

Service unit FRC, FRCS

FESTO



Characteristics

At a glance

Filter, regulator and lubricator functions in a single unit.

- High flow rate and extremely efficient in removing contaminants
- Setting values are secured by locking the rotary knob
- Lockable rotary knob (optional)
- Two pressure gauge connections for variable installation

The following oils are recommended for Festo components (viscosity range to ISO 3448, ISO class VG 32, 32 mm²/s (= cSt) at 40 °C):

- Festo special oil OFSW-32 (see accessories)
- ARAL Vitam GF 32
- BP Energol HLP 32
- ESSO Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

Diagrams



The diagrams shown in this document are also available online. These can be used to display precise values.

Version

[D] D series, metal

Sturdy in full metal design for the specific requirements of the process automation industry

Pressure regulation range

Two pressure regulation ranges: 0.5...7 bar and 0.5...12 bar

Grade of filtration

Grade of filtration of 5 µm or 40 µm can be selected.

Pressure gauge

The filter regulator can be ordered with or without a pressure gauge. The interface has a thread of 1/4 NPT or 1/8 NPT.

Condensate drain

The following functions can be selected:

- Manual
- Fully automatic, normally closed

Type code

001	Series	
FRC	Service unit	

002	Pneumatic connection, inch	
1/8	Female thread NPT 1/8	
1/4	Female thread NPT 1/4	
3/8	Female thread NPT 3/8	
3/4	Female thread NPT 3/4	
1/2	Female thread NPT 1/2	
1	Female thread NPT 1	

003	Version	
D	D series, metal	

004	Pressure regulation range	
	0.5 ... 12 bar (0.05 ... 1.2 MPa)	
7	0.5 ... 7 bar (0.05 ... 0.7 MPa)	

005	Grade of filtration	
	40 µm	
5M	5 µm	

006	Pressure gauge	
	With pressure gauge	
0	Without pressure gauge	

007	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)	

008	Condensate drain	
A	Fully automatic	
	Manually rotating	

009	Thread type	
NPT	NPT thread	

Datasheet

Technical data – Mini		
Size	Mini	
Grade of filtration	5 µm	40 µm
Pneumatic connection, port 1	1/8 NPT, 1/4 NPT, 3/8 NPT	
Pneumatic connection, port 2	1/8 NPT, 1/4 NPT, 3/8 NPT	
Type of mounting	Either: In-line installation Via mounting bracket	Either: In-line installation Via mounting bracket With accessories
Mounting position	Vertical	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8-] Inert gases	Compressed air to ISO 8573-1:2010 [7:8-] Inert gases
Bowl guard	–	
Condensate drain	Fully automatic Manual, non-detenting	
Actuator lock	–	
Pressure regulation range	0.5 ... 12 bar	
Max. pressure hysteresis	0.2 bar	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	–	
Max. condensate volume	–	
Operating pressure ¹⁾	1 ... 16 bar	
Operating medium ²⁾	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases	
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	

1) With fully automatic condensate drain: 2 ... 12 bar

2) With fully automatic condensate drain: compressed air to ISO 8573-1:2010 [7:9-]

Size	Midi	
Grade of filtration	5 µm	40 µm
Pneumatic connection, port 2	3/8 NPT, 1/2 NPT	3/8 NPT, 1/2 NPT, 3/4 NPT
Type of mounting	Either: In-line installation Via mounting bracket	Either: In-line installation Via mounting bracket With accessories
Mounting position	Vertical	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8-] Inert gases	Compressed air to ISO 8573-1:2010 [7:8-] Inert gases
Bowl guard	–	
Condensate drain	Fully automatic Manual, non-detenting	
Actuator lock	–	
Pressure regulation range	0.5 ... 12 bar	
Max. pressure hysteresis	0.2 bar	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	–	
Max. condensate volume	–	
Operating pressure	1 ... 16 bar	
Operating medium	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases	
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	

Datasheet

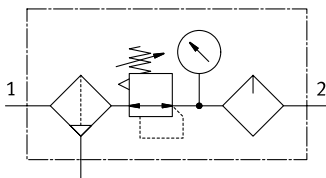
Technical data – Maxi

Size	Maxi	
Grade of filtration	5 µm	40 µm
Pneumatic connection, port 1	3/4 NPT, 1 NPT	
Pneumatic connection, port 2	3/4 NPT, 1 NPT	
Type of mounting	Either: In-line installation Via mounting bracket	
Mounting position	Vertical	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8-] Inert gases	Compressed air to ISO 8573-1:2010 [7:8-] Inert gases
Bowl guard	–	
Condensate drain	Fully automatic Manually rotating	
Actuator lock	–	
Pressure regulation range	0.5 ... 12 bar	
Max. pressure hysteresis	0.4 bar	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	–	
Max. condensate volume	–	
Operating pressure ¹⁾	1 ... 16 bar	
Operating medium ²⁾	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases Compressed air to ISO 8573-1:2010 [-:9-]
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	

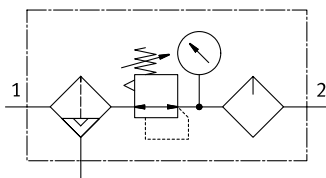
1) With fully automatic condensate drain: 2 ... 12 bar

2) With fully automatic condensate drain: compressed air to ISO 8573-1:2010 [7:9-]

Function (manual condensate drain, rotating, with pressure gauge)

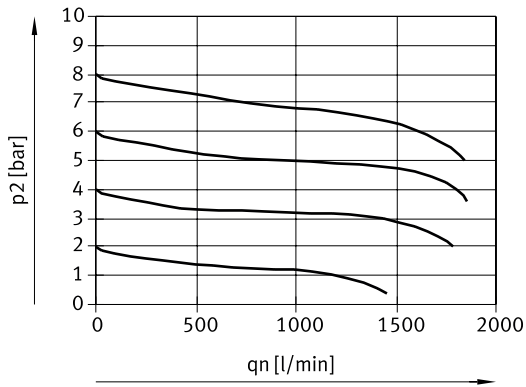


Function (fully automatic condensate drain, with pressure gauge)

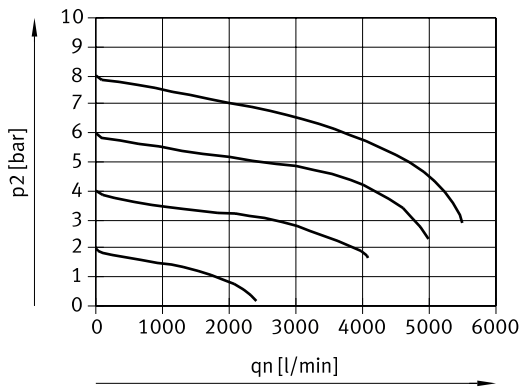


Datasheet

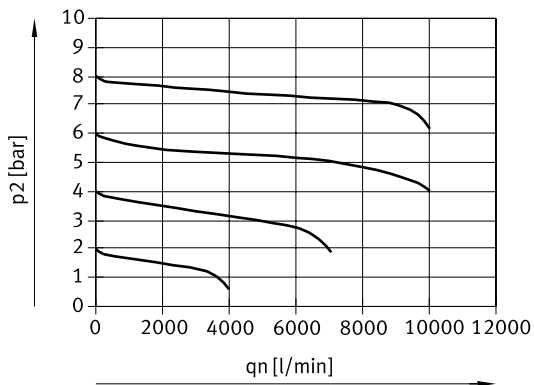
Standard flow rate q_n as a function of output pressure p_2 (FRC-1/4-D-MINI)



Standard flow rate q_n as a function of output pressure p_2 (FRC-1/2-D-MIDI)

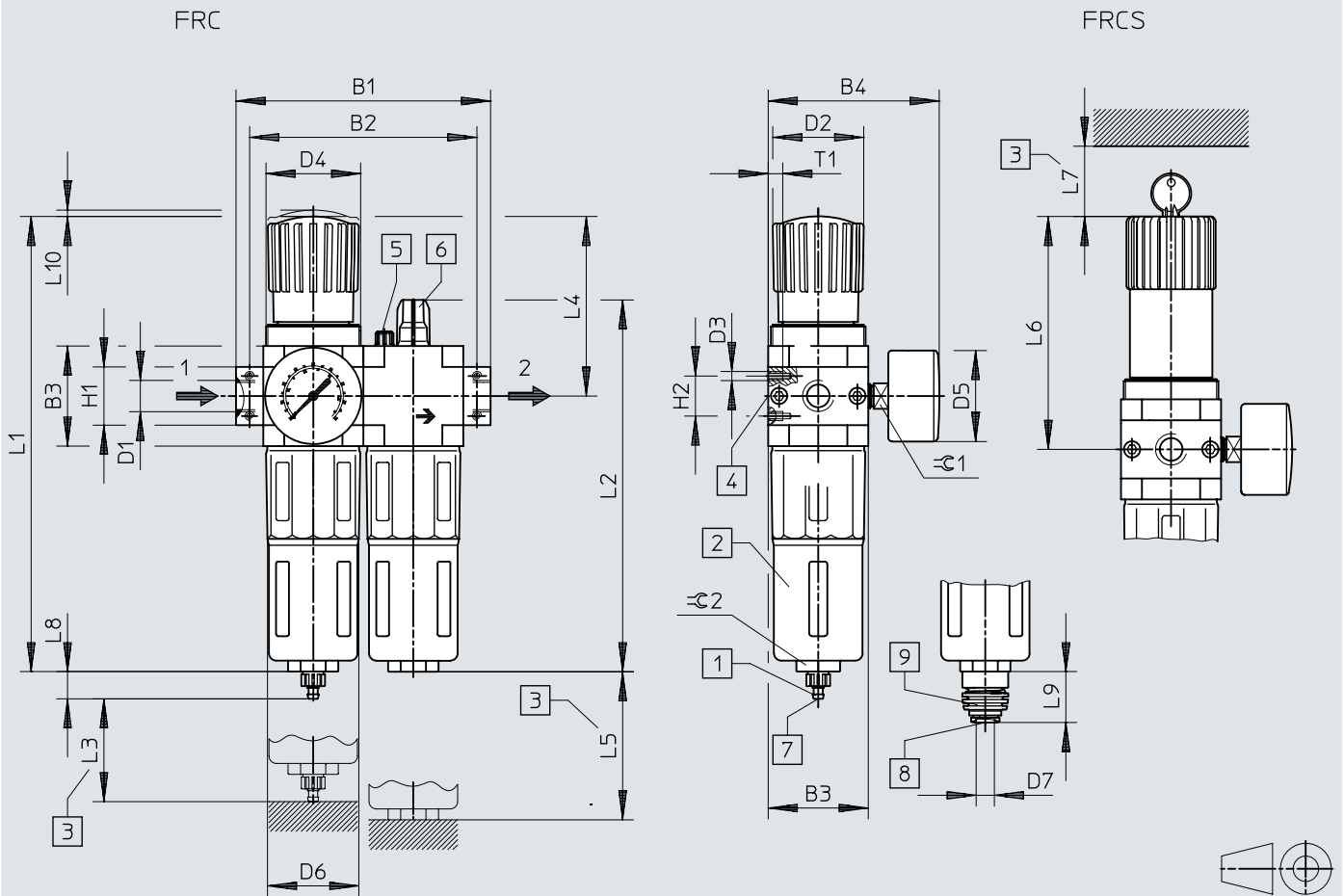


Standard flow rate q_n as a function of output pressure p_2 (FRC-1-D-MAXI)



Dimensions

Dimensions – Mini/Midi/Maxi

Download CAD data www.festo.com

- [1] Barbed connector for plastic tubing PUN(-H)-8x1.25
- [2] Metal bowl guard
- [3] Installation dimension
- [4] Second pressure gauge connection
- [5] Vent screw for oil reservoir
- [6] Oil adjusting screw
- [7] Manual condensate drain
- [8] Fully automatic condensate drain

Dimensions

	B1	B2	B3	B4	D1	D2 ∅	D3	D4	D5 ∅	D6 ∅
FRC-1/8-D-MINI	104	92	40	76	G1/8	31	M4	M36x1,5	39	38
FRC/FRCS-1/4-D-MINI					G1/4					
FRC-3/8-D-MINI	110	125	55	95	G3/8	50	M5	M52x1,5	39	52
FRC/FRCS-1/4-D-MIDI	140				G1/4					
FRC-3/8-D-MIDI					G3/8					
FRC/FRCS-1/2-D-MIDI					G1/2					
FRC-3/4-D-MIDI	162	146	66	106	G3/4	31	M5	M36x1,5	39	65
FRC/FRCS-1/2-D-MAXI					G1/2					
FRC-3/4-D-MAXI					G3/4					
FRC-1-D-MAXI	182	157			G1					

	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	T1	≈ 1	≈ 2
FRC-1/8-D-MINI	20	11	193	169	60	69	100	98	60	15	19	3	7	14	22
FRC/FRCS-1/4-D-MINI															
FRC-3/8-D-MINI	32	22	250	204	80	99	120	130	60	15	19	3	8	14	24
FRC/FRCS-1/4-D-MIDI															
FRC-3/8-D-MIDI															
FRC/FRCS-1/2-D-MIDI															
FRC-3/4-D-MIDI	32	22	252	228	90	82	150	111	60	15	19	3	8	14	24
FRC/FRCS-1/2-D-MAXI															
FRC-3/4-D-MAXI															
FRC-1-D-MAXI	40														

Ordering data

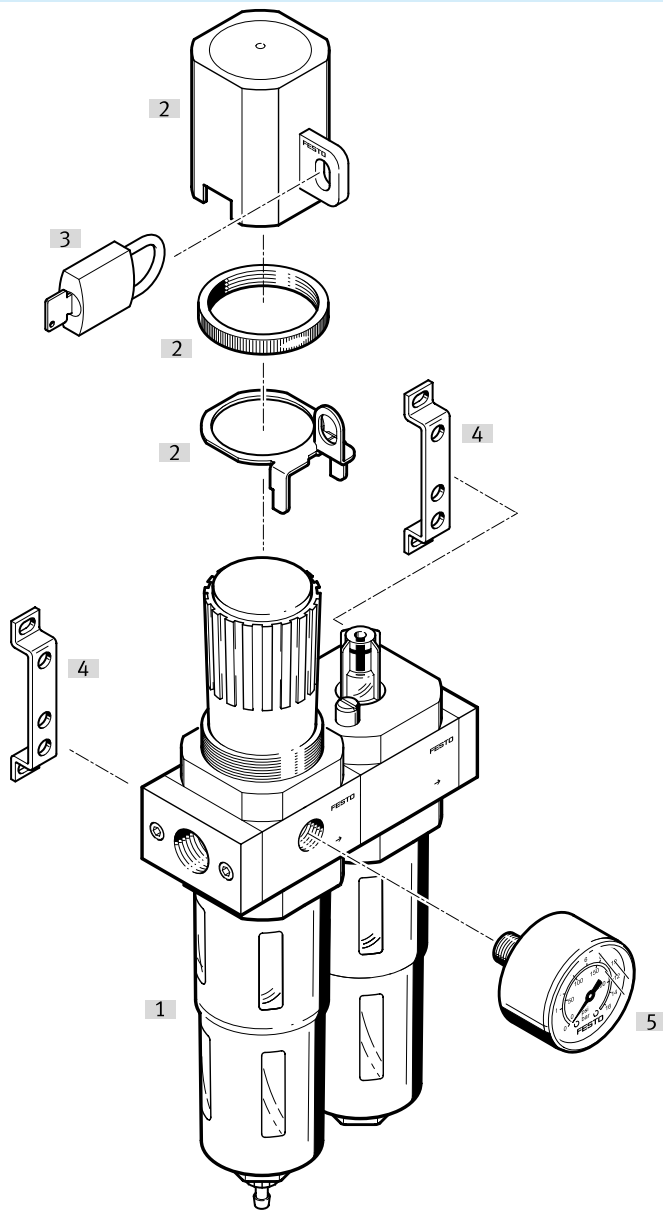
Ordering information – Mini							
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Pressure gauge	Product weight	Part no.	Type	
1/8 NPT	600 l/min	Manual, non-detenting	With pressure gauge	660 g	173832	FRC-1/8-D-5M-MINI-NPT	
		Fully automatic			173829	FRC-1/8-D-MINI-A-NPT	
	700 l/min	Manual, non-detenting	Without pressure gauge	600 g	173828	FRC-1/8-D-MINI-NPT	
		Fully automatic			173830	FRC-1/8-D-O-MINI-NPT	
1/4 NPT	850 l/min	Fully automatic	With pressure gauge	660 g	173841	FRC-1/4-D-5M-MINI-A-NPT	
		Manual, non-detenting			173840	FRC-1/4-D-5M-MINI-NPT	
	1,000 l/min	Fully automatic			173837	FRC-1/4-D-MINI-A-NPT	
		Manual, non-detenting			173836	FRC-1/4-D-MINI-NPT	
	1,300 l/min	Fully automatic			173843	FRC-1/4-D-7-MINI-A-NPT	
		Manual, non-detenting			173842	FRC-1/4-D-7-MINI-NPT	
	3/8 NPT	1,050 l/min	Fully automatic			173849	FRC-3/8-D-5M-MINI-A-NPT
			Manual, non-detenting			173848	FRC-3/8-D-5M-MINI-NPT
1,200 l/min		Fully automatic			173844	FRC-3/8-D-MINI-NPT	
		Manual, non-detenting			173851	FRC-3/8-D-7-MINI-A-NPT	
1,500 l/min		Fully automatic			173850	FRC-3/8-D-7-MINI-NPT	
		Manual, non-detenting					

Ordering information – Midi						
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Pressure gauge	Product weight	Part no.	Type
3/8 NPT	1,700 l/min	Manual, non-detenting	With pressure gauge	1,440 g	173856	FRC-3/8-D-5M-MIDI-NPT
		Fully automatic			173853	FRC-3/8-D-MIDI-A-NPT
	2,000 l/min	Manual, non-detenting			173858	FRC-3/8-D-7-MIDI-NPT
		Fully automatic			173852	FRC-3/8-D-MIDI-NPT
1/2 NPT	1,800 l/min	Fully automatic			173865	FRC-1/2-D-5M-MIDI-A-NPT
		Manual, non-detenting			173864	FRC-1/2-D-5M-MIDI-NPT
	2,600 l/min	Fully automatic			173861	FRC-1/2-D-MIDI-A-NPT
		Manual, non-detenting			173860	FRC-1/2-D-MIDI-NPT
	2,800 l/min	Fully automatic	Without pressure gauge	1,350 g	173862	FRC-1/2-D-O-MIDI-NPT
		Manual, non-detenting	With pressure gauge	1,440 g	173867	FRC-1/2-D-7-MIDI-A-NPT
3/4 NPT	2,600 l/min	Fully automatic			173869	FRC-3/4-D-MIDI-A-NPT
		Manual, non-detenting			173868	FRC-3/4-D-MIDI-NPT

Ordering data – Maxi						
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Pressure gauge	Product weight	Part no.	Type
3/4 NPT	7,000 l/min	Fully automatic	With pressure gauge	2,390 g	173881	FRC-3/4-D-5M-MAXI-A-NPT
					173877	FRC-3/4-D-MAXI-A-NPT
	8,300 l/min	Manually rotating	With pressure gauge	2,390 g	173879	FRC-3/4-D-O-MAXI-A-NPT
					173876	FRC-3/4-D-MAXI-NPT
	8,500 l/min	Fully automatic			173883	FRC-3/4-D-7-MAXI-A-NPT
		Manually rotating			173882	FRC-3/4-D-7-MAXI-NPT
1 NPT	7,200 l/min	Fully automatic		2,520 g	173888	FRC-1-D-5M-MAXI-NPT
	8,500 l/min	Fully automatic			173885	FRC-1-D-MAXI-A-NPT
		Manually rotating			173884	FRC-1-D-MAXI-NPT

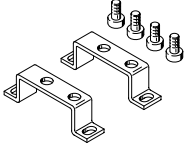
Peripherals

Service unit FRC

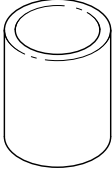


Accessories		→ Link
Type/order code	Description	
[1] Service unit FRC		frc-d
[2] Regulator lock LRVS		11
[3] Padlock LRVS-D		11
[4] Mounting bracket HFOE		11
[5] Pressure gauge MA		11

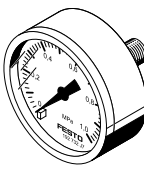
Accessories

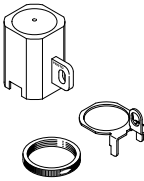
Mounting bracket HFOE-D-MIDI/MAXI					
	Short type code	Corrosion resistance class CRC ¹⁾	Part no.	Type	
	HFOE	2 - Moderate corrosion stress	159593	HFOE-D-MIDI/MAXI	

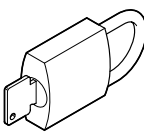
1) More information: www.festo.com/x/topic/crc

Filter cartridges, D series, metal					
	Size	Grade of filtration ¹⁾	Part no.	Type	
	Maxi	5 µm	159641	LFP-D-MAXI-5M	
	Midi		159594	LFP-D-MIDI-5M	
	Mini		159640	LFP-D-MINI-5M	

1) Grade of filtration 5 µm: colour blue
Grade of filtration 40 µm: colour white


Pressure gauge MA						
	Size	Pneumatic connection	Indicating range	Product weight	Part no.	Type
	Diameter 40 mm	G1/8	0 ... 10 bar	60 g	359874	MA-40-10-1/8
			0 ... 16 bar		345395	MA-40-16-1/8
	Diameter 50 mm	G1/4	0 ... 10 bar	70 g	359873	MA-50-10-1/4
			0 ... 16 bar		356759	MA-50-16-1/4

Regulator lock LRVS					
	Size	LABS (PWIS) conformity	Product weight	Part no.	Type
	Grid dimension 40 mm (without sub-bases)	VDMA24364-B1/B2-L	40 g	193781	LRVS-D-MINI
	Grid dimension 55 mm (without sub-bases)		60 g	193782	LRVS-D-MIDI
	Grid dimension 66 mm (without sub-bases)		36 g	193784	LRVS-D-DI-MAXI
			56 g	193783	LRVS-D-MAXI

Padlock LRVS-D					
	Corrosion resistance class CRC ¹⁾	LABS (PWIS) conformity	Product weight	Part no.	Type
	2 - Moderate corrosion stress	VDMA24364-B1/B2-L	120 g	193786	LRVS-D

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

Accessories

Special oil OPSW-32			
	Short type code	Part no.	Type
	OFSW	152811	OFSW-32