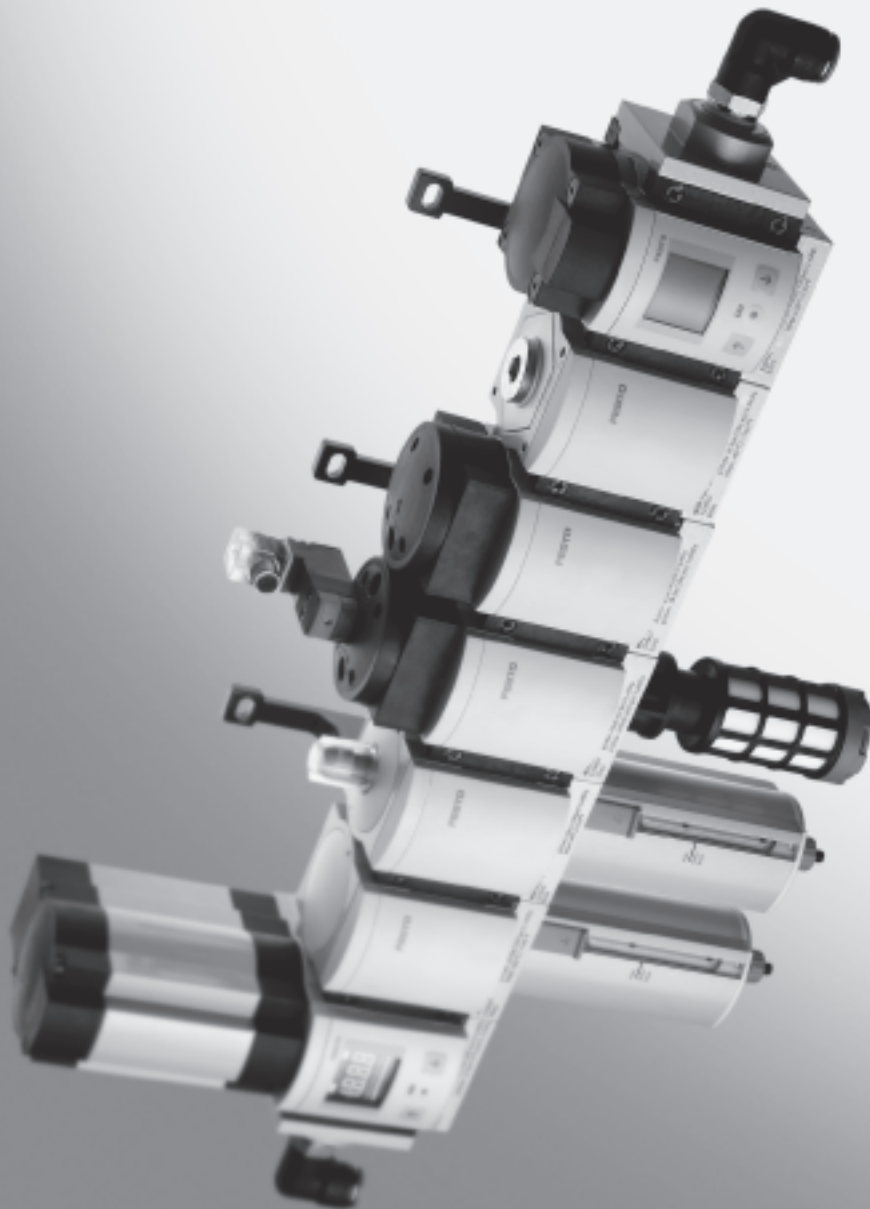


Wide range of configuration options

→ www.festo.com/en/engineering



- Three sizes:
 - MS4 – grid
dimension 40 mm
 - MS6 – grid
dimension 62 mm
 - MS12 – grid
dimension 124 mm
- Modular
- Easy to assemble
- Broad range of functions
- Compact with high flow rates
- Modern design
- Wide choice of variants
- Integrated safety functions

Specified types in accordance with ATEX directive for potentially explosive atmospheres

→ www.festo.com/en/ex

MS series service units

Product range overview



MS series service units

1

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Grade of filtration [µm]						
				0.05	0.05	0.1	0.3	0.1	0.5							
				...	...	...	...	...	...	0.01	1	5	40		
Code			AG...	D2	D4	D5	D6	D7	D8	A	B	C	E			
Service units																
MSB-FRC		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	■	■	-	-	-	■	■		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	■	■	-	-	-	-	■	■	
		12	-													
Service unit combinations (further variants can be ordered using the configurator → www.festo.com/en/engineering)																
MSB		4	G1/4	G1/8, G1/4, G3/8	-	-	-	■	■	-	-	-	-	■	■	
		6	G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	■	■	-	-	-	-	-	■	■
		12	-													
Individual devices																
Filter regulators MS-LFR		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	-	■	■	
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-	-	■	■
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	■	■	■	-	-	-	-	■	■
Filters MS-LF		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	-	■	■	
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-	-	■	■
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-	■	■
Fine and micro filters MS-LFM		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	■	■	-	-	-	
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	■	■	-	-	-	
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	■	■	-	-	-	
Activated carbon filters MS-LFX		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	-	-	-	
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-	-	-	
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-	-	
Pressure regulators MS-LR		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	-	-	-	
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-	-	-	
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	■	■	■	-	-	-	-	-	
Pressure regulators MS-LRB		4	G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	-	-	-	
		6	G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-	-	-	
		12	-													
Precision pressure regulators MS-LRP		4	-													
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	-	■	-	-	-	-	-	-	
		12	-													
Precision pressure regulators MS-LRPB		4	-													
		6	G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	-	■	-	-	-	-	-	-	
		12	-													

MS series service units

Product range overview



Type	Size	Bowl guard		Condensate drains				Pressure indicator					Actuator lock		Options		→ Page
		Plastic bowl guard	Metal bowl	Manual rotary	Semi-automatic	Fully automatic	External, fully-automatic, electrical	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for EN pressure gauge G 1/8	Adapter for EN pressure gauge G 1/4	Pressure sensor with display	Rotary knob, lockable	Rotary knob, long	Silencer	Flow direction from right to left	
Code		R	U	M	H	V	E...	VS	AG	A8	A4	AD...	AS	LD	S	Z	
Service units																	
MSB-FRC	4	■	-	■	-	■	-	-	■	-	-	-	■	-	-	■	2-2
	6	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	
	12	-															
Service unit combinations																	
MSB	4	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	2-2
	6	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	
	12	-															
Individual devices																	
Filter regulators MS-LFR	4	■	■	■	■	■	-	■	■	■	■	■	■	■	-	■	3-2
	6	■	■	■	■	■	■	■	■	-	■	■	■	■	-	■	
	12	-	■	■	-	■	■	■	■	-	■	-	■	■	-	■	3-18
Filters MS-LF	4	■	■	■	■	■	-	-	-	-	-	-	-	-	-	■	4-2, 4-4
	6	■	■	■	■	■	■	-	-	-	-	-	-	-	-	■	
	12	-	■	■	-	■	■	-	-	-	-	-	-	-	-	■	4-32, 4-34
Fine and micro filters MS-LFM	4	■	■	■	■	■	-	-	-	-	-	-	-	-	-	■	4-2, 4-12
	6	■	■	■	■	■	■	-	-	-	-	-	-	-	-	■	
	12	-	■	■	-	■	■	-	-	-	-	-	-	-	-	■	4-32, 4-39
Activated carbon filters MS-LFX	4	■	■	-	-	-	-	-	-	-	-	-	-	-	-	■	4-2, 4-24
	6	■	■	-	-	-	-	-	-	-	-	-	-	-	-	■	
	12	-	■	-	-	-	-	-	-	-	-	-	-	-	-	■	4-32, 4-46
Pressure regulators MS-LR	4	-	-	-	-	-	-	■	■	■	■	■	■	■	-	■	5-2, 5-7
	6	-	-	-	-	-	-	■	■	-	■	■	■	■	-	■	
	12	-	-	-	-	-	-	■	■	-	■	-	■	■	-	■	5-58
Pressure regulators MS-LRB	4	-	-	-	-	-	-	■	■	■	■	■	■	■	-	■	5-2, 5-16
	6	-	-	-	-	-	-	■	■	-	■	■	■	■	-	■	
	12	-															
Precision pressure regulators MS-LRP	4	-															5-24, 5-29
	6	-	-	-	-	-	-	■	-	■	■	■	■	■	-	■	
	12	-															
Precision pressure regulators MS-LRPB	4	-															5-24, 5-38
	6	-	-	-	-	-	-	■	-	■	■	■	■	■	-	■	
	12	-															

MS series service units

Product range overview



MS series service units

1

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]				Supply voltage				
				0.3 ... 4	0.3 ... 7	0.5 ... 12	0.5 ... 16	24 V DC (connection pattern to EN 175301)	24 V DC (connection pattern M12 to DESINA)	110 V AC (connection pattern to EN 175301)	230 V AC (connection pattern to EN 175301)	
Code			AG...	D5	D6	D7	D8	V24	V24P	V110	V230	
Individual devices												
Electrical pressure regulators MS-LRE		4	–									
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	■	■	■	■	–	–	–	–
		12	–									
Lubricators MS-LOE		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	–	–	–	–
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	–	–	–	–
		12	–	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	–	–	–	–	–	–	–	–
On-off valves MS-EM(1)		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	–	–	–	–
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	–	–	–	–
		12	–	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	–	–	–	–	–	–	–	–
On-off valves MS-EE		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	■	–	■	■
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	■	–	■	■
		12	–	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	–	–	–	–	■	■	■	■
Soft-start valves MS-DL		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	–	–	–	–
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	–	–	–	–
		12	–	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	–	–	–	–	–	–	–	–
Soft-start valves MS-DE		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	■	–	■	■
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	■	–	■	■
		12	–	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	–	–	–	–	■	■	■	■
Membrane air dryers MS-LDM1		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	–	–	–	–
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	–	–	–	–
		12	–									
Branching modules MS-FRM		4	G $\frac{1}{8}$, G $\frac{1}{4}$	G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$	–	–	–	–	–	–	–	–
		6	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$, G $\frac{3}{4}$	–	–	–	–	–	–	–	–
		12	–	G1, G1 $\frac{1}{4}$, G1 $\frac{1}{2}$, G2	–	–	–	–	–	–	–	–
Flow sensors MS-SFE		4	–									
		6	G $\frac{1}{2}$	G $\frac{1}{2}$	–	–	–	–	–	–	–	–
		12	–									

MS series service units

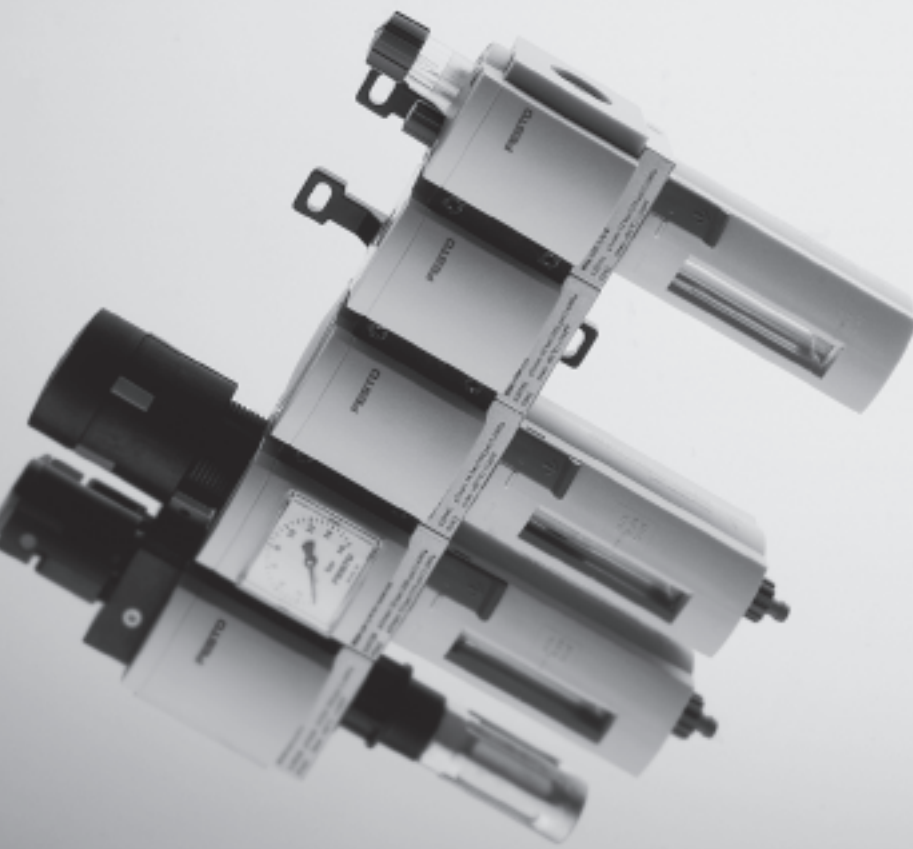
Product range overview



Type	Size	Bowl guard		Pressure indicator					Switch output		Options		→ Page	
		Plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for EN pressure gauge G 1/8	Adapter for EN pressure gauge G 1/4	Pressure sensor with display	2x PNP	2x NPN	Silencer	Flow direction from right to left		
														R	U	VS	AG	A8	A4	AD...	P2	N2	S	Z
Individual devices														
Electrical pressure regulators MS-LRE	4	-												5-46
	6	-	-	■	■	-	■	-	-	-	-	-	■	
	12	-												
Lubricators MS-LOE	4	■	■	-	-	-	-	-	-	-	-	-	■	6-2
	6	■	■	-	-	-	-	-	-	-	-	-	■	
	12	-	■	-	-	-	-	-	-	-	-	-	■	6-10
On-off valves MS-EM(1)	4	-	-	■	■	■	■	■	-	-	■	■	7-2, 7-5	
	6	-	-	■	■	-	■	■	-	-	■	■		
	12	-	-	■	■	-	■	-	-	-	■	■	7-32, 7-35	
On-off valves MS-EE	4	-	-	■	■	■	■	■	-	-	■	■	7-2, 7-10	
	6	-	-	■	■	-	■	■	-	-	■	■		
	12	-	-	■	■	-	■	-	-	-	■	■	7-32, 7-39	
Soft-start valves MS-DL	4	-	-	■	■	■	■	■	-	-	-	■	7-2, 7-18	
	6	-	-	■	■	-	■	■	-	-	-	■		
	12	-	-	■	■	-	■	-	-	-	-	■	7-32, 7-43	
Soft-start valves MS-DE	4	-	-	■	■	■	■	■	-	-	-	■	7-2, 7-23	
	6	-	-	■	■	-	■	■	-	-	-	■		
	12	-	-	■	■	-	■	-	-	-	-	■	7-32, 7-47	
Membrane air dryers MS-LDM1	4	-	■	-	-	-	-	-	-	-	-	■	8-2	
	6	-	■	-	-	-	-	-	-	-	-	■		
	12	-												
Branching modules MS-FRM	4	-	-	■	■	■	■	■	-	-	-	■	9-2	
	6	-	-	■	■	-	■	■	-	-	-	■		
	12	-	-	■	-	-	-	-	-	-	-	-	9-14	
Flow sensors MS-SFE	4	-											10-2	
	6	-	-	-	-	-	-	-	■	■	-	■ ¹⁾		
	12	-												

1) To be ordered via configurator software only → www.festo.com/en/engineering

Wide range of configuration options
→ www.festo.com/en/engineering

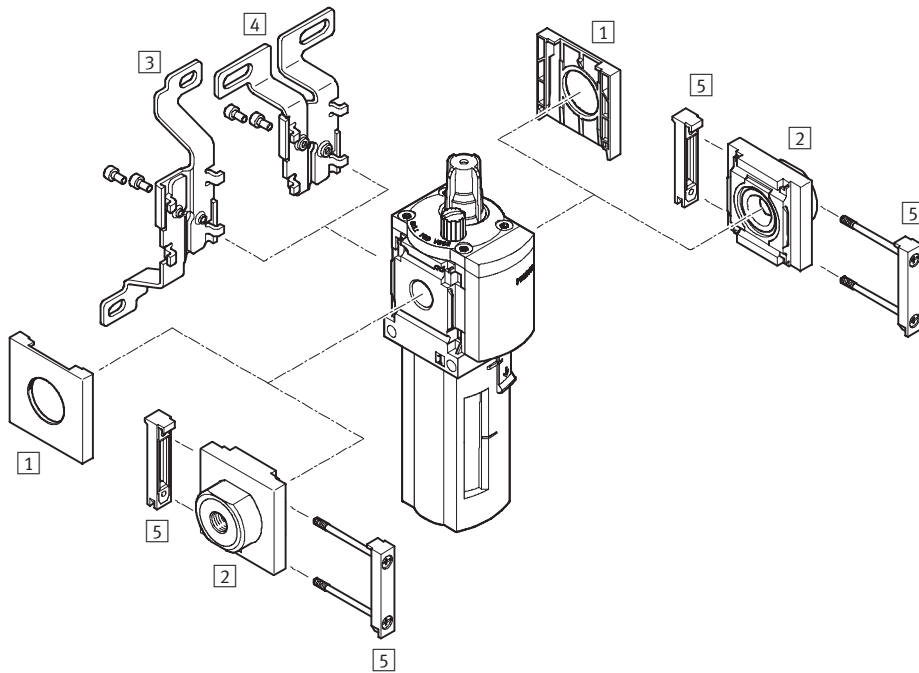



- MS4 – grid
dimension 40 mm
MS6 – grid
dimension 62 mm
- Modular
- Easy to assemble
- Broad range of functions
- Compact with high flow rates
- Modern design
- Wide choice of variants
- Integrated safety functions

Specified types in accordance with
ATEX directive for potentially
explosive atmospheres
→ www.festo.com/en/ex

Lubricators MS4/MS6-LOE, MS series

Peripherals overview

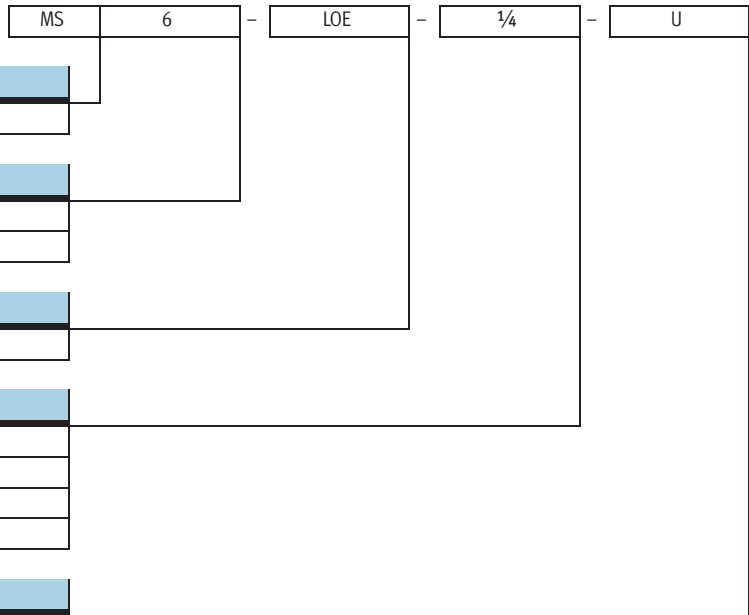


-  - Note
 Additional accessories:
 - Module connector for combinations → 11-9
 - Adapter for mounting on profiles → 11-12

Mounting attachments and accessories						
		Individual unit		Combination → 3/2.11-0		→ Page
		without connecting plate	with connecting plate	without connecting plate	with connecting plate	
1	Cover cap MS4/6-END	■	-	■	-	11-3
2	Connecting plate MS4/6-AG...	-	■	-	■	11-2
3	Mounting bracket MS4/6-WB	■	■	-	-	11-4
4	Mounting bracket MS4-WBM	■	■	-	-	11-4
5	Module connector MS4/6-MV	-	■	■	■	11-8
-	Mounting bracket MS4/6-WP/WPB/WPM	-	■	■	■	11-6, 11-7

Lubricators MS4/MS6-LOE, MS series

Type codes



Series

MS	Standard service unit
----	-----------------------

Size

4	Grid dimension 40 mm
6	Grid dimension 62 mm

Service function

LOE	Lubricators
-----	-------------

Connection size

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

Bowl guard

R	Plastic bowl guard
U	Metal bowl

Further variants can be ordered using the modular system

Lubricator LOE → 6-7

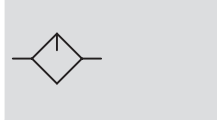
- Connecting plates
- Type of mounting
- Alternative flow direction

Lubricators MS4/MS6-LOE, MS series

Technical data



Function



- - Flow rate
1,100 ... 7,200 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 pro-

portional 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 even during operation (under pressure)

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 → 11-18
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

General technical data					
Size	MS4		MS6		
Pneumatic connection 1, 2	G ¹ / ₈	G ¹ / ₄	G ¹ / ₄	G ³ / ₈	G ¹ / ₂
Design	Proportional standard mist lubricator				
Type of mounting	Via accessories				
	In-line installation				
Assembly position	Vertical ±5°				
Bowl guard	Plastic bowl guard				
	Metal bowl				
Minimum flow for lubricator operation [l/min]	40		50		
Max. oil capacity [cm ³]	30 (with plastic bowl guard)		75 (with plastic bowl guard)		
	36 (with metal bowl)		80 (with metal bowl)		

• Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Standard nominal flow rate q _N [l/min]					
Size	MS4		MS6		
Pneumatic connection	G ¹ / ₈	G ¹ / ₄	G ¹ / ₄	G ³ / ₈	G ¹ / ₂
In main flow direction 1 → 2	1,100	2,200	2,500	5,300	7,200

Operating and environmental conditions		
Size	MS4	MS6
Input pressure [bar]	1 ... 12	1 ... 16
Operating medium	Compressed air	Filtered compressed air, grade of filtration 40 µm
Ambient temperature [°C]	-10 ... +60	0 ... +60
Temperature of medium [°C]	-10 ... +60	0 ... +60
Storage temperature [°C]	-10 ... +60	-10 ... +60
Corrosion resistance 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.

Lubricators MS4/MS6-LOE, MS series

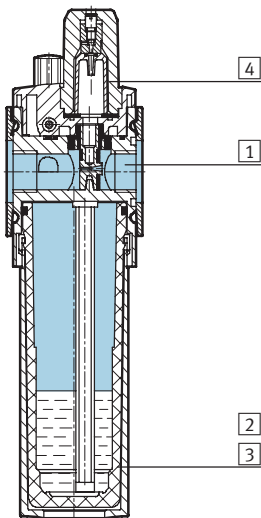
Data sheet



Weights [g]		
Size	MS4	MS6
With plastic bowl guard	194	600
With metal bowl	354	810

Materials

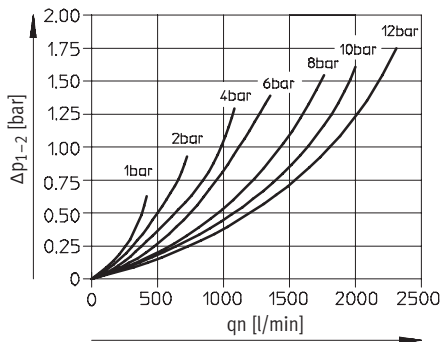
Sectional view



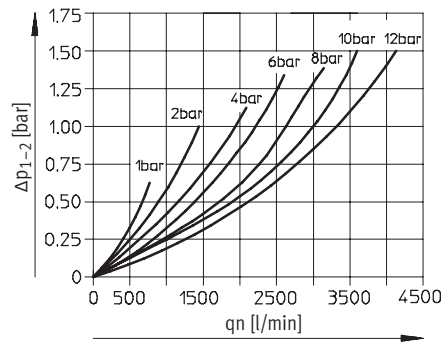
Lubricators		
1	Body	Die-cast aluminium
2	Plastic bowl guard	Polycarbonate/polyamide
3	Metal bowl	Aluminium
	Viewing window	Polyamide
4	Lubricator dome	Polycarbonate
-	Seals	Nitrile rubber

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

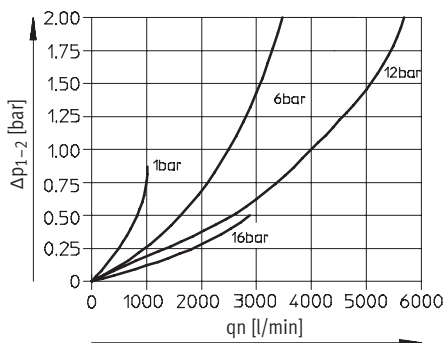
MS4-LOE-1/8



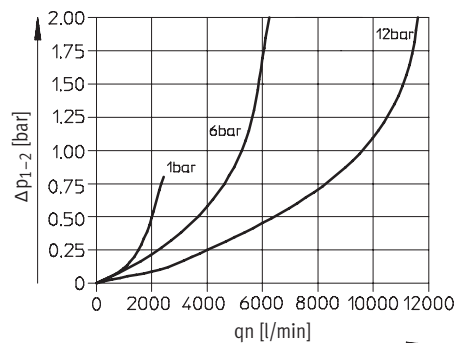
MS4-LOE-1/4



MS6-LOE-1/4



MS6-LOE-3/8



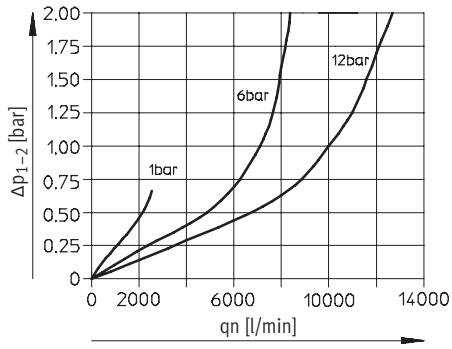
Lubricators MS4/MS6-LOE, MS series

Data sheet



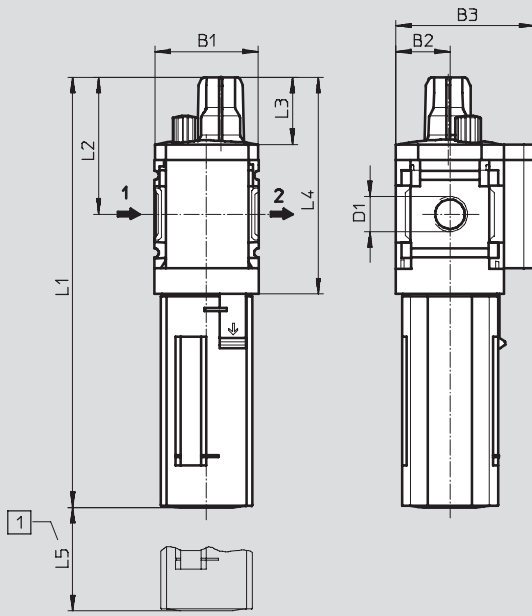
Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

MS6-LOE-1/2



Dimensions – Standard

Download CAD data → www.festo.com/en/engineering



1 Installation dimensions

→ Flow direction

Type	B1	B2	B3	D1	L1 Bowl guard		L2	L3	L4	L5
					Plastic	Metal				
MS4-LOE-1/8	42	21	54	G1/8	166.6	184.9	53	26	84	80
MS4-LOE-1/4				G1/4						
MS6-LOE-1/4	62	31	76	G1/4	215.7	222	66	27	111	130
MS6-LOE-3/8				G3/8						
MS6-LOE-1/2				G1/2						

– Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Ordering data

Size	Connection	Plastic bowl guard		Metal bowl	
		Part No.	Type	Part No.	Type
MS4	G1/8	529 413	MS4-LOE-1/8-R	535 791	MS4-LOE-1/8-U
	G1/4	529 411	MS4-LOE-1/4-R	535 790	MS4-LOE-1/4-U
MS6	G1/4	529 779	MS6-LOE-1/4-R	529 781	MS6-LOE-1/4-U
	G3/8	529 783	MS6-LOE-3/8-R	529 785	MS6-LOE-3/8-U
	G1/2	529 775	MS6-LOE-1/2-R	529 777	MS6-LOE-1/2-U

Lubricators MS4/MS6-LOE, MS series

Ordering data – Modular products



M Mandatory data						O Options	
Module No.	Series	Size	Function	Connection size	Bowl	Type of mounting	Alternative flow direction
527 701 527 674	MS	4 6	LOE	1/8, 1/4, 3/8, 1/2, AGA, AGB, AGC, AGD, AGE	R U	WP WPM WB WBM	Z
Order example 527 701	MS	4	- LOE	- AGB	- R	- WP	- Z

Ordering table							
Grid dimension	[mm]	40	62	Condi- tions	Code	Enter code	
M	Module No.	527 701	527 674				
	Series	Standard			MS		MS
	Size	4	6		...		
	Function	Lubricators			-LOE		-LOE
	Connection size	G ¹ / ₈ thread	-		-1/8		
		Thread G ¹ / ₄	Thread G ¹ / ₄		-1/4		
		-	Thread G ³ / ₈		-3/8		
		-	Thread G ¹ / ₂		-1/2		
		Connecting plate G ¹ / ₈	-		-AGA		
		Connecting plate G ¹ / ₄	Connecting plate G ¹ / ₄		-AGB		
		Connecting plate G ³ / ₈	Connecting plate G ³ / ₈		-AGC		
		-	Connecting plate G ¹ / ₂		-AGD		
	Bowl	Plastic bowl with plastic bowl guard			-R		
		Metal bowl			-U		
O	Type of mounting	Mounting bracket		1	-WP		
		Mounting bracket		1	-WPM		
		Mounting bracket				-WB	
		Mounting bracket	-			-WBM	
	Alternative flow direction	Flow direction from right to left			-Z		

1 WP, WPM Only with connecting plate AGA, AGB, AGC, AGD or AGE.

Transfer order code

	MS		-	LOE		-		-		-	
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MS12 series service units

FESTO

Wide range of configuration options
→ www.festo.com/en/engineering

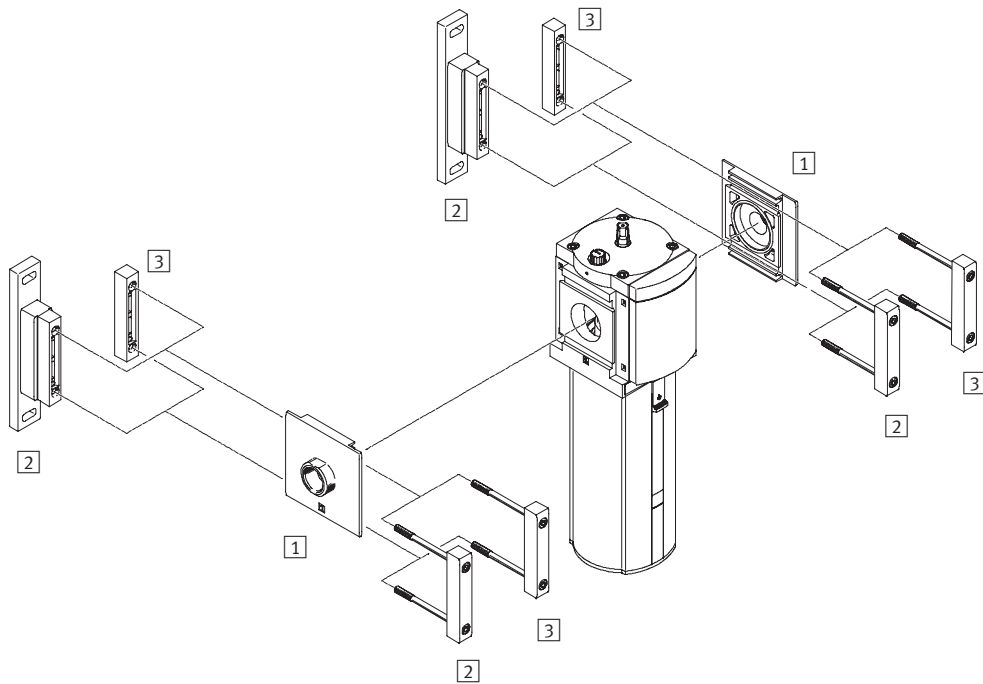


- Grid dimension 124 mm
- High flow rates
- Modern design



Lubricators MS12-LOE, MS series

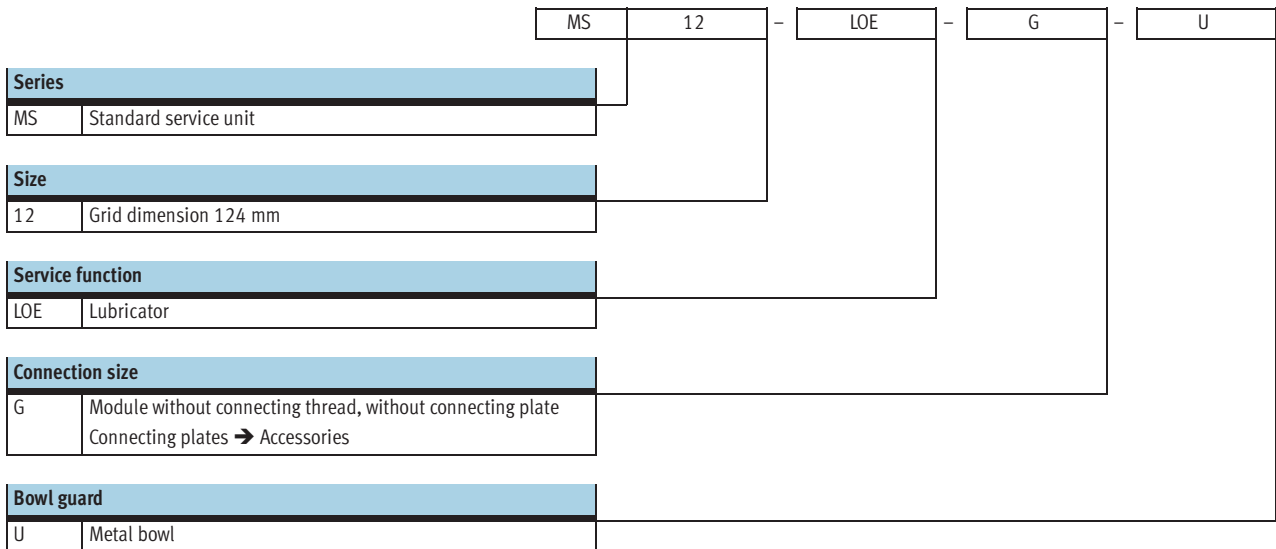
Peripherals overview



Mounting attachments and accessories		→ Page
1	Connecting plate MS12-AG...	11-2
2	Mounting bracket MS12-WP	11-8
3	Module connector MS12-MV	11-8

Lubricators MS12-LOE, MS series

Type codes



Further variants can be ordered using the modular system

Lubricators LOE → 6-16

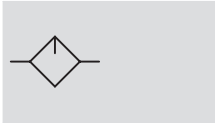
- Connecting plates
- Type of mounting
- Alternative flow direction

Lubricators MS12-LOE, MS series

Technical data



Function



- - Flow rate
20,000 ... 22,000 l/min

- - Temperature range
0 ... 60 °C

- - Input pressure
1 ... 16 bar

- - www.festo.com/en/Spare_parts_service

Wearing parts kits
→ 6-15



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

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 even during operation (under pressure)

- Festo special oil OFSW-32 → 11-18
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

General technical data				
Pneumatic connection 1, 2 ¹⁾	G1	G1¼	G1½	G2
Design	Proportional standard mist lubricator			
Type of mounting	Via accessories			
	In-line installation			
Assembly position	Vertical ±5°			
Bowl guard	Metal bowl			
Minimum flow for lubricator operation [l/min]	≤400			
Max. oil capacity [cm ³]	1,500			

1) Dependent on connecting plate selected, must be ordered separately as an accessory → 11-2
 - - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Standard nominal flow rate q _N ¹⁾ [l/min]				
Pneumatic connection	G1	G1¼	G1½	G2
In main flow direction 1 → 2	20,000	20,500	21,000	22,000

1) Dependent on connecting plate selected, must be ordered separately as an accessory → 11-2
 Measured at p₁ = 6 bar and Δp = 0.5 bar

Lubricators MS12-LOE, MS series

Technical data

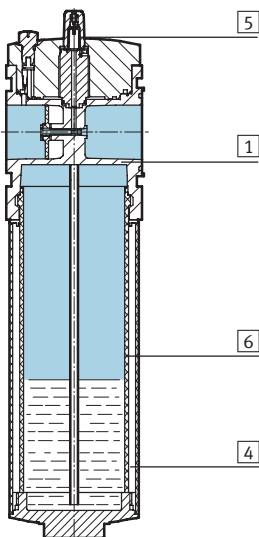
Operating and environmental conditions		
Input pressure	[bar]	1 ... 16
Operating medium		Compressed air, air quality class 5.7.- to DIN ISO 8573-1
Ambient temperature	[°C]	0 ... +60
Temperature of medium	[°C]	0 ... +60
Storage temperature	[°C]	-10 ... +60
Corrosion resistance	CRC ¹⁾	2

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.

Weights [g]	
With metal bowl	6,500

Materials

Sectional view



Lubricator		
1	Body	Die-cast aluminium
4	Metal bowl	Aluminium/polyamide
5	Lubricator dome	Polycarbonate
6	Metal bowl sight glass	Polyamide
-	Seals	Nitrile rubber

Lubricators MS12-LOE, MS series

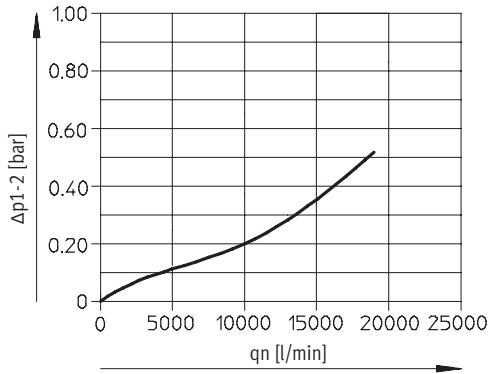
Technical data



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

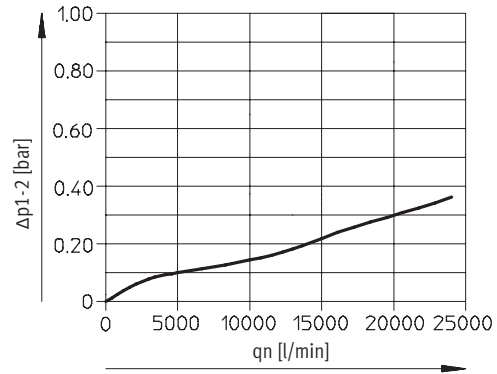
With connecting plate MS12-AGF

Pneumatic connection G1



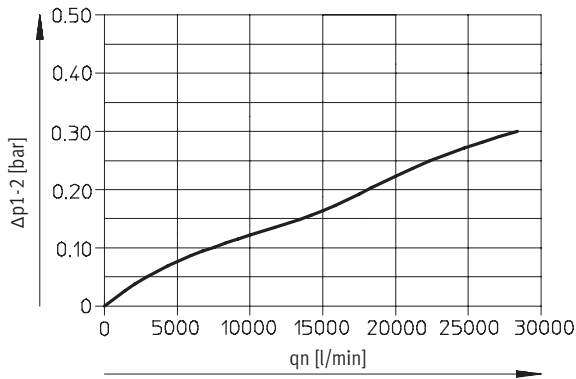
With connecting plate MS12-AGG

Pneumatic connection G1¼



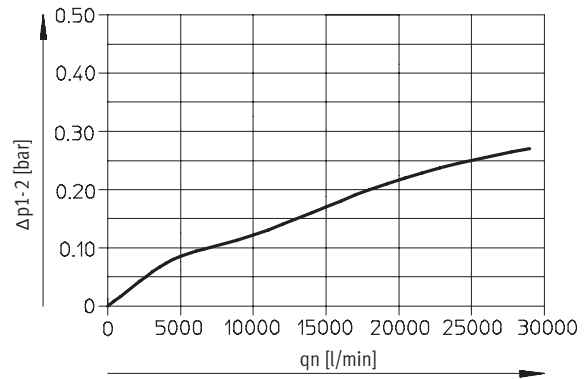
With connecting plate MS12-AGH

Pneumatic connection G1½



With connecting plate MS12-AGI

Pneumatic connection G2

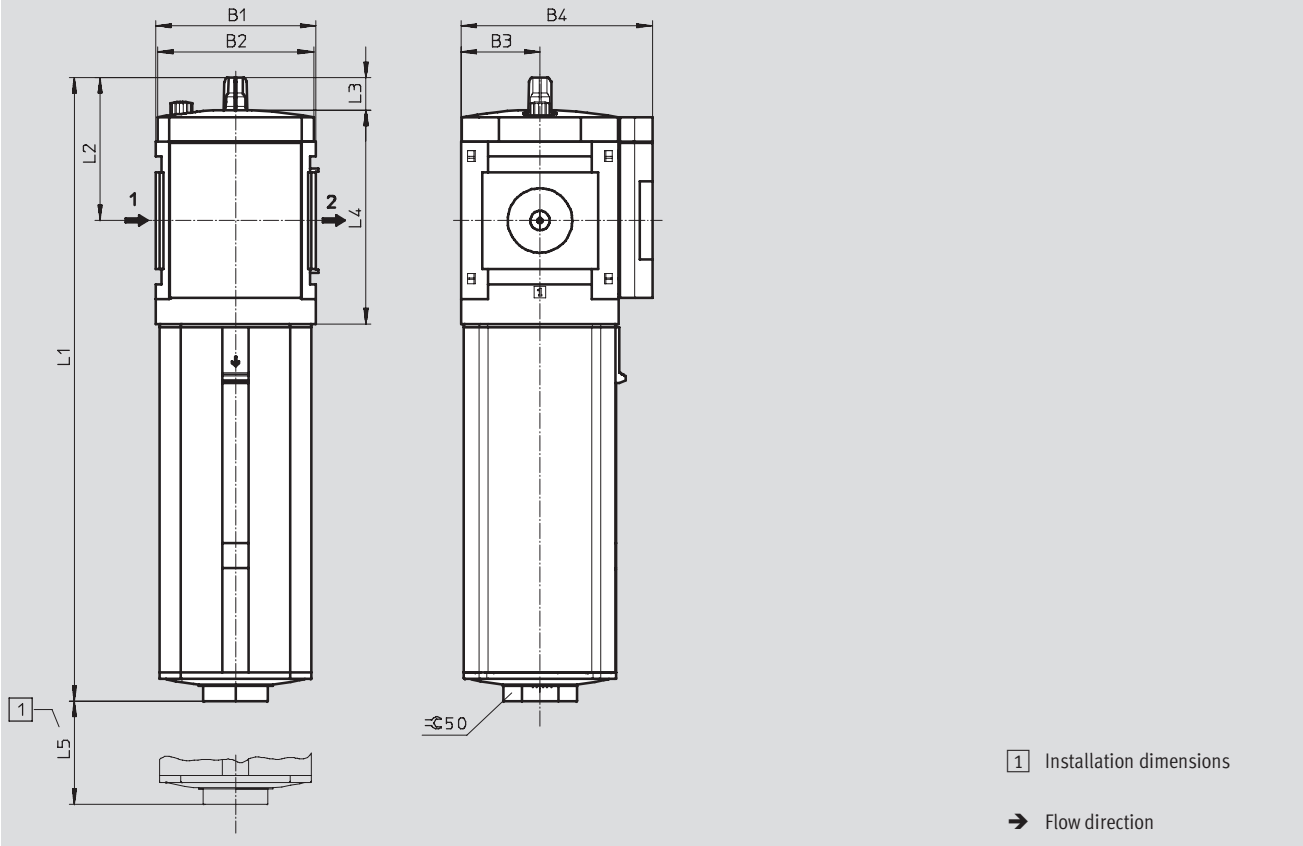


Lubricators MS12-LOE, MS series

Technical data

Dimensions – Standard

Download CAD data → www.festo.com/en/engineering



Type	B1	B2	B3	B4	L1	L2	L3	L4	L5
MS12-LOE	124	122	61	148	483	111	25	166	300

Ordering data			
Metal bowl			
Size	Connection	Part No.	Type
MS12	G1 ... G2 ¹⁾	537 156	MS12-LOE-G-U

1) Connecting plate must be ordered separately as an accessory → 11-2
 - | - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Ordering data – Wearing parts kits		
Size	Part No.	Type
MS12	673 746	MS12-LOE

Lubricators MS12-LOE, MS series

Ordering data – Modular products



MS series service units
Lubricators

6

M Mandatory data						O Options	
Module No.	Series	Size	Function	Connection size	Bowl	Type of mounting	Alternative flow direction
535 041	MS		LOE	AGF AGG AGH AGI G	U	WP	Z
Order example							
535 041	MS	12	- LOE	- AGI	- U	- WP	- Z

Ordering table			
Grid dimension	[mm]	124	Condi- tions
M	Module No.	535 041	
	Series	Standard	MS
	Size	12	12
	Function	Lubricator	-LOE
	Connection size	Connecting plate G1	-AGF
		Connecting plate G1¼	-AGG
		Connecting plate G1½	-AGH
		Connecting plate G2	-AGI
		Module without connecting thread, without connecting plate	-G
	Bowl	Metal bowl	-U
O	Type of mounting	Mounting bracket	1 -WP
	Alternative flow direction	Flow direction from right to left	-Z

1 WP Only with connecting plate AGF, AGG, AGH or AGI.

Transfer order code

535 041	MS	12	- LOE	-	U	-		-	
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MS series service units

Accessories

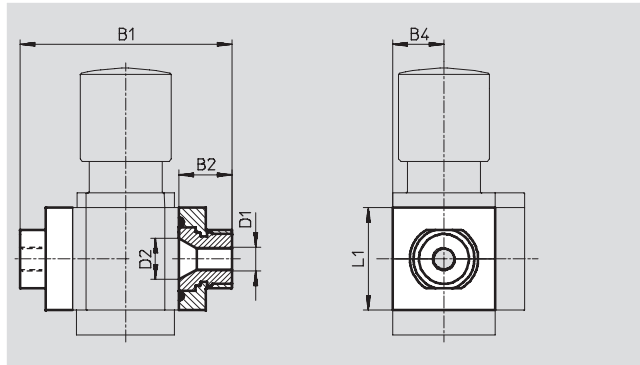


Connecting plate MS4/6-AG...

(order code: AG...)

- Adapter for pneumatic connection
- MS6-AGE for implementing threaded connection G $\frac{3}{4}$

Material:
Aluminium



Dimensions and ordering data									
Size	B1	B2	B4	D1	D2	L1	Weight [g]	Part No.	Type
MS4	83.5	21.5	21	G $\frac{1}{8}$	16.8	42	128	526 068	MS4-AGA
				G $\frac{1}{4}$				526 069	MS4-AGB
				G $\frac{3}{8}$				526 070	MS4-AGC
MS6	115	26.5	31	G $\frac{1}{4}$	24	62	300	526 080	MS6-AGB
				G $\frac{3}{8}$				526 081	MS6-AGC
				G $\frac{1}{2}$				526 082	MS6-AGD
				G $\frac{3}{4}$				526 083	MS6-AGE

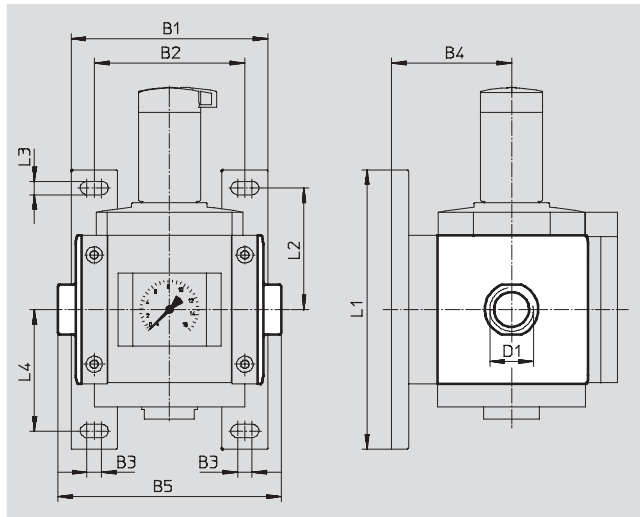
-||- Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Connecting plate MS12-AG...

(order code: AG...)

- Adapter for pneumatic connection

Material:
Die-cast aluminium
Free of copper and PTFE



Dimensions and ordering data													
Size	B1	B2	B3	B4	B5	D1	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS12	162	124	12	99	184	G1	230	100	11	100	1,300	537 135	MS12-AGF
					184	G $\frac{1}{4}$						537 136	MS12-AGG
					184	G $\frac{1}{2}$						537 137	MS12-AGH
					196	G2						537 138	MS12-AGI

-||- Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

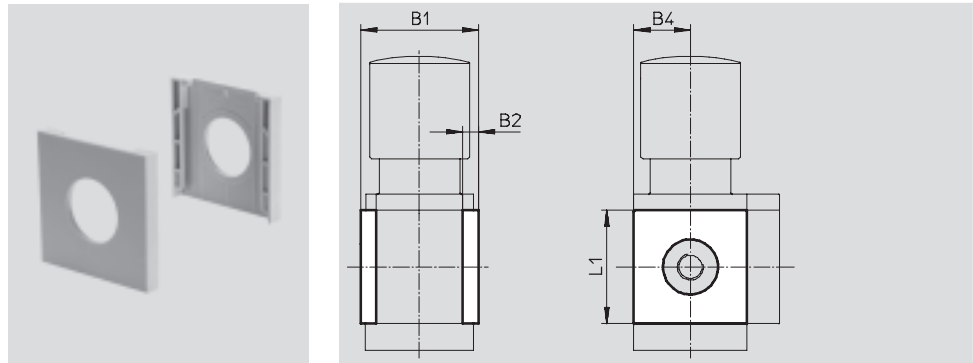
MS series service units

Accessories

Cover cap MS4/6-END

- Can be used to cover the body sides of the first and last module if connecting plates are not used.

Material:
Reinforced polyamide
Free of copper and PTFE



Dimensions and ordering data						
Size	B1	B2	B4	L1	Part No.	Type
MS4	43.6	6	21	42	538 779	MS4-END
MS6	67	8	31	62	538 780	MS6-END

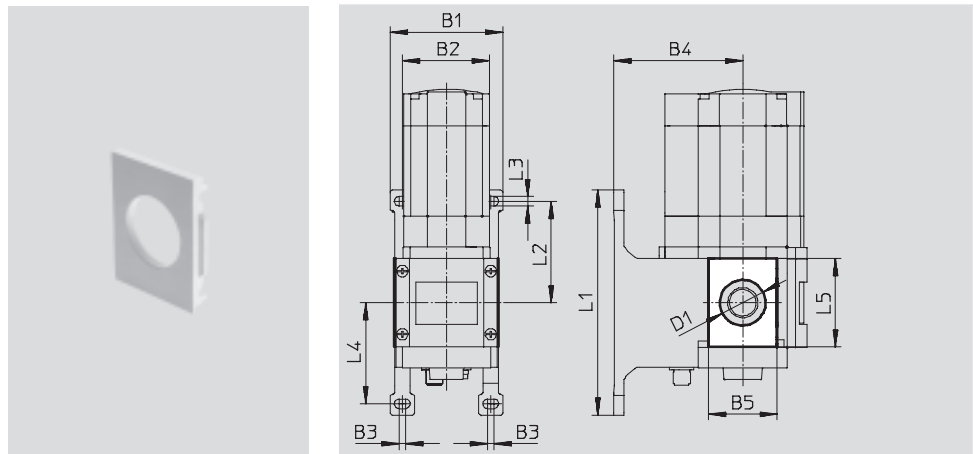
• Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.


Mounting plate MS4/6-AEND

(order code: WBE; scope of delivery includes wall mounting plate MS6-WPB)

- In combination with wall mounting plate MS-WP or MS-WPB for mounting an individual unit on a wall with direct thread

Material:
Reinforced polyamide
Conforms to RoHS
Free of copper and PTFE



Dimensions and ordering data																
Size	B1	B2	B3	B4		B5	D1 ∅	L1	L2	L3	L4	L5	CRC ¹⁾	Weight [g]	Part No.	Type
				WP	WPB											
MS4	55.2	40.2	4	44	66	30.4	20.3	106	46.5	5.6	46.7	42	2	4	542 966	MS4-AEND 
MS6	79	62	4.5	54	90.5	48.4	32	158	71	6.6	71	62	2	17	535 408	MS6-AEND

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.

MS series service units

Accessories



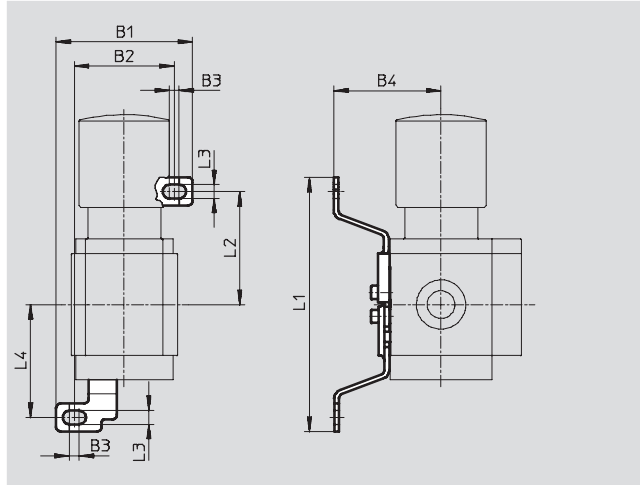
Mounting bracket MS4/6-WB

(order code: WB)

- For wall mounting

Material:

Steel



Dimensions and ordering data											
Size	B1	B2	B3	B4	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS4	56.2	41.2	4	44.2	104.6	46.6	5.6	46.5	46	532 185	MS4-WB
MS6	79.4	61.9	4.5	55	157.6	71	6.6	71	121	532 196	MS6-WB

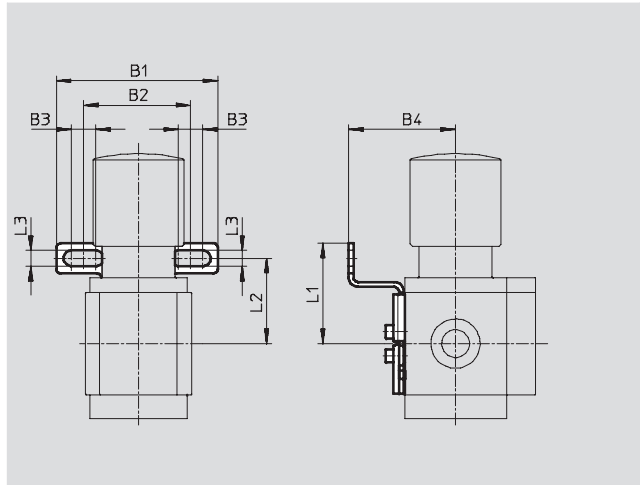
Mounting bracket MS4-WBM

(order code: WBM)

- For wall mounting

Material:

Steel



Dimensions and ordering data											
Size	B1	B2	B3	B4	L1	L2	L3	Weight [g]	Part No.	Type	
MS4	66.5	44	10	44	41.3	35	6.5	48	526 062	MS4-WBM	

MS series service units

Accessories



Mounting bracket MS4/6-WP...

Clearances for mounting service unit combinations

1 unit

MS4-...: 40 mm

MS6-...: 62 mm

2 units

MS4-...: 80 mm

MS6-...: 124 mm with WP, WPB

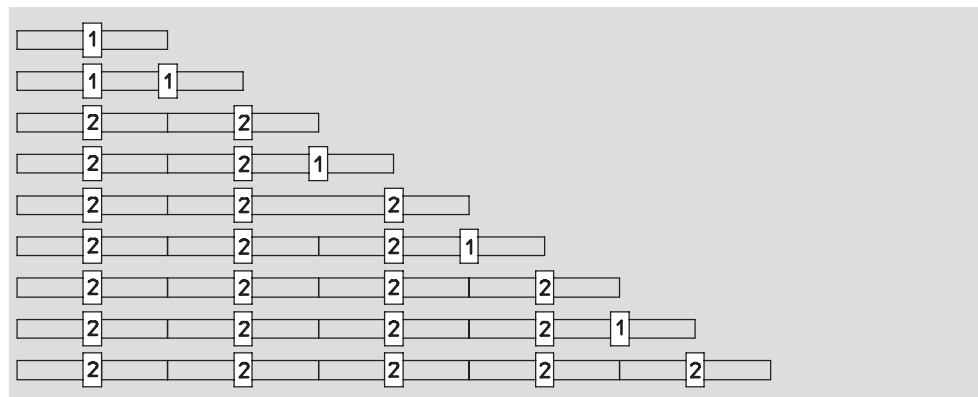
138 mm with WPM-2D

1 Mounting bracket WP, WPB or WPM-D

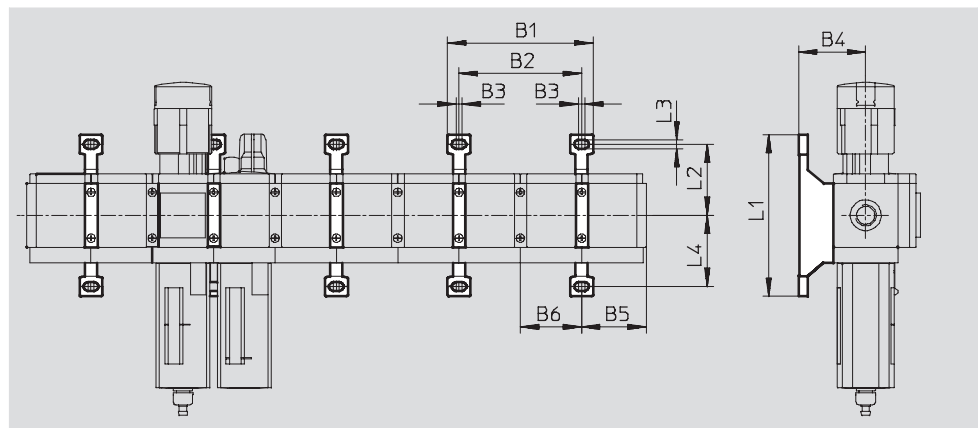
2 Mounting bracket WP, WPB or WPM-2D

Number of units

1 2 3 4 5 6 7 8 9 10



Mounting dimensions



Type	B1	B2	B3	B4	B5	B6	L1	L2	L3	L4
MS4-WP	95.2	80	4	44	41.9	40	106	46.5	5.6	46.7
MS4-WPB				66						
MS4-WPM-...D				44						
MS6-WP	141	124	4.5	54	64.5	62	158	71	6.6	71
MS6-WPB				90.5						
MS6-WPM-...D				54						
MS6-WPM-...D	168	138	17.5	54	65.5	69	98.6	41.3		41.3

MS series service units

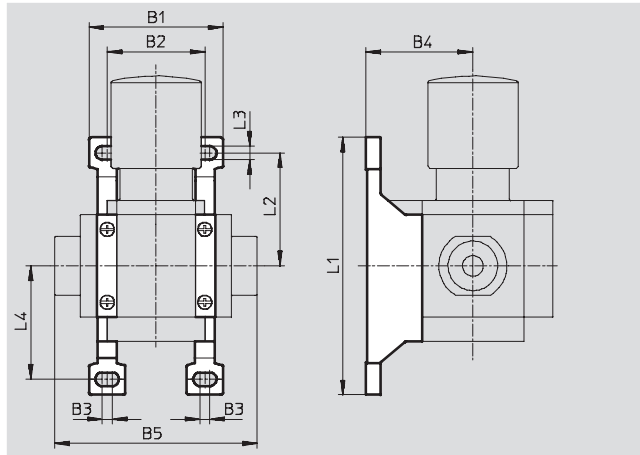
Accessories



Mounting bracket MS4/6-WP

(order code: WP)

- For connecting the modules for wall mounting
- In combination with a connecting plate MS4/6-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS-AEND or for mounting an individual unit with direct thread on a wall
- For pressure regulator LRB with angled outlet block B... at rear



Material:

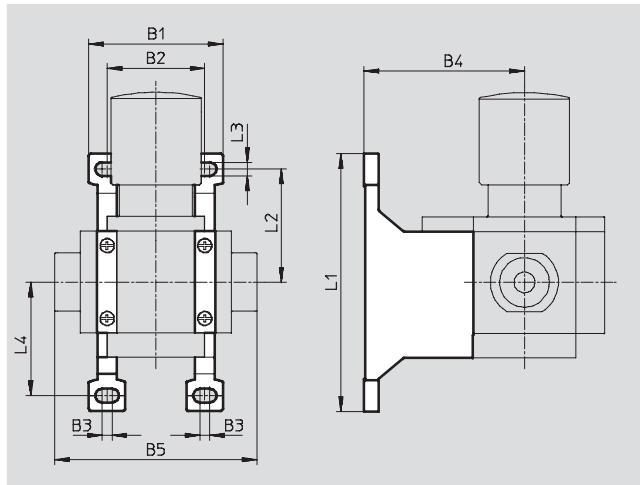
Die-cast aluminium

Dimensions and ordering data												
Size	B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS4	55.2	40.2	4	44	83.4	106	46.5	5.6	46.7	39	532 184	MS4-WP
MS6	79	62	4.5	54	115	158	71	6.6	71	76	532 195	MS6-WP

Mounting bracket MS4/6-WPB

(order code: WPB)

- For connecting the modules for wall mounting
- In combination with a connecting plate MS4/6-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS-AEND or for mounting an individual unit with direct thread on a wall
- Provides large wall gap for pressure regulator



Material:

Die-cast aluminium

Dimensions and ordering data												
Size	B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS4	55.2	40.2	4	66	83.4	106	46.5	5.6	46.7	55	526 063	MS4-WPB
MS6	79	62	4.5	90.5	115	158	71	6.6	71	115	526 074	MS6-WPB

MS series service units

Accessories



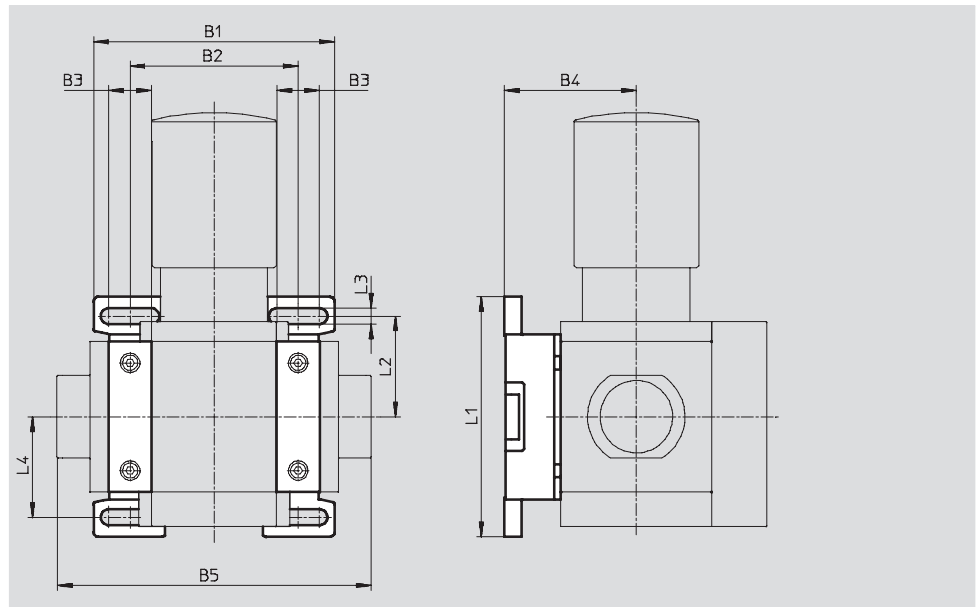
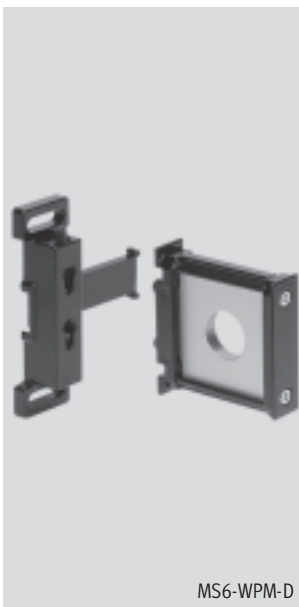
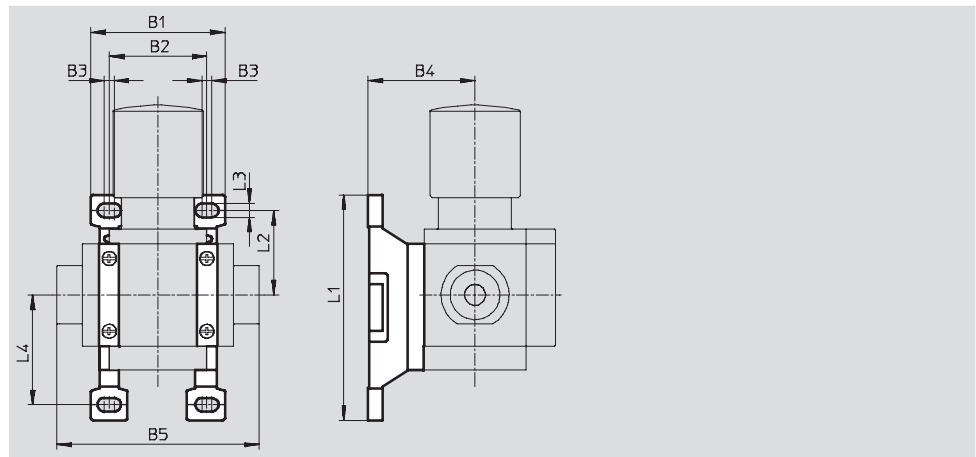
Mounting bracket MS4/6-WPM

(order code: WPM)

- For connecting the modules for wall mounting
- In combination with a connecting plate MS4/6-AG... for mounting an individual unit on a wall
- Speedy attachment and detachment
- For installation of modules with regulating knob pointing downwards

The distance piece D or 2D (designated in the type code) is included in the scope of delivery and ensures the correct clearance

Material:
Die-cast aluminium



Dimensions and ordering data													
Size	B1	B2	B3	B4	B5	L1	L2	L3	L4	Clearance	Weight [g]	Part No.	Type
MS4	55.2	40	4	44	83.4	92.8	34.8	5.6	45.2	40	45	526 060	MS4-WPM-D
	95.2	80			123.4					80	55	526 061	MS4-WPM-2D
MS6	99	69	17.5	54	129	98.6	41.3	6.6	41.3	62	144	526 073	MS6-WPM-D
	168	138			198					124	154	532 186	MS6-WPM-2D

MS series service units

Accessories

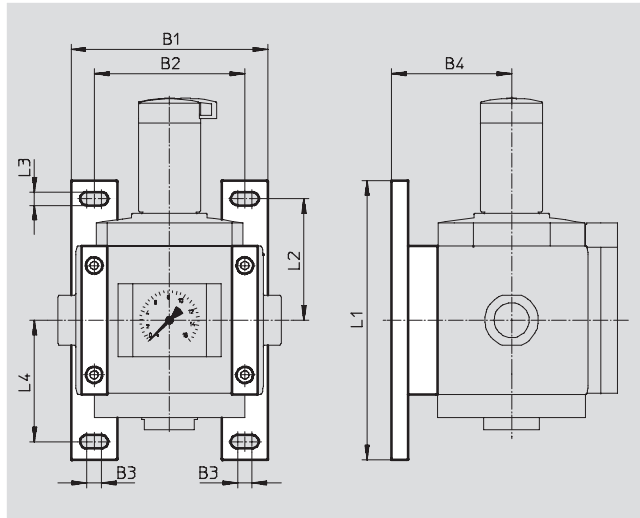


Wall mounting plate MS12-WP

(order code: WP)

- For connecting the modules for wall mounting
- In combination with a connecting plate for mounting an individual unit on a wall

Material:
Die-cast aluminium
Free of copper and PTFE



Dimensions and ordering data											
Size	B1	B2	B3	B4	L1	L2	L3	L4	Weight [g]	Part No.	Type
MS12	162	124	12	99	230	100	11	100	700	537 133	MS12-WP

Module connector MS...-MV

- For connecting modules

Material:
MS4/6: Stainless steel/polyacetate

MS12: Die-cast aluminium,
free of copper and PTFE

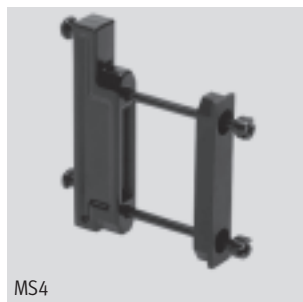


Ordering data			
Size	Weight [g]	Part No.	Type
MS4	36	532 798	MS4-MV
MS6	54	532 799	MS6-MV
MS12	500	537 134	MS12-MV

Module connector MS4/6-MVM

- For installation of modules with regulating knob pointing downwards

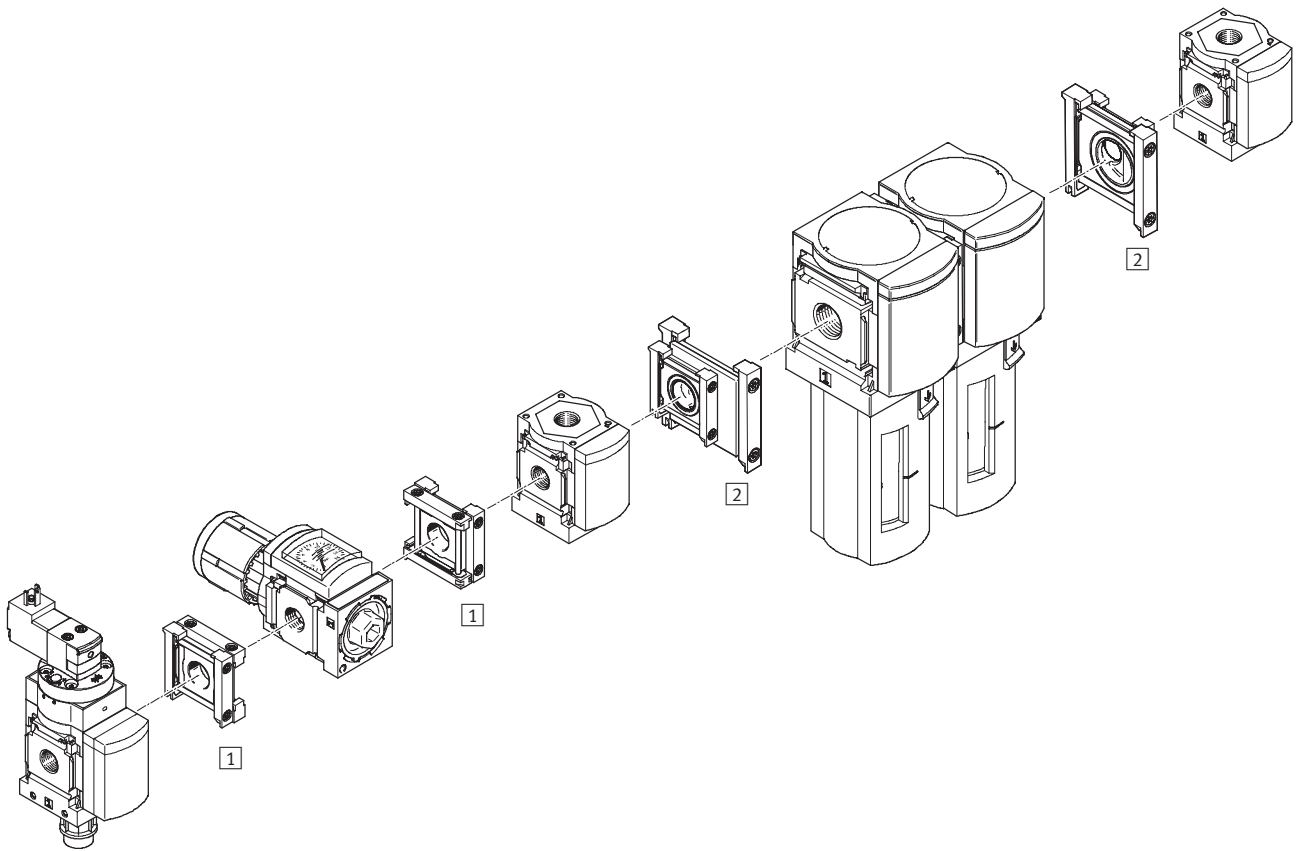
Material:
Die-cast aluminium




Ordering data		
Size	Part No.	Type
MS4	532 800	MS4-MVM
MS6	532 801	MS6-MVM

MS series service units

Accessories



Mounting attachments		→ Page
1	Module connector MS4/6-RMV	11-10
2	Module connector MS4-6-AMV	11-11

 Note
 Mounting attachments for wall
 mounting → 11-5

MS series service units

Accessories

Module connector MS4/6-RMV

- For connecting service units at right angles to the axis of connection

Material:

Connecting plate, module connector:

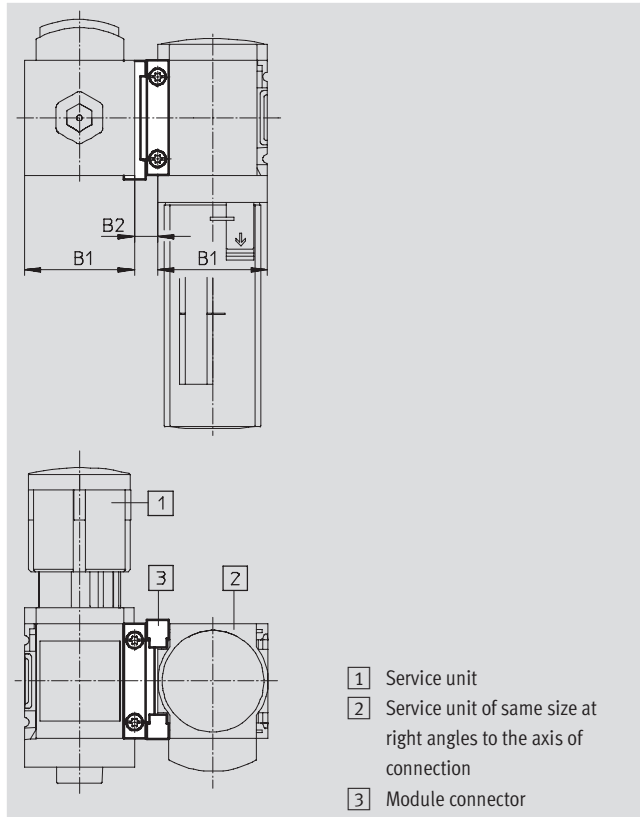
Die-cast aluminium

Sealing ring: Nitrile rubber

Conforms to RoHS

Temperature of medium:

-10 ... +60 °C



Dimensions and ordering data						
Size	B1	B2	CRC ¹⁾	Weight [g]	Part No.	Type
MS4	40.2	8.5	2	50	543 490	MS4-RMV
MS6	62	11	2	80	543 491	MS6-RMV

1) Corrosion resistance class 2 to Festo standard 940 070
 Components subject to moderate corrosion stress. 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.

MS series service units

Accessories

Module connector MS4-6-AMV

- For connecting MS4 and MS6 service units as one unit

Material:

Connecting plate, module connector:

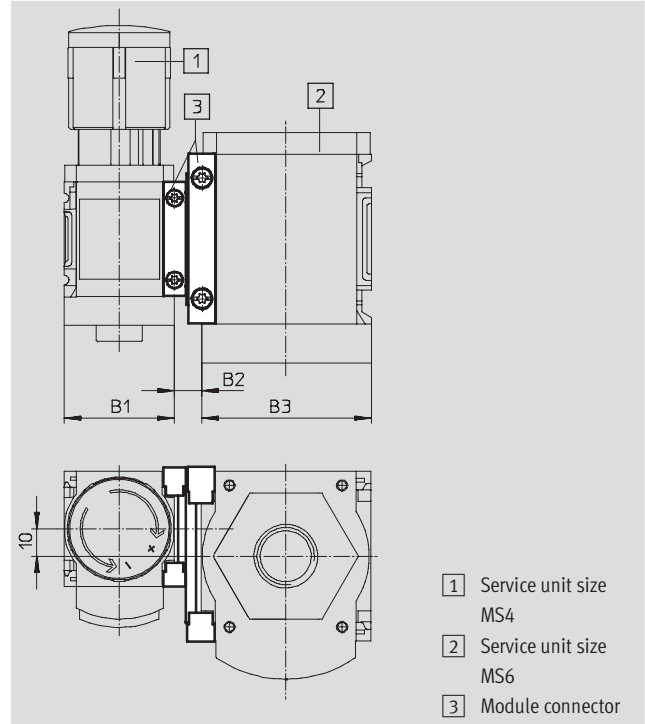
Die-cast aluminium

Sealing ring: Nitrile rubber

Conforms to RoHS

Temperature of medium:

-10 ... +60 °C



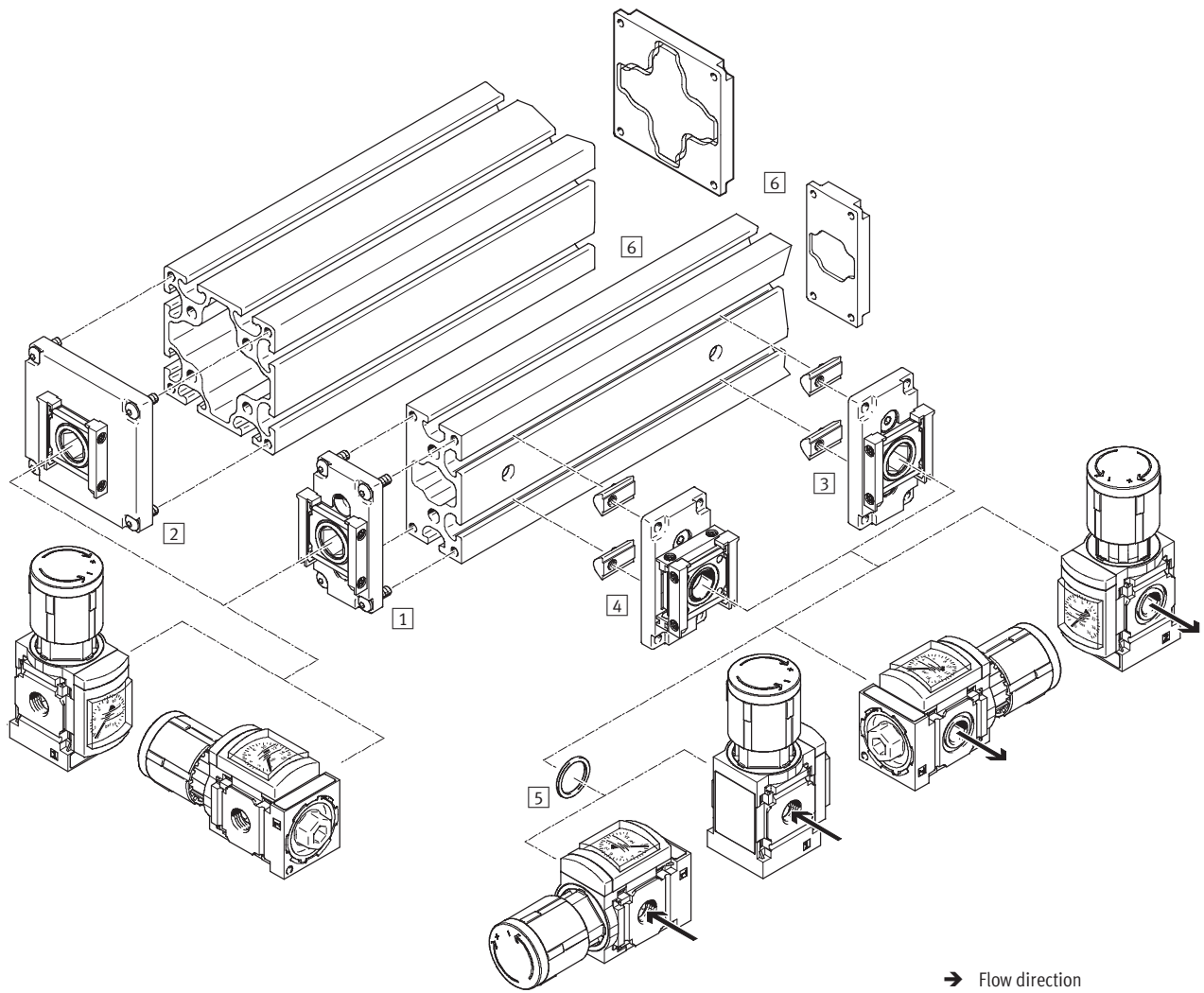
- 1 Service unit size MS4
- 2 Service unit size MS6
- 3 Module connector

Dimensions and ordering data							
Size	B1	B2	B3	CRC ¹⁾	Weight [g]	Part No.	Type
MS4/6	40.2	10	62	2	200	543 489	MS4-6-AMV

1) Corrosion resistance class 2 to Festo standard 940 070
 Components subject to moderate corrosion stress. 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.


MS series service units

Accessories



→ Flow direction

Mounting attachments		→ Page
1	Pressure supply module MS4/6-E-IPM-40-80	11-13
2	Pressure supply module MS4/6-E-IPM-80-80	11-14
3	Branching module MS4/6-A-IPM-80	11-15
4	Branching module MS4/6-A-RMV-IPM-80	11-16
5	Sealing ring MS4/6-NNR	11-17
6	Profiles 40x80/80x80, cover plates, supply plates, drilling jigs	On request

 Note

Further mounting attachments are required for mounting a service unit combination → 11-5

MS series service units

Accessories

Pressure supply module

MS4/6-E-IPM-40-80

- For mounting a service unit on the end of a profile of size 40x80
- Module connector can be repositioned by 90° for horizontal mounting of the service unit

Material:

Connecting plate, hollow bolt, module connector: Die-cast aluminium

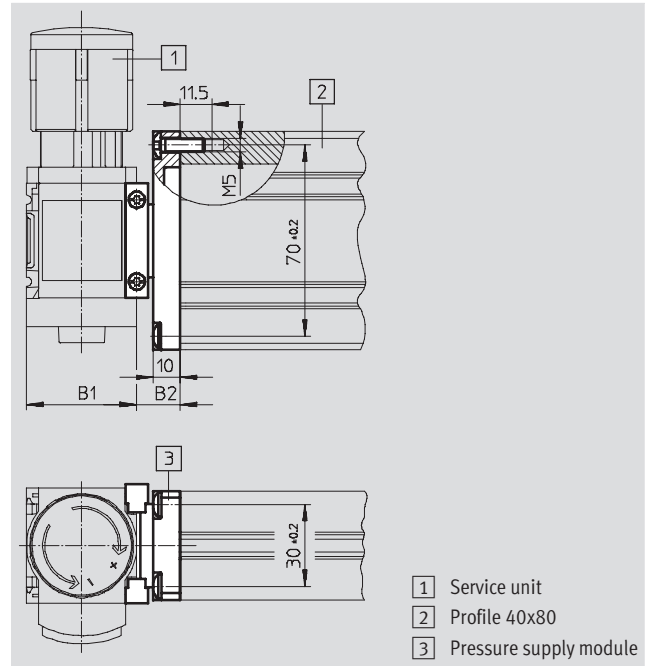
Screws: Steel

Seals: Nitrile rubber

Conforms to RoHS

Temperature of medium:

-10 ... +60 °C



Dimensions and ordering data						
Size	B1	B2	CRC ¹⁾	Weight [g]	Part No.	Type
MS4	40.2	16	2	90	543 494	MS4-E-IPM-40-80
MS6	62	16	2	210	543 496	MS6-E-IPM-40-80

1) Corrosion resistance class 2 to Festo standard 940 070
 Components subject to moderate corrosion stress. 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.

MS series service units

Accessories

Pressure supply module

MS4/6-E-IPM-80-80

- For mounting a service unit on the end of a profile of size 80x80
- Module connector can be repositioned by 90° for horizontal mounting of the service unit

Material:

Connecting plate, hollow bolt, module

connector: Die-cast aluminium

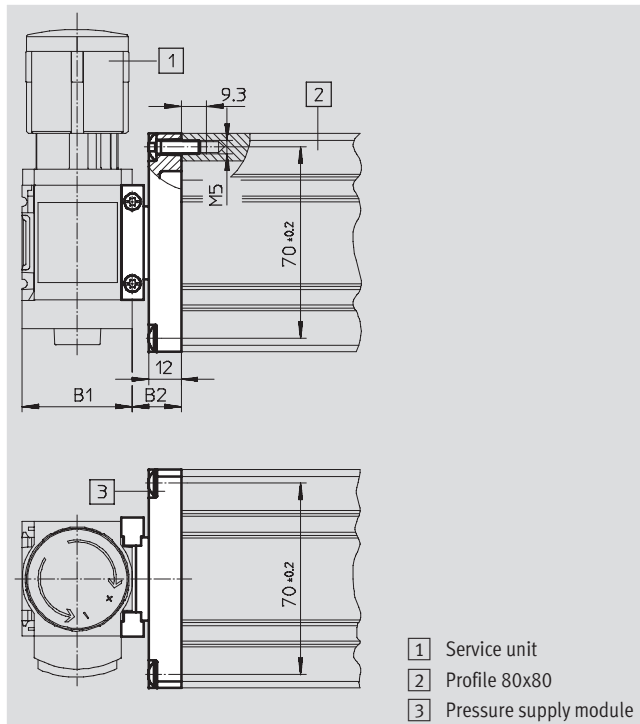
Screws: Steel

Seals: Nitrile rubber

Conforms to RoHS

Temperature of medium:

-10 ... +60 °C



Dimensions and ordering data						
Size	B1	B2	CRC ¹⁾	Weight [g]	Part No.	Type
MS4	40.2	18	2	100	543 495	MS4-E-IPM-80-80
MS6	62	18	2	240	543 497	MS6-E-IPM-80-80

1) Corrosion resistance class 2 to Festo standard 940 070

Components subject to moderate corrosion stress. 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.

MS series service units

Accessories

Branching module MS4/6-A-IPM-80

- For mounting a service unit on the long side of a profile
- Module connector can be repositioned by 90° for horizontal mounting of the service unit

Material:

Connecting plate, hollow bolt, module

connector: Die-cast aluminium

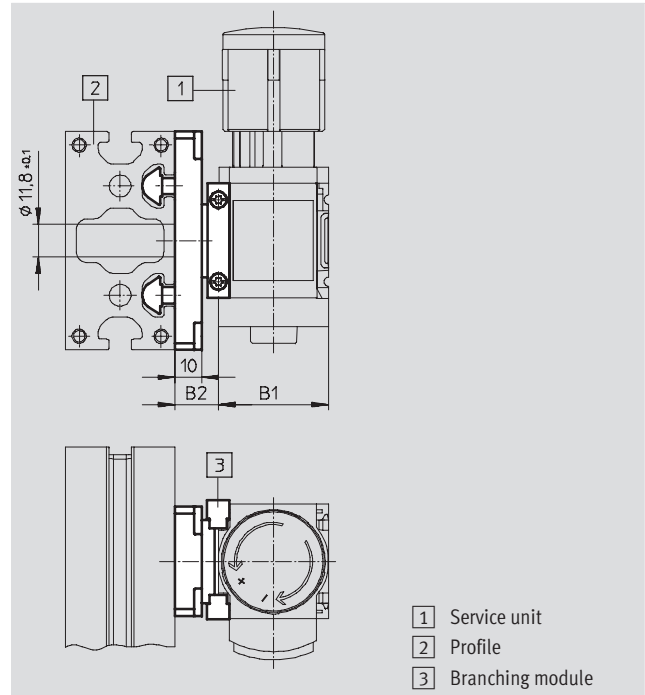
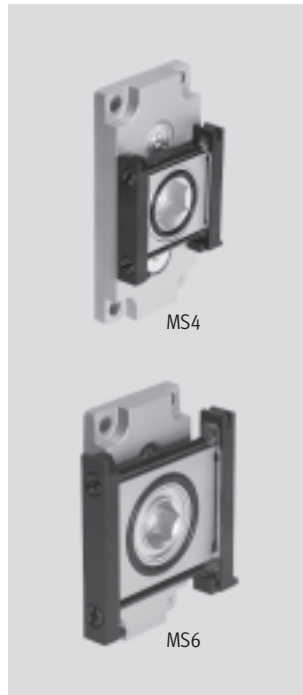
Screws: Steel

Seals: Nitrile rubber

Conforms to RoHS

Temperature of medium:

-10 ... +60 °C



- 1 Service unit
- 2 Profile
- 3 Branching module

Dimensions and ordering data						
Size	B1	B2	CRC ¹⁾	Weight [g]	Part No.	Type
MS4	40.2	16	2	90	543 498	MS4-A-IPM-80
MS6	62	16	2	200	543 499	MS6-A-IPM-80

1) Corrosion resistance class 2 to Festo standard 940 070

Components subject to moderate corrosion stress. 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.

MS series service units

Accessories

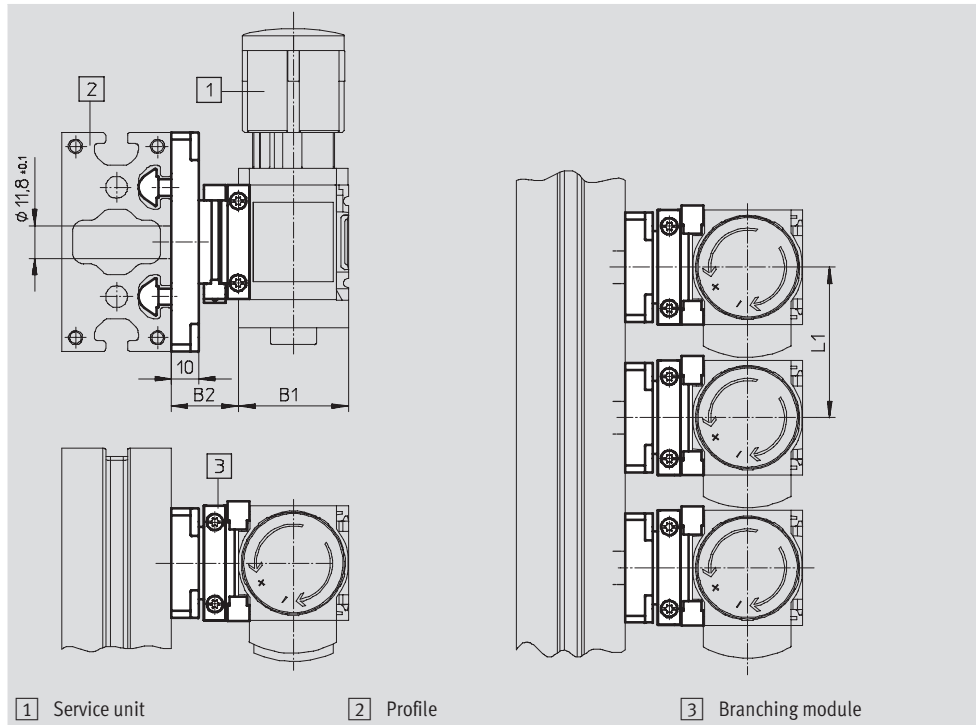
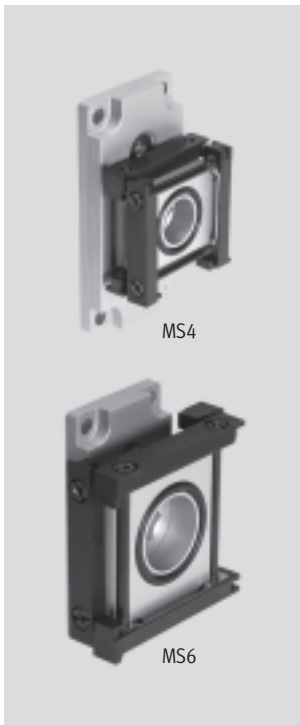
Branching module

MS4/6-A-RMV-IPM-80

- For mounting a service unit on the long side of a profile
- Suitable for manifold mounting (the fittings on the module connector can be accessed from above for fast replacement of an individual component)
- Module connector can be repositioned by 90° for horizontal mounting of the service unit

Material:
 Connecting plate, hollow bolt,
 module connector: Die-cast
 aluminium
 Screws: Steel
 Seals: Nitrile rubber
 Conforms to RoHS

Temperature of medium:
 -10 ... +60 °C



Dimensions and ordering data							
Size	B1	B2	L1	CRC ¹⁾	Weight [g]	Part No.	Type
MS4	40.2	24.5	55	2	150	543 500	MS4-A-RMV-IPM-80
MS6	62	27	77	2	220	543 501	MS6-A-RMV-IPM-80

1) Corrosion resistance class 2 to Festo standard 940 070
 Components subject to moderate corrosion stress. 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.

MS series service units

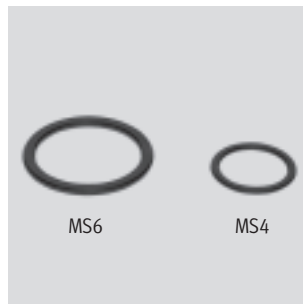
Accessories

Sealing ring MS4/6-NNR

- For sealing a branching module
MS-A-IPM when used as a pressure supply module

Material:
Nitrile rubber
Conforms to RoHS

Temperature of medium:
-10 ... +60 °C




Dimensions and ordering data				
Size	CRC ¹⁾	Weight [g]	Part No.	Type
MS4	2	1	543 492	MS4-NNR
MS6	2	1	543 493	MS6-NNR


1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. 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.


MS series service units

Accessories



Ordering data – Silencer U			Technical data → www.festo.com	
	Description	Pneumatic connection	Part No.	Type
	for MS4-EM1/EE	G $\frac{1}{4}$	6 842	U-$\frac{1}{4}$-B
	for MS6-EM1/EE	G $\frac{1}{2}$	6 844	U-$\frac{1}{2}$-B
	for MS12-EM/EE	G1	151 990	U-1-B

Ordering data – Double nipple ESK					
	Description	Pneumatic connection		Part No.	Type
	Adjustable for angular compensation • For retro-fitting pressure switch PEV or pressure sensor SDE1 to branching module MS-FRM	R $\frac{1}{8}$	R $\frac{1}{4}$	534 151	ESK-$\frac{1}{8}$-$\frac{1}{4}$
		R $\frac{1}{4}$	R $\frac{1}{4}$	151 521	ESK-$\frac{1}{4}$-$\frac{1}{4}$
			R $\frac{1}{2}$	534 153	ESK-$\frac{1}{4}$-$\frac{1}{2}$

Ordering data – Padlock LRVS-D				
	Description	Weight [g]	Part No.	Type
	for filter or pressure regulators	120	193 786	LRVS-D

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