G $\frac{1}{4}$ | 0 ... 10 | 0 ... 160 | 359873 | MA-50-10-1/4 |
| | | | 0 ... 16 | 0 ... 240 | 356759 | MA-50-16-1/4 |

LT = Lead time

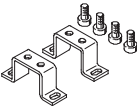
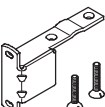
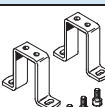

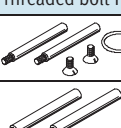
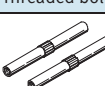
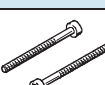
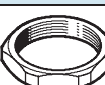


1D typically ships same day/next day

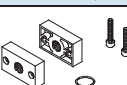
3D typically ships within 3 days

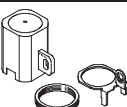
Accessories – Metric Series

Ordering Data

FESTO

| 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 |
| | | 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 |


Accessories – Metric Series



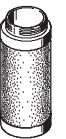

Ordering Data

FESTO

| Ordering Data – Sensors | | | |
|---|-----------------|----------|-----------------------|
| Designation | Connection | Part No. | Order code |
| Pressure switch PEV Technical Data → 150 | | | |
|  | G $\frac{1}{4}$ | 10773 | PEV- $\frac{1}{4}$ -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 | | | |
|  | G $\frac{1}{8}$ | 6841 | U- $\frac{1}{8}$ -B |
| | G $\frac{1}{4}$ | 6842 | U- $\frac{1}{4}$ -B |
| | G $\frac{3}{8}$ | 6844 | U- $\frac{3}{8}$ -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

Festo Customer Interaction Center
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com



4 Regional Service Center
7777 Columbia Road
Mason, OH 45040

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