



- **Sturdy and versatile metallic series**
- **4 sizes:**
MICRO, MINI, MIDI and MAXI
- **10 connection sizes**
- **2 pressure ranges:**
7 and 12 bar
- **Broad range of functions**

The D series: Service units for the harshest operating conditions

**D for durability:**

Even at first impression, the D series communicates maximum sturdiness and reliability. No wonder given the metal housing, the all-metal bowl guard and the sturdy fittings.

Cleanliness across the board:

A choice of four different sizes (D Micro to D Maxi) makes the D series suitable for many industries and all installation conditions. The variety of filters and micro filter functionalities from 40 µm to 5 µm and 1 µm right on down to 0.01 µm speaks for itself. Add to this the active carbon filter functionality and even contaminants and oil can be filtered with ease. The moisture content of the compressed air is reduced to the required level using the membrane dryer – maintenance-free!

D for desirable:

Extremely sturdy with high flow rates across all sizes. The perfect marriage of performance and reliability. The D series modules offer a broad range of flow characteristics from 450 l/min to 12,500 l/min.

The D series includes a range that facilitates peak flow values even in the cramped spaces normally encountered in the electronics and light assembly industries: the space-optimised D Micro service units.

D for direct ordering:

It goes without saying that you can order individual modules directly. But why not try the new alternative from Festo? 12 pre-assembled service units with various equipment variants. Over 400 in fact, available directly ex-stock.

Durable with high flow rates in all sizes from MICRO to MAXI



All-metal bowl guard



450 ... 12,500 l/min



Micro – Maxi: D series

Sturdy thanks to all-metal bowl guard and extremely sturdy fittings.

High flow rates across all sizes.

Service units to suit a wide spectrum of space requirements, even down to the smallest thanks to D Micro.

Advantages for designers

Advantages for purchasers

Wide range of functions across four sizes

- Wealth of options ensures the right solution for every task
- Suitable service units for a wide range of space requirements, even down to the smallest thanks to D Micro

- Cost savings through straightforward fulfilment of industry-specific requirements
- Low investment costs thanks to a precise product selection system based on compressed air requirement

High-quality and sturdy product, easy servicing and maintenance

- All compressed air qualities to DIN ISO 8573-1 at Festo
- Machine downtimes are reduced to a minimum

- Reduced maintenance overheads and easy servicing save time and money
- Follow-up costs are kept low thanks to the long service life

Developed by Festo's pneumatic specialists

- 'Everything from a single source' guarantees excellent selection options and high availability of the selected components (which have been designed to complement each other perfectly)

- Low investment costs and cost transparency increase the cost-effectiveness of the system

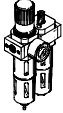
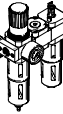
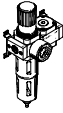
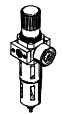
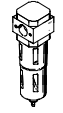
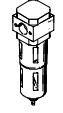
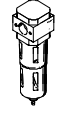
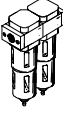
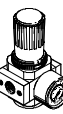
D series service units

Product range overview



D series service units

1.0

Type	Size	Pneumatic connection										Pressure regulation range [bar]			Grade of filtration [µm]			
		M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	0.5 ...	0.5 ...	2.5 ...	0.01	1	5	40
Service units																		
	Micro	■	■	■	-	-	-	-	-	■	■	■	-	-	-	■	-	
	Mini	-	-	■	■	■	-	-	-	-	-	■	-	-	-	■	■	
	Midi	-	-	-	■	■	■	■	-	-	-	■	-	-	-	■	■	
	Maxi	-	-	-	-	-	■	■	■	-	-	-	■	-	-	■	■	
Service unit combinations																		
	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Mini	-	-	■	■	-	-	-	-	-	-	■	■	-	-	-	■	
	Midi	-	-	-	■	■	■	-	-	-	-	■	■	-	-	-	■	
	Maxi	-	-	-	-	-	■	■	-	-	-	■	■	-	-	-	■	
	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Mini	-	-	■	■	-	-	-	-	-	-	■	■	-	-	-	■	
	Midi	-	-	-	■	■	■	-	-	-	-	■	■	-	-	-	■	
	Maxi	-	-	-	-	-	■	■	-	-	-	■	■	-	-	-	■	
Individual devices																		
	Micro	■	■	■	-	-	-	-	-	■	■	■	-	-	-	■	-	
	Mini	-	-	■	■	■	-	-	-	-	-	■	■	-	-	-	■	
	Midi	-	-	-	■	■	■	■	-	-	-	■	■	-	-	-	■	
	Maxi	-	-	-	-	-	■	■	■	-	-	■	■	-	-	-	■	
	Micro	■	■	■	-	-	-	-	-	■	■	-	-	-	-	■	-	
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	-	■	■	
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	-	■	■	
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	-	■	■	
	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	■	■	-	
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	■	■	-	
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	■	■	-	
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	■	■	-	
	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	-	-	-	
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	-	-	-	
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	-	-	-	
	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	■	■	-	
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	■	■	-	
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	■	■	-	
	Micro	■	■	■	-	-	-	-	-	■	■	■	-	-	-	-	-	
	Mini	-	-	■	■	■	-	-	-	-	-	■	■	-	-	-	-	
	Midi	-	-	-	■	■	■	■	-	-	-	■	■	-	-	-	-	
	Maxi	-	-	-	-	-	■	■	■	-	-	■	■	-	-	-	-	

D series service units

Product range overview

Type	Size	Bowl guard		Condensate drain			Pressure indication		Actuator lock		Supply voltage			Options			→ Page
		Metal bowl guard	Plastic bowl	Manual rotary	Semi-automatic	Fully automatic	With pressure gauge	Without pressure gauge	Rotary knob with detent	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	Directly actuated pressure regulator with integrated return flow function	Pilot actuated pressure regulator with integrated return flow function	Differential pressure indicator	
Service units																	
FRC/FRCS	Micro	-	■	■	■	-	■	■	■	-	-	-	-	-	-	-	3 / 1.1-2
	Mini	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Midi	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	■	■	■	-	-	-	■	■	-	
Service unit combinations																	
FRC-K FRCS-K	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 / 1.1-19
	Mini	■	-	■	-	■	■	-	■	■	-	-	-	-	-	-	
	Midi	■	-	■	-	■	■	-	■	■	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	-	■	■	-	-	-	■	■	-	
LFR-K LFRS-K	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 / 1.1-42
	Mini	■	-	■	-	■	■	-	■	■	■	-	-	-	-	-	
	Midi	■	-	■	-	■	■	-	■	■	■	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	-	■	■	■	-	-	■	■	-	
Individual devices																	
Filter regulators LFR/LFRS	Micro	-	■	■	■	-	■	■	■	-	-	-	-	-	-	-	3 / 1.2-3
	Mini	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Midi	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	■	■	■	-	-	-	■	■	-	
Filters LF	Micro	-	■	■	■	-	-	-	-	-	-	-	-	-	-	-	3 / 1.3-2
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	-	-	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	-	
Fine and micro filters LFMA/LFMB	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 / 1.3-12
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
Active carbon filters LFX	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 / 1.3-21
	Mini	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Midi	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Maxi	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Filter combinations LFMBA	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 / 1.3-27
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
Pressure regulators LR/LRS	Micro	-	-	-	-	-	■	■	■	-	-	-	-	-	-	-	3 / 1.4-3
	Mini	-	-	-	-	-	■	■	■	■	-	-	-	■	-	-	
	Midi	-	-	-	-	-	■	■	■	■	-	-	-	■	-	-	
	Maxi	-	-	-	-	-	■	■	■	■	-	-	-	■	■	-	

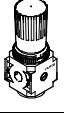
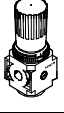
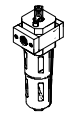
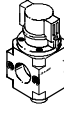

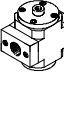
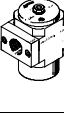
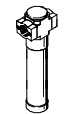


D series service units

Product range overview



D series service units

1.0

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

D series service units

Product range overview



Type	Size	Bowl guard		Pressure indication		Actuator lock		Supply voltage			Options	→ Page
		Metal bowl guard	Plastic bowl	With pressure gauge	Without pressure gauge	Rotary knob with detent	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC		
Individual devices												
Pressure regulators LRB/LRBS	Micro	-										3 / 1.4-16
	Mini	-	-	-	■	■	■	-	-	-	-	
	Midi	-	-	-	■	■	■	-	-	-	-	
	Maxi	-	-									
Pressure regulator combinations LRB/LRBS-K	Micro	-										3 / 1.4-21
	Mini	-	-	-	■	■	■	-	-	-	-	
	Midi	-	-	-	■	■	■	-	-	-	-	
	Maxi	-	-									
Lubricators LOE	Micro	-	■	-	■	-	-	-	-	-	-	3 / 1.5-2
	Mini	■	-	-	■	-	-	-	-	-	-	
	Midi	■	-	-	■	-	-	-	-	-	-	
	Maxi	■	-	-	■	-	-	-	-	-	-	
On-off valves HE	Micro	-										3 / 1.6-1
	Mini	-	-	-	■	■	-	-	-	-	-	
	Midi	-	-	-	■	■	-	-	-	-	-	
	Maxi	-	-	-	■	■	-	-	-	-	-	
On-off valves, electrical HEE	Micro	-										3 / 1.6-7
	Mini	-	-	-	■	-	-	■	■	■	-	
	Midi	-	-	-	■	-	-	■	■	■	-	
	Maxi	-	-	-	■	-	-	■	■	■	-	
On-off valves, pneumatic HEP	Micro	-										3 / 1.6-13
	Mini	-	-	-	■	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	
Soft-start valves HEL	Micro	-										3 / 1.6-19
	Mini	-	-	-	■	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	
Membrane dryers LDM	Micro	-										3 / 1.7-0
	Mini	-										
	Midi	-										
	Maxi	■	-	-	■	-	-	-	-	-	-	
Branching modules FRM	Micro	-										3 / 1.8-1
	Mini	-	-	-	■	-	-	-	-	-	■	
	Midi	-	-	-	■	-	-	-	-	-	■	
	Maxi	-	-	-	■	-	-	-	-	-	■	
Distributor block FRZ	Micro	-										3 / 1.8-6
	Mini	-	-	-	■	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	

D series service units

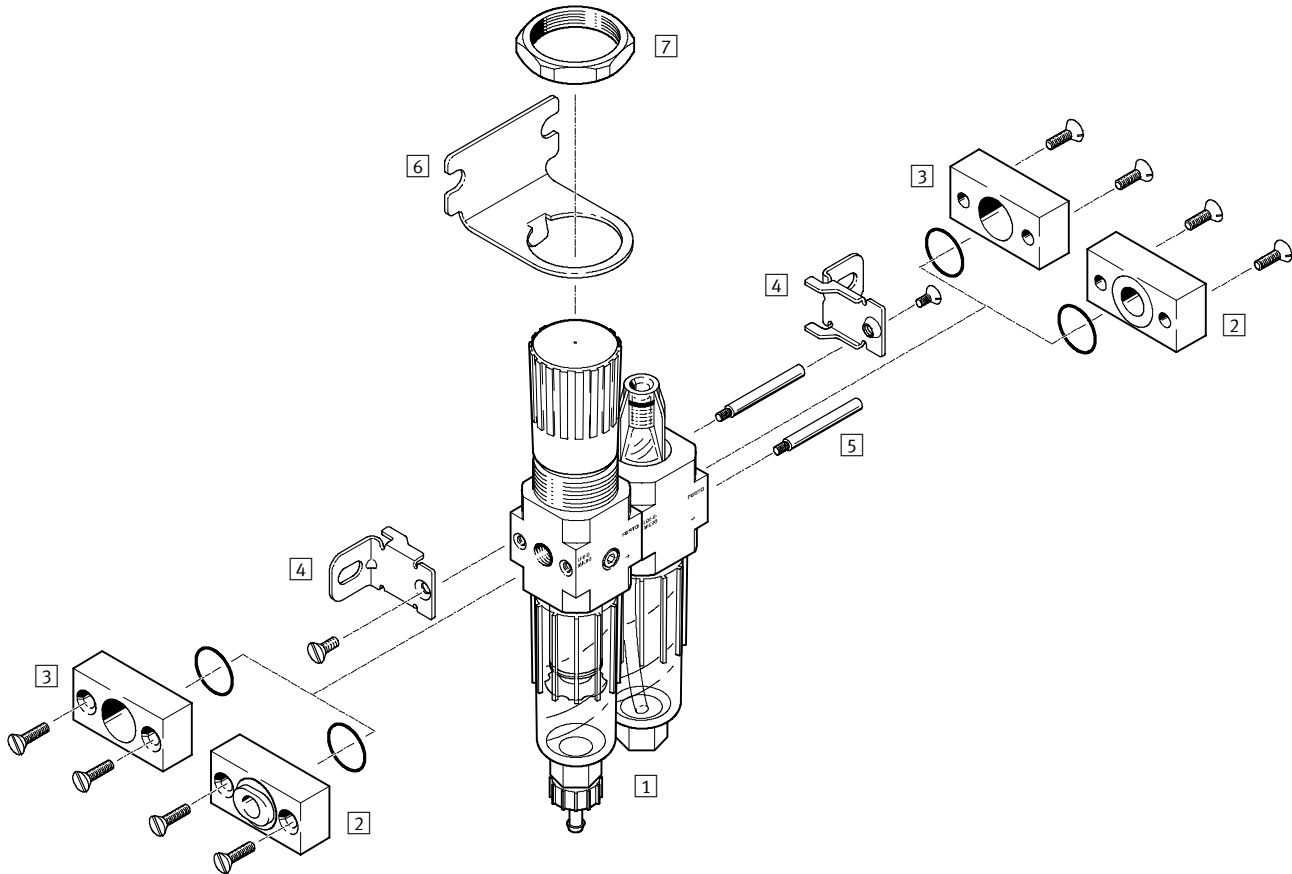
1.0

Service units FRC/FRCS, D series

Peripherals overview



Micro

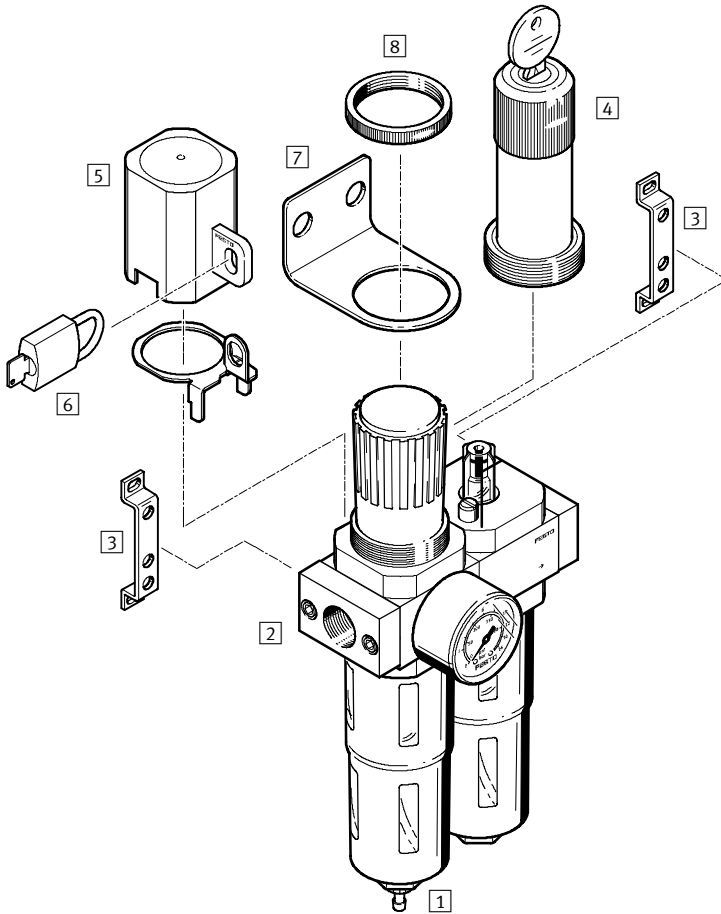


Mounting attachments and accessories	Brief description	→ Page
1 Service unit FRC	MICRO: Connection size M5, M7 in housing	3 / 1.1-3
2 Connection set PBL-QS4-D-MICRO PBL-QS6-D-MICRO	QS push-in fitting for tubing O.D. 4 and 6 mm	3 / 1.8-12
3 Connection set PBL-1/8-D-MICRO	Connection size G1/8	3 / 1.8-12
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE-D-MICRO are used to mount the service unit on a wall (they are not included in the scope of delivery)	3 / 1.8-8
5 Threaded pin (2 pcs.) FRB	For combination of individual devices	3 / 1.8-10
6 Mounting bracket HRS	Required for wall mounting (not included in the scope of delivery)	3 / 1.8-9
7 Hex nut HMR	Required for securing via the mounting bracket HRS (included in the scope of delivery)	3 / 1.8-11

Service units FRC/FRCS, D series

Peripherals overview

Mini/Midi/Maxi



Mounting attachments and accessories	Brief description	→ Page
1 Service unit FRC/FRCS	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.1-3
2 Connecting plates	The service units FRC/FRCS are available with connecting plates (included in the scope of delivery)	-
3 Mounting bracket (2 pcs.) HFOE	Design: HFOE-D-MINI HFOE-D-MIDI/MAXI (not included in the scope of delivery)	3 / 1.8-8
4 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	-
5 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
6 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
7 Mounting bracket HR-D-...	Required for wall mounting (not included in the scope of delivery)	3 / 1.8-10
8 Knurled nut	The knurled nut is included in the scope of delivery	-

Service units FRC/FRCS, D series

Type codes



D series service units
Service units

1.1

FRC – 3/4 – D – – 5M – 0 – DI – MAXI – A

Basic function

FRC	Service unit
FRCS	Service unit, lockable

Pneumatic connection

M5	Thread M5
M7	Thread M7
QS4	Push-in fitting QS4
QS6	Push-in fitting QS6
1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4
1	Thread G1

Series

D	Series
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Pressure regulation range

	0.5 ... 12 bar
7	0.5 ... 7 bar

Grade of filtration

	40 µm
5M	5 µm

Pressure gauge

	With pressure gauge
0	Without pressure gauge

Function (Maxi size only)

DI	Directly actuated pressure regulator with integrated return flow function
----	---

Size

MICRO	Grid dimension 25 mm (without connecting plates)
MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)
MAXI	Grid dimension 66 mm (without connecting plates)

Condensate drain

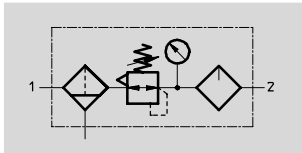
	Turned manually
H	Semi-automatic
A	Fully automatic

Service units FRC/FRCS, D series

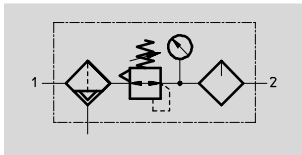
Technical data

Function

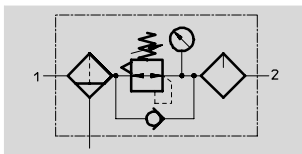
FRC/FRCS-...-D-...
Condensate drain
turned manually



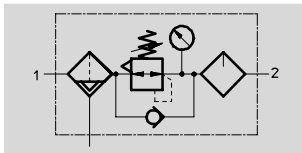
semi- or fully automatic



FRC/FRCS-...-D-DI-MAXI
Condensate drain
turned manually



fully automatic



- - Flow rate
90 ... 8700 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
1 ... 16 bar



- Filter, regulator and lubricator functions in a single unit
- High flow rate and highly efficient removal of contaminants
- Good regulating characteristics with minimal pressure hysteresis
- Setting values are secured by locking the rotary knob
- Lockable rotary knob
- Two pressure regulation ranges: 0.5 ... 7 bar and 0.5 ... 12 bar
- Two pressure gauge connections for different fitting options
- Choice of filter cartridges: 5 µm or 40 µm
- With manual, semi-automatic or fully automatic condensate drain

General technical data																
Size	Micro					Mini			Midi				Maxi			
Pneumatic connection	M5	M7	G1/8	QS4	QS6	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1	
Operating medium	Compressed air					Compressed air										
Design	Filter regulator					Filter regulator										
	Proportional standard mist lubricator					Proportional standard mist lubricator										
Type of mounting	Via accessories					Via accessories										
	In-line installation					In-line installation										
Assembly position	Vertical ±5°					Vertical ±5°										
Grade of filtration [µm]	5					5 or 40										
Max. hysteresis [bar]	0.3					0.2									0.4	
Pressure regulation range [bar]	0.5 ... 7					0.5 ... 7					0.5 ... 12					
						0.5 ... 7					0.5 ... 12					
Pressure indication	Via pressure gauge					Via pressure gauge										
	M5 prepared					G1/8 prepared			G1/4 prepared			G1/4 prepared				
Max. condensate volume [cm ³]	3					22			43				80 ¹⁾			
Input pressure [bar]																
Condensate drain	turned manually					1 ... 10										1 ... 16
	semi-automatic					1 ... 10										-
	fully automatic					-										1.5 ... 12

1) The max. condensate volume for the FRC/FRCS-...-DI-MAXI is 43 cm³.

Service units FRC/FRCS, D series

Technical data



D series service units
Service units

1.1

Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	Female thread		Connecting plate		
	M5	M7	G1/8	QS4	QS6
Micro					
FRC/FRCS	90	170	140	100	140

- 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.

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
FRC/FRCS-...-D-...(-A)	700	1000	1200	–	–	–
FRC/FRCS-...-D-7-...(-A)	800	1300	1500	–	–	–
FRC/FRCS-...-D-5M-...(-A)	600	850	1050	–	–	–
Midi						
FRC/FRCS-...-D-...(-A)	–	1500	2000	2600	2600	–
FRC/FRCS-...-D-7-...(-A)	–	1700	2000	2800	2800	–
FRC/FRCS-...-D-5M-...(-A)	–	1300	1700	1800	2100	–
Maxi						
FRC/FRCS-...-D-...(-A)	–	–	–	7600	8300	8500
FRC/FRCS-...-D-7-...(-A)	–	–	–	7700	8500	8700
FRC/FRCS-...-D-5M-...(-A)	–	–	–	6800	7000	7200
Maxi – Directly actuated pressure regulator with integrated return flow function						
FRC/FRCS-...-D-...(-A)	–	–	–	2000	4100	2500
FRC/FRCS-...-D-7-...(-A)	–	–	–	5000	4600	4300
FRC/FRCS-...-D-5M-...(-A)	–	–	–	1900	3200	3500

- 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.

Screw-in depth of connecting thread [mm]					
Connection	M5	M7	G1/8	QS4	QS6
Micro					
In housing	5	6	–	–	–
In connecting plates	–	–	8	–	–

Ambient conditions		Micro	Mini	Midi	Maxi
Ambient temperature	[°C]	–10 ... +60			
Temperature of medium	[°C]	–10 ... +60			
Corrosion resistance class	CRC ¹⁾	2			

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

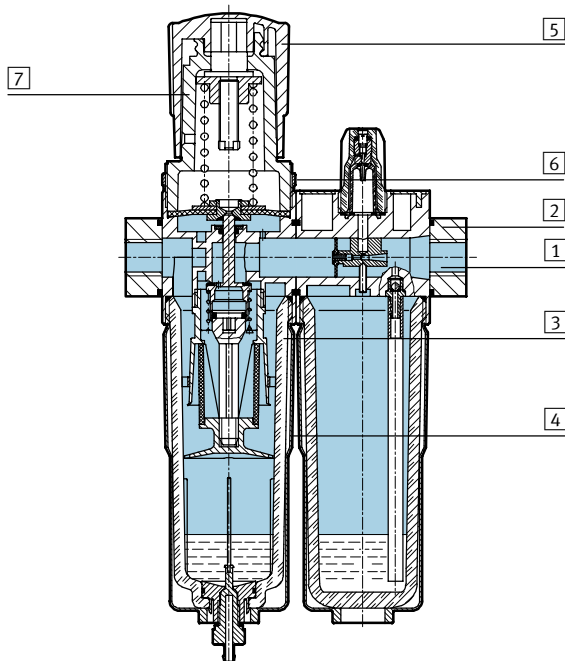
Service units FRC/FRCS, D series

Technical data

Weight [g]						
Size	Micro		Mini	Midi	Maxi	
	Female thread	Connecting plate			Connection G1/2, G3/4	Connection G1
With pressure gauge						
FRC-...	113	133	660	1440	2390	2520
FRC-...-DI	-	-	-	-	2670	2670
FRCS-...	-	-	760	1680	2490	2620
FRCS-...-DI	-	-	-	-	2950	2950
Without pressure gauge						
FRC-...	103	123	600	1350	2280	2460
FRC-...-DI	-	-	-	-	2600	2600
FRCS-...	-	-	700	1590	2380	2560
FRCS-...-DI	-	-	-	-	2880	2880

Materials

Sectional view



Service units	Micro	Mini/Midi/Maxi
1 Housing	Wrought aluminium alloy	Die-cast zinc
2 Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
3 Bowl	Polycarbonate	Polycarbonate
4 Metal bowl guard	-	Aluminium
5 Regulating knob	Polyacetal	Polyacetal
6 Knurled nut	Wrought aluminium alloy	Aluminium
7 Support	Polycarbonate	-
- Seals	Nitrile rubber	Nitrile rubber

Service units FRC/FRCS, D series

Technical data

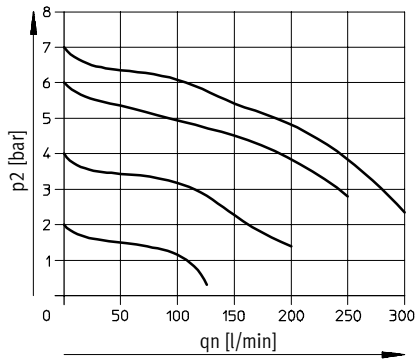


D series service units
Service units

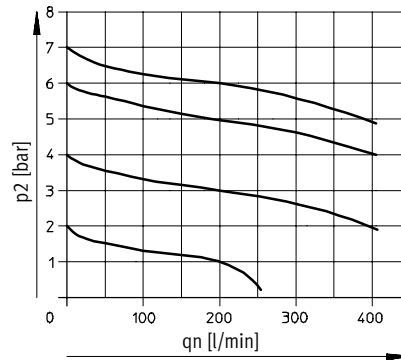
1.1

Standard flow rate q_n as a function of the output pressure p_2

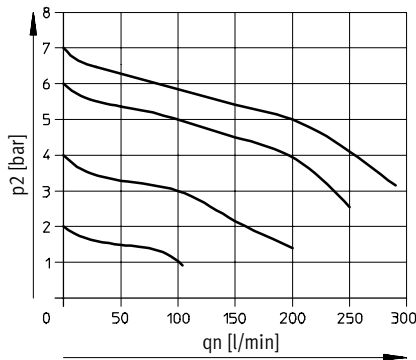
FRC-M5-...-MICRO



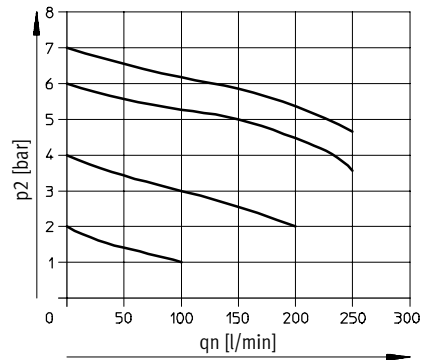
FRC-M7-...-MICRO B



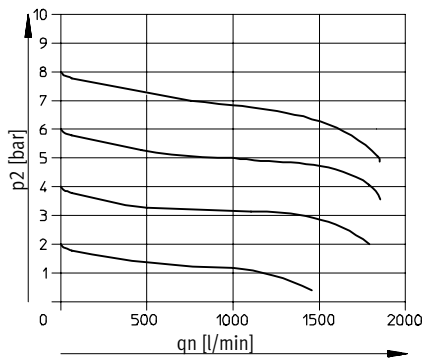
FRC-QS4-...-MICRO



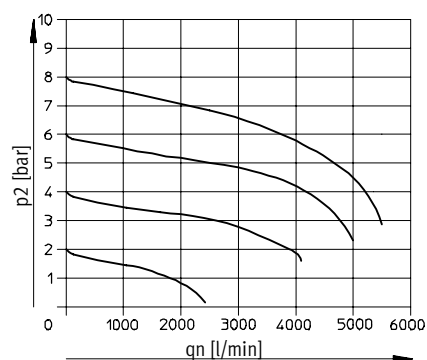
FRC-QS6-...-MICRO and FRC-1/8-...-MICRO



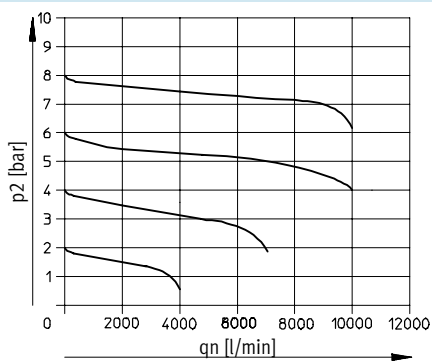
FRC/FRCS-1/4-D-MINI



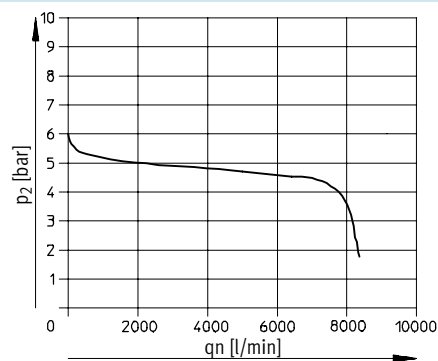
FRC/FRCS-1/2-D-MIDI



FRC/FRCS-1-D-MAXI



FRC/FRCS-1-D-DI-MAXI



Primary pressure $p_1 = 10$ bar

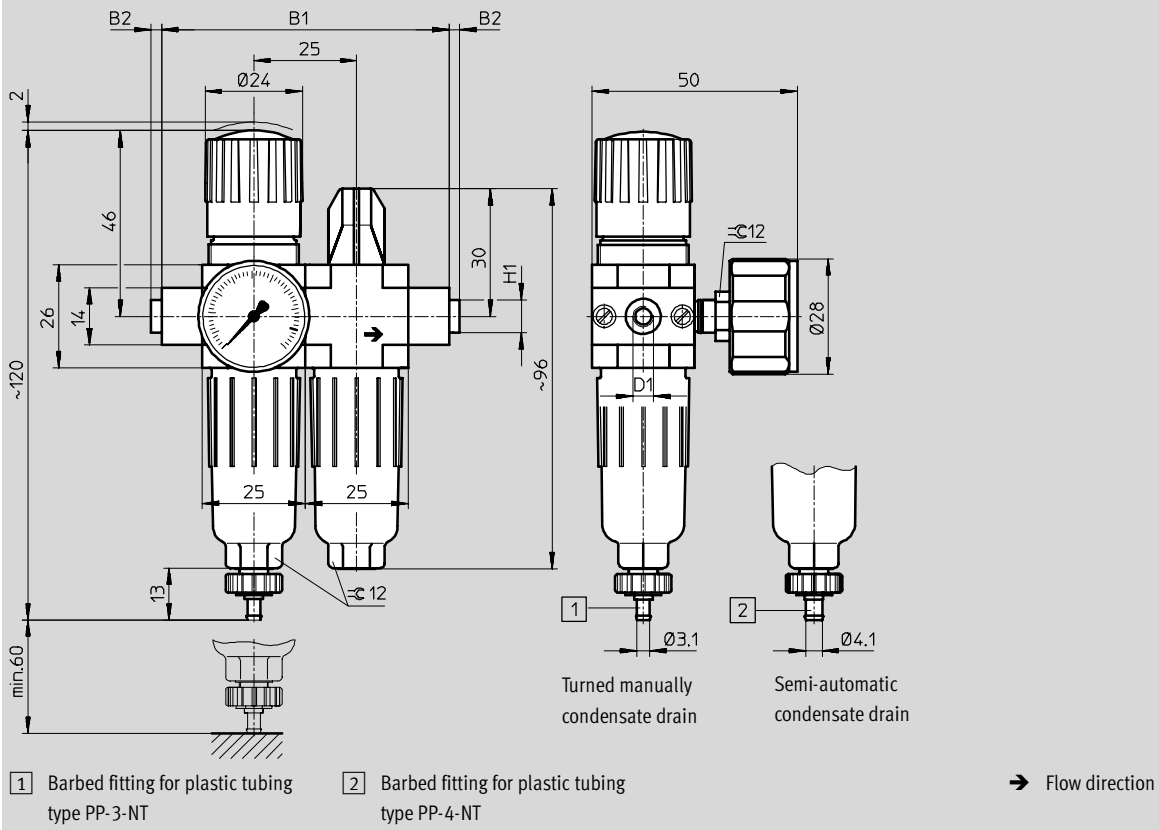
Service units FRC/FRCS, D series

Technical data



Dimensions

Micro



Type	B1	B2	D1	H1
FRC-M5-D-7-5M-MICRO (H)	50	-	M5	-
FRC-M7-D-7-5M-MICRO (H) B			M7	
FRC-1/8-D-7-5M-MICRO (H)			G1/8	
FRC-QS4-D-7-5M-MICRO (H)	70	~2.5	QS4	~8
FRC-QS6-D-7-5M-MICRO (H)			QS6	~10

Service units FRC/FRCS, D series

Technical data

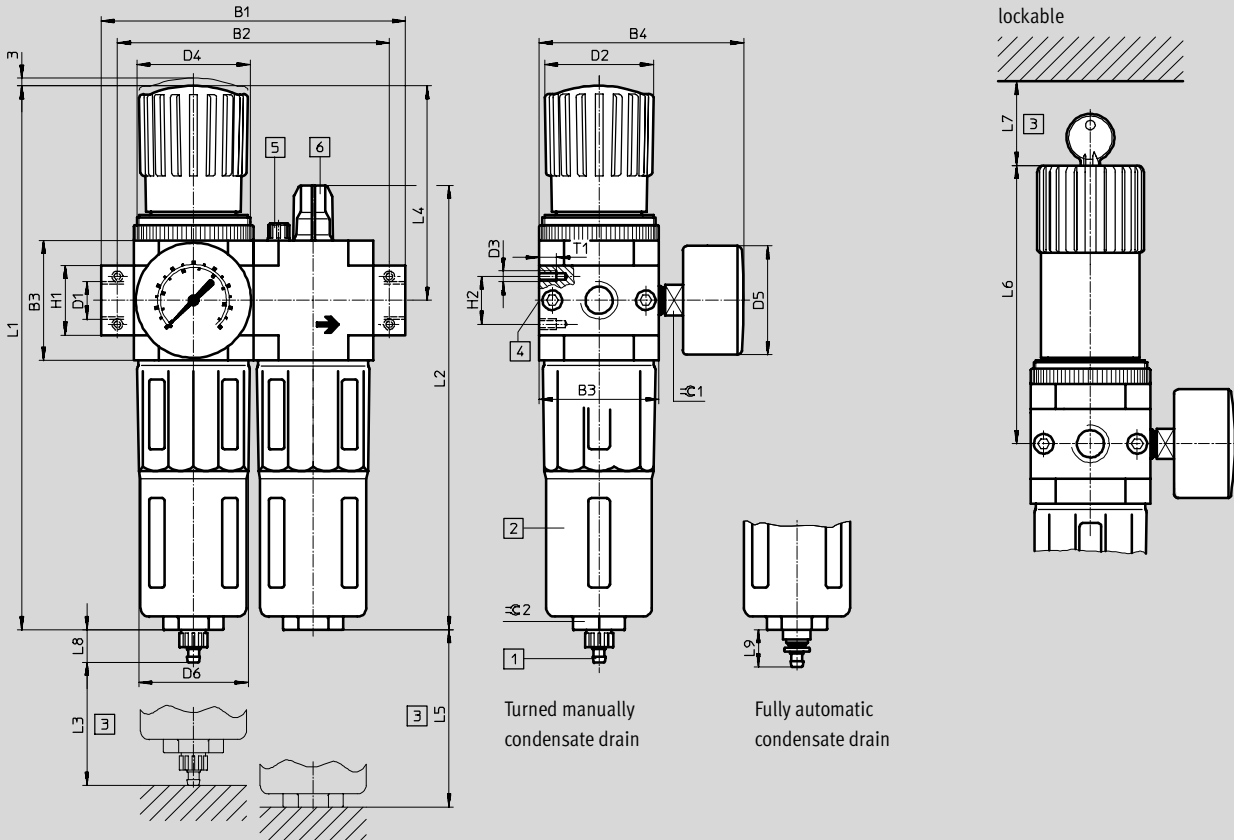


D series service units
Service units

1.1

Dimensions

Mini/Midi/Maxi



- 1 Barbed fitting for plastic tubing type PCN-4
- 2 Metal bowl guard
- 3 Installation dimensions
- 4 Second pressure gauge connection
- 5 Bleed screw for oil reservoir
- 6 Oil adjusting screw
- Flow direction

Type	B1	B2	B3	B4	D1	D2	D3	D4	D5	D6
Mini										
FRC/FRCS-1/8-D-MINI	104	92	40	76	G1/8	31	M4	M36x1.5	41	38
FRC/FRCS-1/4-D-MINI					G1/4					
FRC/FRCS-3/8-D-MINI	110				G3/8					
Midi										
FRC/FRCS-1/4-D-MIDI	140	125	55	95	G1/4	50	M5	M52x1.5	50	52
FRC/FRCS-3/8-D-MIDI					G3/8					
FRC/FRCS-1/2-D-MIDI					G1/2					
FRC/FRCS-3/4-D-MIDI					G3/4					
Maxi										
FRC/FRCS-1/2-D-MAXI	162	146	66	107	G1/2	31	M5	M36x1.5	50	65
FRC/FRCS-1/2-D-DI-MAXI						49		M52x1.5		
FRC/FRCS-3/4-D-MAXI					G3/4	31		M36x1.5		
FRC/FRCS-3/4-D-DI-MAXI						49		M52x1.5		
FRC/FRCS-1-D-MAXI	182	157			G1	31		M36x1.5		
FRC/FRCS-1-D-DI-MAXI						49		M52x1.5		

Service units FRC/FRCS, D series



Technical data

Type	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1	⌀ 1	⌀ 2	
Mini															
FRC/FRCS-1/8-D-MINI	20	11	193	169	60	69	100	98	60	15	19	7	14	22	
FRC/FRCS-1/4-D-MINI															
FRC/FRCS-3/8-D-MINI															
Midi															
FRC/FRCS-1/4-D-MIDI	32	22	250	204	80	99	120	130	60	15	19	8	14	24	
FRC/FRCS-3/8-D-MIDI															
FRC/FRCS-1/2-D-MIDI															
FRC/FRCS-3/4-D-MIDI															
Maxi															
FRC/FRCS-1/2-D-MAXI	32	22	252	228	90	82	150	111	60	15	19	8	14	24	
FRC/FRCS-1/2-D-DI-MAXI			275			105		135							
FRC/FRCS-3/4-D-MAXI			252			82		111							
FRC/FRCS-3/4-D-DI-MAXI			275			105		135							
FRC/FRCS-1-D-MAXI			40			252		82							111
FRC/FRCS-1-D-DI-MAXI						275		105							135

D series service units
Service units

1.1

Service units FRC/FRCS, D series



Technical data

D series service units
Service units

1.1


Ordering data			
Pressure regulation range 0.5 ... 7 bar			
Condensate drain	Size	Connection	Grade of filtration 5 µm
			Part No. Type
With pressure gauge			
Turned manually	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	527 860 FRC-M5-D-7-5M-MICRO
		M7	534 189 FRC-M7-D-7-5M-MICRO B New
		With threaded connecting plates	
		G ¹ / ₈	527 864 FRC- ¹ / ₈ -D-7-5M-MICRO
		With connecting plate and push-in fitting	
		QS4	527 876 FRC-QS4-D-7-5M-MICRO
		QS6	527 880 FRC-QS6-D-7-5M-MICRO
Semi-automatic	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	527 861 FRC-M5-D-7-5M-MICRO-H
		M7	534 190 FRC-M7-D-7-5M-MICRO-H B New
		With threaded connecting plates	
		G ¹ / ₈	527 865 FRC- ¹ / ₈ -D-7-5M-MICRO-H
		With connecting plate and push-in fitting	
		QS4	527 877 FRC-QS4-D-7-5M-MICRO-H
		QS6	527 881 FRC-QS6-D-7-5M-MICRO-H
Without pressure gauge			
Turned manually	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	527 862 FRC-M5-D-7-0-5M-MICRO
		M7	534 191 FRC-M7-D-7-0-5M-MICRO B New
		With threaded connecting plates	
		G ¹ / ₈	527 866 FRC- ¹ / ₈ -D-7-0-5M-MICRO
		With connecting plate and push-in fitting	
		QS4	527 878 FRC-QS4-D-7-0-5M-MICRO
		QS6	527 882 FRC-QS6-D-7-0-5M-MICRO
Semi-automatic	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	527 863 FRC-M5-D-7-0-5M-MICRO-H
		M7	534 192 FRC-M7-D-7-0-5M-MICRO-H B New
		With threaded connecting plates	
		G ¹ / ₈	527 867 FRC- ¹ / ₈ -D-7-0-5M-MICRO-H
		With connecting plate and push-in fitting	
		QS4	527 879 FRC-QS4-D-7-0-5M-MICRO-H
		QS6	527 883 FRC-QS6-D-7-0-5M-MICRO-H

Service units FRC/FRCS, D series

Technical data

FESTO

Ordering data							
Pressure regulation range 0.5 ... 12 bar, metal bowl guard							
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm		
			Part No.	Type	Part No.	Type	
With pressure gauge							
Turned manually	Mini	G $\frac{1}{8}$	162 770	FRC- $\frac{1}{8}$ -D-5M-MINI	159 604	FRC- $\frac{1}{8}$ -D-MINI	
		G $\frac{1}{4}$	162 771	FRC- $\frac{1}{4}$ -D-5M-MINI	159 605	FRC- $\frac{1}{4}$ -D-MINI	
		G $\frac{3}{8}$	162 772	FRC- $\frac{3}{8}$ -D-5M-MINI	162 734	FRC- $\frac{3}{8}$ -D-MINI	
	Midi	G $\frac{1}{4}$	186 499	FRC- $\frac{1}{4}$ -D-5M-MIDI	186 497	FRC- $\frac{1}{4}$ -D-MIDI	
		G $\frac{3}{8}$	162 773	FRC- $\frac{3}{8}$ -D-5M-MIDI	159 588	FRC- $\frac{3}{8}$ -D-MIDI	
		G $\frac{1}{2}$	162 774	FRC- $\frac{1}{2}$ -D-5M-MIDI	159 590	FRC- $\frac{1}{2}$ -D-MIDI	
		G $\frac{3}{4}$	162 775	FRC- $\frac{3}{4}$ -D-5M-MIDI	162 735	FRC- $\frac{3}{4}$ -D-MIDI	
	Maxi	G $\frac{1}{2}$	186 507	FRC- $\frac{1}{2}$ -D-5M-MAXI	186 505	FRC- $\frac{1}{2}$ -D-MAXI	
		G $\frac{3}{4}$	162 776	FRC- $\frac{3}{4}$ -D-5M-MAXI	159 606	FRC- $\frac{3}{4}$ -D-MAXI	
		G1	162 777	FRC-1-D-5M-MAXI	159 607	FRC-1-D-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	162 778	FRC- $\frac{1}{8}$ -D-5M-MINI-A	159 608	FRC- $\frac{1}{8}$ -D-MINI-A
G $\frac{1}{4}$			162 779	FRC- $\frac{1}{4}$ -D-5M-MINI-A	159 609	FRC- $\frac{1}{4}$ -D-MINI-A	
G $\frac{3}{8}$			162 780	FRC- $\frac{3}{8}$ -D-5M-MINI-A	162 736	FRC- $\frac{3}{8}$ -D-MINI-A	
Midi		G $\frac{1}{4}$	186 502	FRC- $\frac{1}{4}$ -D-5M-MIDI-A	186 500	FRC- $\frac{1}{4}$ -D-MIDI-A	
		G $\frac{3}{8}$	162 781	FRC- $\frac{3}{8}$ -D-5M-MIDI-A	159 589	FRC- $\frac{3}{8}$ -D-MIDI-A	
		G $\frac{1}{2}$	162 782	FRC- $\frac{1}{2}$ -D-5M-MIDI-A	159 591	FRC- $\frac{1}{2}$ -D-MIDI-A	
		G $\frac{3}{4}$	162 783	FRC- $\frac{3}{4}$ -D-5M-MIDI-A	162 737	FRC- $\frac{3}{4}$ -D-MIDI-A	
Maxi		G $\frac{1}{2}$	186 510	FRC- $\frac{1}{2}$ -D-5M-MAXI-A	186 508	FRC- $\frac{1}{2}$ -D-MAXI-A	
		G $\frac{3}{4}$	162 784	FRC- $\frac{3}{4}$ -D-5M-MAXI-A	159 610	FRC- $\frac{3}{4}$ -D-MAXI-A	
		G1	162 785	FRC-1-D-5M-MAXI-A	159 611	FRC-1-D-MAXI-A	
Without pressure gauge							
Turned manually		Mini	G $\frac{1}{8}$	192 650	FRC- $\frac{1}{8}$ -D-5M-O-MINI	162 738	FRC- $\frac{1}{8}$ -D-O-MINI
	G $\frac{1}{4}$		192 651	FRC- $\frac{1}{4}$ -D-5M-O-MINI	162 739	FRC- $\frac{1}{4}$ -D-O-MINI	
	G $\frac{3}{8}$		192 652	FRC- $\frac{3}{8}$ -D-5M-O-MINI	162 740	FRC- $\frac{3}{8}$ -D-O-MINI	
	Midi	G $\frac{1}{4}$	192 653	FRC- $\frac{1}{4}$ -D-5M-O-MIDI	186 498	FRC- $\frac{1}{4}$ -D-O-MIDI	
		G $\frac{3}{8}$	192 654	FRC- $\frac{3}{8}$ -D-5M-O-MIDI	162 741	FRC- $\frac{3}{8}$ -D-O-MIDI	
		G $\frac{1}{2}$	192 655	FRC- $\frac{1}{2}$ -D-5M-O-MIDI	162 742	FRC- $\frac{1}{2}$ -D-O-MIDI	
		G $\frac{3}{4}$	192 656	FRC- $\frac{3}{4}$ -D-5M-O-MIDI	162 743	FRC- $\frac{3}{4}$ -D-O-MIDI	
	Maxi	G $\frac{1}{2}$	192 657	FRC- $\frac{1}{2}$ -D-5M-O-MAXI	186 506	FRC- $\frac{1}{2}$ -D-O-MAXI	
		G $\frac{3}{4}$	192 658	FRC- $\frac{3}{4}$ -D-5M-O-MAXI	162 744	FRC- $\frac{3}{4}$ -D-O-MAXI	
		G1	192 659	FRC-1-D-5M-O-MAXI	162 745	FRC-1-D-O-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	192 660	FRC- $\frac{1}{8}$ -D-5M-O-MINI-A	162 746	FRC- $\frac{1}{8}$ -D-O-MINI-A
G $\frac{1}{4}$			192 661	FRC- $\frac{1}{4}$ -D-5M-O-MINI-A	162 747	FRC- $\frac{1}{4}$ -D-O-MINI-A	
G $\frac{3}{8}$			192 662	FRC- $\frac{3}{8}$ -D-5M-O-MINI-A	162 748	FRC- $\frac{3}{8}$ -D-O-MINI-A	
Midi		G $\frac{1}{4}$	192 663	FRC- $\frac{1}{4}$ -D-5M-O-MIDI-A	186 501	FRC- $\frac{1}{4}$ -D-O-MIDI-A	
		G $\frac{3}{8}$	192 664	FRC- $\frac{3}{8}$ -D-5M-O-MIDI-A	162 749	FRC- $\frac{3}{8}$ -D-O-MIDI-A	
		G $\frac{1}{2}$	192 665	FRC- $\frac{1}{2}$ -D-5M-O-MIDI-A	162 750	FRC- $\frac{1}{2}$ -D-O-MIDI-A	
		G $\frac{3}{4}$	192 666	FRC- $\frac{3}{4}$ -D-5M-O-MIDI-A	162 751	FRC- $\frac{3}{4}$ -D-O-MIDI-A	
Maxi		G $\frac{1}{2}$	192 667	FRC- $\frac{1}{2}$ -D-5M-O-MAXI-A	186 509	FRC- $\frac{1}{2}$ -D-O-MAXI-A	
		G $\frac{3}{4}$	192 668	FRC- $\frac{3}{4}$ -D-5M-O-MAXI-A	162 752	FRC- $\frac{3}{4}$ -D-O-MAXI-A	
		G1	192 669	FRC-1-D-5M-O-MAXI-A	162 753	FRC-1-D-O-MAXI-A	

 Core Range

Service units FRC/FRCS, D series

Technical data



D series service units
Service units

1.1

Ordering data				
Pressure regulation range 0.5 ... 7 bar, metal bowl guard				
Condensate drain	Size	Connection	Grade of filtration 40 µm	
			Part No.	Type
With pressure gauge				
Turned manually	Mini	G $\frac{1}{8}$	162 754	FRC- $\frac{1}{8}$ -D-7-MINI
		G $\frac{1}{4}$	162 755	FRC- $\frac{1}{4}$ -D-7-MINI
		G $\frac{3}{8}$	162 756	FRC- $\frac{3}{8}$ -D-7-MINI
	Midi	G $\frac{1}{4}$	186 503	FRC- $\frac{1}{4}$ -D-7-MIDI
		G $\frac{3}{8}$	162 757	FRC- $\frac{3}{8}$ -D-7-MIDI
		G $\frac{1}{2}$	162 758	FRC- $\frac{1}{2}$ -D-7-MIDI
		G $\frac{3}{4}$	162 759	FRC- $\frac{3}{4}$ -D-7-MIDI
	Maxi	G $\frac{1}{2}$	186 511	FRC- $\frac{1}{2}$ -D-7-MAXI
		G $\frac{3}{4}$	162 760	FRC- $\frac{3}{4}$ -D-7-MAXI
G1		162 761	FRC-1-D-7-MAXI	
Fully automatic				
Fully automatic	Mini	G $\frac{1}{8}$	162 762	FRC- $\frac{1}{8}$ -D-7-MINI-A
		G $\frac{1}{4}$	162 763	FRC- $\frac{1}{4}$ -D-7-MINI-A
		G $\frac{3}{8}$	162 764	FRC- $\frac{3}{8}$ -D-7-MINI-A
	Midi	G $\frac{1}{4}$	186 504	FRC- $\frac{1}{4}$ -D-7-MIDI-A
		G $\frac{3}{8}$	162 765	FRC- $\frac{3}{8}$ -D-7-MIDI-A
		G $\frac{1}{2}$	162 766	FRC- $\frac{1}{2}$ -D-7-MIDI-A
		G $\frac{3}{4}$	162 767	FRC- $\frac{3}{4}$ -D-7-MIDI-A
	Maxi	G $\frac{1}{2}$	186 512	FRC- $\frac{1}{2}$ -D-7-MAXI-A
		G $\frac{3}{4}$	162 768	FRC- $\frac{3}{4}$ -D-7-MAXI-A
G1		162 769	FRC-1-D-7-MAXI-A	
Without pressure gauge				
Turned manually	Mini	G $\frac{1}{8}$	192 630	FRC- $\frac{1}{8}$ -D-7-O-MINI
		G $\frac{1}{4}$	192 631	FRC- $\frac{1}{4}$ -D-7-O-MINI
		G $\frac{3}{8}$	192 632	FRC- $\frac{3}{8}$ -D-7-O-MINI
	Midi	G $\frac{1}{4}$	192 633	FRC- $\frac{1}{4}$ -D-7-O-MIDI
		G $\frac{3}{8}$	192 634	FRC- $\frac{3}{8}$ -D-7-O-MIDI
		G $\frac{1}{2}$	192 635	FRC- $\frac{1}{2}$ -D-7-O-MIDI
		G $\frac{3}{4}$	192 636	FRC- $\frac{3}{4}$ -D-7-O-MIDI
	Maxi	G $\frac{1}{2}$	192 637	FRC- $\frac{1}{2}$ -D-7-O-MAXI
		G $\frac{3}{4}$	192 638	FRC- $\frac{3}{4}$ -D-7-O-MAXI
G1		192 639	FRC-1-D-7-O-MAXI	
Fully automatic				
Fully automatic	Mini	G $\frac{1}{8}$	192 640	FRC- $\frac{1}{8}$ -D-7-O-MINI-A
		G $\frac{1}{4}$	192 641	FRC- $\frac{1}{4}$ -D-7-O-MINI-A
		G $\frac{3}{8}$	192 642	FRC- $\frac{3}{8}$ -D-7-O-MINI-A
	Midi	G $\frac{1}{4}$	192 643	FRC- $\frac{1}{4}$ -D-7-O-MIDI-A
		G $\frac{3}{8}$	192 644	FRC- $\frac{3}{8}$ -D-7-O-MIDI-A
		G $\frac{1}{2}$	192 645	FRC- $\frac{1}{2}$ -D-7-O-MIDI-A
		G $\frac{3}{4}$	192 646	FRC- $\frac{3}{4}$ -D-7-O-MIDI-A
	Maxi	G $\frac{1}{2}$	192 647	FRC- $\frac{1}{2}$ -D-7-O-MAXI-A
		G $\frac{3}{4}$	192 648	FRC- $\frac{3}{4}$ -D-7-O-MAXI-A
G1		192 649	FRC-1-D-7-O-MAXI-A	

Service units FRC/FRCS, D series

Technical data

FESTO

Ordering data						
Pressure regulation range 0.5 ... 12 bar, directly actuated pressure regulator with integrated return flow function, metal bowl guard						
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
With pressure gauge						
Turned manually	Maxi	G1/2	192 406	FRC-1/2-D-5M-DI-MAXI	192 404	FRC-1/2-D-DI-MAXI
		G3/4	192 412	FRC-3/4-D-5M-DI-MAXI	192 410	FRC-3/4-D-DI-MAXI
		G1	192 418	FRC-1-D-5M-DI-MAXI	192 416	FRC-1-D-DI-MAXI
Fully automatic	Maxi	G1/2	192 424	FRC-1/2-D-5M-DI-MAXI-A	192 422	FRC-1/2-D-DI-MAXI-A
		G3/4	192 430	FRC-3/4-D-5M-DI-MAXI-A	192 428	FRC-3/4-D-DI-MAXI-A
		G1	192 436	FRC-1-D-5M-DI-MAXI-A	192 434	FRC-1-D-DI-MAXI-A
Without pressure gauge						
Turned manually	Maxi	G1/2	192 407	FRC-1/2-D-5M-O-DI-MAXI	192 405	FRC-1/2-D-O-DI-MAXI
		G3/4	192 413	FRC-3/4-D-5M-O-DI-MAXI	192 411	FRC-3/4-D-O-DI-MAXI
		G1	192 419	FRC-1-D-5M-O-DI-MAXI	192 417	FRC-1-D-O-DI-MAXI
Fully automatic	Maxi	G1/2	192 425	FRC-1/2-D-5M-O-DI-MAXI-A	192 423	FRC-1/2-D-O-DI-MAXI-A
		G3/4	192 431	FRC-3/4-D-5M-O-DI-MAXI-A	192 429	FRC-3/4-D-O-DI-MAXI-A
		G1	192 437	FRC-1-D-5M-O-DI-MAXI-A	192 435	FRC-1-D-O-DI-MAXI-A

Ordering data						
Pressure regulation range 0.5 ... 7 bar, directly actuated pressure regulator with integrated return flow function, metal bowl guard						
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
With pressure gauge						
Turned manually	Maxi	G1/2	–		192 408	FRC-1/2-D-7-DI-MAXI
		G3/4	–		192 414	FRC-3/4-D-7-DI-MAXI
		G1	–		192 420	FRC-1-D-7-DI-MAXI
Fully automatic	Maxi	G1/2	–		192 426	FRC-1/2-D-7-DI-MAXI-A
		G3/4	–		192 432	FRC-3/4-D-7-DI-MAXI-A
		G1	–		192 438	FRC-1-D-7-DI-MAXI-A
Without pressure gauge						
Turned manually	Maxi	G1/2	–		192 409	FRC-1/2-D-7-O-DI-MAXI
		G3/4	–		192 415	FRC-3/4-D-7-O-DI-MAXI
		G1	–		192 421	FRC-1-D-7-O-DI-MAXI
Fully automatic	Maxi	G1/2	–		192 427	FRC-1/2-D-7-O-DI-MAXI-A
		G3/4	–		192 433	FRC-3/4-D-7-O-DI-MAXI-A
		G1	–		192 439	FRC-1-D-7-O-DI-MAXI-A

Service units FRC/FRCS, D series

Technical data



D series service units
Service units

1.1

Ordering data							
Pressure regulation range 0.5 ... 12 bar, metal bowl guard, lockable							
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm		
			Part No.	Type	Part No.	Type	
With pressure gauge							
Turned manually	Mini	G $\frac{1}{8}$	194 860	FRCS- $\frac{1}{8}$ -D-5M-MINI	194 852	FRCS- $\frac{1}{8}$ -D-MINI	
		G $\frac{1}{4}$	194 872	FRCS- $\frac{1}{4}$ -D-5M-MINI	194 864	FRCS- $\frac{1}{4}$ -D-MINI	
		G $\frac{3}{8}$	194 884	FRCS- $\frac{3}{8}$ -D-5M-MINI	194 876	FRCS- $\frac{3}{8}$ -D-MINI	
	Midi	G $\frac{1}{4}$	194 896	FRCS- $\frac{1}{4}$ -D-5M-MIDI	194 888	FRCS- $\frac{1}{4}$ -D-MIDI	
		G $\frac{3}{8}$	194 908	FRCS- $\frac{3}{8}$ -D-5M-MIDI	194 900	FRCS- $\frac{3}{8}$ -D-MIDI	
		G $\frac{1}{2}$	194 920	FRCS- $\frac{1}{2}$ -D-5M-MIDI	194 912	FRCS- $\frac{1}{2}$ -D-MIDI	
		G $\frac{3}{4}$	194 932	FRCS- $\frac{3}{4}$ -D-5M-MIDI	194 924	FRCS- $\frac{3}{4}$ -D-MIDI	
	Maxi	G $\frac{1}{2}$	194 944	FRCS- $\frac{1}{2}$ -D-5M-MAXI	194 936	FRCS- $\frac{1}{2}$ -D-MAXI	
		G $\frac{3}{4}$	194 956	FRCS- $\frac{3}{4}$ -D-5M-MAXI	194 948	FRCS- $\frac{3}{4}$ -D-MAXI	
		G1	194 968	FRCS-1-D-5M-MAXI	194 960	FRCS-1-D-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	194 862	FRCS- $\frac{1}{8}$ -D-5M-MINI-A	194 853	FRCS- $\frac{1}{8}$ -D-MINI-A
G $\frac{1}{4}$			194 874	FRCS- $\frac{1}{4}$ -D-5M-MINI-A	194 865	FRCS- $\frac{1}{4}$ -D-MINI-A	
G $\frac{3}{8}$			194 886	FRCS- $\frac{3}{8}$ -D-5M-MINI-A	194 877	FRCS- $\frac{3}{8}$ -D-MINI-A	
Midi		G $\frac{1}{4}$	194 898	FRCS- $\frac{1}{4}$ -D-5M-MIDI-A	194 889	FRCS- $\frac{1}{4}$ -D-MIDI-A	
		G $\frac{3}{8}$	194 910	FRCS- $\frac{3}{8}$ -D-5M-MIDI-A	194 901	FRCS- $\frac{3}{8}$ -D-MIDI-A	
		G $\frac{1}{2}$	194 922	FRCS- $\frac{1}{2}$ -D-5M-MIDI-A	194 913	FRCS- $\frac{1}{2}$ -D-MIDI-A	
		G $\frac{3}{4}$	194 934	FRCS- $\frac{3}{4}$ -D-5M-MIDI-A	194 925	FRCS- $\frac{3}{4}$ -D-MIDI-A	
Maxi		G $\frac{1}{2}$	194 946	FRCS- $\frac{1}{2}$ -D-5M-MAXI-A	194 937	FRCS- $\frac{1}{2}$ -D-MAXI-A	
		G $\frac{3}{4}$	194 958	FRCS- $\frac{3}{4}$ -D-5M-MAXI-A	194 949	FRCS- $\frac{3}{4}$ -D-MAXI-A	
		G1	194 970	FRCS-1-D-5M-MAXI-A	194 961	FRCS-1-D-MAXI-A	
Without pressure gauge							
Turned manually		Mini	G $\frac{1}{8}$	194 861	FRCS- $\frac{1}{8}$ -D-5M-O-MINI	194 854	FRCS- $\frac{1}{8}$ -D-O-MINI
	G $\frac{1}{4}$		194 873	FRCS- $\frac{1}{4}$ -D-5M-O-MINI	194 866	FRCS- $\frac{1}{4}$ -D-O-MINI	
	G $\frac{3}{8}$		194 885	FRCS- $\frac{3}{8}$ -D-5M-O-MINI	194 878	FRCS- $\frac{3}{8}$ -D-O-MINI	
	Midi	G $\frac{1}{4}$	194 897	FRCS- $\frac{1}{4}$ -D-5M-O-MIDI	194 890	FRCS- $\frac{1}{4}$ -D-O-MIDI	
		G $\frac{3}{8}$	194 909	FRCS- $\frac{3}{8}$ -D-5M-O-MIDI	194 902	FRCS- $\frac{3}{8}$ -D-O-MIDI	
		G $\frac{1}{2}$	194 921	FRCS- $\frac{1}{2}$ -D-5M-O-MIDI	194 914	FRCS- $\frac{1}{2}$ -D-O-MIDI	
		G $\frac{3}{4}$	194 933	FRCS- $\frac{3}{4}$ -D-5M-O-MIDI	194 926	FRCS- $\frac{3}{4}$ -D-O-MIDI	
	Maxi	G $\frac{1}{2}$	194 945	FRCS- $\frac{1}{2}$ -D-5M-O-MAXI	194 938	FRCS- $\frac{1}{2}$ -D-O-MAXI	
		G $\frac{3}{4}$	194 957	FRCS- $\frac{3}{4}$ -D-5M-O-MAXI	194 950	FRCS- $\frac{3}{4}$ -D-O-MAXI	
		G1	194 969	FRCS-1-D-5M-O-MAXI	194 962	FRCS-1-D-O-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	194 863	FRCS- $\frac{1}{8}$ -D-5M-O-MINI-A	194 855	FRCS- $\frac{1}{8}$ -D-O-MINI-A
G $\frac{1}{4}$			194 875	FRCS- $\frac{1}{4}$ -D-5M-O-MINI-A	194 867	FRCS- $\frac{1}{4}$ -D-O-MINI-A	
G $\frac{3}{8}$			194 887	FRCS- $\frac{3}{8}$ -D-5M-O-MINI-A	194 879	FRCS- $\frac{3}{8}$ -D-O-MINI-A	
Midi		G $\frac{1}{4}$	194 899	FRCS- $\frac{1}{4}$ -D-5M-O-MIDI-A	194 891	FRCS- $\frac{1}{4}$ -D-O-MIDI-A	
		G $\frac{3}{8}$	194 911	FRCS- $\frac{3}{8}$ -D-5M-O-MIDI-A	194 903	FRCS- $\frac{3}{8}$ -D-O-MIDI-A	
		G $\frac{1}{2}$	194 923	FRCS- $\frac{1}{2}$ -D-5M-O-MIDI-A	194 915	FRCS- $\frac{1}{2}$ -D-O-MIDI-A	
		G $\frac{3}{4}$	194 935	FRCS- $\frac{3}{4}$ -D-5M-O-MIDI-A	194 927	FRCS- $\frac{3}{4}$ -D-O-MIDI-A	
Maxi		G $\frac{1}{2}$	194 947	FRCS- $\frac{1}{2}$ -D-5M-O-MAXI-A	194 939	FRCS- $\frac{1}{2}$ -D-O-MAXI-A	
		G $\frac{3}{4}$	194 959	FRCS- $\frac{3}{4}$ -D-5M-O-MAXI-A	194 951	FRCS- $\frac{3}{4}$ -D-O-MAXI-A	
		G1	194 971	FRCS-1-D-5M-O-MAXI-A	194 963	FRCS-1-D-O-MAXI-A	

Service units FRC/FRCS, D series

Technical data



Ordering data				
Pressure regulation range 0.5 ... 7 bar, metal bowl guard, lockable				
Condensate drain	Size	Connection	Grade of filtration 40 µm	
			Part No.	Type
With pressure gauge				
Turned manually	Mini	G $\frac{1}{8}$	194 856	FRCS- $\frac{1}{8}$ -D-7-MINI
		G $\frac{1}{4}$	194 868	FRCS- $\frac{1}{4}$ -D-7-MINI
		G $\frac{3}{8}$	194 880	FRCS- $\frac{3}{8}$ -D-7-MINI
	Midi	G $\frac{1}{4}$	194 892	FRCS- $\frac{1}{4}$ -D-7-MIDI
		G $\frac{3}{8}$	194 904	FRCS- $\frac{3}{8}$ -D-7-MIDI
		G $\frac{1}{2}$	194 916	FRCS- $\frac{1}{2}$ -D-7-MIDI
		G $\frac{3}{4}$	194 928	FRCS- $\frac{3}{4}$ -D-7-MIDI
	Maxi	G $\frac{1}{2}$	194 940	FRCS- $\frac{1}{2}$ -D-7-MAXI
		G $\frac{3}{4}$	194 952	FRCS- $\frac{3}{4}$ -D-7-MAXI
		G1	194 964	FRCS-1-D-7-MAXI
Fully automatic				
Fully automatic	Mini	G $\frac{1}{8}$	194 858	FRCS- $\frac{1}{8}$ -D-7-MINI-A
		G $\frac{1}{4}$	194 870	FRCS- $\frac{1}{4}$ -D-7-MINI-A
		G $\frac{3}{8}$	194 882	FRCS- $\frac{3}{8}$ -D-7-MINI-A
	Midi	G $\frac{1}{4}$	194 894	FRCS- $\frac{1}{4}$ -D-7-MIDI-A
		G $\frac{3}{8}$	194 906	FRCS- $\frac{3}{8}$ -D-7-MIDI-A
		G $\frac{1}{2}$	194 918	FRCS- $\frac{1}{2}$ -D-7-MIDI-A
		G $\frac{3}{4}$	194 930	FRCS- $\frac{3}{4}$ -D-7-MIDI-A
	Maxi	G $\frac{1}{2}$	194 942	FRCS- $\frac{1}{2}$ -D-7-MAXI-A
		G $\frac{3}{4}$	194 954	FRCS- $\frac{3}{4}$ -D-7-MAXI-A
		G1	194 966	FRCS-1-D-7-MAXI-A
Without pressure gauge				
Turned manually	Mini	G $\frac{1}{8}$	194 857	FRCS- $\frac{1}{8}$ -D-7-O-MINI
		G $\frac{1}{4}$	194 869	FRCS- $\frac{1}{4}$ -D-7-O-MINI
		G $\frac{3}{8}$	194 881	FRCS- $\frac{3}{8}$ -D-7-O-MINI
	Midi	G $\frac{1}{4}$	194 893	FRCS- $\frac{1}{4}$ -D-7-O-MIDI
		G $\frac{3}{8}$	194 905	FRCS- $\frac{3}{8}$ -D-7-O-MIDI
		G $\frac{1}{2}$	194 917	FRCS- $\frac{1}{2}$ -D-7-O-MIDI
		G $\frac{3}{4}$	194 929	FRCS- $\frac{3}{4}$ -D-7-O-MIDI
	Maxi	G $\frac{1}{2}$	194 941	FRCS- $\frac{1}{2}$ -D-7-O-MAXI
		G $\frac{3}{4}$	194 953	FRCS- $\frac{3}{4}$ -D-7-O-MAXI
		G1	194 965	FRCS-1-D-7-O-MAXI
Fully automatic				
Fully automatic	Mini	G $\frac{1}{8}$	194 859	FRCS- $\frac{1}{8}$ -D-7-O-MINI-A
		G $\frac{1}{4}$	194 871	FRCS- $\frac{1}{4}$ -D-7-O-MINI-A
		G $\frac{3}{8}$	194 883	FRCS- $\frac{3}{8}$ -D-7-O-MINI-A
	Midi	G $\frac{1}{4}$	194 895	FRCS- $\frac{1}{4}$ -D-7-O-MIDI-A
		G $\frac{3}{8}$	194 907	FRCS- $\frac{3}{8}$ -D-7-O-MIDI-A
		G $\frac{1}{2}$	194 919	FRCS- $\frac{1}{2}$ -D-7-O-MIDI-A
		G $\frac{3}{4}$	194 931	FRCS- $\frac{3}{4}$ -D-7-O-MIDI-A
	Maxi	G $\frac{1}{2}$	194 943	FRCS- $\frac{1}{2}$ -D-7-O-MAXI-A
		G $\frac{3}{4}$	194 955	FRCS- $\frac{3}{4}$ -D-7-O-MAXI-A
		G1	194 967	FRCS-1-D-7-O-MAXI-A

Service units FRC/FRCS, D series



Technical data

D series service units
Service units

1.1

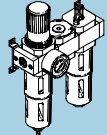
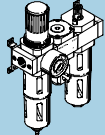
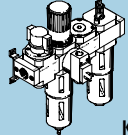
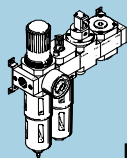
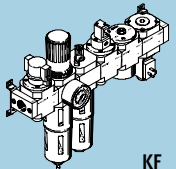
Ordering data						
Pressure regulation range 0.5 ... 12 bar, directly actuated pressure regulator with integrated return flow function, lockable						
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
With pressure gauge						
Turned manually	Maxi	G $\frac{1}{2}$	194 974	FRCS- $\frac{1}{2}$ -D-5M-DI-MAXI	194 972	FRCS- $\frac{1}{2}$ -D-DI-MAXI
		G $\frac{3}{4}$	194 980	FRCS- $\frac{3}{4}$ -D-5M-DI-MAXI	194 978	FRCS- $\frac{3}{4}$ -D-DI-MAXI
		G1	194 986	FRCS-1-D-5M-DI-MAXI	194 984	FRCS-1-D-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	194 992	FRCS- $\frac{1}{2}$ -D-5M-DI-MAXI-A	194 990	FRCS- $\frac{1}{2}$ -D-DI-MAXI-A
		G $\frac{3}{4}$	194 998	FRCS- $\frac{3}{4}$ -D-5M-DI-MAXI-A	194 996	FRCS- $\frac{3}{4}$ -D-DI-MAXI-A
		G1	195 004	FRCS-1-D-5M-DI-MAXI-A	195 002	FRCS-1-D-DI-MAXI-A
Without pressure gauge						
Turned manually	Maxi	G $\frac{1}{2}$	194 975	FRCS- $\frac{1}{2}$ -D-5M-O-DI-MAXI	194 973	FRCS- $\frac{1}{2}$ -D-O-DI-MAXI
		G $\frac{3}{4}$	194 981	FRCS- $\frac{3}{4}$ -D-5M-O-DI-MAXI	194 979	FRCS- $\frac{3}{4}$ -D-O-DI-MAXI
		G1	194 987	FRCS-1-D-5M-O-DI-MAXI	194 985	FRCS-1-D-O-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	194 993	FRCS- $\frac{1}{2}$ -D-5M-O-DI-MAXI-A	194 991	FRCS- $\frac{1}{2}$ -D-O-DI-MAXI-A
		G $\frac{3}{4}$	194 999	FRCS- $\frac{3}{4}$ -D-5M-O-DI-MAXI-A	194 997	FRCS- $\frac{3}{4}$ -D-O-DI-MAXI-A
		G1	195 005	FRCS-1-D-5M-O-DI-MAXI-A	195 003	FRCS-1-D-O-DI-MAXI-A

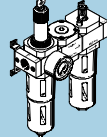
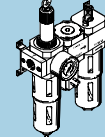
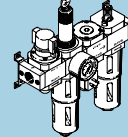
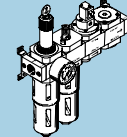
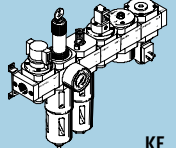
Ordering data						
Pressure regulation range 0.5 ... 7 bar, directly actuated pressure regulator with integrated return flow function, lockable						
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
With pressure gauge						
Turned manually	Maxi	G $\frac{1}{2}$	–		194 976	FRCS- $\frac{1}{2}$ -D-7-DI-MAXI
		G $\frac{3}{4}$	–		194 982	FRCS- $\frac{3}{4}$ -D-7-DI-MAXI
		G1	–		194 988	FRCS-1-D-7-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	–		194 994	FRCS- $\frac{1}{2}$ -D-7-DI-MAXI-A
		G $\frac{3}{4}$	–		195 000	FRCS- $\frac{3}{4}$ -D-7-DI-MAXI-A
		G1	–		195 006	FRCS-1-D-7-DI-MAXI-A
Without pressure gauge						
Turned manually	Maxi	G $\frac{1}{2}$	–		194 977	FRCS- $\frac{1}{2}$ -D-7-O-DI-MAXI
		G $\frac{3}{4}$	–		194 983	FRCS- $\frac{3}{4}$ -D-7-O-DI-MAXI
		G1	–		194 989	FRCS-1-D-7-O-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	–		194 995	FRCS- $\frac{1}{2}$ -D-7-O-DI-MAXI-A
		G $\frac{3}{4}$	–		195 001	FRCS- $\frac{3}{4}$ -D-7-O-DI-MAXI-A
		G1	–		195 007	FRCS-1-D-7-O-DI-MAXI-A

Service unit combinations FRC-K/FRCS-K, D series



Product range overview

FRC Rotary knob with detent	 KA	 KB	 KC	 KE	 KF
Individual devices					
On-off valve, manual	-	-	■	-	■
Filter regulator with pressure gauge	■	■	■	■	■
Lubricator	-	-	-	■	■
On-off valve with solenoid coil 24 V DC	-	-	-	■	■
Soft-start valve	-	-	-	■	■
Branching module with pressure switch	-	-	-	-	■
Branching module with pressure switch and lubricator	-	■	■	-	-
Branching module and lubricator	■	-	-	-	-
Mounting bracket and metal bowl guard	■	■	■	■	■
→ Page	3 / 1.1-20	3 / 1.1-24	3 / 1.1-28	3 / 1.1-32	3 / 1.1-36

FRCS Rotary knob with integrated lock	 KA	 KB	 KC	 KE	 KF
Individual devices					
On-off valve, manual	-	-	■	-	■
Filter regulator with pressure gauge	■	■	■	■	■
Lubricator	-	-	-	■	■
On-off valve with solenoid coil 24 V DC	-	-	-	■	■
Soft-start valve	-	-	-	■	■
Branching module with pressure switch	-	-	-	-	■
Branching module with pressure switch and lubricator	-	■	■	-	-
Branching module and lubricator	■	-	-	-	-
Mounting bracket and metal bowl guard	■	■	■	■	■
→ Page	3 / 1.1-20	3 / 1.1-24	3 / 1.1-28	3 / 1.1-32	3 / 1.1-36

D series service units
Service units

1.1

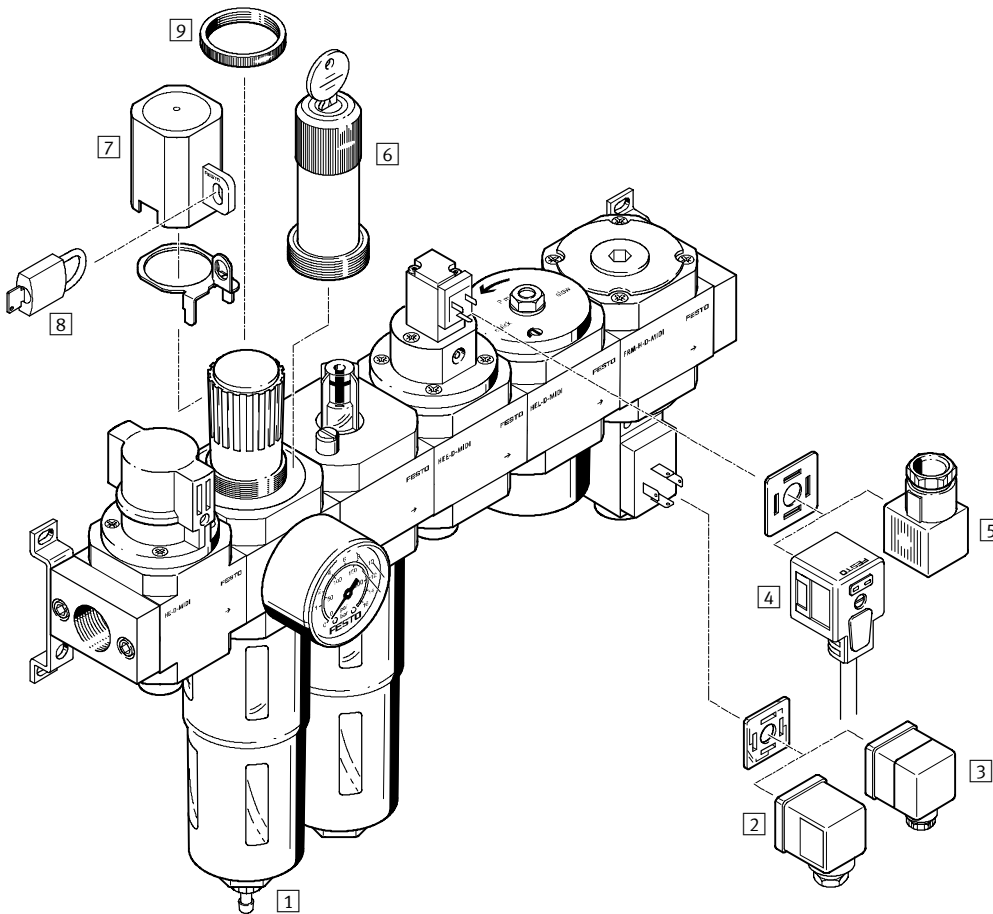
Service unit combinations FRC-K/FRCS-K, D series

Peripherals overview



D series service units
Service units

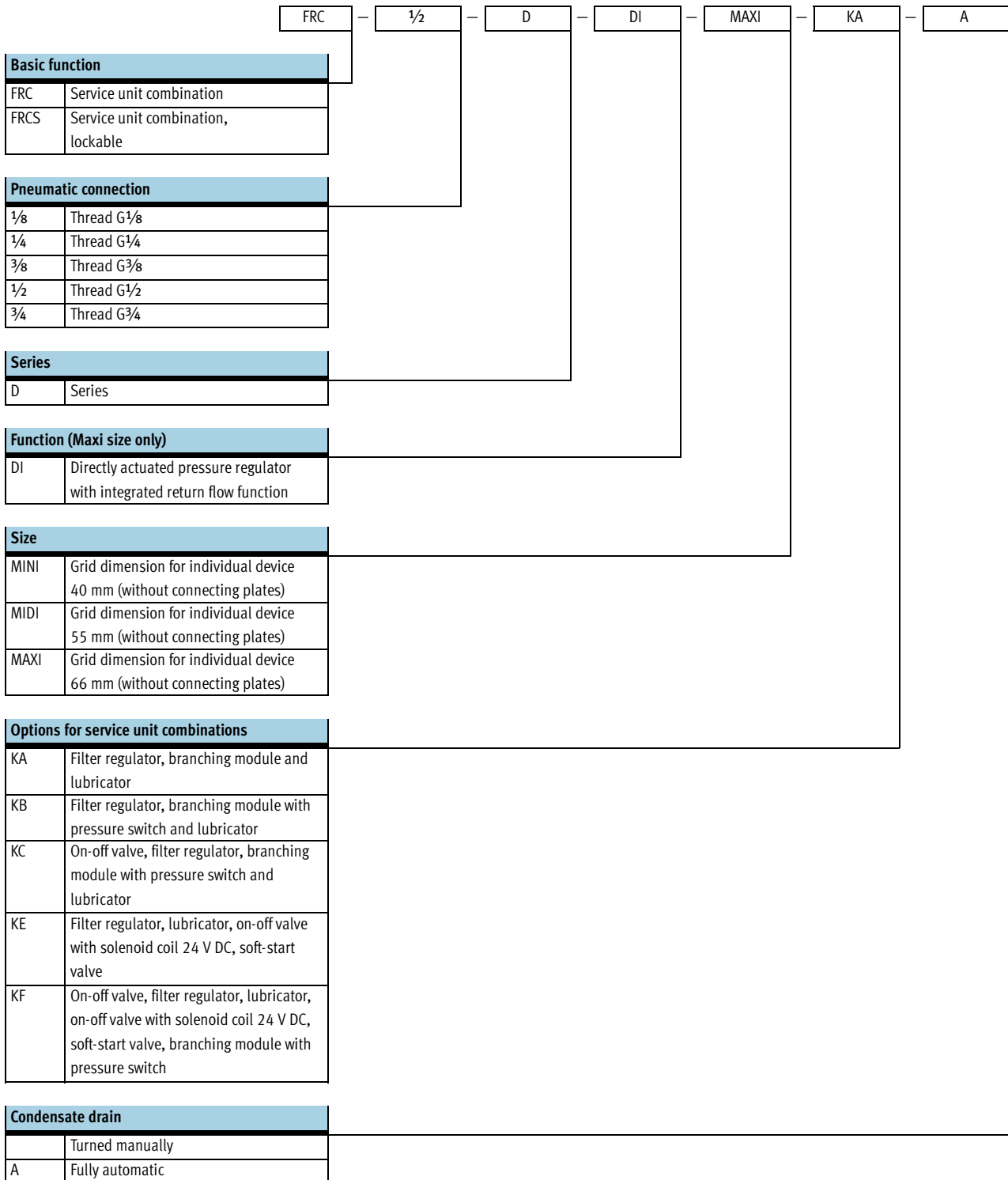
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Mounting attachments and accessories	Brief description	→ Page
1 Service unit combination FRC/FRCS-D-...-KF	This combination is made up of the following individual devices: on-off valve, filter regulator, lubricator, on-off valve with solenoid coil 24 V DC without plug socket, soft-start valve, branching module with pressure switch without plug socket MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$	3 / 1.1-36
2 Plug socket without LED for pressure switch PEV MSSD-C-4P	Accessory, optional	3 / 1.8-17
3 Angled plug socket with LED for pressure switch PEV PEV- $\frac{1}{4}$ -WD-LED-...	Accessory, optional	3 / 1.8-17
4 Plug socket with cable for on-off valve HEE KMEB-1	Accessory, optional	3 / 1.8-18
5 Plug socket for on-off valve HEE MSSD-EB	Accessory, optional	3 / 1.8-18
6 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	-
7 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
8 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
9 Knurled nut	The knurled nut is included in the scope of delivery	-

Service unit combinations FRC-K/FRCS-K, D series

Type codes

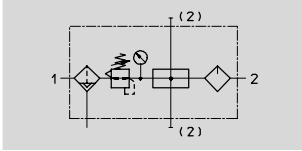


Service unit combinations FRC-KA/FRCS-KA, D series

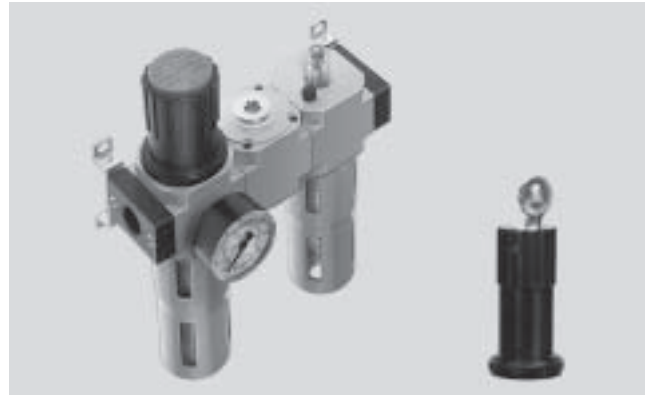
Technical data



Function



- - Flow rate
650 ... 8200 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
1 ... 16 bar



- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
- Lubricator LOE
 - metal bowl guard
- Mounting accessories

■ For lubricated and unlubricated compressed air

■ Two connections for unlubricated compressed air supply

■ One connection for lubricated compressed air supply

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{1}{2}$	G $\frac{3}{4}$
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical $\pm 5^\circ$						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.25	0.2	0.25	0.35	0.3	0.1	0.2
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	1 ... 16					
	fully automatic	1.5 ... 12					

1) The max. condensate volume for the FRC/FRCS-...-DI-MAXI-KA is 43 cm³.

Service unit combinations FRC-KA/FRCS-KA, D series

Technical data


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
FRC/FRCS-...-D-...	650	980	-	-	-
Midi					
FRC/FRCS-...-D-...	-	1400	2100	2500	-
Maxi					
FRC/FRCS-...-D-...	-	-	-	7500	8200
Maxi – Directly actuated pressure regulator with integrated return flow function					
FRC/FRCS-...-D-...	-	-	-	5200	5800

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

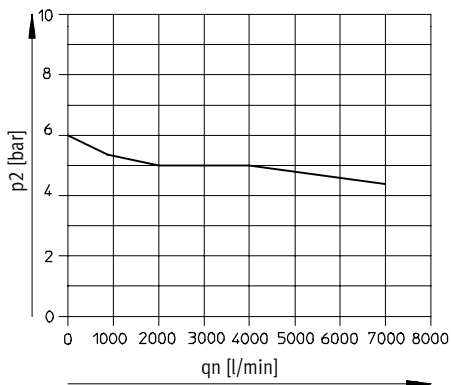
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
FRC	1000	2400	3500	3700
FRCS	1100	2640	3600	3940

 Note
 Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 FRC/FRCS-1/2-D-DI-MAXI-KA(-A)



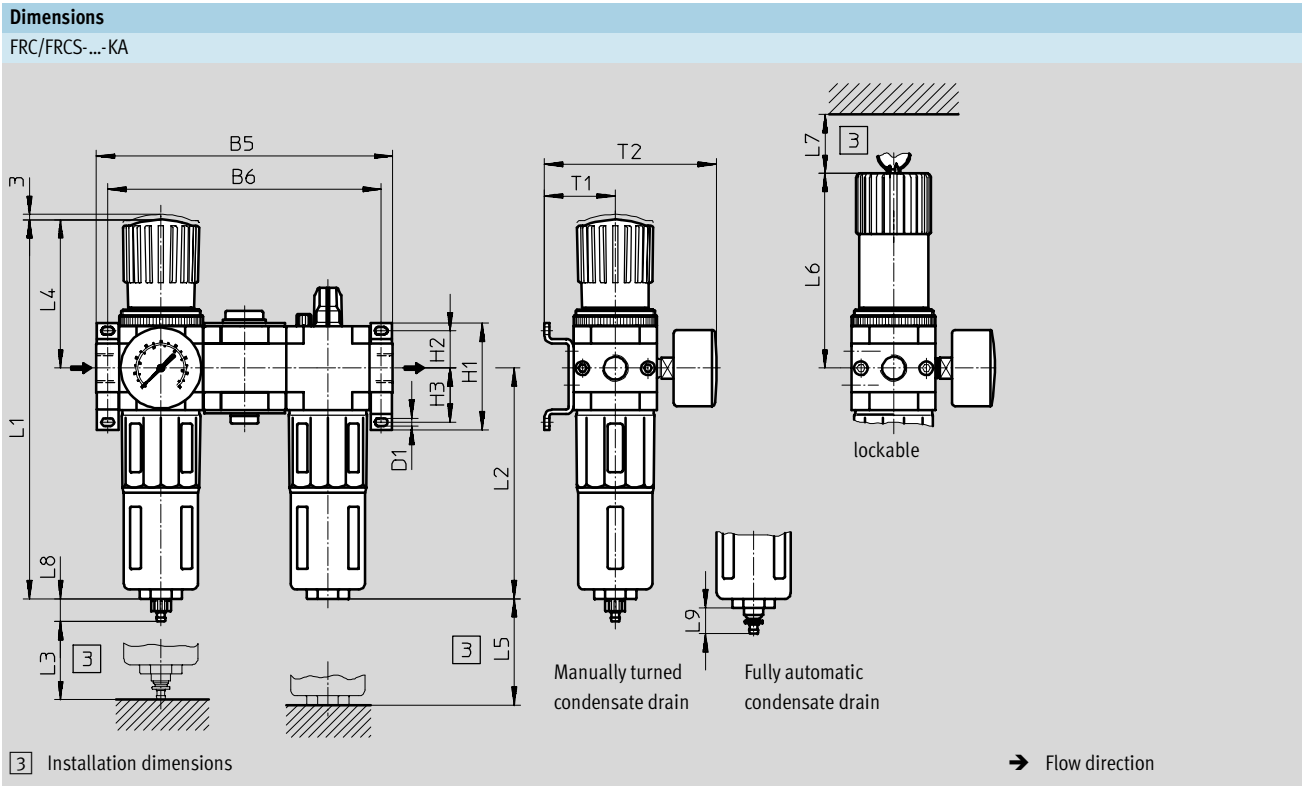
Primary pressure p1 = 10 bar

Service unit combinations FRC-KA/FRCS-KA, D series

Technical data



D series service units
Service units
1.1



Type	B5	B6	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1	T2
Mini																	
FRC-...-D-MINI-KA (A)	144	132	4.3	43	17.5	17.5	193	124	60	68	100	98	60	15	19	39	95
FRCS-...-D-MINI-KA (A)																	
Midi																	
FRC-...-D-MIDI-KA (A)	195	180	5.3	70	24.5	35.5	250	152	80	99	120	130	60	15	19	47	114
FRCS-...-D-MIDI-KA (A)																	
Maxi																	
FRC-...-D-MAXI-KA (A)	228	212	5.3	70	24.5	35.5	252	171	90	82	150	111	60	15	19	53	126
FRCS-...-D-MAXI-KA (A)							275			105		135					
FRC-...-D-DI-MAXI-KA (A)																	
FRCS-...-D-DI-MAXI-KA (A)																	

Service unit combinations FRC-KA/FRCS-KA, D series



Technical data

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module, lubricator					
Mini	G1/8	185 791	FRC-1/8-D-MINI-KA	185 792	FRC-1/8-D-MINI-KA-A
	G1/4	185 793	FRC-1/4-D-MINI-KA	185 794	FRC-1/4-D-MINI-KA-A
Midi	G1/4	185 795	FRC-1/4-D-MIDI-KA	185 796	FRC-1/4-D-MIDI-KA-A
	G3/8	185 797	FRC-3/8-D-MIDI-KA	185 798	FRC-3/8-D-MIDI-KA-A
	G1/2	185 799	FRC-1/2-D-MIDI-KA	185 800	FRC-1/2-D-MIDI-KA-A
Maxi	G1/2	186 053	FRC-1/2-D-MAXI-KA	186 054	FRC-1/2-D-MAXI-KA-A
	G3/4	185 801	FRC-3/4-D-MAXI-KA	185 802	FRC-3/4-D-MAXI-KA-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 468	FRC-1/2-D-DI-MAXI-KA	192 478	FRC-1/2-D-DI-MAXI-KA-A
	G3/4	192 473	FRC-3/4-D-DI-MAXI-KA	192 483	FRC-3/4-D-DI-MAXI-KA-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module, lubricator					
Mini	G1/8	195 106	FRCS-1/8-D-MINI-KA	195 107	FRCS-1/8-D-MINI-KA-A
	G1/4	195 116	FRCS-1/4-D-MINI-KA	195 117	FRCS-1/4-D-MINI-KA-A
Midi	G1/4	195 126	FRCS-1/4-D-MIDI-KA	195 127	FRCS-1/4-D-MIDI-KA-A
	G3/8	195 136	FRCS-3/8-D-MIDI-KA	195 137	FRCS-3/8-D-MIDI-KA-A
	G1/2	195 146	FRCS-1/2-D-MIDI-KA	195 147	FRCS-1/2-D-MIDI-KA-A
Maxi	G1/2	195 156	FRCS-1/2-D-MAXI-KA	195 157	FRCS-1/2-D-MAXI-KA-A
	G3/4	195 166	FRCS-3/4-D-MAXI-KA	195 167	FRCS-3/4-D-MAXI-KA-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 204	FRCS-1/2-D-DI-MAXI-KA	195 205	FRCS-1/2-D-DI-MAXI-KA-A
	G3/4	195 214	FRCS-3/4-D-DI-MAXI-KA	195 215	FRCS-3/4-D-DI-MAXI-KA-A

D series service units
Service units

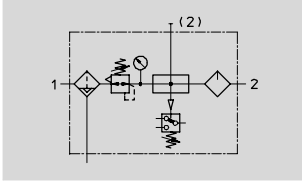
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Service unit combinations FRC-KB/FRCS-KB, D series

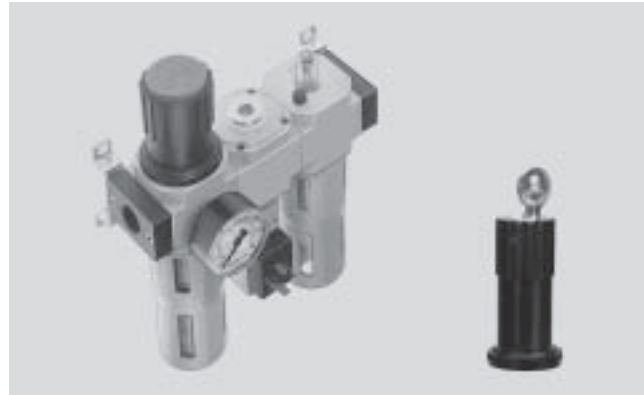
Technical data



Function



- Flow rate
650 ... 8200 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar



- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
 - Pressure switch without display
- Lubricator LOE
 - metal bowl guard
- Mounting accessories

- Electrical pressure monitoring with adjustable switching pressure
- For lubricated and unlubricated compressed air
- One connection for unlubricated compressed air supply
- One connection for lubricated compressed air supply

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.25	0.2	0.25	0.35	0.35	0.1	0.2
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	1 ... 16					
	fully automatic	1.5 ... 12					

1) The max. condensate volume for the FRC/FRCS-...-DI-MAXI-KB is 43 cm³.

Service unit combinations FRC-KB/FRCS-KB, D series

Technical data


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
FRC/FRCS-...-D-...	650	980	-	-	-
Midi					
FRC/FRCS-...-D-...	-	1400	2100	2500	-
Maxi					
FRC/FRCS-...-D-...	-	-	-	7500	8200
Maxi – Directly actuated pressure regulator with integrated return flow function					
FRC/FRCS-...-D-...	-	-	-	5000	6000

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

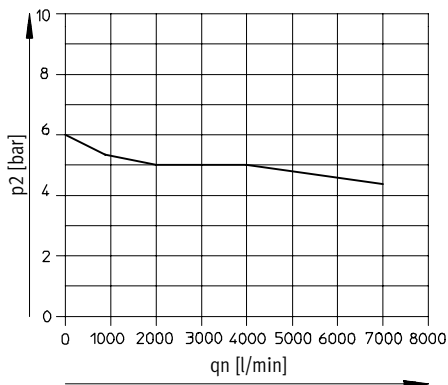
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
FRC	1200	2600	3500	3700
FRCS	1300	2840	3600	3940

 Note
 Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 FRC/FRCS-1/2-D-DI-MAXI-KB(-A)



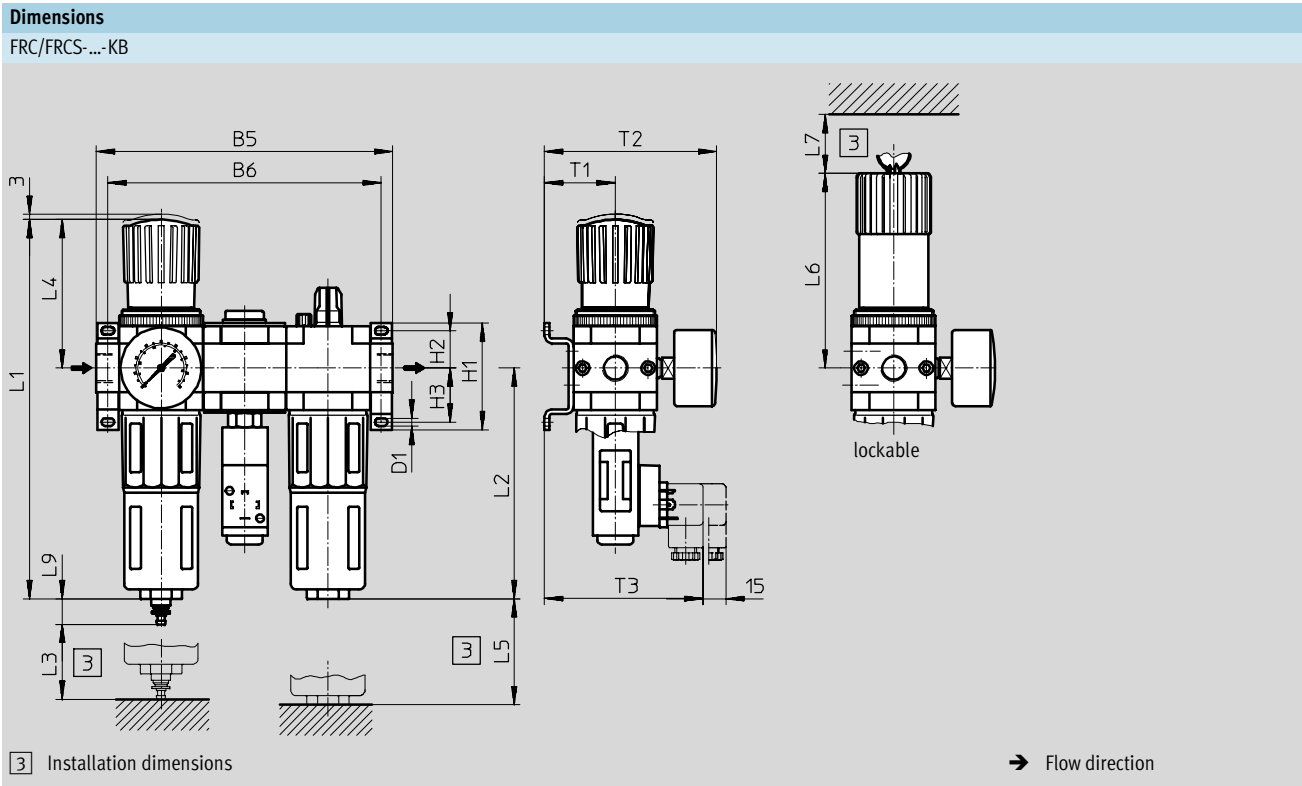
Primary pressure p1 = 10 bar

Service unit combinations FRC-KB/FRCS-KB, D series

Technical data



D series service units
Service units
1.1



Type	B5	B6	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T3
Mini																	
FRC-...-D-MINI-KB (A)	144	132	4.3	43	17.5	17.5	193	124	60	68	100	98	60	19	39	95	97
FRCS-...-D-MINI-KB (A)																	
Midi																	
FRC-...-D-MIDI-KB (A)	195	180	5.3	70	24.5	35.5	250	152	80	99	120	130	60	19	47	114	105
FRCS-...-D-MIDI-KB (A)																	
Maxi																	
FRC-...-D-MAXI-KB (A)	228	212	5.3	70	24.5	35.5	252	171	90	82	150	111	60	19	53	126	111
FRCS-...-D-MAXI-KB (A)							275			105		135					
FRC-...-D-DI-MAXI-KB (A)																	
FRCS-...-D-DI-MAXI-KB (A)																	

Service unit combinations FRC-KB/FRCS-KB, D series



Technical data

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module with pressure switch without display, lubricator					
Mini	G1/8	185 803	FRC-1/8-D-MINI-KB	185 804	FRC-1/8-D-MINI-KB-A
	G1/4	185 805	FRC-1/4-D-MINI-KB	185 806	FRC-1/4-D-MINI-KB-A
Midi	G1/4	185 807	FRC-1/4-D-MIDI-KB	185 808	FRC-1/4-D-MIDI-KB-A
	G3/8	185 809	FRC-3/8-D-MIDI-KB	185 810	FRC-3/8-D-MIDI-KB-A
	G1/2	185 811	FRC-1/2-D-MIDI-KB	185 812	FRC-1/2-D-MIDI-KB-A
Maxi	G1/2	186 055	FRC-1/2-D-MAXI-KB	186 056	FRC-1/2-D-MAXI-KB-A
	G3/4	185 813	FRC-3/4-D-MAXI-KB	185 814	FRC-3/4-D-MAXI-KB-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 469	FRC-1/2-D-DI-MAXI-KB	192 479	FRC-1/2-D-DI-MAXI-KB-A
	G3/4	192 474	FRC-3/4-D-DI-MAXI-KB	192 484	FRC-3/4-D-DI-MAXI-KB-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module with pressure switch without display, lubricator					
Mini	G1/8	195 108	FRCS-1/8-D-MINI-KB	195 109	FRCS-1/8-D-MINI-KB-A
	G1/4	195 118	FRCS-1/4-D-MINI-KB	195 119	FRCS-1/4-D-MINI-KB-A
Midi	G1/4	195 128	FRCS-1/4-D-MIDI-KB	195 129	FRCS-1/4-D-MIDI-KB-A
	G3/8	195 138	FRCS-3/8-D-MIDI-KB	195 139	FRCS-3/8-D-MIDI-KB-A
	G1/2	195 148	FRCS-1/2-D-MIDI-KB	195 149	FRCS-1/2-D-MIDI-KB-A
Maxi	G1/2	195 158	FRCS-1/2-D-MAXI-KB	195 159	FRCS-1/2-D-MAXI-KB-A
	G3/4	195 168	FRCS-3/4-D-MAXI-KB	195 169	FRCS-3/4-D-MAXI-KB-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 206	FRCS-1/2-D-DI-MAXI-KB	195 207	FRCS-1/2-D-DI-MAXI-KB-A
	G3/4	195 216	FRCS-3/4-D-DI-MAXI-KB	195 217	FRCS-3/4-D-DI-MAXI-KB-A

D series service units
Service units

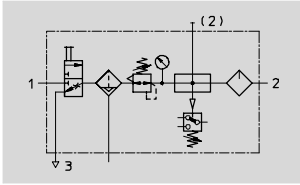
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Service unit combinations FRC-KC/FRCS-KC, D series

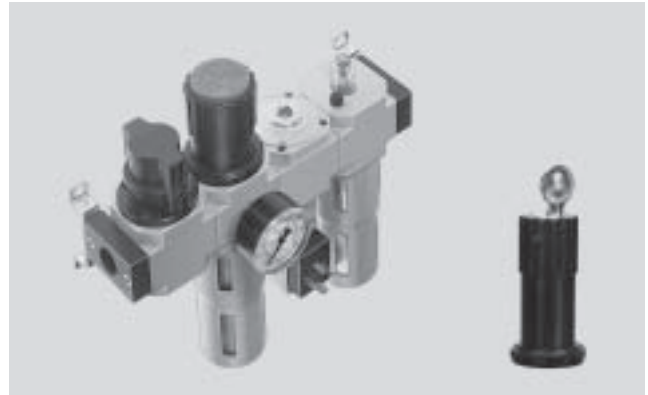
Technical data



Function



- Flow rate
640 ... 7800 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar



- On-off valve HE
 - manually actuated
- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
 - pressure switch without display
- Lubricator LOE
 - metal bowl guard
- Mounting accessories

- To ensure safe venting of the system, an additional quick exhaust valve is necessary at the output of the service unit combination
- Electrical pressure monitoring with adjustable switching pressure
- The system is vented when supply air is closed
- For lubricated and unlubricated compressed air
- One connection for unlubricated compressed air supply
- One connection for lubricated compressed air supply

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ¹ / ₂	G ³ / ₄
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.2	0.2	0.4	0.3	0.3	0.15	0.15
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain turned manually	1 ... 16						
fully automatic	1.5 ... 12						

1) The max. condensate volume for the FRC/FRCS-...-DI-MAXI-KC is 43 cm³.

Service unit combinations FRC-KC/FRCS-KC, D series

Technical data


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
FRC/FRCS-...-D-...	640	870	-	-	-
Midi					
FRC/FRCS-...-D-...	-	1320	1870	2400	-
Maxi					
FRC/FRCS-...-D-...	-	-	-	6600	7800
Maxi – Directly actuated pressure regulator with integrated return flow function					
FRC/FRCS-...-D-...	-	-	-	4800	5400

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

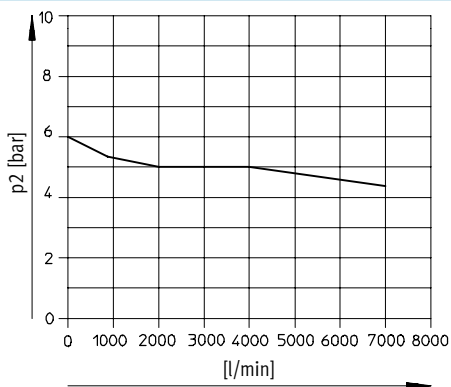
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
FRC	1400	3000	4600	4800
FRCS	1500	3240	4700	5040

 Note
 Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 FRC/FRCS-1/2-D-DI-MAXI-KC(-A)



Primary pressure p1 = 10 bar

Service unit combinations FRC-KC/FRCS-KC, D series

Technical data

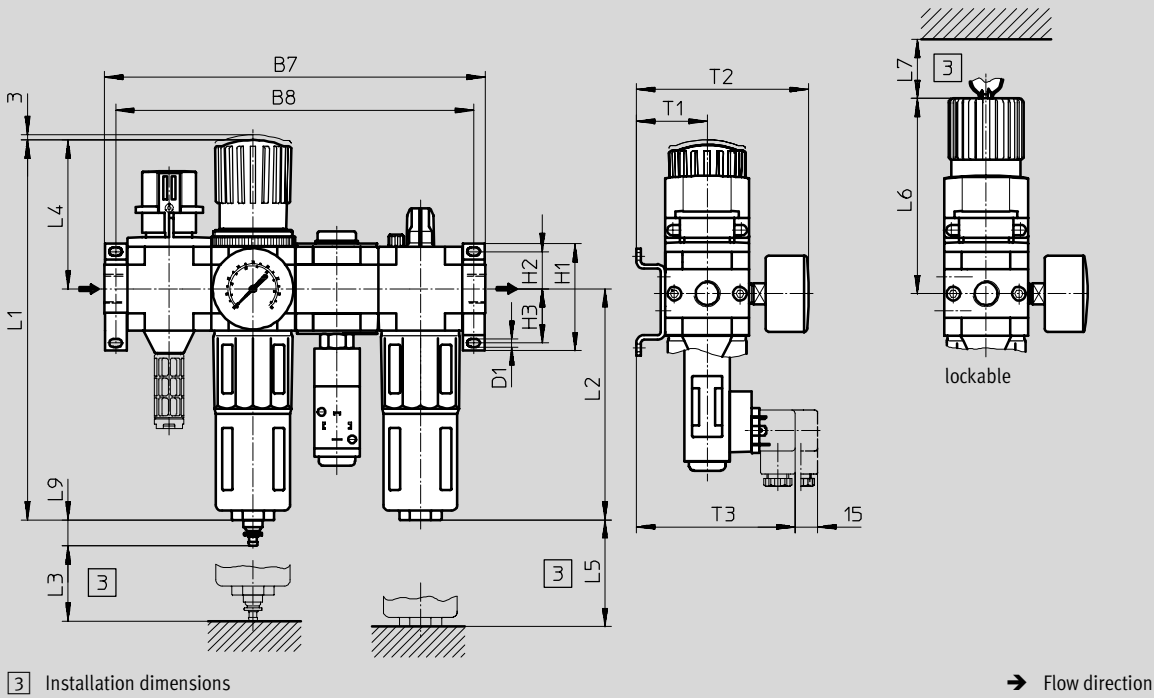


D series service units
Service units

1.1

Dimensions

FRC/FRCS-...-KC



Type	B7	B8	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T3
Mini																	
FRC-...-D-MINI-KC (A)	184	172	4.3	43	17.5	17.5	193	124	60	68	100	98	60	19	39	95	97
FRCS-...-D-MINI-KC (A)																	
Midi																	
FRC-...-D-MIDI-KC (A)	250	235	5.3	70	24.5	35.5	250	152	80	99	120	130	60	19	47	114	105
FRCS-...-D-MIDI-KC (A)																	
Maxi																	
FRC-...-D-MAXI-KC (A)	294	278	5.3	70	24.5	35.5	252	171	90	82	150	111	60	19	53	126	111
FRCS-...-D-MAXI-KC (A)							275			105		135					
FRC-...-D-DI-MAXI-KC (A)																	
FRCS-...-D-DI-MAXI-KC (A)																	

Service unit combinations FRC-KC/FRCS-KC, D series



Technical data

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, branching module with pressure switch without plug socket, lubricator					
Mini	G1/8	185 815	FRC-1/8-D-MINI-KC	185 816	FRC-1/8-D-MINI-KC-A
	G1/4	185 817	FRC-1/4-D-MINI-KC	185 818	FRC-1/4-D-MINI-KC-A
Midi	G1/4	185 819	FRC-1/4-D-MIDI-KC	185 820	FRC-1/4-D-MIDI-KC-A
	G3/8	185 821	FRC-3/8-D-MIDI-KC	185 822	FRC-3/8-D-MIDI-KC-A
	G1/2	185 823	FRC-1/2-D-MIDI-KC	185 824	FRC-1/2-D-MIDI-KC-A
Maxi	G1/2	186 057	FRC-1/2-D-MAXI-KC	186 058	FRC-1/2-D-MAXI-KC-A
	G3/4	185 825	FRC-3/4-D-MAXI-KC	185 826	FRC-3/4-D-MAXI-KC-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 470	FRC-1/2-D-DI-MAXI-KC	192 480	FRC-1/2-D-DI-MAXI-KC-A
	G3/4	192 475	FRC-3/4-D-DI-MAXI-KC	192 485	FRC-3/4-D-DI-MAXI-KC-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, branching module with pressure switch without plug socket, lubricator					
Mini	G1/8	195 110	FRCS-1/8-D-MINI-KC	195 111	FRCS-1/8-D-MINI-KC-A
	G1/4	195 120	FRCS-1/4-D-MINI-KC	195 121	FRCS-1/4-D-MINI-KC-A
Midi	G1/4	195 130	FRCS-1/4-D-MIDI-KC	195 131	FRCS-1/4-D-MIDI-KC-A
	G3/8	195 140	FRCS-3/8-D-MIDI-KC	195 141	FRCS-3/8-D-MIDI-KC-A
	G1/2	195 150	FRCS-1/2-D-MIDI-KC	195 151	FRCS-1/2-D-MIDI-KC-A
Maxi	G1/2	195 160	FRCS-1/2-D-MAXI-KC	195 161	FRCS-1/2-D-MAXI-KC-A
	G3/4	195 170	FRCS-3/4-D-MAXI-KC	195 171	FRCS-3/4-D-MAXI-KC-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 208	FRCS-1/2-D-DI-MAXI-KC	195 209	FRCS-1/2-D-DI-MAXI-KC-A
	G3/4	195 218	FRCS-3/4-D-DI-MAXI-KC	195 219	FRCS-3/4-D-DI-MAXI-KC-A

D series service units
Service units

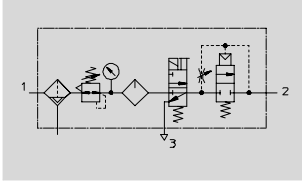
1.1

Service unit combinations FRC-KE/FRCS-KE, D series

Technical data



Function



- Flow rate
550 ... 6000 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
3.5 ... 16 bar



- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Lubricator LOE
 - metal bowl guard
- On-off valve HEE
 - solenoid actuated
 - 24 V DC
- Soft-start valve HEL
 - pneumatically actuated
- Mounting accessories

- Gradual pressure build-up prevents sudden, unpredictable movements
- For lubricated compressed air
- When supply pressure is closed, quick venting ensures rapid pressure reduction

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.15	0.18	0.25	0.35	0.4	0.3	0.3
Pressure regulation range [bar]	2.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	3.5 ... 16					
	fully automatic	3.5 ... 12					

1) The max. condensate volume for the FRC/FRCS-...-DI-MAXI-KE is 43 cm³.

Service unit combinations FRC-KE/FRCS-KE, D series

Technical data


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
FRC/FRCS-...-D-...	550	650	-	-	-
Midi					
FRC/FRCS-...-D-...	-	1100	1420	1590	-
Maxi					
FRC/FRCS-...-D-...	-	-	-	3500	3800
Maxi – Directly actuated pressure regulator with integrated return flow function					
FRC/FRCS-...-D-...	-	-	-	5000	6000

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

Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

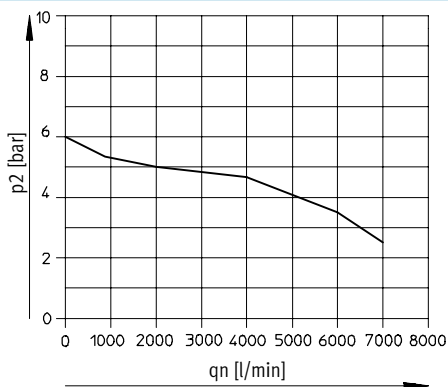
1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
FRC	1200	2800	4200	4400
FRCS	1300	3040	4300	4640

 Note
 Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2

FRC/FRCS-1/2-D-DI-MAXI-KE(-A)



Primary pressure p1 = 10 bar

Service unit combinations FRC-KE/FRCS-KE, D series

Technical data

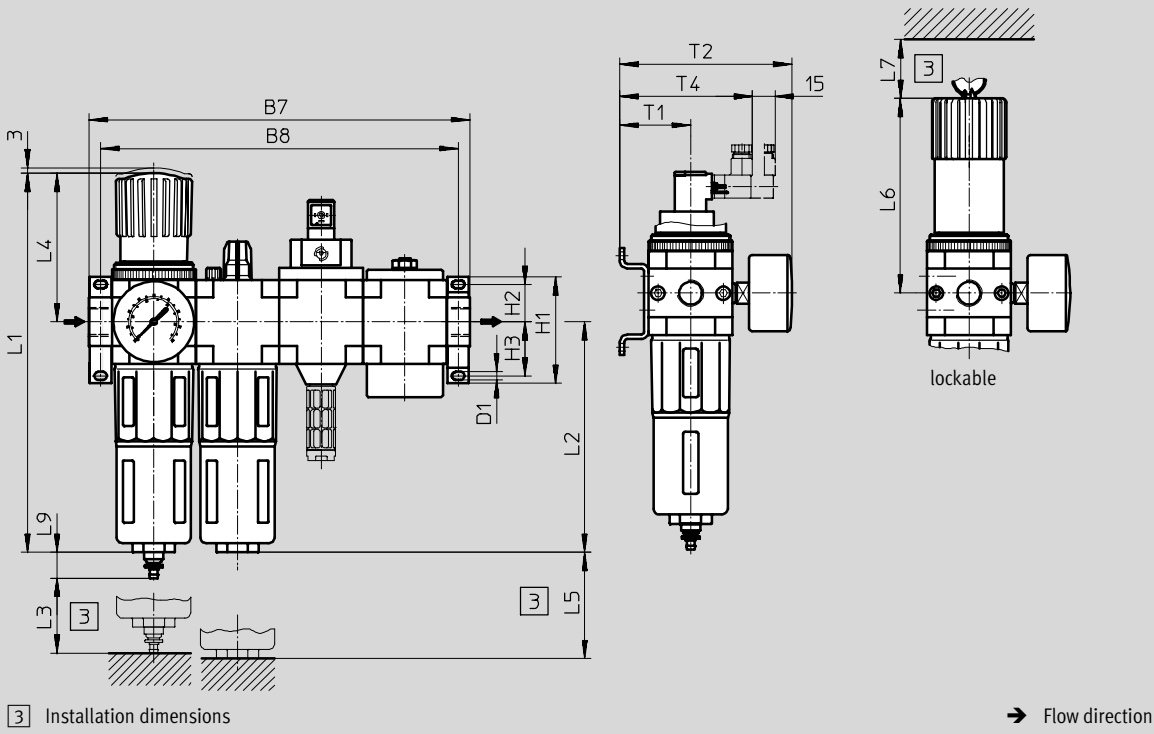


D series service units
Service units

1.1

Dimensions

FRC/FRCS-...-KE



Type	B7	B8	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T4
Mini																	
FRC-...-D-MINI-KE (A)	184	172	4.3	43	17.5	17.5	193	124	60	68	100	98	60	19	39	95	78
FRCS-...-D-MINI-KE (A)																	
Midi																	
FRC-...-D-MIDI-KE (A)	250	235	5.3	70	24.5	35.5	250	152	80	99	120	130	60	19	47	114	86
FRCS-...-D-MIDI-KE (A)																	
Maxi																	
FRC-...-D-MAXI-KE (A)	294	278	5.3	70	24.5	35.5	252	171	90	82	150	111	60	19	53	126	92
FRCS-...-D-MAXI-KE (A)							275			105		135					
FRC-...-D-DI-MAXI-KE (A)																	
FRCS-...-D-DI-MAXI-KE (A)																	

Service unit combinations FRC-KE/FRCS-KE, D series



Technical data

Ordering data					
Pressure regulation range 2.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, lubricator, on-off valve with solenoid coil 24 V DC without plug socket, soft-start valve					
Mini	G1/8	185 827	FRC-1/8-D-MINI-KE	185 828	FRC-1/8-D-MINI-KE-A
	G1/4	185 829	FRC-1/4-D-MINI-KE	185 830	FRC-1/4-D-MINI-KE-A
Midi	G1/4	185 831	FRC-1/4-D-MIDI-KE	185 832	FRC-1/4-D-MIDI-KE-A
	G3/8	185 833	FRC-3/8-D-MIDI-KE	185 834	FRC-3/8-D-MIDI-KE-A
	G1/2	185 835	FRC-1/2-D-MIDI-KE	185 836	FRC-1/2-D-MIDI-KE-A
Maxi	G1/2	186 059	FRC-1/2-D-MAXI-KE	186 060	FRC-1/2-D-MAXI-KE-A
	G3/4	185 837	FRC-3/4-D-MAXI-KE	185 838	FRC-3/4-D-MAXI-KE-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 471	FRC-1/2-D-DI-MAXI-KE	192 481	FRC-1/2-D-DI-MAXI-KE-A
	G3/4	192 476	FRC-3/4-D-DI-MAXI-KE	192 486	FRC-3/4-D-DI-MAXI-KE-A

Ordering data					
Pressure regulation range 2.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, lubricator, on-off valve with solenoid coil 24 V DC without plug socket, soft-start valve					
Mini	G1/8	195 112	FRCS-1/8-D-MINI-KE	195 113	FRCS-1/8-D-MINI-KE-A
	G1/4	195 122	FRCS-1/4-D-MINI-KE	195 123	FRCS-1/4-D-MINI-KE-A
Midi	G1/4	195 132	FRCS-1/4-D-MIDI-KE	195 133	FRCS-1/4-D-MIDI-KE-A
	G3/8	195 142	FRCS-3/8-D-MIDI-KE	195 143	FRCS-3/8-D-MIDI-KE-A
	G1/2	195 152	FRCS-1/2-D-MIDI-KE	195 153	FRCS-1/2-D-MIDI-KE-A
Maxi	G1/2	195 162	FRCS-1/2-D-MAXI-KE	195 163	FRCS-1/2-D-MAXI-KE-A
	G3/4	195 172	FRCS-3/4-D-MAXI-KE	195 173	FRCS-3/4-D-MAXI-KE-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 210	FRCS-1/2-D-DI-MAXI-KE	195 211	FRCS-1/2-D-DI-MAXI-KE-A
	G3/4	195 220	FRCS-3/4-D-DI-MAXI-KE	195 221	FRCS-3/4-D-DI-MAXI-KE-A

D series service units
Service units

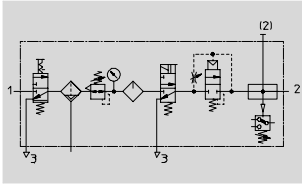
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Service unit combinations FRC-KF/FRCS-KF, D series

Technical data

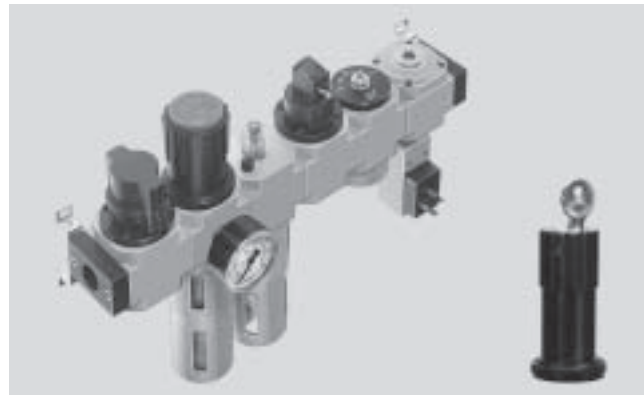


Function



- Flow rate
530 ... 6000 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
3.5 ... 16 bar

- On-off valve HE
 - manually actuated
- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Lubricator LOE
 - metal bowl guard
- On-off valve HEE
 - solenoid actuated
 - 24 V DC
- Soft-start valve HEL
 - pneumatically actuated
- Branching module FRM
 - pressure switch without display
- Mounting accessories



- Gradual pressure build-up prevents sudden, unpredictable movements
- To ensure safe venting of the system, an additional quick exhaust valve is necessary at the output of the service unit combination
- For lubricated compressed air
- Two branch connections are available
- Supply pressure can be opened and closed

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.2	0.3	0.4	0.3	0.35	0.25	0.3
Pressure regulation range [bar]	2.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain							
turned manually	3.5 ... 16						
fully automatic	3.5 ... 12						

1) The max. condensate volume for the FRC/FRCS-...DI-MAXI-KF is 43 cm³.

Service unit combinations FRC-KF/FRCS-KF, D series

Technical data


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
FRC/FRCS-...-D-...	530	620	-	-	-
Midi					
FRC/FRCS-...-D-...	-	1060	1150	1220	-
Maxi					
FRC/FRCS-...-D-...	-	-	-	3400	3700
Maxi – Directly actuated pressure regulator with integrated return flow function					
FRC/FRCS-...-D-...	-	-	-	5000	6000

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

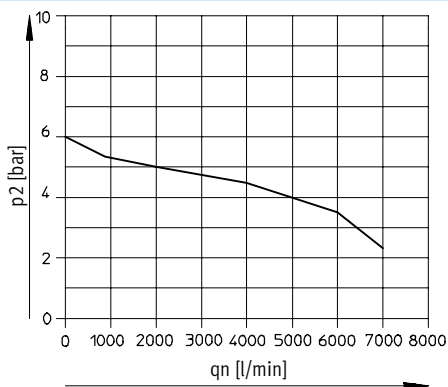
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
FRC	1800	4000	6300	6500
FRCS	1900	4240	6400	6740

 Note
 Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 FRC/FRCS-1/2-D-DI-MAXI-KF(-A)



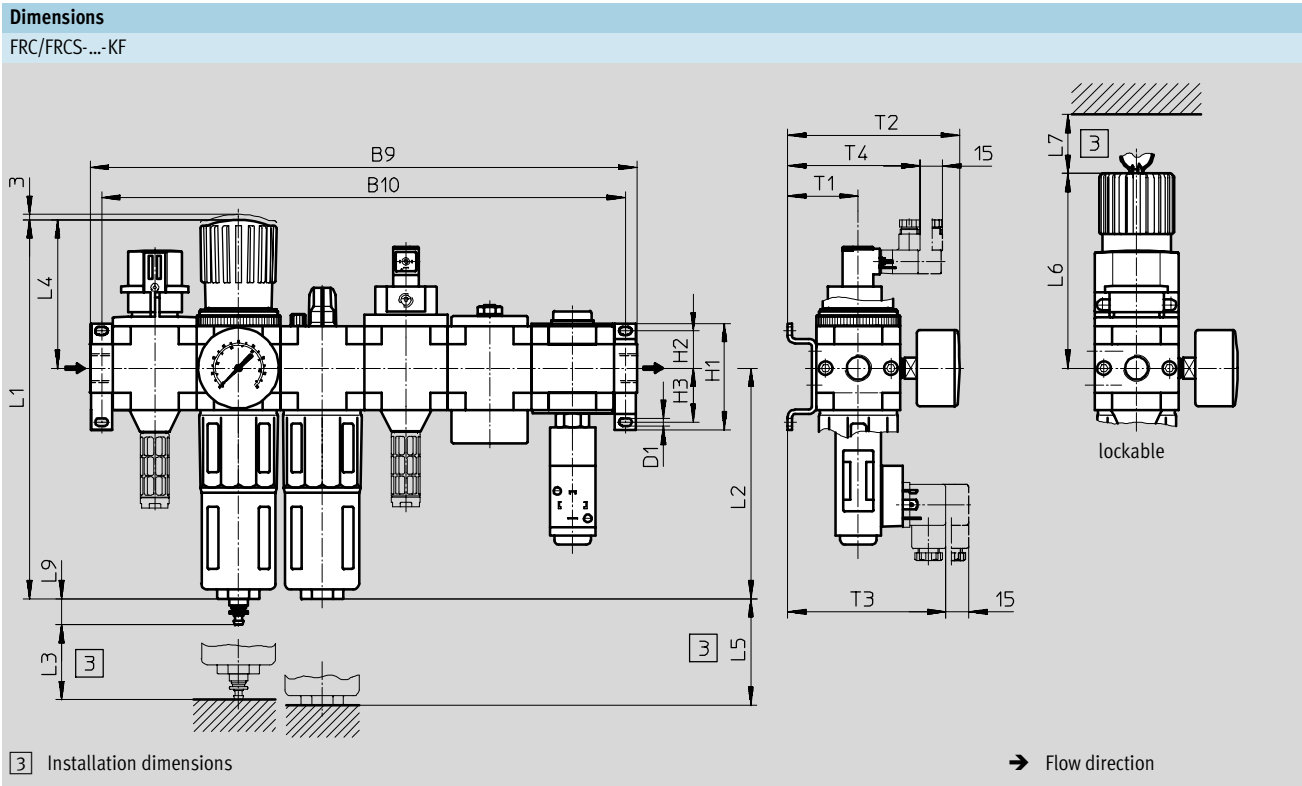
Primary pressure p1 = 10 bar

Service unit combinations FRC-KF/FRCS-KF, D series

Technical data



D series service units
Service units
1.1



Type	B9	B10	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T3	T4
Mini																		
FRC-...-D-MINI-KF (A)	264	252	4.3	43	17.5	17.5	193	124	60	68	100	98	60	19	39	95	97	78
FRCS-...-D-MINI-KF (A)																		
Midi																		
FRC-...-D-MIDI-KF (A)	360	344	5.3	70	24.5	35.5	250	152	80	99	120	130	60	19	47	114	105	86
FRCS-...-D-MIDI-KF (A)																		
Maxi																		
FRC-...-D-MAXI-KF (A)	426	410	5.3	70	24.5	35.5	252	171	90	82	150	111	60	19	53	126	111	92
FRCS-...-D-MAXI-KF (A)							275			105		135						
FRC-...-D-DI-MAXI-KF (A)																		
FRCS-...-D-DI-MAXI-KF (A)																		

Service unit combinations FRC-KF/FRCS-KF, D series

FESTO

Technical data

Ordering data					
Pressure regulation range 2.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, lubricator, on-off valve with solenoid coil 24 V DC without plug socket, soft-start valve, branching module with pressure switch without display					
Mini	G ¹ / ₈	185 839	FRC- ¹ / ₈ -D-MINI-KF	185 840	FRC- ¹ / ₈ -D-MINI-KF-A
	G ¹ / ₄	185 841	FRC- ¹ / ₄ -D-MINI-KF	185 842	FRC- ¹ / ₄ -D-MINI-KF-A
Midi	G ¹ / ₄	185 843	FRC- ¹ / ₄ -D-MIDI-KF	185 844	FRC- ¹ / ₄ -D-MIDI-KF-A
	G ³ / ₈	185 845	FRC- ³ / ₈ -D-MIDI-KF	185 846	FRC- ³ / ₈ -D-MIDI-KF-A
	G ¹ / ₂	185 847	FRC- ¹ / ₂ -D-MIDI-KF	185 848	FRC- ¹ / ₂ -D-MIDI-KF-A
Maxi	G ¹ / ₂	186 061	FRC- ¹ / ₂ -D-MAXI-KF	186 062	FRC- ¹ / ₂ -D-MAXI-KF-A
	G ³ / ₄	185 849	FRC- ³ / ₄ -D-MAXI-KF	185 850	FRC- ³ / ₄ -D-MAXI-KF-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G ¹ / ₂	192 472	FRC- ¹ / ₂ -D-DI-MAXI-KF	192 482	FRC- ¹ / ₂ -D-DI-MAXI-KF-A
	G ³ / ₄	192 477	FRC- ³ / ₄ -D-DI-MAXI-KF	192 487	FRC- ³ / ₄ -D-DI-MAXI-KF-A

Ordering data					
Pressure regulation range 2.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, lubricator, on-off valve with solenoid coil 24 V DC without plug socket, soft-start valve, branching module with pressure switch with display					
Mini	G ¹ / ₈	195 114	FRCS- ¹ / ₈ -D-MINI-KF	195 115	FRCS- ¹ / ₈ -D-MINI-KF-A
	G ¹ / ₄	195 124	FRCS- ¹ / ₄ -D-MINI-KF	195 125	FRCS- ¹ / ₄ -D-MINI-KF-A
Midi	G ¹ / ₄	195 134	FRCS- ¹ / ₄ -D-MIDI-KF	195 135	FRCS- ¹ / ₄ -D-MIDI-KF-A
	G ³ / ₈	195 144	FRCS- ³ / ₈ -D-MIDI-KF	195 145	FRCS- ³ / ₈ -D-MIDI-KF-A
	G ¹ / ₂	195 154	FRCS- ¹ / ₂ -D-MIDI-KF	195 155	FRCS- ¹ / ₂ -D-MIDI-KF-A
Maxi	G ¹ / ₂	195 164	FRCS- ¹ / ₂ -D-MAXI-KF	195 165	FRCS- ¹ / ₂ -D-MAXI-KF-A
	G ³ / ₄	195 174	FRCS- ³ / ₄ -D-MAXI-KF	195 175	FRCS- ³ / ₄ -D-MAXI-KF-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G ¹ / ₂	195 212	FRCS- ¹ / ₂ -D-DI-MAXI-KF	195 213	FRCS- ¹ / ₂ -D-DI-MAXI-KF-A
	G ³ / ₄	195 222	FRCS- ³ / ₄ -D-DI-MAXI-KF	195 223	FRCS- ³ / ₄ -D-DI-MAXI-KF-A

D series service units
Service units

1.1

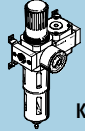
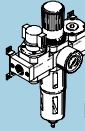
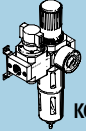
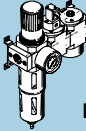
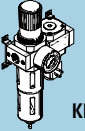
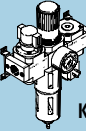
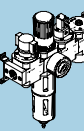
Service unit combinations LFR-K/LFRS-K, D series

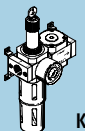
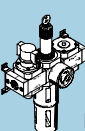
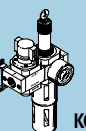
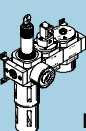
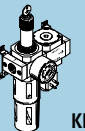
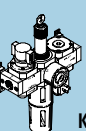
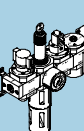
Product range overview



D series service units
Service units

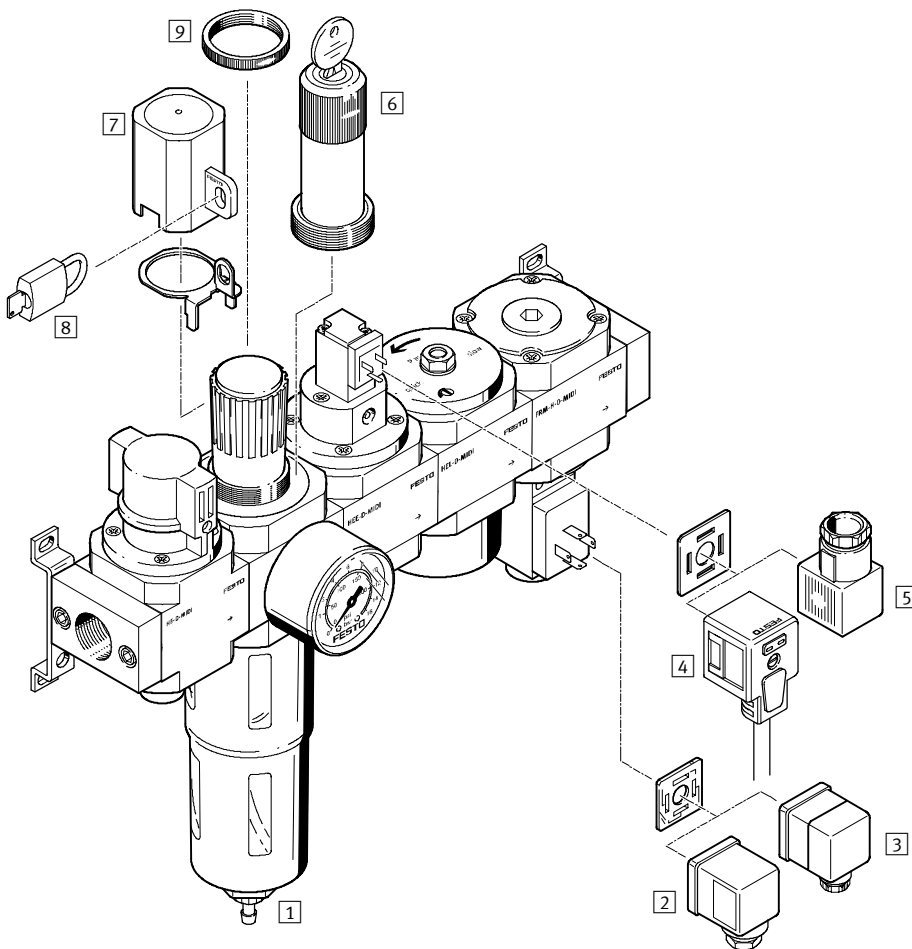
1.1

LFR Rotary knob with detent	 KA	 KB	 KC	 KD	 KE	 KF	 KG
Individual devices							
On-off valve, manual	-	■	■	-	-	■	■
Filter regulator with pressure gauge	■	■	■	■	■	■	■
Branching module	■	■	-	-	-	-	-
On-off valve with solenoid coil 24 V DC	-	-	-	■	-	-	■
Soft-start valve	-	-	-	■	-	-	■
Branching module with pressure switch	-	-	-	-	■	■	■
Mounting bracket and metal bowl guard	■	■	■	■	■	■	■
→ Page	3 / 1.1-43	3 / 1.1-47	3 / 1.1-51	3 / 1.1-55	3 / 1.1-59	3 / 1.1-63	3 / 1.1-67

LFRS Rotary knob with integrated lock	 KA	 KB	 KC	 KD	 KE	 KF	 KG
Individual devices							
On-off valve, manual	-	■	■	-	-	■	■
Filter regulator with pressure gauge	■	■	■	■	■	■	■
Branching module	■	■	-	-	-	-	-
On-off valve with solenoid coil 24 V DC	-	-	-	■	-	-	■
Soft-start valve	-	-	-	■	-	-	■
Branching module with pressure switch	-	-	-	-	■	■	■
Mounting bracket and metal bowl guard	■	■	■	■	■	■	■
→ Page	3 / 1.1-43	3 / 1.1-47	3 / 1.1-51	3 / 1.1-55	3 / 1.1-59	3 / 1.1-63	3 / 1.1-67

Service unit combinations LFR-K/LFRS-K, D series

Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 Service unit combination LFR/LFRS-D-...-KG	This combination is made up of the following individual devices: on-off valve, filter regulator, on-off valve with solenoid coil 24 V DC without plug socket, soft-start valve, branching module with pressure switch without plug socket MINI: Connection size G1/8, G1/4 MIDI: Connection size G1/4, G3/8, G1/2 MAXI: Connection size G1/2, G3/4	3 / 1.1-67
2 Plug socket without LED for pressure switch PEV MSSD-C-4P	Accessory, optional	3 / 1.8-17
3 Angled plug socket with LED for pressure switch PEV PEV-1/4-WD-LED-...	Accessory, optional	3 / 1.8-17
4 Plug socket with cable for on-off valve HEE KMEB-1	Accessory, optional	3 / 1.8-18
5 Plug socket for on-off valve HEE MSSD-EB	Accessory, optional	3 / 1.8-18
6 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	-
7 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
8 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
9 Knurled nut	The knurled nut is included in the scope of delivery	-

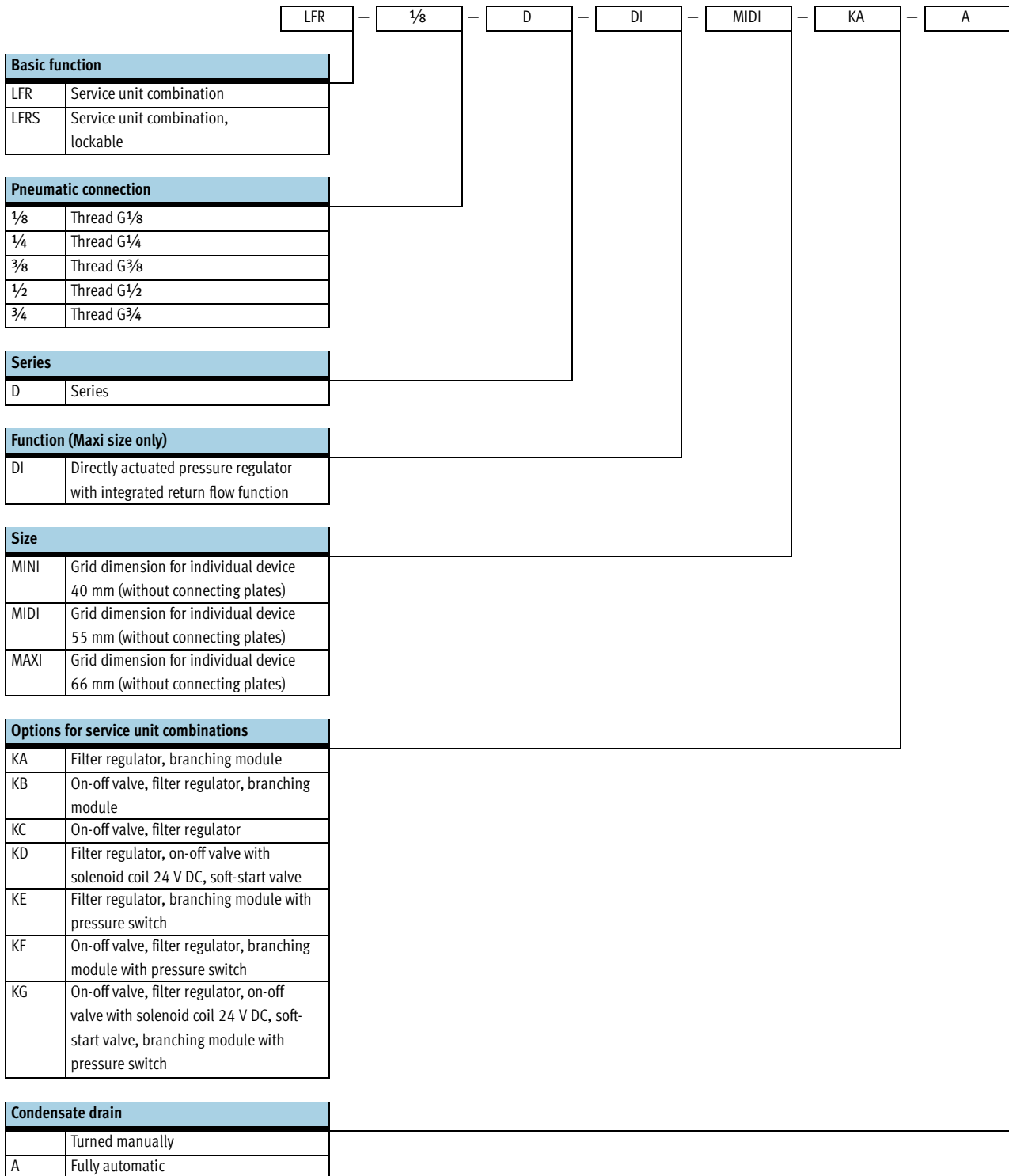
Service unit combinations LFR-K/LFRS-K, D series

Type codes



D series service units
Service units

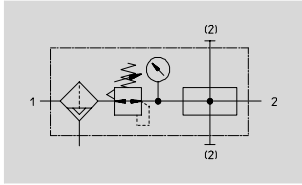
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Service unit combinations LFR-KA/LFRS-KA, D series

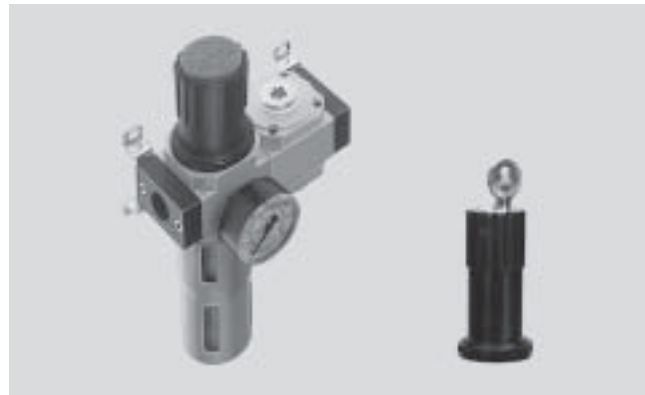
Technical data

Function



- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
 - Pressure switch without display
- Mounting accessories

- Flow rate
720 ... 9400 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar



- For unlubricated compressed air supply
- Three branch connections are available

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{1}{2}$	G $\frac{3}{4}$
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical $\pm 5^\circ$						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.15	0.15	0.25	0.2	0.2	0.2	0.3
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually		1 ... 16				
	fully automatic		1.5 ... 12				

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KA is 43 cm³.

Service unit combinations LFR-KA/LFRS-KA, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	720	1140	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1850	2620	3050	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	9200	9400
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	5200	5800

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

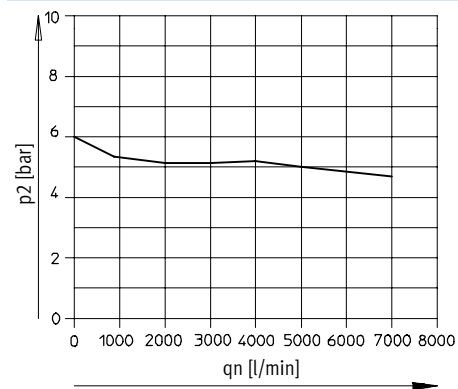
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	800	1800	2400	2600
LFRS	900	2040	2500	2840

 Note
Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KA(-A)



Primary pressure p1 = 10 bar

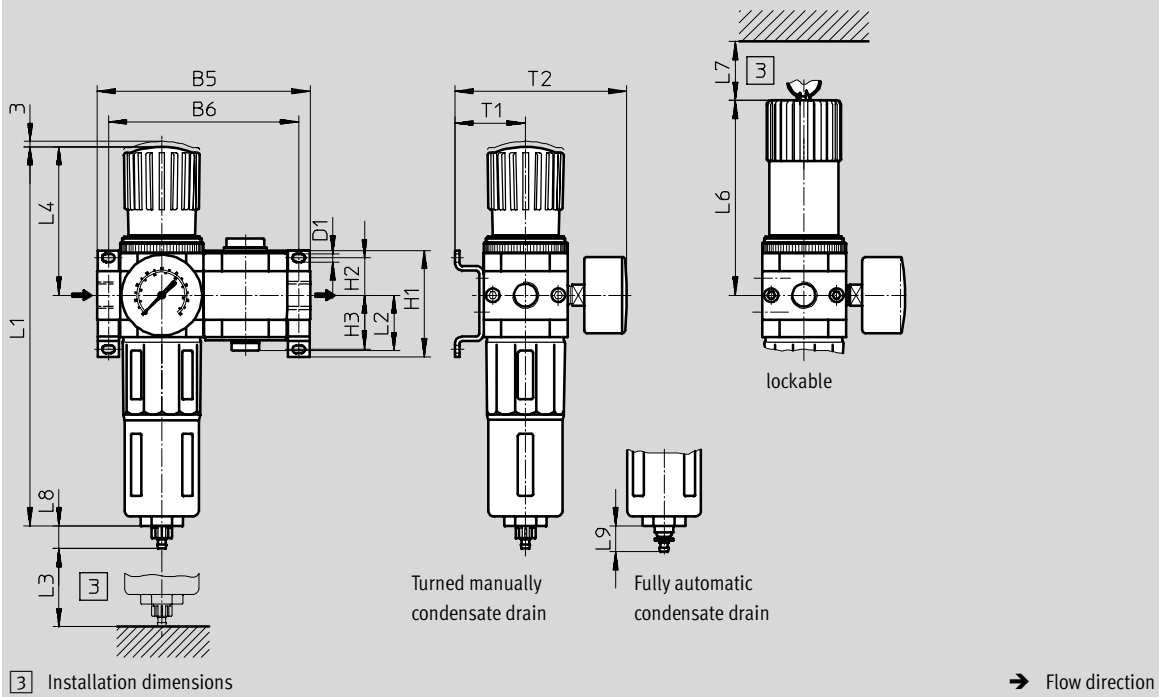
Service unit combinations LFR-KA/LFRS-KA, D series

Technical data



Dimensions

LFR/LFRS-...-KA



Type	B5	B6	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1	T2
Mini																	
LFR-...-D-MINI-KA (A)	104	92	4.3	43	17.5	17.5	193	28	60	68	100	98	60	15	19	39	95
LFRS-...-D-MINI-KA (A)																	
Midi																	
LFR-...-D-MIDI-KA (A)	140	125	5.3	70	24.5	35.5	250	36.5	80	99	120	130	60	15	19	47	114
LFRS-...-D-MIDI-KA (A)																	
Maxi																	
LFR-...-D-MAXI-KA (A)	162	146	5.3	70	24.5	35.5	252	42	90	82	150	111	60	15	19	53	126
LFRS-...-D-MAXI-KA (A)							275			105		135					
LFR-...-D-DI-MAXI-KA (A)																	
LFRS-...-D-DI-MAXI-KA (A)																	

Service unit combinations LFR-KA/LFRS-KA, D series



Technical data

D series service units
Service units

1.1

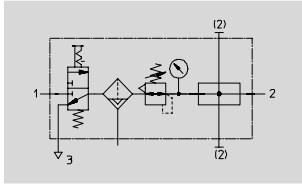
Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module					
Mini	G1/8	185 707	LFR-1/8-D-MINI-KA	185 708	LFR-1/8-D-MINI-KA-A
	G1/4	185 709	LFR-1/4-D-MINI-KA	185 710	LFR-1/4-D-MINI-KA-A
Midi	G1/4	185 711	LFR-1/4-D-MIDI-KA	185 712	LFR-1/4-D-MIDI-KA-A
	G3/8	185 713	LFR-3/8-D-MIDI-KA	185 714	LFR-3/8-D-MIDI-KA-A
	G1/2	185 715	LFR-1/2-D-MIDI-KA	185 716	LFR-1/2-D-MIDI-KA-A
Maxi	G1/2	186 039	LFR-1/2-D-MAXI-KA	186 040	LFR-1/2-D-MAXI-KA-A
	G3/4	185 717	LFR-3/4-D-MAXI-KA	185 718	LFR-3/4-D-MAXI-KA-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 440	LFR-1/2-D-DI-MAXI-KA	192 454	LFR-1/2-D-DI-MAXI-KA-A
	G3/4	192 447	LFR-3/4-D-DI-MAXI-KA	192 461	LFR-3/4-D-DI-MAXI-KA-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module					
Mini	G1/8	195 008	LFRS-1/8-D-MINI-KA	195 009	LFRS-1/8-D-MINI-KA-A
	G1/4	195 022	LFRS-1/4-D-MINI-KA	195 023	LFRS-1/4-D-MINI-KA-A
Midi	G1/4	195 036	LFRS-1/4-D-MIDI-KA	195 037	LFRS-1/4-D-MIDI-KA-A
	G3/8	195 050	LFRS-3/8-D-MIDI-KA	195 051	LFRS-3/8-D-MIDI-KA-A
	G1/2	195 064	LFRS-1/2-D-MIDI-KA	195 065	LFRS-1/2-D-MIDI-KA-A
Maxi	G1/2	195 078	LFRS-1/2-D-MAXI-KA	195 079	LFRS-1/2-D-MAXI-KA-A
	G3/4	195 092	LFRS-3/4-D-MAXI-KA	195 093	LFRS-3/4-D-MAXI-KA-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 176	LFRS-1/2-D-DI-MAXI-KA	195 177	LFRS-1/2-D-DI-MAXI-KA-A
	G3/4	195 190	LFRS-3/4-D-DI-MAXI-KA	195 191	LFRS-3/4-D-DI-MAXI-KA-A

Service unit combinations LFR-KB/LFRS-KB, D series

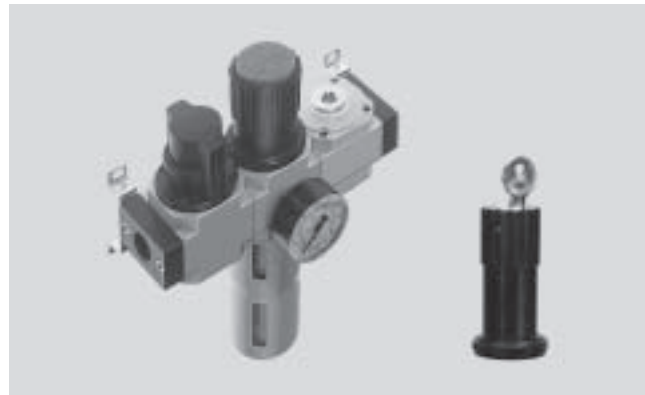
Technical data

Function



- On-off valve HE
 - manually actuated
- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
 - Pressure switch without display
- Mounting accessories

- Flow rate
700 ... 8400 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar



- For unlubricated compressed air supply
- Supply pressure can be opened and closed
- Three branch connections are available
- To ensure safe venting of the system, an additional quick exhaust valve is necessary at the output of the service unit combination

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.2	0.2	0.25	0.3	0.25	0.2	0.2
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	1 ... 16					
	fully automatic	1.5 ... 12					

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KB is 43 cm³.

Service unit combinations LFR-KB/LFRS-KB, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qn [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	700	1050	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1720	2420	2920	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	8000	8400
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	5400	7000

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

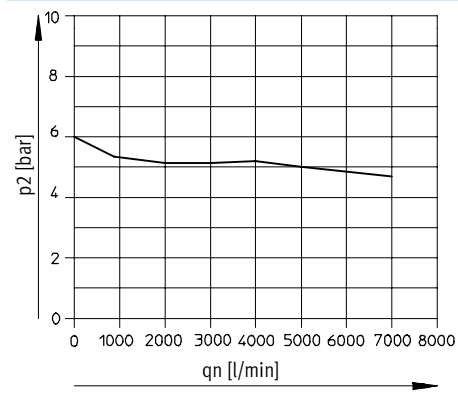
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	1000	2200	3300	3500
LFRS	1100	2440	3400	3740

 Note
Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KB(-A)



Primary pressure p1 = 10 bar

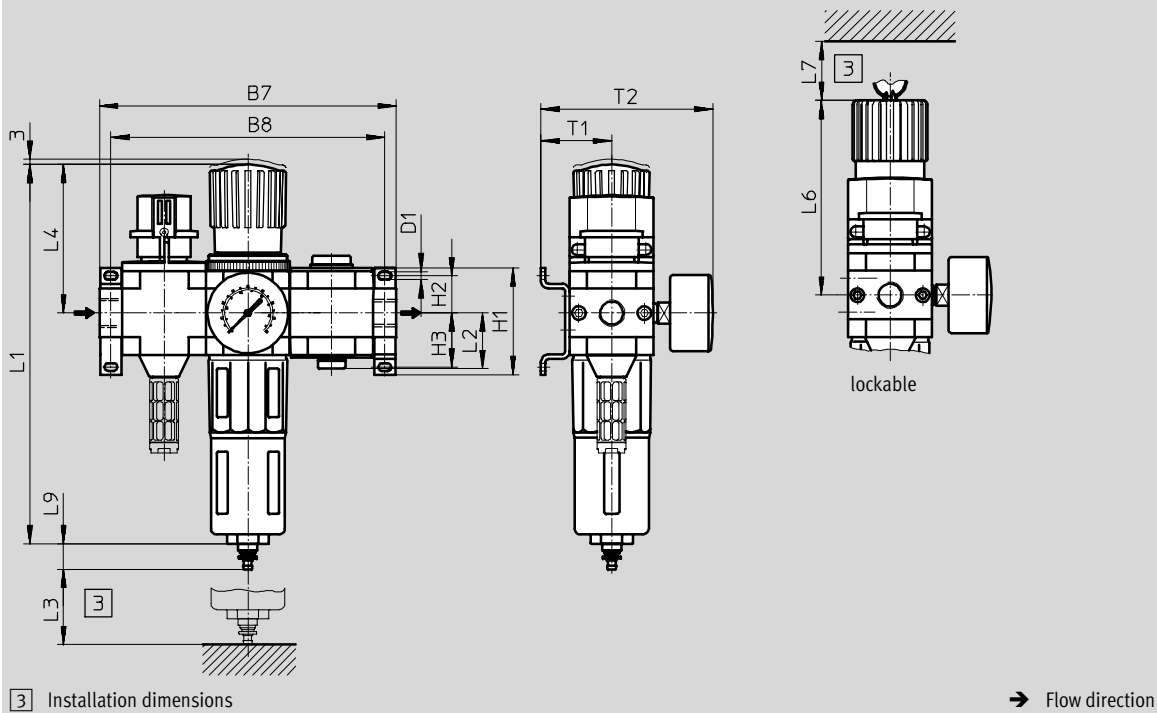
Service unit combinations LFR-KB/LFRS-KB, D series

Technical data



Dimensions

LFR/LFRS-...-KB



Type	B7	B8	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	
Mini																	
LFR-...-D-MINI-KB (A)	144	132	4.3	43	17.5	17.5	193	28	60	68	100	98	60	19	39	95	
LFRS-...-D-MINI-KB (A)																	
Midi																	
LFR-...-D-MIDI-KB (A)	195	180	5.3	70	24.5	35.5	250	36.5	80	99	120	130	60	19	47	114	
LFRS-...-D-MIDI-KB (A)																	
Maxi																	
LFR-...-D-MAXI-KB (A)	228	212	5.3	70	24.5	35.5	252	42	90	82	150	111	60	19	53	126	
LFRS-...-D-MAXI-KB (A)							275			105		135					
LFR-...-D-DI-MAXI-KB (A)																	
LFRS-...-D-DI-MAXI-KB (A)																	

Service unit combinations LFR-KB/LFRS-KB, D series



Technical data

D series service units
Service units

1.1

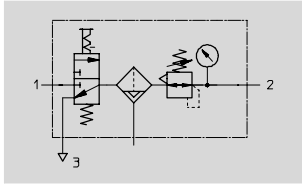
Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, branching module					
Mini	G1/8	185 719	LFR-1/8-D-MINI-KB	185 720	LFR-1/8-D-MINI-KB-A
	G1/4	185 721	LFR-1/4-D-MINI-KB	185 722	LFR-1/4-D-MINI-KB-A
Midi	G1/4	185 723	LFR-1/4-D-MIDI-KB	185 724	LFR-1/4-D-MIDI-KB-A
	G3/8	185 725	LFR-3/8-D-MIDI-KB	185 726	LFR-3/8-D-MIDI-KB-A
	G1/2	185 727	LFR-1/2-D-MIDI-KB	185 728	LFR-1/2-D-MIDI-KB-A
Maxi	G1/2	186 041	LFR-1/2-D-MAXI-KB	186 042	LFR-1/2-D-MAXI-KB-A
	G3/4	185 729	LFR-3/4-D-MAXI-KB	185 730	LFR-3/4-D-MAXI-KB-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 441	LFR-1/2-D-DI-MAXI-KB	192 455	LFR-1/2-D-DI-MAXI-KB-A
	G3/4	192 448	LFR-3/4-D-DI-MAXI-KB	192 462	LFR-3/4-D-DI-MAXI-KB-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, branching module					
Mini	G1/8	195 010	LFRS-1/8-D-MINI-KB	195 011	LFRS-1/8-D-MINI-KB-A
	G1/4	195 024	LFRS-1/4-D-MINI-KB	195 025	LFRS-1/4-D-MINI-KB-A
Midi	G1/4	195 038	LFRS-1/4-D-MIDI-KB	195 039	LFRS-1/4-D-MIDI-KB-A
	G3/8	195 052	LFRS-3/8-D-MIDI-KB	195 053	LFRS-3/8-D-MIDI-KB-A
	G1/2	195 066	LFRS-1/2-D-MIDI-KB	195 067	LFRS-1/2-D-MIDI-KB-A
Maxi	G1/2	195 080	LFRS-1/2-D-MAXI-KB	195 081	LFRS-1/2-D-MAXI-KB-A
	G3/4	195 094	LFRS-3/4-D-MAXI-KB	195 095	LFRS-3/4-D-MAXI-KB-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 178	LFRS-1/2-D-DI-MAXI-KB	195 179	LFRS-1/2-D-DI-MAXI-KB-A
	G3/4	195 192	LFRS-3/4-D-DI-MAXI-KB	195 193	LFRS-3/4-D-DI-MAXI-KB-A

Service unit combinations LFR-KC/LFRS-KC, D series

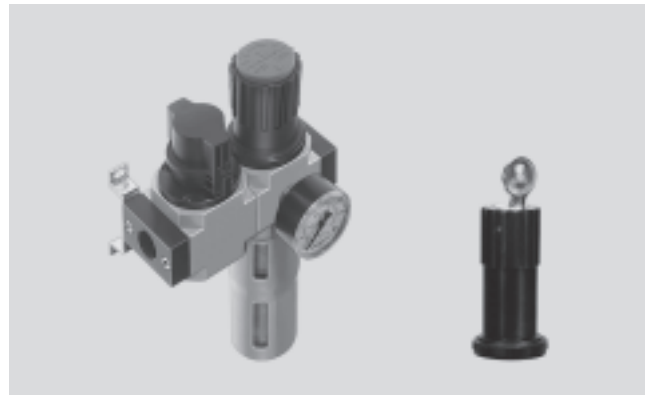
Technical data

Function



- On-off valve HE
 - manually actuated
- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Mounting accessories

- Flow rate
750 ... 8400 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar



- For unlubricated compressed air
- Supply pressure can be opened and closed
- To ensure safe venting of the system, an additional quick exhaust valve is necessary at the output of the service unit combination

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually		1 ... 16				
	fully automatic		1.5 ... 12				

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KC is 43 cm³.

Service unit combinations LFR-KC/LFRS-KC, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qn [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	750	1150	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1900	2700	3150	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	8100	8400
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	4800	5400

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

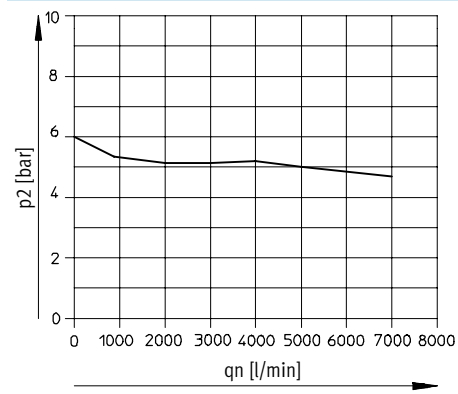
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	700	1600	2300	2600
LFRS	1000	1840	2400	2840

 Note
Materials → Technical data of the individual devices

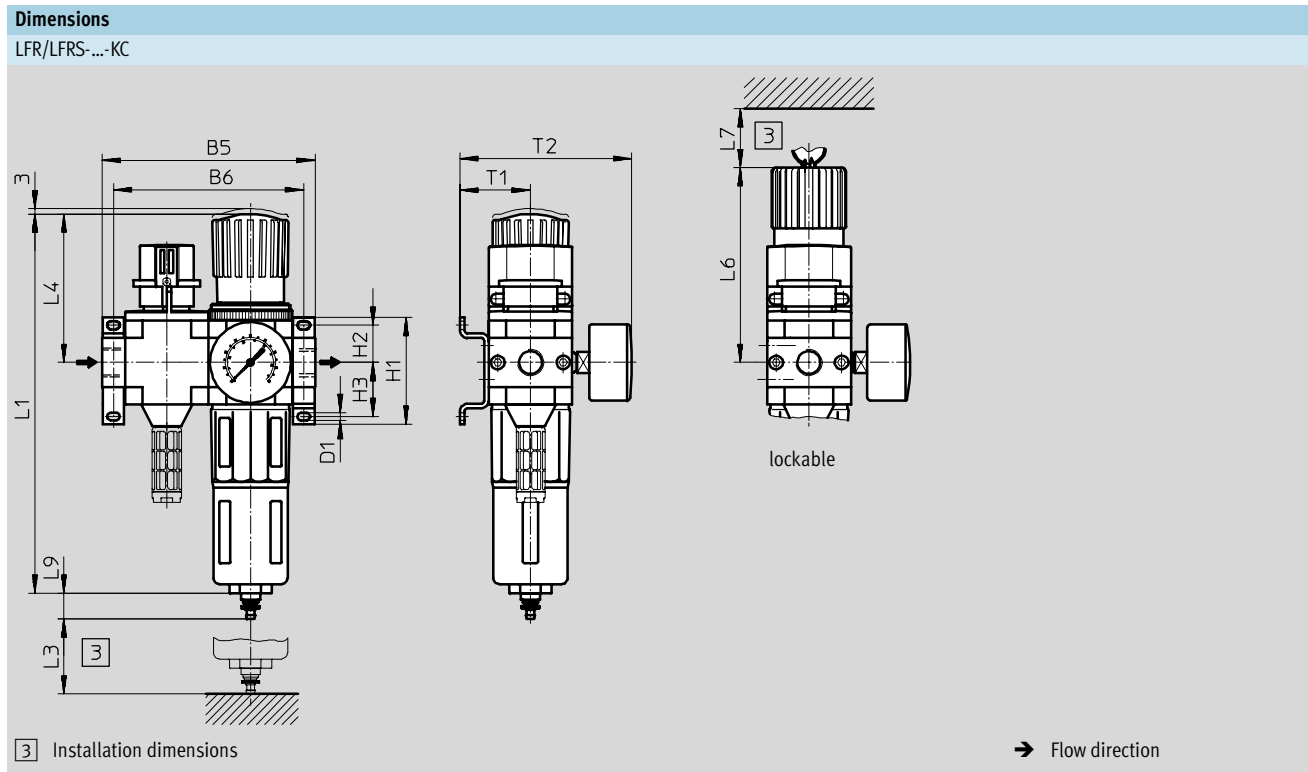
Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KC(-A)



Primary pressure p1 = 10 bar

Service unit combinations LFR-KC/LFRS-KC, D series

Technical data



Type	B5	B6	D1	H1	H2	H3	L1	L3	L4	L5	L6	L7	L9	T1	T2
Mini															
LFR-...-D-MINI-KC (A)	104	92	4.3	43	17.5	17.5	193	60	68	100	98	60	19	39	95
LFRS-...-D-MINI-KC (A)															
Midi															
LFR-...-D-MIDI-KC (A)	140	125	5.3	70	24.5	35.5	250	80	99	120	130	60	19	47	114
LFRS-...-D-MIDI-KC (A)															
Maxi															
LFR-...-D-MAXI-KC (A)	162	146	5.3	70	24.5	35.5	252	90	82	150	111	60	19	53	126
LFRS-...-D-MAXI-KC (A)							275		105		135				
LFR-...-D-DI-MAXI-KC (A)															
LFRS-...-D-DI-MAXI-KC (A)															

Service unit combinations LFR-KC/LFRS-KC, D series

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Technical data

D series service units
Service units

1.1

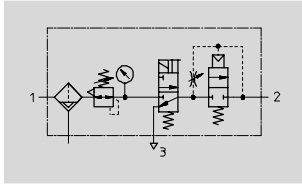
Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator					
Mini	G1/8	185 731	LFR-1/8-D-MINI-KC	185 732	LFR-1/8-D-MINI-KC-A
	G1/4	185 733	LFR-1/4-D-MINI-KC	185 734	LFR-1/4-D-MINI-KC-A
Midi	G1/4	185 735	LFR-1/4-D-MIDI-KC	185 736	LFR-1/4-D-MIDI-KC-A
	G3/8	185 737	LFR-3/8-D-MIDI-KC	185 738	LFR-3/8-D-MIDI-KC-A
	G1/2	185 739	LFR-1/2-D-MIDI-KC	185 740	LFR-1/2-D-MIDI-KC-A
Maxi	G1/2	186 043	LFR-1/2-D-MAXI-KC	186 044	LFR-1/2-D-MAXI-KC-A
	G3/4	185 741	LFR-3/4-D-MAXI-KC	185 742	LFR-3/4-D-MAXI-KC-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 442	LFR-1/2-D-DI-MAXI-KC	192 456	LFR-1/2-D-DI-MAXI-KC-A
	G3/4	192 449	LFR-3/4-D-DI-MAXI-KC	192 463	LFR-3/4-D-DI-MAXI-KC-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator					
Mini	G1/8	195 012	LFRS-1/8-D-MINI-KC	195 013	LFRS-1/8-D-MINI-KC-A
	G1/4	195 026	LFRS-1/4-D-MINI-KC	195 027	LFRS-1/4-D-MINI-KC-A
Midi	G1/4	195 040	LFRS-1/4-D-MIDI-KC	195 041	LFRS-1/4-D-MIDI-KC-A
	G3/8	195 054	LFRS-3/8-D-MIDI-KC	195 055	LFRS-3/8-D-MIDI-KC-A
	G1/2	195 068	LFRS-1/2-D-MIDI-KC	195 069	LFRS-1/2-D-MIDI-KC-A
Maxi	G1/2	195 082	LFRS-1/2-D-MAXI-KC	195 083	LFRS-1/2-D-MAXI-KC-A
	G3/4	195 096	LFRS-3/4-D-MAXI-KC	195 097	LFRS-3/4-D-MAXI-KC-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 180	LFRS-1/2-D-DI-MAXI-KC	195 181	LFRS-1/2-D-DI-MAXI-KC-A
	G3/4	195 194	LFRS-3/4-D-DI-MAXI-KC	195 195	LFRS-3/4-D-DI-MAXI-KC-A

Service unit combinations LFR-KD/LFRS-KD, D series

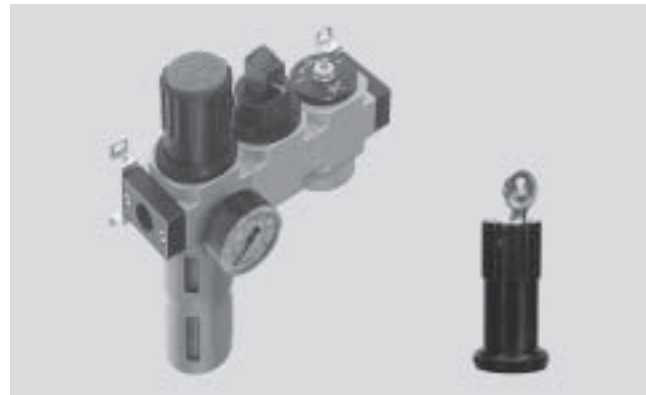
Technical data

Function



- Flow rate
595 ... 5000 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
3.5 ... 16 bar

- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- On-off valve HEE
 - solenoid actuated
 - 24 V DC
- Soft-start valve HEL
 - pneumatically actuated
- Mounting accessories



- For unlubricated compressed air
- When supply pressure is closed, quick venting ensures rapid pressure reduction
- Gradual pressure build-up prevents sudden, unpredictable movements

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ¹ / ₂	G ³ / ₄
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.15	0.15	0.25	0.25	0.25	0.3	0.2
Pressure regulation range [bar]	2.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	3.5 ... 16					
	fully automatic	3.5 ... 12					

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KD is 43 cm³.

Service unit combinations LFR-KD/LFRS-KD, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	595	730	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1440	1890	2000	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	4300	5000
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	3000	2800

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

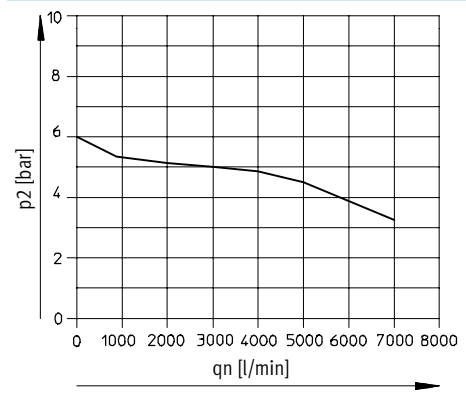
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	900	2100	3100	3300
LFRS	1000	2340	3200	3540

 Note
Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KD(-A)



Primary pressure p1 = 10 bar

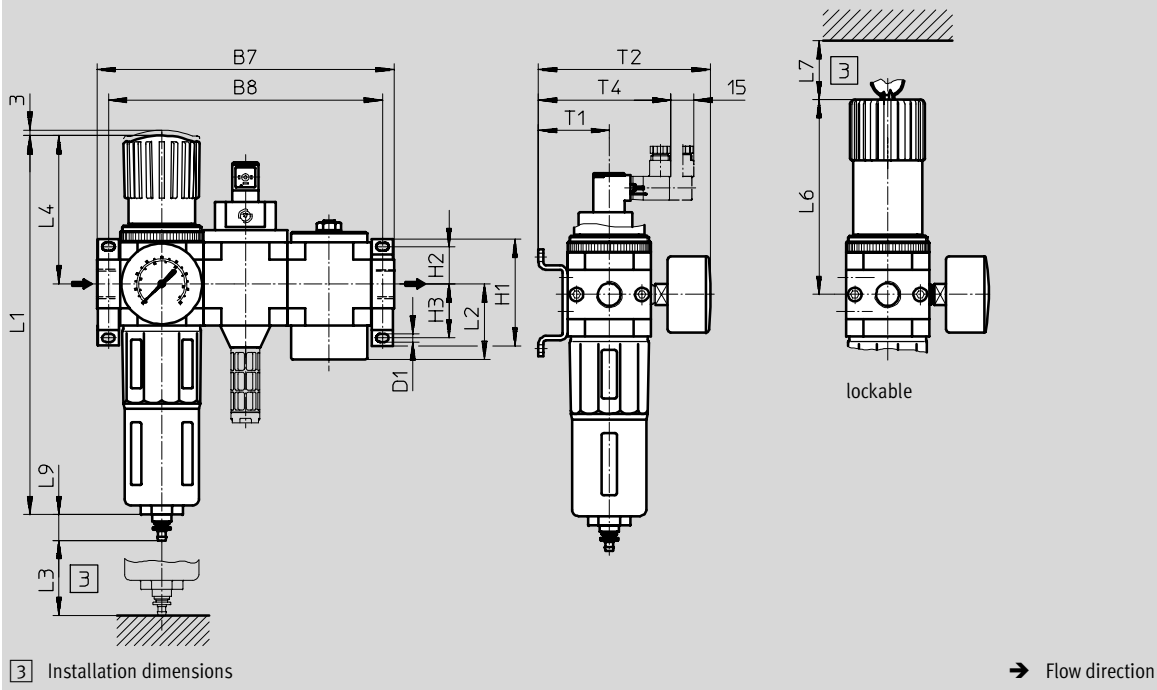
Service unit combinations LFR-KD/LFRS-KD, D series

Technical data



Dimensions

LFR/LFRS-...-KD



Type	B7	B8	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T4
Mini																	
LFR-...-D-MINI-KD (A)	144	132	4.3	43	17.5	17.5	193	36	60	68	100	98	60	19	39	95	78
LFRS-...-D-MINI-KD (A)																	
Midi																	
LFR-...-D-MIDI-KD (A)	195	180	5.3	70	24.5	35.5	250	49.5	80	99	120	130	60	19	47	114	86
LFRS-...-D-MIDI-KD (A)																	
Maxi																	
LFR-...-D-MAXI-KD (A)	228	212	5.3	70	24.5	35.5	252	56.4	90	82	111	60	19	53	126	92	
LFRS-...-D-MAXI-KD (A)							275			105	135						
LFR-...-D-DI-MAXI-KD (A)																	
LFRS-...-D-DI-MAXI-KD (A)																	

Service unit combinations LFR-KD/LFRS-KD, D series



Technical data

D series service units
Service units

1.1

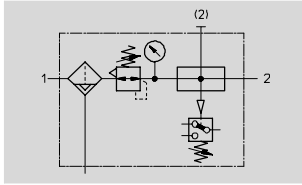
Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, on-off valve with solenoid coil 24 V DC, soft-start valve					
Mini	G1/8	185 743	LFR-1/8-D-MINI-KD	185 744	LFR-1/8-D-MINI-KD-A
	G1/4	185 745	LFR-1/4-D-MINI-KD	185 746	LFR-1/4-D-MINI-KD-A
Midi	G1/4	185 747	LFR-1/4-D-MIDI-KD	185 748	LFR-1/4-D-MIDI-KD-A
	G3/8	185 749	LFR-3/8-D-MIDI-KD	185 750	LFR-3/8-D-MIDI-KD-A
	G1/2	185 751	LFR-1/2-D-MIDI-KD	185 752	LFR-1/2-D-MIDI-KD-A
Maxi	G1/2	186 045	LFR-1/2-D-MAXI-KD	186 046	LFR-1/2-D-MAXI-KD-A
	G3/4	185 753	LFR-3/4-D-MAXI-KD	185 754	LFR-3/4-D-MAXI-KD-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 443	LFR-1/2-D-DI-MAXI-KD	192 457	LFR-1/2-D-DI-MAXI-KD-A
	G3/4	192 450	LFR-3/4-D-DI-MAXI-KD	192 464	LFR-3/4-D-DI-MAXI-KD-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, on-off valve with solenoid coil 24 V DC, soft-start valve					
Mini	G1/8	195 014	LFRS-1/8-D-MINI-KD	195 015	LFRS-1/8-D-MINI-KD-A
	G1/4	195 028	LFRS-1/4-D-MINI-KD	195 029	LFRS-1/4-D-MINI-KD-A
Midi	G1/4	195 042	LFRS-1/4-D-MIDI-KD	195 043	LFRS-1/4-D-MIDI-KD-A
	G3/8	195 056	LFRS-3/8-D-MIDI-KD	195 057	LFRS-3/8-D-MIDI-KD-A
	G1/2	195 070	LFRS-1/2-D-MIDI-KD	195 071	LFRS-1/2-D-MIDI-KD-A
Maxi	G1/2	195 084	LFRS-1/2-D-MAXI-KD	195 085	LFRS-1/2-D-MAXI-KD-A
	G3/4	195 098	LFRS-3/4-D-MAXI-KD	195 099	LFRS-3/4-D-MAXI-KD-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 182	LFRS-1/2-D-DI-MAXI-KD	195 183	LFRS-1/2-D-DI-MAXI-KD-A
	G3/4	195 196	LFRS-3/4-D-DI-MAXI-KD	195 197	LFRS-3/4-D-DI-MAXI-KD-A

Service unit combinations LFR-KE/LFRS-KE, D series

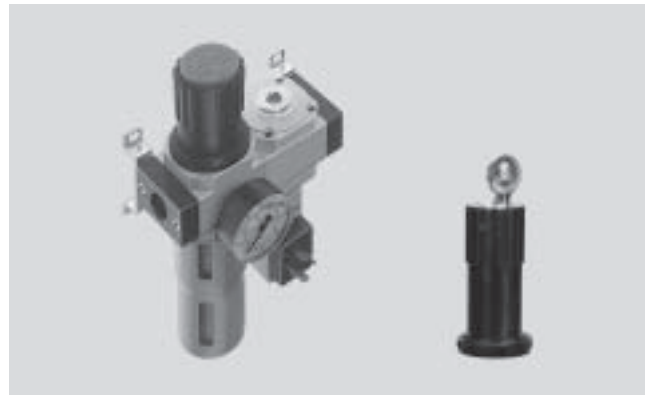
Technical data

Function



- Flow rate
720 ... 9400 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar

- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
 - pressure switch without display
- Mounting accessories



- For unlubricated compressed air
- Two branch connections are available
- Electrical pressure monitoring with adjustable switching pressure

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ¹ / ₂	G ³ / ₄
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.15	0.15	0.25	0.2	0.2	0.2	0.3
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	1 ... 16					
	fully automatic	1.5 ... 12					

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KE is 43 cm³.

Service unit combinations LFR-KE/LFRS-KE, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	720	1140	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1850	2620	3050	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	9200	9400
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	5000	6000

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

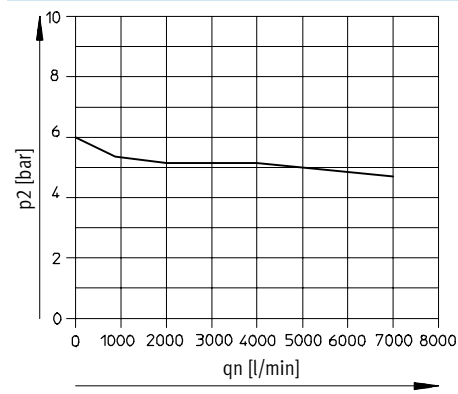
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	1000	2000	2400	2600
LFRS	1100	2240	2500	2840

 Note
Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KE(-A)



Primary pressure p1 = 10 bar

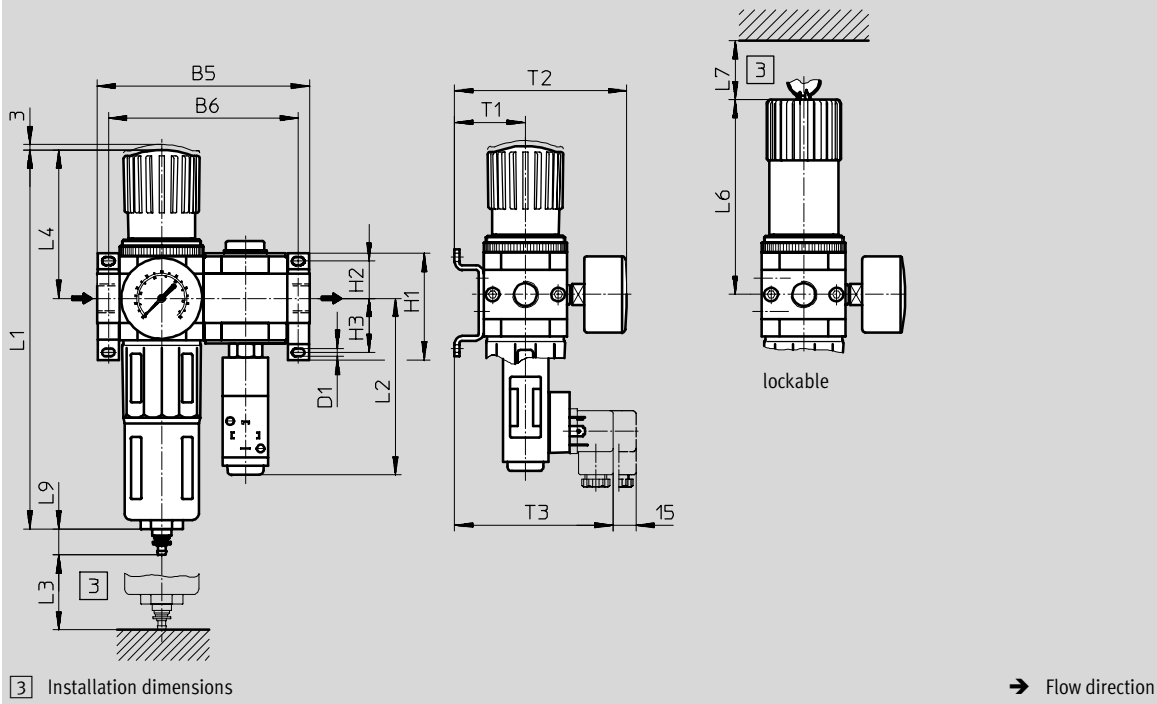
Service unit combinations LFR-KE/LFRS-KE, D series

Technical data



Dimensions

LFR/LFRS-...-KE



Type	B5	B6	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T3
Mini																	
LFR-...-D-MINI-KE (A)	104	92	4.3	43	17.5	17.5	193	108	60	68	100	98	60	19	39	95	97
LFRS-...-D-MINI-KE (A)																	
Midi																	
LFR-...-D-MIDI-KE (A)	140	125	5.3	70	24.5	35.5	250	117	80	99	120	130	60	19	47	114	109
LFRS-...-D-MIDI-KE (A)																	
Maxi																	
LFR-...-D-MAXI-KE (A)	162	146	5.3	70	24.5	35.5	252	122	90	82	150	111	60	19	53	126	111
LFRS-...-D-MAXI-KE (A)							275			105		135					
LFR-...-D-DI-MAXI-KE (A)																	
LFRS-...-D-DI-MAXI-KE (A)																	

Service unit combinations LFR-KE/LFRS-KE, D series



Technical data

D series service units
Service units

1.1

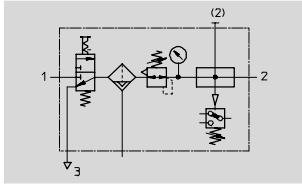
Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module with pressure switch					
Mini	G1/8	185 755	LFR-1/8-D-MINI-KE	185 756	LFR-1/8-D-MINI-KE-A
	G1/4	185 757	LFR-1/4-D-MINI-KE	185 758	LFR-1/4-D-MINI-KE-A
Midi	G1/4	185 759	LFR-1/4-D-MIDI-KE	185 760	LFR-1/4-D-MIDI-KE-A
	G3/8	185 761	LFR-3/8-D-MIDI-KE	185 762	LFR-3/8-D-MIDI-KE-A
	G1/2	185 763	LFR-1/2-D-MIDI-KE	185 764	LFR-1/2-D-MIDI-KE-A
Maxi	G1/2	186 047	LFR-1/2-D-MAXI-KE	186 048	LFR-1/2-D-MAXI-KE-A
	G3/4	185 765	LFR-3/4-D-MAXI-KE	185 766	LFR-3/4-D-MAXI-KE-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 444	LFR-1/2-D-DI-MAXI-KE	192 458	LFR-1/2-D-DI-MAXI-KE-A
	G3/4	192 451	LFR-3/4-D-DI-MAXI-KE	192 465	LFR-3/4-D-DI-MAXI-KE-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Filter regulator, branching module with pressure switch					
Mini	G1/8	195 016	LFRS-1/8-D-MINI-KE	195 017	LFRS-1/8-D-MINI-KE-A
	G1/4	195 030	LFRS-1/4-D-MINI-KE	195 031	LFRS-1/4-D-MINI-KE-A
Midi	G1/4	195 044	LFRS-1/4-D-MIDI-KE	195 045	LFRS-1/4-D-MIDI-KE-A
	G3/8	195 058	LFRS-3/8-D-MIDI-KE	195 059	LFRS-3/8-D-MIDI-KE-A
	G1/2	195 072	LFRS-1/2-D-MIDI-KE	195 073	LFRS-1/2-D-MIDI-KE-A
Maxi	G1/2	195 086	LFRS-1/2-D-MAXI-KE	195 087	LFRS-1/2-D-MAXI-KE-A
	G3/4	195 100	LFRS-3/4-D-MAXI-KE	195 101	LFRS-3/4-D-MAXI-KE-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 184	LFRS-1/2-D-DI-MAXI-KE	195 185	LFRS-1/2-D-DI-MAXI-KE-A
	G3/4	195 198	LFRS-3/4-D-DI-MAXI-KE	195 199	LFRS-3/4-D-DI-MAXI-KE-A

Service unit combinations LFR-KF/LFRS-KF, D series

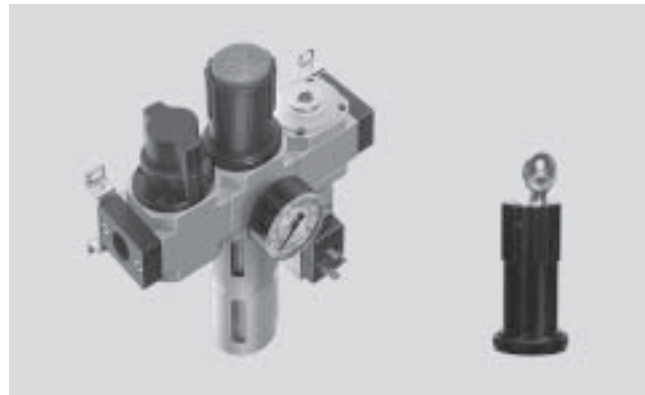
Technical data

Function



- On-off valve HE
 - manually actuated
- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- Branching module FRM
 - pressure switch without display
- Mounting accessories

- Flow rate
700 ... 8400 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
1 ... 16 bar



- For unlubricated compressed air
- Supply pressure can be opened and closed
- Two branch connections are available
- Electrical pressure monitoring with adjustable switching pressure
- To ensure safe venting of the system, an additional quick exhaust valve is necessary at the output of the service unit combination

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.2	0.2	0.25	0.3	0.25	0.2	0.2
Pressure regulation range [bar]	0.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	1 ... 16					
	fully automatic	1.5 ... 12					

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KF is 43 cm³.

Service unit combinations LFR-KF/LFRS-KF, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	700	1050	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1720	2420	2920	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	8000	8400
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	5000	6000

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

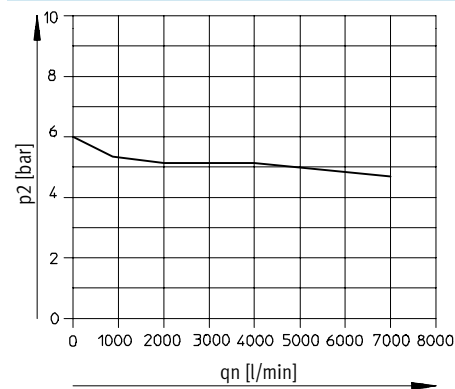
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	1200	2400	3300	3500
LFRS	1300	2640	3400	3740

 Note
Materials → Technical data of the individual devices

Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KF(-A)



Primary pressure p1 = 10 bar

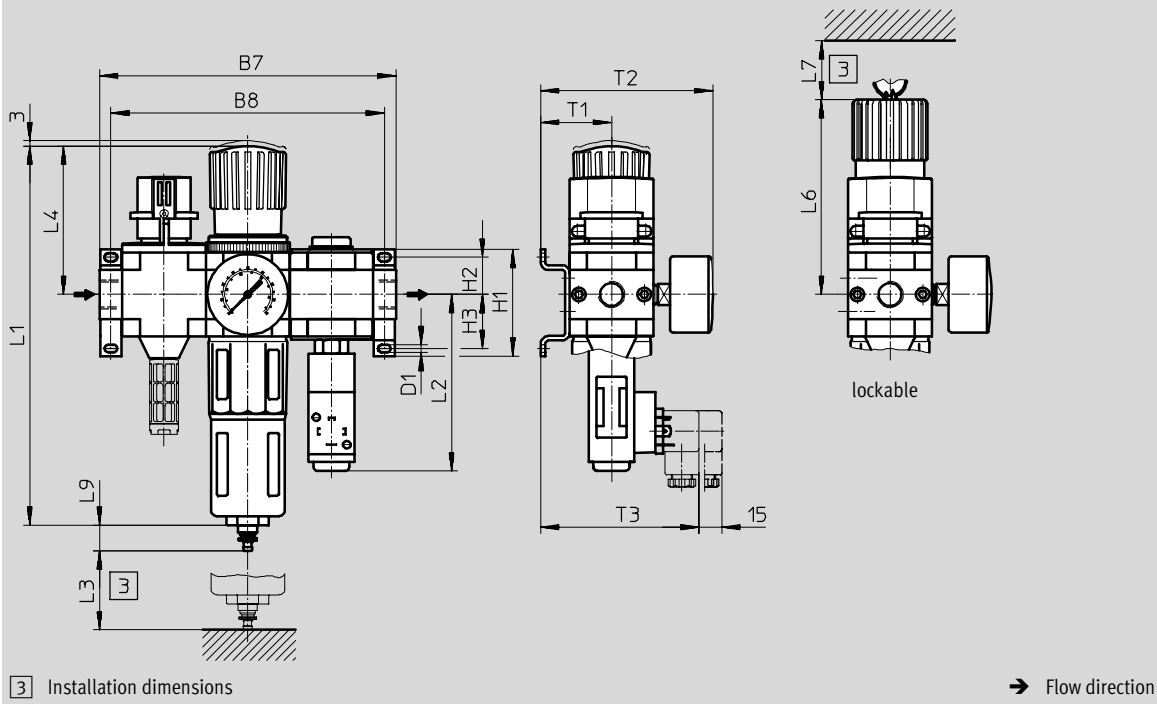
Service unit combinations LFR-KF/LFRS-KF, D series

Technical data



Dimensions

LFR/LFRS-...-KF



3 Installation dimensions

→ Flow direction

Type	B7	B8	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T3
Mini																	
LFR-...-D-MINI-KF (A)	144	132	4.3	43	17.5	17.5	193	108	60	68	100	98	60	19	39	95	97
LFRS-...-D-MINI-KF (A)																	
Midi																	
LFR-...-D-MIDI-KF (A)	195	180	5.3	70	24.5	35.5	250	117	80	99	120	130	60	19	47	114	105
LFRS-...-D-MIDI-KF (A)																	
Maxi																	
LFR-...-D-MAXI-KF (A)	228	212	5.3	70	24.5	35.5	252	122	90	82	150	111	60	19	53	126	111
LFRS-...-D-MAXI-KF (A)							275			105		135					
LFR-...-D-DI-MAXI-KF (A)																	
LFRS-...-D-DI-MAXI-KF (A)																	

Service unit combinations LFR-KF/LFRS-KF, D series



Technical data

D series service units
Service units

1.1

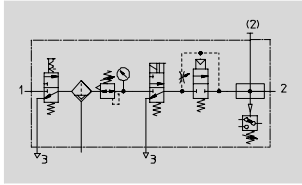
Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, branching module with pressure switch					
Mini	G1/8	185 767	LFR-1/8-D-MINI-KF	185 768	LFR-1/8-D-MINI-KF-A
	G1/4	185 769	LFR-1/4-D-MINI-KF	185 770	LFR-1/4-D-MINI-KF-A
Midi	G1/4	185 771	LFR-1/4-D-MIDI-KF	185 772	LFR-1/4-D-MIDI-KF-A
	G3/8	185 773	LFR-3/8-D-MIDI-KF	185 774	LFR-3/8-D-MIDI-KF-A
	G1/2	185 775	LFR-1/2-D-MIDI-KF	185 776	LFR-1/2-D-MIDI-KF-A
Maxi	G1/2	186 049	LFR-1/2-D-MAXI-KF	186 050	LFR-1/2-D-MAXI-KF-A
	G3/4	185 777	LFR-3/4-D-MAXI-KF	185 778	LFR-3/4-D-MAXI-KF-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 445	LFR-1/2-D-DI-MAXI-KF	192 459	LFR-1/2-D-DI-MAXI-KF-A
	G3/4	192 452	LFR-3/4-D-DI-MAXI-KF	192 466	LFR-3/4-D-DI-MAXI-KF-A

Ordering data					
Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, branching module with pressure switch					
Mini	G1/8	195 018	LFRS-1/8-D-MINI-KF	195 019	LFRS-1/8-D-MINI-KF-A
	G1/4	195 032	LFRS-1/4-D-MINI-KF	195 033	LFRS-1/4-D-MINI-KF-A
Midi	G1/4	195 046	LFRS-1/4-D-MIDI-KF	195 047	LFRS-1/4-D-MIDI-KF-A
	G3/8	195 060	LFRS-3/8-D-MIDI-KF	195 061	LFRS-3/8-D-MIDI-KF-A
	G1/2	195 074	LFRS-1/2-D-MIDI-KF	195 075	LFRS-1/2-D-MIDI-KF-A
Maxi	G1/2	195 088	LFRS-1/2-D-MAXI-KF	195 089	LFRS-1/2-D-MAXI-KF-A
	G3/4	195 102	LFRS-3/4-D-MAXI-KF	195 103	LFRS-3/4-D-MAXI-KF-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 186	LFRS-1/2-D-DI-MAXI-KF	195 187	LFRS-1/2-D-DI-MAXI-KF-A
	G3/4	195 200	LFRS-3/4-D-DI-MAXI-KF	195 201	LFRS-3/4-D-DI-MAXI-KF-A

Service unit combinations LFR-KG/LFRS-KG, D series

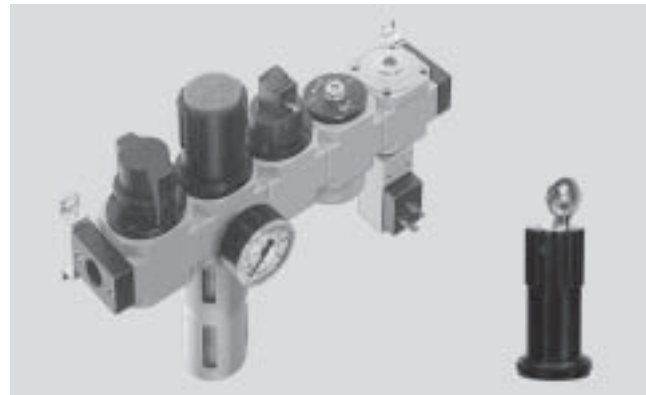
Technical data

Function



- Flow rate
575 ... 4900 l/min
- Temperature range
-10 ... +60 °C
- Input pressure
3.5 ... 16 bar

- On-off valve HE
 - manually actuated
- Filter regulator LFR/LFRS
 - grade of filtration 40 µm
 - metal bowl guard
 - condensate drain, turned manually or fully automatic
 - rotary knob with detent or lockable rotary knob
 - pressure gauge
- On-off valve HEE
 - solenoid actuated
 - 24 V DC
- Soft-start valve HEL
 - pneumatically actuated
- Branching module FRM
 - pressure switch without display
- Mounting accessories



- For unlubricated compressed air
- To ensure safe venting of the system, an additional quick exhaust valve is necessary at the output of the service unit combination
- Two branch connections are available
- Gradual pressure build-up prevents sudden, unpredictable movements
- Electrical pressure monitoring with adjustable switching pressure

General technical data							
Size	Mini		Midi			Maxi	
Pneumatic connection	G1/8	G1/4	G1/4	G3/8	G1/2	G1/2	G3/4
Operating medium	Compressed air						
Type of mounting	Via accessories						
	In-line installation						
Assembly position	Vertical ±5°						
Grade of filtration [µm]	40						
Max. hysteresis [bar]	0.15	0.15	0.25	0.2	0.2	0.25	0.25
Pressure regulation range [bar]	2.5 ... 12						
Pressure indication	Via pressure gauge						
Max. condensate volume [cm ³]	22		43			80 ¹⁾	
Input pressure [bar]							
Condensate drain	turned manually	3.5 ... 16					
	fully automatic	3.5 ... 12					

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI-KG is 43 cm³.

Service unit combinations LFR-KG/LFRS-KG, D series

Technical data



D series service units
Service units

1.1


Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	G1/8	G1/4	G3/8	G1/2	G3/4
Mini					
LFR/LFRS-...-D-...	575	715	-	-	-
Midi					
LFR/LFRS-...-D-...	-	1370	1680	1740	-
Maxi					
LFR/LFRS-...-D-...	-	-	-	4200	4900
Maxi – Directly actuated pressure regulator with integrated return flow function					
LFR/LFRS-...-D-...	-	-	-	2500	3000

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

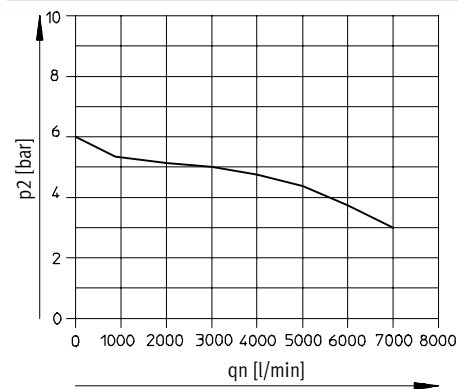
Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size	Mini	Midi	Maxi	
			D	D-DI
LFR	1500	3400	5200	5400
LFRS	1600	3640	5300	5640

 Note
Materials → Technical data of the individual devices

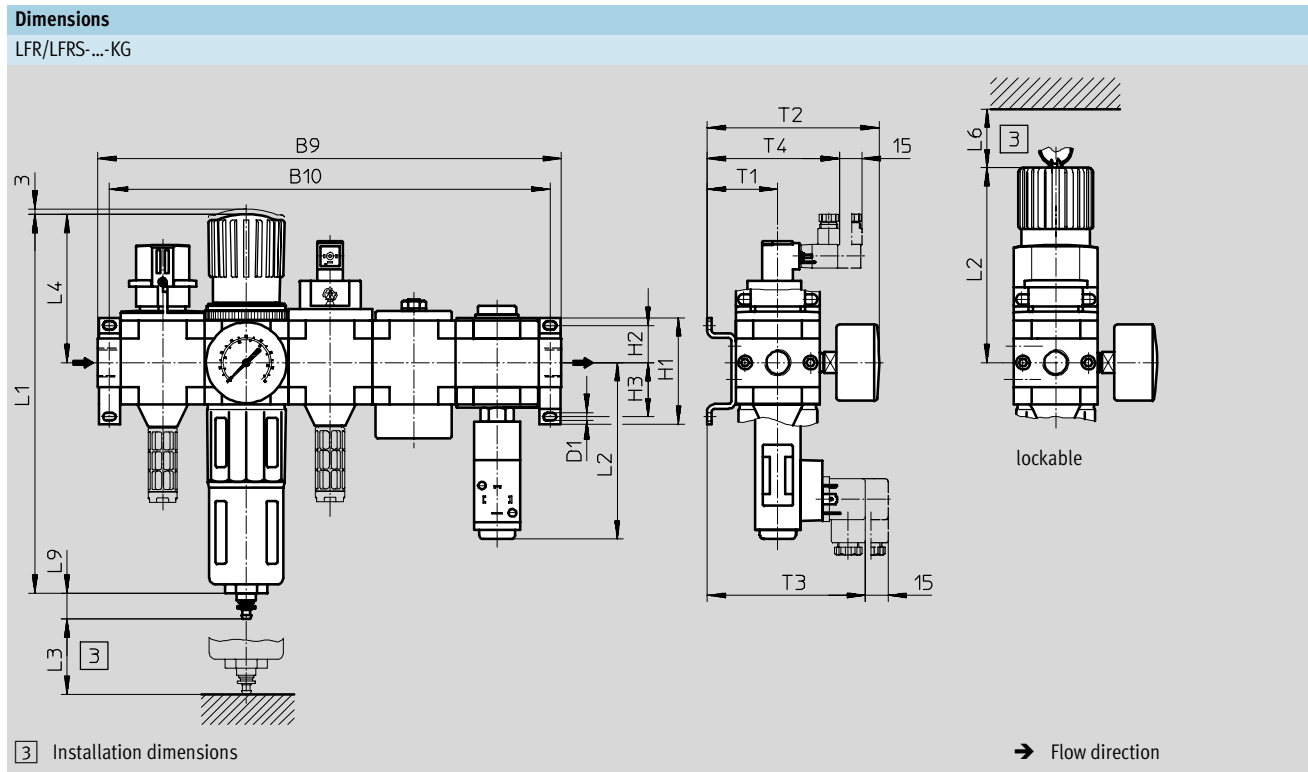
Standard flow rate qn as a function of the output pressure p2 LFR/LFRS-1/2-D-DI-MAXI-KG(-A)



Primary pressure p1 = 10 bar

Service unit combinations LFR-KG/LFRS-KG, D series

Technical data



Type	B9	B10	D1	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L9	T1	T2	T3	T4
Mini																		
LFR-...-D-MINI-KG (A)	244	212	4.3	43	17.5	17.5	193	108	60	68	100	98	60	19	39	95	97	78
LFRS-...-D-MINI-KG (A)																		
Midi																		
LFR-...-D-MIDI-KG (A)	305	290	5.3	70	24.5	35.5	250	117	80	99	120	130	60	19	47	114	105	86
LFRS-...-D-MIDI-KG (A)																		
Maxi																		
LFR-...-D-MAXI-KG (A)	360	344	5.3	70	24.5	35.5	252	122	90	82	150	111	60	19	53	126	111	92
LFRS-...-D-MAXI-KG (A)							275			105		135						
LFR-...-D-DI-MAXI-KG (A)																		
LFRS-...-D-DI-MAXI-KG (A)																		

Service unit combinations LFR-KG/LFRS-KG, D series



Technical data

D series service units
Service units

1.1

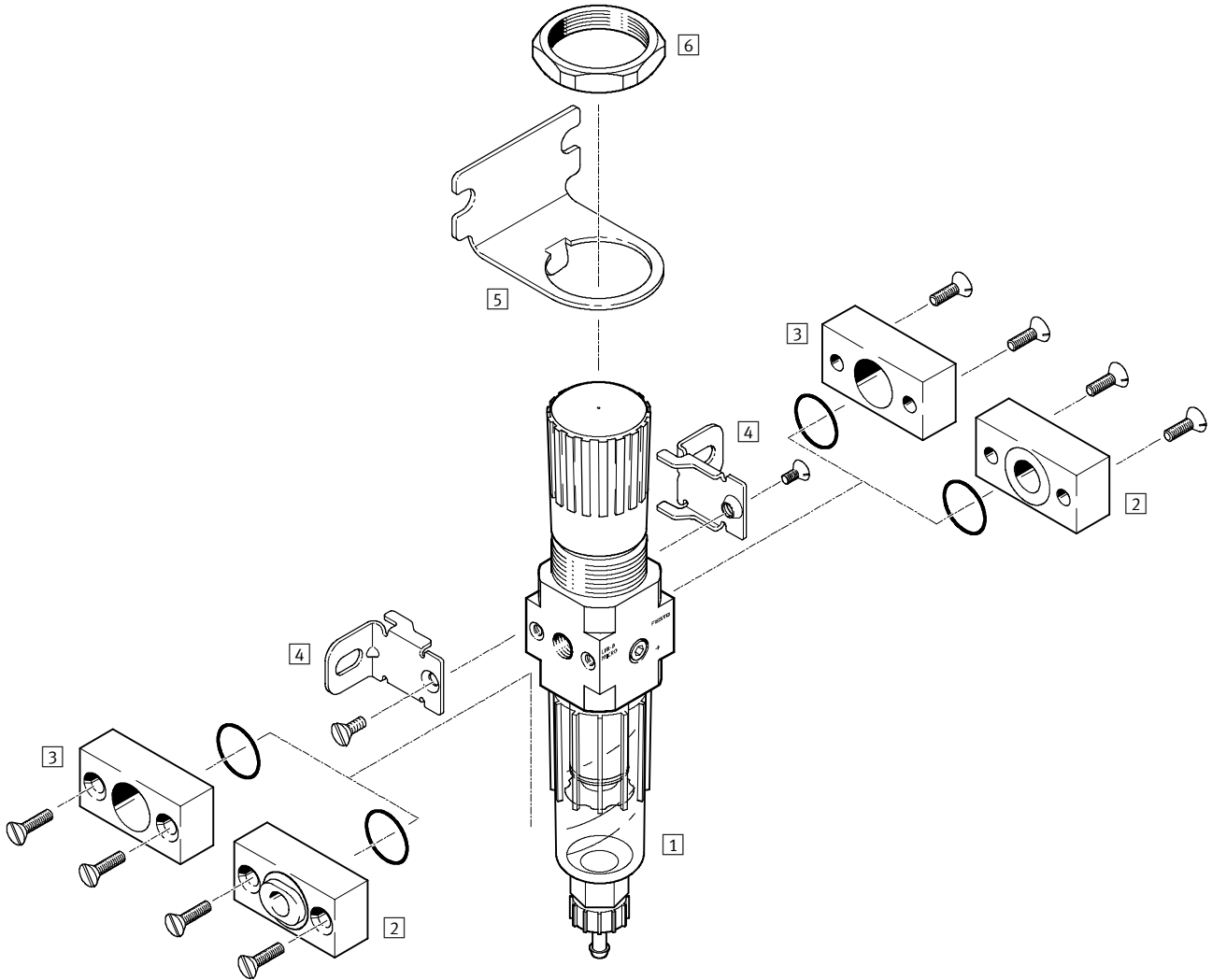
Ordering data					
Pressure regulation range 2.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, on-off valve with solenoid coil 24 V DC, soft-start valve, branching module with pressure switch					
Mini	G1/8	185 779	LFR-1/8-D-MINI-KG	185 780	LFR-1/8-D-MINI-KG-A
	G1/4	185 781	LFR-1/4-D-MINI-KG	185 782	LFR-1/4-D-MINI-KG-A
Midi	G1/4	185 783	LFR-1/4-D-MIDI-KG	185 784	LFR-1/4-D-MIDI-KG-A
	G3/8	185 785	LFR-3/8-D-MIDI-KG	185 786	LFR-3/8-D-MIDI-KG-A
	G1/2	185 787	LFR-1/2-D-MIDI-KG	185 788	LFR-1/2-D-MIDI-KG-A
Maxi	G1/2	186 051	LFR-1/2-D-MAXI-KG	186 052	LFR-1/2-D-MAXI-KG-A
	G3/4	185 789	LFR-3/4-D-MAXI-KG	185 790	LFR-3/4-D-MAXI-KG-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	192 446	LFR-1/2-D-DI-MAXI-KG	192 460	LFR-1/2-D-DI-MAXI-KG-A
	G3/4	192 453	LFR-3/4-D-DI-MAXI-KG	192 467	LFR-3/4-D-DI-MAXI-KG-A

Ordering data					
Pressure regulation range 2.5 ... 12 bar, grade of filtration 40 µm, mounting bracket and metal bowl guard, lockable					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
On-off valve, filter regulator, on-off valve with solenoid coil 24 V DC, soft-start valve, branching module with pressure switch					
Mini	G1/8	195 020	LFRS-1/8-D-MINI-KG	195 021	LFRS-1/8-D-MINI-KG-A
	G1/4	195 034	LFRS-1/4-D-MINI-KG	195 035	LFRS-1/4-D-MINI-KG-A
Midi	G1/4	195 048	LFRS-1/4-D-MIDI-KG	195 049	LFRS-1/4-D-MIDI-KG-A
	G3/8	195 062	LFRS-3/8-D-MIDI-KG	195 063	LFRS-3/8-D-MIDI-KG-A
	G1/2	195 076	LFRS-1/2-D-MIDI-KG	195 077	LFRS-1/2-D-MIDI-KG-A
Maxi	G1/2	195 090	LFRS-1/2-D-MAXI-KG	195 091	LFRS-1/2-D-MAXI-KG-A
	G3/4	195 104	LFRS-3/4-D-MAXI-KG	195 105	LFRS-3/4-D-MAXI-KG-A
Directly actuated pressure regulator with integrated return flow function					
Maxi	G1/2	195 188	LFRS-1/2-D-DI-MAXI-KG	195 189	LFRS-1/2-D-DI-MAXI-KG-A
	G3/4	195 202	LFRS-3/4-D-DI-MAXI-KG	195 203	LFRS-3/4-D-DI-MAXI-KG-A

Filter regulators LFR/LFRS, D series

Peripherals overview

Micro



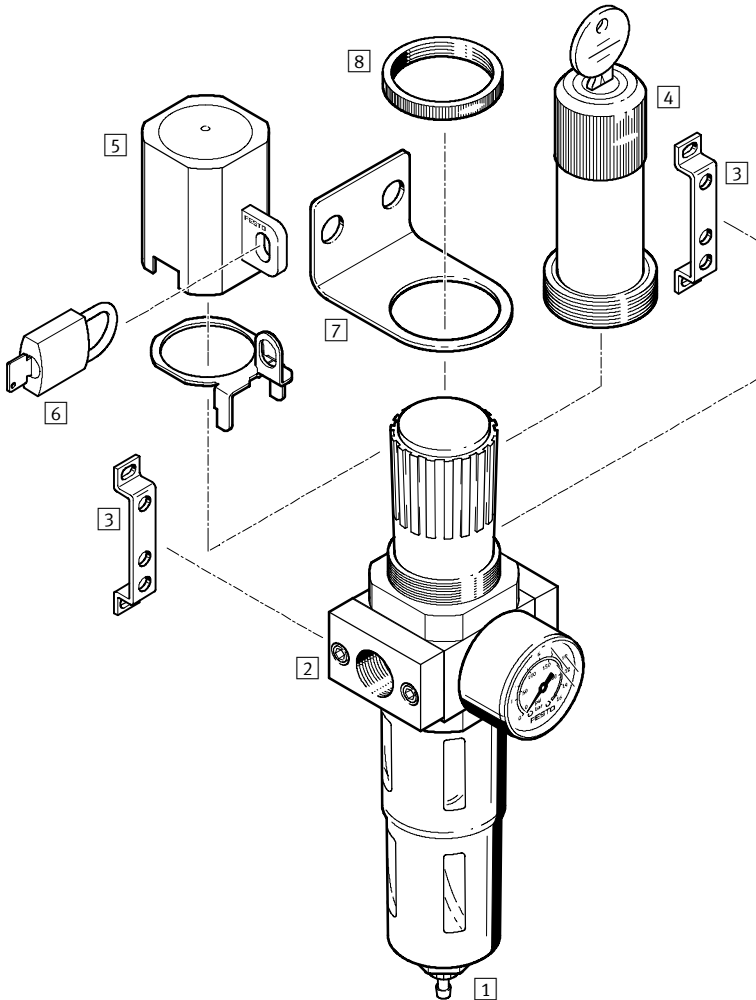
Mounting attachments and accessories	Brief description	→ Page
1 Filter regulator LFR	MICRO: Connection size M5, M7 in housing	3 / 1.2-4
2 Connection set PBL-QS4-D-MICRO PBL-QS6-D-MICRO	QS push-in fitting for tubing O.D. 4 and 6 mm	3 / 1.8-12
3 Connection set PBL-1/8-D-MICRO	Connection size G1/8	3 / 1.8-12
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE-D-MICRO are used to mount the filter regulator on the wall (they are not included in the scope of delivery)	3 / 1.8-8
5 Mounting bracket HRS-D-MICRO	Required to mount the filter regulator on the wall (it is not included in the scope of delivery)	3 / 1.8-10
6 Hex nut HMR	Required for securing via the mounting bracket HRS (included in the scope of delivery)	3 / 1.8-11

Filter regulators LFR/LFRS, D series

Peripherals overview



Mini/Midi/Maxi



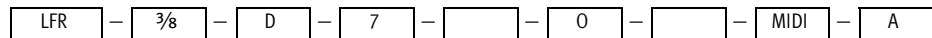
D series service units
Filter regulators

1.2

Mounting attachments and accessories	Brief description	→ Page
1 Filter regulator LFR/LFRS	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.2-4
2 Connecting plates	The filter regulators LFR/LFRS are available with connecting plates (included in the scope of delivery)	-
3 Mounting bracket (2 pcs.) HFOE	Design: HFOE-D-MINI HFOE-D-MIDI/MAXI (not included in the scope of delivery)	3 / 1.8-8
4 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	-
5 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
6 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
7 Mounting bracket HR-D-...	Required to mount the filter regulator on the wall (it is not included in the scope of delivery)	3 / 1.8-10
8 Knurled nut	The knurled nut is included in the scope of delivery	-

Filter regulators LFR/LFRS, D series

Type codes



Basic function

LFR	Filter regulator
LFRS	Filter regulator, lockable

Pneumatic connection

M5	Thread M5
M7	Thread M7
QS4	Push-in fitting QS4
QS6	Push-in fitting QS6
1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4
1	Thread G1

Series

D	Series
---	--------

Pressure regulation range

	0.5 ... 12 bar
7	0.5 ... 7 bar

Grade of filtration

	40 µm
5M	5 µm

Pressure gauge

	With pressure gauge
0	Without pressure gauge

Function (Maxi size only)

DI	Directly actuated pressure regulator with integrated return flow function
----	---

Size

MICRO	Grid dimension 25 mm (without connecting plates)
MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)
MAXI	Grid dimension 66 mm (without connecting plates)

Condensate drain

	Turned manually
H	Semi-automatic
A	Fully automatic

Filter regulators LFR/LFRS, D series

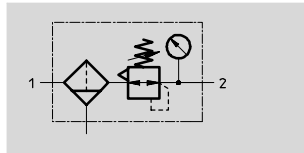
Technical data



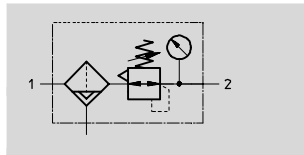
Function

LFR/LFRS-...-D-...

Condensate drain turned manually

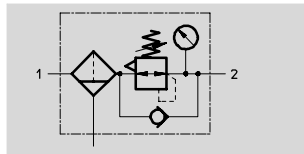


semi- or fully automatic

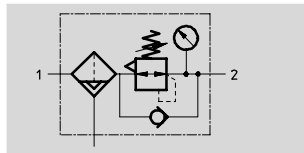


LFR/LFRS-...-D-DI-MAXI

Condensate drain turned manually



fully automatic



- - Flow rate
110 ... 11000 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
1 ... 16 bar



- Two pressure regulation ranges:
0.5 ... 7 bar and 0.5 ... 12 bar
- Two pressure gauge connections for flexible installation
- Choice of filter cartridges: 5 µm or 40 µm
- With manual, semi-automatic or fully automatic condensate drain
- Space-saving design with filter and regulator in a single unit
- Good particle separation and high flow rate
- Good regulating characteristics with minimal hysteresis
- Setting values are secured by locking the rotary knob
- Pressure sensor (optional)
→ 3 / 1.8-15

General technical data																
Size	Micro					Mini			Midi				Maxi			
Pneumatic connection	M5	M7	G1/8	QS4	QS6	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1	
Operating medium	Compressed air					Compressed air										
Design	Directly actuated diaphragm regulator					Directly actuated diaphragm regulator										Pilot actuated piston regulator
																Directly actuated diaphragm regulator
Type of mounting	Via accessories					Via accessories										
	In-line installation					In-line installation										
	Front panel mounting					Front panel mounting										
Assembly position	Vertical ±5°					Vertical ±5°										
Grade of filtration [µm]	5					5 or 40										
Max. hysteresis [bar]	0.3					0.2										0.4
Pressure regulation range [bar]	0.5 ... 7					0.5 ... 7										0.5 ... 12
Pressure indication	Via pressure gauge					Via pressure gauge										
	M5 prepared					G1/8 prepared			G1/4 prepared				G1/4 prepared			
Max. condensate volume [cm ³]	3					22			43				80 ¹⁾			
Input pressure [bar]																
Condensate drain	turned manually					1 ... 10					1 ... 16					
	semi-automatic					1 ... 10					-					
	fully automatic					-					1.5 ... 12					

1) The max. condensate volume for the LFR/LFRS-...-DI-MAXI is 43 cm³.

Filter regulators LFR/LFRS, D series

Technical data

Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	Female thread		Connecting plate		
	M5	M7	G1/8	QS4	QS6
Micro					
LFR	110	280	410	150	410

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

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
LFR/LFRS-...-D-...	750	1400	1600	–	–	–
LFR/LFRS-...-D-7-...	900	1500	1700	–	–	–
LFR/LFRS-...-D-5M-...	650	1200	1350	–	–	–
Midi						
LFR/LFRS-...-D-...	–	2000	3100	3400	3400	–
LFR/LFRS-...-D-7-...	–	2100	3200	3900	4000	–
LFR/LFRS-...-D-5M-...	–	1600	2400	2600	2600	–
Maxi						
LFR/LFRS-...-D-...	–	–	–	9400	9700	10000
LFR/LFRS-...-D-7-...	–	–	–	9500	10000	11000
LFR/LFRS-...-D-5M-...	–	–	–	7500	7600	8000
Maxi – Directly actuated diaphragm regulator with integrated return flow function						
LFR/LFRS-...-D-...-DI	–	–	–	4500	6800	7000
LFR/LFRS-...-D-7-...-DI	–	–	–	7600	7700	7800
LFR/LFRS-...-D-5M-...-DI	–	–	–	4000	5800	6000

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

Screw-in depth of connecting thread [mm]					
Connection	M5	M7	G1/8	QS4	QS6
Micro					
In housing	5	6	–	–	–
In connecting plates	–	–	8	–	–

Ambient conditions				
Size	Micro	Mini	Midi	Maxi
Ambient temperature [°C]	–10 ... +60			
Temperature of medium [°C]	–10 ... +60			
Corrosion resistance class CRC ¹⁾	2			

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Filter regulators LFR/LFRS, D series

Technical data



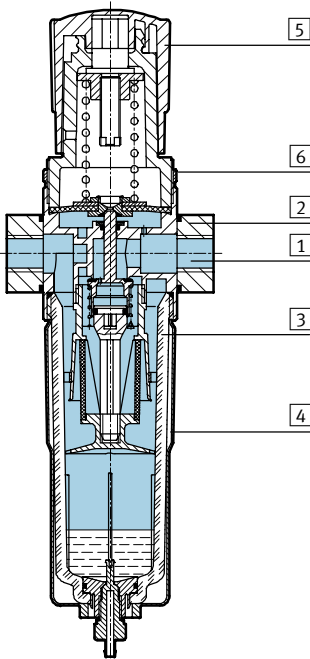
D series service units
Filter regulators

1.2

Weight [g]						
Size	Micro		Mini	Midi	Maxi	
	Female thread	Connecting plate			Connection G $\frac{1}{2}$, G $\frac{3}{4}$	Connection G1
With pressure gauge						
LFR-...	74	94	460	920	1370	1470
LFR-...-DI	-	-	-	-	1670	1670
LFRS-...	-	-	560	1160	1470	1570
LFRS-...-DI	-	-	-	-	1950	1950
Without pressure gauge						
LFR-...	64	84	410	830	1300	1400
LFR-...-DI	-	-	-	-	1600	1600
LFRS-...	-	-	510	1070	1400	1500
LFRS-...-DI	-	-	-	-	1880	1880

Materials

Sectional view



Filter regulator	Micro	Mini/Midi/Maxi
1 Housing	Wrought aluminium alloy	Die-cast zinc
2 Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
3 Bowl	Polycarbonate	Polycarbonate
4 Metal bowl guard	-	Aluminium
5 Regulating knob	Polyacetal	Polyacetal
6 Knurled nut	Wrought aluminium alloy	Aluminium
- Seals	Nitrile rubber	Nitrile rubber
Note on materials	Designs free of copper and PTFE → Ordering data	

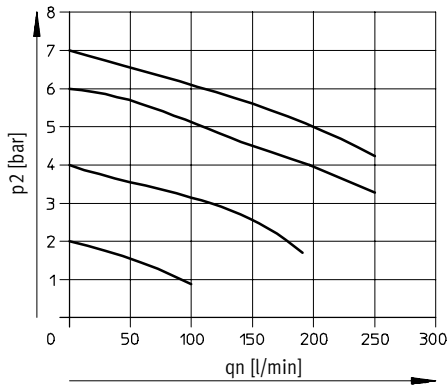
Filter regulators LFR/LFRS, D series

Technical data

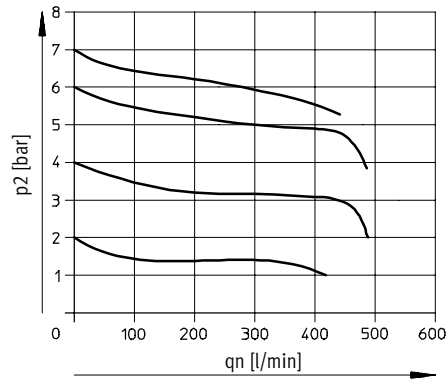


Standard flow rate q_n as a function of the output pressure p_2

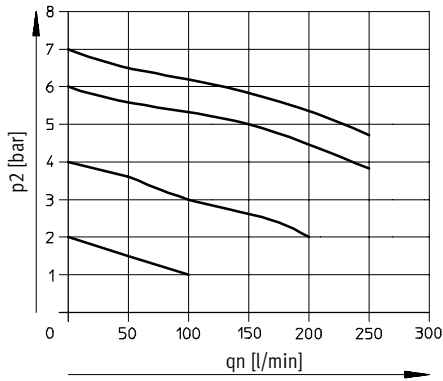
LFR-M5-...-MICRO



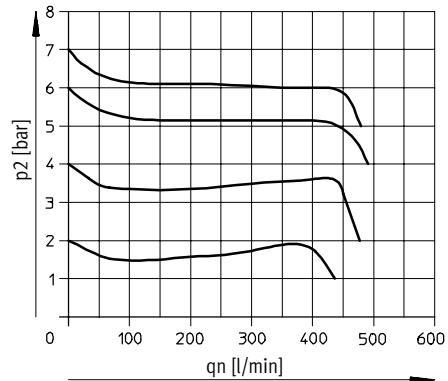
LFR-M7-...-MICRO B



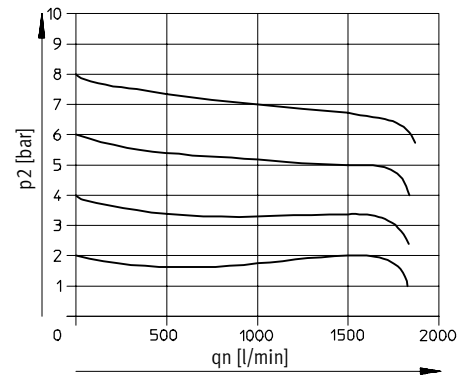
LFR-QS4-...-MICRO



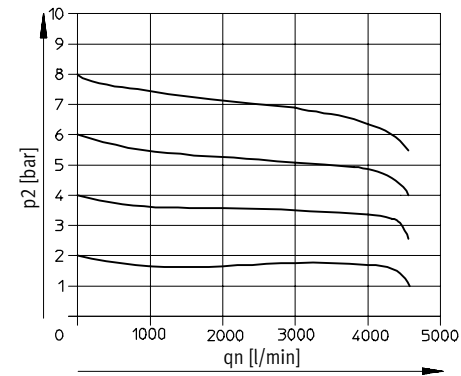
LFR-QS6-...-MICRO and LFR-1/8-...-MICRO



LFR/LFRS-1/4-D-MINI



LFR/LFRS-1/2-D-MIDI



Primary pressure $p_1 = 10$ bar

Filter regulators LFR/LFRS, D series

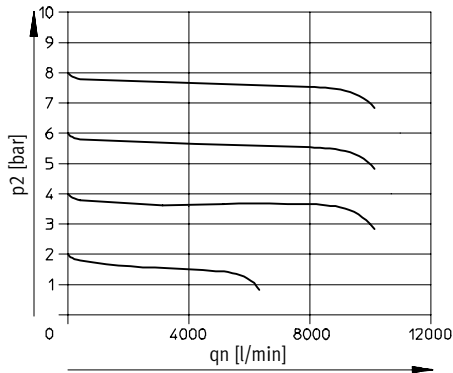
Technical data



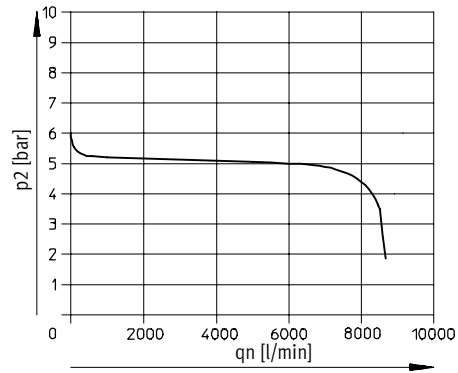
D series service units
Filter regulators

Standard flow rate q_n as a function of the output pressure p_2

LFR/LFRS-1-D-MAXI



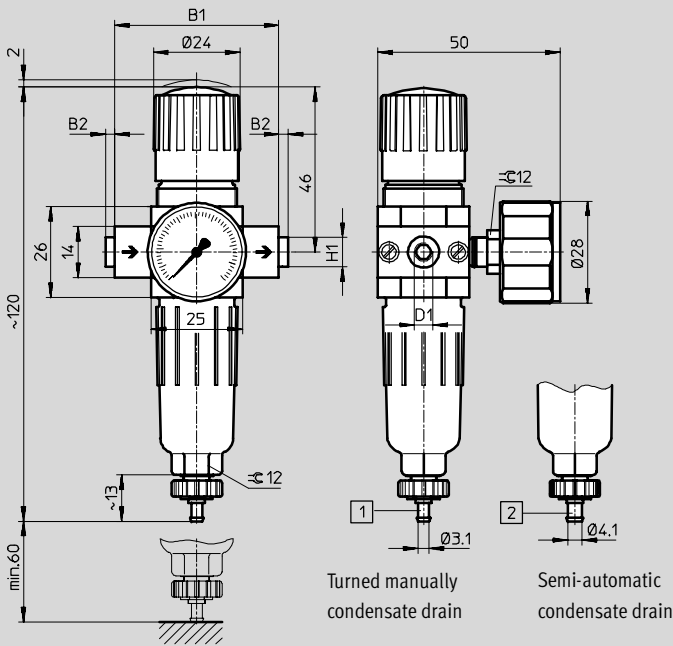
LFR/LFRS-1-D-DI-MAXI



Primary pressure $p_1 = 10$ bar

Dimensions

Micro



1 Barbed fitting for plastic tubing type PP-3-NT

2 Barbed fitting for plastic tubing type PP-4-NT

→ Flow direction

Type	B1	B2	D1	H1
LFR-M5-...-MICRO (H)	25	-	M5	-
LFR-M7-...-MICRO (H) B			M7	
LFR-1/8-...-MICRO (H)	45	~2.5	G1/8	~8
LFR-QS4-...-MICRO (H)			QS4	
LFR-QS6-...-MICRO (H)			QS6	

Filter regulators LFR/LFRS, D series

Technical data



Dimensions
Mini/Midi/Maxi

1 Barbed fitting for plastic tubing type PCN-4
 2 Metal bowl guard
 3 Installation dimensions
 4 Second pressure gauge connection

lockable

Turned manually condensate drain
 Fully automatic condensate drain

→ Flow direction

Type	B1	B2	B3	B4	D1	D2 Ø	D3	D4	D5 Ø	D6 Ø
Mini										
LFR/LFRS-1/8-D-MINI (A)	64	52	40	76	G1/8	31	M4	M36x1.5	41	38
LFR/LFRS-1/4-D-MINI (A)					G1/4					
LFR/LFRS-3/8-D-MINI (A)					G3/8					
Midi										
LFR/LFRS-1/4-D-MIDI (A)	85	70	55	95	G1/4	50	M5	M52x1.5	50	52
LFR/LFRS-3/8-D-MIDI (A)					G3/8					
LFR/LFRS-1/2-D-MIDI (A)					G1/2					
LFR/LFRS-3/4-D-MIDI (A)					G3/4					
Maxi										
LFR/LFRS-1/2-D-MAXI (A)	96	80	66	107	G1/2	31	M5	M36x1.5	50	65
LFR/LFRS-1/2-D-DI-MAXI (A)						49		M52x1.5		
LFR/LFRS-3/4-D-MAXI (A)					G3/4	31		M36x1.5		
LFR/LFRS-3/4-D-DI-MAXI (A)						49		M52x1.5		
LFR/LFRS-1-D-MAXI (A)					116	91		G1		
LFR/LFRS-1-D-DI-MAXI (A)	49	M52x1.5								

Filter regulators LFR/LFRS, D series



Technical data

Type	H1	H2	L1	L3	L4	L5 max.	L6	L7	L8	L9	T1	≈ 1	≈ 2
Mini													
LFR/LFRS-1/8-D-MINI (A)	20	11	193	60	68	3	98	60	15	19	7	14	22
LFR/LFRS-1/4-D-MINI (A)													
LFR/LFRS-3/8-D-MINI (A)													
Midi													
LFR/LFRS-1/4-D-MIDI (A)	32	22	250	80	99	5	130	60	15	19	8	14	24
LFR/LFRS-3/8-D-MIDI (A)													
LFR/LFRS-1/2-D-MIDI (A)													
LFR/LFRS-3/4-D-MIDI (A)													
Maxi													
LFR/LFRS-1/2-D-MAXI (A)	32	22	252	90	82	4	111	60	15	19	8	14	24
LFR/LFRS-1/2-D-DI-MAXI (A)			275		105		135						
LFR/LFRS-3/4-D-MAXI (A)			252		82		111						
LFR/LFRS-3/4-D-DI-MAXI (A)			275		105		135						
LFR/LFRS-1-D-MAXI (A)	40		252		82		111						
LFR/LFRS-1-D-DI-MAXI (A)			275		105		135						





D series service units
Filter regulators

1.2

Filter regulators LFR/LFRS, D series

Technical data

FESTO

Ordering data			
Pressure regulation range 0.5 ... 7 bar			
Condensate drain	Size	Connection	Grade of filtration 5 µm
			Part No. Type
With pressure gauge			
Turned manually	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	526 273 LFR-M5-D-7-5M-MICRO ¹⁾
		M7	534 184 LFR-M7-D-7-5M-MICRO B ¹⁾  New
		With threaded connecting plates	
		G ¹ / ₈	526 277 LFR- ¹ / ₈ -D-7-5M-MICRO ¹⁾
		With connecting plate and push-in fitting	
		QS4	526 289 LFR-QS4-D-7-5M-MICRO ¹⁾
	QS6	526 293 LFR-QS6-D-7-5M-MICRO ¹⁾	
Semi-automatic	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	526 274 LFR-M5-D-7-5M-MICRO-H ¹⁾
		M7	534 185 LFR-M7-D-7-5M-MICRO-H B ¹⁾  New
		With threaded connecting plates	
		G ¹ / ₈	526 278 LFR- ¹ / ₈ -D-7-5M-MICRO-H ¹⁾
		With connecting plate and push-in fitting	
		QS4	526 290 LFR-QS4-D-7-5M-MICRO-H ¹⁾
	QS6	526 294 LFR-QS6-D-7-5M-MICRO-H ¹⁾	
Without pressure gauge			
Turned manually	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	526 275 LFR-M5-D-7-0-5M-MICRO ¹⁾
		M7	534 186 LFR-M7-D-7-0-5M-MICRO B ¹⁾  New
		With threaded connecting plates	
		G ¹ / ₈	526 279 LFR- ¹ / ₈ -D-7-0-5M-MICRO ¹⁾
		With connecting plate and push-in fitting	
		QS4	526 291 LFR-QS4-D-7-0-5M-MICRO ¹⁾
	QS6	526 295 LFR-QS6-D-7-0-5M-MICRO ¹⁾	
Semi-automatic	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	526 276 LFR-M5-D-7-0-5M-MICRO-H ¹⁾
		M7	534 187 LFR-M7-D-7-0-5M-MICRO-H B ¹⁾  New
		With threaded connecting plates	
		G ¹ / ₈	526 280 LFR- ¹ / ₈ -D-7-0-5M-MICRO-H ¹⁾
		With connecting plate and push-in fitting	
		QS4	526 292 LFR-QS4-D-7-0-5M-MICRO-H ¹⁾
	QS6	526 296 LFR-QS6-D-7-0-5M-MICRO-H ¹⁾	

1) Free of copper and PTFE

D series service units
Filter regulators

1.2

Filter regulators LFR/LFRS, D series

Technical data

FESTO

D series service units
Filter regulators

1.2

Ordering data							
Pressure regulation range 0.5 ... 12 bar, metal bowl guard							
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm		
			Part No.	Type	Part No.	Type	
With pressure gauge							
Turned manually	Mini	G $\frac{1}{8}$	162 718	LFR- $\frac{1}{8}$ -D-5M-MINI	159 630	LFR- $\frac{1}{8}$ -D-MINI	
		G $\frac{1}{4}$	162 719	LFR- $\frac{1}{4}$ -D-5M-MINI	159 631	LFR- $\frac{1}{4}$ -D-MINI	
		G $\frac{3}{8}$	162 720	LFR- $\frac{3}{8}$ -D-5M-MINI	162 682	LFR- $\frac{3}{8}$ -D-MINI	
	Midi	G $\frac{1}{4}$	186 483	LFR- $\frac{1}{4}$ -D-5M-MIDI	186 481	LFR- $\frac{1}{4}$ -D-MIDI	
		G $\frac{3}{8}$	162 721	LFR- $\frac{3}{8}$ -D-5M-MIDI	159 582	LFR- $\frac{3}{8}$ -D-MIDI	
		G $\frac{1}{2}$	162 722	LFR- $\frac{1}{2}$ -D-5M-MIDI	159 584	LFR- $\frac{1}{2}$ -D-MIDI	
		G $\frac{3}{4}$	162 723	LFR- $\frac{3}{4}$ -D-5M-MIDI	162 683	LFR- $\frac{3}{4}$ -D-MIDI	
	Maxi	G $\frac{1}{2}$	186 491	LFR- $\frac{1}{2}$ -D-5M-MAXI	186 489	LFR- $\frac{1}{2}$ -D-MAXI	
		G $\frac{3}{4}$	162 724	LFR- $\frac{3}{4}$ -D-5M-MAXI	159 632	LFR- $\frac{3}{4}$ -D-MAXI	
		G1	162 725	LFR-1-D-5M-MAXI	159 633	LFR-1-D-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	162 726	LFR- $\frac{1}{8}$ -D-5M-MINI-A	159 634	LFR- $\frac{1}{8}$ -D-MINI-A
G $\frac{1}{4}$			162 727	LFR- $\frac{1}{4}$ -D-5M-MINI-A	159 635	LFR- $\frac{1}{4}$ -D-MINI-A	
G $\frac{3}{8}$			162 728	LFR- $\frac{3}{8}$ -D-5M-MINI-A	162 684	LFR- $\frac{3}{8}$ -D-MINI-A	
Midi		G $\frac{1}{4}$	186 486	LFR- $\frac{1}{4}$ -D-5M-MIDI-A	186 484	LFR- $\frac{1}{4}$ -D-MIDI-A	
		G $\frac{3}{8}$	162 729	LFR- $\frac{3}{8}$ -D-5M-MIDI-A	159 583	LFR- $\frac{3}{8}$ -D-MIDI-A	
		G $\frac{1}{2}$	162 730	LFR- $\frac{1}{2}$ -D-5M-MIDI-A	159 585	LFR- $\frac{1}{2}$ -D-MIDI-A	
		G $\frac{3}{4}$	162 731	LFR- $\frac{3}{4}$ -D-5M-MIDI-A	162 685	LFR- $\frac{3}{4}$ -D-MIDI-A	
Maxi		G $\frac{1}{2}$	186 494	LFR- $\frac{1}{2}$ -D-5M-MAXI-A	186 492	LFR- $\frac{1}{2}$ -D-MAXI-A	
		G $\frac{3}{4}$	162 732	LFR- $\frac{3}{4}$ -D-5M-MAXI-A	159 636	LFR- $\frac{3}{4}$ -D-MAXI-A	
		G1	162 733	LFR-1-D-5M-MAXI-A	159 637	LFR-1-D-MAXI-A	
Without pressure gauge							
Turned manually		Mini	G $\frac{1}{8}$	192 610	LFR- $\frac{1}{8}$ -D-5M-O-MINI ¹⁾	162 686	LFR- $\frac{1}{8}$ -D-O-MINI ¹⁾
	G $\frac{1}{4}$		192 611	LFR- $\frac{1}{4}$ -D-5M-O-MINI ¹⁾	162 687	LFR- $\frac{1}{4}$ -D-O-MINI ¹⁾	
	G $\frac{3}{8}$		192 612	LFR- $\frac{3}{8}$ -D-5M-O-MINI ¹⁾	162 688	LFR- $\frac{3}{8}$ -D-O-MINI ¹⁾	
	Midi	G $\frac{1}{4}$	192 613	LFR- $\frac{1}{4}$ -D-5M-O-MIDI ¹⁾	186 482	LFR- $\frac{1}{4}$ -D-O-MIDI ¹⁾	
		G $\frac{3}{8}$	192 614	LFR- $\frac{3}{8}$ -D-5M-O-MIDI ¹⁾	162 689	LFR- $\frac{3}{8}$ -D-O-MIDI ¹⁾	
		G $\frac{1}{2}$	192 615	LFR- $\frac{1}{2}$ -D-5M-O-MIDI ¹⁾	162 690	LFR- $\frac{1}{2}$ -D-O-MIDI ¹⁾	
		G $\frac{3}{4}$	192 616	LFR- $\frac{3}{4}$ -D-5M-O-MIDI ¹⁾	162 691	LFR- $\frac{3}{4}$ -D-O-MIDI ¹⁾	
	Maxi	G $\frac{1}{2}$	192 617	LFR- $\frac{1}{2}$ -D-5M-O-MAXI ¹⁾	186 490	LFR- $\frac{1}{2}$ -D-O-MAXI ¹⁾	
		G $\frac{3}{4}$	192 618	LFR- $\frac{3}{4}$ -D-5M-O-MAXI ¹⁾	162 692	LFR- $\frac{3}{4}$ -D-O-MAXI ¹⁾	
		G1	192 619	LFR-1-D-5M-O-MAXI ¹⁾	162 693	LFR-1-D-O-MAXI ¹⁾	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	192 620	LFR- $\frac{1}{8}$ -D-5M-O-MINI-A ¹⁾	162 694	LFR- $\frac{1}{8}$ -D-O-MINI-A ¹⁾
G $\frac{1}{4}$			192 621	LFR- $\frac{1}{4}$ -D-5M-O-MINI-A ¹⁾	162 695	LFR- $\frac{1}{4}$ -D-O-MINI-A ¹⁾	
G $\frac{3}{8}$			192 622	LFR- $\frac{3}{8}$ -D-5M-O-MINI-A ¹⁾	162 696	LFR- $\frac{3}{8}$ -D-O-MINI-A ¹⁾	
Midi		G $\frac{1}{4}$	192 623	LFR- $\frac{1}{4}$ -D-5M-O-MIDI-A ¹⁾	186 485	LFR- $\frac{1}{4}$ -D-O-MIDI-A ¹⁾	
		G $\frac{3}{8}$	192 624	LFR- $\frac{3}{8}$ -D-5M-O-MIDI-A ¹⁾	162 697	LFR- $\frac{3}{8}$ -D-O-MIDI-A ¹⁾	
		G $\frac{1}{2}$	192 625	LFR- $\frac{1}{2}$ -D-5M-O-MIDI-A ¹⁾	162 698	LFR- $\frac{1}{2}$ -D-O-MIDI-A ¹⁾	
		G $\frac{3}{4}$	192 626	LFR- $\frac{3}{4}$ -D-5M-O-MIDI-A ¹⁾	162 699	LFR- $\frac{3}{4}$ -D-O-MIDI-A ¹⁾	
Maxi		G $\frac{1}{2}$	192 627	LFR- $\frac{1}{2}$ -D-5M-O-MAXI-A ¹⁾	186 493	LFR- $\frac{1}{2}$ -D-O-MAXI-A ¹⁾	
		G $\frac{3}{4}$	192 628	LFR- $\frac{3}{4}$ -D-5M-O-MAXI-A ¹⁾	162 700	LFR- $\frac{3}{4}$ -D-O-MAXI-A ¹⁾	
		G1	192 629	LFR-1-D-5M-O-MAXI-A ¹⁾	162 701	LFR-1-D-O-MAXI-A ¹⁾	

1) Free of copper and PTFE

 Core Range

Filter regulators LFR/LFRS, D series



Technical data

Ordering data				
Pressure regulation range 0.5 ... 7 bar, metal bowl guard				
Condensate drain	Size	Connection	Grade of filtration 40 µm	
			Part No.	Type
With pressure gauge				
Turned manually	Mini	G $\frac{1}{8}$	162 702	LFR- $\frac{1}{8}$ -D-7-MINI
		G $\frac{1}{4}$	162 703	LFR- $\frac{1}{4}$ -D-7-MINI
		G $\frac{3}{8}$	162 704	LFR- $\frac{3}{8}$ -D-7-MINI
	Midi	G $\frac{1}{4}$	186 487	LFR- $\frac{1}{4}$ -D-7-MIDI
		G $\frac{3}{8}$	162 705	LFR- $\frac{3}{8}$ -D-7-MIDI
		G $\frac{1}{2}$	162 706	LFR- $\frac{1}{2}$ -D-7-MIDI
		G $\frac{3}{4}$	162 707	LFR- $\frac{3}{4}$ -D-7-MIDI
	Maxi	G $\frac{1}{2}$	186 495	LFR- $\frac{1}{2}$ -D-7-MAXI
		G $\frac{3}{4}$	162 708	LFR- $\frac{3}{4}$ -D-7-MAXI
G1	162 709	LFR-1-D-7-MAXI		
Fully automatic				
Fully automatic	Mini	G $\frac{1}{8}$	162 710	LFR- $\frac{1}{8}$ -D-7-MINI-A
		G $\frac{1}{4}$	162 711	LFR- $\frac{1}{4}$ -D-7-MINI-A
		G $\frac{3}{8}$	162 712	LFR- $\frac{3}{8}$ -D-7-MINI-A
	Midi	G $\frac{1}{4}$	186 488	LFR- $\frac{1}{4}$ -D-7-MIDI-A
		G $\frac{3}{8}$	162 713	LFR- $\frac{3}{8}$ -D-7-MIDI-A
		G $\frac{1}{2}$	162 714	LFR- $\frac{1}{2}$ -D-7-MIDI-A
		G $\frac{3}{4}$	162 715	LFR- $\frac{3}{4}$ -D-7-MIDI-A
	Maxi	G $\frac{1}{2}$	186 496	LFR- $\frac{1}{2}$ -D-7-MAXI-A
		G $\frac{3}{4}$	162 716	LFR- $\frac{3}{4}$ -D-7-MAXI-A
G1	162 717	LFR-1-D-7-MAXI-A		
Without pressure gauge				
Turned manually	Mini	G $\frac{1}{8}$	192 590	LFR- $\frac{1}{8}$ -D-7-O-MINI ¹⁾
		G $\frac{1}{4}$	192 591	LFR- $\frac{1}{4}$ -D-7-O-MINI ¹⁾
		G $\frac{3}{8}$	192 592	LFR- $\frac{3}{8}$ -D-7-O-MINI ¹⁾
	Midi	G $\frac{1}{4}$	192 593	LFR- $\frac{1}{4}$ -D-7-O-MIDI ¹⁾
		G $\frac{3}{8}$	192 594	LFR- $\frac{3}{8}$ -D-7-O-MIDI ¹⁾
		G $\frac{1}{2}$	192 595	LFR- $\frac{1}{2}$ -D-7-O-MIDI ¹⁾
		G $\frac{3}{4}$	192 596	LFR- $\frac{3}{4}$ -D-7-O-MIDI ¹⁾
	Maxi	G $\frac{1}{2}$	192 597	LFR- $\frac{1}{2}$ -D-7-O-MAXI ¹⁾
		G $\frac{3}{4}$	192 598	LFR- $\frac{3}{4}$ -D-7-O-MAXI ¹⁾
G1	192 599	LFR-1-D-7-O-MAXI ¹⁾		
Fully automatic				
Fully automatic	Mini	G $\frac{1}{8}$	192 600	LFR- $\frac{1}{8}$ -D-7-O-MINI-A ¹⁾
		G $\frac{1}{4}$	192 601	LFR- $\frac{1}{4}$ -D-7-O-MINI-A ¹⁾
		G $\frac{3}{8}$	192 602	LFR- $\frac{3}{8}$ -D-7-O-MINI-A ¹⁾
	Midi	G $\frac{1}{4}$	192 603	LFR- $\frac{1}{4}$ -D-7-O-MIDI-A ¹⁾
		G $\frac{3}{8}$	192 604	LFR- $\frac{3}{8}$ -D-7-O-MIDI-A ¹⁾
		G $\frac{1}{2}$	192 605	LFR- $\frac{1}{2}$ -D-7-O-MIDI-A ¹⁾
		G $\frac{3}{4}$	192 606	LFR- $\frac{3}{4}$ -D-7-O-MIDI-A ¹⁾
	Maxi	G $\frac{1}{2}$	192 607	LFR- $\frac{1}{2}$ -D-7-O-MAXI-A ¹⁾
		G $\frac{3}{4}$	192 608	LFR- $\frac{3}{4}$ -D-7-O-MAXI-A ¹⁾
G1	192 609	LFR-1-D-7-O-MAXI-A ¹⁾		

1) Free of copper and PTFE

Filter regulators LFR/LFRS, D series

Technical data



D series service units
Filter regulators

1.2

Ordering data					
Pressure regulation range 0.5 ... 12 bar, directly actuated diaphragm regulator with integrated return flow function					
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm
			Part No.	Type	Part No.
With pressure gauge					
Turned manually	Maxi	G $\frac{1}{2}$	192 370	LFR- $\frac{1}{2}$ -D-5M-DI-MAXI	192 368 LFR- $\frac{1}{2}$ -D-DI-MAXI
		G $\frac{3}{4}$	192 376	LFR- $\frac{3}{4}$ -D-5M-DI-MAXI	192 374 LFR- $\frac{3}{4}$ -D-DI-MAXI
		G1	192 382	LFR-1-D-5M-DI-MAXI	192 380 LFR-1-D-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	192 388	LFR- $\frac{1}{2}$ -D-5M-DI-MAXI-A	192 386 LFR- $\frac{1}{2}$ -D-DI-MAXI-A
		G $\frac{3}{4}$	192 394	LFR- $\frac{3}{4}$ -D-5M-DI-MAXI-A	192 392 LFR- $\frac{3}{4}$ -D-DI-MAXI-A
		G1	192 400	LFR-1-D-5M-DI-MAXI-A	192 398 LFR-1-D-DI-MAXI-A
Without pressure gauge					
Turned manually	Maxi	G $\frac{1}{2}$	192 371	LFR- $\frac{1}{2}$ -D-5M-O-DI-MAXI	192 369 LFR- $\frac{1}{2}$ -D-O-DI-MAXI
		G $\frac{3}{4}$	192 377	LFR- $\frac{3}{4}$ -D-5M-O-DI-MAXI	192 375 LFR- $\frac{3}{4}$ -D-O-DI-MAXI
		G1	192 383	LFR-1-D-5M-O-DI-MAXI	192 381 LFR-1-D-O-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	192 389	LFR- $\frac{1}{2}$ -D-5M-O-DI-MAXI-A	192 387 LFR- $\frac{1}{2}$ -D-O-DI-MAXI-A
		G $\frac{3}{4}$	192 395	LFR- $\frac{3}{4}$ -D-5M-O-DI-MAXI-A	192 393 LFR- $\frac{3}{4}$ -D-O-DI-MAXI-A
		G1	192 401	LFR-1-D-5M-O-DI-MAXI-A	192 399 LFR-1-D-O-DI-MAXI-A

Ordering data					
Pressure regulation range 0.5 ... 7 bar, directly actuated diaphragm regulator with integrated return flow function					
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm
			Part No.	Type	Part No.
With pressure gauge					
Turned manually	Maxi	G $\frac{1}{2}$	–		192 372 LFR- $\frac{1}{2}$ -D-7-DI-MAXI
		G $\frac{3}{4}$	–		192 378 LFR- $\frac{3}{4}$ -D-7-DI-MAXI
		G1	–		192 384 LFR-1-D-7-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	–		192 390 LFR- $\frac{1}{2}$ -D-7-DI-MAXI-A
		G $\frac{3}{4}$	–		192 396 LFR- $\frac{3}{4}$ -D-7-DI-MAXI-A
		G1	–		192 402 LFR-1-D-7-DI-MAXI-A
Without pressure gauge					
Turned manually	Maxi	G $\frac{1}{2}$	–		192 373 LFR- $\frac{1}{2}$ -D-7-O-DI-MAXI
		G $\frac{3}{4}$	–		192 379 LFR- $\frac{3}{4}$ -D-7-O-DI-MAXI
		G1	–		192 385 LFR-1-D-7-O-DI-MAXI
Fully automatic	Maxi	G $\frac{1}{2}$	–		192 391 LFR- $\frac{1}{2}$ -D-7-O-DI-MAXI-A
		G $\frac{3}{4}$	–		192 397 LFR- $\frac{3}{4}$ -D-7-O-DI-MAXI-A
		G1	–		192 403 LFR-1-D-7-O-DI-MAXI-A

Filter regulators LFR/LFRS, D series



Technical data

Ordering data							
Pressure regulation range 0.5 ... 12 bar, lockable							
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm		
			Part No.	Type	Part No.	Type	
With pressure gauge							
Turned manually	Mini	G $\frac{1}{8}$	194 704	LFRS- $\frac{1}{8}$ -D-5M-MINI	194 696	LFRS- $\frac{1}{8}$ -D-MINI	
		G $\frac{1}{4}$	194 716	LFRS- $\frac{1}{4}$ -D-5M-MINI	194 708	LFRS- $\frac{1}{4}$ -D-MINI	
		G $\frac{3}{8}$	194 728	LFRS- $\frac{3}{8}$ -D-5M-MINI	194 720	LFRS- $\frac{3}{8}$ -D-MINI	
	Midi	G $\frac{1}{4}$	194 740	LFRS- $\frac{1}{4}$ -D-5M-MIDI	194 732	LFRS- $\frac{1}{4}$ -D-MIDI	
		G $\frac{3}{8}$	194 752	LFRS- $\frac{3}{8}$ -D-5M-MIDI	194 744	LFRS- $\frac{3}{8}$ -D-MIDI	
		G $\frac{1}{2}$	194 764	LFRS- $\frac{1}{2}$ -D-5M-MIDI	194 756	LFRS- $\frac{1}{2}$ -D-MIDI	
		G $\frac{3}{4}$	194 776	LFRS- $\frac{3}{4}$ -D-5M-MIDI	194 768	LFRS- $\frac{3}{4}$ -D-MIDI	
	Maxi	G $\frac{1}{2}$	194 788	LFRS- $\frac{1}{2}$ -D-5M-MAXI	194 780	LFRS- $\frac{1}{2}$ -D-MAXI	
		G $\frac{3}{4}$	194 800	LFRS- $\frac{3}{4}$ -D-5M-MAXI	194 792	LFRS- $\frac{3}{4}$ -D-MAXI	
		G1	194 812	LFRS-1-D-5M-MAXI	194 804	LFRS-1-D-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	194 706	LFRS- $\frac{1}{8}$ -D-5M-MINI-A	194 697	LFRS- $\frac{1}{8}$ -D-MINI-A
G $\frac{1}{4}$			194 718	LFRS- $\frac{1}{4}$ -D-5M-MINI-A	194 709	LFRS- $\frac{1}{4}$ -D-MINI-A	
G $\frac{3}{8}$			194 730	LFRS- $\frac{3}{8}$ -D-5M-MINI-A	194 721	LFRS- $\frac{3}{8}$ -D-MINI-A	
Midi		G $\frac{1}{4}$	194 742	LFRS- $\frac{1}{4}$ -D-5M-MIDI-A	194 733	LFRS- $\frac{1}{4}$ -D-MIDI-A	
		G $\frac{3}{8}$	194 754	LFRS- $\frac{3}{8}$ -D-5M-MIDI-A	194 745	LFRS- $\frac{3}{8}$ -D-MIDI-A	
		G $\frac{1}{2}$	194 766	LFRS- $\frac{1}{2}$ -D-5M-MIDI-A	194 757	LFRS- $\frac{1}{2}$ -D-MIDI-A	
		G $\frac{3}{4}$	194 778	LFRS- $\frac{3}{4}$ -D-5M-MIDI-A	194 769	LFRS- $\frac{3}{4}$ -D-MIDI-A	
Maxi		G $\frac{1}{2}$	194 790	LFRS- $\frac{1}{2}$ -D-5M-MAXI-A	194 781	LFRS- $\frac{1}{2}$ -D-MAXI-A	
		G $\frac{3}{4}$	194 802	LFRS- $\frac{3}{4}$ -D-5M-MAXI-A	194 793	LFRS- $\frac{3}{4}$ -D-MAXI-A	
		G1	194 814	LFRS-1-D-5M-MAXI-A	194 805	LFRS-1-D-MAXI-A	
Without pressure gauge							
Turned manually		Mini	G $\frac{1}{8}$	194 705	LFRS- $\frac{1}{8}$ -D-5M-O-MINI	194 698	LFRS- $\frac{1}{8}$ -D-O-MINI
	G $\frac{1}{4}$		194 717	LFRS- $\frac{1}{4}$ -D-5M-O-MINI	194 710	LFRS- $\frac{1}{4}$ -D-O-MINI	
	G $\frac{3}{8}$		194 729	LFRS- $\frac{3}{8}$ -D-5M-O-MINI	194 722	LFRS- $\frac{3}{8}$ -D-O-MINI	
	Midi	G $\frac{1}{4}$	194 741	LFRS- $\frac{1}{4}$ -D-5M-O-MIDI	194 734	LFRS- $\frac{1}{4}$ -D-O-MIDI	
		G $\frac{3}{8}$	194 753	LFRS- $\frac{3}{8}$ -D-5M-O-MIDI	194 746	LFRS- $\frac{3}{8}$ -D-O-MIDI	
		G $\frac{1}{2}$	194 765	LFRS- $\frac{1}{2}$ -D-5M-O-MIDI	194 758	LFRS- $\frac{1}{2}$ -D-O-MIDI	
		G $\frac{3}{4}$	194 777	LFRS- $\frac{3}{4}$ -D-5M-O-MIDI	194 770	LFRS- $\frac{3}{4}$ -D-O-MIDI	
	Maxi	G $\frac{1}{2}$	194 789	LFRS- $\frac{1}{2}$ -D-5M-O-MAXI	194 782	LFRS- $\frac{1}{2}$ -D-O-MAXI	
		G $\frac{3}{4}$	194 801	LFRS- $\frac{3}{4}$ -D-5M-O-MAXI	194 794	LFRS- $\frac{3}{4}$ -D-O-MAXI	
		G1	194 813	LFRS-1-D-5M-O-MAXI	194 806	LFRS-1-D-O-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	194 707	LFRS- $\frac{1}{8}$ -D-5M-O-MINI-A	194 699	LFRS- $\frac{1}{8}$ -D-O-MINI-A
G $\frac{1}{4}$			194 719	LFRS- $\frac{1}{4}$ -D-5M-O-MINI-A	194 711	LFRS- $\frac{1}{4}$ -D-O-MINI-A	
G $\frac{3}{8}$			194 731	LFRS- $\frac{3}{8}$ -D-5M-O-MINI-A	194 723	LFRS- $\frac{3}{8}$ -D-O-MINI-A	
Midi		G $\frac{1}{4}$	194 743	LFRS- $\frac{1}{4}$ -D-5M-O-MIDI-A	194 735	LFRS- $\frac{1}{4}$ -D-O-MIDI-A	
		G $\frac{3}{8}$	194 755	LFRS- $\frac{3}{8}$ -D-5M-O-MIDI-A	194 747	LFRS- $\frac{3}{8}$ -D-O-MIDI-A	
		G $\frac{1}{2}$	194 767	LFRS- $\frac{1}{2}$ -D-5M-O-MIDI-A	194 759	LFRS- $\frac{1}{2}$ -D-O-MIDI-A	
		G $\frac{3}{4}$	194 779	LFRS- $\frac{3}{4}$ -D-5M-O-MIDI-A	194 771	LFRS- $\frac{3}{4}$ -D-O-MIDI-A	
Maxi		G $\frac{1}{2}$	194 791	LFRS- $\frac{1}{2}$ -D-5M-O-MAXI-A	194 783	LFRS- $\frac{1}{2}$ -D-O-MAXI-A	
		G $\frac{3}{4}$	194 803	LFRS- $\frac{3}{4}$ -D-5M-O-MAXI-A	194 795	LFRS- $\frac{3}{4}$ -D-O-MAXI-A	
		G1	194 815	LFRS-1-D-5M-O-MAXI-A	194 807	LFRS-1-D-O-MAXI-A	

D series service units
Filter regulators

1.2

Filter regulators LFR/LFRS, D series

Technical data



D series service units
Filter regulators
1.2

Ordering data				
Pressure regulation range 0.5 ... 7 bar, lockable				
Condensate drain	Size	Connection	Grade of filtration 40 µm	
			Part No.	Type
With pressure gauge				
Turned manually	Mini	G ¹ / ₈	194 700	LFRS- ¹ / ₈ -D-7-MINI
		G ¹ / ₄	194 712	LFRS- ¹ / ₄ -D-7-MINI
		G ³ / ₈	194 724	LFRS- ³ / ₈ -D-7-MINI
	Midi	G ¹ / ₄	194 736	LFRS- ¹ / ₄ -D-7-MIDI
		G ³ / ₈	194 748	LFRS- ³ / ₈ -D-7-MIDI
		G ¹ / ₂	194 760	LFRS- ¹ / ₂ -D-7-MIDI
		G ³ / ₄	194 772	LFRS- ³ / ₄ -D-7-MIDI
	Maxi	G ¹ / ₂	194 784	LFRS- ¹ / ₂ -D-7-MAXI
		G ³ / ₄	194 796	LFRS- ³ / ₄ -D-7-MAXI
G1		194 808	LFRS-1-D-7-MAXI	
Fully automatic				
Fully automatic	Mini	G ¹ / ₈	194 702	LFRS- ¹ / ₈ -D-7-MINI-A
		G ¹ / ₄	194 714	LFRS- ¹ / ₄ -D-7-MINI-A
		G ³ / ₈	194 726	LFRS- ³ / ₈ -D-7-MINI-A
	Midi	G ¹ / ₄	194 738	LFRS- ¹ / ₄ -D-7-MIDI-A
		G ³ / ₈	194 750	LFRS- ³ / ₈ -D-7-MIDI-A
		G ¹ / ₂	194 762	LFRS- ¹ / ₂ -D-7-MIDI-A
		G ³ / ₄	194 774	LFRS- ³ / ₄ -D-7-MIDI-A
	Maxi	G ¹ / ₂	194 786	LFRS- ¹ / ₂ -D-7-MAXI-A
		G ³ / ₄	194 798	LFRS- ³ / ₄ -D-7-MAXI-A
G1		194 810	LFRS-1-D-7-MAXI-A	
Without pressure gauge				
Turned manually	Mini	G ¹ / ₈	194 701	LFRS- ¹ / ₈ -D-7-O-MINI
		G ¹ / ₄	194 713	LFRS- ¹ / ₄ -D-7-O-MINI
		G ³ / ₈	194 725	LFRS- ³ / ₈ -D-7-O-MINI
	Midi	G ¹ / ₄	194 737	LFRS- ¹ / ₄ -D-7-O-MIDI
		G ³ / ₈	194 749	LFRS- ³ / ₈ -D-7-O-MIDI
		G ¹ / ₂	194 761	LFRS- ¹ / ₂ -D-7-O-MIDI
		G ³ / ₄	194 773	LFRS- ³ / ₄ -D-7-O-MIDI
	Maxi	G ¹ / ₂	194 785	LFRS- ¹ / ₂ -D-7-O-MAXI
		G ³ / ₄	194 797	LFRS- ³ / ₄ -D-7-O-MAXI
G1		194 809	LFRS-1-D-7-O-MAXI	
Fully automatic				
Fully automatic	Mini	G ¹ / ₈	194 703	LFRS- ¹ / ₈ -D-7-O-MINI-A
		G ¹ / ₄	194 715	LFRS- ¹ / ₄ -D-7-O-MINI-A
		G ³ / ₈	194 727	LFRS- ³ / ₈ -D-7-O-MINI-A
	Midi	G ¹ / ₄	194 739	LFRS- ¹ / ₄ -D-7-O-MIDI-A
		G ³ / ₈	194 751	LFRS- ³ / ₈ -D-7-O-MIDI-A
		G ¹ / ₂	194 763	LFRS- ¹ / ₂ -D-7-O-MIDI-A
		G ³ / ₄	194 775	LFRS- ³ / ₄ -D-7-O-MIDI-A
	Maxi	G ¹ / ₂	194 787	LFRS- ¹ / ₂ -D-7-O-MAXI-A
		G ³ / ₄	194 799	LFRS- ³ / ₄ -D-7-O-MAXI-A
G1		194 811	LFRS-1-D-7-O-MAXI-A	

Filter regulators LFR/LFRS, D series

Technical data

FESTO

Ordering data						
Pressure regulation range 0.5 ... 12 bar, directly actuated diaphragm regulator with integrated return flow function, lockable						
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
With pressure gauge						
Turned manually	Maxi	G1/2	194 818	LFRS-1/2-D-5M-DI-MAXI	194 816	LFRS-1/2-D-DI-MAXI
		G3/4	194 824	LFRS-3/4-D-5M-DI-MAXI	194 822	LFRS-3/4-D-DI-MAXI
		G1	194 830	LFRS-1-D-5M-DI-MAXI	194 828	LFRS-1-D-DI-MAXI
Fully automatic	Maxi	G1/2	194 836	LFRS-1/2-D-5M-DI-MAXI-A	194 834	LFRS-1/2-D-DI-MAXI-A
		G3/4	194 842	LFRS-3/4-D-5M-DI-MAXI-A	194 840	LFRS-3/4-D-DI-MAXI-A
		G1	194 848	LFRS-1-D-5M-DI-MAXI-A	194 846	LFRS-1-D-DI-MAXI-A
Without pressure gauge						
Turned manually	Maxi	G1/2	194 819	LFRS-1/2-D-5M-O-DI-MAXI	194 817	LFRS-1/2-D-O-DI-MAXI
		G3/4	194 825	LFRS-3/4-D-5M-O-DI-MAXI	194 823	LFRS-3/4-D-O-DI-MAXI
		G1	194 831	LFRS-1-D-5M-O-DI-MAXI	194 829	LFRS-1-D-O-DI-MAXI
Fully automatic	Maxi	G1/2	194 837	LFRS-1/2-D-5M-O-DI-MAXI-A	194 835	LFRS-1/2-D-O-DI-MAXI-A
		G3/4	194 843	LFRS-3/4-D-5M-O-DI-MAXI-A	194 841	LFRS-3/4-D-O-DI-MAXI-A
		G1	194 849	LFRS-1-D-5M-O-DI-MAXI-A	194 847	LFRS-1-D-O-DI-MAXI-A

Ordering data						
Pressure regulation range 0.5 ... 7 bar, directly actuated diaphragm regulator with integrated return flow function, lockable						
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm	
			Part No.	Type	Part No.	Type
With pressure gauge						
Turned manually	Maxi	G1/2	-	-	194 820	LFRS-1/2-D-7-DI-MAXI
		G3/4	-	-	194 826	LFRS-3/4-D-7-DI-MAXI
		G1	-	-	194 832	LFRS-1-D-7-DI-MAXI
Fully automatic	Maxi	G1/2	-	-	194 838	LFRS-1/2-D-7-DI-MAXI-A
		G3/4	-	-	194 844	LFRS-3/4-D-7-DI-MAXI-A
		G1	-	-	194 850	LFRS-1-D-7-DI-MAXI-A
Without pressure gauge						
Turned manually	Maxi	G1/2	-	-	194 821	LFRS-1/2-D-7-O-DI-MAXI
		G3/4	-	-	194 827	LFRS-3/4-D-7-O-DI-MAXI
		G1	-	-	194 833	LFRS-1-D-7-O-DI-MAXI
Fully automatic	Maxi	G1/2	-	-	194 839	LFRS-1/2-D-7-O-DI-MAXI-A
		G3/4	-	-	194 845	LFRS-3/4-D-7-O-DI-MAXI-A
		G1	-	-	194 851	LFRS-1-D-7-O-DI-MAXI-A

D series service units
Filter regulators

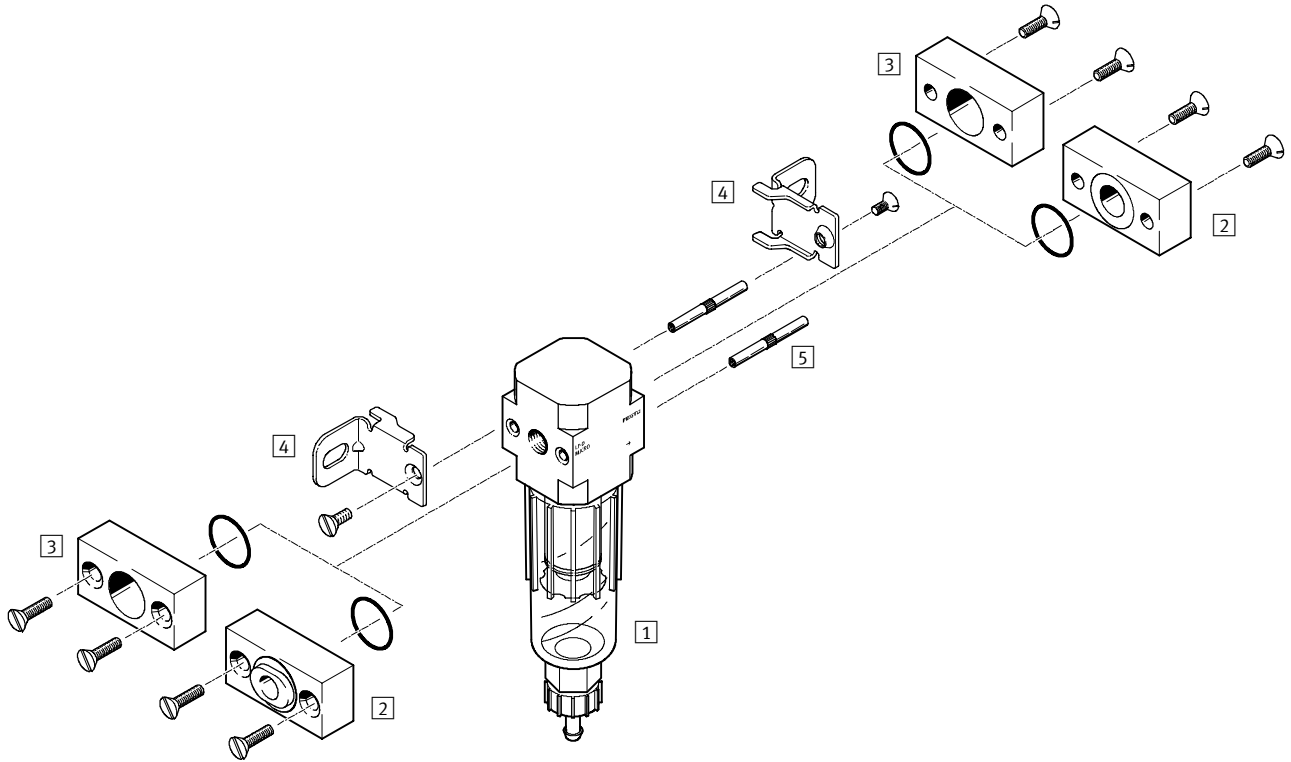
1.2

Filters LF, D series

Peripherals overview



Micro



D series service units
Filters

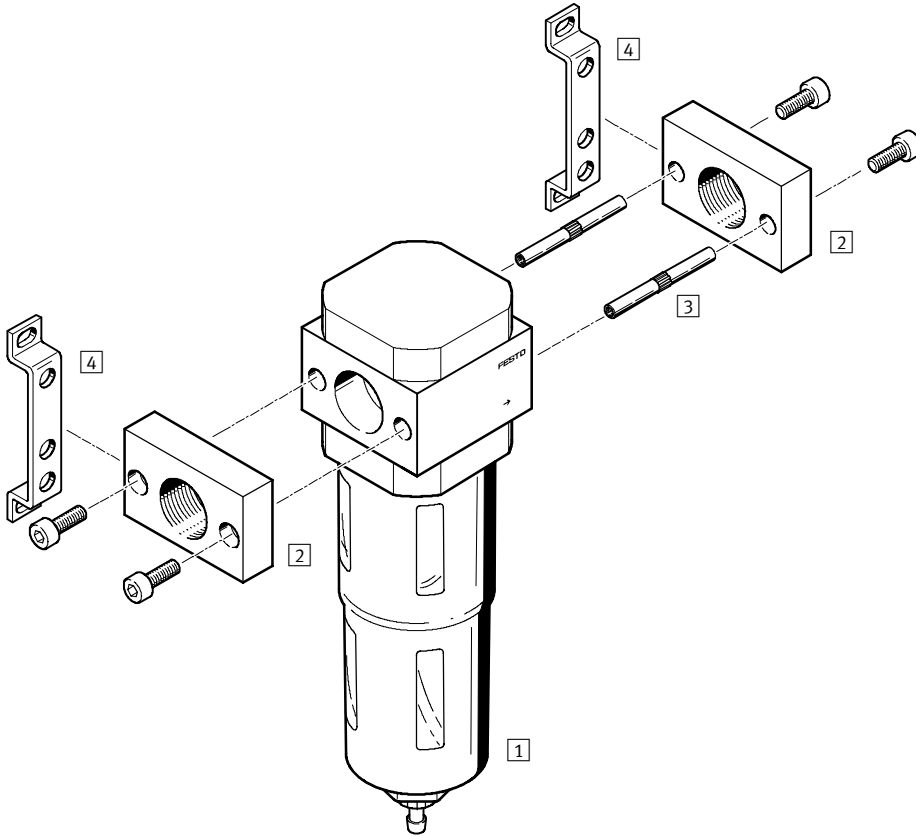
1.3

Mounting attachments and accessories	Brief description	→ Page
1 Filter LF	MICRO: Connection size M5, M7 in housing	3 / 1.3-3
2 Connection set PBL-QS4-D-MICRO PBL-QS6-D-MICRO	QS push-in fitting for tubing O.D. 4 and 6 mm	3 / 1.8-12
3 Connection set PBL-1/8-D-MICRO	Connection size G1/8	3 / 1.8-12
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE-D-MICRO are used to mount the filter on the wall (they are not included in the scope of delivery)	3 / 1.8-8
5 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10

Filters LF, D series

Peripherals overview

Mini/Midi/Maxi



Mounting attachments and accessories	Brief description	→ Page
1 Filter LF	MINI: Connection size G1/8, G1/4, G3/8 MIDI: Connection size G1/4, G3/8, G1/2, G3/4 MAXI: Connection size G1/2, G3/4, G1	3 / 1.3-3
2 Connecting plates	The filters are available with and without threaded connecting plates	-
3 Threaded pin (2 pcs.) HSB	The threaded pins are included in the scope of delivery	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Design: HFOE-D-MINI HFOE-D-MIDI/MAXI (these mounting brackets are not included in the scope of delivery)	3 / 1.8-8

Filters LF, D series

Type codes

LF – 1/4 – D – 5M – MIDI – A

Basic function	
LF	Filter

Pneumatic connection	
M5	Thread M5
M7	Thread M7
QS4	Push-in fitting QS4
QS6	Push-in fitting QS6
1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4
1	Thread G1

Series	
D	Series

Grade of filtration	
5M	5 µm
	40 µm

Size	
MICRO	Grid dimension 25 mm (without connecting plates)
MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)
MAXI	Grid dimension 66 mm (without connecting plates)

Condensate drain	
	Turned manually
H	Semi-automatic
A	Fully automatic

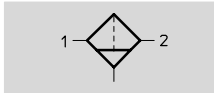
Filters LF, D series

Technical data

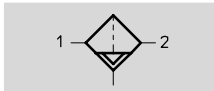



Function


Condensate drain
turned manually




semi- or fully automatic



 Flow rate
170 ... 5300 l/min

 Temperature range
-10 ... +60 °C

 Input pressure
0 ... 16 bar



■ Good particle and condensate separation

■ High flow rate with minimal pressure drop

■ Choice of filter cartridges: 5 µm or 40 µm

■ With manual or fully automatic condensate drain

General technical data																	
Size	Micro					Mini			Midi				Maxi				
Pneumatic connection	M5	M7	G ¹ / ₈	QS4	QS6	G ¹ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ³ / ₄	G ¹ / ₂	G ³ / ₄	G1		
Operating medium	Compressed air					Compressed air											
Design	Sintered filter with centrifugal separation					Sintered filter with centrifugal separation											
Type of mounting	Via accessories					Via accessories											
	In-line installation					In-line installation											
Assembly position	Vertical ±5°					Vertical ±5°											
Grade of filtration [µm]	5					5 or 40											
Max. condensate volume [cm ³]	3					22			43				80				
Input pressure [bar]																	
Condensate drain	turned manually					0 ... 10					0 ... 16						
	semi-automatic					1 ... 10					-						
	fully automatic					-					0 ... 12						

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	Female thread			Connecting plate		
	M5	M7		G ¹ / ₈	QS4	QS6
Micro						
LF	170	280		290	170	280

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

Filters LF, D series

Technical data

FESTO

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
LF...-D-...(-A)	1000	1200	1400	–	–	–
LF...-D-5M-...(-A)	800	950	1100	–	–	–
Midi						
LF...-D-...(-A)	–	1900	2700	3000	3000	–
LF...-D-5M-...(-A)	–	1600	1800	2000	2000	–
Maxi						
LF...-D-...(-A)	–	–	–	4400	5000	5300
LF...-D-5M-...(-A)	–	–	–	3700	3600	3800

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

Screw-in depth of connecting thread [mm]					
Connection	M5	M7	G1/8	QS4	QS6
Micro					
In housing	5	6	–	–	–
In connecting plates	–	–	8	–	–

Ambient conditions				
Size	Micro	Mini	Midi	Maxi
Ambient temperature [°C]	–10 ... +60			
Temperature of medium [°C]	–10 ... +60			
Corrosion resistance class CRC ¹⁾	2			

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

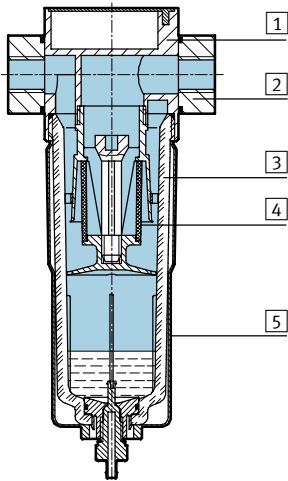
Weight [g]						
Size	Micro		Mini	Midi	Maxi	
	Female thread	Connecting plate			Connection G1/2, G3/4	Connection G1
LF...	44	64	250	700	1340	1440

Filters LF, D series

Technical data

Materials

Sectional view



Filter	Micro	Mini/Midi/Maxi
1 Housing	Wrought aluminium alloy	Die-cast zinc
2 Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
3 Bowl	Polycarbonate	Polycarbonate
4 Filter cartridge	Polyethylene	Polyethylene
5 Metal bowl guard	-	Aluminium
- Seals	Nitrile rubber	Nitrile rubber
Note on materials	Designs free of copper, PTFE and silicone → Ordering data	

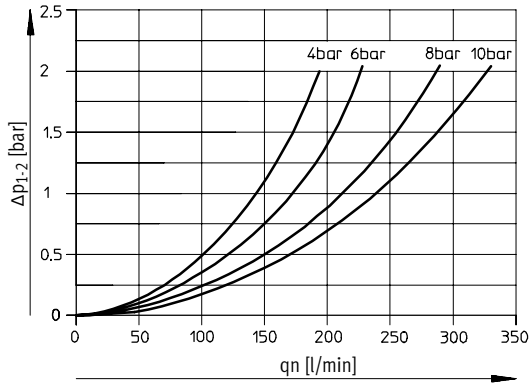
Filters LF, D series

Technical data

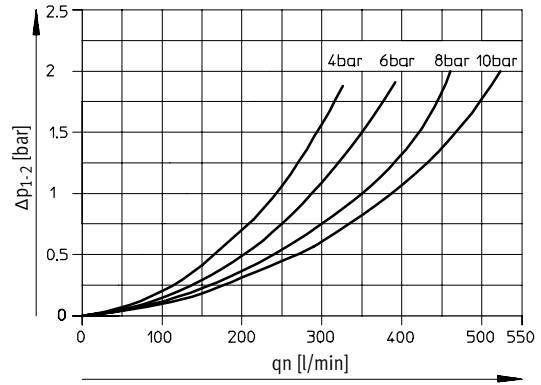


Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

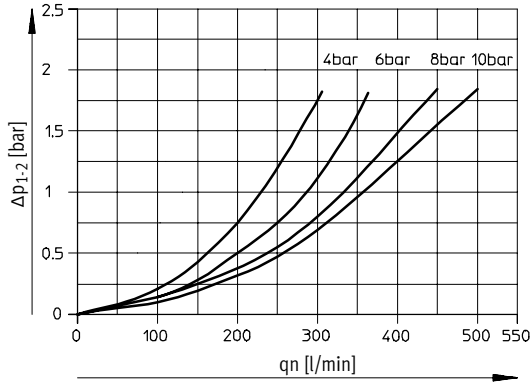
LF-M5-...-MICRO and LF-QS4-...-MICRO



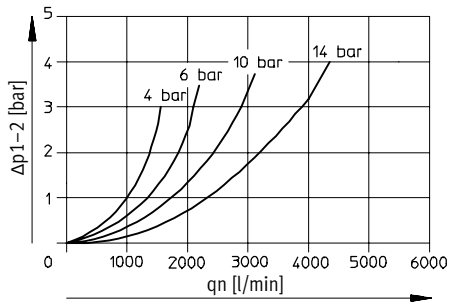
LF-1/8-...-MICRO



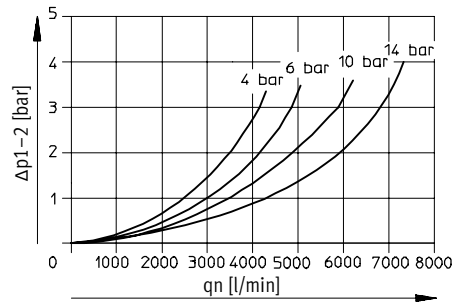
LF-M7-...-MICRO B and LF-QS6-...-MICRO



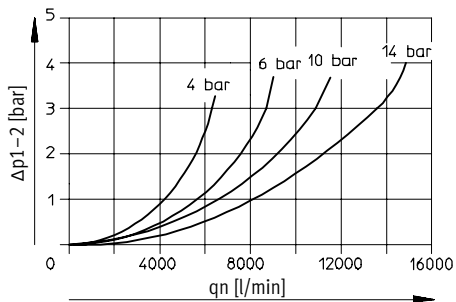
LF-1/4-D-MINI



LF-1/2-D-MIDI



LF-1-D-MAXI



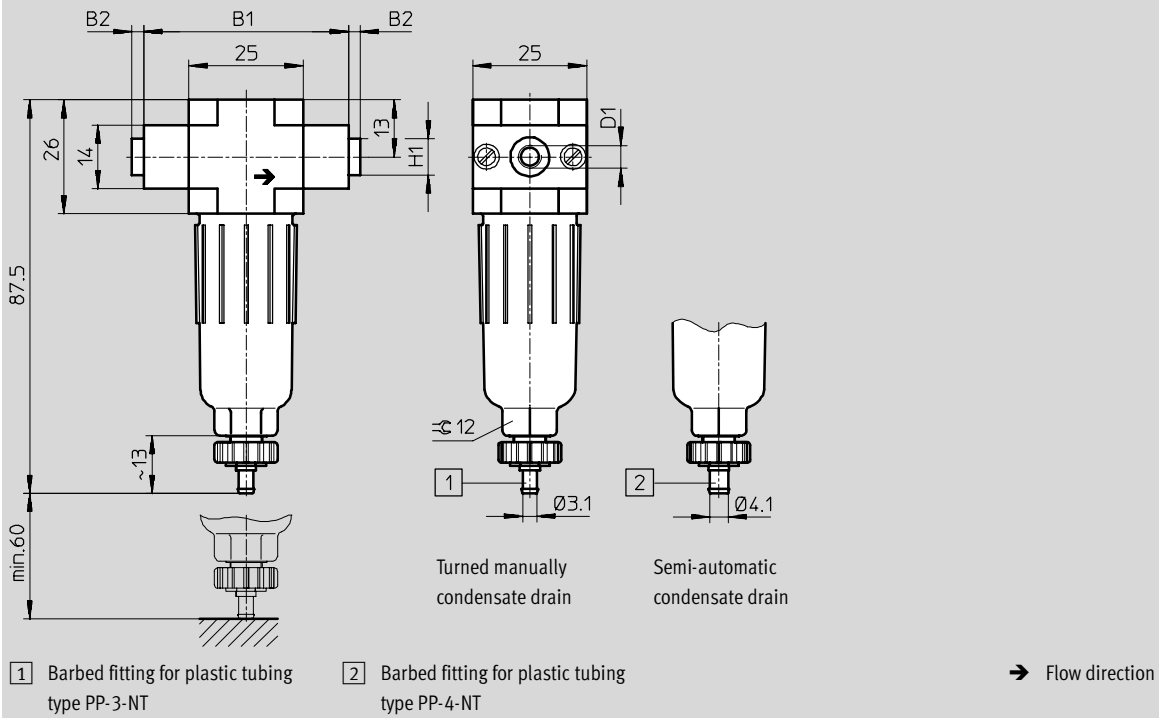
Filters LF, D series

Technical data



Dimensions

Micro



Type	B1	B2	D1	H1
LF-M5-D-7-5M-MICRO (H)	25	-	M5	-
LF-M7-D-7-5M-MICRO (H) B			M7	
LF-1/8-D-7-5M-MICRO (H)			G1/8	
LF-QS4-D-7-5M-MICRO (H)	45	~2.5	QS4	~8
LF-QS6-D-7-5M-MICRO (H)			QS6	~10

Filters LF, D series

Technical data

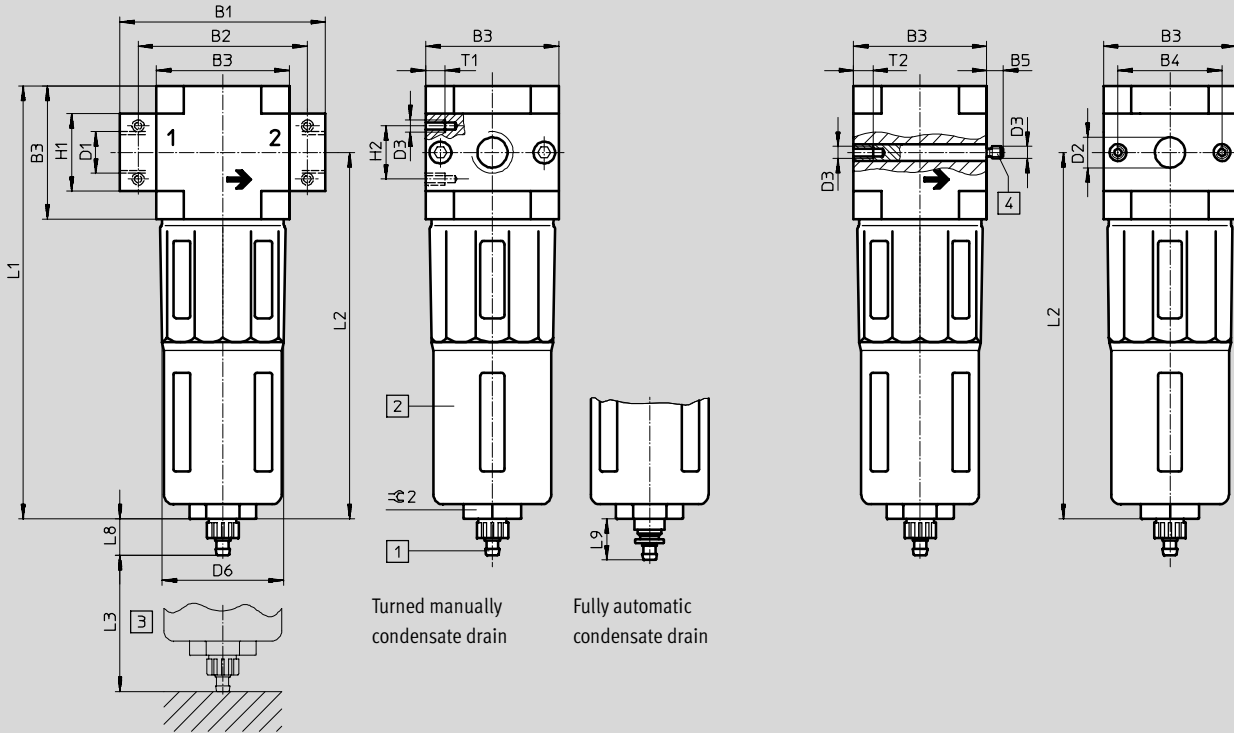


Dimensions

Mini/Midi/Maxi

With threaded connecting plates

Without threaded connecting plates





- 1 Barbed fitting for plastic tubing type PCN-4
- 2 Metal bowl guard
- 3 Installation dimensions
- 4 Threaded pin (exchangeable)
- ➔ Flow direction

Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	L3	L8	L9	T1	T2	⌀ 2
Mini																			
LF-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	38	20	11	144	124	60	15	19	7	-	22
LF-1/4-D-MINI						G1/4													
LF-3/8-D-MINI	70	-	-	-	-	G3/8	11	-	-	-	-	-	-	-	-	-	-	-	-
LF-D-MINI						5.8													
Midi																			
LF-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	52	32	22	179	151	80	15	19	8	-	24
LF-3/8-D-MIDI						G3/8													
LF-1/2-D-MIDI	-	-	-	-	-	G1/2	24	-	-	-	-	-	-	-	-	-	-	-	-
LF-3/4-D-MIDI						G3/4													
LF-D-MIDI	6.8	G1																	
Maxi																			
LF-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	65	32	22	203	170	90	15	19	8	-	24
LF-3/4-D-MAXI						G3/4													
LF-1-D-MAXI	116	91	-	-	-	G1	30	-	-	40	-	-	-	-	-	-	-	-	-
LF-D-MAXI						6.8													

Filters LF, D series

Technical data

FESTO

Ordering data			
Input pressure 1 ... 10 bar			
Condensate drain	Size	Connection	Grade of filtration 5 µm
			Part No. Type
Turned manually	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	526 297 LF-M5-D-5M-MICRO ¹⁾
		M7	534 182 LF-M7-D-5M-MICRO B ¹⁾  New
		With threaded connecting plates	
		G ¹ / ₈	526 299 LF- ¹ / ₈ -D-5M-MICRO ¹⁾
		With connecting plate and push-in fitting	
		QS4	526 305 LF-QS4-D-5M-MICRO ¹⁾
	QS6	526 307 LF-QS6-D-5M-MICRO ¹⁾	
Semi-automatic	Micro	Without threaded connecting plates, connecting thread in housing	
		M5	526 298 LF-M5-D-5M-MICRO-H ¹⁾
		M7	534 183 LF-M7-D-5M-MICRO-H B ¹⁾  New
		With threaded connecting plates	
		G ¹ / ₈	526 300 LF- ¹ / ₈ -D-5M-MICRO-H ¹⁾
		With connecting plate and push-in fitting	
		QS4	526 306 LF-QS4-D-5M-MICRO-H ¹⁾
	QS6	526 308 LF-QS6-D-5M-MICRO-H ¹⁾	

1) Free of copper, PTFE and silicone

Ordering data					
Input pressure 0 ... 16 bar, metal bowl guard					
Condensate drain	Size	Grade of filtration 5 µm		Grade of filtration 40 µm	
		Part No.	Type	Part No.	Type
Without threaded connecting plates					
Turned manually	Mini	192 557	LF-D-5M-MINI	192 551	LF-D-MINI
	Midi	192 558	LF-D-5M-MIDI	192 552	LF-D-MIDI
	Maxi	192 559	LF-D-5M-MAXI	192 553	LF-D-MAXI
Fully automatic	Mini	192 560	LF-D-5M-MINI-A	192 554	LF-D-MINI-A
	Midi	192 561	LF-D-5M-MIDI-A	192 555	LF-D-MIDI-A
	Maxi	192 562	LF-D-5M-MAXI-A	192 556	LF-D-MAXI-A

D series service units
Filters

1.3

Filters LF, D series

Technical data



Ordering data							
Input pressure 0 ... 16 bar, metal bowl guard							
Condensate drain	Size	Connection	Grade of filtration 5 µm		Grade of filtration 40 µm		
			Part No.	Type	Part No.	Type	
With threaded connecting plates							
Turned manually	Mini	G $\frac{1}{8}$	162 610	LF- $\frac{1}{8}$ -D-5M-MINI	159 612	LF- $\frac{1}{8}$ -D-MINI	
		G $\frac{1}{4}$	162 611	LF- $\frac{1}{4}$ -D-5M-MINI	159 613	LF- $\frac{1}{4}$ -D-MINI	
		G $\frac{3}{8}$	162 612	LF- $\frac{3}{8}$ -D-5M-MINI	162 606	LF- $\frac{3}{8}$ -D-MINI	
	Midi	G $\frac{1}{4}$	186 460	LF- $\frac{1}{4}$ -D-5M-MIDI	186 459	LF- $\frac{1}{4}$ -D-MIDI	
		G $\frac{3}{8}$	162 613	LF- $\frac{3}{8}$ -D-5M-MIDI	159 576	LF- $\frac{3}{8}$ -D-MIDI	
		G $\frac{1}{2}$	162 614	LF- $\frac{1}{2}$ -D-5M-MIDI	159 578	LF- $\frac{1}{2}$ -D-MIDI	
		G $\frac{3}{4}$	162 615	LF- $\frac{3}{4}$ -D-5M-MIDI	162 607	LF- $\frac{3}{4}$ -D-MIDI	
	Maxi	G $\frac{1}{2}$	186 464	LF- $\frac{1}{2}$ -D-5M-MAXI	186 463	LF- $\frac{1}{2}$ -D-MAXI	
		G $\frac{3}{4}$	162 616	LF- $\frac{3}{4}$ -D-5M-MAXI	159 614	LF- $\frac{3}{4}$ -D-MAXI	
		G1	162 617	LF-1-D-5M-MAXI	159 615	LF-1-D-MAXI	
	Fully automatic						
	Fully automatic	Mini	G $\frac{1}{8}$	162 618	LF- $\frac{1}{8}$ -D-5M-MINI-A	159 616	LF- $\frac{1}{8}$ -D-MINI-A
G $\frac{1}{4}$			162 619	LF- $\frac{1}{4}$ -D-5M-MINI-A	159 617	LF- $\frac{1}{4}$ -D-MINI-A	
G $\frac{3}{8}$			162 620	LF- $\frac{3}{8}$ -D-5M-MINI-A	162 608	LF- $\frac{3}{8}$ -D-MINI-A	
Midi		G $\frac{1}{4}$	186 462	LF- $\frac{1}{4}$ -D-5M-MIDI-A	186 461	LF- $\frac{1}{4}$ -D-MIDI-A	
		G $\frac{3}{8}$	162 621	LF- $\frac{3}{8}$ -D-5M-MIDI-A	159 577	LF- $\frac{3}{8}$ -D-MIDI-A	
		G $\frac{1}{2}$	162 622	LF- $\frac{1}{2}$ -D-5M-MIDI-A	159 579	LF- $\frac{1}{2}$ -D-MIDI-A	
		G $\frac{3}{4}$	162 623	LF- $\frac{3}{4}$ -D-5M-MIDI-A	162 609	LF- $\frac{3}{4}$ -D-MIDI-A	
Maxi		G $\frac{1}{2}$	186 466	LF- $\frac{1}{2}$ -D-5M-MAXI-A	186 465	LF- $\frac{1}{2}$ -D-MAXI-A	
		G $\frac{3}{4}$	162 624	LF- $\frac{3}{4}$ -D-5M-MAXI-A	159 618	LF- $\frac{3}{4}$ -D-MAXI-A	
		G1	162 625	LF-1-D-5M-MAXI-A	159 619	LF-1-D-MAXI-A	

D series service units
Filters

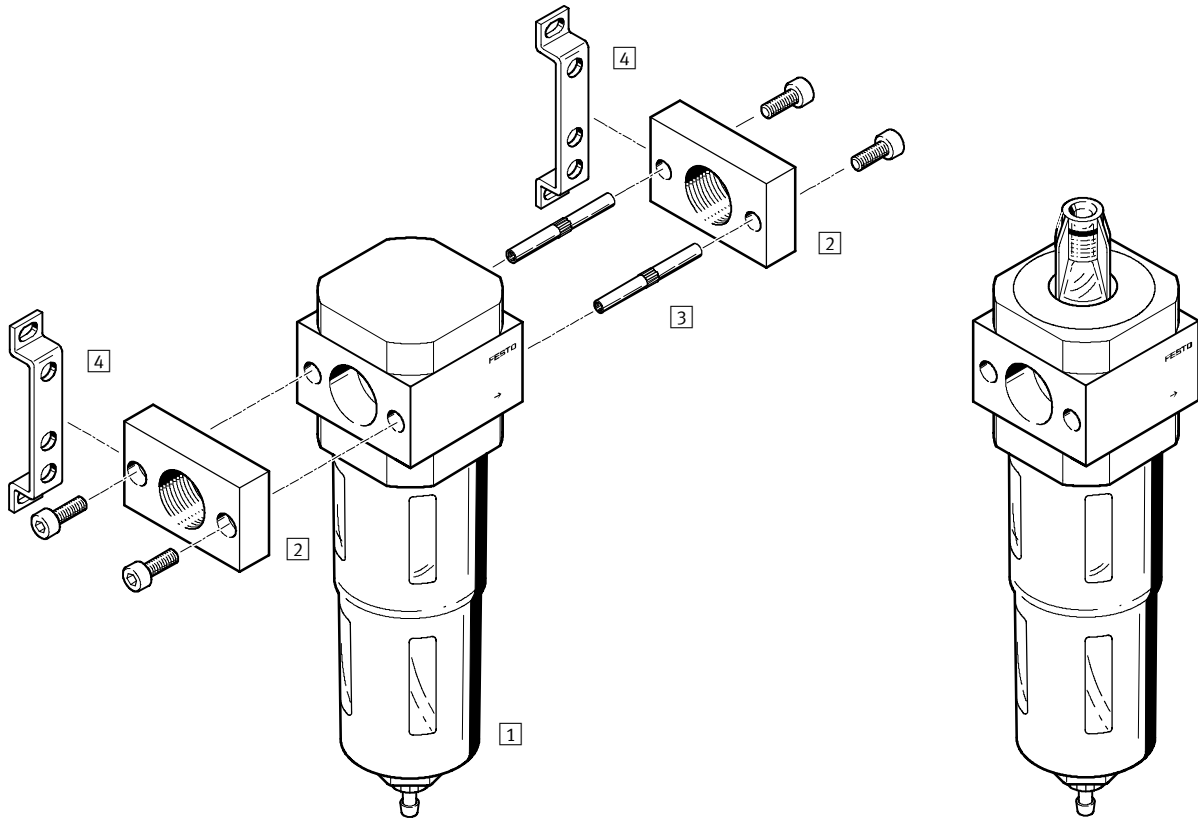
1.3

Fine and micro filters LFMA/LFMB, D series

Peripherals overview

Without differential pressure indicator

With differential pressure indicator



Mounting attachments and accessories	Brief description	→ Page
1 Fine and micro filters LFMA/LFMB	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.3-13
2 Connecting plates	The fine and micro filters are available with and without threaded connecting plates	–
3 Threaded pin (2 pcs.) HSB	The threaded pins are included in the scope of delivery	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Design: HFOE-D-MINI HFOE-D-MIDI/MAXI (these mounting brackets are not included in the scope of delivery)	3 / 1.8-8

Fine and micro filters LFMA/LFMB, D series

Type codes

		LFMB	-	1/4	-	D	-	MIDI	-	DA	-	A
Basic function												
LFMA	Micro filter with grade of filtration 0.01 µm											
LFMB	Fine filter with grade of filtration 1 µm											
Pneumatic connection												
1/8	Thread G1/8											
1/4	Thread G1/4											
3/8	Thread G3/8											
1/2	Thread G1/2											
3/4	Thread G3/4											
1	Thread G1											
Series												
D	Series											
Size												
MINI	Grid dimension 40 mm (without connecting plates)											
MIDI	Grid dimension 55 mm (without connecting plates)											
MAXI	Grid dimension 66 mm (without connecting plates)											
Filter change sensor												
	Without differential pressure indicator											
DA	With differential pressure indicator											
Condensate drain												
	Turned manually											
A	Fully automatic											

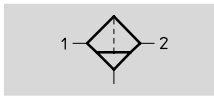
Fine and micro filters LFMA/LFMB, D series

Technical data

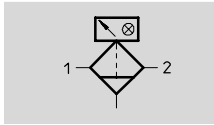
FESTO

Function

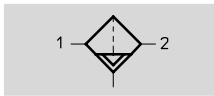
Condensate drain
turned manually
without differential pressure indicator



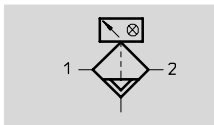
with differential pressure indicator





Condensate drain
fully automatic
without differential pressure indicator




with differential pressure indicator



 Flow rate
130 ... 1250 l/min

 Temperature range
-10 ... +60 °C

 Input pressure
1 ... 16 bar



- High efficiency filter for special requirements
- Choice of filter cartridges: 0.01 µm or 1 µm
- Air quality to DIN ISO 8573-1
- With or without threaded connecting plates
- Version with differential pressure indicator for optical indication of filter pollution

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
Filter efficiency 99.9999%

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
Filter efficiency 99.99%

General technical data										
Size	Mini			Midi				Maxi		
Pneumatic connection	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Design	Fibre filter									
Type of mounting	Via accessories In-line installation									
Assembly position	Vertical ±5°									
Operating medium										
Micro filter LFMA	Filtered compressed air, lubricated or unlubricated, grade of filtration 1 µm									
Fine filter LFMB	Filtered compressed air, lubricated or unlubricated, grade of filtration 5 µm									
Grade of filtration [µm]										
Micro filter LFMA	0.01									
Fine filter LFMB	1									
Residual oil content [mg/m ³]										
Micro filter LFMA	≤0.01									
Fine filter LFMB	≤0.5									
Input pressure [bar]										
Condensate drain turned manually	1 ... 16									
Condensate drain fully automatic	1.5 ... 12									
Max. condensate volume [cm ³]										
Micro filter LFMA/fine filter LFMB	22			43				80		

Fine and micro filters LFMA/LFMB, D series

Technical data

FESTO

Standard nominal flow rate ¹⁾ qnN [l/min]										
Connection	Mini			Midi				Maxi		
	G ¹ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ³ / ₄	G ¹ / ₂	G ³ / ₄	G1
Micro filter LFMA	130	160	180	350	380	400	460	750	900	950
Fine filter LFMB	250	300	310	500	700	900	1000	1150	1200	1250

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

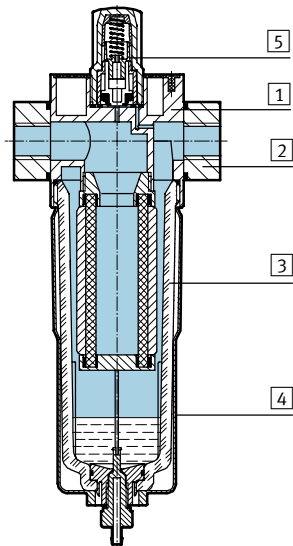
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	+1.5 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]			
Size	Mini	Midi	Maxi
Without differential pressure indicator	250	650	1200
With differential pressure indicator	368	834	1340

Materials

Sectional view



Fine and micro filters		
1	Housing	Die-cast zinc
2	Connecting plates	Aluminium
3	Bowl	Polycarbonate
4	Metal bowl guard	Aluminium
5	Housing for version with differential pressure indicator	Polycarbonate
-	Seals	Nitrile rubber
	Note on materials	Free of copper and PTFE

Fine and micro filters LFMA/LFMB, D series

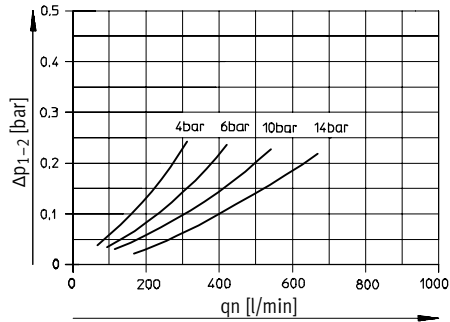
Technical data

Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

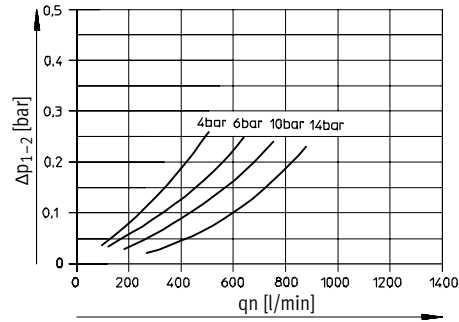
Grade of filtration 0.01 μm

Grade of filtration 1 μm

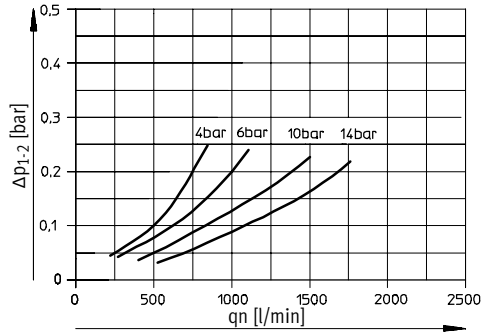
LFMA-1/4-D-MINI and LFMA-1/4-D-MINI-A



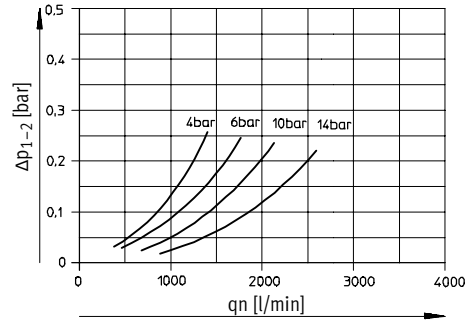
LFMB-1/4-D-MINI and LFMB-1/4-D-MINI-A



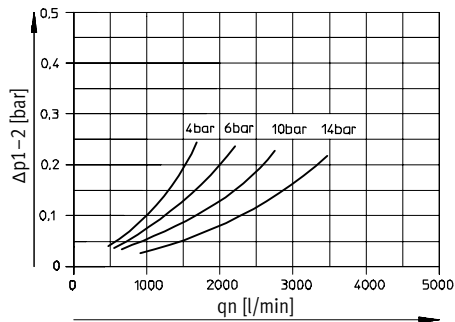
LFMA-1/2-D-MIDI and LFMA-1/2-D-MIDI-A



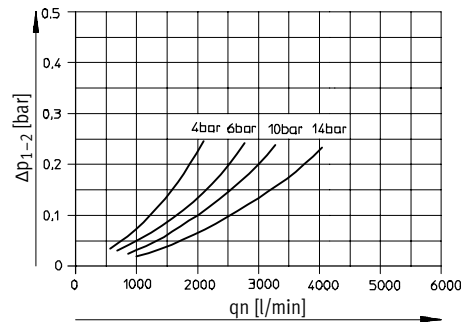
LFMB-1/2-D-MIDI and LFMB-1/2-D-MIDI-A



LFMA-1-D-MAXI and LFMA-1-D-MAXI-A



LFMB-1-D-MAXI and LFMB-1-D-MAXI-A



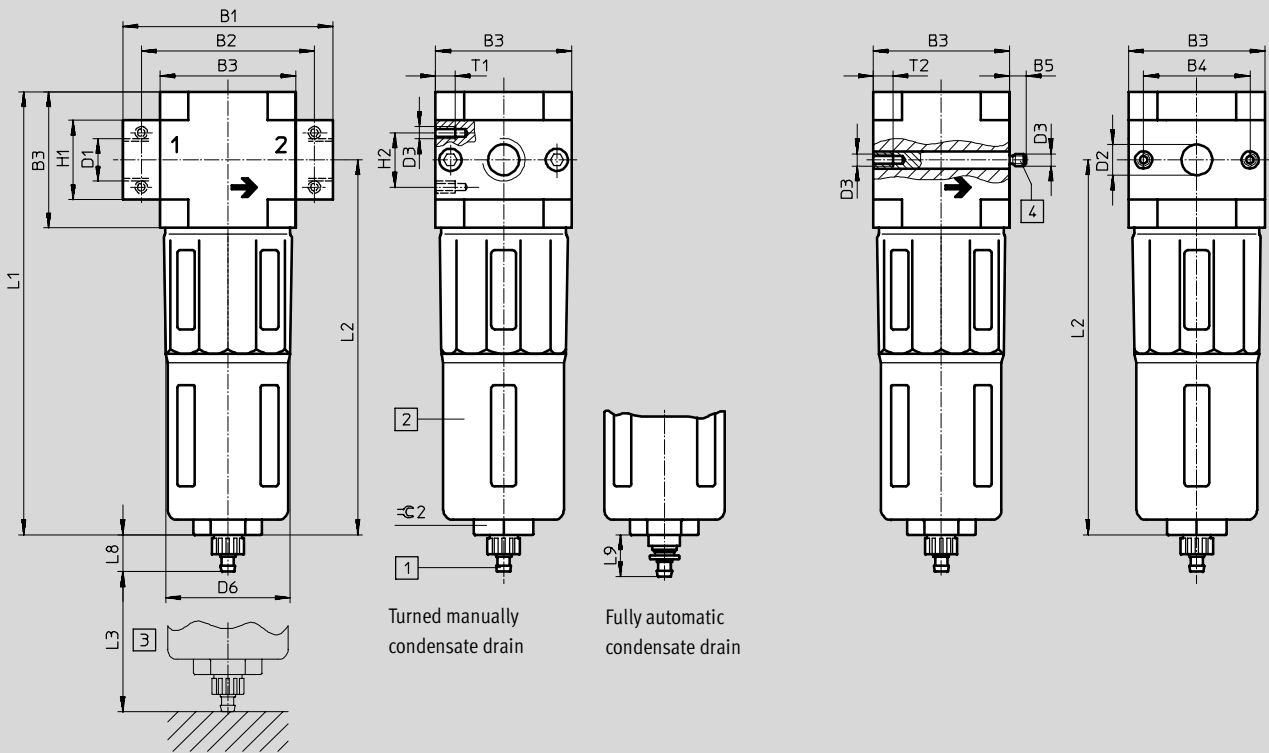
Fine and micro filters LFMA/LFMB, D series

Technical data

Dimensions

With threaded connecting plates

Without threaded connecting plates

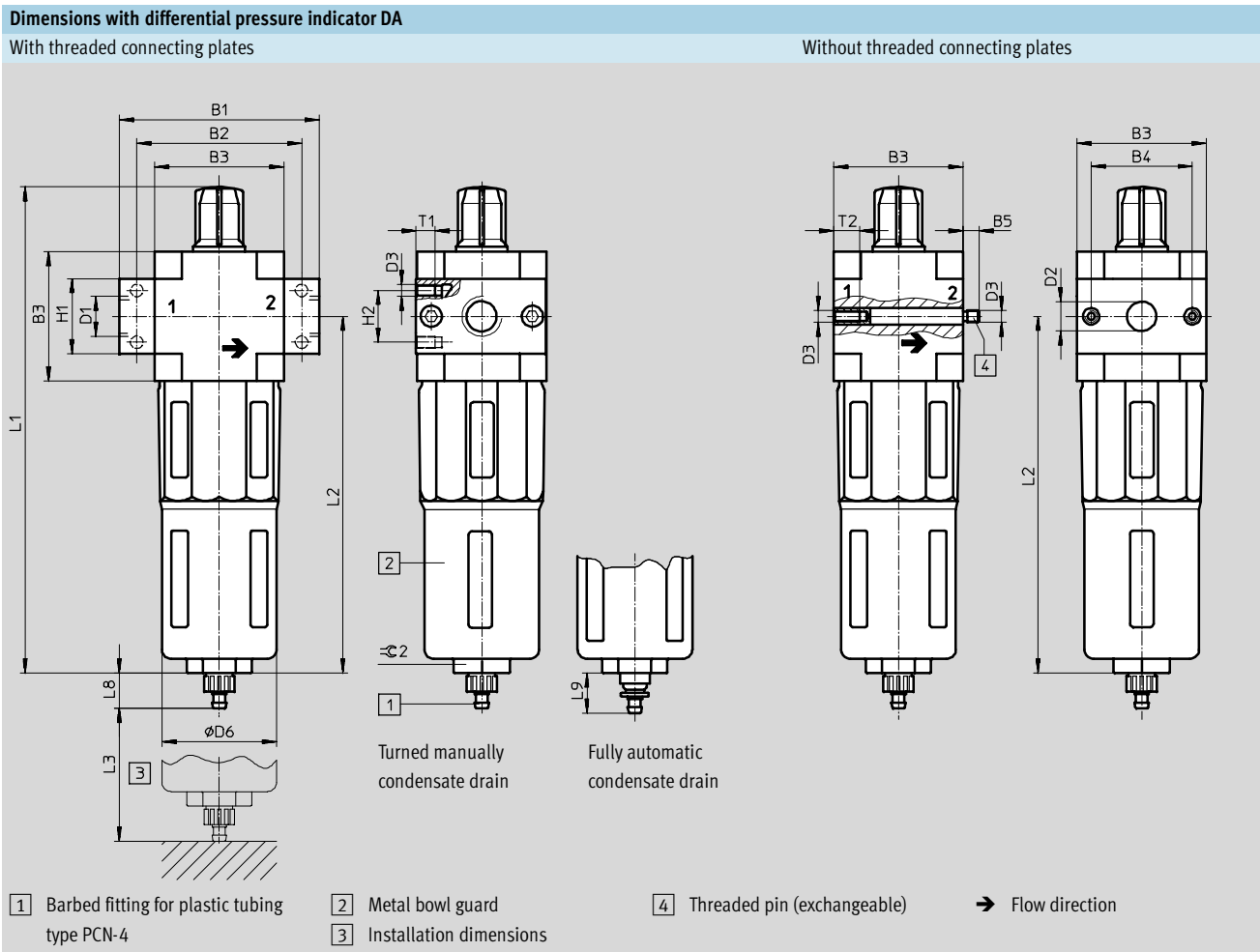


- 1 Barbed fitting for plastic tubing type PCN-4
- 2 Metal bowl guard
- 3 Installation dimensions
- 4 Threaded pin (exchangeable)
- Flow direction

Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	L3	L8	L9	T1	T2	±0.2
Mini																			
LFMB/A-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	38	20	11	144	124	60	15	19	7	-	22
LFMB/A-1/4-D-MINI						G3/8													
LFMB/A-3/8-D-MINI	70																		
LFMB/A-D-MINI	-	-			5.8	-	11			-	-						-	10	
Midi																			
LFMB/A-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	52	32	22	179	151	80	15	19	8	-	24
LFMB/A-3/8-D-MIDI						G3/8													
LFMB/A-1/2-D-MIDI						G1/2													
LFMB/A-3/4-D-MIDI						G3/4													
LFMB/A-D-MIDI	-	-			6.8	-	24			-	-						-	11	
Maxi																			
LFMB/A-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	65	32	22	203	170	90	15	19	8	-	24
LFMB/A-3/4-D-MAXI						G3/4													
LFMB/A-1-D-MAXI	116	91								40									
LFMB/A-D-MAXI	-	-			6.8	-	30			-	-						-	11	

Fine and micro filters LFMA/LFMB, D series

Technical data



Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	L3	L8	L9	T1	T2	∅C 2
Mini																			
LFMB/A-1/8-D-MINI-DA	64	52	40	30	-	G1/8	-	M4	38	20	11	173	124	60	15	19	7	-	22
LFMB/A-1/4-D-MINI-DA						G3/8													
LFMB/A-3/8-D-MINI-DA	70																		
LFMB/A-D-MINI-DA	-	-			5.8	-	11											10	
Midi																			
LFMB/A-1/4-D-MIDI-DA	85	70	55	43	-	G1/4	-	M5	52	32	22	207	151	80	15	19	8	-	24
LFMB/A-3/8-D-MIDI-DA						G3/8													
LFMB/A-1/2-D-MIDI-DA						G1/2													
LFMB/A-3/4-D-MIDI-DA						G3/4													
LFMB/A-D-MIDI-DA	-	-			6.8	-	24											11	
Maxi																			
LFMB/A-1/2-D-MAXI-DA	96	80	66	46	-	G1/2	-	M5	65	32	22	232	170	90	15	19	8	-	24
LFMB/A-3/4-D-MAXI-DA						G3/4													
LFMB/A-1-D-MAXI-DA	116	91																	
LFMB/A-D-MAXI-DA	-	-			6.8	-	30											11	

Fine and micro filters LFMA/LFMB, D series

Technical data

FESTO

Ordering data – Micro filter LFMA					
Grade of filtration 0.01 µm, metal bowl guard					
Size	Connection	Input pressure 1 ... 16 bar		Input pressure 1.5 ... 12 bar	
		Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Without threaded connecting plates					
Mini		192 563	LFMA-D-MINI	192 566	LFMA-D-MINI-A
Midi		192 564	LFMA-D-MIDI	192 567	LFMA-D-MIDI-A
Maxi		192 565	LFMA-D-MAXI	192 568	LFMA-D-MAXI-A
With threaded connecting plates					
Mini	G ¹ / ₈	162 642	LFMA- ¹ / ₈ -D-MINI	162 650	LFMA- ¹ / ₈ -D-MINI-A
	G ¹ / ₄	162 643	LFMA- ¹ / ₄ -D-MINI	162 651	LFMA- ¹ / ₄ -D-MINI-A
	G ³ / ₈	162 644	LFMA- ³ / ₈ -D-MINI	162 652	LFMA- ³ / ₈ -D-MINI-A
Midi	G ¹ / ₄	186 469	LFMA- ¹ / ₄ -D-MIDI	186 470	LFMA- ¹ / ₄ -D-MIDI-A
	G ³ / ₈	162 645	LFMA- ³ / ₈ -D-MIDI	162 653	LFMA- ³ / ₈ -D-MIDI-A
	G ¹ / ₂	162 646	LFMA- ¹ / ₂ -D-MIDI	162 654	LFMA- ¹ / ₂ -D-MIDI-A
	G ³ / ₄	162 647	LFMA- ³ / ₄ -D-MIDI	162 655	LFMA- ³ / ₄ -D-MIDI-A
Maxi	G ¹ / ₂	186 476	LFMA- ¹ / ₂ -D-MAXI	186 475	LFMA- ¹ / ₂ -D-MAXI-A
	G ³ / ₄	162 648	LFMA- ³ / ₄ -D-MAXI	162 656	LFMA- ³ / ₄ -D-MAXI-A
	G1	162 649	LFMA-1-D-MAXI	162 657	LFMA-1-D-MAXI-A

Ordering data – Fine filter LFMB					
Grade of filtration 1 µm, metal bowl guard					
Size	Connection	Input pressure 1 ... 16 bar		Input pressure 1.5 ... 12 bar	
		Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Without threaded connecting plates					
Mini		192 569	LFMB-D-MINI	192 572	LFMB-D-MINI-A
Midi		192 570	LFMB-D-MIDI	192 573	LFMB-D-MIDI-A
Maxi		192 571	LFMB-D-MAXI	192 574	LFMB-D-MAXI-A
With threaded connecting plates					
Mini	G ¹ / ₈	162 626	LFMB- ¹ / ₈ -D-MINI	162 634	LFMB- ¹ / ₈ -D-MINI-A
	G ¹ / ₄	162 627	LFMB- ¹ / ₄ -D-MINI	162 635	LFMB- ¹ / ₄ -D-MINI-A
	G ³ / ₈	162 628	LFMB- ³ / ₈ -D-MINI	162 636	LFMB- ³ / ₈ -D-MINI-A
Midi	G ¹ / ₄	186 467	LFMB- ¹ / ₄ -D-MIDI	186 468	LFMB- ¹ / ₄ -D-MIDI-A
	G ³ / ₈	162 629	LFMB- ³ / ₈ -D-MIDI	162 637	LFMB- ³ / ₈ -D-MIDI-A
	G ¹ / ₂	162 630	LFMB- ¹ / ₂ -D-MIDI	162 638	LFMB- ¹ / ₂ -D-MIDI-A
	G ³ / ₄	162 631	LFMB- ³ / ₄ -D-MIDI	162 639	LFMB- ³ / ₄ -D-MIDI-A
Maxi	G ¹ / ₂	186 473	LFMB- ¹ / ₂ -D-MAXI	186 474	LFMB- ¹ / ₂ -D-MAXI-A
	G ³ / ₄	162 632	LFMB- ³ / ₄ -D-MAXI	162 640	LFMB- ³ / ₄ -D-MAXI-A
	G1	162 633	LFMB-1-D-MAXI	162 641	LFMB-1-D-MAXI-A

Fine and micro filters LFMA/LFMB

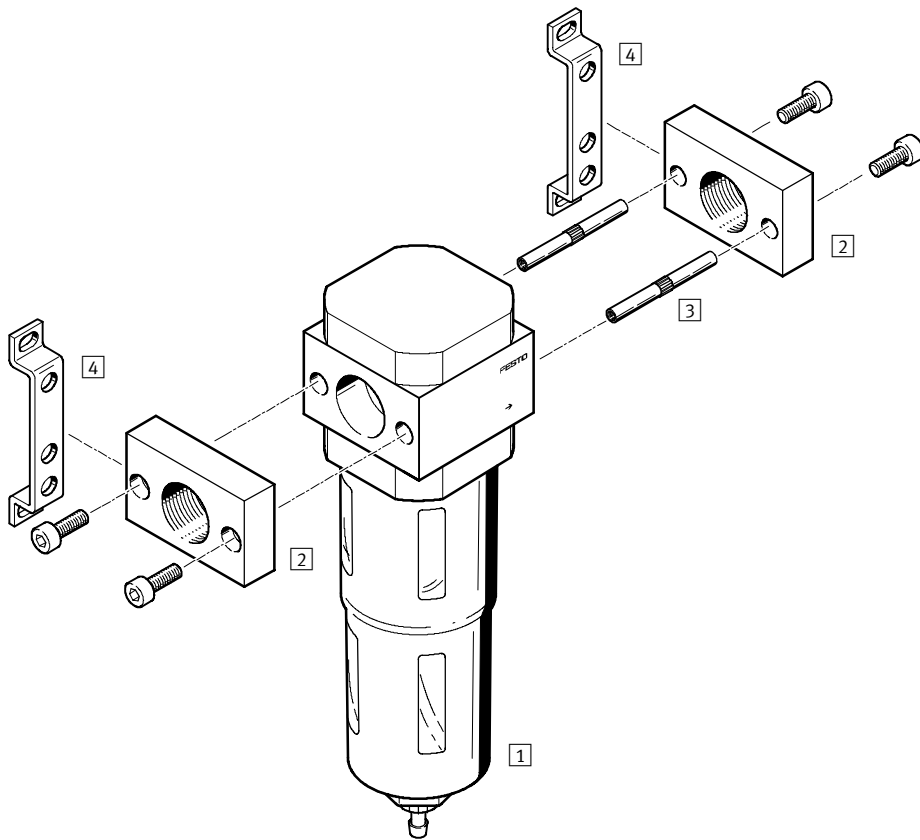
Technical data

Ordering data – Micro filter LFMA with differential pressure indicator DA					
Working pressure 12 bar, grade of filtration 0.01 µm, metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Without threaded connecting plates					
Mini		532 837	LFMA-D-MINI-DA	532 840	LFMA-D-MINI-DA-A
Midi		532 838	LFMA-D-MIDI-DA	532 841	LFMA-D-MIDI-DA-A
Maxi		532 839	LFMA-D-MAXI-DA	532 842	LFMA-D-MAXI-DA-A
With threaded connecting plates					
Mini	G ¹ / ₈	532 843	LFMA- ¹ / ₈ -D-MINI-DA	532 853	LFMA- ¹ / ₈ -D-MINI-DA-A
	G ¹ / ₄	532 844	LFMA- ¹ / ₄ -D-MINI-DA	532 854	LFMA- ¹ / ₄ -D-MINI-DA-A
	G ³ / ₈	532 845	LFMA- ³ / ₈ -D-MINI-DA	532 855	LFMA- ³ / ₈ -D-MINI-DA-A
Midi	G ¹ / ₄	532 846	LFMA- ¹ / ₄ -D-MIDI-DA	532 856	LFMA- ¹ / ₄ -D-MIDI-DA-A
	G ³ / ₈	532 847	LFMA- ³ / ₈ -D-MIDI-DA	532 857	LFMA- ³ / ₈ -D-MIDI-DA-A
	G ¹ / ₂	532 848	LFMA- ¹ / ₂ -D-MIDI-DA	532 858	LFMA- ¹ / ₂ -D-MIDI-DA-A
	G ³ / ₄	532 849	LFMA- ³ / ₄ -D-MIDI-DA	532 859	LFMA- ³ / ₄ -D-MIDI-DA-A
Maxi	G ¹ / ₂	532 850	LFMA- ¹ / ₂ -D-MAXI-DA	532 860	LFMA- ¹ / ₂ -D-MAXI-DA-A
	G ³ / ₄	532 851	LFMA- ³ / ₄ -D-MAXI-DA	532 861	LFMA- ³ / ₄ -D-MAXI-DA-A
	G1	532 852	LFMA-1-D-MAXI-DA	532 862	LFMA-1-D-MAXI-DA-A

Ordering data – Fine filter LFMB with differential pressure indicator DA					
Working pressure 12 bar, grade of filtration 1 µm, metal bowl guard					
Size	Connection	Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Without threaded connecting plates					
Mini		532 811	LFMB-D-MINI-DA	532 814	LFMB-D-MINI-DA-A
Midi		532 812	LFMB-D-MIDI-DA	532 815	LFMB-D-MIDI-DA-A
Maxi		532 813	LFMB-D-MAXI-DA	532 816	LFMB-D-MAXI-DA-A
With threaded connecting plates					
Mini	G ¹ / ₈	532 817	LFMB- ¹ / ₈ -D-MINI-DA	532 827	LFMB- ¹ / ₈ -D-MINI-DA-A
	G ¹ / ₄	532 818	LFMB- ¹ / ₄ -D-MINI-DA	532 828	LFMB- ¹ / ₄ -D-MINI-DA-A
	G ³ / ₈	532 819	LFMB- ³ / ₈ -D-MINI-DA	532 829	LFMB- ³ / ₈ -D-MINI-DA-A
Midi	G ¹ / ₄	532 820	LFMB- ¹ / ₄ -D-MIDI-DA	532 830	LFMB- ¹ / ₄ -D-MIDI-DA-A
	G ³ / ₈	532 821	LFMB- ³ / ₈ -D-MIDI-DA	532 831	LFMB- ³ / ₈ -D-MIDI-DA-A
	G ¹ / ₂	532 822	LFMB- ¹ / ₂ -D-MIDI-DA	532 832	LFMB- ¹ / ₂ -D-MIDI-DA-A
	G ³ / ₄	532 823	LFMB- ³ / ₄ -D-MIDI-DA	532 833	LFMB- ³ / ₄ -D-MIDI-DA-A
Maxi	G ¹ / ₂	532 824	LFMB- ¹ / ₂ -D-MAXI-DA	532 834	LFMB- ¹ / ₂ -D-MAXI-DA-A
	G ³ / ₄	532 825	LFMB- ³ / ₄ -D-MAXI-DA	532 835	LFMB- ³ / ₄ -D-MAXI-DA-A
	G1	532 826	LFMB-1-D-MAXI-DA	532 836	LFMB-1-D-MAXI-DA-A

Active carbon filters LFX, D series

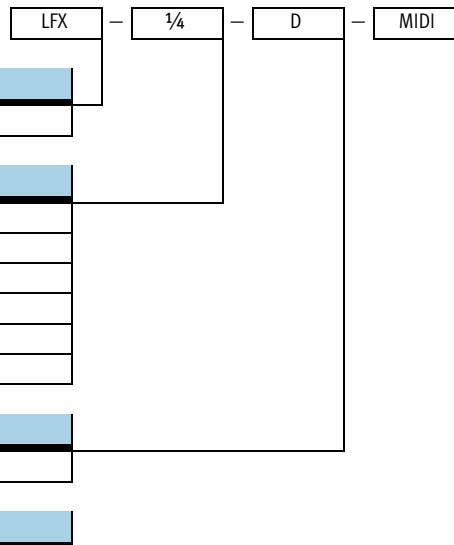
Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 Active carbon filter LFX	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.3-22
2 Connecting plates	The active carbon filters are available with and without threaded connecting plates	-
3 Threaded pin (2 pcs.) HSB	The threaded pins are included in the scope of delivery	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Design: HFOE-D-MINI HFOE-D-MIDI/MAXI (these mounting brackets are not included in the scope of delivery)	3 / 1.8-8

Active carbon filters LFX, D series

Type codes



Basic function

LFX	Active carbon filter
-----	----------------------

Pneumatic connection

1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4
1	Thread G1

Series

D	Series
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Size

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

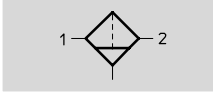
Active carbon filters LFX, D series

Technical data



Function

Condensate drain turned manually



- - Flow rate
300 ... 1430 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
0 ... 16 bar



- Removal of liquid and gaseous oil particles from compressed air using active carbon
- Active carbon filter cartridges provide odour and oil-free air to food industry standard
- Prefiltration down to a particle size of 0.01µm is recommended

General technical data											
Size	Mini			Midi			Maxi				
Pneumatic connection	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1	
Operating medium	Compressed air, filtered, unlubricated, grade of filtration 0.01 µm										
Design	Fibre filter (filter fabric made of active carbon)										
Type of mounting	Via accessories										
	In-line installation										
Assembly position	Vertical ±5°										
Residual oil content [mg/m ³]	≤0.003										
Air purity class at the output	1.7.1 to DIN ISO 8573-1										
Input pressure [bar]	0 ... 16										

Standard nominal flow rate ¹⁾ qnN and standard flow rate qn [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
qnN	300	330	400	-	-	-
qn max	360	360	360	-	-	-
Midi						
qnN	-	650	950	1050	1100	-
qn max	-	900	900	900	900	-
Maxi						
qnN	-	-	-	1350	1400	1430
qn max	-	-	-	1100	1100	1100

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

Ambient conditions			
Size	Mini	Midi	Maxi
Ambient temperature [°C]	-10 ... +60 °C		
Temperature of medium [°C]	+5 ... +30 °C		
Corrosion resistance class CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

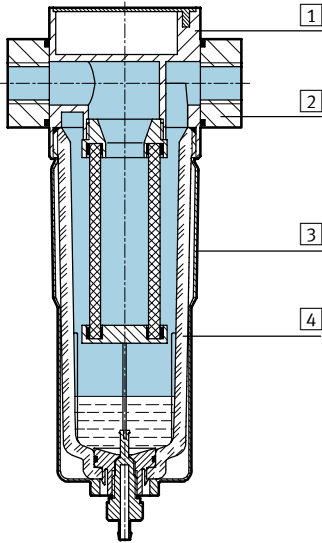
Active carbon filters LFX, D series

Technical data

Weight [g]			
Size	Mini	Midi	Maxi
With connecting plates	376	816	1191
Without connecting plates	283	600	921

Materials

Sectional view

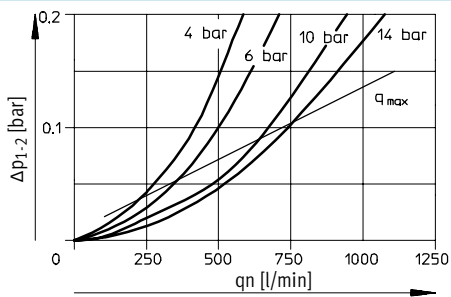


Active carbon filter

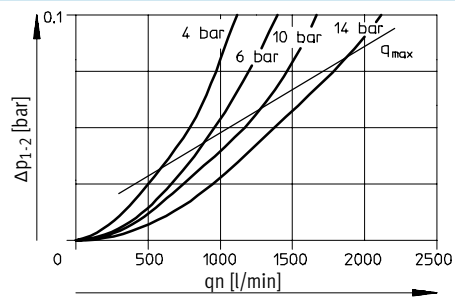
1	Housing	Die-cast zinc
2	Connecting plates	Aluminium
3	Bowl	Polycarbonate
4	Metal bowl guard	Aluminium
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

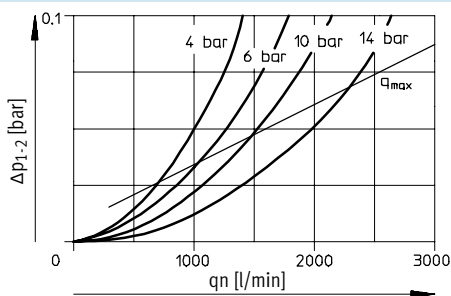
LFX-1/4-D-MINI



LFX-1/2-D-MIDI



LFX-1-D-MAXI



Active carbon filters LFX, D series

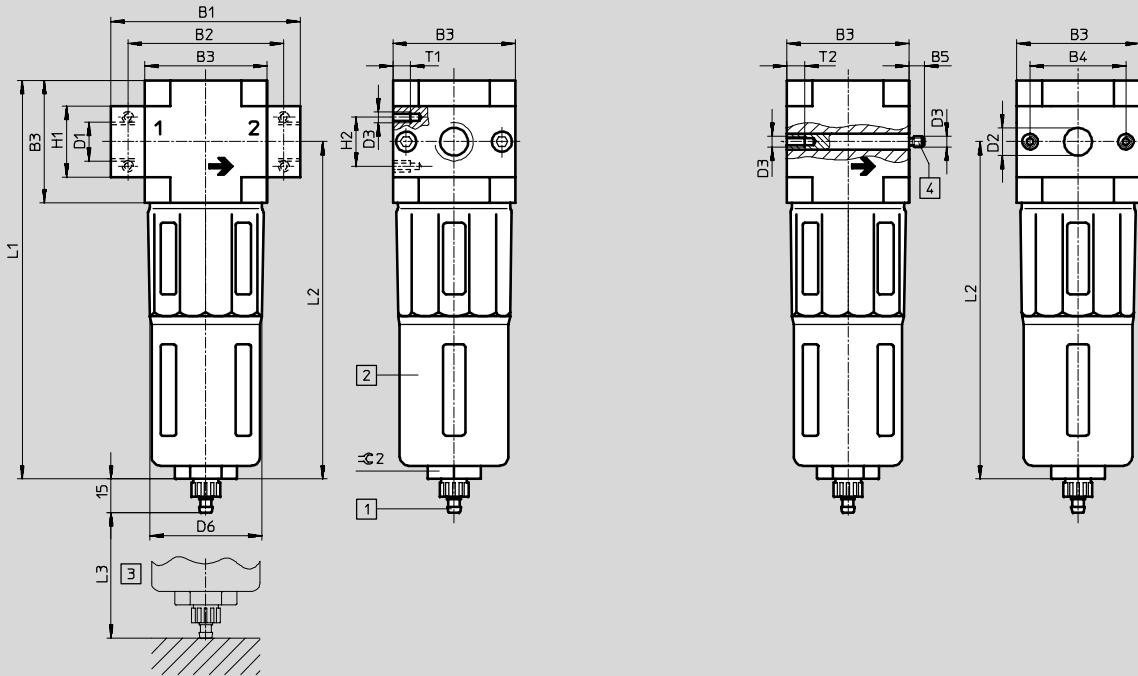
Technical data



Dimensions

With threaded connecting plates

Without threaded connecting plates



- 1 Barbed fitting for plastic tubing type PCN-4
- 2 Metal bowl guard
- 3 Installation dimensions
- 4 Threaded pin (exchangeable)
- Flow direction

D series service units
Filters

1.3

Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	L3	T1	T2	≈ 2
Mini																	
LFX-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	38	20	11	144	124	60	7	-	22
LFX-1/4-D-MINI						G1/4											
LFX-3/8-D-MINI	70					G3/8											
LFX-D-MINI	-	-			5.8	-	11	-		-	-				-	10	
Midi																	
LFX-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	52	32	22	179	151	80	8	-	24
LFX-3/8-D-MIDI						G3/8											
LFX-1/2-D-MIDI						G1/2											
LFX-3/4-D-MIDI						G3/4											
LFX-D-MIDI	-	-			6.8	-	24			-	-				-	11	
Maxi																	
LFX-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	65	32	22	203	170	90	8	-	24
LFX-3/4-D-MAXI						G3/4											
LFX-1-D-MAXI	116	91				G1				40							
LFX-D-MAXI	-	-			6.8	-	30			-	-				-	11	

Active carbon filters LFX, D series

FESTO

Technical data

Ordering data		
Active carbon filter with metal bowl guard		
Size	Part No.	Type
Without threaded connecting plates		
Mini	532 776	LFX-D-MINI
Midi	532 777	LFX-D-MIDI
Maxi	532 778	LFX-D-MAXI

Ordering data			
Active carbon filter with metal bowl guard			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G $\frac{1}{8}$	532 779	LFX- $\frac{1}{8}$ -D-MINI
	G $\frac{1}{4}$	532 802	LFX- $\frac{1}{4}$ -D-MINI
	G $\frac{3}{8}$	532 780	LFX- $\frac{3}{8}$ -D-MINI
Midi	G $\frac{1}{4}$	532 781	LFX- $\frac{1}{4}$ -D-MIDI
	G $\frac{3}{8}$	532 782	LFX- $\frac{3}{8}$ -D-MIDI
	G $\frac{1}{2}$	532 783	LFX- $\frac{1}{2}$ -D-MIDI
	G $\frac{3}{4}$	532 784	LFX- $\frac{3}{4}$ -D-MIDI
Maxi	G $\frac{1}{2}$	532 785	LFX- $\frac{1}{2}$ -D-MAXI
	G $\frac{3}{4}$	532 786	LFX- $\frac{3}{4}$ -D-MAXI
	G1	532 787	LFX-1-D-MAXI

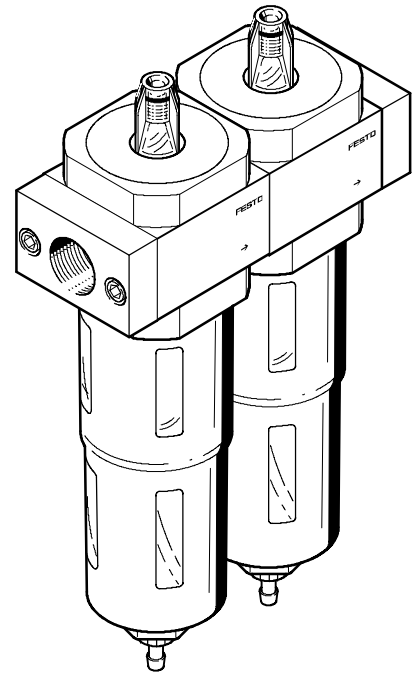
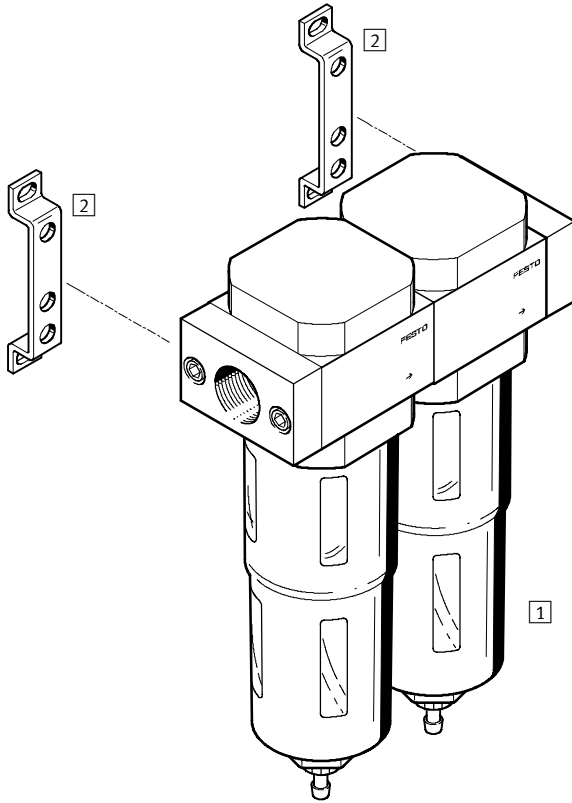
Ordering data		
Active carbon filter cartridge		
Size	Part No.	Type
Mini	532 912	MS4/D-MINI-LFX
Midi	532 788	LFACP-MIDI
Maxi	532 789	LFACP-MAXI

Filter combinations LFMBA, D series

Peripherals overview

Without differential pressure indicator

With differential pressure indicator



Mounting attachments and accessories	Brief description	→ Page
1 Filter combination LFMBA	MINI: Connection size G1/8, G1/4, G3/8 MIDI: Connection size G1/4, G3/8, G1/2, G3/4 MAXI: Connection size G1/2, G3/4, G1 This combination consists of a fine filter (1 µm) and a micro filter (0.01 µm)	3 / 1.3-28
2 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the filter combination on the wall (they are not included in the scope of delivery)	3 / 1.8-8

Filter combinations LFMBA, D series

Type codes

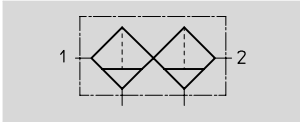
		LFMBA	-	1/4	-	D	-	MIDI	-	DA	-	A
Basic function		LFMBA										
	Filter combination											
Pneumatic connection												
1/8	Thread G1/8											
1/4	Thread G1/4											
3/8	Thread G3/8											
1/2	Thread G1/2											
3/4	Thread G3/4											
1	Thread G1											
Series												
D	Series											
Size												
MINI	Grid dimension 40 mm (without connecting plates)											
MIDI	Grid dimension 55 mm (without connecting plates)											
MAXI	Grid dimension 60 mm (without connecting plates)											
Filter change sensor												
	Without differential pressure indicator											
DA	With differential pressure indicator											
Condensate drain												
	Turned manually											
A	Fully automatic											

Filter combinations LFMBA, D series

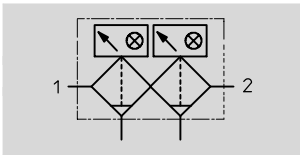
Technical data

Function

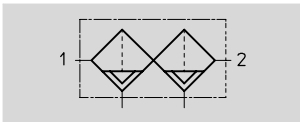
Condensate drain
turned manually
without differential pressure indicator



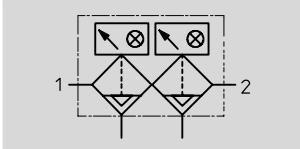
with differential pressure indicator






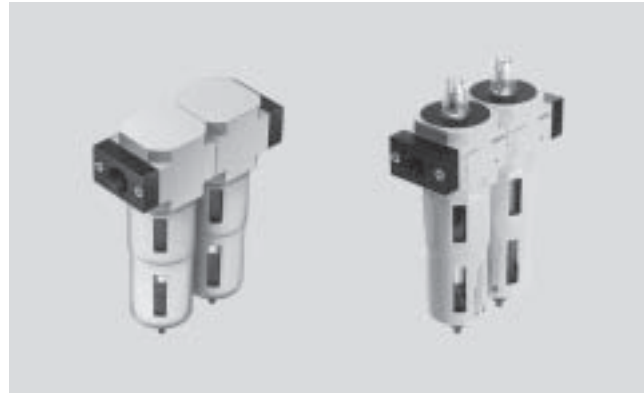
Condensate drain
fully automatic
without differential pressure indicator



with differential pressure indicator



-  Flow rate
125 ... 600 l/min
-  Temperature range
-10 ... +60 °C
-  Input pressure
1 ... 16 bar



- High efficiency filter for special requirements
- Filter cartridges with 1 µm and 0.01 µm
- Air quality to DIN ISO 8573-1
- Available as pre-assembled filter combination
- Version with differential pressure indicator for optical indication of filter pollution

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
Filter efficiency 99.9999%

General technical data											
Size	Mini			Midi				Maxi			
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ³ / ₄	G ¹ / ₂	G ³ / ₄	G1	
Operating medium	Filtered compressed air, lubricated or unlubricated										
Design	Fibre filter										
Type of mounting	Via accessories In-line installation										
Assembly position	Vertical ±5°										
Grade of filtration [µm]	0.01 and 1										
Residual oil content [mg/m ³]	≤0.01										
Max. condensate volume [cm ³]	22			43				80			
Input pressure [bar]											
Condensate drain											
turned manually	1 ... 16										
fully automatic	1.5 ... 12										

Standard nominal flow rate ¹⁾ qnN [l/min]										
Connection	Mini			Midi				Maxi		
	G ¹ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ³ / ₄	G ¹ / ₂	G ³ / ₄	G1
LFMBA	125	130	140	300	350	350	350	550	550	600

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

Filter combinations LFMBA, D series

Technical data

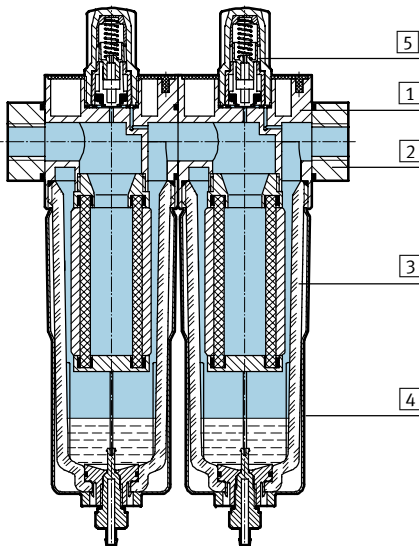
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	+1.5 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size		Mini	Midi	Maxi
Without differential pressure indicator		500	1300	2400
With differential pressure indicator		651	1429	2362

Materials

Sectional view



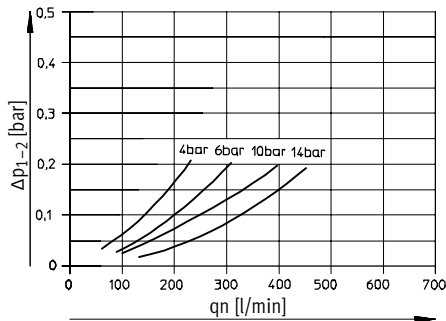
Filter combination		
1	Housing	Die-cast zinc
2	Connecting plates	Die-cast zinc
3	Bowl	Polycarbonate
4	Bowl guard	Aluminium
5	Housing for version with differential pressure indicator	Polycarbonate
-	Seals	Nitrile rubber
	Note on materials	Free of copper and PTFE

Filter combinations LFMBA, D series

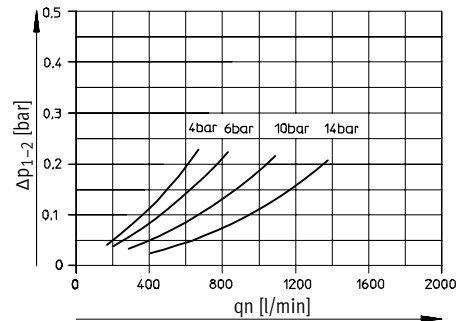
Technical data

Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

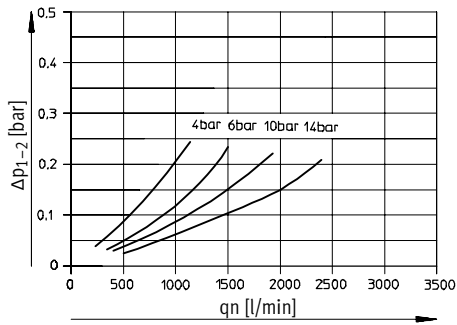
LFMBA-1/4-D-MINI and LFMBA-1/4-D-MINI-A



LFMBA-1/2-D-MIDI and LFMBA-1/2-D-MIDI-A



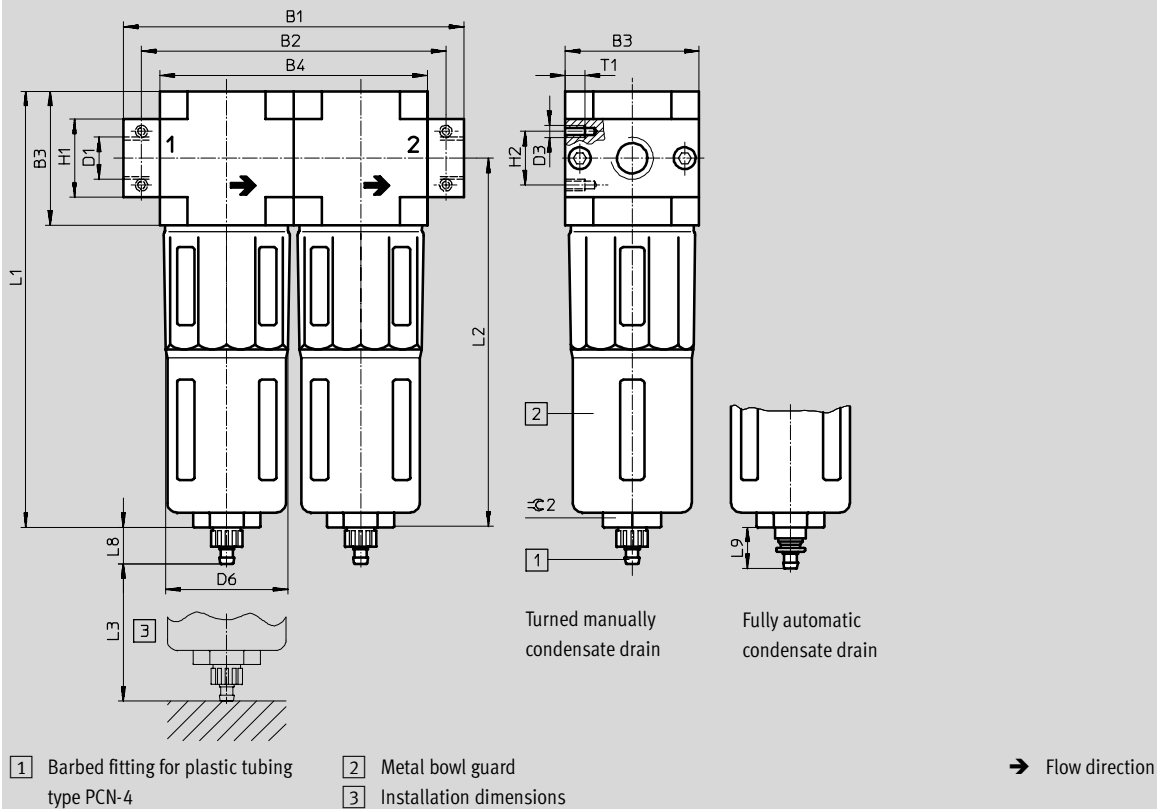
LFMBA-1-D-MAXI and LFMBA-1-D-MAXI-A



Filter combinations LFMBA, D series

Technical data

Dimensions

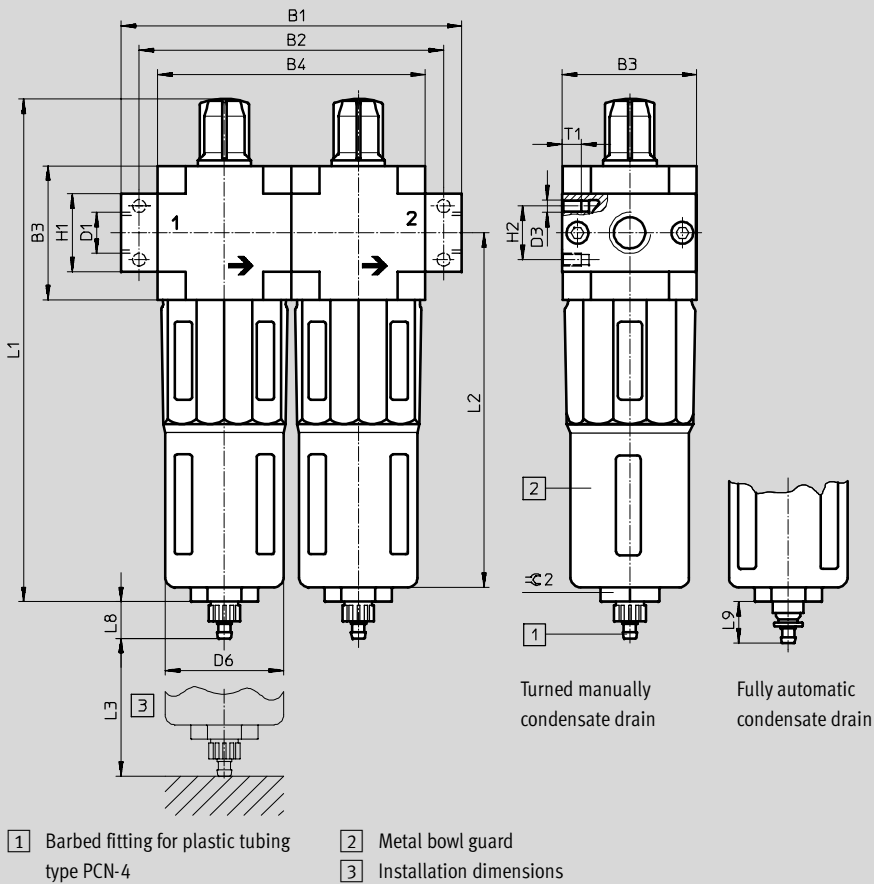


Type	B1	B2	B3	B4	D1	D3	D6	H1	H2	L1	L2	L3	L8	L9	T1	≈ 2
Mini																
LFMBA-1/8-D-MINI	104	92	40	80	G1/8	M4	38	20	11	144	124	60	15	19	7	22
LFMBA-1/4-D-MINI					G1/4											
LFMBA-3/8-D-MINI	110				G3/8											
Midi																
LFMBA-1/4-D-MIDI	140	125	55	110	G1/4	M5	52	32	22	179	151	80	15	19	8	24
LFMBA-3/8-D-MIDI					G3/8											
LFMBA-1/2-D-MIDI					G1/2											
LFMBA-3/4-D-MIDI					G3/4											
Maxi																
LFMBA-1/2-D-MAXI	162	146	66	132	G1/2	M5	65	32	22	203	170	90	15	19	8	24
LFMBA-3/4-D-MAXI					G3/4			40								
LFMBA-1-D-MAXI	182	157			G1											

Filter combinations LFMBA, D series

Technical data

Dimensions with differential pressure indicator



Type	B1	B2	B3	B4	D1	D3	D6	H1	H2	L1	L2	L3	L8	L9	T1	⊙ 2
Mini																
LFMBA-1/8-D-MINI-DA	104	92	40	80	G1/8	M4	38	20	11	173	124	60	15	19	7	22
LFMBA-1/4-D-MINI-DA					G1/4											
LFMBA-3/8-D-MINI-DA					G3/8											
Midi																
LFMBA-1/4-D-MIDI-DA	140	125	55	110	G1/4	M5	52	32	22	206	151	80	15	19	8	24
LFMBA-3/8-D-MIDI-DA					G3/8											
LFMBA-1/2-D-MIDI-DA					G1/2											
LFMBA-3/4-D-MIDI-DA					G3/4											
Maxi																
LFMBA-1/2-D-MAXI-DA	162	146	66	132	G1/2	M5	65	32	22	231	170	90	15	19	8	24
LFMBA-3/4-D-MAXI-DA					G3/4											
LFMBA-1-D-MAXI-DA					G1											

Filter combinations LFMBA, D series

Technical data

Ordering data – Filter combination LFMBA					
Grade of filtration 1 µm and 0.01 µm, metal bowl guard					
Size	Connection	Input pressure 1 ... 16 bar		Input pressure 1.5 ... 12 bar	
		Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Mini	G1/8	162 658	LFMBA-1/8-D-MINI	162 666	LFMBA-1/8-D-MINI-A
	G1/4	162 659	LFMBA-1/4-D-MINI	162 667	LFMBA-1/4-D-MINI-A
	G3/8	162 660	LFMBA-3/8-D-MINI	162 668	LFMBA-3/8-D-MINI-A
Midi	G1/4	186 471	LFMBA-1/4-D-MIDI	186 472	LFMBA-1/4-D-MIDI-A
	G3/8	162 661	LFMBA-3/8-D-MIDI	162 669	LFMBA-3/8-D-MIDI-A
	G1/2	162 662	LFMBA-1/2-D-MIDI	162 670	LFMBA-1/2-D-MIDI-A
	G3/4	162 663	LFMBA-3/4-D-MIDI	162 671	LFMBA-3/4-D-MIDI-A
Maxi	G1/2	186 477	LFMBA-1/2-D-MAXI	186 478	LFMBA-1/2-D-MAXI-A
	G3/4	162 664	LFMBA-3/4-D-MAXI	162 672	LFMBA-3/4-D-MAXI-A
	G1	162 665	LFMBA-1-D-MAXI	162 673	LFMBA-1-D-MAXI-A

Ordering data – Filter combination LFMBA with differential pressure indicator DA					
Grade of filtration 1 µm and 0.01 µm, metal bowl guard					
Size	Connection	Input pressure 1 ... 16 bar		Input pressure 1.5 ... 12 bar	
		Condensate drain turned manually		Condensate drain fully automatic	
		Part No.	Type	Part No.	Type
Mini	G1/8	532 863	LFMBA-1/8-D-MINI-DA	532 873	LFMBA-1/8-D-MINI-DA-A
	G1/4	532 864	LFMBA-1/4-D-MINI-DA	532 874	LFMBA-1/4-D-MINI-DA-A
	G3/8	532 865	LFMBA-3/8-D-MINI-DA	532 875	LFMBA-3/8-D-MINI-DA-A
Midi	G1/4	532 866	LFMBA-1/4-D-MIDI-DA	532 876	LFMBA-1/4-D-MIDI-DA-A
	G3/8	532 867	LFMBA-3/8-D-MIDI-DA	532 877	LFMBA-3/8-D-MIDI-DA-A
	G1/2	532 868	LFMBA-1/2-D-MIDI-DA	532 878	LFMBA-1/2-D-MIDI-DA-A
	G3/4	532 869	LFMBA-3/4-D-MIDI-DA	532 879	LFMBA-3/4-D-MIDI-DA-A
Maxi	G1/2	532 870	LFMBA-1/2-D-MAXI-DA	532 880	LFMBA-1/2-D-MAXI-DA-A
	G3/4	532 871	LFMBA-3/4-D-MAXI-DA	532 881	LFMBA-3/4-D-MAXI-DA-A
	G1	532 872	LFMBA-1-D-MAXI-DA	532 882	LFMBA-1-D-MAXI-DA-A

Filter cartridges, D series

Accessories



Filter cartridge LFP for service units

Material:
Polyethylene
Free of copper, PTFE and silicone



Ordering data		
Size	Part No.	Type
5 µm filter cartridge		
Micro	526 818	LFP-D-MICRO-5M
Mini	159 640	LFP-D-MINI-5M
Midi	159 594	LFP-D-MIDI-5M
Maxi	159 641	LFP-D-MAXI-5M
40 µm filter cartridge		
Mini	363 665	LFP-D-MINI-40M
Midi	363 667	LFP-D-MIDI-40M
Maxi	363 664	LFP-D-MAXI-40M

Filter cartridge LFMBP/LFMAP for fine and micro filters

Material:
Borosilicate fibre mesh
Free of copper, PTFE and silicone

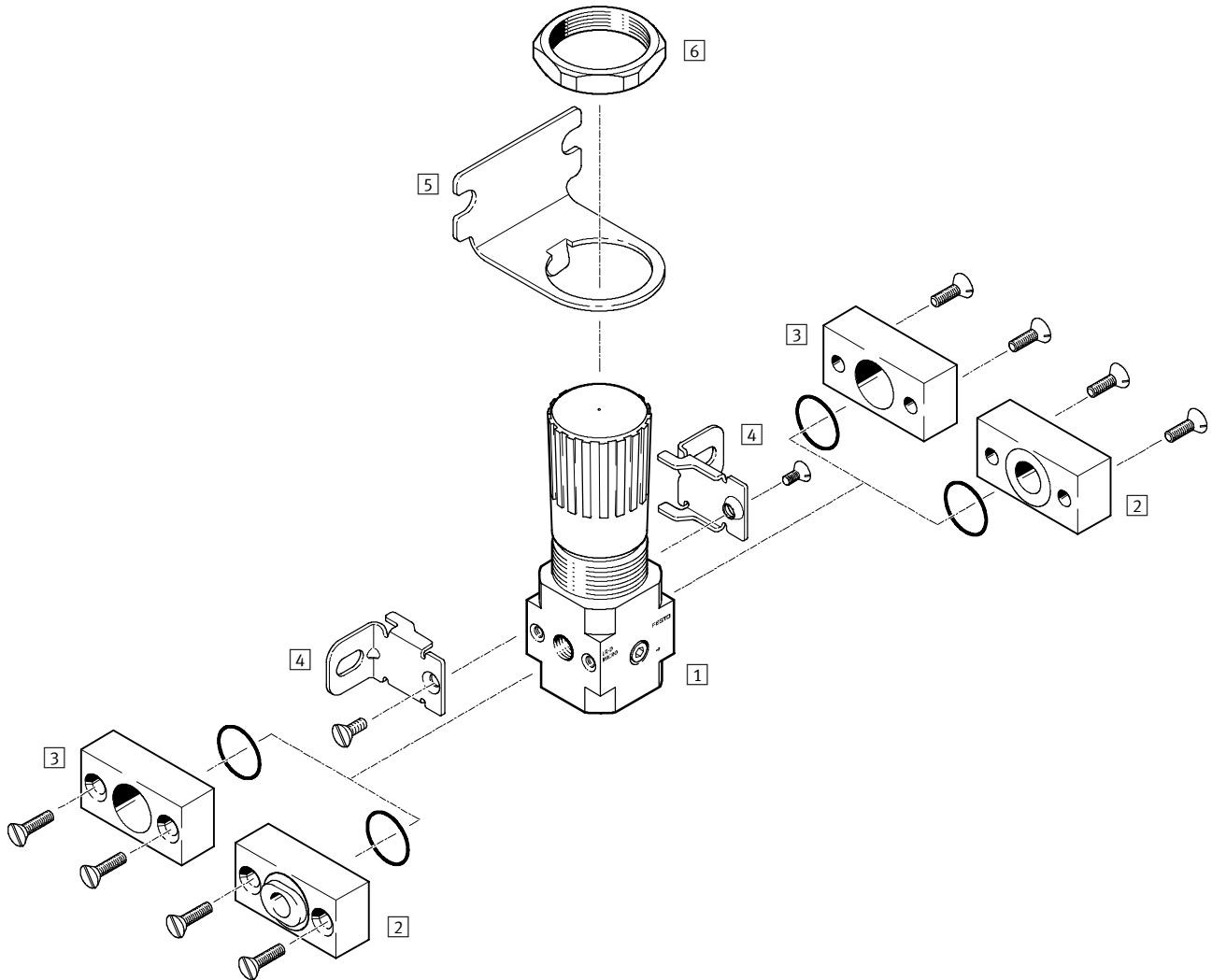


Ordering data		
Size	Part No.	Type
1 µm filter cartridge		
Mini	162 677	MS4/D-MINI-LFM-B
Midi	162 678	LFMBP-D-MIDI
Maxi	162 679	LFMBP-D-MAXI
0.01 µm filter cartridge		
Mini	162 674	MS4/D-MINI-LFM-A
Midi	162 675	LFMAP-D-MIDI
Maxi	162 676	LFMAP-D-MAXI

Pressure regulators LR/LRS, D series

Peripherals overview

Micro



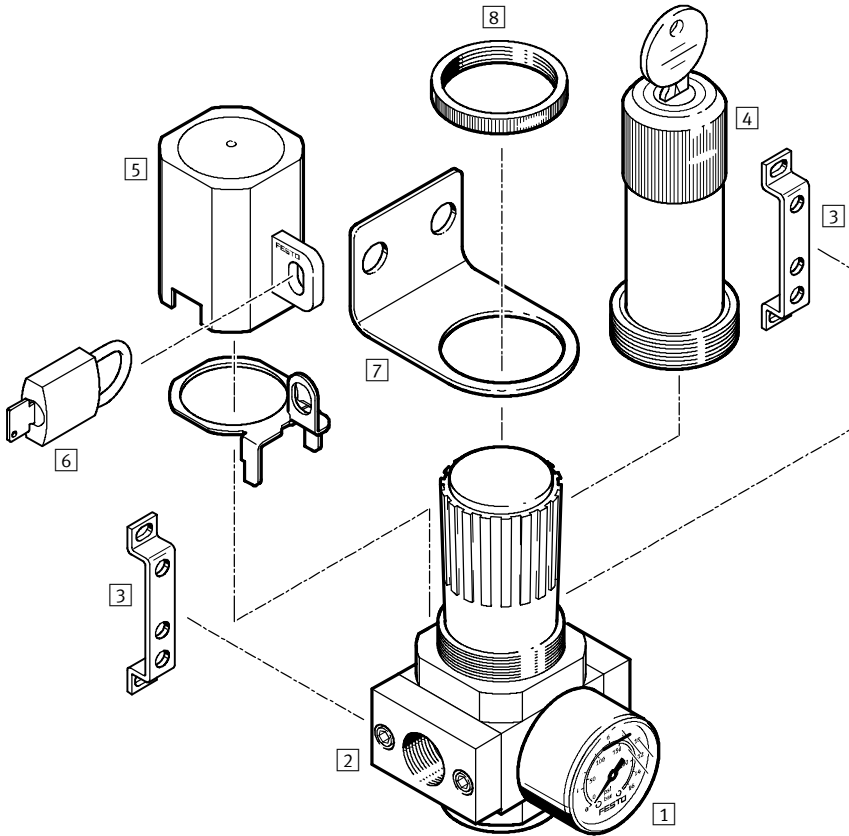
Mounting attachments and accessories	Brief description	→ Page
1 Pressure regulator LR	Connection size M5, M7 in housing	3 / 1.4-4
2 Connection set PBL-QS4-D-MICRO PBL-QS6-D-MICRO	QS push-in fitting for tubing O.D. 4 and 6 mm	3 / 1.8-12
3 Connection set PBL-1/8-D-MICRO	Connection size G1/8	3 / 1.8-12
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE-D-MICRO are used to mount the pressure regulator on the wall (they are not included in the scope of delivery)	3 / 1.8-8
5 Mounting bracket HRS	Required to mount the pressure regulator on the wall or in a front panel	3 / 1.8-9
6 Hex nut HMR	Required for securing via the mounting bracket HRS	3 / 1.8-11

Pressure regulators LR/LRS, D series

Peripherals overview



Mini/Midi/Maxi



Mounting attachments and accessories	Brief description	→ Page
1 Pressure regulator LR/LRS	Mini: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ Midi: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ Maxi: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.4-4
2 Connecting plates	The pressure regulators LR/LRS are available with connecting plates (included in the scope of delivery)	–
3 Mounting bracket (2 pcs.) HFOE	Design: HFOE-D-MINI HFOE-D-MIDI/MAXI (not included in the scope of delivery)	3 / 1.8-8
4 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	–
5 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
6 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
7 Mounting bracket HR-D-...	Required for wall mounting (not included in the scope of delivery)	3 / 1.8-10
8 Knurled nut	The knurled nut is included in the scope of delivery	–

Pressure regulators LR/LRS, D series

Type codes

FESTO

	LR	–	1/2	–	D	–	7	–	0	–	DI	–	MAXI
Basic function													
LR	Pressure regulator												
LRS	Pressure regulator, lockable												
Pneumatic connection													
M5	Thread M5												
M7	Thread M7												
QS4	Push-in fitting QS4												
QS6	Push-in fitting QS6												
1/8	Thread G1/8												
1/4	Thread G1/4												
3/8	Thread G3/8												
1/2	Thread G1/2												
3/4	Thread G3/4												
1	Thread G1												
Series													
D	Series												
Pressure regulation range													
	0.5 ... 12 bar												
7	0.5 ... 7 bar												
Pressure gauge													
	With pressure gauge												
0	Without pressure gauge												
Functions													
I	With integrated return flow function												
DI	Directly actuated pressure regulator with integrated return flow function (MAXI units only)												
Size													
MICRO	Grid dimension 25 mm (without connecting plates)												
MINI	Grid dimension 40 mm (without connecting plates)												
MIDI	Grid dimension 55 mm (without connecting plates)												
MAXI	Grid dimension 66 mm (without connecting plates)												

D series service units
Pressure regulators

1.4

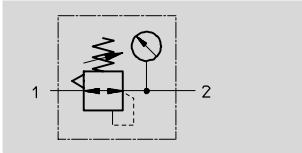
Pressure regulators LR/LRS, D series

Technical data

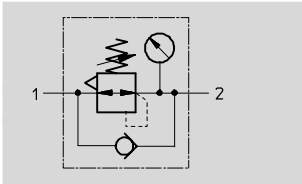


Function

LR/LRS-...-D-...



LR/LRS-...-D-DI-MAXI



- - Flow rate
120 ... 12500 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
1 ... 16 bar



Integrated universal locking for pressure regulators of D series which prevents alteration of the set secondary pressure (p2) by unauthorized persons. Universal locking means that multiple locks can be closed with the same key. A cylinder lock is integrated in the rotary knob.

- Also suitable for front panel mounting
- Two pressure gauge connections for different fitting options
- Mini and Midi sizes: Directly actuated diaphragm regulator
- Maxi size: Pilot actuated piston regulator, diaphragm regulator LRS-DI
- Good regulating characteristics with minimal pressure hysteresis
- High flow rate
- Two pressure regulation ranges: 0.5 ... 7 bar and 0.5 ... 12 bar
- Setting values are secured by locking the rotary knob
- Return flow option for venting from output 2 to input 1
- Pressure sensor (optional)
→ 3 / 1.8-15

General technical data																
Size	Micro					Mini			Midi				Maxi			
Pneumatic connection	M5	M7	G ¹ / ₈	QS4	QS6	G ¹ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₄	G ³ / ₈	G ¹ / ₂	G ³ / ₄	G ¹ / ₂	G ³ / ₄	G1	
Operating medium	Compressed air					Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm										
Design	Directly actuated diaphragm regulator					Directly actuated diaphragm regulator							Pilot actuated piston regulator			
													Directly actuated diaphragm regulator			
Type of mounting	Via accessories					Via accessories										
	In-line installation					In-line installation										
	Front panel mounting					Front panel mounting										
Assembly position	Any					Any										
Max. hysteresis [bar]	0.3					0.2							0.4			
Input pressure [bar]	1 ... 10					1 ... 16										
Pressure regulation range [bar]	0.5 ... 7					0.5 ... 7							0.5 ... 12			
Pressure indication	Via pressure gauge					Via pressure gauge										
	M5 prepared					G ¹ / ₈ prepared			G ¹ / ₄ prepared				G ¹ / ₄ prepared			

Pressure regulators LR/LRS, D series

FESTO

Technical data

Standard nominal flow rate ¹⁾ qnN [l/min]					
Connection	Female thread		Connecting plate		
	M5	M7	G1/8	QS4	QS6
Micro					
LR	120	300	450	160	450

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

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
Pressure regulation range 0.5 ... 7 bar	1000	1600	1800	–	–	–
Pressure regulation range 0.5 ... 12 bar	800	1500	1700	–	–	–
Midi						
Pressure regulation range 0.5 ... 7 bar	–	2200	3300	4000	4500	–
Pressure regulation range 0.5 ... 12 bar	–	2100	3200	3500	3500	–
Maxi						
Pressure regulation range 0.5 ... 7 bar	–	–	–	10700	12000	12500
Pressure regulation range 0.5 ... 12 bar	–	–	–	10500	11000	11500
Maxi – Directly actuated pressure regulator with integrated return flow function						
Pressure regulation range 0.5 ... 7 bar	–	–	–	5400	6800	7000
Pressure regulation range 0.5 ... 12 bar	–	–	–	7300	8350	8400

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

Screw-in depth of connecting thread [mm]					
Connection	M5	M7	G1/8	QS4	QS6
Micro					
In housing	5	6	–	–	–
In connecting plates	–	–	8	–	–

Ambient conditions				
Size	Micro	Mini	Midi	Maxi
Ambient temperature [°C]	–10 ... +60			
Temperature of medium [°C]	–10 ... +60			
Corrosion resistance class CRC ¹⁾	2			

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]					
Size	Micro		Mini	Midi	Maxi
	Female thread	Connecting plate			
With pressure gauge					
LR	60	80	350	720	1200
LRS	–	–	520	1250	1290
Without pressure gauge					
LR	50	70	300	660	1100
LRS	–	–	470	1180	1215

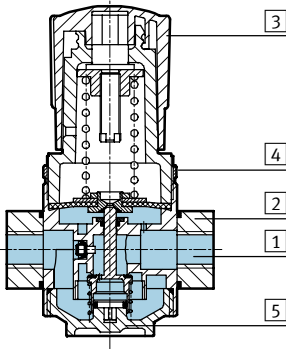
Pressure regulators LR/LRS, D series

Technical data



Materials

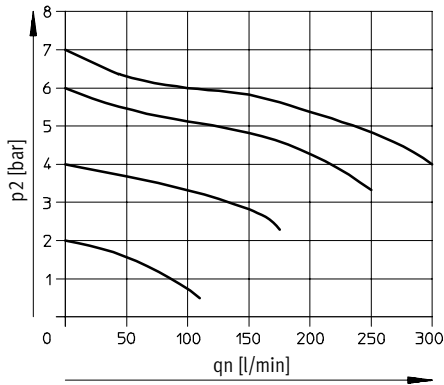
Sectional view



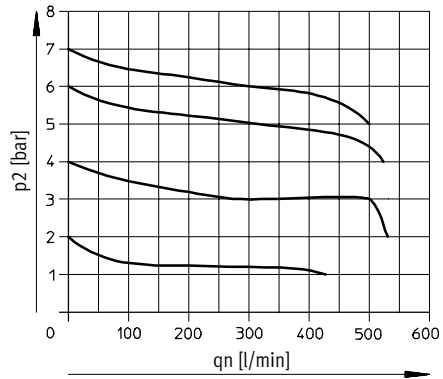
Pressure regulator	Micro	Mini/Midi/Maxi
1 Housing	Wrought aluminium alloy	Die-cast zinc/aluminium
2 Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
3 Regulating knob	Polyacetal	Polyacetal
4 Knurled nut	-	Aluminium
5 Plug cap	Polycarbonate	Polycarbonate
- Seals	Nitrile rubber	Nitrile rubber
Note on materials	Designs free of copper, PTFE and silicone → Ordering data	

Standard flow rate q_n as a function of the output pressure p_2

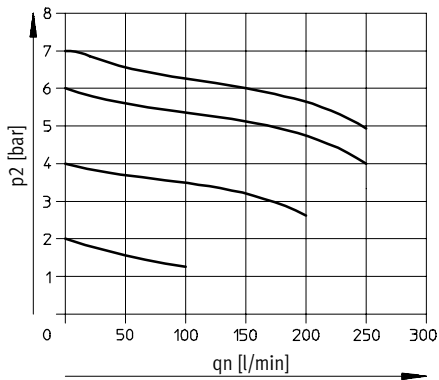
LR-M5-...-MICRO



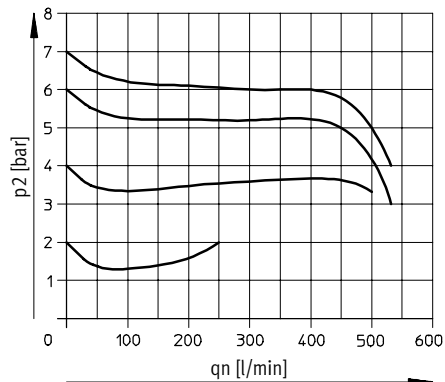
LR-M7-...-MICRO B



LR-QS4-...-MICRO



LR-QS6-...-MICRO and LR-1/8-...-MICRO



Primary pressure $p_1 = 10$ bar

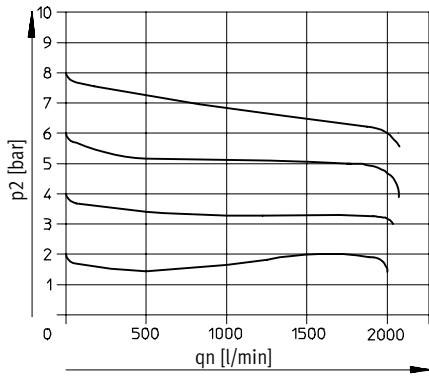
Pressure regulators LR/LRS, D series

Technical data

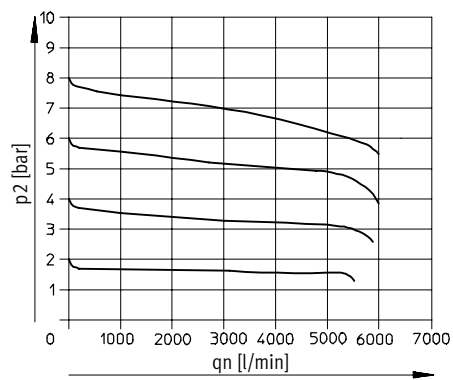


Standard flow rate q_n as a function of the output pressure p_2

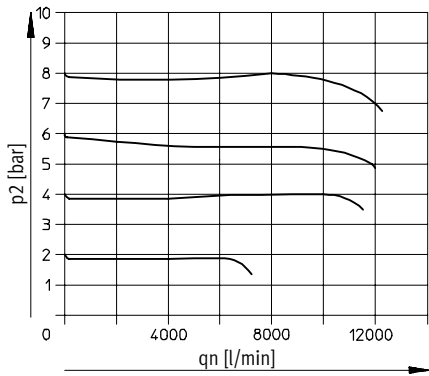
LR/LRS-1/4-D-MINI



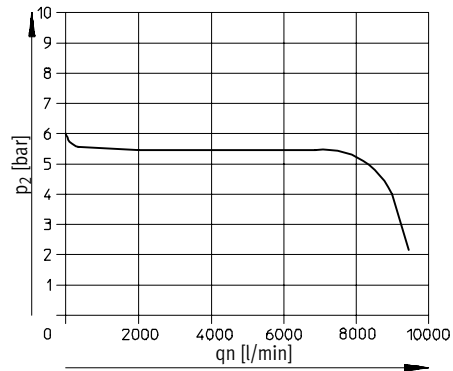
LR/LRS-1/2-D-MIDI



LR/LRS-1-D-MAXI



LR/LRS-1-D-DI-MAXI



Primary pressure $p_1 = 10$ bar

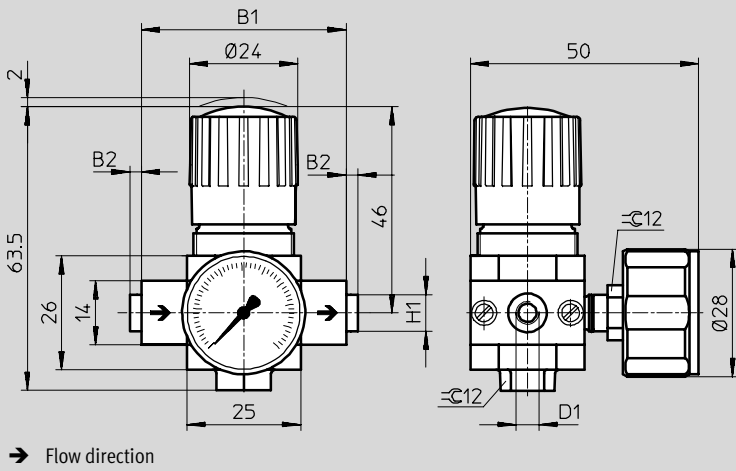
Pressure regulators LR/LRS, D series

Technical data



Dimensions

Micro



Type	B1	B2	D1	H1	
Micro					
LR-M5-D-7-MICRO	25	-	M5	-	
LR-M7-D-7-MICRO B			M7		
LR-1/8-D-7-MICRO	45	-	G1/8	-	
LR-QS4-D-7-MICRO			~2.5	QS4	~8
LR-QS6-D-7-MICRO				QS6	~10

Pressure regulators LR/LRS, D series

Technical data



Dimensions
Mini/Midi/Maxi

lockable

→ Flow direction

1 Second pressure gauge connection 2 Installation dimensions 3 Installation dimensions

Type	B1	B2	B3	B4	D1	D2 Ø	D3	D4	D5 Ø
Mini									
LR/LRS-1/8-D-(I)-MINI	64	52	40	76	G1/8	31	M4	M36x1.5	41
LR/LRS-1/4-D-(I)-MINI					G1/4				
LR/LRS-3/8-D-(I)-MINI	70				G3/8				
Midi									
LR/LRS-1/4-D-(I)-MIDI	85	70	55	95	G1/4	50	M5	M52x1.5	50
LR/LRS-3/8-D-(I)-MIDI					G3/8				
LR/LRS-1/2-D-(I)-MIDI					G1/2				
LR/LRS-3/4-D-(I)-MIDI					G3/4				
Maxi									
LR/LRS-1/2-D-MAXI	96	80	66	107	G1/2	31	M5	M36x1.5	50
LR/LRS-1/2-D-DI-MAXI						49		M52x1.5	
LR/LRS-3/4-D-MAXI					G3/4	31		M36x1.5	
LR/LRS-3/4-D-DI-MAXI						49		M52x1.5	
LR/LRS-1-D-MAXI	116	91			G1	31		M36x1.5	
LR/LRS-1-D-DI-MAXI						49		M52x1.5	

D series service units
Pressure regulators

1.4

Pressure regulators LR/LRS, D series

FESTO

Technical data

Type	H1	H2	L1	L4	L5 max.	L6	L7	T1	≈ 1	≈ 2
Mini										
LR/LRS-1/8-D-MINI	20	11	96	68	3	98	60	7	14	17
LR/LRS-1/4-D-MINI										
LR/LRS-3/8-D-MINI										
Midi										
LR/LRS-1/4-D-MIDI	32	22	135	99	5	130	60	8	14	36
LR/LRS-3/8-D-MIDI										
LR/LRS-1/2-D-MIDI										
LR/LRS-3/4-D-MIDI										
Maxi										
LR/LRS-1/2-D-MAXI	32	22	125	82	4	111	60	8	14	22
LR/LRS-1/2-D-DI-MAXI			148	105		135				
LR/LRS-3/4-D-MAXI			125	82		111				
LR/LRS-3/4-D-DI-MAXI			148	105		135				
LR/LRS-1-D-MAXI	40		125	82		111				
LR/LRS-1-D-DI-MAXI			148	105		135				



D series service units
Pressure regulators

1.4

Pressure regulators LR/LRS, D series

Technical data


FESTO

Ordering data			
Size	Connection	Pressure regulation range 0.5 ... 7 bar	
		Part No.	Type
With pressure gauge			
Micro	Without threaded connecting plates, connecting thread in housing		
	M5	526 261	LR-M5-D-7-MICRO ¹⁾
	M7	534 180	LR-M7-D-7-MICRO B ¹⁾  New
	With threaded connecting plates		
	G1/8	526 263	LR-1/8-D-7-MICRO ¹⁾
	With connecting plate and push-in fitting		
	QS4	526 269	LR-QS4-D-7-MICRO ¹⁾
QS6	526 271	LR-QS6-D-7-MICRO ¹⁾	
Without pressure gauge			
Micro	Without threaded connecting plates, connecting thread in housing		
	M5	526 262	LR-M5-D-O-7-MICRO ¹⁾
	M7	534 181	LR-M7-D-O-7-MICRO B ¹⁾  New
	With threaded connecting plates		
	G1/8	526 264	LR-1/8-D-O-7-MICRO ¹⁾
	With connecting plate and push-in fitting		
	QS4	526 270	LR-QS4-D-O-7-MICRO ¹⁾
QS6	526 272	LR-QS6-D-O-7-MICRO ¹⁾	

1) Free of copper, PTFE and silicone

Ordering data					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
With pressure gauge					
Mini	G1/8	162 582	LR-1/8-D-7-MINI	159 624	LR-1/8-D-MINI
	G1/4	162 583	LR-1/4-D-7-MINI	159 625	LR-1/4-D-MINI
	G3/8	162 584	LR-3/8-D-7-MINI	162 580	LR-3/8-D-MINI
Midi	G1/4	186 453	LR-1/4-D-7-MIDI	186 451	LR-1/4-D-MIDI
	G3/8	162 585	LR-3/8-D-7-MIDI	159 580	LR-3/8-D-MIDI
	G1/2	162 586	LR-1/2-D-7-MIDI	159 581	LR-1/2-D-MIDI
	G3/4	162 587	LR-3/4-D-7-MIDI	162 581	LR-3/4-D-MIDI
Maxi	G1/2	186 457	LR-1/2-D-7-MAXI	186 455	LR-1/2-D-MAXI
	G3/4	162 588	LR-3/4-D-7-MAXI	159 626	LR-3/4-D-MAXI
	G1	162 589	LR-1-D-7-MAXI	159 627	LR-1-D-MAXI
Without pressure gauge					
Mini	G1/8	162 598	LR-1/8-D-7-O-MINI ¹⁾	162 590	LR-1/8-D-O-MINI ¹⁾
	G1/4	162 599	LR-1/4-D-7-O-MINI ¹⁾	162 591	LR-1/4-D-O-MINI ¹⁾
	G3/8	162 600	LR-3/8-D-7-O-MINI ¹⁾	162 592	LR-3/8-D-O-MINI ¹⁾
Midi	G1/4	186 454	LR-1/4-D-7-O-MIDI ¹⁾	186 452	LR-1/4-D-O-MIDI ¹⁾
	G3/8	162 601	LR-3/8-D-7-O-MIDI ¹⁾	162 593	LR-3/8-D-O-MIDI ¹⁾
	G1/2	162 602	LR-1/2-D-7-O-MIDI ¹⁾	162 594	LR-1/2-D-O-MIDI ¹⁾
	G3/4	162 603	LR-3/4-D-7-O-MIDI ¹⁾	162 595	LR-3/4-D-O-MIDI ¹⁾
Maxi	G1/2	186 458	LR-1/2-D-7-O-MAXI ¹⁾	186 456	LR-1/2-D-O-MAXI ¹⁾
	G3/4	162 604	LR-3/4-D-7-O-MAXI ¹⁾	162 596	LR-3/4-D-O-MAXI ¹⁾
	G1	162 605	LR-1-D-7-O-MAXI ¹⁾	162 597	LR-1-D-O-MAXI ¹⁾

1) Free of copper, PTFE and silicone

 Core Range

Pressure regulators LR/LRS, D series

Technical data



D series service units
Pressure regulators

1.4

Ordering data					
Pressure regulator with integrated return flow function					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
With pressure gauge					
Mini	G $\frac{1}{8}$	192 299	LR- $\frac{1}{8}$ -D-7-I-MINI	192 298	LR- $\frac{1}{8}$ -D-I-MINI
	G $\frac{1}{4}$	192 301	LR- $\frac{1}{4}$ -D-7-I-MINI	192 300	LR- $\frac{1}{4}$ -D-I-MINI
	G $\frac{3}{8}$	192 303	LR- $\frac{3}{8}$ -D-7-I-MINI	192 302	LR- $\frac{3}{8}$ -D-I-MINI
Midi	G $\frac{1}{4}$	192 311	LR- $\frac{1}{4}$ -D-7-I-MIDI	192 310	LR- $\frac{1}{4}$ -D-I-MIDI
	G $\frac{3}{8}$	192 313	LR- $\frac{3}{8}$ -D-7-I-MIDI	192 312	LR- $\frac{3}{8}$ -D-I-MIDI
	G $\frac{1}{2}$	192 315	LR- $\frac{1}{2}$ -D-7-I-MIDI	192 314	LR- $\frac{1}{2}$ -D-I-MIDI
	G $\frac{3}{4}$	192 317	LR- $\frac{3}{4}$ -D-7-I-MIDI	192 316	LR- $\frac{3}{4}$ -D-I-MIDI
Without pressure gauge					
Mini	G $\frac{1}{8}$	192 305	LR- $\frac{1}{8}$ -D-7-O-I-MINI ¹⁾	192 304	LR- $\frac{1}{8}$ -D-O-I-MINI ¹⁾
	G $\frac{1}{4}$	192 307	LR- $\frac{1}{4}$ -D-7-O-I-MINI ¹⁾	192 306	LR- $\frac{1}{4}$ -D-O-I-MINI ¹⁾
	G $\frac{3}{8}$	192 309	LR- $\frac{3}{8}$ -D-7-O-I-MINI ¹⁾	192 308	LR- $\frac{3}{8}$ -D-O-I-MINI ¹⁾
Midi	G $\frac{1}{4}$	192 319	LR- $\frac{1}{4}$ -D-7-O-I-MIDI ¹⁾	192 318	LR- $\frac{1}{4}$ -D-O-I-MIDI ¹⁾
	G $\frac{3}{8}$	192 321	LR- $\frac{3}{8}$ -D-7-O-I-MIDI ¹⁾	192 320	LR- $\frac{3}{8}$ -D-O-I-MIDI ¹⁾
	G $\frac{1}{2}$	192 323	LR- $\frac{1}{2}$ -D-7-O-I-MIDI ¹⁾	192 322	LR- $\frac{1}{2}$ -D-O-I-MIDI ¹⁾
	G $\frac{3}{4}$	192 325	LR- $\frac{3}{4}$ -D-7-O-I-MIDI ¹⁾	192 324	LR- $\frac{3}{4}$ -D-O-I-MIDI ¹⁾

1) Free of copper, PTFE and silicone

Ordering data					
Directly actuated pressure regulator with integrated return flow function					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
With pressure gauge					
Maxi	G $\frac{1}{2}$	192 358	LR- $\frac{1}{2}$ -D-7-DI-MAXI	192 356	LR- $\frac{1}{2}$ -D-DI-MAXI
	G $\frac{3}{4}$	192 362	LR- $\frac{3}{4}$ -D-7-DI-MAXI	192 360	LR- $\frac{3}{4}$ -D-DI-MAXI
	G1	192 366	LR-1-D-7-DI-MAXI	192 364	LR-1-D-DI-MAXI
Without pressure gauge					
Maxi	G $\frac{1}{2}$	192 359	LR- $\frac{1}{2}$ -D-7-O-DI-MAXI ¹⁾	192 357	LR- $\frac{1}{2}$ -D-O-DI-MAXI ¹⁾
	G $\frac{3}{4}$	192 363	LR- $\frac{3}{4}$ -D-7-O-DI-MAXI ¹⁾	192 361	LR- $\frac{3}{4}$ -D-O-DI-MAXI ¹⁾
	G1	192 367	LR-1-D-7-O-DI-MAXI ¹⁾	192 365	LR-1-D-O-DI-MAXI ¹⁾

1) Free of copper, PTFE and silicone

Pressure regulators LR/LRS, D series

Technical data

FESTO

Ordering data					
Pressure regulator, lockable					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
With pressure gauge					
Mini	G1/8	194 606	LRS-1/8-D-7-MINI	194 602	LRS-1/8-D-MINI
	G1/4	194 614	LRS-1/4-D-7-MINI	194 610	LRS-1/4-D-MINI
	G3/8	194 622	LRS-3/8-D-7-MINI	194 618	LRS-3/8-D-MINI
Midi	G1/4	194 630	LRS-1/4-D-7-MIDI	194 626	LRS-1/4-D-MIDI
	G3/8	194 638	LRS-3/8-D-7-MIDI	194 634	LRS-3/8-D-MIDI
	G1/2	194 646	LRS-1/2-D-7-MIDI	194 642	LRS-1/2-D-MIDI
	G3/4	194 656	LRS-3/4-D-7-MIDI	194 650	LRS-3/4-D-MIDI
Maxi	G1/2	194 660	LRS-1/2-D-7-MAXI	194 658	LRS-1/2-D-MAXI
	G3/4	194 662	LRS-3/4-D-7-MAXI	194 664	LRS-3/4-D-MAXI
	G1	194 668	LRS-1-D-7-MAXI	194 666	LRS-1-D-MAXI
Without pressure gauge					
Mini	G1/8	194 608	LRS-1/8-D-7-O-MINI	194 604	LRS-1/8-D-O-MINI
	G1/4	194 616	LRS-1/4-D-7-O-MINI	194 612	LRS-1/4-D-O-MINI
	G3/8	194 624	LRS-3/8-D-7-O-MINI	194 620	LRS-3/8-D-O-MINI
Midi	G1/4	194 632	LRS-1/4-D-7-O-MIDI	194 628	LRS-1/4-D-O-MIDI
	G3/8	194 640	LRS-3/8-D-7-O-MIDI	194 636	LRS-3/8-D-O-MIDI
	G1/2	194 648	LRS-1/2-D-7-O-MIDI	194 644	LRS-1/2-D-O-MIDI
	G3/4	194 654	LRS-3/4-D-7-O-MIDI	194 652	LRS-3/4-D-O-MIDI
Maxi	G1/2	194 661	LRS-1/2-D-7-O-MAXI	194 659	LRS-1/2-D-O-MAXI
	G3/4	194 663	LRS-3/4-D-7-O-MAXI	194 665	LRS-3/4-D-O-MAXI
	G1	194 669	LRS-1-D-7-O-MAXI	194 667	LRS-1-D-O-MAXI

Ordering data					
Pressure regulator with integrated return flow function, lockable					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
With pressure gauge					
Mini	G1/8	194 607	LRS-1/8-D-7-I-MINI	194 603	LRS-1/8-D-I-MINI
	G1/4	194 615	LRS-1/4-D-7-I-MINI	194 611	LRS-1/4-D-I-MINI
	G3/8	194 623	LRS-3/8-D-7-I-MINI	194 619	LRS-3/8-D-I-MINI
Midi	G1/4	194 631	LRS-1/4-D-7-I-MIDI	194 627	LRS-1/4-D-I-MIDI
	G3/8	194 639	LRS-3/8-D-7-I-MIDI	194 635	LRS-3/8-D-I-MIDI
	G1/2	194 647	LRS-1/2-D-7-I-MIDI	194 643	LRS-1/2-D-I-MIDI
	G3/4	194 657	LRS-3/4-D-7-I-MIDI	194 651	LRS-3/4-D-I-MIDI
Without pressure gauge					
Mini	G1/8	194 609	LRS-1/8-D-7-O-I-MINI	194 605	LRS-1/8-D-O-I-MINI
	G1/4	194 617	LRS-1/4-D-7-O-I-MINI	194 613	LRS-1/4-D-O-I-MINI
	G3/8	194 625	LRS-3/8-D-7-O-I-MINI	194 621	LRS-3/8-D-O-I-MINI
Midi	G1/4	194 633	LRS-1/4-D-7-O-I-MIDI	194 629	LRS-1/4-D-O-I-MIDI
	G3/8	194 641	LRS-3/8-D-7-O-I-MIDI	194 637	LRS-3/8-D-O-I-MIDI
	G1/2	194 649	LRS-1/2-D-7-O-I-MIDI	194 645	LRS-1/2-D-O-I-MIDI
	G3/4	194 655	LRS-3/4-D-7-O-I-MIDI	194 653	LRS-3/4-D-O-I-MIDI

D series service units
Pressure regulators

1.4

Pressure regulators LR/LRS, D series

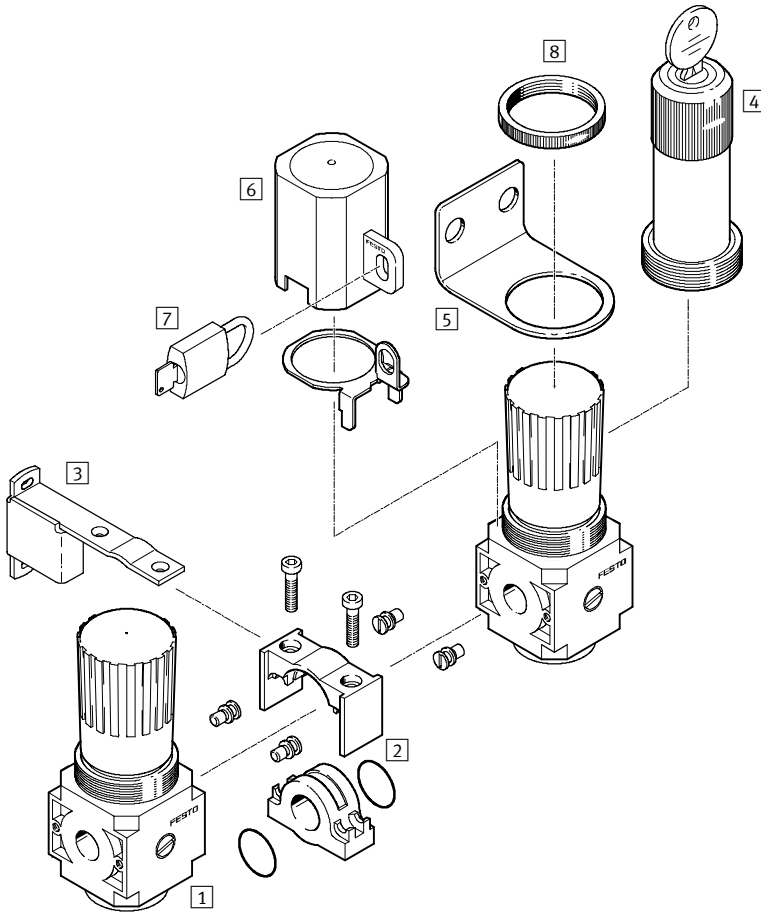


Technical data

Ordering data					
Directly actuated pressure regulator with integrated return flow function, lockable					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
With pressure gauge					
Maxi	G $\frac{1}{2}$	194 672	LRS- $\frac{1}{2}$ -D-7-DI-MAXI	194 670	LRS- $\frac{1}{2}$ -D-DI-MAXI
	G $\frac{3}{4}$	194 676	LRS- $\frac{3}{4}$ -D-7-DI-MAXI	194 674	LRS- $\frac{3}{4}$ -D-DI-MAXI
	G1	194 680	LRS-1-D-7-DI-MAXI	194 678	LRS-1-D-DI-MAXI
Without pressure gauge					
Maxi	G $\frac{1}{2}$	194 673	LRS- $\frac{1}{2}$ -D-7-O-DI-MAXI	194 671	LRS- $\frac{1}{2}$ -D-O-DI-MAXI
	G $\frac{3}{4}$	194 677	LRS- $\frac{3}{4}$ -D-7-O-DI-MAXI	194 675	LRS- $\frac{3}{4}$ -D-O-DI-MAXI
	G1	194 681	LRS-1-D-7-O-DI-MAXI	194 679	LRS-1-D-O-DI-MAXI

Pressure regulators LRB/LRBS, D series

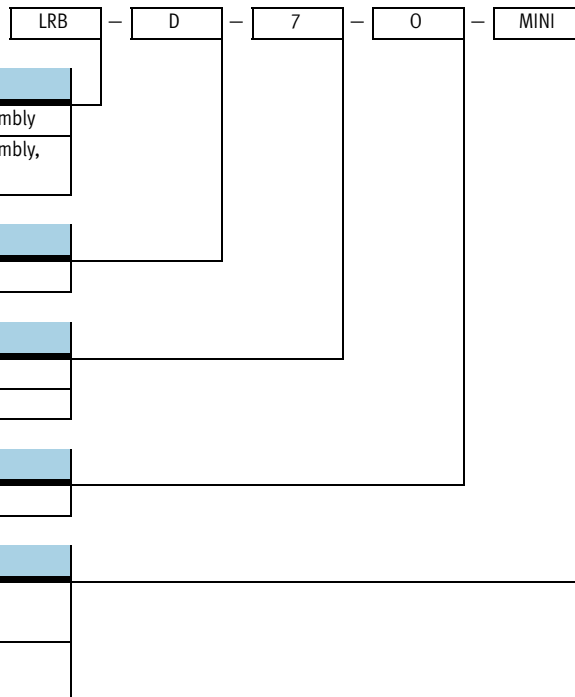
Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 Pressure regulator LRB/LRBS	The pressure regulator is used for manifold assembly	3 / 1.4-17
2 Connecting kit HRBC	Align the lower part of the connector [2] and insert it in the tapered head screws Attach the upper part of the connector [2] with the two enclosed flange screws	3 / 1.8-11
3 Mounting bracket HRBK	If more than two pressure regulators are to be screwed together, a mounting bracket type HRBK must be used after every two pressure regulators	3 / 1.8-8
4 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	–
5 Mounting bracket HR-D	The mounting bracket HR-D cannot be used in combination with the mounting bracket HRB	3 / 1.8-10
6 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
7 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
8 Knurled nut	The knurled nut is included in the scope of delivery	–

Pressure regulators LRB/LRBS, D series

Type codes



Basic function

LRB	Pressure regulator for manifold assembly
LRBS	Pressure regulator for manifold assembly, lockable

Series

D	Series
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Pressure regulation range

	0.5 ... 12 bar
7	0.5 ... 7 bar

Pressure gauge

0	Without pressure gauge
---	------------------------

Size

MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)

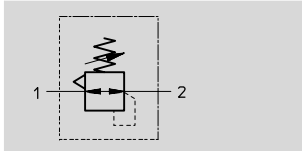
D series service units
Pressure regulators

1.4

Pressure regulators LRB/LRBS, D series

Technical data

Function



- - Flow rate
1600 ... 3800 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
1 ... 16 bar

The pressure regulator is suitable for manifold assemblies with through air supply on both sides, for configuring a regulator manifold with separate, independent pressure ranges. Pressure output is at the front or rear.



- Good control characteristics with low hysteresis and primary pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure ranges
- Two pressure regulation ranges: 0.5 ... 7 bar and 0.5 ... 12 bar
- Settings secured via detent on knob and push-in adjustment lock
- Directly actuated diaphragm regulator

General technical data				
Size	Mini		Midi	
Pneumatic connection 1 ¹⁾	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Pneumatic connection 2	G $\frac{1}{4}$		G $\frac{3}{8}$	
Operating medium	Compressed air, filtered, grade of filtration 40 μ m			
Design	Directly actuated diaphragm regulator with through pressure supply			
Type of mounting	Via accessories In-line installation			
Assembly position	Any			
Max. hysteresis [bar]	0.2			
Input pressure p1 [bar]	1 ... 16			
Pressure regulation range [bar]	0.5 ... 7 0.5 ... 12			
Pressure indication	G $\frac{1}{8}$ prepared		G $\frac{1}{4}$ prepared	

1) Dependent on connecting plate selected, must be ordered separately as an accessory → 3 / 1.8-12

Standard nominal flow rate ¹⁾ qnN [l/min]		
Size	Mini	Midi
Pressure regulation range 0.5 ... 7 bar	1800	3800
Pressure regulation range 0.5 ... 12 bar	1600	3200

1) Measured at p1 = 10 bar, p2 = 6 bar and $\Delta p = 1$ bar.

Ambient conditions		
Size	Mini	Midi
Ambient temperature [°C]	-10 ... +60 °C	
Temperature of medium [°C]	-10 ... +60 °C	
Corrosion resistance class CRC ¹⁾	2	

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Pressure regulators LRB/LRBS, D series

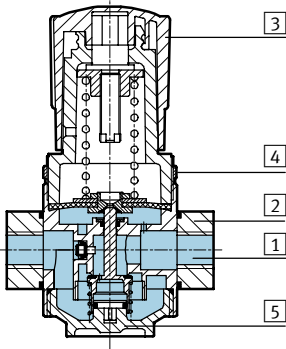
Technical data



Weight [g]		
Size	Mini	Midi
Pressure regulator	250	700
Pressure regulator, lockable	350	940

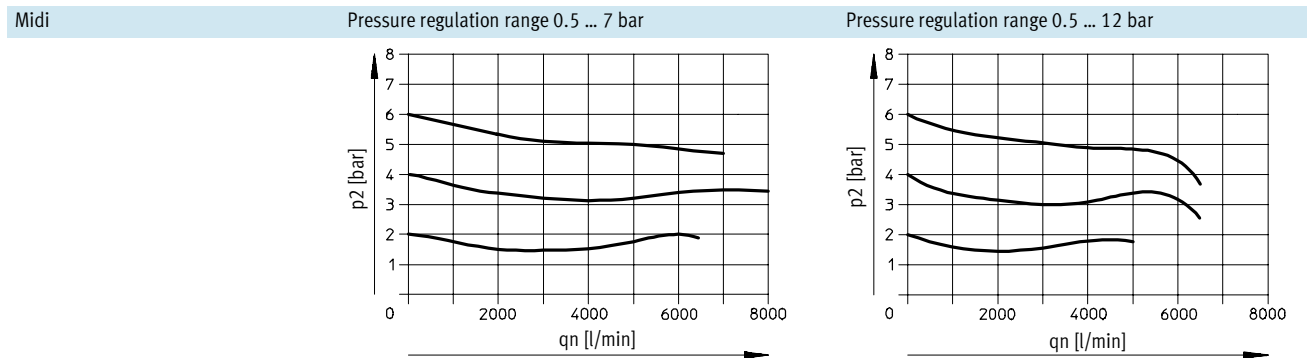
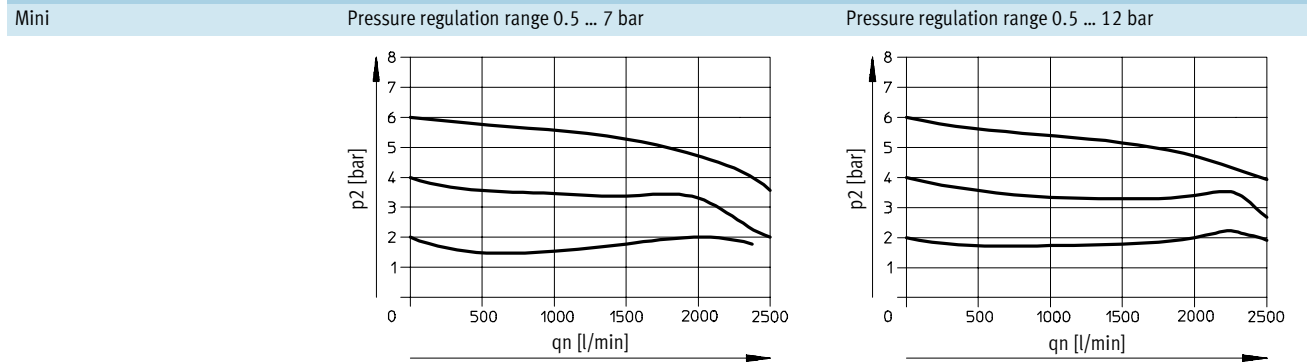
Materials

Sectional view



Pressure regulator		
1	Housing	Die-cast zinc
2	Connecting plates	Die-cast zinc
3	Regulating knob	Polyacetal
4	Knurled nut	Aluminium
5	Plug cap	Polycarbonate
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

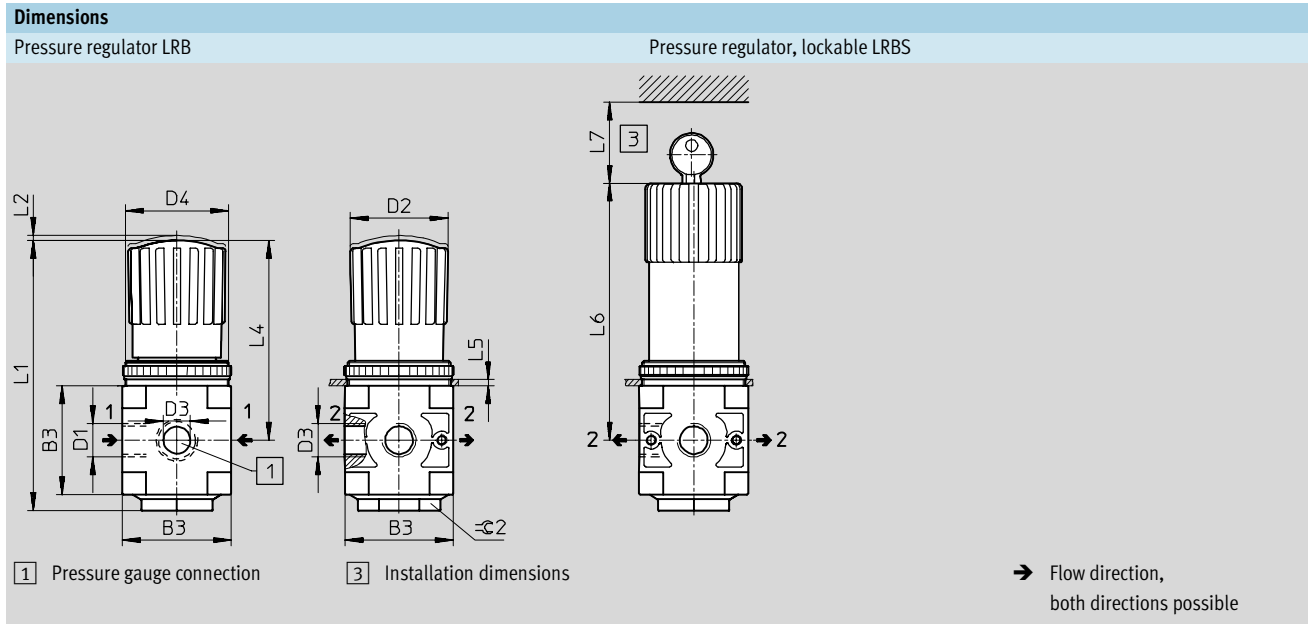
Standard flow rate q_n as a function of the output pressure p_2



Primary pressure $p_1 = 10$ bar

Pressure regulators LRB/LRBS, D series

Technical data



Type	B3	D1	D2	D3	D4	L1	L2	L4	L5 max.	L6	L7 min.	≈ 2
Mini												
LRB-D-...-MINI	40	G¼	31	G⅝	M36x1.5	~95.4	3	~68.9	3	98	60	17
LRBS-D-...-MINI												
Midi												
LRB-D-...-MIDI	55	G¾	50	G¾	M52x1.5	~135.8	3	~100.3	5	129.2	60	36
LRBS-D-...-MIDI												

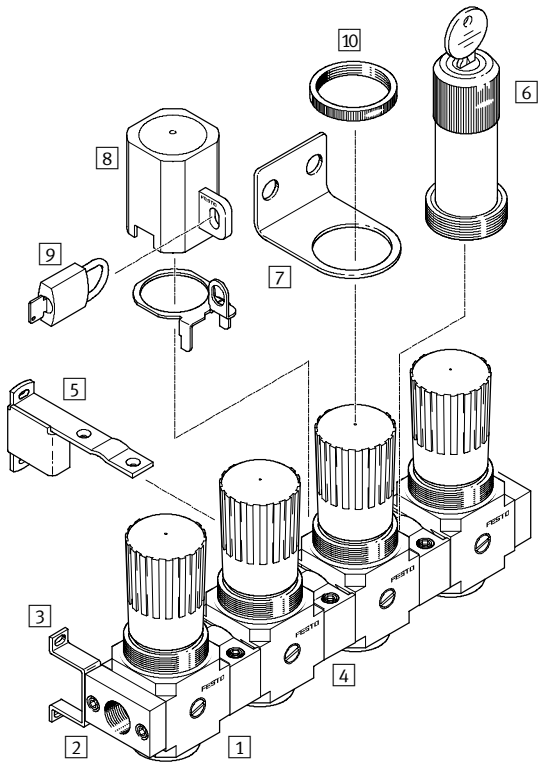
Ordering data

Pressure regulator for manifold assembly

Size	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
	Part No.	Type	Part No.	Type
Without pressure gauge				
Mini	197 534	LRB-D-7-O-MINI	197 535	LRB-D-O-MINI
Midi	197 538	LRB-D-7-O-MIDI	197 539	LRB-D-O-MIDI
Lockable				
Mini	194 683	LRBS-D-7-O-MINI	194 682	LRBS-D-O-MINI
Midi	194 687	LRBS-D-7-O-MIDI	194 686	LRBS-D-O-MIDI

Pressure regulator combinations LRB/LRBS-K, D series

Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 Pressure regulator combination LRB/LRBS	Pressure regulator combinations are used for parallel pressure regulation in pneumatic control circuits with a pressure supply MINI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{3}{8}$, G $\frac{1}{2}$	3 / 1.4-22
2 Connecting plates LRBAS	The connecting plates are included in the scope of delivery	3 / 1.8-12
3 Mounting bracket HRB	Mounting brackets HRB are included in the scope of delivery	3 / 1.8-9
4 Connecting kit HRBC	For combining regulators of the same size	3 / 1.8-11
5 Mounting bracket HRBK-D	If more than two pressure regulators are to be screwed together, a mounting bracket type HRBK-D must be used for each pair of valves (the mounting brackets HRBK are included in the scope of delivery)	3 / 1.8-8
6 Rotary knob, lockable	Prevents unauthorised persons changing the pressure setting (E11 locking)	-
7 Mounting bracket HR-D	HRB and HRBK cannot be used in combination with HR-D (the mounting bracket HR-D is not included in the scope of delivery)	3 / 1.8-10
8 Regulator lock LRVS with lock plate	Attached to the rotary knob to prevent unauthorised persons adjusting the pressure	3 / 1.8-13
9 Padlock LRVS-D	Accessory for LRVS	3 / 1.8-13
10 Knurled nut	The knurled nut is included in the scope of delivery	-

Pressure regulator combinations LRB/LRBS-K, D series

Type codes

LRB – ¼ – D – 7 – 0 – K2 – MINI

Basic function

LRB	Pressure regulator combination
LRBS	Pressure regulator combination, lockable

Pneumatic connection

¼	Thread G¼
¾	Thread G¾
½	Thread G½

Series

D	Series
---	--------

Pressure regulation range

	0.5 ... 12 bar
7	0.5 ... 7 bar

Pressure gauge

0	Without pressure gauge
---	------------------------

Functions

K2	Manifold with 2 pressure regulators
K3	Manifold with 3 pressure regulators
K4	Manifold with 4 pressure regulators
K5	Manifold with 5 pressure regulators

Size

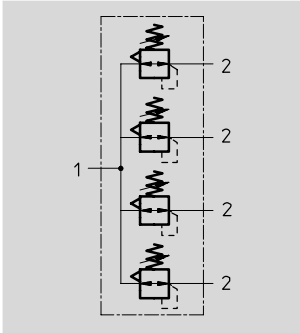
MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)

Pressure regulator combinations LRB/LRBS-K, D series

Technical data



Function



- - Flow rate
1600 ... 3800 l/min
- - Temperature range
-10 ... +60 °C
- - Input pressure
1 ... 16 bar



Pressure regulator combinations

LRB/LRBS-...-D-...-O-K2
 LRB/LRBS-...-D-...-O-K3
 LRB/LRBS-...-D-...-O-K4
 LRB/LRBS-...-D-...-O-K5
 with through pressure supply for manifold assembly

- Good control characteristics with low hysteresis and primary pressure compensation
- Manifold assembly with through air supply
- For configuring a regulator manifold with independent pressure ranges
- Two pressure regulation ranges: 0.5 ... 7 bar and 0.5 ... 12 bar
- Settings secured via detent on knob and push-in adjustment lock
- Directly actuated diaphragm regulator

General technical data				
Size	Mini		Midi	
Pneumatic connection 1	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Pneumatic connection 2	G $\frac{1}{4}$		G $\frac{3}{8}$	
Operating medium	Compressed air, filtered, grade of filtration 40 μ m			
Design	Directly actuated diaphragm regulator with through pressure supply			
Type of mounting	Via accessory (mounting bracket HRB or HRBK included in scope of delivery)			
Assembly position	Any			
Max. hysteresis [bar]	0.2			
Input pressure p ₁ [bar]	1 ... 16			
Pressure regulation range [bar]	0.5 ... 7 0.5 ... 12			
Pressure indication	G $\frac{1}{8}$ prepared		G $\frac{1}{4}$ prepared	

Standard nominal flow rate ¹⁾ q _{nN} [l/min]		
Size	Mini	Midi
Pressure regulation range 0.5 ... 7 bar	1800	3800
Pressure regulation range 0.5 ... 12 bar	1600	3200

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

Pressure regulator combinations LRB/LRBS-K, D series

Technical data

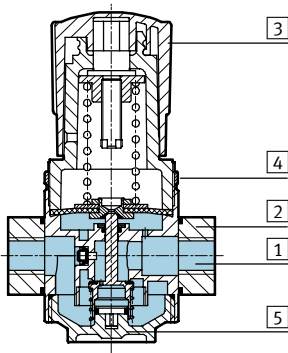
Ambient conditions		
Size	Mini	Midi
Ambient temperature [°C]	-10 ... +60 °C	
Temperature of medium [°C]	-10 ... +60 °C	
Corrosion resistance class CRC ¹⁾	2	

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]		
Size	Mini	Midi
Manifold with 2 pressure regulators		
LRB-...-K2	760	1950
LRBS-...-K2	1180	2450
Manifold with 3 pressure regulators		
LRB-...-K3	1090	3144
LRBS-...-K3	1720	3894
Manifold with 4 pressure regulators		
LRB-...-K4	1480	3834
LRBS-...-K4	2320	4834
Manifold with 5 pressure regulators		
LRB-...-K5	1860	4820
LRBS-...-K5	2910	6078

Materials

Sectional view



Pressure regulator	Mini/Midi
1 Housing	Die-cast zinc
2 Connecting plates	Die-cast zinc
3 Regulating knob	Polyacetal
4 Knurled nut	Aluminium
5 Plug cap	Polycarbonate
- Seals	Nitrile rubber

Pressure regulator combinations LRB/LRBS-K, D series

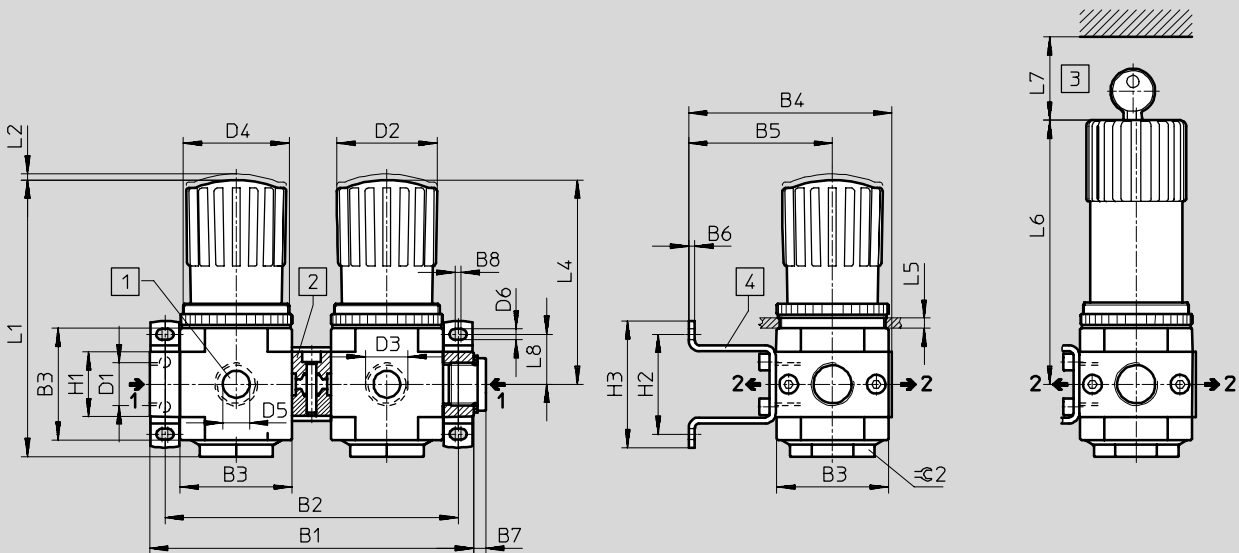
Technical data



Dimensions

LRB-...-D-...-K2-...

LRBS-...-D-...-K2-...



- 1 Pressure gauge connection
- 2 Connecting kit HRBC-D-...
- 3 Installation dimensions
- 4 Mounting bracket HRB-D-...
- ➔ Flow direction, both directions possible

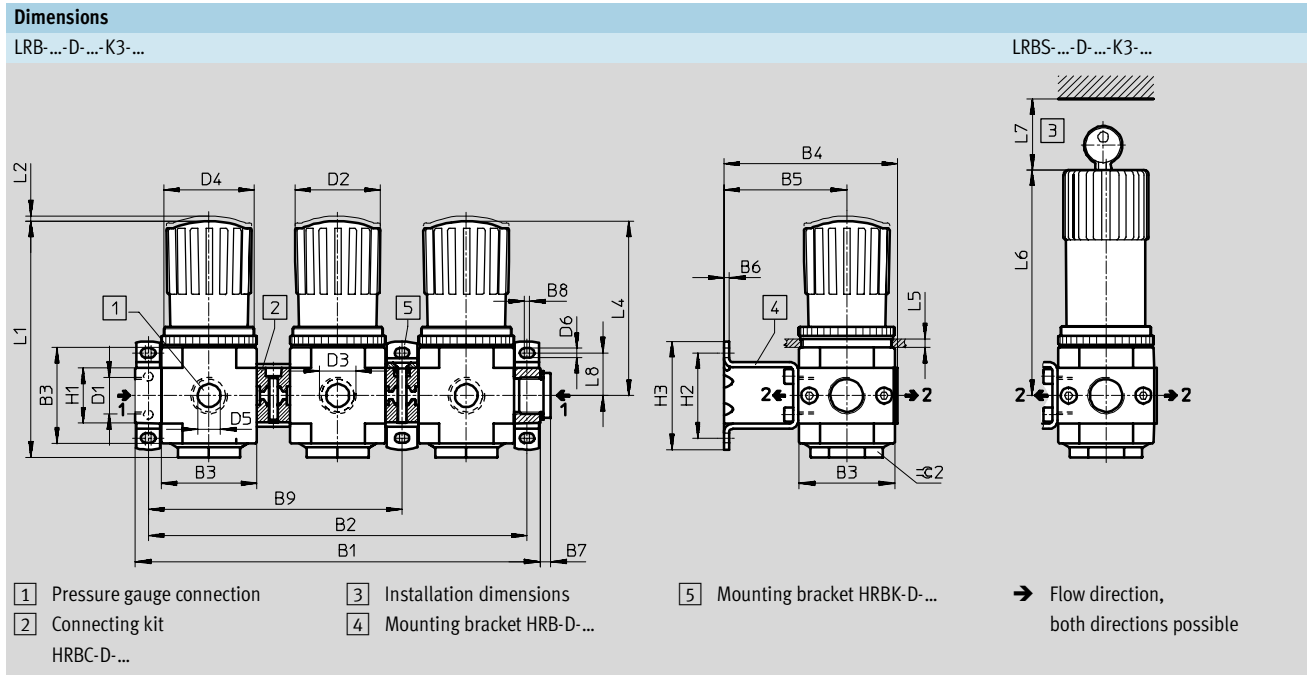
Type	B1	B2	B3	B4	B5	B6	B7	B8	D1	D2	D3	D4	D5
Mini													
LRB-1/4-D-...-K2-MINI	119	~107	40	80.7	59.2	2.5	5	7.3	G1/4	31	G1/4	M36x1.5	G3/8
LRB-3/8-D-...-K2-MINI	125								G3/8				
LRBS-1/4-D-...-K2-MINI	119								G1/4				
LRBS-3/8-D-...-K2-MINI	125								G3/8				
Midi													
LRB-3/8-D-...-K2-MIDI	159	~144	55	99.9	70.6	3	5	8.3	G3/8	50	G3/8	M52x1.5	G1/4
LRB-1/2-D-...-K2-MIDI							6		G1/2				
LRBS-3/8-D-...-K2-MIDI							5		G3/8				
LRBS-1/2-D-...-K2-MIDI							6		G1/2				

Type	D6	H1	H2 ±0.2	H3	L1	L2	L4	L5 max.	L6	L7 min.	∅2
Mini											
LRB-1/4-D-...-K2-MINI	4.3	20	35	47.3	~95.4	3	~68.9	3	98	60	17
LRB-3/8-D-...-K2-MINI											
LRBS-1/4-D-...-K2-MINI											
LRBS-3/8-D-...-K2-MINI											
Midi											
LRB-3/8-D-...-K2-MIDI	5.3	32	49	62.3	~135.8	3	~100.3	5	129.2	60	36
LRB-1/2-D-...-K2-MIDI											
LRBS-3/8-D-...-K2-MIDI											
LRBS-1/2-D-...-K2-MIDI											

Pressure regulator combinations LRB/LRBS-K, D series



Technical data



Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	D4
Mini													
LRB-1/4-D-...-K3-MINI	174	~162	40	80.7	59.2	2.5	5	7.3	108.5	G1/4	31	G1/4	M36x1.5
LRB-3/8-D-...-K3-MINI	180									G3/8			
LRBS-1/4-D-...-K3-MINI	174									G1/4			
LRBS-3/8-D-...-K3-MINI	180									G3/8			
Midi													
LRB-3/8-D-...-K3-MIDI	233	~218	55	99.9	70.6	3	5	8.3	146	G3/8	50	G3/8	M52x1.5
LRB-1/2-D-...-K3-MIDI							6			G1/2			
LRBS-3/8-D-...-K3-MIDI							5			G3/8			
LRBS-1/2-D-...-K3-MIDI							6			G1/2			

Type	D5	D6	H1	H2 ±0.2	H3	L1	L2	L4	L5 max.	L6	L7 min.	L8	±0.2
Mini													
LRB-1/4-D-...-K3-MINI	G1/8	4.3	20	35	47.3	~95.4	3	~68.9	3	98	60	17.5	17
LRB-3/8-D-...-K3-MINI													
LRBS-1/4-D-...-K3-MINI													
LRBS-3/8-D-...-K3-MINI													
Midi													
LRB-3/8-D-...-K3-MIDI	G1/4	5.3	32	49	62.3	~135.8	3	~100.3	5	129.2	60	31.2	36
LRB-1/2-D-...-K3-MIDI													
LRBS-3/8-D-...-K3-MIDI													
LRBS-1/2-D-...-K3-MIDI													

Pressure regulator combinations LRB/LRBS-K, D series

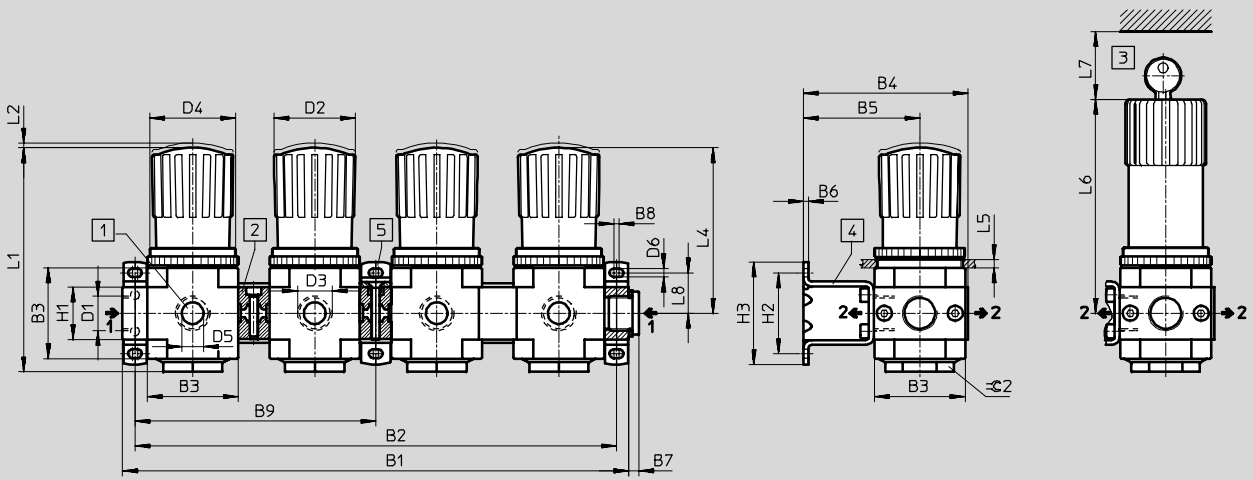
Technical data



Dimensions

LRB-...-D-...-K4-...

LRBS-...-D-...-K4-...



- 1 Pressure gauge connection
 - 2 Connecting kit HRBC-D...
 - 3 Installation dimensions
 - 4 Mounting bracket HRB-D...
 - 5 Mounting bracket HRBK-D...
- Flow direction, both directions possible

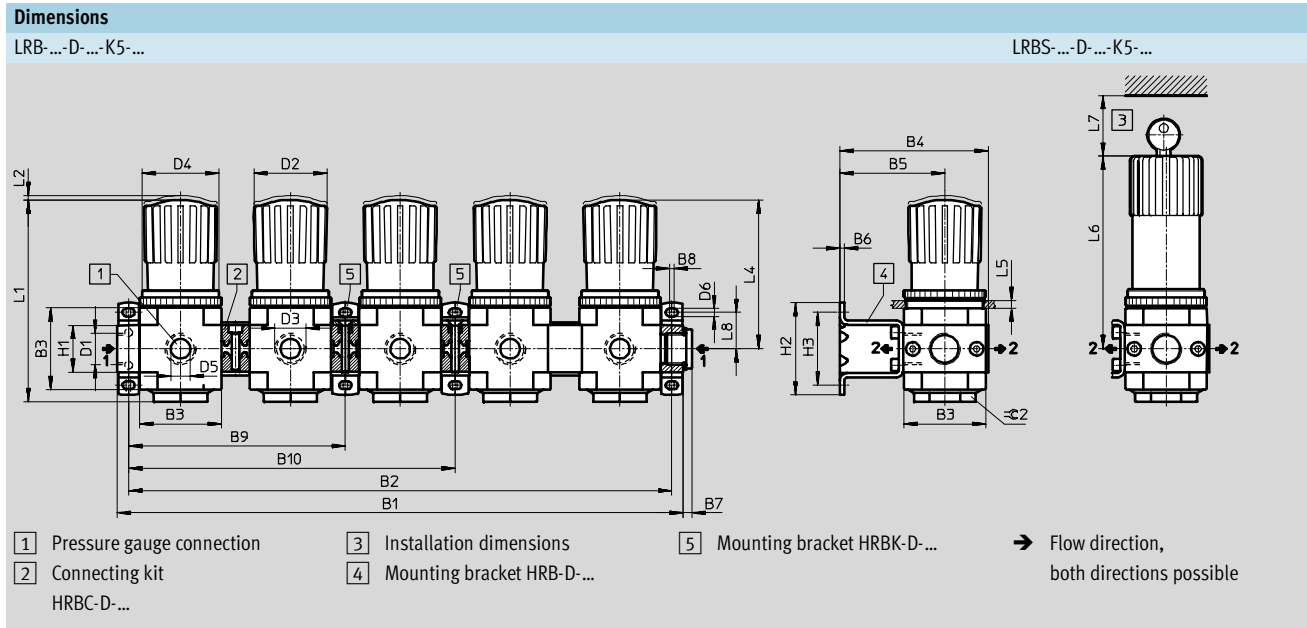
Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	D4
Mini													
LRB-1/4-D-...-K4-MINI	229	~217	40	80.7	59.2	2.5	5	7.3	108.5	G1/4	31	G1/4	M36x1.5
LRB-3/8-D-...-K4-MINI	235									G3/8			
LRBS-1/4-D-...-K4-MINI	229									G1/4			
LRBS-3/8-D-...-K4-MINI	235									G3/8			
Midi													
LRB-3/8-D-...-K4-MIDI	307	~292	55	99.9	70.6	3	5	8.3	146	G3/8	50	G3/8	M52x1.5
LRB-1/2-D-...-K4-MIDI							6			G1/2			
LRBS-3/8-D-...-K4-MIDI							5			G3/8			
LRBS-1/2-D-...-K4-MIDI							6			G1/2			

Type	D5	D6	H1	H2 ±0.2	H3	L1	L2	L4	L5 max.	L6	L7 min.	L8	±0.2
Mini													
LRB-1/4-D-...-K4-MINI	G3/8	4.3	20	35	47.3	~95.4	3	~68.9	3	98	60	17.5	17
LRB-3/8-D-...-K4-MINI													
LRBS-1/4-D-...-K4-MINI													
LRBS-3/8-D-...-K4-MINI													
Midi													
LRB-3/8-D-...-K4-MIDI	G1/4	5.3	32	49	62.3	~135.8	3	~100.3	5	129.2	60	31.2	36
LRB-1/2-D-...-K4-MIDI													
LRBS-3/8-D-...-K4-MIDI													
LRBS-1/2-D-...-K4-MIDI													

Pressure regulator combinations LRB/LRBS-K, D series



Technical data



Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	D1	D2	D3	D4
Mini														
LRB-1/4-D-...-K5-MINI	284	~272	40	80.7	59.2	2.5	5	7.3	108.5	146	G1/4	31	G1/4	M36x1.5
LRB-3/8-D-...-K5-MINI	290										G3/8			
LRBS-1/4-D-...-K5-MINI	284										G1/4			
LRBS-3/8-D-...-K5-MINI	290										G3/8			
Midi														
LRB-3/8-D-...-K5-MIDI	381	~366	55	99.9	70.6	3	5	8.3	146	186	G3/8	50	G3/8	M52x1.5
LRB-1/2-D-...-K5-MIDI							6				G1/2			
LRBS-3/8-D-...-K5-MIDI							5				G3/8			
LRBS-1/2-D-...-K5-MIDI							6				G1/2			

Type	D5	D6	H1	H2 ±0.2	H3	L1	L2	L4	L5 max.	L6	L7 min.	L8	∓2
Mini													
LRB-1/4-D-...-K5-MINI	G1/8	4.3	20	35	47.3	~95.4	3	~68.9	3	98	60	17.5	17
LRB-3/8-D-...-K5-MINI													
LRBS-1/4-D-...-K5-MINI													
LRBS-3/8-D-...-K5-MINI													
Midi													
LRB-3/8-D-...-K5-MIDI	G1/4	5.3	32	49	62.3	~135.8	3	~100.3	5	129.2	60	31.2	36
LRB-1/2-D-...-K5-MIDI													
LRBS-3/8-D-...-K5-MIDI													
LRBS-1/2-D-...-K5-MIDI													

Pressure regulator combinations LRB/LRBS-K, D series

Technical data

FESTO

Ordering data					
Connecting kit, connecting plate and mounting bracket					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
Manifold with 2 pressure regulators					
Mini	G $\frac{1}{4}$	528 952	LRB- $\frac{1}{4}$ -D-7-O-K2-MINI	528 954	LRB- $\frac{1}{4}$ -D-O-K2-MINI
	G $\frac{3}{8}$	528 953	LRB- $\frac{3}{8}$ -D-7-O-K2-MINI	528 955	LRB- $\frac{3}{8}$ -D-O-K2-MINI
Midi	G $\frac{3}{8}$	528 956	LRB- $\frac{3}{8}$ -D-7-O-K2-MIDI	528 958	LRB- $\frac{3}{8}$ -D-O-K2-MIDI
	G $\frac{1}{2}$	528 957	LRB- $\frac{1}{2}$ -D-7-O-K2-MIDI	528 959	LRB- $\frac{1}{2}$ -D-O-K2-MIDI
Lockable					
Mini	G $\frac{1}{4}$	528 960	LRBS- $\frac{1}{4}$ -D-7-O-K2-MINI	528 962	LRBS- $\frac{1}{4}$ -D-O-K2-MINI
	G $\frac{3}{8}$	528 961	LRBS- $\frac{3}{8}$ -D-7-O-K2-MINI	528 963	LRBS- $\frac{3}{8}$ -D-O-K2-MINI
Midi	G $\frac{3}{8}$	528 964	LRBS- $\frac{3}{8}$ -D-7-O-K2-MIDI	528 966	LRBS- $\frac{3}{8}$ -D-O-K2-MIDI
	G $\frac{1}{2}$	528 965	LRBS- $\frac{1}{2}$ -D-7-O-K2-MIDI	528 967	LRBS- $\frac{1}{2}$ -D-O-K2-MIDI

Ordering data					
Connecting kit, connecting plate and mounting bracket					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
Manifold with 3 pressure regulators					
Mini	G $\frac{1}{4}$	528 968	LRB- $\frac{1}{4}$ -D-7-O-K3-MINI	528 970	LRB- $\frac{1}{4}$ -D-O-K3-MINI
	G $\frac{3}{8}$	528 969	LRB- $\frac{3}{8}$ -D-7-O-K3-MINI	528 971	LRB- $\frac{3}{8}$ -D-O-K3-MINI
Midi	G $\frac{3}{8}$	528 972	LRB- $\frac{3}{8}$ -D-7-O-K3-MIDI	528 974	LRB- $\frac{3}{8}$ -D-O-K3-MIDI
	G $\frac{1}{2}$	528 973	LRB- $\frac{1}{2}$ -D-7-O-K3-MIDI	528 975	LRB- $\frac{1}{2}$ -D-O-K3-MIDI
Lockable					
Mini	G $\frac{1}{4}$	528 976	LRBS- $\frac{1}{4}$ -D-7-O-K3-MINI	528 978	LRBS- $\frac{1}{4}$ -D-O-K3-MINI
	G $\frac{3}{8}$	528 977	LRBS- $\frac{3}{8}$ -D-7-O-K3-MINI	528 979	LRBS- $\frac{3}{8}$ -D-O-K3-MINI
Midi	G $\frac{3}{8}$	528 980	LRBS- $\frac{3}{8}$ -D-7-O-K3-MIDI	528 982	LRBS- $\frac{3}{8}$ -D-O-K3-MIDI
	G $\frac{1}{2}$	528 981	LRBS- $\frac{1}{2}$ -D-7-O-K3-MIDI	528 983	LRBS- $\frac{1}{2}$ -D-O-K3-MIDI

Ordering data					
Connecting kit, connecting plate and mounting bracket					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
Manifold with 4 pressure regulators					
Mini	G $\frac{1}{4}$	528 984	LRB- $\frac{1}{4}$ -D-7-O-K4-MINI	528 986	LRB- $\frac{1}{4}$ -D-O-K4-MINI
	G $\frac{3}{8}$	528 985	LRB- $\frac{3}{8}$ -D-7-O-K4-MINI	528 987	LRB- $\frac{3}{8}$ -D-O-K4-MINI
Midi	G $\frac{3}{8}$	528 988	LRB- $\frac{3}{8}$ -D-7-O-K4-MIDI	528 990	LRB- $\frac{3}{8}$ -D-O-K4-MIDI
	G $\frac{1}{2}$	528 989	LRB- $\frac{1}{2}$ -D-7-O-K4-MIDI	528 991	LRB- $\frac{1}{2}$ -D-O-K4-MIDI
Lockable					
Mini	G $\frac{1}{4}$	528 992	LRBS- $\frac{1}{4}$ -D-7-O-K4-MINI	528 994	LRBS- $\frac{1}{4}$ -D-O-K4-MINI
	G $\frac{3}{8}$	528 993	LRBS- $\frac{3}{8}$ -D-7-O-K4-MINI	528 995	LRBS- $\frac{3}{8}$ -D-O-K4-MINI
Midi	G $\frac{3}{8}$	528 996	LRBS- $\frac{3}{8}$ -D-7-O-K4-MIDI	528 998	LRBS- $\frac{3}{8}$ -D-O-K4-MIDI
	G $\frac{1}{2}$	528 997	LRBS- $\frac{1}{2}$ -D-7-O-K4-MIDI	528 999	LRBS- $\frac{1}{2}$ -D-O-K4-MIDI

D series service units
Pressure regulators

1.4

Pressure regulator combinations LRB/LRBS-K, D series



Technical data

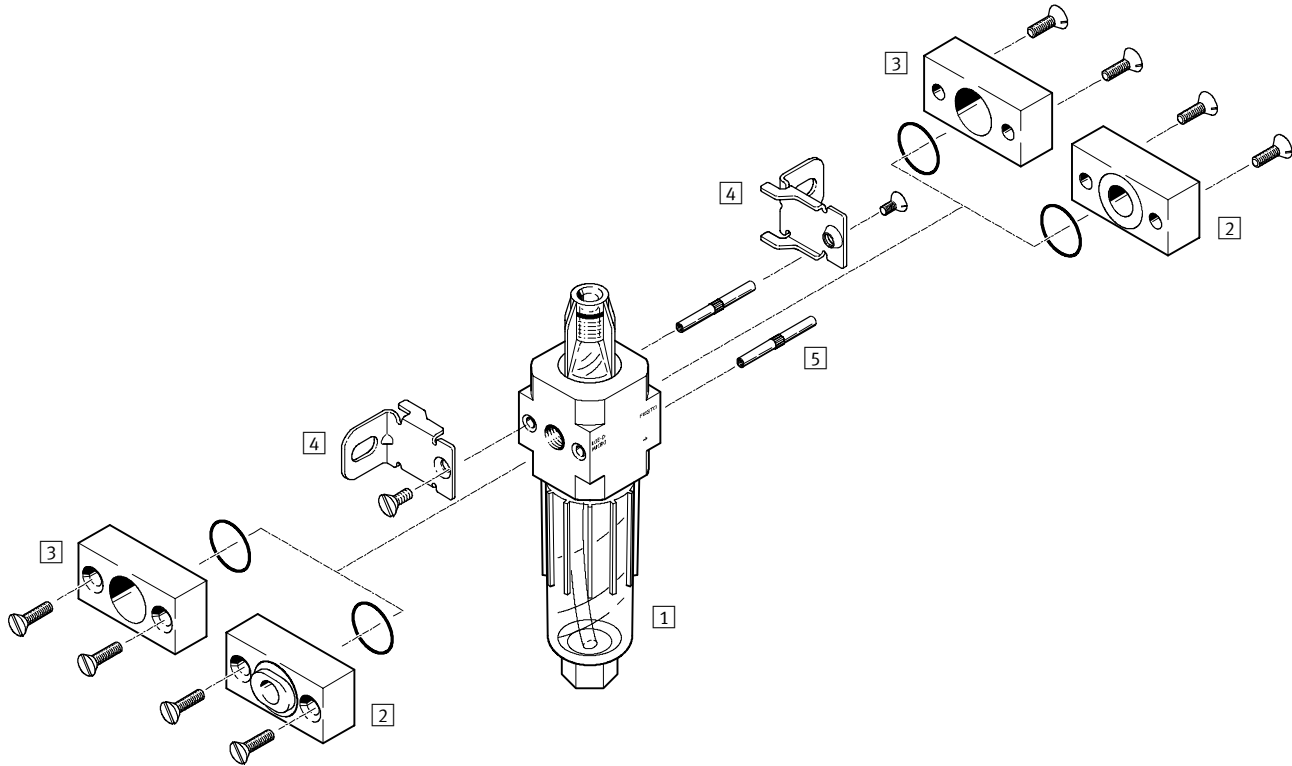
Ordering data					
Connecting kit, connecting plate and mounting bracket					
Size	Connection	Pressure regulation range 0.5 ... 7 bar		Pressure regulation range 0.5 ... 12 bar	
		Part No.	Type	Part No.	Type
Manifold with 5 pressure regulators					
Mini	G $\frac{1}{4}$	529 000	LRB- $\frac{1}{4}$ -D-7-O-K5-MINI	529 002	LRB- $\frac{1}{4}$ -D-O-K5-MINI
	G $\frac{3}{8}$	529 001	LRB- $\frac{3}{8}$ -D-7-O-K5-MINI	529 003	LRB- $\frac{3}{8}$ -D-O-K5-MINI
Midi	G $\frac{3}{8}$	529 004	LRB- $\frac{3}{8}$ -D-7-O-K5-MIDI	529 006	LRB- $\frac{3}{8}$ -D-O-K5-MIDI
	G $\frac{1}{2}$	529 005	LRB- $\frac{1}{2}$ -D-7-O-K5-MIDI	529 007	LRB- $\frac{1}{2}$ -D-O-K5-MIDI
Lockable					
Mini	G $\frac{1}{4}$	529 008	LRBS- $\frac{1}{4}$ -D-7-O-K5-MINI	529 010	LRBS- $\frac{1}{4}$ -D-O-K5-MINI
	G $\frac{3}{8}$	529 009	LRBS- $\frac{3}{8}$ -D-7-O-K5-MINI	529 011	LRBS- $\frac{3}{8}$ -D-O-K5-MINI
Midi	G $\frac{3}{8}$	529 012	LRBS- $\frac{3}{8}$ -D-7-O-K5-MIDI	529 014	LRBS- $\frac{3}{8}$ -D-O-K5-MIDI
	G $\frac{1}{2}$	529 013	LRBS- $\frac{1}{2}$ -D-7-O-K5-MIDI	529 015	LRBS- $\frac{1}{2}$ -D-O-K5-MIDI

Lubricators LOE, D series

Peripherals overview



Micro

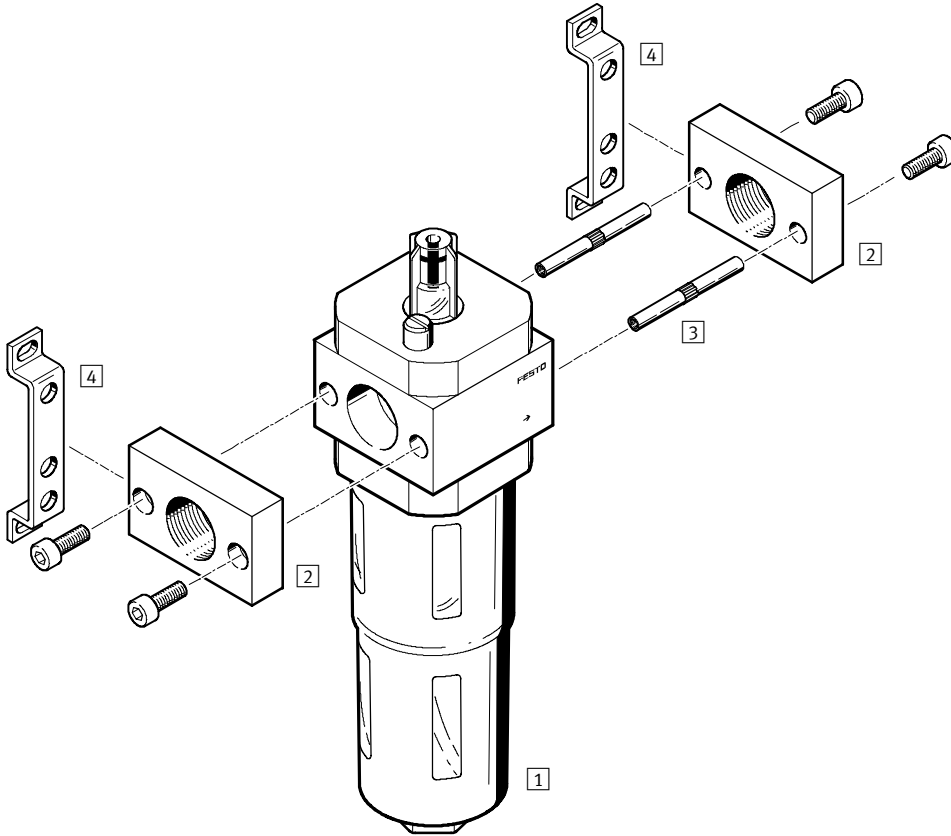


Mounting attachments and accessories	Brief description	→ Page
1 Lubricator LOE	MICRO: Connection size M5, M7 in housing	3 / 1.5-3
2 Connection set PBL-QS4-D-MICRO PBL-QS6-D-MICRO	QS push-in fitting for tubing O.D. 4 and 6 mm	3 / 1.8-12
3 Connection set PBL-1/8-D-MICRO	Connection size G1/8	3 / 1.8-12
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE-D-MICRO are used to mount the lubricator on the wall (they are not included in the scope of delivery)	3 / 1.8-8
5 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10

Lubricators LOE, D series

Peripherals overview

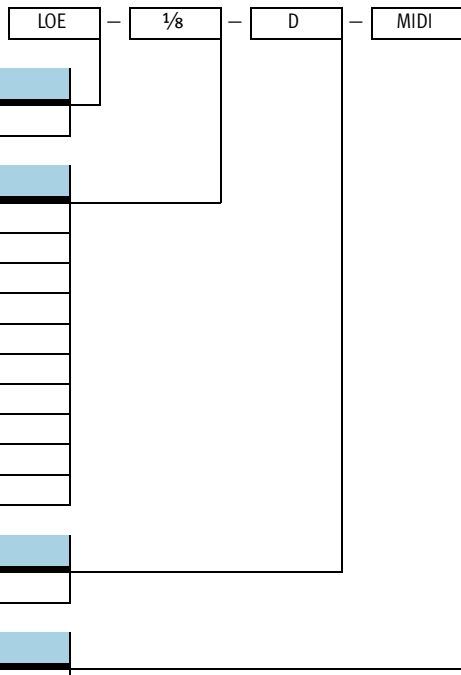
Mini/Midi/Maxi



Mounting attachments and accessories	Brief description	→ Page
1 Lubricator LOE	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.5-3
2 Connecting plates	With and without threaded connecting plates	-
3 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the lubricator on the wall (they are not included in the scope of delivery)	3 / 1.8-8

Lubricators LOE, D series

Type codes



Basic function	
LOE	Lubricator

Pneumatic connection	
M5	Thread M5
M7	Thread M7
QS4	Push-in fitting QS4
QS6	Push-in fitting QS6
1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4
1	Thread G1

Series	
D	Series

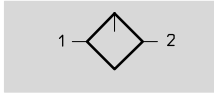
Size	
MICRO	Grid dimension 25 mm (without connecting plates)
MINI	Grid dimension 40 mm (without connecting plates)
MIDI	Grid dimension 55 mm (without connecting plates)
MAXI	Grid dimension 66 mm (without connecting plates)

Lubricators LOE, D series

Technical data



Function



- - Flow rate
160 ... 9000 l/min

- - Temperature range
-10 ... +60 °C

- - Input pressure
1 ... 16 bar

The proportional lubricator adds a precision adjustable quantity of oil to the compressed air stream.

The pressure drop that occurs when air flows through a Venturi nozzle is used to convey oil from the container to the drip cap. From here, the oil drips into the air duct directly behind the proportional valve, where it is atomised. The oil mist component is proportional to the compressed air flow rate.



- Proportional lubricator with precision oil metering
- Reduces wear on drive units subject to high loading
- High flow rate
- Quick and easy oil top-up
- Robust metal housing
- Transparent lubricator bowl with metallic bowl guard

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
→ 3 / 1.5-9
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

General technical data																
Size	Micro					Mini			Midi				Maxi			
Pneumatic connection	M5	M7	G1/8	QS4	QS6	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1	
Operating medium	Filtered compressed air, unlubricated, grade of filtration 5 µm					Filtered compressed air, unlubricated, grade of filtration 40 µm										
Design	Proportional standard mist lubricator															
Type of mounting	Via accessories															
	In-line installation															
Assembly position	Vertical ±5°															
Input pressure [bar]	0 ... 10					0 ... 16										
Minimum flow for lubricator operation [l/min]	3					3			8				10			
Max. oil capacity [cm ³]	6.5					45			110				190			

Standard nominal flow rate ¹⁾ qnN [l/min]										
Connection	Female thread			Connecting plate						
	M5	M7	QS4	G1/8	QS4	QS6				
Micro										
LOE	200		430		410		160		330	

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

Lubricators LOE, D series

Technical data

FESTO

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
LOE	1300	2300	2700	–	–	–
Midi						
LOE	–	2800	5500	6100	6300	–
Maxi						
LOE	–	–	–	8300	8400	9000

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

Screw-in depth of connecting thread [mm]					
Connection	M5	M7	G1/8	QS4	QS6
Micro					
In housing	5	6	–	–	–
In connecting plates	–	–	8	–	–

Ambient conditions		Micro	Mini	Midi	Maxi
Ambient temperature	[°C]	–10 ... +60			
Temperature of medium	[°C]	–10 ... +60			
Corrosion resistance class	CRC ¹⁾	2			

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

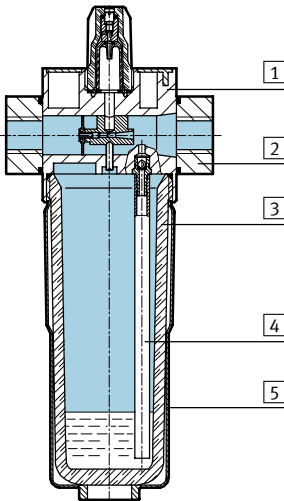
Weight [g]						
Size	Micro		Mini	Midi	Maxi	
	Female thread	Connecting plate			Connection G1/2, G3/4	Connection G1
LOE	39	59	270	630	1100	1200

Lubricators LOE, D series

Technical data

Materials

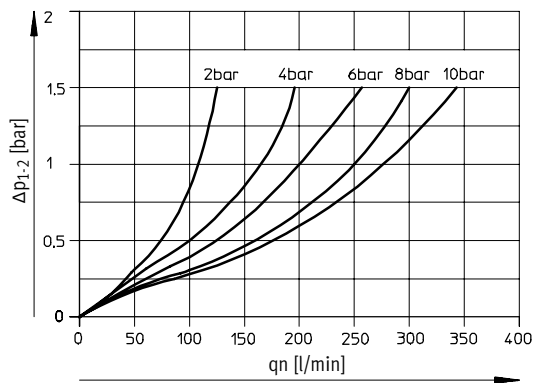
Sectional view



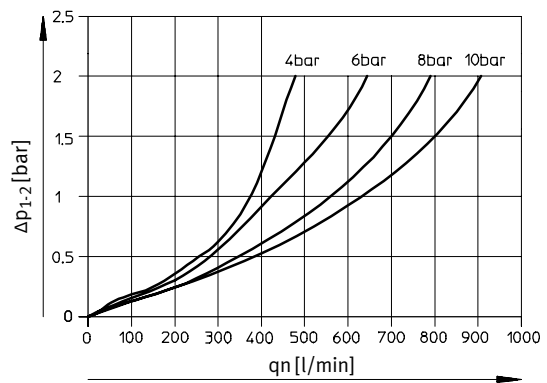
Lubricator	Micro	Mini/Midi/Maxi
1 Housing	Wrought aluminium alloy	Die-cast zinc/aluminium
2 Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
3 Bowl	Polycarbonate	Polycarbonate
4 Tubing	Polyethylene	Polyethylene
5 Metal bowl guard	-	Aluminium
- Seals	Nitrile rubber	Nitrile rubber

Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

LOE-M5-D-MICRO



LOE-M7-D-MICRO B



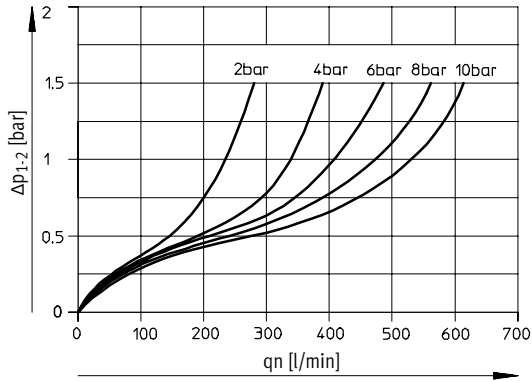
Lubricators LOE, D series

Technical data

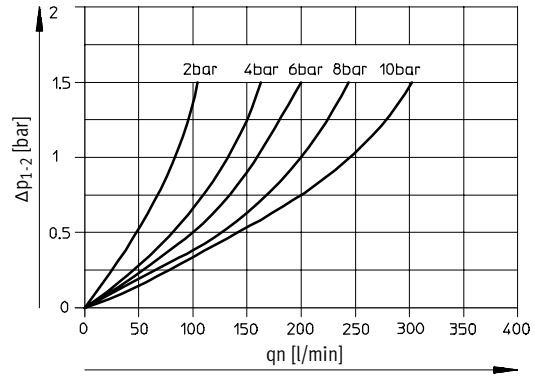


Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

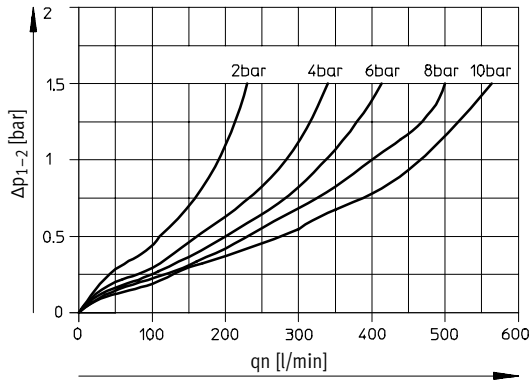
LOE-1/8-D-MICRO



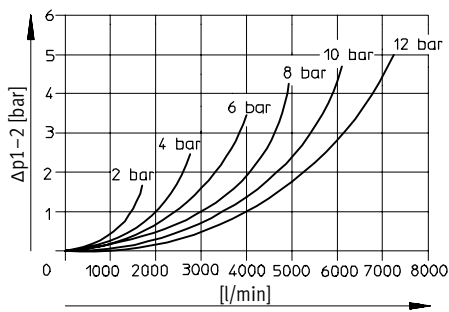
LOE-QS4-D-MICRO



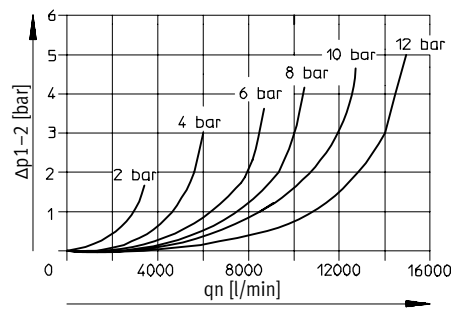
LOE-QS6-D-MICRO



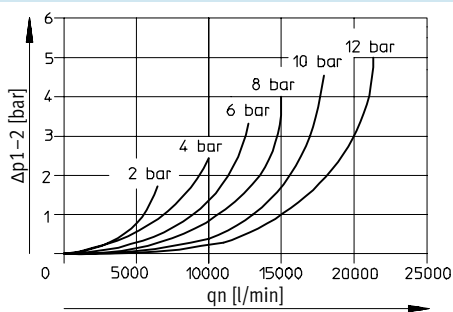
LOE-1/4-D-MINI



LOE-1/2-D-MIDI



LOE-1-D-MAXI



Primary pressure $p_1 = 10$ bar

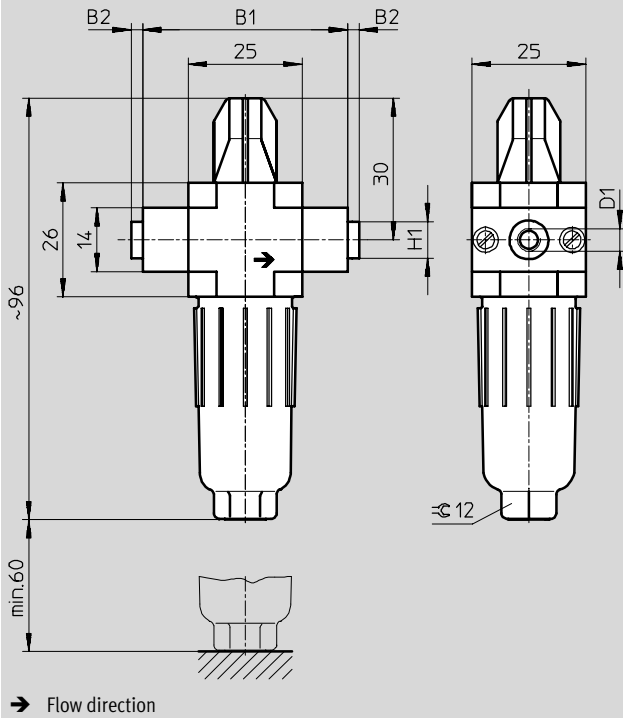
Lubricators LOE, D series

Technical data



Dimensions

Micro



Type	B1	B2	D1	H1
MICRO				
LOE-M5-D-MICRO	25	-	M5	-
LOE-M7-D-MICRO B			M7	
LOE-1/8-D-MICRO			G1/8	
LOE-QS4-D-MICRO	45	~2.5	QS4	~8
LOE-QS6-D-MICRO			QS6	~10

Lubricators LOE, D series

Technical data

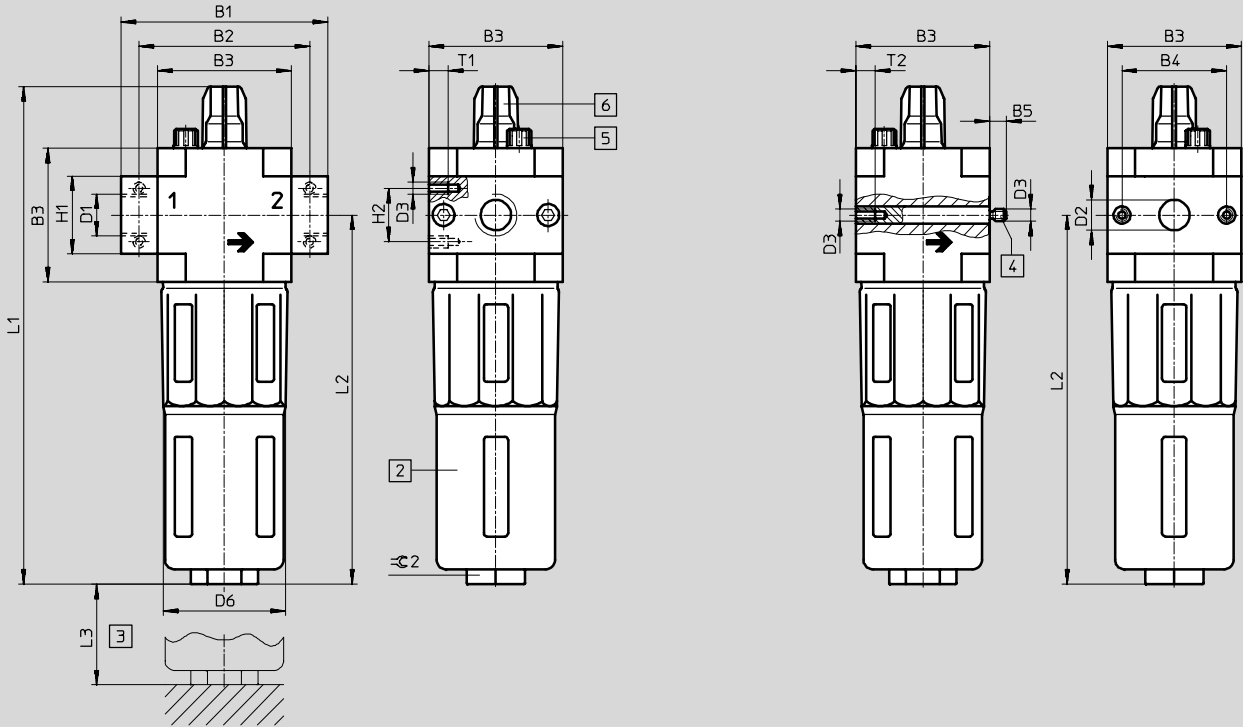


Dimensions

Mini/Midi/Maxi

With threaded connecting plates

Without threaded connecting plates



- 2 Metal bowl guard
- 3 Installation dimensions
- 4 Threaded pin (exchangeable)
- 5 Bleed screw for oil reservoir
- 6 Oil adjusting screw
- Flow direction

Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	L3	T1	T2	≈ 2
Mini																	
LOE-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	38	20	11	169	124	100	7	-	22
LOE-1/4-D-MINI						G1/4											
LOE-3/8-D-MINI						G3/8											
LOE-D-MINI	-	-	-	-	5.8	-	11	-	-	-	-	-	-	-	-	10	-
Midi																	
LOE-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	52	32	22	204	151	120	8	-	24
LOE-3/8-D-MIDI						G3/8											
LOE-1/2-D-MIDI						G1/2											
LOE-3/4-D-MIDI						G3/4											
LOE-D-MIDI	-	-	-	-	6.8	-	24	-	-	-	-	-	-	-	-	11	-
Maxi																	
LOE-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	65	32	22	228	170	150	8	-	24
LOE-3/4-D-MAXI						G3/4											
LOE-1-D-MAXI	116	91				G1											
LOE-D-MAXI	-	-	-	-	6.8	-	30	-	-	-	-	-	-	-	-	11	-

D series service units
Lubricators

1.5

Lubricators LOE, D series

Technical data

Ordering data			
Lubricator, input pressure 0 ... 10 bar			
Size	Connection	Part No.	Type
Micro	Without threaded connecting plates, connecting thread in housing		
	M5	526 309	LOE-M5-D-MICRO
	M7	534 188	LOE-M7-D-MICRO B New
	With threaded connecting plates		
	G1/8	526 310	LOE-1/8-D-MICRO
	With connecting plate and push-in fitting		
	QS4	526 313	LOE-QS4-D-MICRO
QS6	526 314	LOE-QS6-D-MICRO	

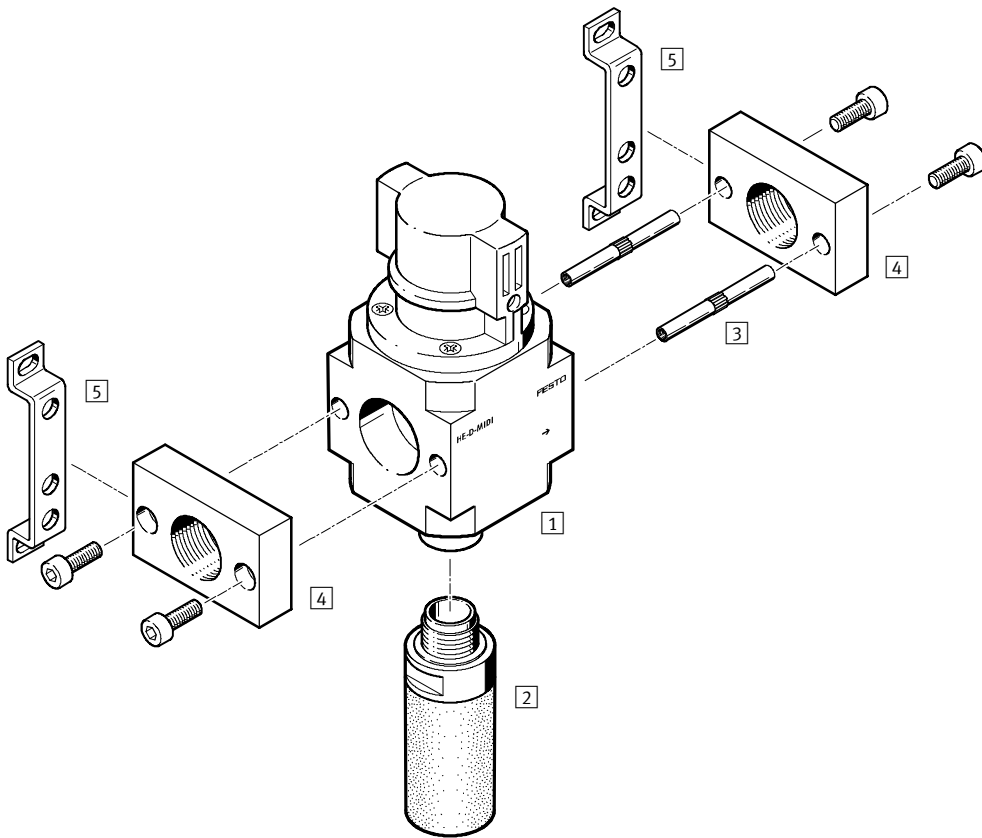
Ordering data			
Lubricator, input pressure 0 ... 16 bar, metal bowl guard			
Size	Part No.	Type	
Without threaded connecting plates			
Mini	192 575	LOE-D-MINI	
Midi	192 576	LOE-D-MIDI	
Maxi	192 577	LOE-D-MAXI	

Ordering data			
Lubricator, input pressure 0 ... 16 bar, metal bowl guard			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G1/8	159 620	LOE-1/8-D-MINI
	G1/4	159 621	LOE-1/4-D-MINI
	G3/8	162 680	LOE-3/8-D-MINI
Midi	G1/4	186 479	LOE-1/4-D-MIDI
	G3/8	159 586	LOE-3/8-D-MIDI
	G1/2	159 587	LOE-1/2-D-MIDI
	G3/4	162 681	LOE-3/4-D-MIDI
Maxi	G1/2	186 480	LOE-1/2-D-MAXI
	G3/4	159 622	LOE-3/4-D-MAXI
	G1	159 623	LOE-1-D-MAXI

Ordering data – Special oil			
	Scope of delivery	Part No.	Type
	1 litre	152 811	OFSW-32

On-off valves HE, D series

Peripherals overview



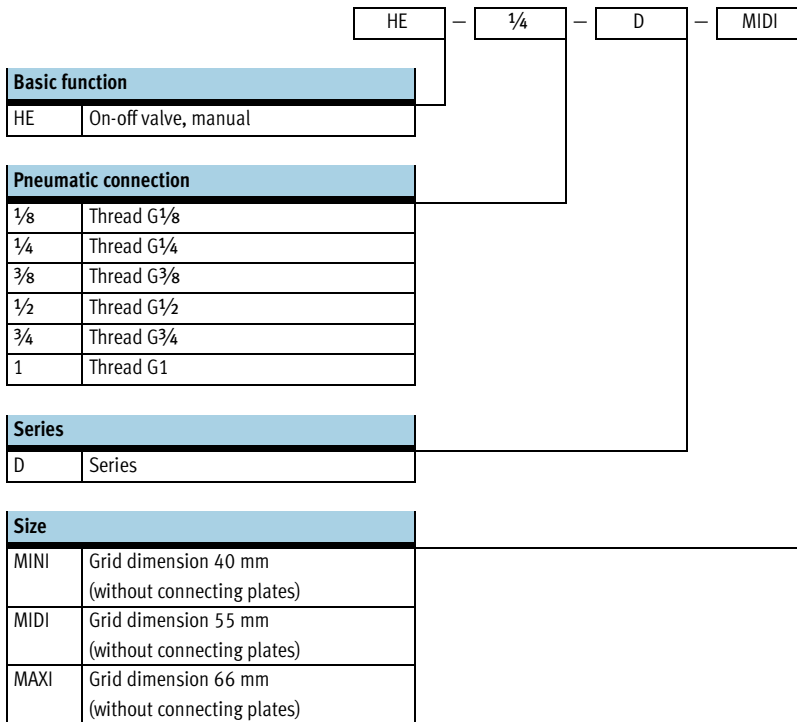
D series service units
Start-up and exhaust valves

1.6

Mounting attachments and accessories	Brief description	→ Page
1 On-off valve, manual HE	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.6-2
2 Silencer U...	The silencers are not included in the scope of delivery	3 / 4.7-5
3 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
4 Connecting plates	With and without threaded connecting plates	-
5 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the on-off valve on the wall (they are not included in the scope of delivery)	3 / 1.8-8

On-off valves HE, D series

Type codes

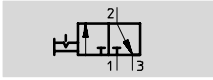


On-off valves HE, D series

Technical data



Function



- - Flow rate
1000 ... 6500 l/min
- - Temperature range
-10 ... +60 °C
- - Operating pressure
0 ... 16 bar



- 3/2-way manual shut-off valve
- The unit is vented when switched off
- Ducted exhaust possible via a threaded connection
- The switching position is immediately recognisable
- Commercially available padlock can be used for security

General technical data										
Size	Mini			Midi				Maxi		
Pneumatic connection	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 50 µm									
Design	Piston spool valve									
Type of mounting	Via accessories In-line installation									
Assembly position	Any									
Operating pressure [bar]	0 ... 16									
Valve function	3/2-way valve, single solenoid									
Exhaust function	Without flow control									
Reset method	Mechanical spring									
C value [l/sbar]	4.4	7.2	7.5	9.9	15.7	17.0	17.3	23.7	26.8	25.9
b value	0.44	0.28	0.27	0.45	0.30	0.30	0.42	0.32	0.35	0.37
Direction of flow	Non-reversible									

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
HE	1000	1500	1600	-	-	-
Midi						
HE	-	2600	3200	3600	3800	-
Maxi						
HE	-	-	-	5600	6000	6500

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

On-off valves HE, D series

Technical data

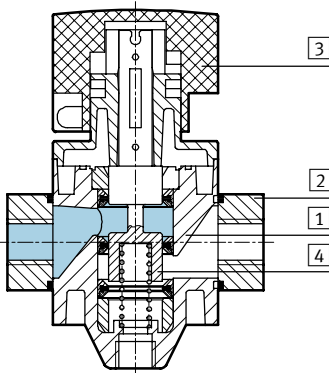
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size		Mini	Midi	Maxi
HE		192	511	796

Materials

Sectional view



On-off valve		
1	Housing	Die-cast aluminium
2	Connecting plates	Wrought aluminium alloy
3	Rotary knob	Polyamide
4	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

On-off valves HE, D series

Technical data

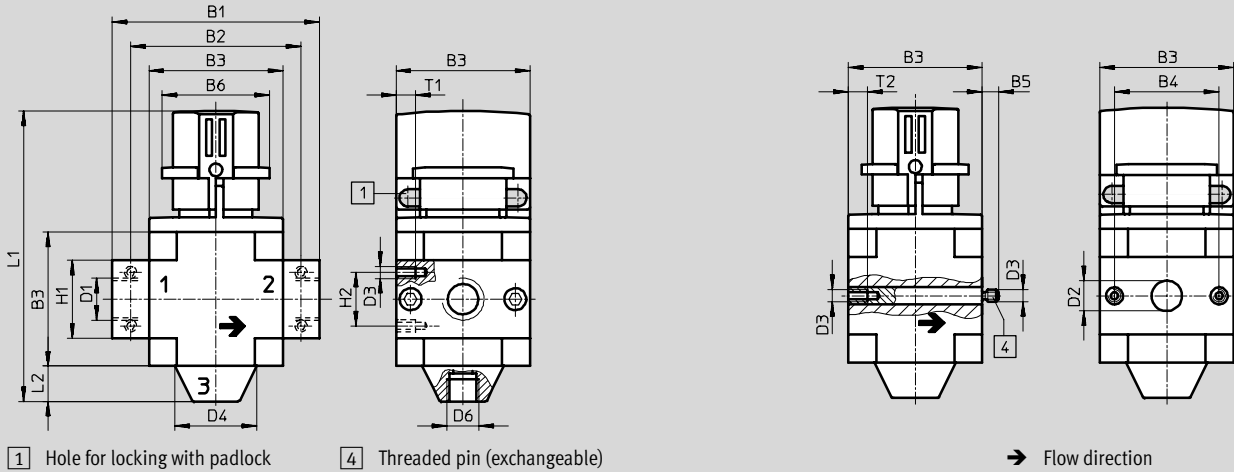


Dimensions

Mini/Midi/Maxi

With threaded connecting plates

Without threaded connecting plates



Type	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	D6	H1	H2	L1	L2	T1	T2
Mini																	
HE-1/8-D-MINI	64	52	40	30	-	32	G1/8	-	M4	24	G1/8	20	11	98	11	7	-
HE-1/4-D-MINI							G3/8										
HE-3/8-D-MINI	70						G3/8										
HE-D-MINI	-	-			5.8		-	11				-	-			-	10
Midi																	
HE-1/4-D-MIDI	85	70	55	43	-	44	G1/4	-	M5	34	G1/4	32	22	119	14	8	-
HE-3/8-D-MIDI							G3/8										
HE-1/2-D-MIDI							G1/2										
HE-3/4-D-MIDI							G3/4										
HE-D-MIDI	-	-			6.8		-	24			-	-			-	11	
Maxi																	
HE-1/2-D-MAXI	96	80	66	46	-	44	G1/2	-	M5	38	G3/8	32	22	132	16	8	-
HE-3/4-D-MAXI							G3/4										
HE-1-D-MAXI	116	91					G1					40					
HE-D-MAXI	-	-			6.8		-	30				-	-			-	11

D series service units
Start-up and exhaust valves

1.6

On-off valves HE, D series

Technical data

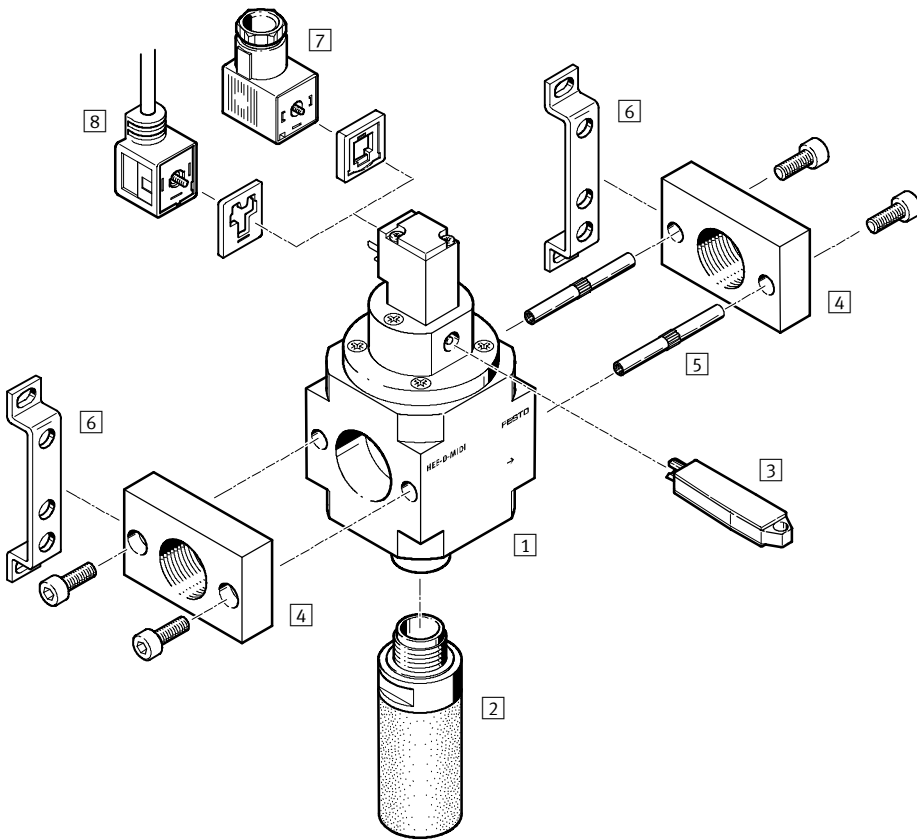
Ordering data			
3/2-way valve, operating pressure 0 ... 16 bar, normally closed			
Size	Part No.	Type	
Without threaded connecting plates			
Mini	170 681	HE-D-MINI	
Midi	170 682	HE-D-MIDI	
Maxi	170 683	HE-D-MAXI	

Ordering data			
3/2-way valve, operating pressure 0 ... 16 bar, normally closed			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G1/8	162 806	HE-1/8-D-MINI
	G1/4	162 807	HE-1/4-D-MINI
	G3/8	162 808	HE-3/8-D-MINI
Midi	G1/4	186 513	HE-1/4-D-MIDI
	G3/8	162 809	HE-3/8-D-MIDI
	G1/2	162 810	HE-1/2-D-MIDI
	G3/4	162 811	HE-3/4-D-MIDI
Maxi	G1/2	186 514	HE-1/2-D-MAXI
	G3/4	162 812	HE-3/4-D-MAXI
	G1	162 813	HE-1-D-MAXI

 Core Range

On-off valves HEE, D series

Peripherals overview



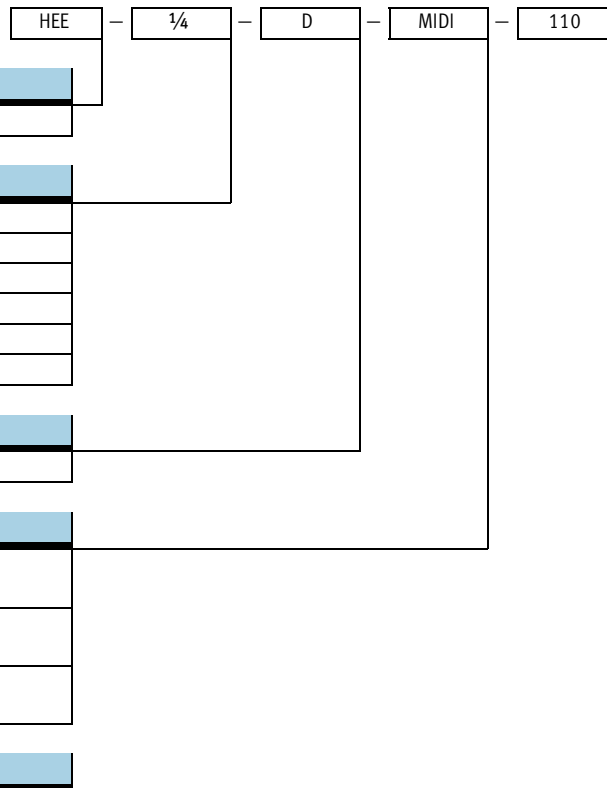
D series service units
Start-up and exhaust valves

1.6

Mounting attachments and accessories	Brief description	→ Page
1 On-off valve, electrical HEE	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.6-8
2 Silencer U-...	The silencers are not included in the scope of delivery	3 / 4.7-5
3 Manual override tool AHB-MD/MF/MY	The push-to-reset manual override can be latched by inserting and rotating (90°) Latching using bayonet catch (manual override tool not included in scope of delivery)	-
4 Connecting plates	With and without threaded connecting plates	-
5 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
6 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the on-off valve on the wall (they are not included in the scope of delivery)	3 / 1.8-8
7 Plug socket MSSD-EB	Accessory, optional	3 / 1.8-18
8 Plug socket with cable KMEB-1	Accessory, optional	3 / 1.8-18

On-off valves HEE, D series

Type codes



Basic function

HEE	On-off valve, electrical
-----	--------------------------

Pneumatic connection

1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4
1	Thread G1

Series

D	Series
---	--------

Size

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

Voltage

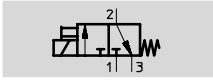
24	Supply voltage 24 V DC
110	Supply voltage 110 V AC
230	Supply voltage 230 V AC

On-off valves HEE, D series

Technical data



Function



- - Flow rate
1000 ... 6500 l/min
- - Temperature range
-10 ... +60 °C
- - Operating pressure
2.5 ... 16 bar

Selected types according to ATEX directive for explosive atmospheres
→ www.festo.com/en/ex



- Electrical on-off valve for pressurising and venting pneumatic installations
- With solenoid coil without plug socket
- Three voltage ranges can be selected
- Manual override via pushing and detenting (using override tool AHB-MD/MF/MV)
- Solenoid head can be repositioned by 4 x 90°

General technical data										
Size	Mini			Midi				Maxi		
Pneumatic connection	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 50 µm									
Design	Piston spool valve									
Type of mounting	Via accessories In-line installation									
Assembly position	Any									
Operating pressure [bar]	2.5 ... 16									
Valve function	3/2-way valve, single solenoid									
Exhaust function	Without flow control									
Type of actuation	Mechanical spring									
C value [l/sbar]	4.4	7.0	7.3	9.7	15.7	17.0	17.3	24.2	28.0	27.6
b value	0.44	0.31	0.28	0.47	0.33	0.30	0.41	0.30	0.32	0.32
Direction of flow	Non-reversible									
Supply voltage [V DC/AC]	24, 110, 230									
Electrical connection	Plug to DIN 43 650, type C									
Duty cycle	100%									
Protection class	IP65									

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
HEE	1000	1500	1600	-	-	-
Midi						
HEE	-	2400	3200	3600	3800	-
Maxi						
HEE	-	-	-	5600	6000	6500

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

On-off valves HEE, D series

Technical data

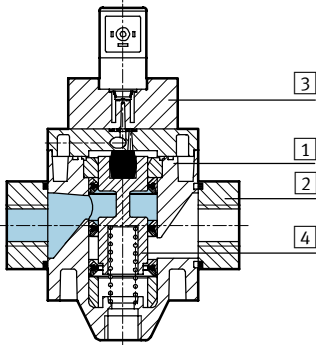
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size		Mini	Midi	Maxi
HEE		223	500	800

Materials

Sectional view



On-off valve		
1	Housing	Die-cast aluminium
2	Connecting plates	Wrought aluminium alloy
3	Solenoid and intermediate plate	Polyamide
4	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

On-off valves HEE, D series

Technical data

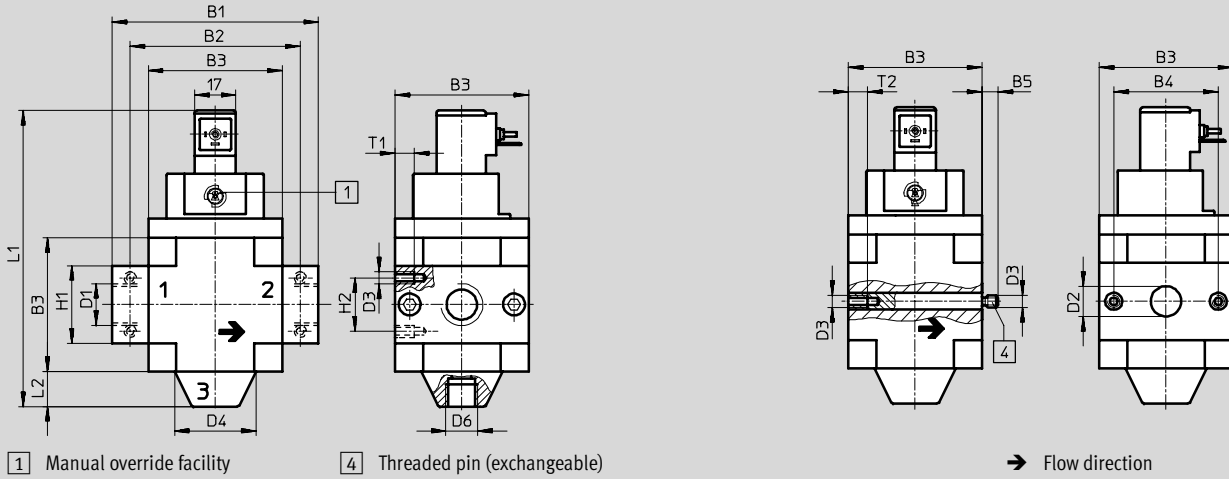


Dimensions

Mini/Midi/Maxi

With threaded connecting plates

Without threaded connecting plates



Type	B1	B2	B3	B4	B5	D1	D2 Ø	D3	D4 Ø	D6	H1	H2	L1	L2	T1	T2
Mini																
HEE-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	24	G1/8	20	11	104	11	7	-
HEE-1/4-D-MINI						G1/4										
HEE-3/8-D-MINI	70					G3/8										
HEE-D-MINI	-	-			5.8	-	11				-	-			-	10
Midi																
HEE-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	34	G1/4	32	22	122	14	8	-
HEE-3/8-D-MIDI						G3/8										
HEE-1/2-D-MIDI						G1/2										
HEE-3/4-D-MIDI						G3/4										
HEE-D-MIDI	-	-			6.8	-	24				-	-			-	11
Maxi																
HEE-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	38	G3/8	32	22	135	16	8	-
HEE-3/4-D-MAXI						G3/4					40					
HEE-1-D-MAXI	116	91				G1					-	-			-	11
HEE-D-MAXI	-	-			6.8	-	30				-	-			-	11

On-off valves HEE, D series



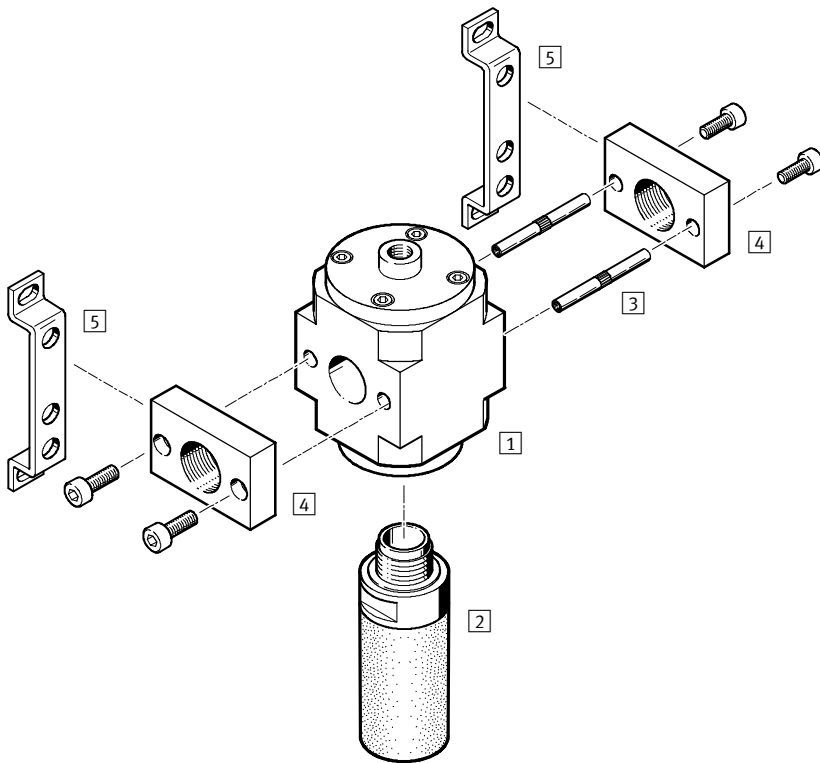
Technical data

Ordering data							
3/2-way valve, operating pressure 2.5 ... 16 bar, normally closed							
Size	Connection	24 V DC		110 V AC		230 V AC	
		Part No.	Type	Part No.	Type	Part No.	Type
Without threaded connecting plates							
Mini		172 956	HEE-D-MINI-24	172 957	HEE-D-MINI-110	172 958	HEE-D-MINI-230
Midi		172 959	HEE-D-MIDI-24	172 960	HEE-D-MIDI-110	172 961	HEE-D-MIDI-230
Maxi		172 962	HEE-D-MAXI-24	172 963	HEE-D-MAXI-110	172 964	HEE-D-MAXI-230

Ordering data							
3/2-way valve, operating pressure 2.5 ... 16 bar, normally closed							
Size	Connection	24 V DC		110 V AC		230 V AC	
		Part No.	Type	Part No.	Type	Part No.	Type
With threaded connecting plates							
Mini	G1/8	165 068	HEE-1/8-D-MINI-24	165 069	HEE-1/8-D-MINI-110	165 070	HEE-1/8-D-MINI-230
	G1/4	165 071	HEE-1/4-D-MINI-24	165 072	HEE-1/4-D-MINI-110	165 073	HEE-1/4-D-MINI-230
	G3/8	165 074	HEE-3/8-D-MINI-24	165 075	HEE-3/8-D-MINI-110	172 940	HEE-3/8-D-MINI-230
Midi	G1/4	186 515	HEE-1/4-D-MIDI-24	186 517	HEE-1/4-D-MIDI-110	186 516	HEE-1/4-D-MIDI-230
	G3/8	172 941	HEE-3/8-D-MIDI-24	172 942	HEE-3/8-D-MIDI-110	172 943	HEE-3/8-D-MIDI-230
	G1/2	172 944	HEE-1/2-D-MIDI-24	172 945	HEE-1/2-D-MIDI-110	172 946	HEE-1/2-D-MIDI-230
	G3/4	172 947	HEE-3/4-D-MIDI-24	172 948	HEE-3/4-D-MIDI-110	172 949	HEE-3/4-D-MIDI-230
Maxi	G1/2	186 518	HEE-1/2-D-MAXI-24	186 520	HEE-1/2-D-MAXI-110	186 519	HEE-1/2-D-MAXI-230
	G3/4	172 950	HEE-3/4-D-MAXI-24	172 951	HEE-3/4-D-MAXI-110	172 952	HEE-3/4-D-MAXI-230
	G1	172 953	HEE-1-D-MAXI-24	172 954	HEE-1-D-MAXI-110	172 955	HEE-1-D-MAXI-230

On-off valves HEP, D series

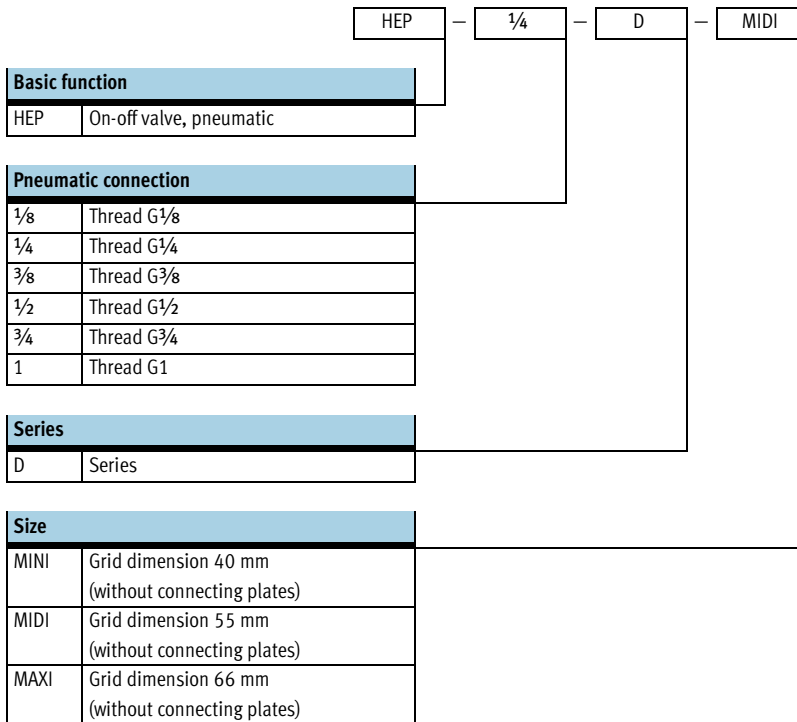
Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 On-off valve, pneumatic HEP	MINI: Connection size G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$ MIDI: Connection size G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$ MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.6-14
2 Silencer U-...	Silencers are not included in the scope of delivery	3 / 4.7-5
3 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
4 Connecting plates	With or without threaded connecting plates	-
5 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the on-off valve on a wall (they are not included in the scope of delivery)	3 / 1.8-8

On-off valves HEP, D series

Type codes

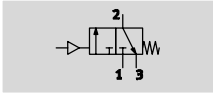


On-off valves HEP, D series

Technical data



Function



- - Flow rate
800 ... 6500 l/min
- - Temperature range
-10 ... +60 °C
- - Operating pressure
2 ... 16 bar



- Pneumatically actuated on-off valve for pressurising and venting pneumatic installations
- The valve can be used as a single unit or in combination with other D series modules
- These valves are particularly suitable for applications in explosion protection areas

General technical data										
Size	Mini			Midi				Maxi		
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G1
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 50 μ m									
Design	Piston spool valve									
Type of mounting	Via accessories In-line installation									
Assembly position	Any									
Operating pressure [bar]	2 ... 16									
Pilot pressure [bar]	3 ... 16									
Valve function	3/2-way valve									
Exhaust function	Without flow control									
Type of actuation	Mechanical spring									
C value [l/sbar]	4.3	7.2	7.7	10.1	15.5	16.6	16.2	24.2	28.0	27.6
b value	0.48	0.34	0.30	0.46	0.33	0.40	0.47	0.30	0.32	0.32
Direction of flow	Non-reversible									

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G1
Mini						
HEP	1000	1500	1600	-	-	-
Without threaded connecting plates	800			-	-	-
Midi						
HEP	-	2600	3500	3900	4100	-
Without threaded connecting plates	-	1900				-
Maxi						
HEP	-	-	-	5600	6000	6500
Without threaded connecting plates	-	-	-	2400		

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

On-off valves HEP, D series

Technical data

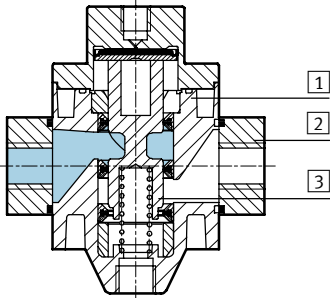
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60 °C		
Temperature of medium	[°C]	-10 ... +60 °C		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size		Mini	Midi	Maxi
HEP		223	500	800

Materials

Sectional view



On-off valve		
1	Housing	Die-cast aluminium
2	Connecting plates	Wrought aluminium alloy
3	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

On-off valves HEP, D series

Technical data

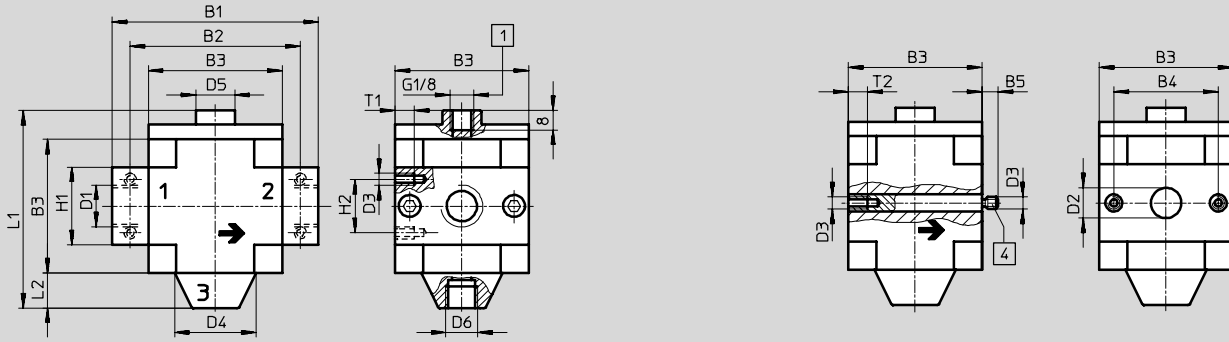


Dimensions

Mini/Midi/Maxi

With threaded connecting plates

Without threaded connecting plates



1 Threaded connection for pilot air (12)

4 Threaded pin (exchangeable)

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D2	D3	D4	D5	D6	H1	H2	L1	L2	T1	T2
Mini																	
HEP-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	24	16	G1/8	20	11	73.8	11	7	-
HEP-1/4-D-MINI						G3/8											
HEP-3/8-D-MINI	70																
HEP-D-MINI	-	-			5.8	-	11					-	-			-	10
Midi																	
HEP-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	34	32	G1/4	32	22	94.6	14	8	-
HEP-3/8-D-MIDI						G3/8											
HEP-1/2-D-MIDI						G1/2											
HEP-3/4-D-MIDI						G3/4											
HEP-D-MIDI	-	-			6.8	-	24					-	-			-	11
Maxi																	
HEP-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	38	16	G3/8	32	22	95.6	16	8	-
HEP-3/4-D-MAXI						G3/4											
HEP-1-D-MAXI	116	91										40					
HEP-D-MAXI	-	-			6.8	-	30					-	-			-	11

On-off valves HEP, D series

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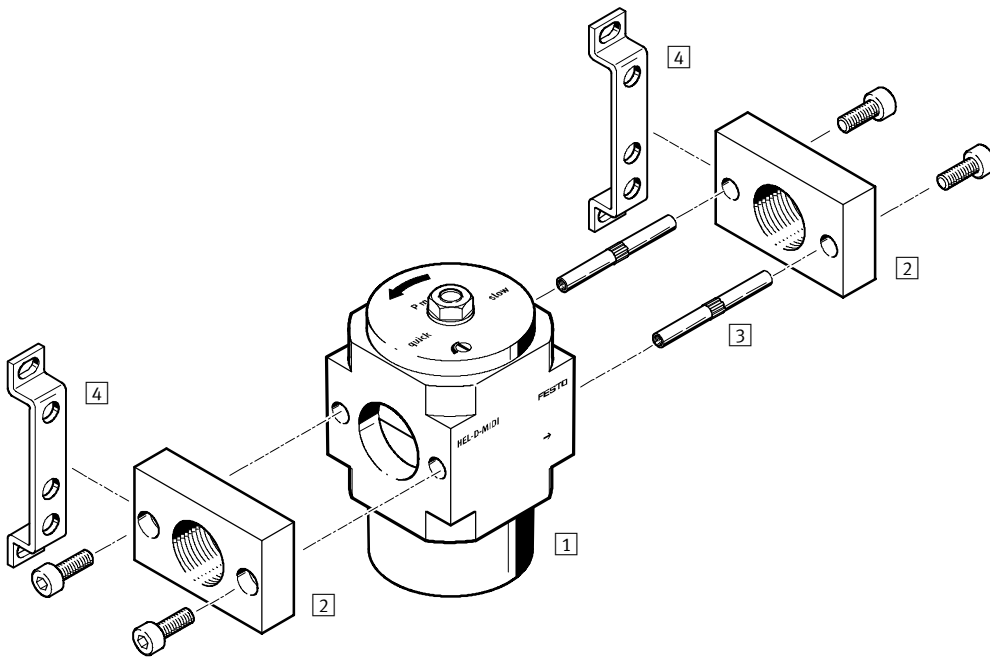
Technical data

Ordering data			
Pneumatic actuation, 3/2-way valve, operating pressure 2 ... 16 bar, normally closed			
Size	Part No.	Type	
Without threaded connecting plates			
Mini	193 242	HEP-D-MINI	
Midi	193 249	HEP-D-MIDI	
Maxi	193 257	HEP-D-MAXI	

Ordering data			
Pneumatic actuation, 3/2-way valve, operating pressure 2 ... 16 bar, normally closed			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G1/8	193 243	HEP-1/8-D-MINI
	G1/4	193 244	HEP-1/4-D-MINI
	G3/8	193 245	HEP-3/8-D-MINI
Midi	G1/4	193 250	HEP-1/4-D-MIDI
	G3/8	193 251	HEP-3/8-D-MIDI
	G1/2	193 252	HEP-1/2-D-MIDI
	G3/4	193 253	HEP-3/4-D-MIDI
Maxi	G1/2	193 258	HEP-1/2-D-MAXI
	G3/4	193 259	HEP-3/4-D-MAXI
	G1	193 260	HEP-1-D-MAXI

Soft-start valves HEL, D series

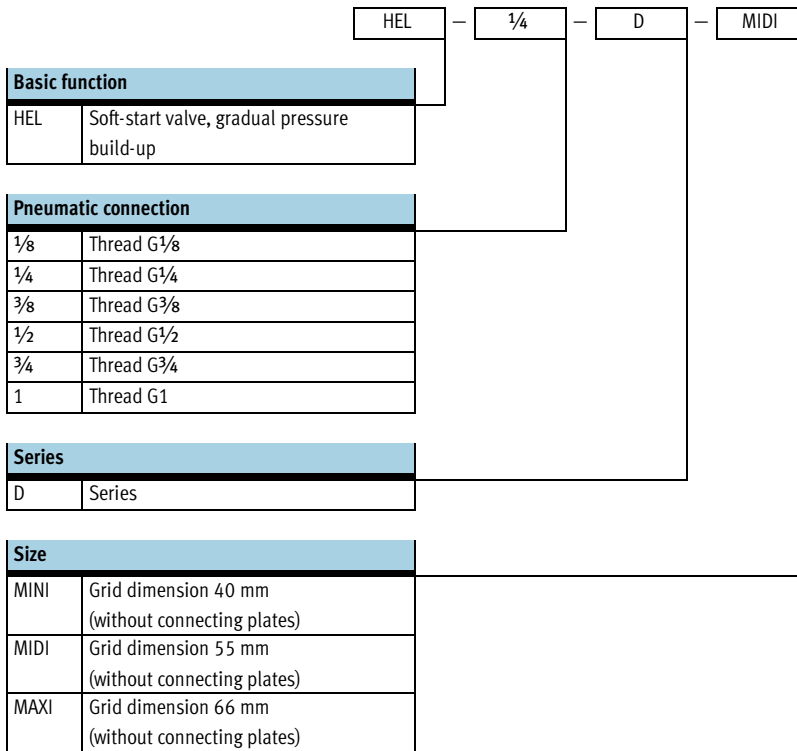
Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 Soft-start valve HEL	MINI: Connection size G1/8, G1/4, G3/8 MIDI: Connection size G1/4, G3/8, G1/2, G3/4 MAXI: Connection size G1/2, G3/4, G1	3 / 1.6-20
2 Connecting plates	With and without threaded connecting plates	-
3 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the soft-start valve on the wall (they are not included in the scope of delivery)	3 / 1.8-8

Soft-start valves HEL, D series

Type codes

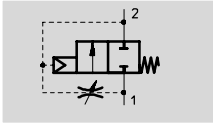


Soft-start valves HEL, D series

Technical data



Function



- - Flow rate
1000 ... 6500 l/min
- - Temperature range
-10 ... +60 °C
- - Operating pressure
3.5 ... 16 bar



- Soft-start valve for gradual pressure build-up (for use with on-off valves HE and HEE)
- Drives are moved slowly and safely to their initial positions
- Sudden and erratic movements are avoided
- Pressure switching approx. 50% of input pressure
- Adjustable switching time delay

General technical data										
Size	Mini			Midi				Maxi		
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G1
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 50 μ m									
Design	Piston spool valve									
Type of mounting	Via accessories In-line installation									
Assembly position	Any									
Operating pressure [bar]	3.5 ... 16									
Valve function	2/2-way valve, single solenoid, closed									
Exhaust function	Flow control									
Reset method	Mechanical spring									
C value [l/sbar]	4.4	7.9	9.1	10.0	18.4	21.0	22.5	26.9	31.0	29.0
b value	0.46	0.38	0.29	0.49	0.33	0.29	0.36	0.36	0.30	0.38
Type of actuation	Direct									
Direction of flow	Non-reversible									

Standard nominal flow rate ¹⁾ q _{nN} [l/min]						
Connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G1
Mini						
HEL	1000	1500	1600	-	-	-
Midi						
HEL	-	2600	3200	3600	3800	-
Maxi						
HEL	-	-	-	5600	6000	6500

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

Soft-start valves HEL, D series

Technical data

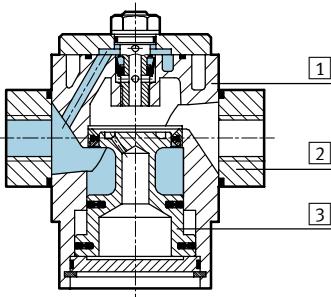
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size		Mini	Midi	Maxi
HEL		184	586	850

Materials

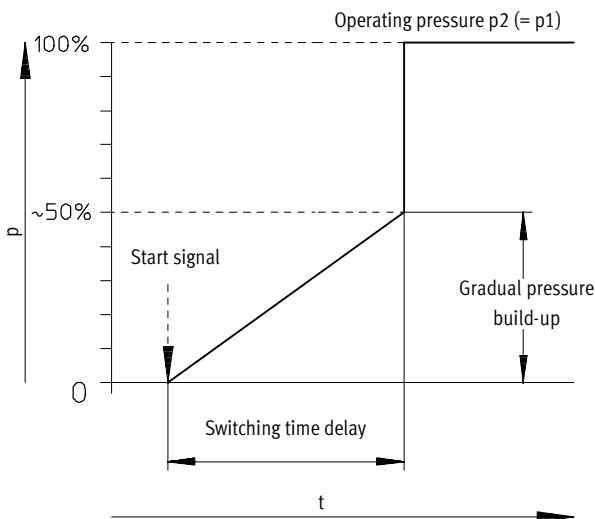
Sectional view



On-off valve		
1	Housing	Die-cast aluminium
2	Connecting plates	Wrought aluminium alloy
3	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

Switching point

Pressure p as a function of time t



Soft-start valves HEL, D series

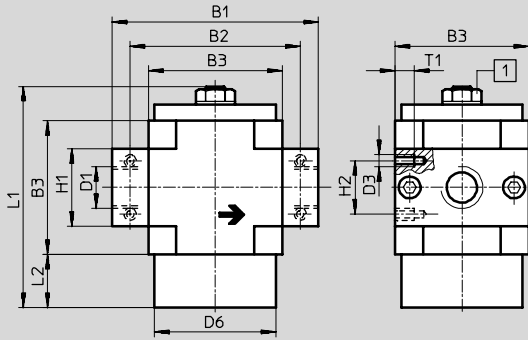
Technical data



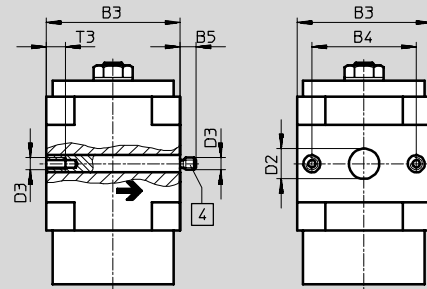
Dimensions

Mini/Midi/Maxi

With threaded connecting plates



Without threaded connecting plates



- 1 Regulating screw for flow control valve
- 4 Threaded pin (exchangeable)

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D2 Ø	D3	D6	H1	H2	L1	L2	T1	T2
Mini															
HEL-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	30	20	11	66	16	7	-
HEL-1/4-D-MINI						G1/4									
HEL-3/8-D-MINI	70					G3/8									
HEL-D-MINI	-	-			5.8	-	11			-	-			-	10
Midi															
HEL-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	50	32	22	91	22	8	-
HEL-3/8-D-MIDI						G3/8									
HEL-1/2-D-MIDI						G1/2									
HEL-3/4-D-MIDI						G3/4									
HEL-D-MIDI	-	-			6.8	-	24			-	-			-	11
Maxi															
HEL-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	50	32	22	103	23	8	-
HEL-3/4-D-MAXI						G3/4									
HEL-1-D-MAXI	116	91				G1				40					
HEL-D-MAXI	-	-			6.8	-	30			-	-			-	11

Soft-start valves HEL, D series

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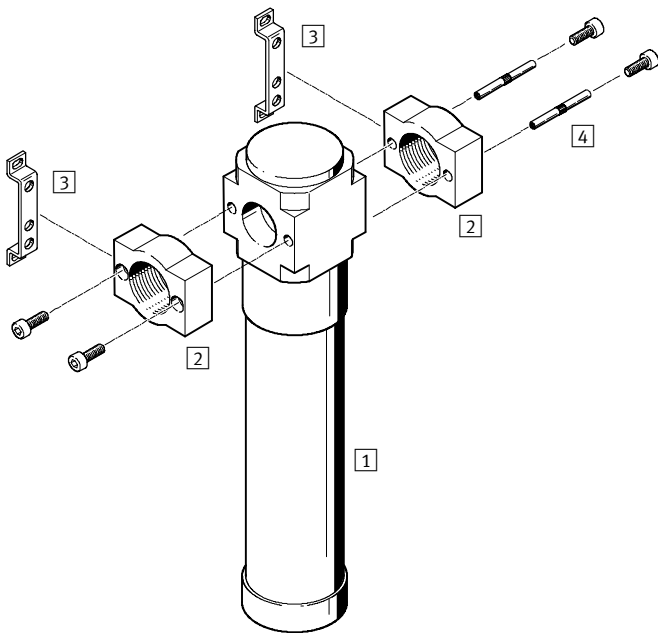
Technical data

Ordering data			
Gradual pressure build-up, 2/2-way valve, operating pressure 3.5 ... 16 bar, normally closed			
Size	Part No.	Type	
Without threaded connecting plates			
Mini	170 690	HEL-D-MINI	
Midi	170 691	HEL-D-MIDI	
Maxi	170 692	HEL-D-MAXI	

Ordering data			
Gradual pressure build-up, 2/2-way valve, operating pressure 3.5 ... 16 bar, normally closed			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G1/8	165 076	HEL-1/8-D-MINI
	G1/4	165 077	HEL-1/4-D-MINI
	G3/8	165 078	HEL-3/8-D-MINI
Midi	G1/4	186 521	HEL-1/4-D-MIDI
	G3/8	165 079	HEL-3/8-D-MIDI
	G1/2	165 080	HEL-1/2-D-MIDI
	G3/4	165 081	HEL-3/4-D-MIDI
Maxi	G1/2	186 522	HEL-1/2-D-MAXI
	G3/4	165 082	HEL-3/4-D-MAXI
	G1	165 083	HEL-1-D-MAXI

Membrane dryers LDM, D series

Peripherals overview and type codes



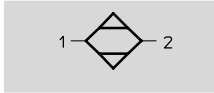
Mounting attachments and accessories	Brief description	→ Page
1 Membrane dryer LDM	MAXI: Connection size G $\frac{1}{2}$, G $\frac{3}{4}$, G1	3 / 1.7-1
2 Connecting plates	With and without threaded connecting plates	-
3 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the membrane dryer on the wall (they are not included in the scope of delivery)	3 / 1.8-8




LDM		-	$\frac{1}{2}$	-	D	-	MAXI	-	300
Basic function									
LDM	Membrane dryer								
Pneumatic connection									
$\frac{1}{2}$	Thread G $\frac{1}{2}$								
$\frac{3}{4}$	Thread G $\frac{3}{4}$								
1	Thread G1								
Series									
D	Series								
Size									
MAXI	Grid dimension 66 mm (without connecting plates)								
Standard flow rate at output qn Out									
300	300 l/min								
600	600 l/min								
1000	1000 l/min								

Membrane dryers LDM, D series

Technical data

Function



-  - Flow rate
375 ... 1250 l/min
-  - Temperature range
+5 ... +55 °C
-  - Input pressure
3 ... 8.5 bar




- Optimum final dryer with excellent operational reliability
- Suitable for use as an individual device or for integration in existing service unit combinations

- Flow rate-dependent dew point reduction
- Wear-free function requiring no external energy

Typical areas of application:

- Drying, cleaning of precision parts
- Measuring technology
- Rinsing of precision glass scales
- Painting systems
- Paper and packaging machines

-  - Note
Prefiltration of the compressed air using a micro filter LFMA-D-MAXI, grade of filtration 0.01 µm (residual particles < 0.1 µm, residual oil content < 0.1 mg/m³) is vital for flawless functioning of the unit.

General technical data			
Size	Maxi		
Pneumatic connection	G½	G¾	G1
Operating medium	Compressed air, air quality class 1.7.2 to DIN ISO 8573-1		
Design	Membrane dryer with internal air consumption		
Type of mounting	Via accessories In-line installation		
Assembly position	Vertical ±5°		
Input pressure [bar]	3 ... 8.5		
Pressure dew point reduction [°C]	13		

Standard flow rate ¹⁾ qn [l/min]				
Size		LDM-D-MAXI-300	LDM-D-MAXI-600	LDM-D-MAXI-1000
Input	qn In	375	750	1250
Output	qn Out	300	600	1000
Purge air	qn Purge	75	150	250

1) Measured at p1 = 6.9 bar, Tpd In = 20 °C, Tpa Out = -20 °C + 15% (Tpd Out = 7 °C + 15%), Tamb = 20 °C

Ambient conditions	
Size	Maxi
Ambient temperature [°C]	+5 ... +55
Temperature of medium [°C]	+5 ... +55
Corrosion resistance class CRC ¹⁾	2

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Membrane dryers LDM, D series

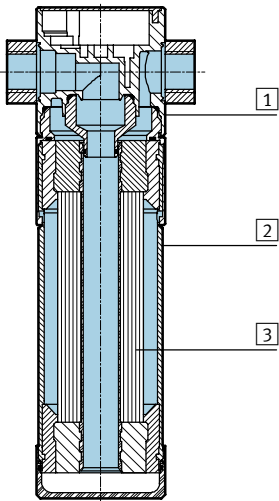
Technical data



Weight [g]			
Size	LDM-D-MAXI-300	LDM-D-MAXI-600	LDM-D-MAXI-1000
LDM-1/2-...	1640	1850	1770
LDM-3/4-...	1620	1670	1750
LDM-1-...	1810	1860	1940
LDM-D-...	1470	1520	1600

Materials

Sectional view



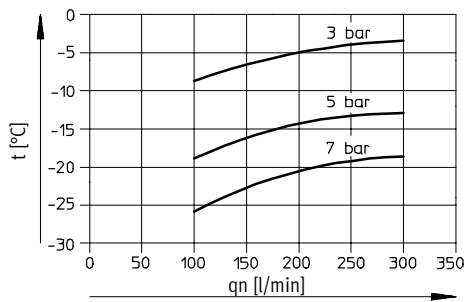
Membrane dryer	
[1] Housing	Die-cast zinc
[2] Protective sleeve for membrane cartridge	Aluminium
[3] Membrane fibres	Tetrafluorethylene copolymers
- Seals	Nitrile rubber

Membrane dryers LDM, D series

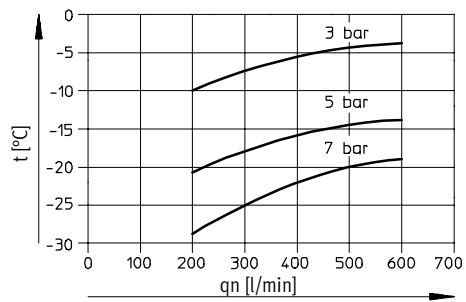
Technical data

Standard flow rate at output q_n as a function of the atmospheric dew point at output t

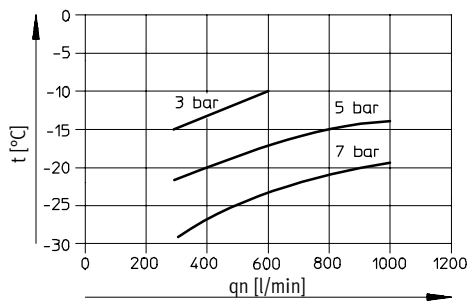
LDM-D-MAXI-300



LDM-D-MAXI-600

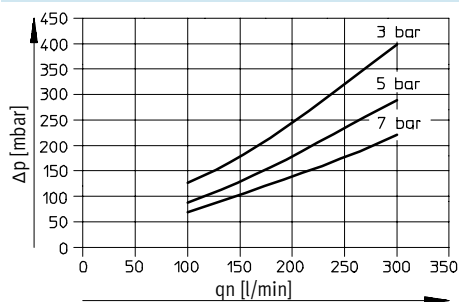


LDM-D-MAXI-1000

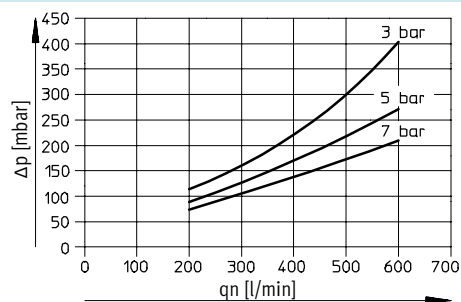


Differential pressure Δp as a function of the nominal flow rate at output q_n

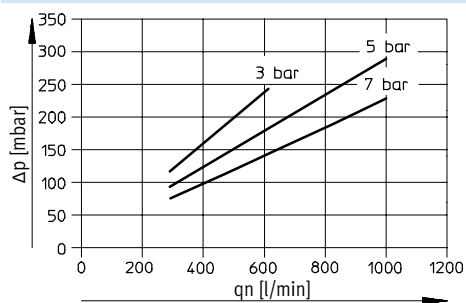
LDM-D-MAXI-300



LDM-D-MAXI-600



LDM-D-MAXI-1000



Membrane dryers LDM, D series

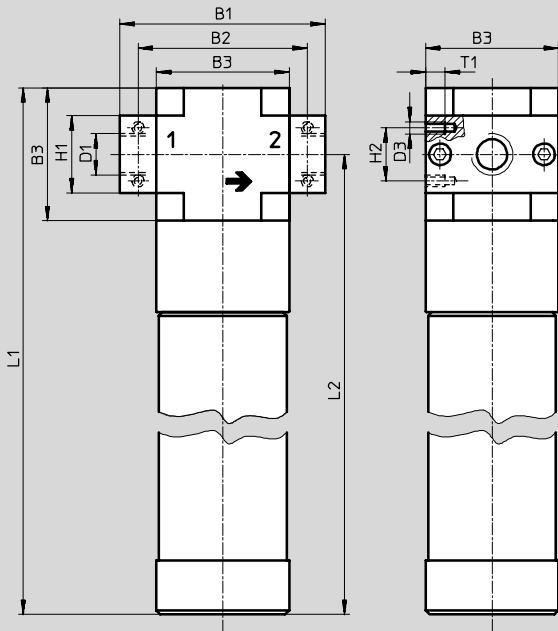
Technical data



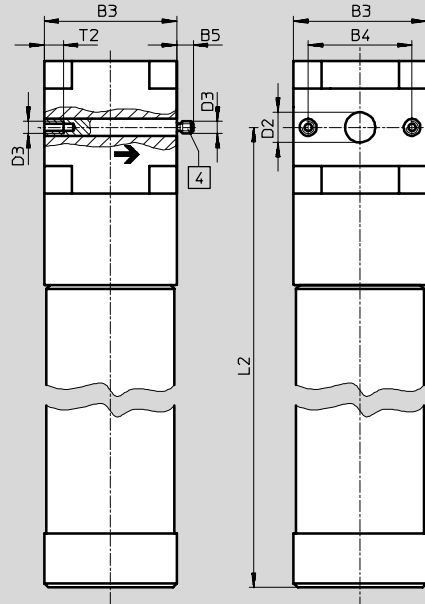
Dimensions

LDM

With threaded connecting plates



Without threaded connecting plates



4 Threaded pin (exchangeable)

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D2 ∅	D3	H1	H2	L1	L2	T1	T2
LDM-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	32	22	331	298	8	-
LDM-3/4-D-MAXI						G3/4			36					
LDM-1-D-MAXI	G1	41												
LDM-D-MAXI	-	-			7	-	30		-	-			-	-

Membrane dryers LDM, D series



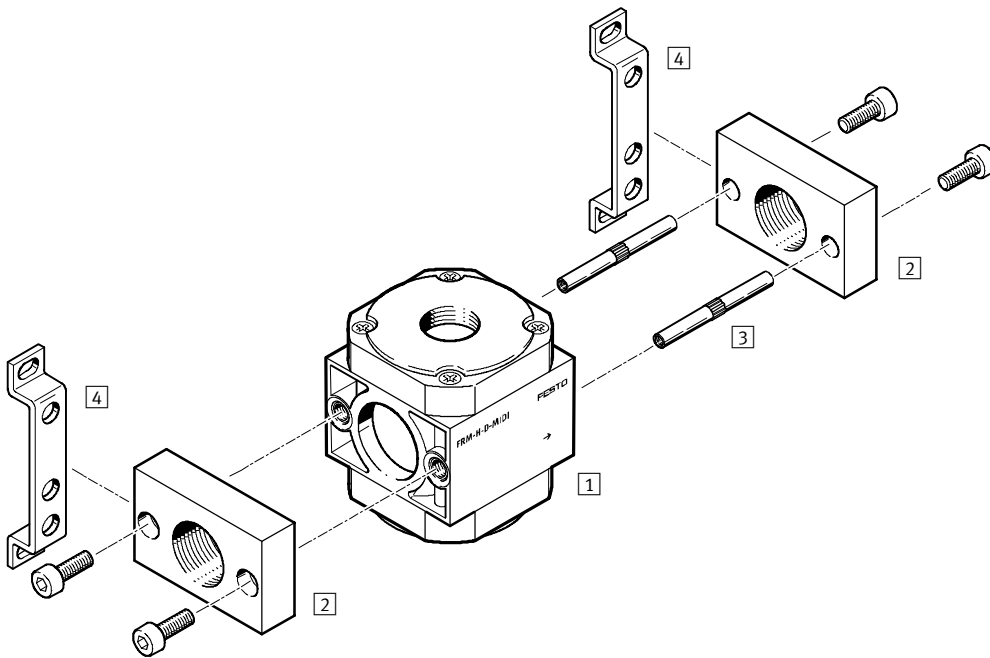
Technical data

Ordering data						
Size	300		600		1 000	
	Part No.	Type	Part No.	Type	Part No.	Type
Without threaded connecting plates						
Maxi	197 518	LDM-D-MAXI-300	197 519	LDM-D-MAXI-600	197 520	LDM-D-MAXI-1000

Ordering data							
Size	Connection	300		600		1 000	
		Part No.	Type	Part No.	Type	Part No.	Type
With threaded connecting plates							
Maxi	G $\frac{1}{2}$	197 509	LDM-$\frac{1}{2}$-D-MAXI-300	197 510	LDM-$\frac{1}{2}$-D-MAXI-600	197 511	LDM-$\frac{1}{2}$-D-MAXI-1000
	G $\frac{3}{4}$	197 512	LDM-$\frac{3}{4}$-D-MAXI-300	197 513	LDM-$\frac{3}{4}$-D-MAXI-600	197 514	LDM-$\frac{3}{4}$-D-MAXI-1000
	G1	197 515	LDM-1-D-MAXI-300	197 516	LDM-1-D-MAXI-600	197 517	LDM-1-D-MAXI-1000

Branching modules FRM, D series

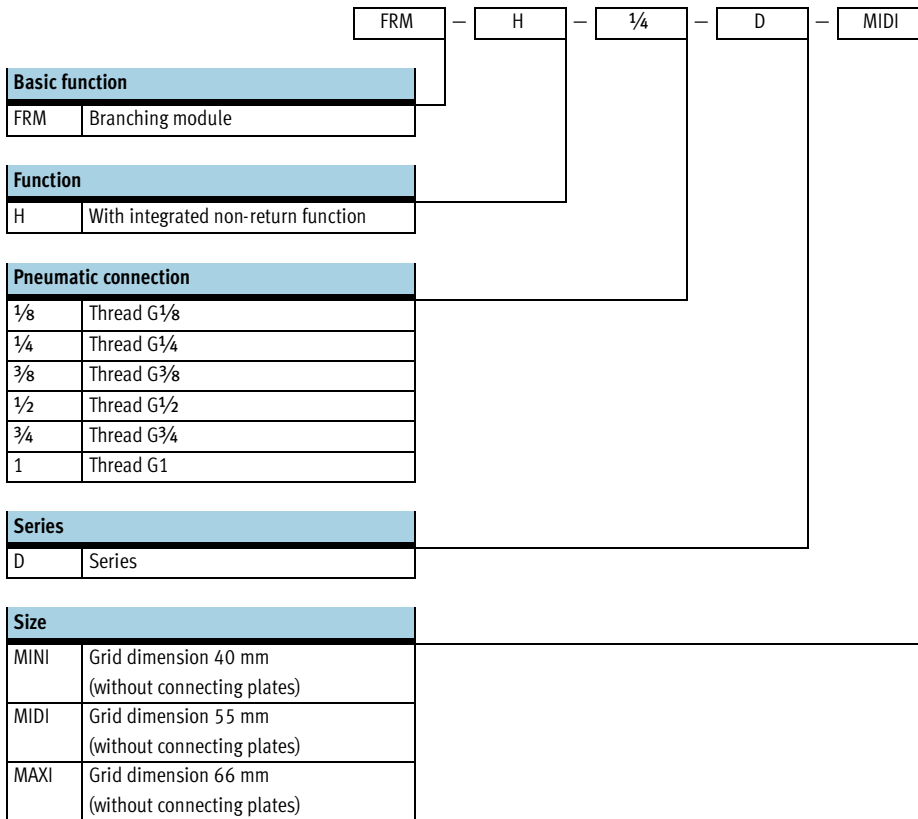
Peripherals overview



Mounting attachments and accessories	Brief description	→ Page
1 Branching module FRM	MINI: Connection size G1/8, G1/4, G3/8 MIDI: Connection size G1/4, G3/8, G1/2, G3/4 MAXI: Connection size G1/2, G3/4, G1	3 / 1.8-2
2 Connecting plates	With and without threaded connecting plates	-
3 Threaded pin (2 pcs.) HSB	For mounting threaded connecting plates	3 / 1.8-10
4 Mounting bracket (2 pcs.) HFOE	Mounting brackets HFOE are used to mount the branching module on the wall (they are not included in the scope of delivery)	3 / 1.8-8

Branching modules FRM, D series

Type codes



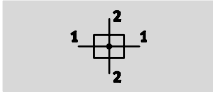
Branching modules FRM, D series

Technical data

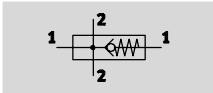


Function

Without non-return valve



With non-return valve



- - Flow rate
1300 ... 20000 l/min

- - Temperature range
-10 ... +60 °C

- - Operating pressure
0 ... 16 bar



- An integrated non-return valve prevents return flow of lubricated compressed air
- Branching module for compressed air distribution for attachment of additional modules (pressure regulator, pressure switch, etc.)
- Several additional air connections for greater flexibility
- Can be used as an intermediate distributor for varying air qualities

General technical data											
Size	Mini			Midi				Maxi			
Pneumatic connection 1	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1	
Pneumatic connection 2	G1/4			G1/2				G3/4			
Operating medium	Filtered compressed air										
Design	Compressed air distributor with variable outlets										
Type of mounting	Via accessories In-line installation										
Assembly position	Any										
Operating pressure [bar]											
Without non-return valve	0 ... 16										
With non-return valve	0.15 ... 16			0.2 ... 16				0.25 ... 16			

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Mini						
Without non-return valve	1500	3300	3300	-	-	-
With non-return valve	1300	2000	2100	-	-	-
Midi						
Without non-return valve	-	3500	7000	8200	8800	-
With non-return valve	-	3400	5500	5600	5500	-
Maxi						
Without non-return valve	-	-	-	11700	20000	17400
With non-return valve	-	-	-	9600	15000	13400

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

Branching modules FRM, D series

Technical data

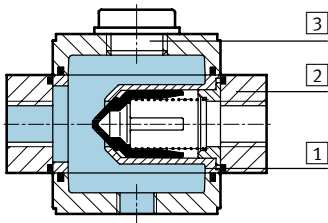
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]				
Size		Mini	Midi	Maxi
FRM		210	520	900

Materials

Sectional view



Branching module		
1	Housing	Die-cast zinc
2	Connecting plates	Die-cast zinc
3	Cover plate	Galvanised steel
-	Seals	Nitrile rubber, polyvinyl chloride
	Note on materials	Free of copper, PTFE and silicone

Branching modules FRM, D series

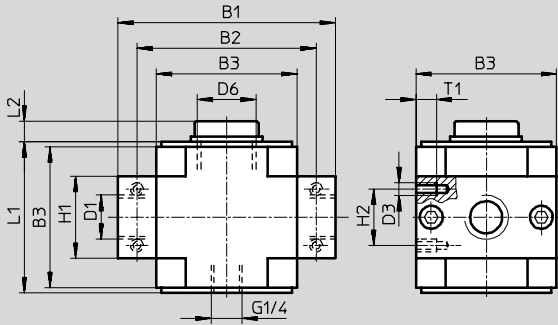
Technical data



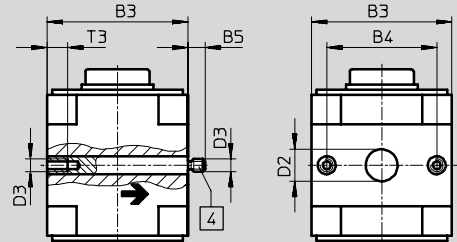
Dimensions

Mini/Midi/Maxi

With threaded connecting plates



Without threaded connecting plates



4 Threaded pin (exchangeable)

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	T1	T2
Mini															
FRM-1/8-D-MINI	64	52	40	30	-	G1/8	-	M4	G1/4	20	11	42	7	7	-
FRM-1/4-D-MINI						G3/8									
FRM-3/8-D-MINI	70	-	-	-	-	-	11	-	-	-	-	-	-	-	10
FRM-D-MINI	-	-	-	-	5.8	-	-	-	-	-	-	-	-	-	-
Midi															
FRM-1/4-D-MIDI	85	70	55	43	-	G1/4	-	M5	G1/2	32	22	59	8	8	-
FRM-3/8-D-MIDI						G3/8									
FRM-1/2-D-MIDI						G1/2									
FRM-3/4-D-MIDI						G3/4									
FRM-D-MIDI	-	-	-	-	6.8	-	24	-	-	-	-	-	-	-	11
Maxi															
FRM-1/2-D-MAXI	96	80	66	46	-	G1/2	-	M5	G3/4	32	22	70	8	8	-
FRM-3/4-D-MAXI						G3/4									
FRM-1-D-MAXI	116	91	-	-	-	G1	-	-	-	40	-	-	-	-	-
FRM-D-MAXI	-	-	-	-	6.8	-	30	-	-	-	-	-	-	-	11

Branching modules FRM, D series

Technical data

Ordering data			
Size	Part No.	Type	
Without threaded connecting plates			
Mini	170 684	FRM-D-MINI	
Midi	170 685	FRM-D-MIDI	
Maxi	170 686	FRM-D-MAXI	

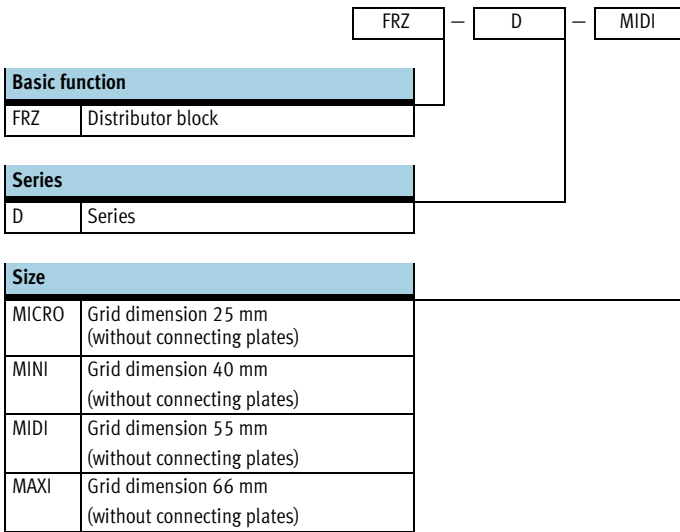
Ordering data			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G1/8	164 949	FRM-1/8-D-MINI
	G1/4	164 950	FRM-1/4-D-MINI
	G3/8	164 951	FRM-3/8-D-MINI
Midi	G1/4	186 523	FRM-1/4-D-MIDI
	G3/8	164 952	FRM-3/8-D-MIDI
	G1/2	164 953	FRM-1/2-D-MIDI
	G3/4	164 954	FRM-3/4-D-MIDI
Maxi	G1/2	186 524	FRM-1/2-D-MAXI
	G3/4	164 955	FRM-3/4-D-MAXI
	G1	164 956	FRM-1-D-MAXI

Ordering data			
Integrated non-return function			
Size	Part No.	Type	
Without threaded connecting plates			
Mini	170 687	FRM-H-D-MINI	
Midi	170 688	FRM-H-D-MIDI	
Maxi	170 689	FRM-H-D-MAXI	

Ordering data			
Integrated non-return function			
Size	Connection	Part No.	Type
With threaded connecting plates			
Mini	G1/8	162 788	FRM-H-1/8-D-MINI
	G1/4	162 789	FRM-H-1/4-D-MINI
	G3/8	162 790	FRM-H-3/8-D-MINI
Midi	G1/4	186 525	FRM-H-1/4-D-MIDI
	G3/8	162 791	FRM-H-3/8-D-MIDI
	G1/2	162 792	FRM-H-1/2-D-MIDI
	G3/4	162 793	FRM-H-3/4-D-MIDI
Maxi	G1/2	186 526	FRM-H-1/2-D-MAXI
	G3/4	162 794	FRM-H-3/4-D-MAXI
	G1	162 795	FRM-H-1-D-MAXI

Distributor blocks FRZ, D series

Type codes

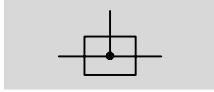


Distributor blocks FRZ, D series



Technical data

Function

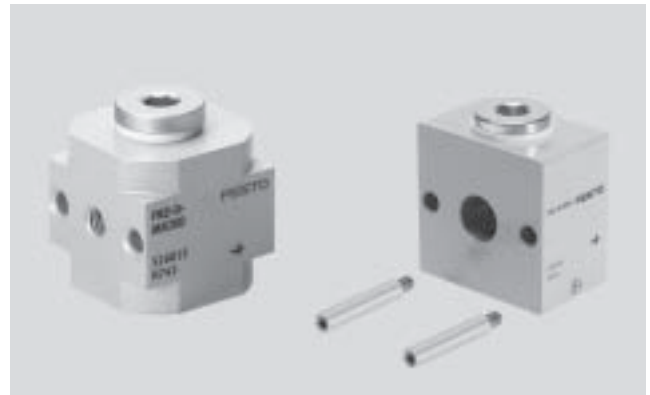


Additional air connections can be used to branch off filtered, unlubricated compressed air, e.g. to supply air barriers, sensors and control systems, or for especially clean air in combination with micro filter LFM.

Materials:

Housing: Aluminium

Cover plate: Galvanised steel



Dimensions

Micro

Mini/Midi/Maxi

4 Threaded pin (exchangeable)

→ Flow direction

Type	B1	B3	B4	B5	B6	D1 Ø	D2	D3	D4	T2
Mini										
FRZ-D-MINI	30	40	30	6	4.5	12	G $\frac{1}{4}$	M4	G $\frac{1}{4}$	12
Midi										
FRZ-D-MIDI	35	55	43	7	6	16	G $\frac{1}{4}$	M5	G $\frac{1}{2}$	8
Maxi										
FRZ-D-MAXI	40	65	30	7	6	22	G $\frac{1}{4}$	M5	G $\frac{3}{4}$	10

Ordering data

Distributor block		
Size	Part No.	Type
Without threaded connecting plates		
Micro	526 815	FRZ-D-MICRO
Mini	162 786	FRZ-D-MINI
Midi	159 592	FRZ-D-MIDI
Maxi	162 787	FRZ-D-MAXI

D series service units
Accessories for series D

1.8

Mounting attachments, D series

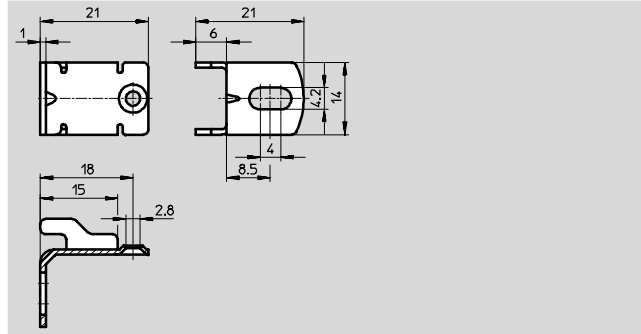
Accessories



Mounting bracket HFOE

Micro size
for wall mounting

Material:
Galvanised steel

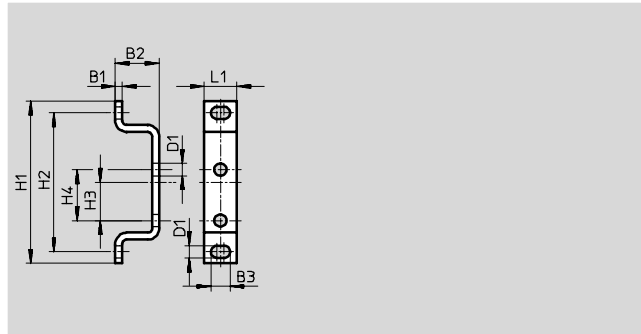


Ordering data			
Size	Part No.	Type	
Micro	526 317	HFOE-D-MICRO	

Mounting bracket HFOE

Mini/Midi/Maxi size
for wall mounting

Material:
Galvanised steel



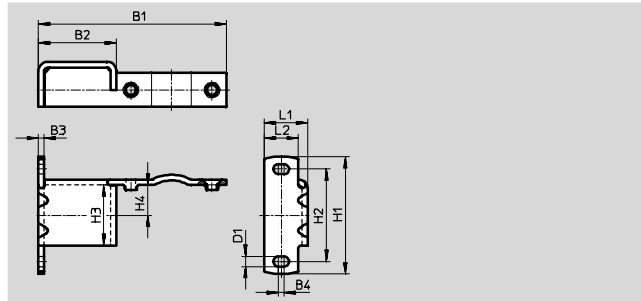
Dimensions and ordering data											
Size	B1	B2	B3	D1	H1	H2	H3	H4	L1	Part No.	Type
Mini	2	19	7.3	4.3	43	35	5.5	11	12	159 638	HFOE-D-MINI ¹⁾
Midi/Maxi	3	19	8.3	5.3	70	60	16.5	22	14	159 593	HFOE-D-MIDI/MAXI ¹⁾

1) Free of copper, PTFE and silicone

Mounting bracket HRBK

for LRB/LRBS

Material:
Galvanised steel



Dimensions and ordering data													
Size	B1	B2	B3	B4	D1 Ø	H1	H2	H3	H4	L1	L2	Part No.	Type
Mini	80.5	37.5	2.5	3	4.3	47.3	35	20	10	18.5	14	525 031	HRBK-D-MINI
Midi	99.8	41.3	3	3	5.3	62.3	49	32	16	23	18	525 032	HRBK-D-MIDI

Core Range

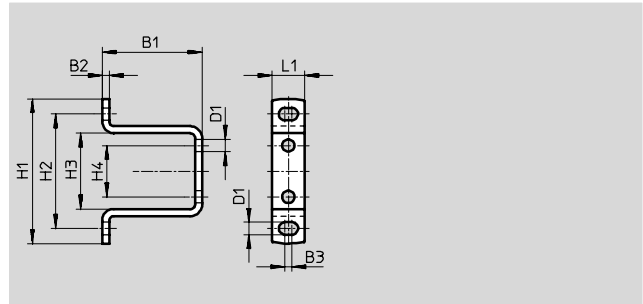
Mounting attachments, D series



Accessories

Mounting bracket HRB for LRB/LRBS

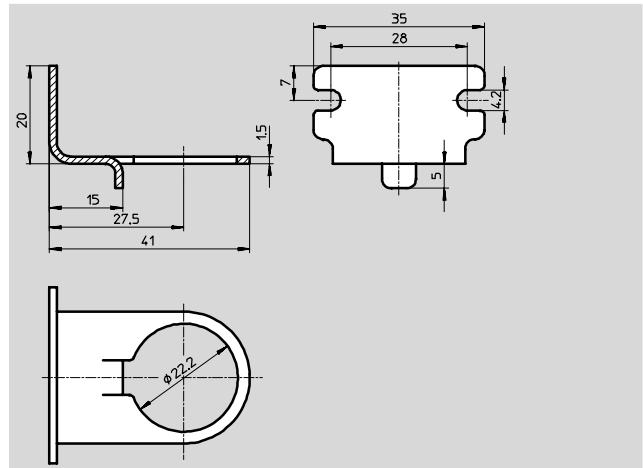
Material:
Galvanised steel



Dimensions and ordering data											
Size	B1	B2	B3	D1 Ø	H1	H2	H3	H4	L1	Part No.	Type
Mini	38.5	2.5	3	4.3	47.3	35	20	11	12	525 029	HRB-D-MINI
Midi	42.7	3	3	5.3	62.3	49	32.5	22	14	525 030	HRB-D-MIDI

Mounting bracket HRS Micro size for wall mounting

Material:
Galvanised steel



Ordering data		
Size	Part No.	Type
Micro	526 316	HRS-D-MICRO

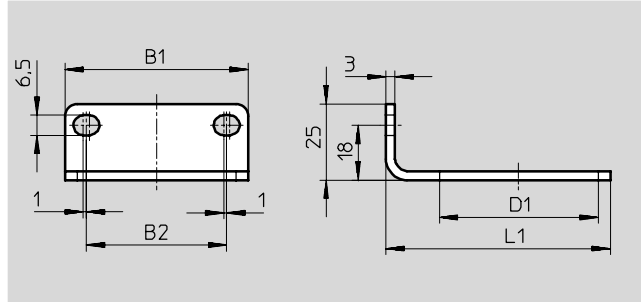
Mounting attachments, D series

Accessories



Mounting bracket HR-D for wall mounting

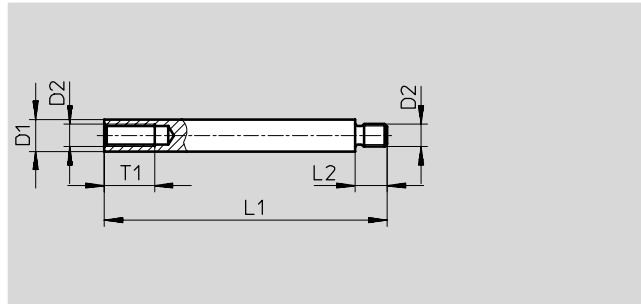
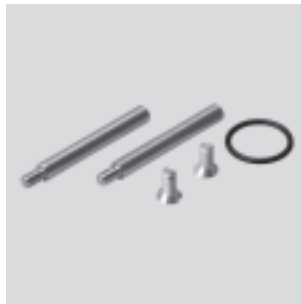
Material:
Galvanised steel



Dimensions and ordering data						
Size	B1	B2	D1 Ø	L1	Part No.	Type
Mini	42	28	36	57.5	164 936	HR-D-MINI
Midi	60	46	52	73.5	162 804	HR-D-MIDI
Maxi	64	51	36	82	162 805	HR-D-MAXI
	DI	64	51	82	193 802	HR-D-DI-MAXI

Threaded pin FRB for service unit combinations

Material:
High-alloy steel

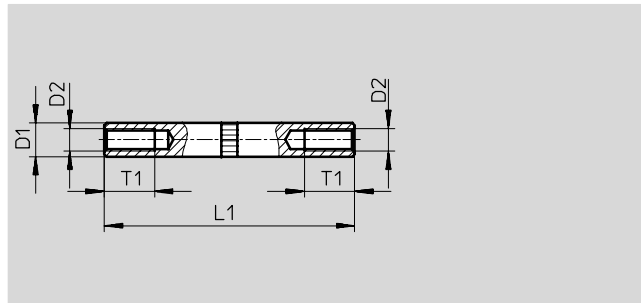


Dimensions and ordering data							
Size	D1 Ø	D2	L1	L2	T1 min.	Part No.	Type
Micro	3.5	M2.5	28.4	4	6	526 817	FRB-D-MICRO
Mini	6	M4	45.8	6	10	159 642	FRB-D-MINI ¹⁾
Midi	7	M5	61.8	7	11	159 595	FRB-D-MIDI ¹⁾
Maxi	7	M5	72.8	7	11	159 643	FRB-D-MAXI ¹⁾

1) Free of copper, PTFE and silicone

Threaded pin HSB for fitting individual devices with connecting plates

Material:
High-alloy steel



Dimensions and ordering data						
Size	D1 Ø	D2	L1	T1 min.	Part No.	Type
Mini	6.5	M4	39.7	10	531 057	HSB-D-MINI
Midi	7.5	M5	54.7	11	531 058	HSB-D-MIDI

Core Range

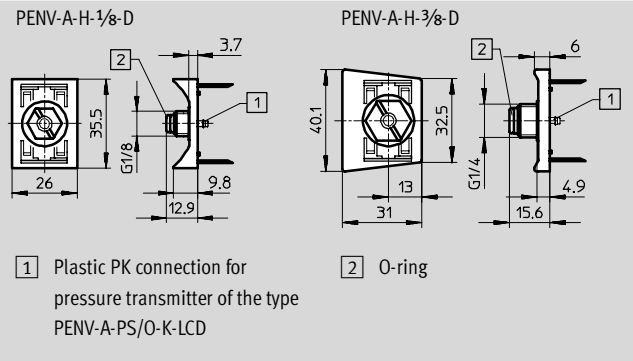
Mounting attachments, D series

Accessories

Retainer PENV

for pressure transducer PENV for mounting on service units

Material:
Polyacetal



Ordering data		
Connection	Part No.	Type
G1/8	161 207	PENV-A-H-1/8-D
G3/8	161 208	PENV-A-H-3/8-D

Hex nut HMR

for filter regulators LFR and pressure regulators LR

Material:
Wrought aluminium alloy

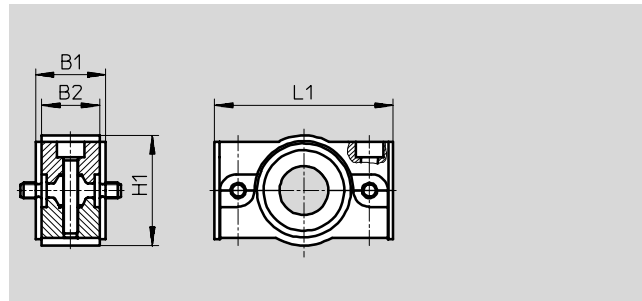
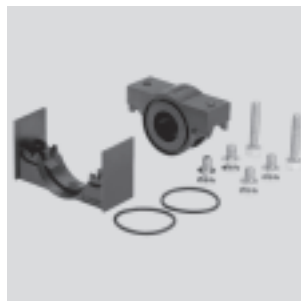


Ordering data		
Size	Part No.	Type
Micro	526 816	HMR-D-MICRO
Mini/Maxi	530 025	HMR-D-MINI/MAXI
Midi	530 026	HMR-D-MIDI

Connecting kit HRBC

for LRB/LRBS

Material:
Die-cast zinc



Dimensions and ordering data						
Size	B1	B2	H1	L1	Part No.	Type
Mini	17.4	14.8	20	43	529 022	HRBC-D-MINI
Midi	23	18.6	38	58.5	529 023	HRBC-D-MIDI

Connecting plates, D series

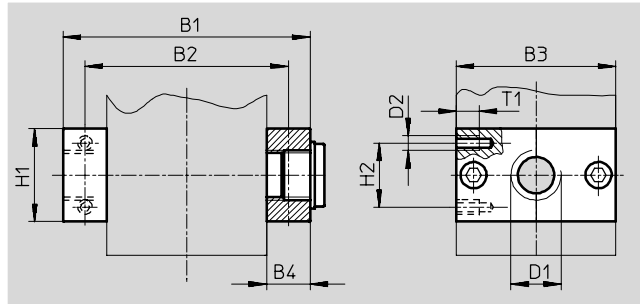
Accessories



Connecting plates LRBAS

for pressure regulators LRB/LRBS

Material:
Die-cast zinc

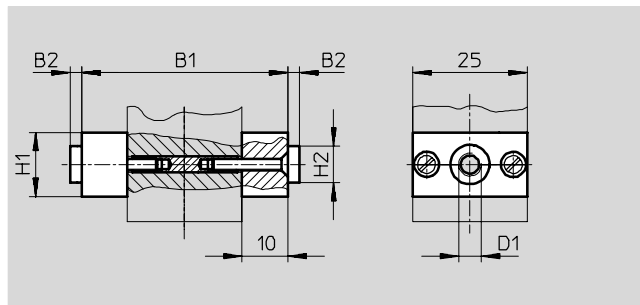


Dimensions and ordering data											
Connection	B1	B2	B3	B4	D1	D2	H1	H2	T1 max.	Part No.	Type
G $\frac{1}{4}$	64	52	40	12	G $\frac{1}{4}$	M4	20	11	7	525 033	LRBAS- $\frac{1}{4}$ -D-MINI
G $\frac{3}{8}$	70	52	40	15	G $\frac{3}{8}$	M4	23	11	7	525 034	LRBAS- $\frac{3}{8}$ -D-MINI
G $\frac{3}{8}$	85	70	55	15	G $\frac{3}{8}$	M5	32	22	8	525 035	LRBAS- $\frac{3}{8}$ -D-MIDI
G $\frac{1}{2}$	85	70	55	15	G $\frac{1}{2}$	M5	32	22	8	525 036	LRBAS- $\frac{1}{2}$ -D-MIDI

Connection set PBL

Micro size
for service units FRC, filter regulators LFR, filters LF, pressure regulators LR and lubricators LOE

Material:
Wrought aluminium alloy



Dimensions and ordering data							
Connection	B1	B2	D1	H1	H2	Part No.	Type
G $\frac{1}{8}$	45	-	M5	10	-	526 318	PBL- $\frac{1}{8}$ -D-MICRO
QS4	45	2.5	QS4	10	8	526 321	PBL-QS4-D-MICRO
QS6	45	2.5	QS6	10	10	526 322	PBL-QS6-D-MICRO

Security components, D series

Accessories

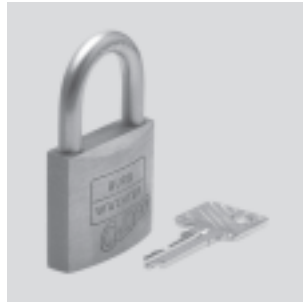
FESTO

Padlock LRVS

for regulator lock LRVS for pressure regulators LR and on-off valves HE

Material:

Housing: Brass



Ordering data		
Weight [g]	Part No.	Type
120	193 786	LRVS-D

Regulator lock LRVS

Material:

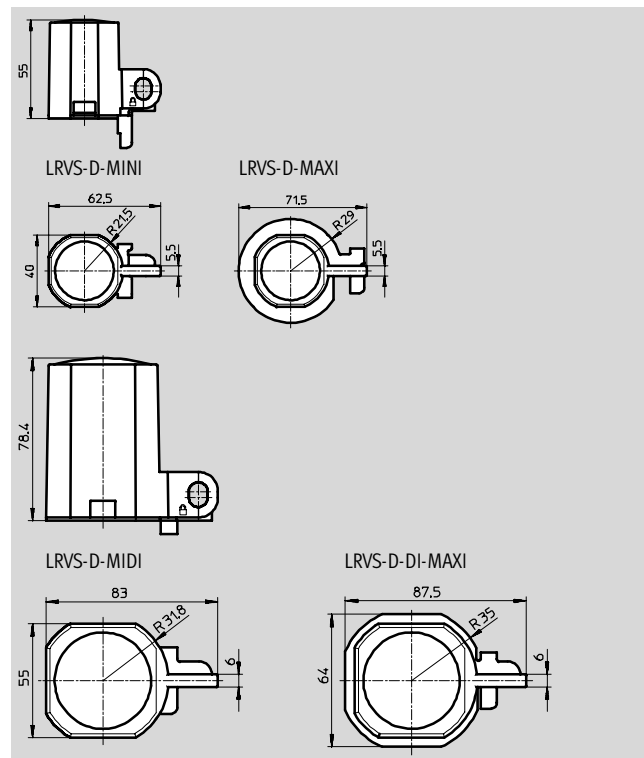
Cap: Polyacetal

Lock plate: Steel

Knurled nut: Aluminium

Lock plate of galvanised steel mounted on pressure regulating valve using knurled nut.

Locking device to prevent unauthorised alteration of the set pressure of pressure and filter regulators.



Ordering data			
Size	Weight [g]	Part No.	Type
Mini	40	193 781	LRVS-D-MINI ¹⁾
Midi	60	193 782	LRVS-D-MIDI ¹⁾
Maxi	56	193 783	LRVS-D-MAXI ¹⁾
	DI	36	193 784

1) Free of copper, PTFE and silicone

Pressure gauges, D series

Accessories

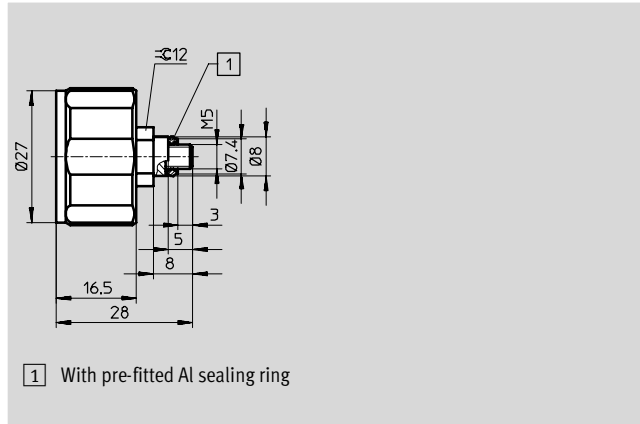
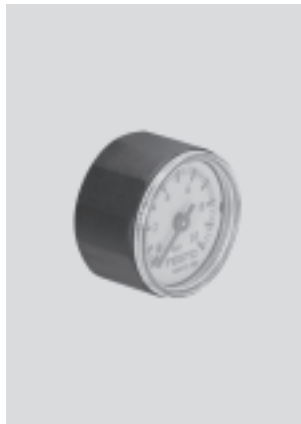


Pressure gauge MA

Material:

Housing: Plastic

- These pressure gauges are used for pressure measurement and display in control systems
- They do not contain any paint-wetting impairment substances
- Pressure gauges may only be loaded to 3/4 of their full scale value during continuous operation

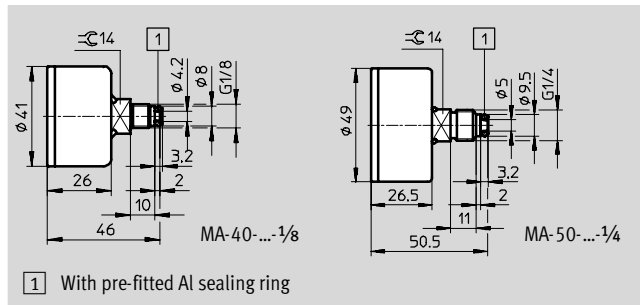


Ordering data		
Indicating range	Part No.	Type
M5, 0 ... 10 bar	526 323	MA-27-10-M5
M5, 0 ... 10 MPa	526 324	MA-27-1,0-M5-MPA
M5, 0 ... 145 psi	527 405	MA-27-160-M5-PSI

Pressure gauge MA

Material:

Housing: Acrylic butadiene styrene



Ordering data		
Display unit [bar]	Part No.	Type
G ¹ / ₈ , 0 ... 10	359 874	MA-40-10- ¹ / ₈
G ¹ / ₈ , 0 ... 16	345 395	MA-40-16- ¹ / ₈
G ¹ / ₄ , 0 ... 10	359 873	MA-50-10- ¹ / ₄
G ¹ / ₄ , 0 ... 16	356 759	MA-50-16- ¹ / ₄

Additional functions, D series

Accessories

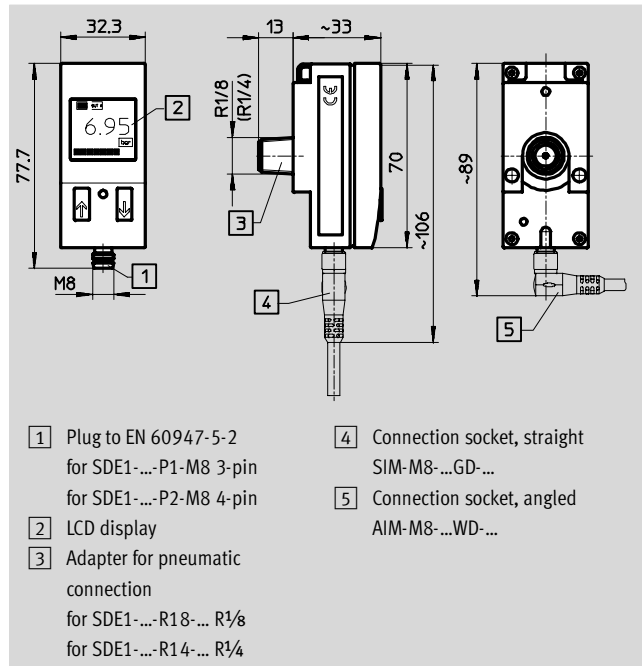
FESTO

Pressure sensor SDE1 with LCD display

Material: Polyacetal

Besides freely programmable switching pressures and hysteresis for each switching output, all SDE1-... variants provide the following setting possibilities:

- Selection of threshold value/window comparator
- Selection of NO contacts/NC contacts
- Selection of pressure display in bar/kPa/psi
- Fast programming option through teach-in function
- Option for protecting against unauthorised programming via a PIN code



Ordering data			
Connection	Weight [g]	Part No.	Type
Pressure range 0 ... 10 bar, overload pressure max. 20 bar, temperature range 0 ... +50 °C			
R $\frac{1}{4}$ -...-M8	95	192 028	SDE1-D10-G2-R14-C-P1-M8
R $\frac{1}{4}$ -...-M8	95	192 029	SDE1-D10-G2-R14-C-P2-M8
R $\frac{1}{8}$ -...-M8	95	192 026	SDE1-D10-G2-R18-C-P1-M8
R $\frac{1}{8}$ -...-M8	95	192 027	SDE1-D10-G2-R18-C-P2-M8

Plastic tubing PCN for condensate drain

Material:
Tubing: Polyvinyl chloride



Ordering data			
Length [m]	Weight [g/m]	Part No.	Type
50	25	7134	PCN-4-NT

Additional functions, D series

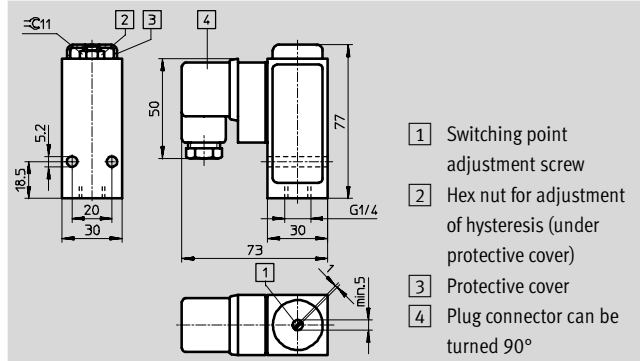
Accessories

FESTO

Pressure switch PEV

adjustable
with plug socket

Material:
Housing: Wrought aluminium alloy

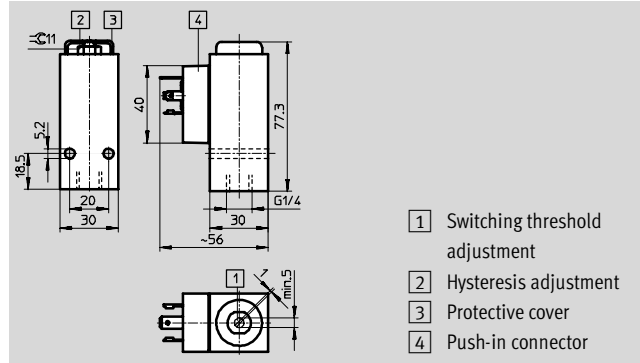


Ordering data		Technical data → Volume 4	
Connection	Weight [g]	Part No.	Type
G $\frac{1}{4}$	231	10 773	PEV- $\frac{1}{4}$ -B

Pressure switch PEV

adjustable
without plug socket

Material:
Housing: Wrought aluminium alloy

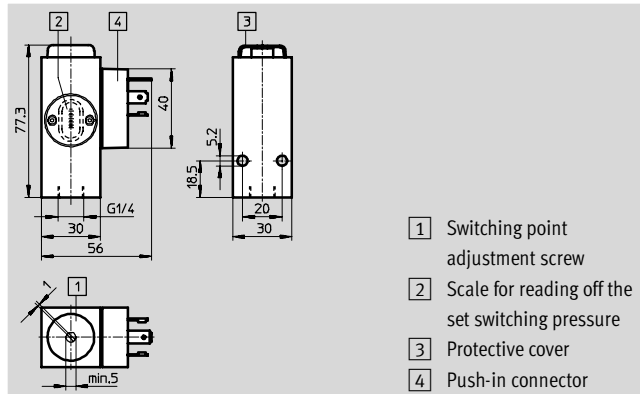


Ordering data		Technical data → Volume 4	
Connection	Weight [g]	Part No.	Type
G $\frac{1}{4}$	220	175 250	PEV- $\frac{1}{4}$ -B-0D

Pressure switch PEV

adjustable with visual scale
without plug socket

Material:
Housing: Wrought aluminium alloy



Ordering data		Technical data → Volume 4	
Connection	Weight [g]	Part No.	Type
G $\frac{1}{4}$	170	161 760	PEV- $\frac{1}{4}$ -SC-0D

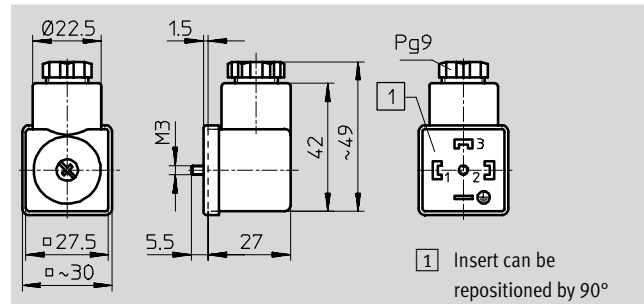
Additional functions, D series

FESTO

Accessories

Plug socket MSSD

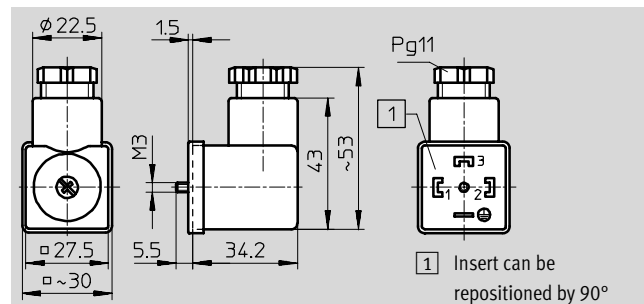
for pressure switch PEV



Ordering data		Technical data → Volume 2	
Weight [g]	Part No.	Type	
22	171 157	MSSD-C-4P	

Angled plug socket with LED

for pressure switch PEV



Ordering data		Technical data → Volume 4	
Voltage	Weight [g]	Part No.	Type
24 V DC	22	164 274	PEV-1/4-WD-LED-24
230 V AC	22	164 275	PEV-1/4-WD-LED-230

Illuminating seal MEB

for on-off valve HEE

Material:
Polymer, silicone-free



Ordering data		Technical data → Volume 2	
Voltage	Weight [g]	Part No.	Type
24 V DC	5	151 717	MEB-LD-12-24DC
230 V AC	5	151 718	MEB-LD-230AC

 Core Range

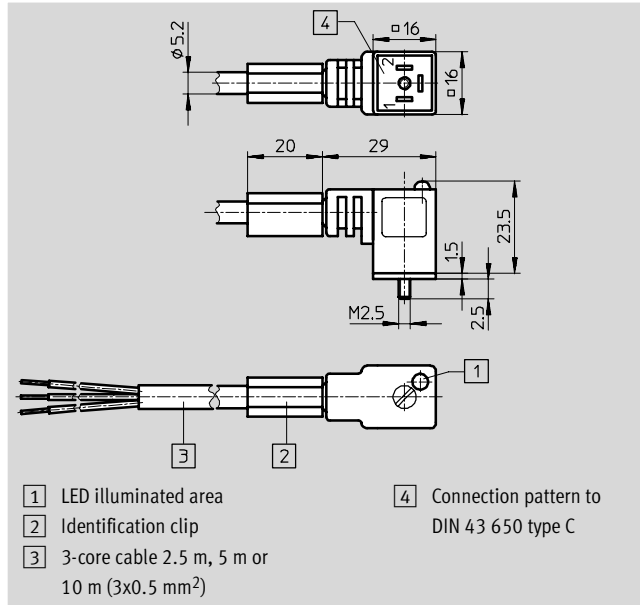
Additional functions, D series

Accessories

FESTO

Plug socket with cable KMEB and LED for on-off valve HEE

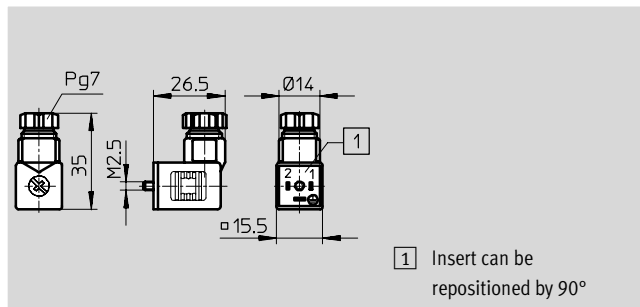
Material:
Housing: Polymer
Seal: Nitrile rubber
Cable: Polyvinyl chloride



Ordering data			Technical data → Volume 2	
Voltage	Cable length [m]	Weight [g]	Part No.	Type
24 V DC	2.5	125	151 688	KMEB-1-24-2,5-LED
24 V DC	5	230	151 689	KMEB-1-24-5-LED
24 V DC	10	460	193 457	KMEB-1-24-10-LED
230 V AC	2.5	125	151 690	KMEB-1-230AC-2,5
230 V AC	5	230	151 691	KMEB-1-230AC-5

Plug socket MSSD for on-off valve HEE

Material:
Housing: Polymer
Seal: Nitrile rubber



Ordering data		Technical data → Volume 2	
Weight [g]	Part No.	Type	
11	151 687	MSSD-EB	

Core Range

Additional functions, D series

Accessories

FESTO

Plug socket MSSD

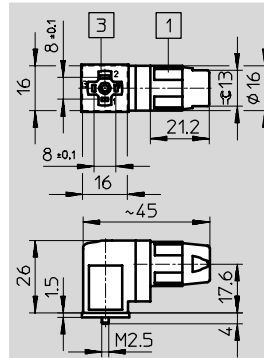
for on-off valve HEE

Insulation displacement technology

Material:

Housing: Polymer

Seal: Nitrile rubber



- 1 Union nut M14x1
- 3 Connection side can be repositioned by 90°

Ordering data		Technical data → Volume 2	
Weight [g]	Part No.	Type	
11	192 745	MSSD-EB-S-M14	

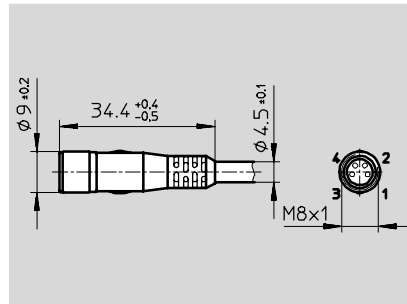
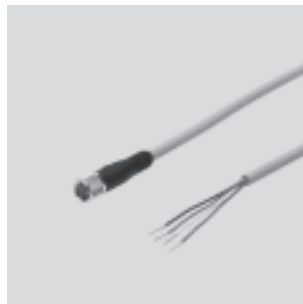
Plug socket with cable SIM

M8, 4-pin

straight socket

Material:

Polyurethane



Ordering data		Technical data → Volume 4	
Length [m]	Part No.	Type	
2.5	158 960	SIM-M8-4GD-2,5-PU	
5	158 961	SIM-M8-4GD-5-PU	

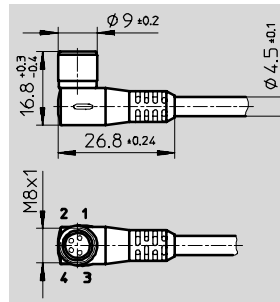
Plug socket with cable SIM

M8, 4-pin

Angled socket

Material:

Polyurethane



Ordering data		Technical data → Volume 4	
Length [m]	Part No.	Type	
2.5	158 962	SIM-M8-4WD-2,5-PU	
5	158 963	SIM-M8-4WD-5-PU	

Additional functions, D series

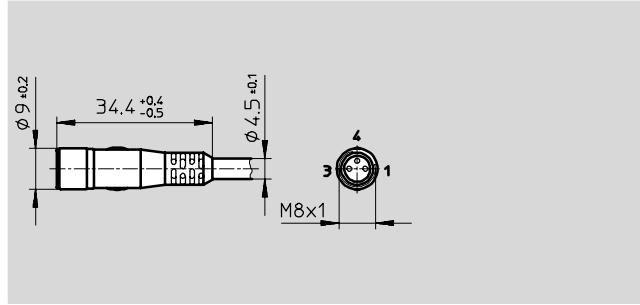
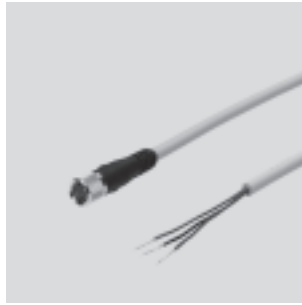
Accessories

FESTO

Plug socket with cable SIM

Push-in/screwed fitting
M8, 3-pin
straight socket without LED

Material:
Polyurethane

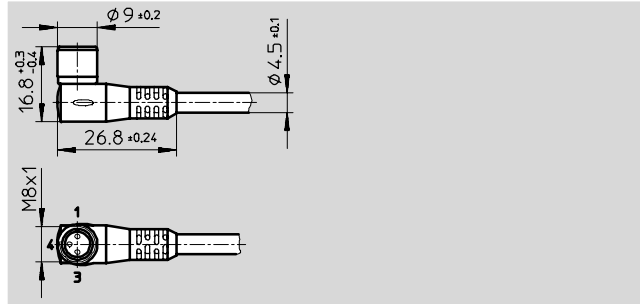


Ordering data		Technical data → Volume 4	
Length [m]	Part No.	Type	
2.5	159 420	SIM-M8-3GD-2,5-PU	
5	159 421	SIM-M8-3GD-5-PU	

Plug socket with cable SIM

Push-in/screwed fitting
M8, 3-pin
angled plug socket without LED

Material:
Polyurethane



Ordering data		Technical data → Volume 4	
Length [m]	Part No.	Type	
2.5	159 422	SIM-M8-3WD-2,5-PU	
5	159 423	SIM-M8-3WD-5-PU	