

## Filter regulator LFR, LFRS (MPA)

**FESTO**



## Characteristics

### At a glance

Space-saving design with filter and regulator in a single device.

- Two pressure gauge connections for variable installation
- Sizes Mini, Midi, Maxi

### Pneumatic connection

Individual fittings can be connected via connecting plates with female threads.

### Version

[D] D series, metal

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

### 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 G1/4 or G1/8.

### Function

Direct or pilot actuated pressure regulator with or without integrated return flow function.

The condensate is separated; then the compressed air is filtered. The output pressure is adjustable within the pressure range.

### Condensate drain

The following functions can be selected:

- Manual
- Fully automatic, normally closed

## Type code

<b>001</b>	<b>Series</b>	
<b>LFR</b>	Filter regulator	

<b>002</b>	<b>Pneumatic connection</b>	
<b>1/8</b>	Female thread G1/8	
<b>1/4</b>	Female thread G1/4	
<b>3/8</b>	Female thread G3/8	
<b>1/2</b>	Female thread G1/2	
<b>3/4</b>	Female thread G3/4	
<b>1</b>	Female thread G1	

<b>003</b>	<b>Version</b>	
<b>D</b>	D series, metal	

<b>004</b>	<b>Pressure regulation range</b>	
	0.5 ... 12 bar (0.05 ... 1.2 MPa)	
<b>7</b>	0.5 ... 7 bar (0.05 ... 0.7 MPa)	

<b>005</b>	<b>Grade of filtration</b>	
	40 µm	
<b>5M</b>	5 µm	

<b>006</b>	<b>Pressure gauge</b>	
	With pressure gauge	

<b>007</b>	<b>Function</b>	
	Directly actuated pressure regulator (MICRO, MINI, MIDI), pilot actuated pressure regulator (only MAXI)	
<b>DI</b>	Directly actuated pressure regulator with integrated return flow function (only MAXI)	

<b>008</b>	<b>Size</b>	
<b>MINI</b>	Grid dimension 40 mm (without connecting plates)	
<b>MIDI</b>	Grid dimension 55 mm (without connecting plates)	
<b>MAXI</b>	Grid dimension 66 mm (without connecting plates)	

<b>009</b>	<b>Condensate drain</b>	
	Manually rotating	
<b>A</b>	Fully automatic	

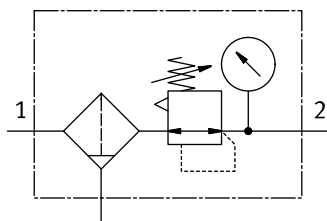
<b>010</b>	<b>Display unit</b>	
<b>MPA</b>	MPa	

## Datasheet

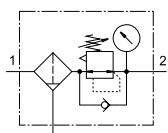
### General technical data

Size	Maxi			Midi				Mini		
Pneumatic connection, port 1	G1/2	G3/4	G1	G1/4	G3/8	G1/2	G3/4	G1/8	G1/4	G3/8
Pneumatic connection, port 2	G1/2	G3/4	G1	G1/4	G3/8	G1/2	G3/4	G1/8	G1/4	G3/8
Standard nominal flow rate (standardised to DIN 1343)	7,500 ... 9,400 l/min	7,600 ... 10,000 l/min	7,800 ... 11,000 l/min	1,600 ... 2,100 l/min	2,400 ... 3,200 l/min	2,600 ... 3,900 l/min	2,600 ... 4,000 l/min	650 ... 900 l/min	1,200 ... 1,500 l/min	1,350 ... 1,700 l/min
Max. pressure hysteresis	0.4 bar			0.2 bar						
Pressure regulation range	0.5 ... 12 bar									
Design	Filter regulator with pressure gauge									
Condensate drain	Fully automatic Manually rotating									
Type of mounting	Either, In-line installation, With accessories									
Mounting position	Vertical +/-5°									
Grade of filtration	5 µm, 40 µm									
Actuator lock	Rotary knob with detent									
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge									
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8:4] Compressed air to ISO 8573-1:2010 [7:8:4] Inert gases									
Max. condensate volume	80 cm <sup>3</sup>		43 ... 80 cm <sup>3</sup>		43 cm <sup>3</sup>			22 cm <sup>3</sup>		

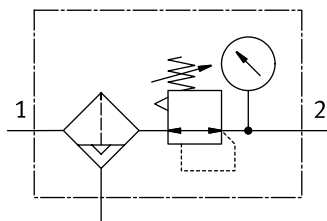
### Function LFR/LFRS (manual condensate drain, with pressure gauge)



### Function LFR/LFRS-...-DI-MAXI (manual condensate drain, with pressure gauge)



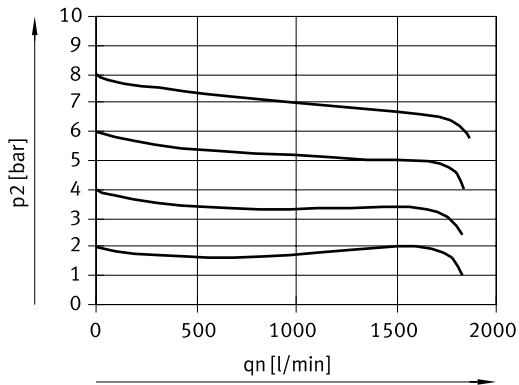
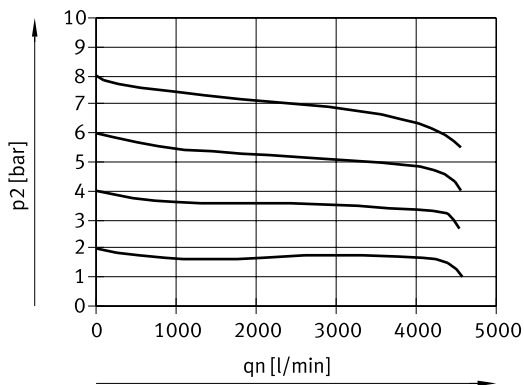
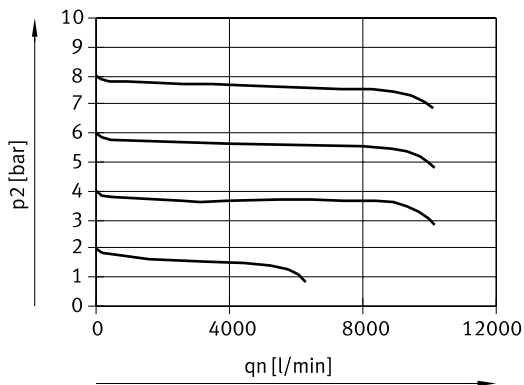
### Function LFR/LFRS (semi- or fully automatic condensate drain, with pressure gauge)



## Datasheet

## Materials

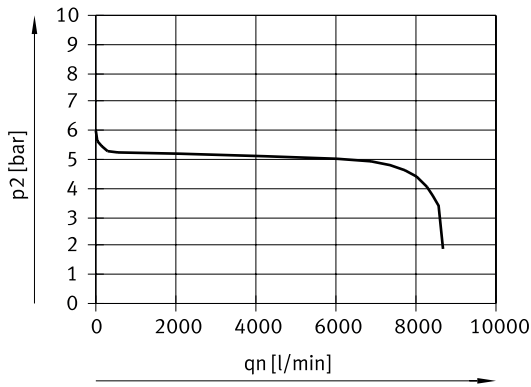
Material housing	Die-cast zinc
Material bowl	PC
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (LFR/LFRS-1/4-D-MINI)Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (LFR/LFRS-1/2-D-MIDI)Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (LFR/LFRS-1-D-MAXI)

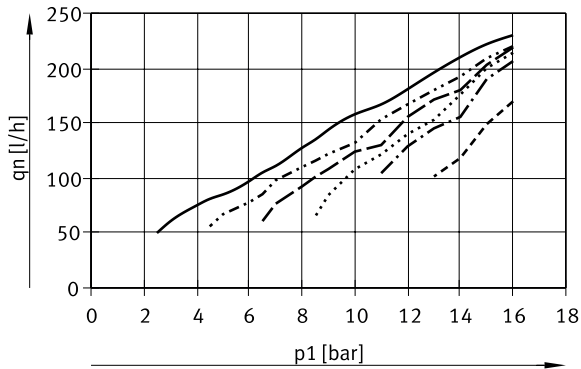
Datasheet

Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (LFR/LFRS-1-D-DI-MAXI)

Input pressure  $p_1 = 10$  bar



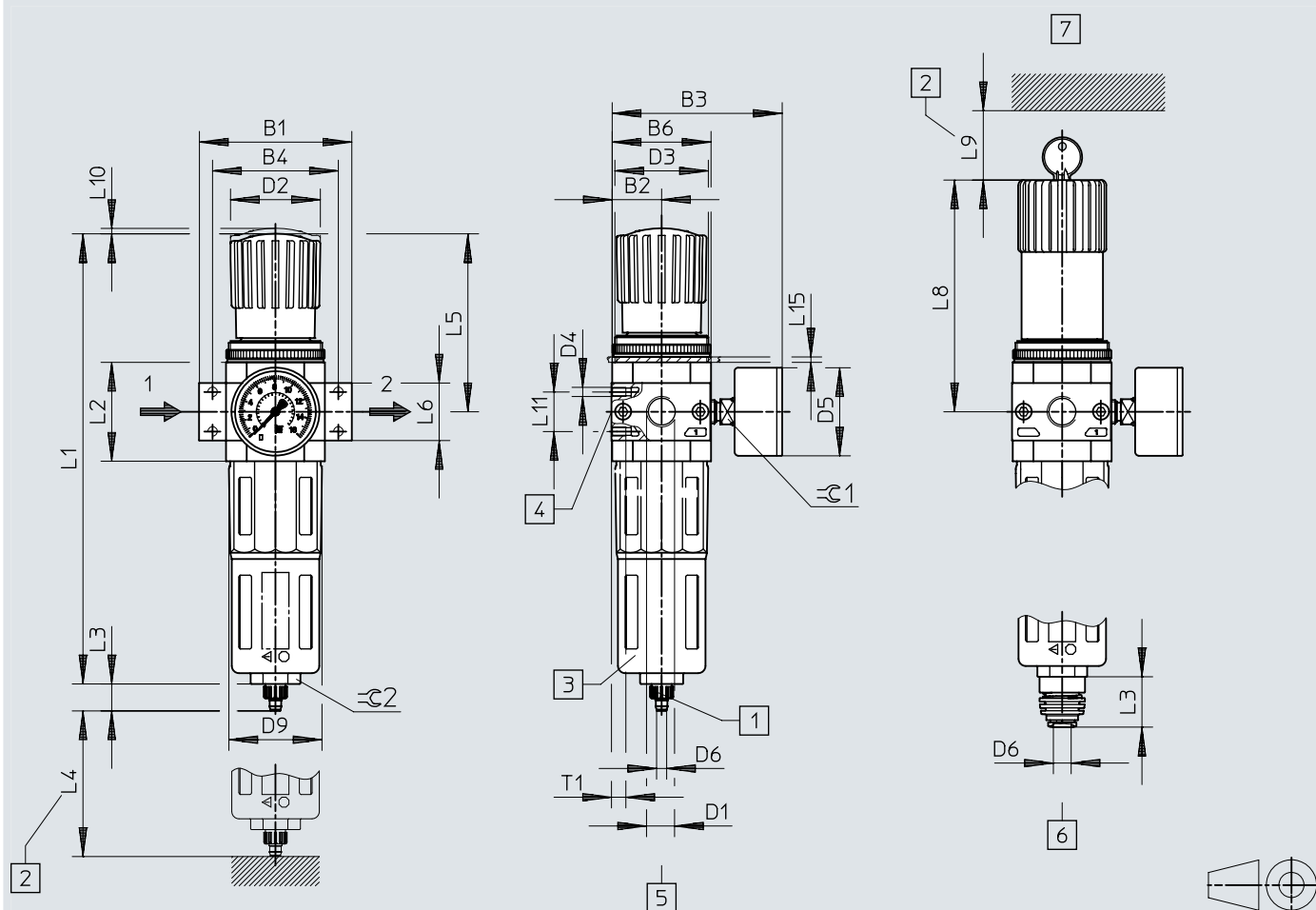
Internal air consumption  $q_n$  as a function of input pressure  $p_1$  (LFR/LFRS-...-MAXI)



- 2 bar
- · - 6 bar
- · - 6 bar
- · · 8 bar
- · - 10 bar
- · - 12 bar

## Dimensions

Dimensions – Filter regulators LFR/LFRS, Mini/Midi/Maxi

Download CAD data [www.festo.com](http://www.festo.com)

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

## Dimensions

	B1	B2	B3	B4	B6	D1	D2 ∅	D3	D4	D5 ∅	D6 ∅	D9 ∅		
LFR/LFRS-1/8-D-MINI (A)	64	20	76	~52	40	G1/8	31	M36x1.5	M4	39	5,6	38		
LFR/LFRS-1/4-D-MINI (A)						G1/4								
LFR/LFRS-3/8-D-MINI (A)						G3/8								
LFR/LFRS-1/4-D-MIDI (A)	~85	27,5	~94,5	~70	55	G1/4	50	M52x1.5	M5	39	5,6	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								
LFR/LFRS-1/2-D-MAXI (A)	96	33	106	80	66	G1/2	31	M36x1.5	M5	39	5,6	65		
LFR/LFRS-1/2-D-DI-MAXI (A)			105			49	M52x1.5							
LFR/LFRS-3/4-D-MAXI (A)			106			31	M36x1.5							
LFR/LFRS-3/4-D-DI-MAXI (A)			105			49	M52x1.5							
LFR/LFRS-1-D-MAXI (A)			116			106	91	G1					31	M36x1.5
LFR/LFRS-1-D-DI-MAXI (A)						105							49	M52x1.5

	L1	L2	L3	L4 min.	L5	L6	L8	L9	L10	L11 ±0,2	L15 max.	T1 min.	≈∅ 1	≈∅ 2	
LFR/LFRS-1/8-D-MINI (A)	192,9	40	15 (19) <sup>1)</sup>	60	~69	20	98	60	3	11	3	7	14	22	
LFR/LFRS-1/4-D-MINI (A)															
LFR/LFRS-3/8-D-MINI (A)															
LFR/LFRS-1/4-D-MIDI (A)	250	55 ±0,1	15 (19) <sup>1)</sup>	80	99	32 ±0,3	130	60	3	22	5	8	14	24	
LFR/LFRS-3/8-D-MIDI (A)															
LFR/LFRS-1/2-D-MIDI (A)															
LFR/LFRS-3/4-D-MIDI (A)															
LFR/LFRS-1/2-D-MAXI (A)	252	66	15 (19) <sup>1)</sup>	90	82	32	111	60	3	22	4	8	14	24	
LFR/LFRS-1/2-D-DI-MAXI (A)					~105	32	135		4						
LFR/LFRS-3/4-D-MAXI (A)					82	32	111		3						
LFR/LFRS-3/4-D-DI-MAXI (A)					~105	36	135		4						
LFR/LFRS-1-D-MAXI (A)					252	82	40		111						3
LFR/LFRS-1-D-DI-MAXI (A)					275	~105	41		135						4



## Ordering data

Pressure regulation range 0.5 ... 12 bar, rotary knob with latch, connecting plates with threaded connection, with pressure gauge, outer scale in MPa, inner scale in barv									
Size	Condensate drain	Pneumatic connection, port 1	Grade of filtration	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type		
Maxi	Fully automatic	G1/2	5 µm	7,500 l/min	1,370 g	8025567	LFR-1/2-D-5M-MAXI-A-MPA		
			40 µm	9,400 l/min		8002378	LFR-1/2-D-MAXI-A-MPA		
		G3/4	5 µm	7,600 l/min		8002330	LFR-3/4-D-5M-MAXI-A-MPA		
			40 µm	9,700 l/min		8002284	LFR-3/4-D-MAXI-A-MPA		
		G1	5 µm	8,000 l/min	1,470 g	8002331	LFR-1-D-5M-MAXI-A-MPA		
			40 µm	10,000 l/min		8002285	LFR-1-D-MAXI-A-MPA		
		Manually rotating	G1/2	5 µm	7,500 l/min	1,370 g	8002377	LFR-1/2-D-5M-MAXI-MPA	
				40 µm	9,400 l/min		8002376	LFR-1/2-D-MAXI-MPA	
	G3/4		5 µm	7,600 l/min	8002322		LFR-3/4-D-5M-MAXI-MPA		
			40 µm	9,700 l/min	8002280		LFR-3/4-D-MAXI-MPA		
	G1		5 µm	8,000 l/min	1,470 g	8002323	LFR-1-D-5M-MAXI-MPA		
			40 µm	10,000 l/min		8002281	LFR-1-D-MAXI-MPA		
	Midi		Fully automatic	G1/4	5 µm	1,600 l/min	900 g	8037020	LFR-1/4-D-5M-MIDI-A-MPA
					40 µm	2,000 l/min	920 g	8002374	LFR-1/4-D-MIDI-A-MPA
		G3/8		5 µm	2,400 l/min	900 g	8002327	LFR-3/8-D-5M-MIDI-A-MPA	
				40 µm	3,100 l/min	920 g	8002259	LFR-3/8-D-MIDI-A-MPA	
G1/2		5 µm		2,600 l/min	900 g	8002328	LFR-1/2-D-5M-MIDI-A-MPA		
		40 µm		3,400 l/min	920 g	8002261	LFR-1/2-D-MIDI-A-MPA		
G3/4		5 µm		2,600 l/min	900 g	8002329	LFR-3/4-D-5M-MIDI-A-MPA		
		40 µm		3,400 l/min	920 g	8002299	LFR-3/4-D-MIDI-A-MPA		
Manually rotating		G1/4		5 µm	1,600 l/min	900 g	8002373	LFR-1/4-D-5M-MIDI-MPA	
				40 µm	2,000 l/min	920 g	8002372	LFR-1/4-D-MIDI-MPA	
		G3/8		5 µm	2,400 l/min	900 g	8002319	LFR-3/8-D-5M-MIDI-MPA	
				40 µm	3,100 l/min	920 g	8002258	LFR-3/8-D-MIDI-MPA	
		G1/2	5 µm	2,600 l/min	900 g	8002320	LFR-1/2-D-5M-MIDI-MPA		
			40 µm	3,400 l/min	920 g	8002260	LFR-1/2-D-MIDI-MPA		
		G3/4	5 µm	2,600 l/min	900 g	8002321	LFR-3/4-D-5M-MIDI-MPA		
			40 µm	3,400 l/min	920 g	8002297	LFR-3/4-D-MIDI-MPA		
Mini		Fully automatic	G1/8	5 µm	650 l/min	460 g	8002324	LFR-1/8-D-5M-MINI-A-MPA	
				40 µm	750 l/min		8002282	LFR-1/8-D-MINI-A-MPA	
			G1/4	5 µm	1,200 l/min		8002325	LFR-1/4-D-5M-MINI-A-MPA	
				40 µm	1,400 l/min		8002283	LFR-1/4-D-MINI-A-MPA	
	G3/8		5 µm	1,350 l/min	8002326	LFR-3/8-D-5M-MINI-A-MPA			
			40 µm	1,600 l/min	8002298	LFR-3/8-D-MINI-A-MPA			
	Manually rotating		G1/8	5 µm	650 l/min	8002316	LFR-1/8-D-5M-MINI-MPA		
				40 µm	750 l/min	8002278	LFR-1/8-D-MINI-MPA		
		G1/4	5 µm	1,200 l/min	8002317	LFR-1/4-D-5M-MINI-MPA			
			40 µm	1,400 l/min	8002279	LFR-1/4-D-MINI-MPA			
		G3/8	5 µm	1,350 l/min	8002318	LFR-3/8-D-5M-MINI-MPA			
			40 µm	1,600 l/min	8002296	LFR-3/8-D-MINI-MPA			

Pressure regulation range 0.5 ... 7 bar, rotary knob with latch, connecting plates with threaded connection, with pressure gauge, outer scale in MPa, inner scale in bar							
Size	Condensate drain	Pneumatic connection, port 1	Grade of filtration	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type
Maxi	Fully automatic	G3/4	40 µm	10,000 l/min	1,370 g	8002314	LFR-3/4-D-7-MAXI-A-MPA
		G1		11,000 l/min	1,470 g	8002315	LFR-1-D-7-MAXI-A-MPA
	Manually rotating	G3/4		10,000 l/min	1,370 g	8002306	LFR-3/4-D-7-MAXI-MPA
		G1		11,000 l/min	1,470 g	8002307	LFR-1-D-7-MAXI-MPA
Midi	Fully automatic	G1/4	2,100 l/min	900 g	8002375	LFR-1/4-D-7-MIDI-A-MPA	
		G3/8	3,200 l/min		8002311	LFR-3/8-D-7-MIDI-A-MPA	
		G1/2	3,900 l/min		8002312	LFR-1/2-D-7-MIDI-A-MPA	
		G3/4	4,000 l/min		8002313	LFR-3/4-D-7-MIDI-A-MPA	
	Manually rotating	G3/8	3,200 l/min	8002303	LFR-3/8-D-7-MIDI-MPA		
		G1/2	3,900 l/min	8002304	LFR-1/2-D-7-MIDI-MPA		
		G3/4	4,000 l/min	8002305	LFR-3/4-D-7-MIDI-MPA		
			900 l/min	460 g	8002308	LFR-1/8-D-7-MINI-A-MPA	

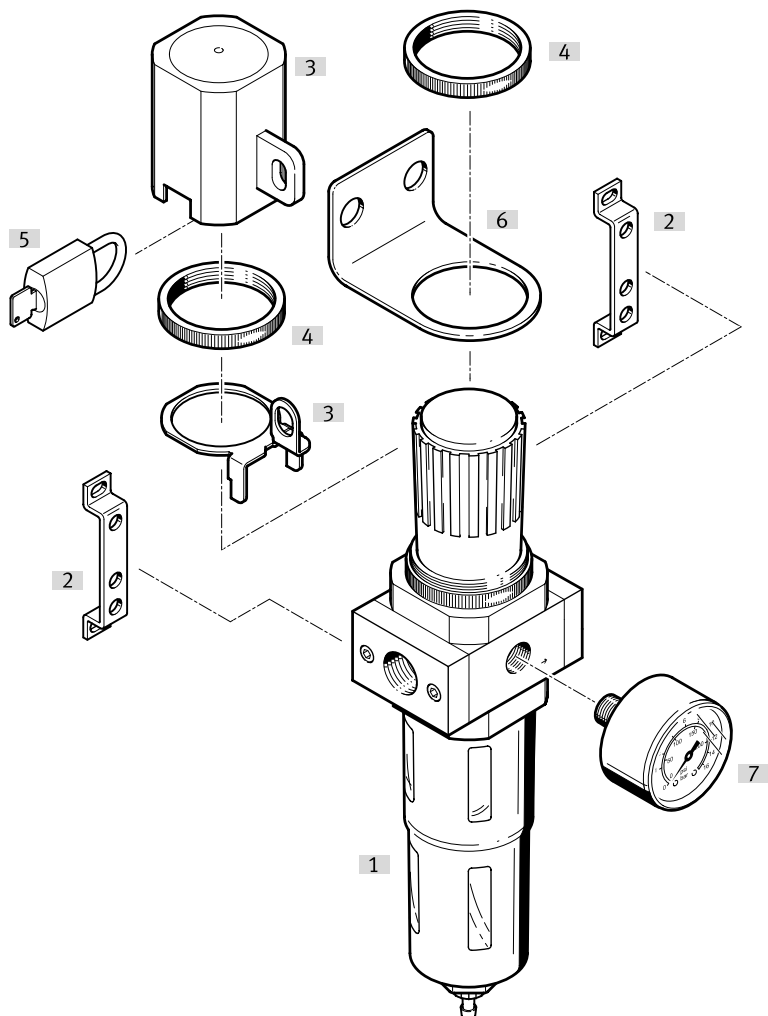
## Ordering data

Pressure regulation range 0.5 ... 7 bar, rotary knob with latch, connecting plates with threaded connection, with pressure gauge, outer scale in MPa, inner scale in bar							
Size	Condensate drain	Pneumatic connection, port 1	Grade of filtration	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type
Mini	Fully automatic	G1/4	40 µm	1,500 l/min	460 g	8002309	LFR-1/4-D-7-MINI-A-MPA
		G3/8		1,700 l/min		8002310	LFR-3/8-D-7-MINI-A-MPA
	Manually rotating	G1/8		900 l/min		8002300	LFR-1/8-D-7-MINI-MPA
		G1/4		1,500 l/min		8002301	LFR-1/4-D-7-MINI-MPA
		G3/8		1,700 l/min		8002302	LFR-3/8-D-7-MINI-MPA

Pressure regulation range 0.5 ... 7 bar, directly actuated diaphragm regulator with integrated reverse flow function, rotary knob with latch, connecting plates with threaded connection, with pressure gauge, outer scale in MPa, inner scale in bar							
Size	Condensate drain	Pneumatic connection, port 1	Grade of filtration	Standard nominal flow rate (standardised to DIN 1343)	Product weight	Part no.	Type
Maxi	Manually rotating	G1	40 µm	7,800 l/min	1,670 g	8002399	LFR-1-D-7-DI-MAXI-MPA

## Peripherals

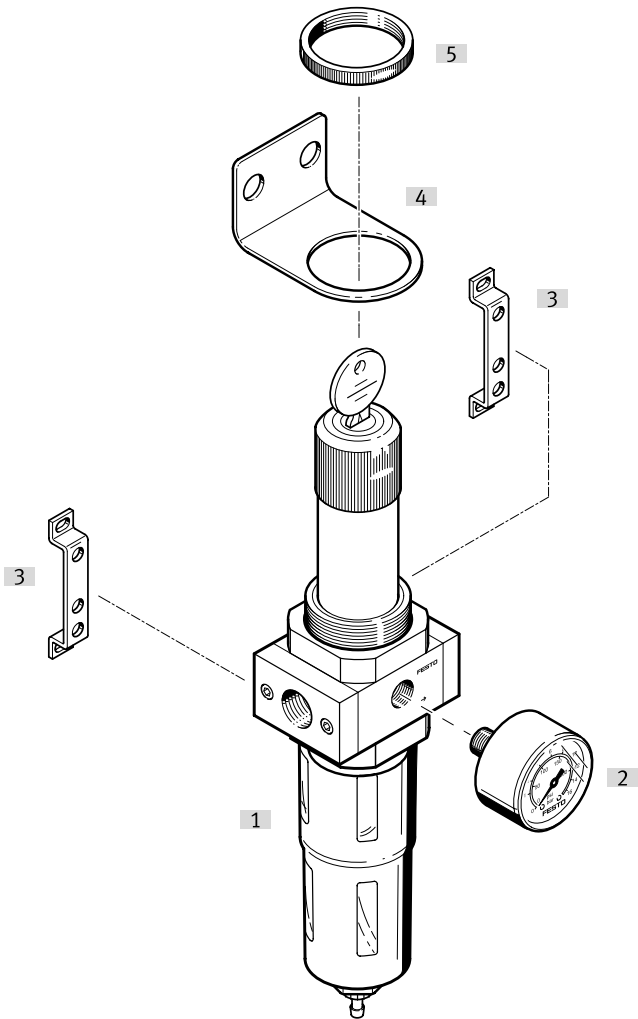
## Filter regulator LFR



Accessories		→ Link
Type/order code	Description	
[1] Filter regulator LFR		<a href="#">lfr-d</a>
[2] Mounting bracket HFOE		<a href="#">15</a>
[3] Regulator lock LRVS		<a href="#">16</a>
[4] Knurled nut HMR	Included in the scope of delivery	<a href="#">lfr-d</a>
[5] Padlock LRVS-D		<a href="#">16</a>
[6] Mounting bracket HR-D		<a href="#">15</a>
[7] Pressure gauge MA		<a href="#">15</a>

## Peripherals

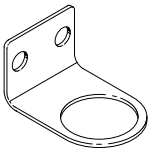
### Filter regulator LFRS (lockable)



Accessories		→ Link
Type/order code	Description	
[1] Filter regulator LFRS		<a href="#">lfrs-d</a>
[2] Pressure gauge MA		13
[3] Mounting bracket HFOE		13
[4] Mounting bracket HR-D		13
[5] Knurled nut HMR	Included in the scope of delivery	<a href="#">lfrs-d</a>

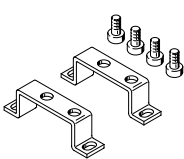
## Accessories

## Mounting bracket HR-D-R3

	Material bracket	Corrosion resistance class CRC <sup>1)</sup>	Product weight	Part no.	Type
		1 - Low corrosion stress		164936	HR-D-MINI
		2 - Moderate corrosion stress		162804	HR-D-MIDI
				162805	HR-D-MAXI
				193802	HR-D-DI-MAXI
	Steel	3 - high corrosion stress	73 g	4650310	HR-D-R3

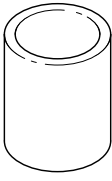
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Mounting bracket HFOE-D-MIDI/MAXI

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

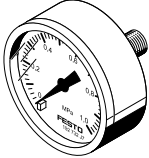
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Filter cartridges, D series, metal

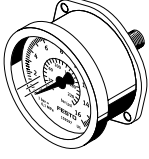
	Size	Grade of filtration <sup>1)</sup>	Part no.	Type
	Maxi	5 µm	159641	LFP-D-MAXI-5M
	Midi		159594	LFP-D-MIDI-5M
	Mini		159640	LFP-D-MINI-5M

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

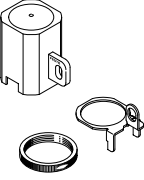
## Pressure gauge MA

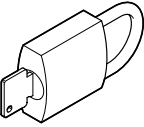
	Pneumatic connection	Indicating range	Conforms to standard	Product weight	Part no.	Type
	G1/8	0 ... 10 bar	EN 837-1	60 g	359874	MA-40-10-1/8
		0 ... 16 bar			345395	MA-40-16-1/8
	G1/4	0 ... 10 bar		70 g	183900	MA-40-10-G1/4-EN
		0 ... 16 bar			359873	MA-50-10-1/4
	R1/8	0 ... 10 bar		60 g	356759	MA-50-16-1/4
		0 ... 16 bar			162835	MA-40-10-1/8-EN

## Flanged pressure gauge FMA

	Size	Pneumatic connection	Indicating range	Product weight	Part no.	Type
	Diameter 40 mm	G1/4	0 ... 10 bar	80 g	159596	FMA-40-10-1/4-EN
			0 ... 16 bar		159597	FMA-40-16-1/4-EN
	Diameter 50 mm		0 ... 10 bar	100 g	159599	FMA-50-10-1/4-EN
			0 ... 16 bar		159600	FMA-50-16-1/4-EN

## Accessories

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	<b>193781</b>	<b>LRVS-D-MINI</b>
	Grid dimension 55 mm (without sub-bases)		60 g	<b>193782</b>	<b>LRVS-D-MIDI</b>
	Grid dimension 66 mm (without sub-bases)		36 g	<b>193784</b>	<b>LRVS-D-DI-MAXI</b>
			56 g	<b>193783</b>	<b>LRVS-D-MAXI</b>

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

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)