

## Service unit combination MSB6N-FRC

**FESTO**



## Characteristics

### At a glance

Combination of filter regulator and lubricator.

- Grid dimension: 62 mm
- High flow rate and extremely efficient in removing contaminants
- Good regulation characteristics with minimal pressure hysteresis
- Setting values are secured by locking the rotary knob
- Lockable rotary knob
- Two pressure regulation ranges: 4.4 ... 103 psi and 7.4 ... 176 psi
- Optionally with manual or fully automatic condensate drain
- Choice of filter inserts 5 µm or 40 µm

### Engineering tools

[Link](#)  [engineering tools](#)



A selection tool for sizing a suitable service unit component and the correct air purity class can be found under Engineering Tools.

## Type code

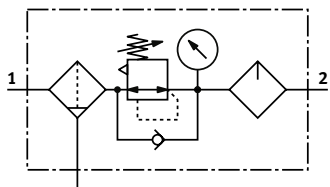
001	Series	
<b>MSB</b>	Service unit component MS series	
002	Size	
<b>6</b>	Grid dimension 62 mm	
003	Thread type	
<b>N</b>	NPT thread	
004	Pneumatic connection, inch	
<b>1/4</b>	Female thread NPT 1/4	
<b>3/8</b>	Female thread NPT 3/8	
<b>1/2</b>	Female thread NPT 1/2	
005	Function	
<b>FRC</b>	Service unit combination	

006	Service unit component equipment	
<b>J1</b>	Filter regulator, 0.5 ... 12 bar, 40 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
<b>J2</b>	Filter regulator, 0.5 ... 12 bar, 40 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
<b>J3</b>	Filter regulator, 0.5 ... 12 bar, 5 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
<b>J4</b>	Filter regulator, 0.5 ... 12 bar, 5 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
<b>J5</b>	Filter regulator, 0.3 ... 7 bar, 40 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
<b>J6</b>	Filter regulator, 0.3 ... 7 bar, 40 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
<b>J7</b>	Filter regulator, 0.3 ... 7 bar, 5 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
<b>J8</b>	Filter regulator, 0.3 ... 7 bar, 5 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
<b>J9</b>	Filter regulator, 0.5 ... 12 bar, 5 µm, metal bowl with manual condensate drain, lockable rotary knob	
<b>J10</b>	Filter regulator, 0.5 ... 12 bar, 5 µm, metal bowl with fully automatic condensate drain, lockable rotary knob	
<b>J11</b>	Filter regulator, 0.5 ... 12 bar, 40 µm, metal bowl with manual condensate drain, lockable rotary knob	
<b>J12</b>	Filter regulator, 0.5 ... 12 bar, 40 µm, metal bowl with fully automatic condensate drain, lockable rotary knob	
<b>M1</b>	Lubricator, plastic bowl with plastic bowl guard	
<b>M2</b>	Lubricator, metal bowl	
007	Flow direction	
	Flow direction from left to right	

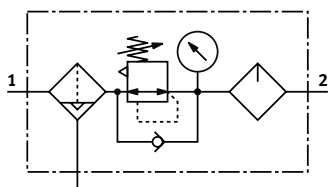
## Datasheet

General technical data			
Grade of filtration	5	40	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:4:-]		Compressed air to ISO 8573-1:2010 [7:4:-]
Pneumatic connection, port 1	1/4 NPT, 3/8 NPT, 1/2 NPT	3/8 NPT	1/4 NPT, 3/8 NPT, 1/2 NPT
Pneumatic connection, port 2	1/4 NPT, 3/8 NPT, 1/2 NPT	3/8 NPT	1/4 NPT, 3/8 NPT, 1/2 NPT
Design	Filter regulator with pressure gauge, Proportional standard mist lubricator		
Controller function	Output pressure constant, Via primary pressure compensation, With secondary venting, With return flow function		
Type of mounting	With accessories		
Mounting position	Vertical +/-5°		
Bowl guard	Plastic bowl guard Integrated as metal bowl	Integrated as metal bowl	Plastic bowl guard Integrated as metal bowl
Condensate drain	Fully automatic Manually rotating	Fully automatic	Fully automatic Manually rotating
Actuator lock	Rotary knob with integrated lock		
Pressure regulation range	0.3 ... 12 bar	0.5 ... 12 bar	0.3 ... 12 bar
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge		

### Function (with manual condensate drain)



### Function (with fully automatic condensate drain)



### Standard nominal flow rate (measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar)

Pneumatic connection, port 1	1/4 NPT				3/8 NPT				1/2 NPT			
	5 μm		40 μm		5 μm		40 μm		5 μm		40 μm	
Pressure regulation range	0.5 ... 12 bar	0.3 ... 7 bar	0.5 ... 12 bar	0.3 ... 7 bar	0.5 ... 12 bar	0.3 ... 7 bar	0.5 ... 12 bar	0.3 ... 7 bar	0.5 ... 12 bar	0.3 ... 7 bar	0.5 ... 12 bar	0.3 ... 7 bar
Standard nominal flow rate (standardised to DIN 1343) <sup>1)</sup>	1,700 l/min	2,000 l/min	1,900 l/min	2,100 l/min	3,400 l/min	4,400 l/min	3,400 ... 3,500 l/min	4,600 l/min	3,600 l/min	4,600 l/min	3,700 l/min	4,800 l/min

1) 125 l/min must be available for the fully automatic condensate drain to close correctly.

## Datasheet

### Operating and environmental conditions

Condensate drain	Fully automatic	Manually rotating
Pressure regulation range	0.5 ... 12 bar	0.3 ... 7 bar
Operating pressure	1.5 ... 12 bar	1.5 ... 20 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4-], Inert gases	Compressed air to ISO 8573-1:2010 [-:4-], Inert gases
Grade of filtration	5 ... 40 µm	
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	5 ... 60°C	-10 ... 60°C
Media temperature	5 ... 60°C	-10 ... 60°C
Storage temperature	-10 ... 60°C	
Corrosion resistance class CRC <sup>1)</sup>	2 - Moderate corrosion stress	
Suitable for use with food <sup>2)</sup>	See supplementary material information	

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

2) More information [www.festo.com/catalogue/msb6n-frc](http://www.festo.com/catalogue/msb6n-frc) → Support/Downloads.

### Weight

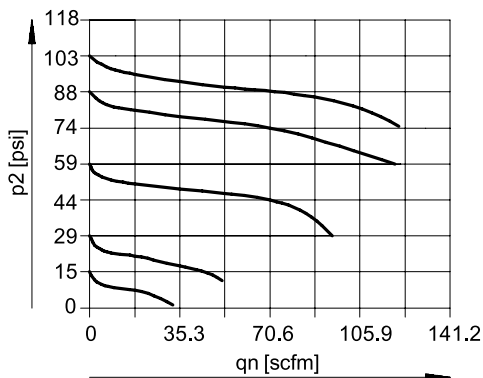
Bowl guard	Plastic bowl guard	Integrated as metal bowl
Pressure regulation range	0.5 ... 12 bar	0.3 ... 7 bar
Product weight	1,495 g	1,713 g

### Materials

Material housing	–
Material bowl	–
Note on materials	RoHS-compliant
LABS (PWIS) conformity <sup>1)</sup>	VDMA24364-B1/B2-L

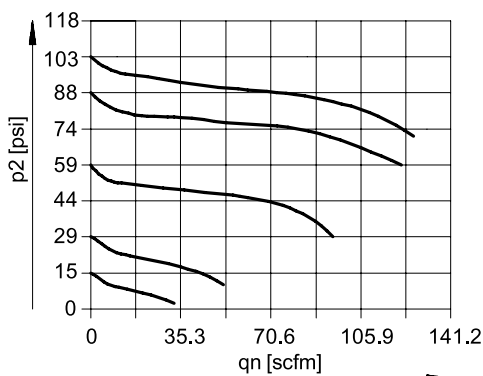
1) MSB6N-1/2-FRC5-J1M1; VDMA24364-B2-L

### Normal flow $q_n$ as a function of output pressure $p_2$ (MSB6N-1/4; pressure regulation range 4.4 ... 103 psi; grade of filtration 5 µm)



Primary pressure  $p_1 = 147$  psi

### Normal flow $q_n$ as a function of output pressure $p_2$ (MSB6N-1/4; pressure regulation range 4.4 ... 103 psi; grade of filtration 40 µm)

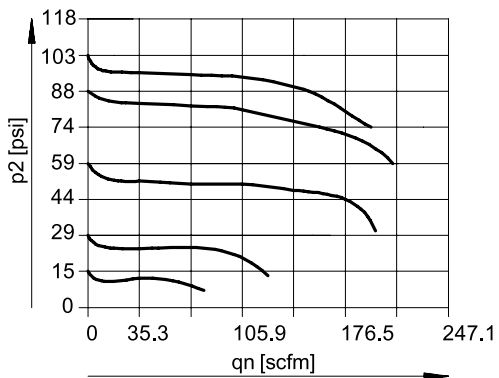


Primary pressure  $p_1 = 147$  psi

## Datasheet

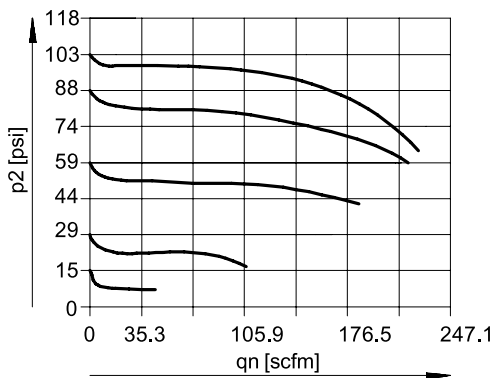
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-3/8; pressure regulation range 4.4 ... 103 psi; grade of filtration 5  $\mu\text{m}$ )

Primary pressure  $p_1 = 147$  psi



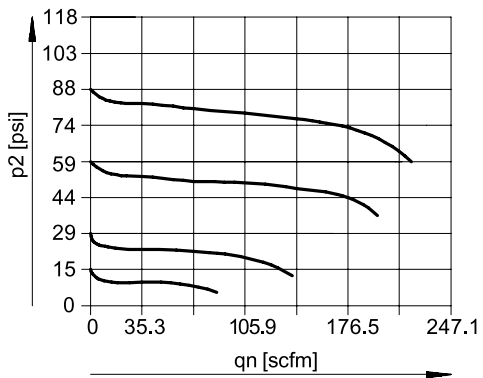
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-3/8; pressure regulation range 4.4 ... 103 psi; grade of filtration 40  $\mu\text{m}$ )

Primary pressure  $p_1 = 147$  psi



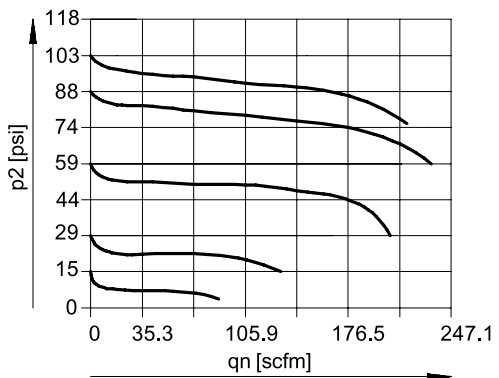
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-1/2; pressure regulation range 4.4 ... 103 psi; grade of filtration 5  $\mu\text{m}$ )

Primary pressure  $p_1 = 147$  psi



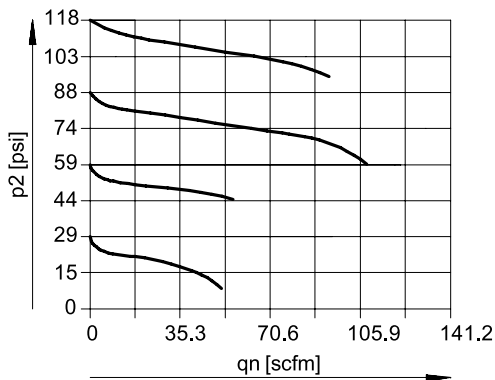
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-1/2; pressure regulation range 4.4 ... 103 psi; grade of filtration 40  $\mu\text{m}$ )

Primary pressure  $p_1 = 147$  psi

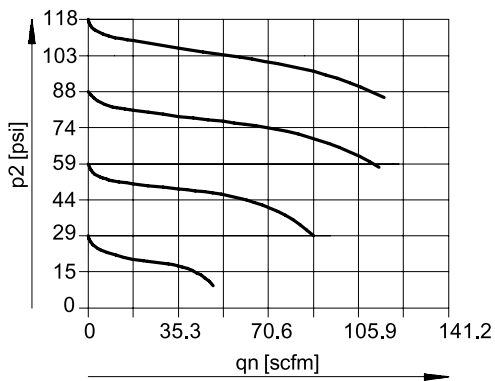


## Datasheet

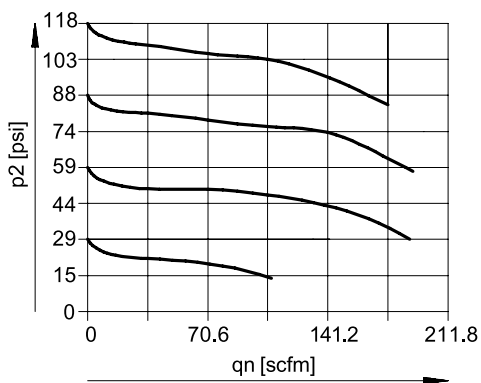
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-1/4; pressure regulation range 7.4 ... 176 psi; grade of filtration 5  $\mu\text{m}$ )



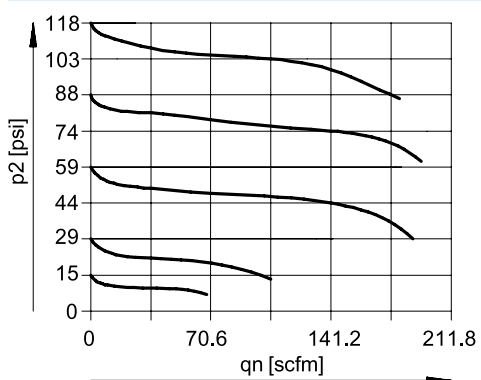
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-1/4; pressure regulation range 7.4 ... 176 psi; grade of filtration 40  $\mu\text{m}$ )



Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-3/8; pressure regulation range 7.4 ... 176 psi; grade of filtration 5  $\mu\text{m}$ )



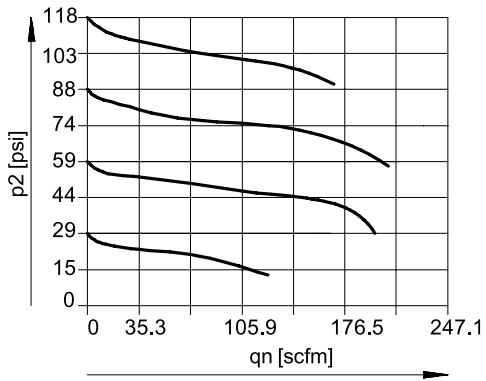
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-3/8; pressure regulation range 7.4 ... 176 psi; grade of filtration 40  $\mu\text{m}$ )



## Datasheet

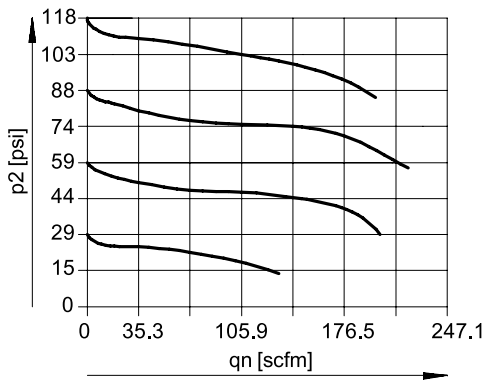
Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-1/2; pressure regulation range 7.4 ... 176 psi; grade of filtration 5  $\mu\text{m}$ )

Primary pressure  $p_1 = 147$  psi



Normal flow  $q_n$  as a function of output pressure  $p_2$  (MSB6N-1/2; pressure regulation range 7.4 ... 176 psi; grade of filtration 40  $\mu\text{m}$ )

Primary pressure  $p_1 = 147$  psi

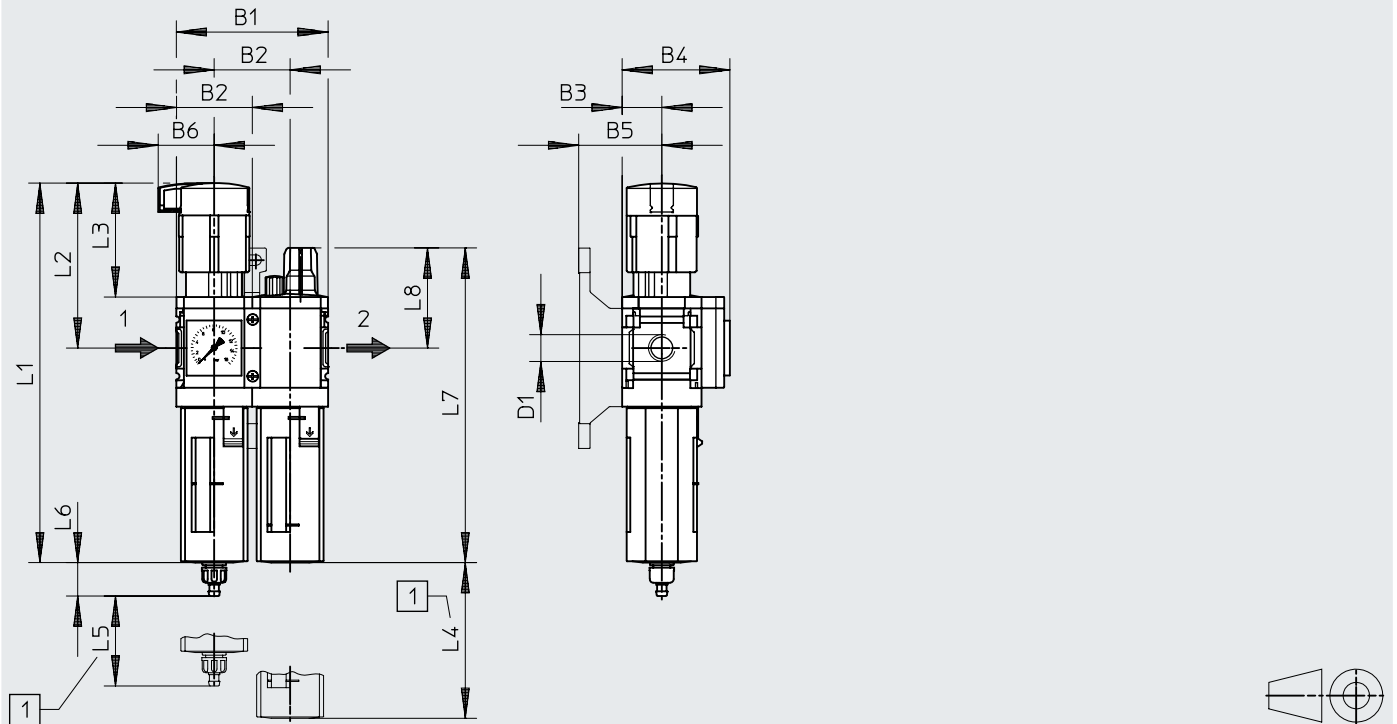




## Dimensions

Dimensions – With pressure gauge, display unit [psi]

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




[1] Installation dimension

	B1	B2	B3	B4	B5	B6	D1	L1	L2	L3	L4	L5	L6		L7	L8
	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]		[inch]	[inch]	[inch]	[inch]	[inch]	[inch] <sup>1)</sup>	[inch] <sup>2)</sup>	[inch]	[inch]
MSB6N-1/4	4,88	2,44	1,22	3,03	2,13	1,53	1/4 NPT	11,21	5,30	3,76	5,12	2,68	0,62	0,73	8,48	2,58
MSB6N-3/8							3/8 NPT									
MSB6N-1/2							1/2 NPT									

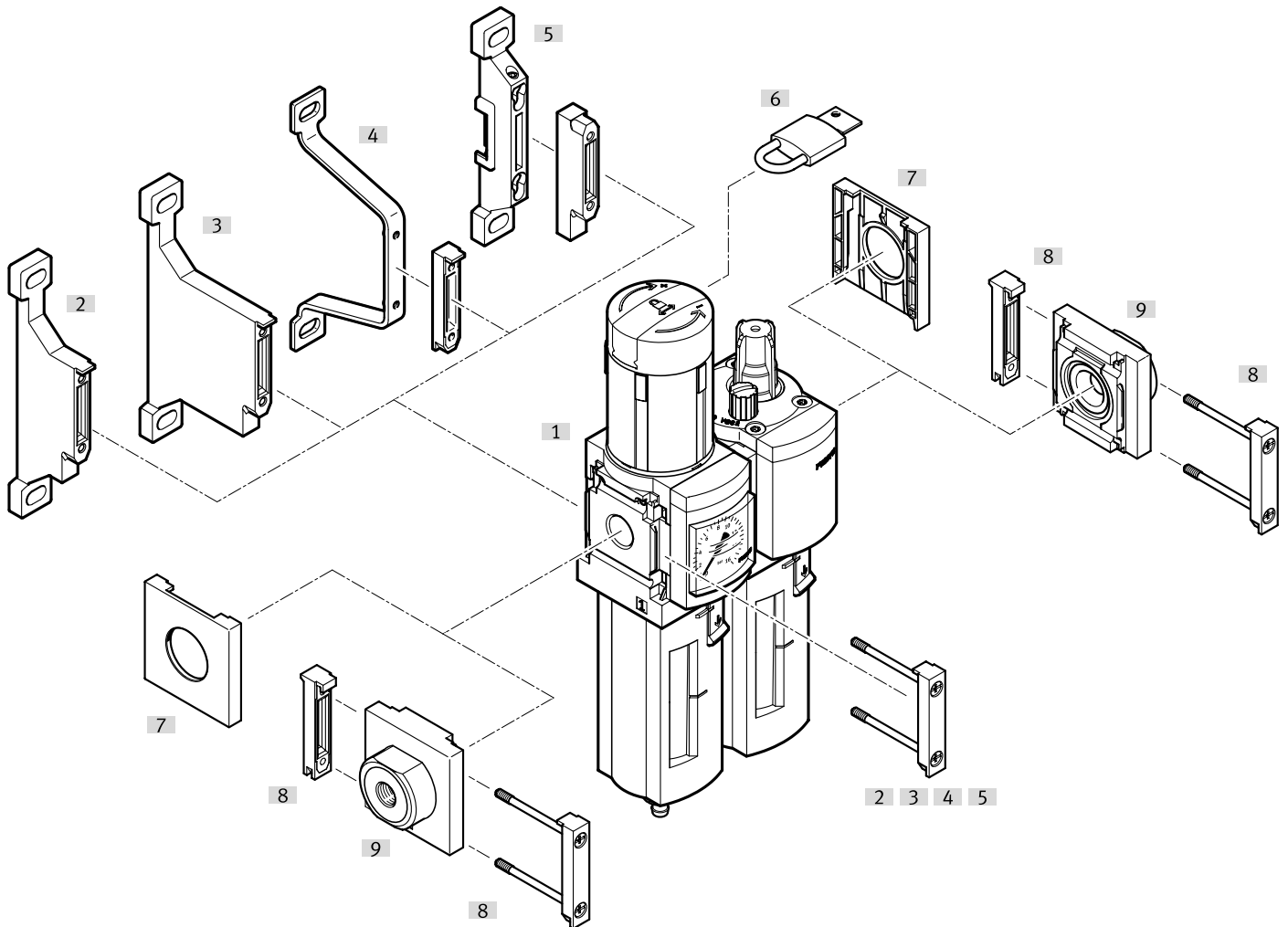
- 1) Manual condensate drain
- 2) Fully automatic condensate drain

## Ordering data

Ordering data						
	Pneumatic connection, port 1	Condensate drain	Grade of filtration	Pressure regulation range	Part no.	Type
	1/4 NPT	Fully automatic	5 µm	0.3 ... 7 bar	534015	MSB6N-1/4-FRC4:J8M1
				0.5 ... 12 bar	534023	MSB6N-1/4-FRC8:J4M1
					534009	MSB6N-1/4-FRC12:J10M2
			40 µm	0.3 ... 7 bar	534011	MSB6N-1/4-FRC2:J6M1
				0.5 ... 12 bar	534005	MSB6N-1/4-FRC10:J12M2
					534019	MSB6N-1/4-FRC6:J2M1
		Manually rotating	5 µm	0.3 ... 7 bar	534013	MSB6N-1/4-FRC3:J7M1
				0.5 ... 12 bar	534021	MSB6N-1/4-FRC7:J3M1
					534007	MSB6N-1/4-FRC11:J9M2
			40 µm	0.3 ... 7 bar	534003	MSB6N-1/4-FRC1:J5M1
				0.5 ... 12 bar	534025	MSB6N-1/4-FRC9:J11M2
					534017	MSB6N-1/4-FRC5:J1M1
	3/8 NPT	Fully automatic	5 µm	0.3 ... 7 bar	534039	MSB6N-3/8-FRC4:J8M1
				0.5 ... 12 bar	534047	MSB6N-3/8-FRC8:J4M1
					534035	MSB6N-3/8-FRC2:J6M1
			40 µm	0.3 ... 7 bar	534029	MSB6N-3/8-FRC10:J12M2
				0.5 ... 12 bar	534033	MSB6N-3/8-FRC12:J10M2
					534043	MSB6N-3/8-FRC6:J2M1
		Manually rotating	5 µm	0.3 ... 7 bar	534037	MSB6N-3/8-FRC3:J7M1
				0.5 ... 12 bar	534045	MSB6N-3/8-FRC7:J3M1
					534031	MSB6N-3/8-FRC11:J9M2
			40 µm	0.3 ... 7 bar	534027	MSB6N-3/8-FRC1:J5M1
				0.5 ... 12 bar	534049	MSB6N-3/8-FRC9:J11M2
					534041	MSB6N-3/8-FRC5:J1M1
1/2 NPT	Fully automatic	5 µm	0.3 ... 7 bar	533991	MSB6N-1/2-FRC4:J8M1	
			0.5 ... 12 bar	533985	MSB6N-1/2-FRC12:J10M2	
				533999	MSB6N-1/2-FRC8:J4M1	
		40 µm	0.3 ... 7 bar	533987	MSB6N-1/2-FRC2:J6M1	
			0.5 ... 12 bar	533995	MSB6N-1/2-FRC6:J2M1	
				533981	MSB6N-1/2-FRC10:J12M2	
	Manually rotating	5 µm	0.3 ... 7 bar	533989	MSB6N-1/2-FRC3:J7M1	
			0.5 ... 12 bar	533983	MSB6N-1/2-FRC11:J9M2	
				533979	MSB6N-1/2-FRC1:J5M1	
		40 µm	0.3 ... 7 bar	533979	MSB6N-1/2-FRC1:J5M1	
			0.5 ... 12 bar	534001	MSB6N-1/2-FRC9:J11M2	
				533993	MSB6N-1/2-FRC5:J1M1	


## Peripherals


## Peripherals overview





Accessories		→ Link
Type/order code	Description	
[1]	Service unit combination MSB6N-FRC	<a href="#">msb6n-frc</a>
[2]	Mounting bracket MS6-WP	<a href="#">12</a>
[3]	Mounting bracket MS6-WPB	<a href="#">12</a>
[4]	Mounting bracket MS6-WPE	<a href="#">12</a>
[5]	Mounting bracket MS6-WPM	<a href="#">12</a>
[6]	Padlock LRVS	<a href="#">13</a>
[7]	Cover cap MS6-END	<a href="#">12</a>
[8]	Module connector MS6-MV1	<a href="#">12</a>
[9]	Connecting plate MS6-AG...	<a href="#">12</a>


## Accessories

Cover cap MS6-END				
	Size		Part no.	Type
	6		538780	MS6-END


Connecting plate SET MS6N-AQ...				
	Size	Pneumatic connection, port 1	Part no.	Type
	6	1/4 NPT	526076	MS6N-AQN
		3/8 NPT	526077	MS6N-AQP
		1/2 NPT	526078	MS6N-AQR
		3/4 NPT	526079	MS6N-AQS


Module connector MS6-MV1				
	Size	Product weight	Part no.	Type
	6	33 g	8119204	MS6-MV1


Mounting bracket MS6-WP...				
	Size		Part no.	Type
	6		532195	MS6-WP
			532186	MS6-WPM-2D
			526073	MS6-WPM-D
			526074	MS6-WPB

Filter cartridge MS-LFP				
	Size	Grade of filtration	Part no.	Type
	6	5 µm	534499	MS6-LFP-C

## Accessories

Filter cartridge MS-LFP				
	Size	Grade of filtration	Part no.	Type
	6	40 µm	<b>534500</b>	<b>MS6-LFP-E</b>

Special oil OPSW-32 (1 litre)			
	Short type code	Part no.	Type
	OFSW	<b>152811</b>	<b>OFSW-32</b>

Padlock LRVS-D						
	Short type code	Corrosion resistance class CRC <sup>1)</sup>	LABS (PWIS) conformity	Product weight	Part no.	Type
	LRVS-D	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/kbk](http://www.festo.com/x/topic/kbk)