

# Filter regulator LFR-DB

**FESTO**



## Characteristics

### At a glance

- Space-saving design with filter and regulator in a single device.
- Good particle separation and high flow rate
- Good regulation characteristics with minimal hysteresis
- Optionally with manual or semi-automatic condensate drain.
- Setting values are secured by locking the rotary knob
- Choice of filter inserts 5  $\mu\text{m}$  or 40  $\mu\text{m}$

### Pressure gauge

[ ] With pressure gauge [0] Without pressure gauge



## Type code

001	Series	
LFR	Filter regulator	
002	Pneumatic connection	
1/4	Female thread G1/4	
003	Version	
DB	D series, polymer	
004	Pressure regulation range	
7	0.5 ... 7 bar (0.05 ... 0.7 MPa)	

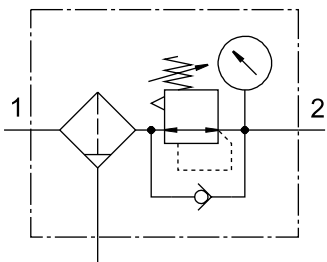
005	Grade of filtration	
	40 µm	
5M	5 µm	
006	Pressure gauge	
	With pressure gauge	
0	Without pressure gauge	
007	Size	
MINI	Grid dimension 40 mm (without connecting plates)	
008	Condensate drain	
H	Semi-automatic	
	Manually rotating	

## Datasheet

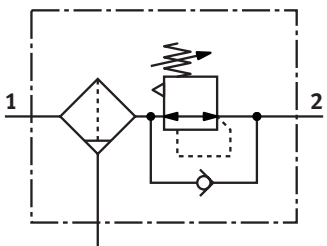
### General technical data

Design	Filter regulator with pressure gauge	Filter regulator without pressure gauge
Size	Mini	
Pneumatic connection, port 1	G1/4	
Pneumatic connection, port 2	G1/4	
Pressure gauge connection	G1/8	
Max. pressure hysteresis	0.5 bar	
Pressure regulation range	0.5 ... 7 bar	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge	Prepared for G1/8
Condensate drain	Manually rotating Semi-automatic	
Controller function	With secondary venting, With return flow function	
Type of mounting	Either: In-line installation With through-hole Via mounting bracket	
Mounting position	Vertical +/-5°	
Grade of filtration	5 µm, 40 µm	
Actuator lock	Rotary knob with detent	
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	

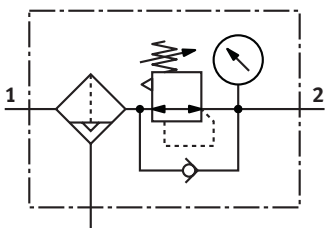
### Function LFR (manual condensate drain, with pressure gauge)



### Function LFR (manual condensate drain, without pressure gauge)

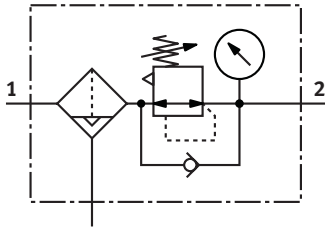


### Function LFR (condensate drain semi-automatic, with pressure gauge)



## Datasheet

### Function LFR (semi-automatic condensate drain, without pressure gauge)



### Standard nominal flow rate $q_{nN}$

Grade of filtration	5 $\mu\text{m}$	40 $\mu\text{m}$
Standard nominal flow rate (standardised to DIN 1343)	$\geq 1000$ l/min	$\geq 1200$ l/min

### Operating and environmental conditions

Grade of filtration	5	40		
Condensate drain	Manually rotating	Semi-automatic	Manually rotating	Semi-automatic
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8:4], Inert gases		Compressed air to ISO 8573-1:2010 [7:8:4], Inert gases	
Operating pressure	1.5 ... 10 bar			
Operating medium	Compressed air to ISO 8573-1:2010 [-:9:-] Inert gases			
Ambient temperature	-5 ... 50°C			
Media temperature	-5 ... 50°C			
Corrosion resistance class CRC <sup>1)</sup>	1 - Low corrosion stress			

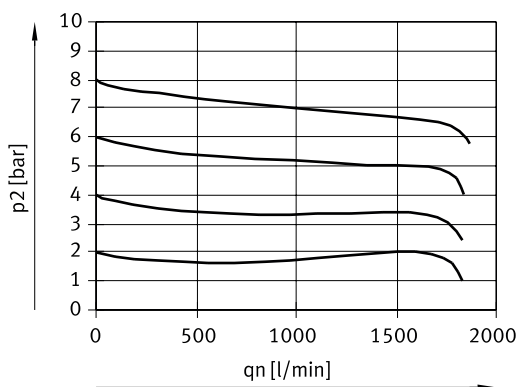
1) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts in direct contact with a normal industrial environment, with primarily functional surface requirements.

### Materials

Material housing	PA-reinforced
Material bowl	PC
Material rotary knob	POM
Material seals	NBR
Material filter	PE
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B1/B2-L

### Normal flow rate $q_n$ as a function of the output pressure $p_2$ (grade of filtration 5 $\mu\text{m}$ )

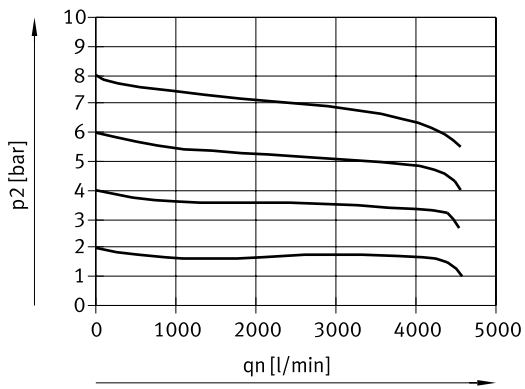


Input pressure  $p_1 = 10$  bar

## Datasheet

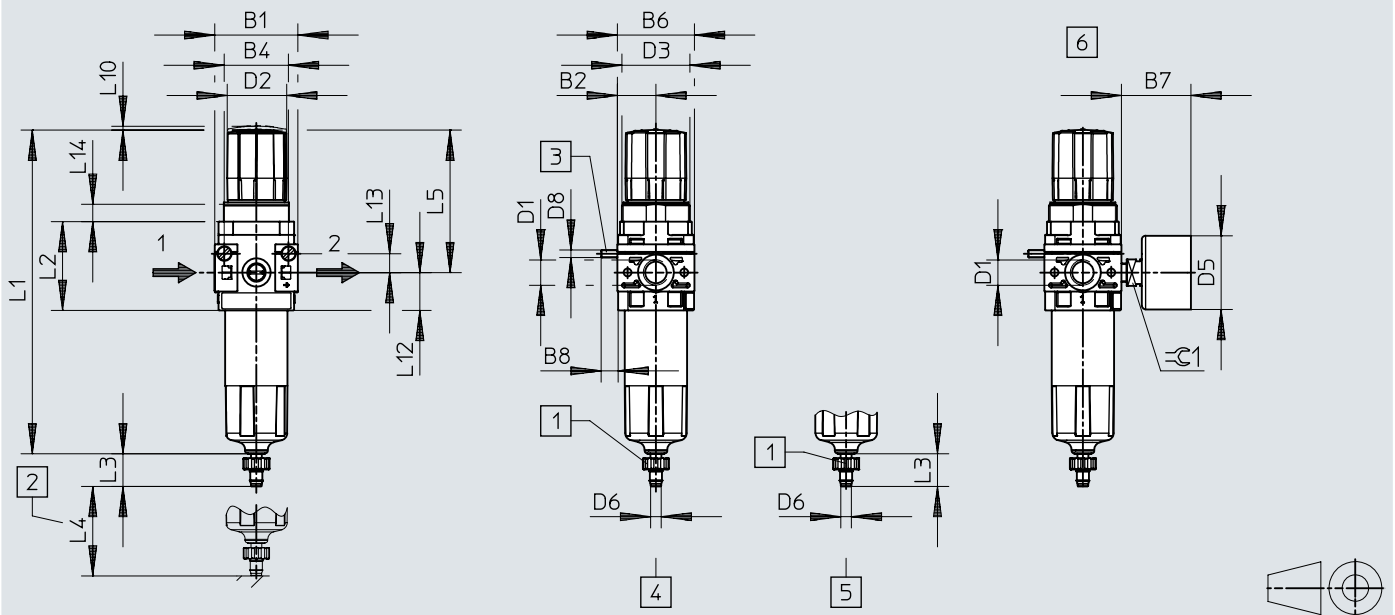
### Normal flow rate $q_n$ as a function of the output pressure $p_2$ (grade of filtration 40 $\mu\text{m}$ )

Input pressure  $p_1 = 10 \text{ bar}$



## Dimensions

## Dimensions – Filter control valve LFR-DB

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

- [1] Barbed connector for plastic tubing PUN(-H)-8x1.25  
 [2] Installation dimension  
 [3] Socket head screw for wall mounting (2 included in the scope of delivery)  
 [4] Manual condensate drain  
 [5] Semi-automatic condensate drain  
 [6] With pressure gauge


	B1	B2	B4	B6	B7 max.	B8	D1	D2 ∅	D3	D5 ∅	D6 ∅	D8
LFR-1/4-DB	44	20,5	34	41	37	9	G1/4	32	M36x1.5	39	5,6	M4


	L1	L2	L3	L4 min.	L5	L10	L12	L13	L14	⊕ 1
LFR-1/4-DB	171,7	47	17,3	60	76	2	20	10	9	14

## Ordering data

### Ordering data – without pressure gauge

	Size	Condensate drain	Pneumatic connection, port 1	Grade of filtration	Product weight	Part no.	Type
	Mini	Manually rotating	G1/4	5 µm	200 g	537644	LFR-1/4-DB-7-5M-O-MINI
				40 µm		537647	LFR-1/4-DB-7-O-MINI
		Semi-automatic		5 µm		537646	LFR-1/4-DB-7-5M-O-MINI-H
				40 µm		537645	LFR-1/4-DB-7-O-MINI-H

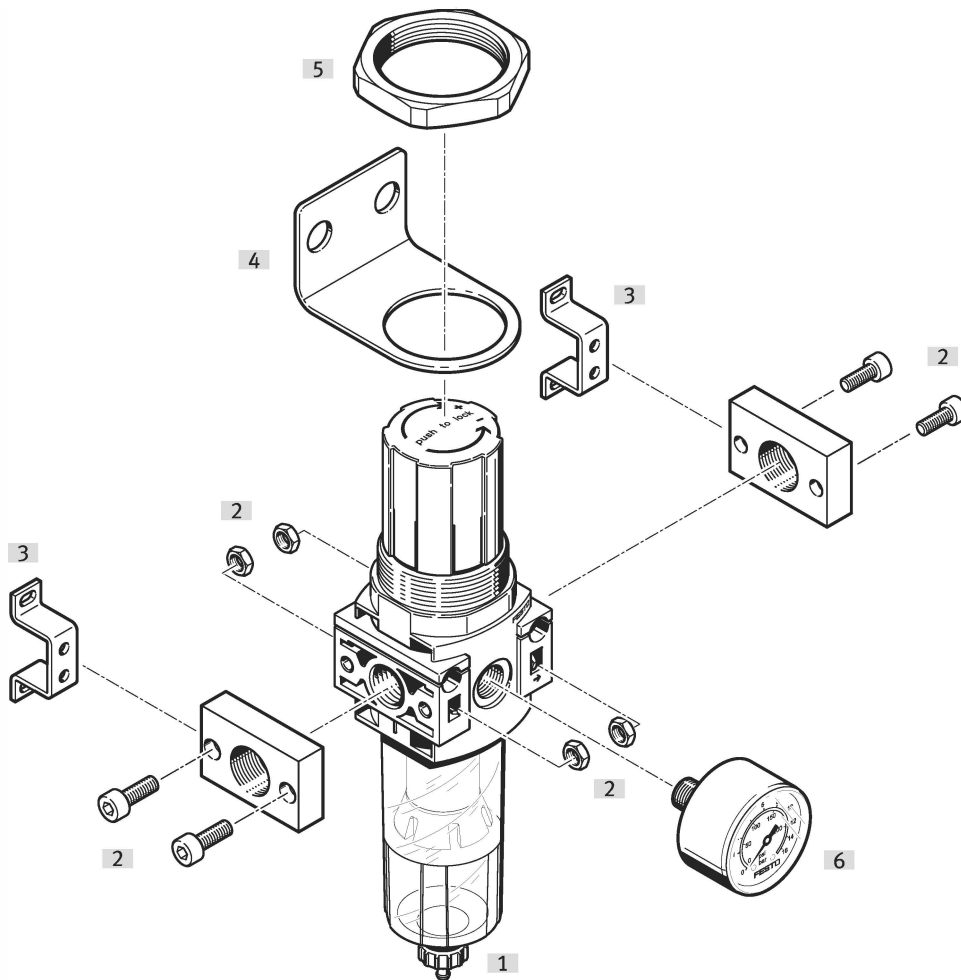
### Ordering data – with pressure gauge

	Size	Condensate drain	Pneumatic connection, port 1	Grade of filtration	Product weight	Part no.	Type
	Mini	Manually rotating	G1/4	5 µm	200 g	539689	LFR-1/4-DB-7-5M-MINI
				40 µm		539685	LFR-1/4-DB-7-MINI
		Semi-automatic		5 µm		539690	LFR-1/4-DB-7-5M-MINI-H
				40 µm		539686	LFR-1/4-DB-7-MINI-H



## Peripherals

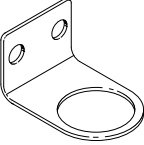
## Filter regulator LFR



Accessories		→ Link
Type/order code	Description	
[1]	Filter regulator LFR	<a href="#">lfr-d</a>
[2]	Connection kit PBL	10
[3]	Mounting bracket HFOE	10
[4]	Mounting bracket HR-D	10
[5]	Knurled nut HMR	Included in the scope of delivery <a href="#">lfr-d</a>
[6]	Pressure gauge MA	11

## Accessories

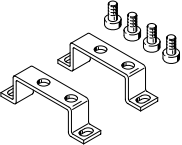
### Mounting bracket HR-D-R3

	Material bracket	Corrosion resistance class CRC <sup>1)</sup>	Product weight	Part no.	Type
	Steel	3 - high corrosion stress	73 g	<b>4650310</b>	<b>HR-D-R3</b>

1) Corrosion resistance class CRC 3 to Festo standard FN 940070

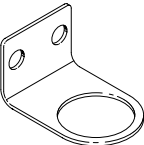
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional surface requirements that are in direct contact with a normal industrial environment.

### Mounting bracket HFOE-D-MIDI/MAXI

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

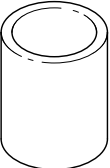
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Connection kit PBL

	Short type code	Material sub-base	Corrosion resistance class CRC <sup>1)</sup>	Part no.	Type
	PBL	Die-cast zinc	1 - Low corrosion stress	<b>542789</b>	<b>PBL-3/8-DB-MINI</b>
				<b>542788</b>	<b>PBL-1/4-DB-MINI</b>
				<b>542787</b>	<b>PBL-1/8-DB-MINI</b>

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

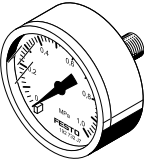
### Filter cartridges, D series, polymer

	Size	Grade of filtration <sup>1)</sup>	Part no.	Type
	4	40 µm	★ <b>534502</b>	<b>MS4-LFP-E</b>

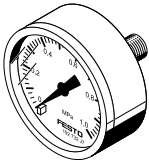
1) Grade of filtration 5 µm: colour blue

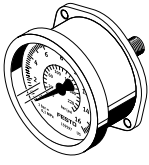
Grade of filtration 40 µm: colour white

### 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	<b>359874</b>	<b>MA-40-10-1/8</b>

## Accessories

Pressure gauge MA						
	Pneumatic connection	Indicating range	Conforms to standard	Product weight	Part no.	Type
	G1/8	0 ... 16 bar	EN 837-1	60 g	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
		0 ... 16 bar			356759	MA-50-16-1/4
	R1/8	0 ... 10 bar	60 g	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