

## On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series

FESTO



Manually operated and solenoid actuated on-off valves for pressurizing and venting pneumatic installations. Pneumatic and solenoid actuated soft-start valves for slowly pressurizing and venting pneumatic installation.

- On-off valves
  - MS4-EM1, manually operated
  - MS4-EE, solenoid actuated
- Soft-start valves
  - MS4-DL, pneumatically actuated
  - MS4-DE, solenoid actuated
- Pneumatic connection: G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$
- Operating pressure
  - EM1: 0 ... 14 bar
  - EE, DL and DE: 4 ... 14 bar
- Flow rate: 1,000 ... 2,200 l/min

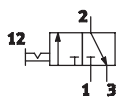
Product Range Overview														
Type	Flow rate [l/min]	Pneumatic connections		Supply voltage				Pressure indicator				Options		
		Body thread	Port plate	24 V DC (connection pattern to EN 175301)	24 V DC (connection pattern M12 to DESINA)	110 V AC (connection pattern to EN 175301)	230 V AC (connection pattern to EN 175301)	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for pressure gauge G $\frac{1}{8}$	Adapter for pressure gauge G $\frac{1}{4}$	Pressure sensor with display	Silencer	Flow direction from right to left
MS4			AG...	V24	V24P	V110	V230	VS	AG	A8	A4	AD...	S	Z
EM1	1,200 ... 2,200	G $\frac{1}{8}$ , G $\frac{1}{4}$	G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$	-	-	-	-	■	■	■	■	■	■	■
EE	1,000 ... 2,000	G $\frac{1}{8}$ , G $\frac{1}{4}$	G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$	■	-	■	■	■	■	■	■	■	■	■
DL	1,000 ... 2,000	G $\frac{1}{8}$ , G $\frac{1}{4}$	G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$	-	-	-	-	■	■	■	■	■	-	■
DE	1,000 ... 2,000	G $\frac{1}{8}$ , G $\frac{1}{4}$	G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$	■	-	■	■	■	■	■	■	■	-	■

Contents			
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→ <a href="http://www.festo.com/catalog/ms4-em1">www.festo.com/catalog/ms4-em1</a>	→ <a href="http://www.festo.com/catalog/ms4-ee">www.festo.com/catalog/ms4-ee</a>	→ <a href="http://www.festo.com/catalog/ms4-dl">www.festo.com/catalog/ms4-dl</a>	→ <a href="http://www.festo.com/catalog/ms4-de">www.festo.com/catalog/ms4-de</a>

# On-off Valves MS4-EM1 – Metric Series

Technical Data

ISO Symbol



- Manually operated on-off valve for pressurizing and venting pneumatic installations
- The valve is activated by turning the rotary knob
- At connection 3 there is the facility to attach a silencer and/or to duct the exhaust air
- When the valve is closed, the rotary knob can be secured with a padlock
- Optional pressure gauge
- Optional pressure sensor with display



General Technical Data		
Pneumatic connection 1, 2	G1/8	G1/4
Pneumatic connection 3	G1/4	
Operating pressure [bar]	0 ... 14 (Standard)	
	0 ... 10 (Pressure sensor with display AD...)	

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

Standard Nominal Flow Rate $q_{nN}^{1)}$ [l/min]		
Pneumatic connection	G1/8	G1/4
In main flow direction 1 → 2	1,200	2,200
In relief direction 2 → 3	1,900	1,700

1) Measured at  $p_1 = 6$  bar and  $p_2 = 5$  bar,  $\Delta p = 1$  bar

Operating and Environmental Conditions		
Variant	Standard	Pressure sensor with display AD...
Operating medium	Compressed air	Filtered compressed air, lubricated or unlubricated, filtration grade 40 $\mu$ m
Exhaust function	No flow control	
Switching position display	Knob actuator direction = flow direction	
Ambient temperature [°C]	-10 ... +60	0 ... +50
Temperature of medium [°C]	-10 ... +60	0 ... +50
Assembly position	Any	
Corrosion resistance CRC <sup>2)</sup>	2	

2) 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]	
Standard	190
With silencer	210

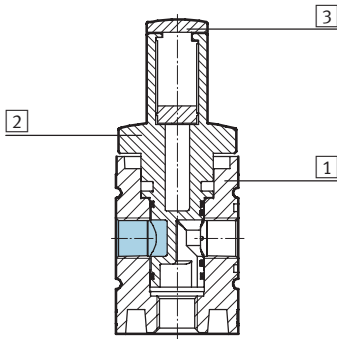
- For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

# On-off Valves MS4-EM1 – Metric Series

Technical Data, Dimensional Drawings

## Materials

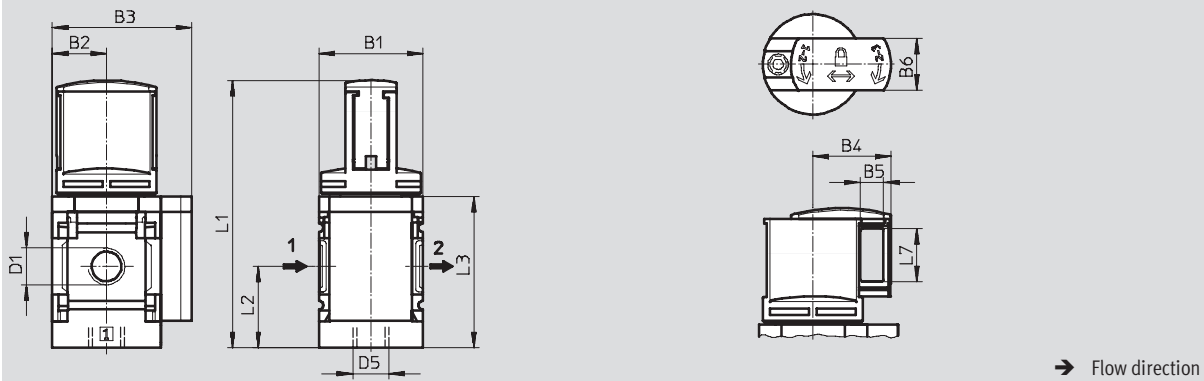
Sectional view



On-off valve		
1	Body	Die-cast aluminum
2	Rotary valve	Reinforced polyamide
3	Lock slide	Reinforced polyamide
-	Seals	Nitrile rubber, polyurethane
Note on materials		Free of copper and PTFE (not with variants AG or AD...)

## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	B1	B2	B3	B4	B5	B6	D1	D5	L1	L2	L3	L7
MS4-EM1-1/8	40	21	54	30	9	20	G1/8	G1/4	104	31.5	59	20.6
MS4-EM1-1/4							G1/4					

1) Dimensions are in millimeters, unless otherwise noted.

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

# On-off Valves MS4-EM1 – Metric Series



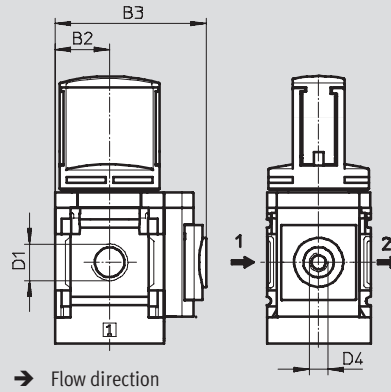
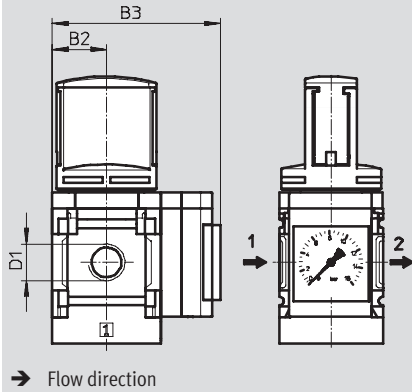
Dimensional Drawings

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

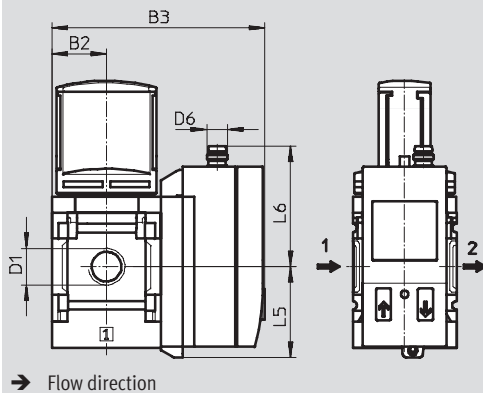
Integrated MS pressure gauge AG, display unit [bar]

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



## Pressure sensor with display AD1 ... AD4

Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)



AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

Type	B2	B3	D1	D4	D6	L5	L6
MS4-EM1-1/8-...-AG	21	65	G1/8	-	-	-	-
MS4-EM1-1/4-...-AG			G1/4				
MS4-EM1-1/8-...-A8	21	58.5	G1/8	G1/8	-	-	-
MS4-EM1-1/4-...-A8			G1/4				
MS4-EM1-1/8-...-A4	21	58.5	G1/8	G1/4	-	-	-
MS4-EM1-1/4-...-A4			G1/4				
MS4-EM1-1/8-...-AD1/AD2	21	82.6	G1/8	-	M8x1	35.1	46.7
MS4-EM1-1/4-...-AD1/AD2			G1/4				
MS4-EM1-1/8-...-AD3/AD4	21	82.6	G1/8	-	M12x1	35.1	55.8
MS4-EM1-1/4-...-AD3/AD4			G1/4				

1) Dimensions are in millimeters, unless otherwise noted.

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

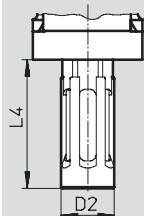
# On-off Valves MS4-EM1 – Metric Series

Dimensional Drawings, Ordering Data – Pre-configured Products



## Dimensions<sup>1)</sup> – Silencer

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	D2	L4
MS4-EM1-...-S	19.5	47

1) Dimensions are in millimeters, unless otherwise noted.

## Ordering Data

Connection	Standard			With silencer		
	Part No.	Type	LT	Part No.	Type	LT
G <sup>1</sup> / <sub>8</sub>	541262	MS4-EM1- <sup>1</sup> / <sub>8</sub> <sup>2)</sup>	1D	541263	MS4-EM1- <sup>1</sup> / <sub>8</sub> -S <sup>2)</sup>	1D
G <sup>1</sup> / <sub>4</sub>	541258	MS4-EM1- <sup>1</sup> / <sub>4</sub> <sup>2)</sup>	1D	541259	MS4-EM1- <sup>1</sup> / <sub>4</sub> -S <sup>2)</sup>	1D

LT = Lead time      **1D** typically ships same day/next day      **1W** typically ships within 1 week      **Q** request a quote for lead time

2) Free of copper and PTFE

# On-off Valves MS4-EM1 – Metric Series

Ordering Data – Configurable Products



M Mandatory Data					O Options				
Part No.	Series	Size	Function	Connection size	Silencer	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
541266	MS	4	EM1	1/8, 1/4, AGA, AGB, AGC	S	AG, A8, A4, AD1, AD2, AD3, AD4	PSI MPA	WP WPM WB WBM	Z
<b>Order example</b>									
541266	MS	4	EM1	1/4	S	AG	PSI	WB	Z

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	541266				
	Series	Standard			MS	MS
	Size	4			4	4
	Function	On-off valve, manual			-EM1	-EM1
	Connection size	Body thread G1/8			-1/8	
		Body thread G1/4			-1/4	
		Port plate G1/8 (dimensions → 390)			-AGA	
		Port plate G1/4 (dimensions → 390)			-AGB	
		Port plate G3/8 (dimensions → 390)			-AGC	
O	Silencer	Silencer			-S	
	Pressure gauge alternatives	MS pressure gauge, bar (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		1	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		1	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		1	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		1	-AD4	
	Alternative pressure gauge scale	psi		2	-PSI	
		MPa		2	-MPA	
	Type of mounting	Mounting bracket (dimensions → 391)		3	-WP	
		Mounting bracket (dimensions → 391)		3	-WPM	
		Mounting bracket (dimensions → 388)			-WB	
		Mounting bracket (dimensions → 388)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

1 AD1 ... AD4 Measuring range max. 10 bar

2 PSI, MPA Only with pressure gauge AG

3 WP, WPM Only with port plate AGA, AGB or AGC

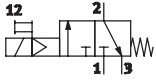
### Transfer order code

541266	MS	4	-	EM1	-		-		-		-		-		-	
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# On-off Valves MS4-EE – Metric Series

Technical Data

ISO Symbol



- Solenoid actuated on-off valve for pressurizing and venting pneumatic installations
- Ducted exhaust possible via a threaded connection with silencer
- Pushing and detenting manual override (detenting is locked on delivery)
- Solenoid coil without plug socket, three voltage ranges available.
- Solenoid actuator can be repositioned by 180°
- Optional pressure sensor with display



General Technical Data		
Pneumatic connection 1, 2	G1/8	G1/4
Pneumatic connection 3	G1/4	
Operating pressure [bar]	4 ... 14 (Coil parameter V24, V110, V230)	
	4 ... 10 (Coil parameter 10V24)	
	4 ... 10 (Pressure sensor with display AD...)	

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

Standard Nominal Flow Rate qnN <sup>1)</sup> [l/min]		
Pneumatic connection	G1/8	G1/4
In main flow direction 1 → 2	1,000	2,000
In relief direction 2 → 3	1,600	1,600

1) Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar

Operating and Environmental Conditions			
Variant	Coil parameter V24, V110, V230	Coil parameter 10V24	Pressure sensor with display AD...
Operating medium	Compressed air		Filtered compressed air, lubricated or unlubricated, filtration grade 40 μm
Coil characteristics	V24	24 V DC (For valves with max. inlet pressure 14 bar – only available via configurator)	
	10V24	24 V DC (For valves with max. inlet pressure 10 bar)	
	V110	110 V AC	
	V230	230 V AC	
Exhaust function	Without flow control		
Ambient temperature [°C]	-10 ... +60	-10 ... +50	0 ... +50
Temperature of medium [°C]	-10 ... +60	-10 ... +50	0 ... +50
Assembly position	Any		
Corrosion resistance CRC <sup>2)</sup>	2		

2) 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]	
Standard	273
With silencer	289

• For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

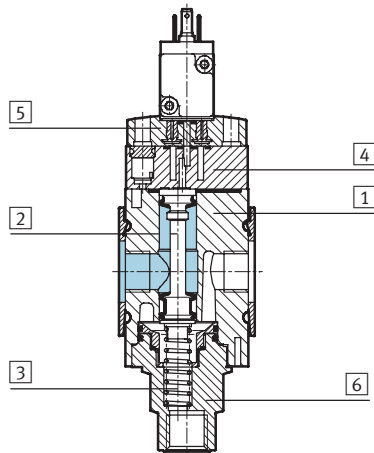
# On-off Valves MS4-EE – Metric Series

Technical Data



## Materials

Sectional view



On-off valve		
1	Body	Die-cast aluminum
2	Piston spool	Nitrile rubber/Aluminum
3	Springs	High-alloy stainless steel
4	End cap	Polyamide
5	Top plate	Polyamide
6	Socket end connection	Polyamide
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants AG, 10V24 or AD...)



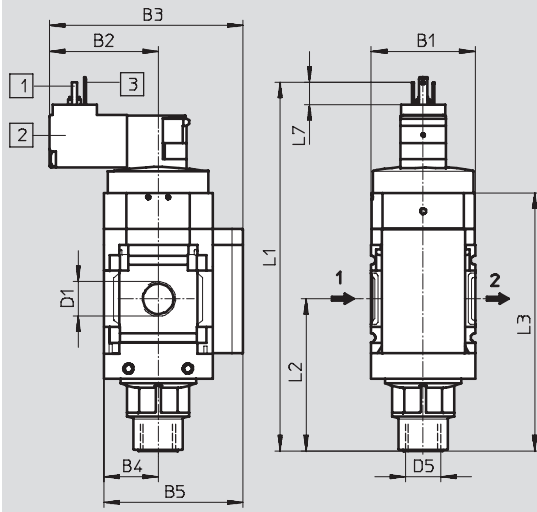
# On-off Valves MS4-EE – Metric Series

Dimensional Drawings



## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



- 1 Plug connection to DIN EN 175 301-803
- 2 Solenoid actuator can be repositioned by 180°, i.e. solenoid points to the front
- 3 PIN only with solenoid actuators 110 V and 230 V

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D5	L1	L2	L3	L7
MS4-EE-1/8	40	42.2	75.2	21	54	G1/8	G1/4	142.8	58.9	100	8.6
MS4-EE-1/4						G1/4					

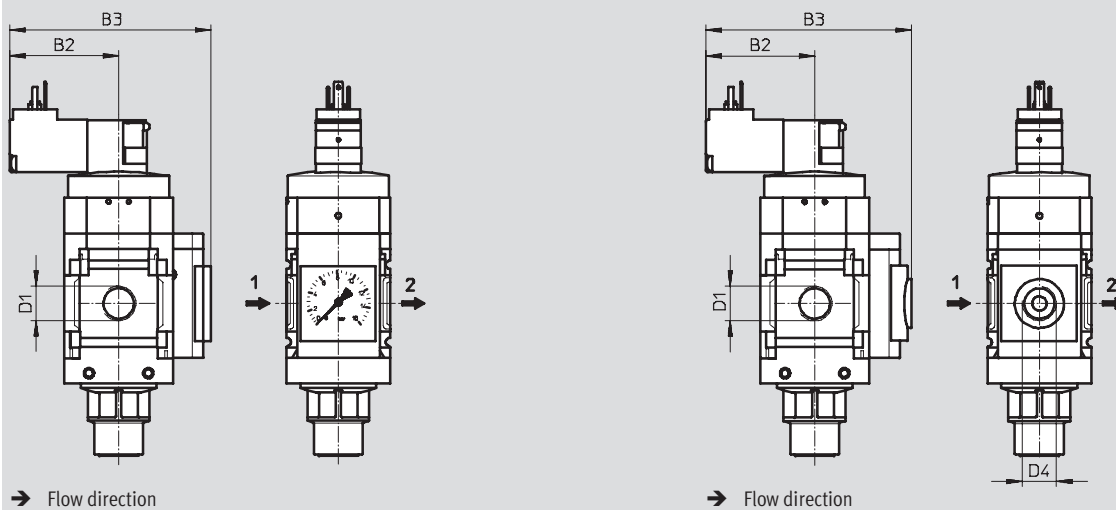
1) Dimensions are in millimeters, unless otherwise noted.

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [bar]

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



→ Flow direction

→ Flow direction

Type	B2	B3	D1	D4
MS4-EE-1/8-...-AG	42.2	86.2	G1/8	-
MS4-EE-1/4-...-AG			G1/4	
MS4-EE-1/8-...-A8	42.2	79.7	G1/8	G1/8
MS4-EE-1/4-...-A8			G1/4	
MS4-EE-1/8-...-A4	42.2	79.7	G1/8	G1/4
MS4-EE-1/4-...-A4			G1/4	

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

# On-off Valves MS4-EE – Metric Series



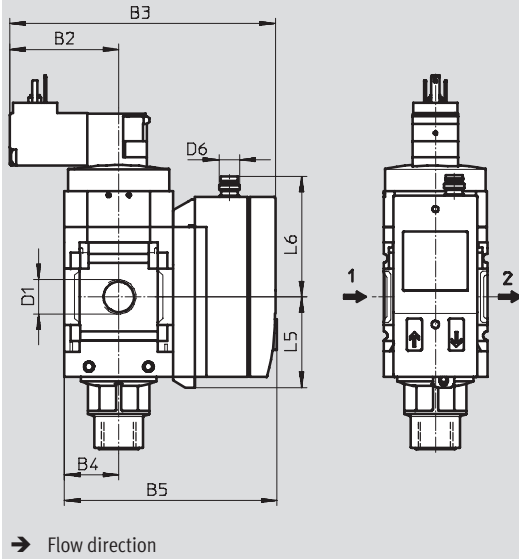
Dimensional Drawings

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pressure sensor with display AD1 ... AD4

Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)



AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

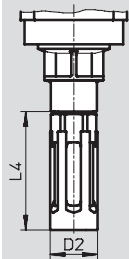
Type	B2	B3	B4	B5	D1	D6	L5	L6
MS4-EE-1/8-...-AD1/AD2	42.2	103.8	21	82.6	G1/8	M8x1	35.1	46.7
MS4-EE-1/4-...-AD1/AD2					G1/4			
MS4-EE-1/8-...-AD3/AD4	42.2	103.8	21	82.6	G1/8	M12x1	35.1	55.8
MS4-EE-1/4-...-AD3/AD4					G1/4			

1) Dimensions are in millimeters, unless otherwise noted.

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

## Dimensions<sup>1)</sup> – Silencer

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	D2	L4
MS4-EE-...-S	19.5	48.5

1) Dimensions are in millimeters, unless otherwise noted.

## On-off Valves MS4-EE – Metric Series

Ordering Data – Pre-configured Products



Ordering Data						
Connection	Without silencer			With silencer		
	Part No.	Type	LT	Part No.	Type	LT
Supply voltage 24 V DC						
G $\frac{1}{8}$	542580	MS4-EE- $\frac{1}{8}$ -10V24	1D	542600	MS4-EE- $\frac{1}{8}$ -10V24-S	Q
G $\frac{1}{4}$	542578	MS4-EE- $\frac{1}{4}$ -10V24	1D	542598	MS4-EE- $\frac{1}{4}$ -10V24-S	Q
Supply voltage 110 V AC						
G $\frac{1}{8}$	529541	MS4-EE- $\frac{1}{8}$ -V110 <sup>1)</sup>	1D	538725	MS4-EE- $\frac{1}{8}$ -V110-S <sup>1)</sup>	Q
G $\frac{1}{4}$	529535	MS4-EE- $\frac{1}{4}$ -V110 <sup>1)</sup>	1D	538719	MS4-EE- $\frac{1}{4}$ -V110-S <sup>1)</sup>	Q
Supply voltage 230 V AC						
G $\frac{1}{8}$	529543	MS4-EE- $\frac{1}{8}$ -V230 <sup>1)</sup>	1D	538727	MS4-EE- $\frac{1}{8}$ -V230-S <sup>1)</sup>	Q
G $\frac{1}{4}$	529537	MS4-EE- $\frac{1}{4}$ -V230 <sup>1)</sup>	1D	538721	MS4-EE- $\frac{1}{4}$ -V230-S <sup>1)</sup>	Q

LT = Lead time

1D typically ships same day/next day

1W typically ships within 1 week

Q request a quote for lead time

1) Free of copper and PTFE

# On-off Valves MS4-EE – Metric Series



Ordering Data – Configurable Products

**M** Mandatory Data →

Part No.	Series	Size	Function	Connection size	Supply voltage
527709	MS	4	EE	1/8 1/4 AGA AGB AGC	V24 10V24 V110 V230
<b>Order example</b>					
<b>527709</b>	<b>MS</b>	<b>4</b>	<b>- EE</b>	<b>- AGB</b>	<b>- V24</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
<b>M</b>	Part No.	<b>527709</b>				
	Series	Standard			<b>MS</b>	MS
	Size	4			<b>4</b>	4
	Function	On-off valve, electrical			<b>-EE</b>	-EE
	Connection size	Body thread G1/8			<b>-1/8</b>	
		Body thread G1/4			<b>-1/4</b>	
		Port plate G1/8 (dimensions → 390)			<b>-AGA</b>	
		Port plate G1/4 (dimensions → 390)			<b>-AGB</b>	
		Port plate G3/8 (dimensions → 390)			<b>-AGC</b>	
	Supply voltage	24 V DC (connection pattern to EN 175301), 14 bar			<b>-V24</b>	
		24 V DC (connection pattern to EN 175301), 10 bar		<b>1</b>	<b>-10V24</b>	
		110 V AC (connection pattern to EN 175301), 14 bar			<b>-V110</b>	
		230 V AC (connection pattern to EN 175301), 14 bar			<b>-V230</b>	

**1** 10V24 Max. inlet pressure 10 bar

Transfer order code

# On-off Valves MS4-EE – Metric Series



Ordering Data – Configurable Products

→ **0 Options**

Silencer	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
S	AG A8 A4 AD1 AD2 AD3 AD4	PSI MPA	WP WPM WB WBM	Z
- S	- AG	- PSI	- WP	- Z

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
0 Silencer	Silencer				-S	
Pressure gauge alternatives	MS pressure gauge, bar (with adapter)				-AG	
	Adapter plate for EN pressure gauge 1/8, without pressure gauge				-A8	
	Adapter plate for EN pressure gauge 1/4, without pressure gauge				-A4	
	Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin	[2]			-AD1	
	Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin	[2]			-AD2	
	Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA	[2]			-AD3	
	Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA	[2]			-AD4	
Alternative pressure gauge scale	psi	[3]			-PSI	
	MPa	[3]			-MPA	
Type of mounting	Mounting bracket (dimensions → 391)	[4]			-WP	
	Mounting bracket (dimensions → 391)	[4]			-WPM	
	Mounting bracket (dimensions → 388)				-WB	
	Mounting bracket (dimensions → 388)				-WBM	
Reverse flow direction	Flow direction from right to left				-Z	

[2] **AD1 ... AD4** Measuring range max. 10 bar  
 [3] **PSI, MPA** Only with pressure gauge AG

[4] **WP, WPM** Only with port plate AGA, AGB or AGC

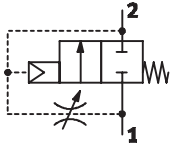
**Transfer order code**

-  -  -  -  -

# Soft-start Valves MS4-DL – Metric Series

Technical Data

ISO Symbol



- Pneumatically actuated soft-start valve for slowly pressurizing and venting pneumatic installations (for use with on-off valves EM1 and EE)
- The duration of the pressure build-up is adjusted using the restrictor attached to the valve cap.
- The output pressure p2 rises slowly in accordance with the restrictor setting. The main seat opens when the switch-through pressure is reached.
- Pressure switching approx. 50% of supply pressure
- When the valve is exhausted, the main seat remains open until the switch-through pressure is reached. The rest of the exhaust procedure is performed via the restricted passage.



- The cylinders advance slowly and reliably into the initial position, sudden and erratic movements are avoided.
- Adjustable switching time delay
- Optional pressure sensor with display

General Technical Data		
Pneumatic connection 1, 2	G1/8	G1/4
Operating pressure [bar]	4 ... 14 (Standard)	
	4 ... 10 (Pressure sensor with display AD...)	

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

Standard Nominal Flow Rate qn <sup>1)</sup> [l/min]		
Pneumatic connection 1, 2	G1/8	G1/4
In main flow direction 1 → 2	1,000	2,000
In relief direction 2 → 1	1,000	2,000

1) Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar

Operating and Environmental Conditions		
Variant	Standard	Pressure sensor with display AD...
Operating medium	Compressed air	Filtered compressed air, lubricated or unlubricated, filtration grade 40 μm
Exhaust function	Flow control	
Direction of flow	Non-reversible	
Ambient temperature [°C]	-10 ... +60	0 ... +50
Temperature of medium [°C]	-10 ... +60	0 ... +50
Assembly position	Any	
Corrosion resistance CRC <sup>2)</sup>	2	

2) 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]	
Soft-start valve	213

• For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

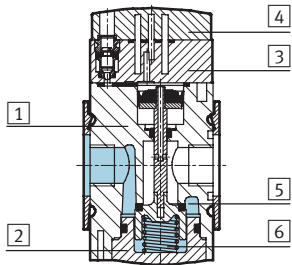
# Soft-start Valves MS4-DL – Metric Series

Technical Data



## Materials

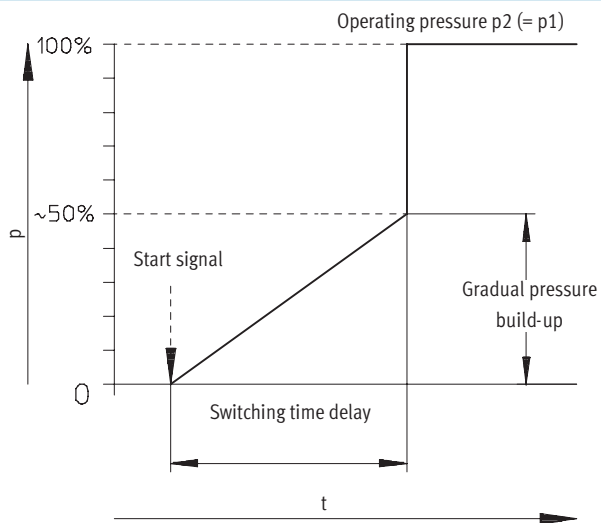
Sectional view



Soft-start valve		
1	Body	Die-cast aluminum
2	Base	Polyester
3	End cap	Polyamide
4	Top plate	Polyamide
5	Seat	Die-cast aluminum
6	Springs	Spring steel
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants AG or AD...)

## Switching Point

Pressure p as a function of time t



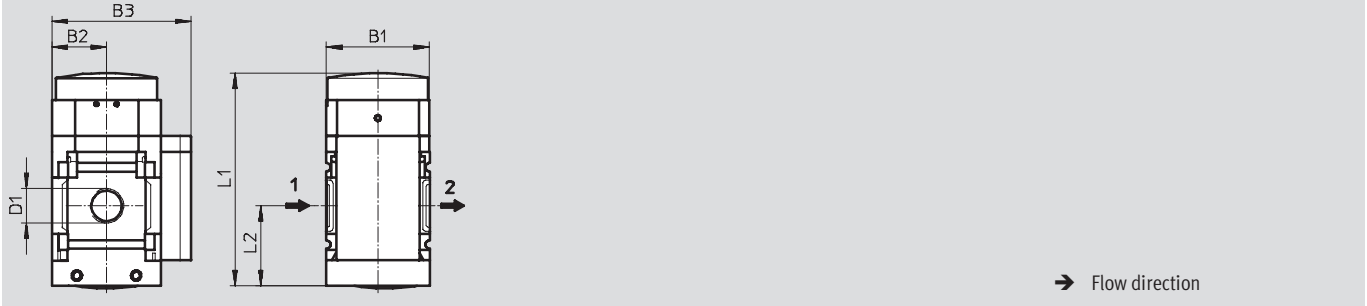
# Soft-start Valves MS4-DL – Metric Series

Dimensional Drawings



## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	B1	B2	B3	D1	L1	L2
MS4-DL-1/8	40	21	54	G1/8	82.7	31
MS4-DL-1/4				G1/4		

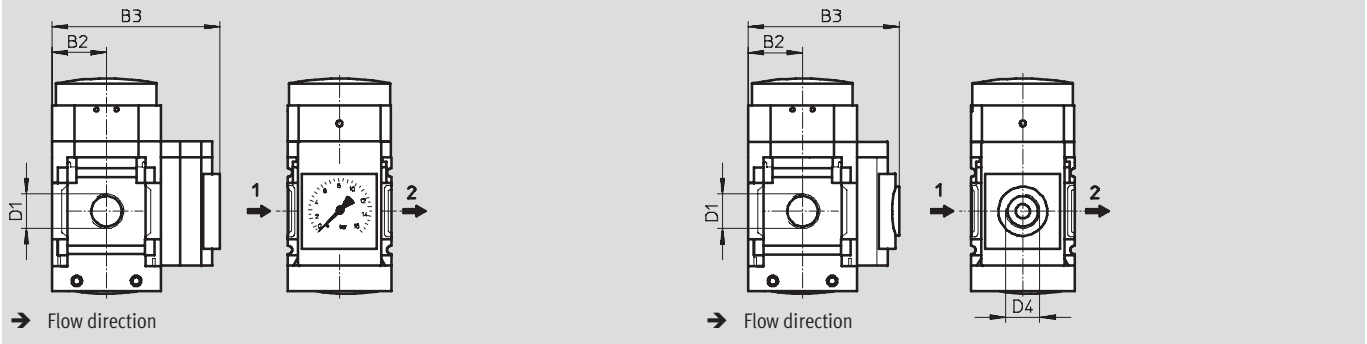
1) Dimensions are in millimeters, unless otherwise noted.

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [bar]

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



Type	B2	B3	D1	D4
MS4-DL-1/8-...-AG	21	65	G1/8	-
MS4-DL-1/4-...-AG			G1/4	
MS4-DL-1/8-...-A8	21	58.5	G1/8	G1/8
MS4-DL-1/4-...-A8			G1/4	
MS4-DL-1/8-...-A4	21	58.5	G1/8	G1/4
MS4-DL-1/4-...-A4			G1/4	

1) Dimensions are in millimeters, unless otherwise noted.

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



# Soft-start Valves MS4-DL – Metric Series

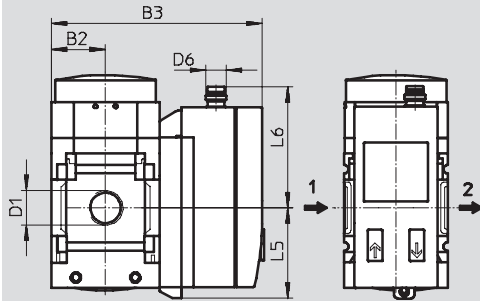
Dimensional Drawings, Ordering Data – Pre-configured Products

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pressure sensor with display AD1 ... AD4

Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)



→ Flow direction

AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

Type	B2	B3	D1	D6	L5	L6
MS4-DL-1/8-...-AD1/AD2	21	82.6	G1/8	M8x1	35.1	46.7
MS4-DL-1/4-...-AD1/AD2			G1/4			
MS4-DL-1/8-...-AD3/AD4	21	82.6	G1/8	M12x1	35.1	55.8
MS4-DL-1/4-...-AD3/AD4			G1/4			

1) Dimensions are in millimeters, unless otherwise noted.

## Ordering Data

Connection	Part No.	Type	LT
G1/8	529533	MS4-DL-1/8 <sup>2)</sup>	1D
G1/4	529531	MS4-DL-1/4 <sup>2)</sup>	1D

LT = Lead time

1D typically ships same day/next day

1W typically ships within 1 week

Q request a quote for lead time

2) Free of copper and PTFE

# Soft-start Valves MS4-DL – Metric Series



Ordering Data – Configurable Products

M Mandatory Data				O Options				
Part No.	Series	Size	Function	Connection size	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
527711	MS	4	DL	1/8, 1/4, AGA, AGB, AGC	AG, A8, A4, AD1, AD2, AD3, AD4	PSI MPA	WP WPM WB WBM	Z
<b>Order example</b>								
<b>527711</b>	<b>MS</b>	<b>4</b>	<b>- DL</b>	<b>- AGA</b>	<b>- AG</b>	<b>- PSI</b>	<b>- WB</b>	<b>- Z</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	527711				
	Series	Standard			MS	MS
	Size	4			4	4
	Function	Soft-start valve, pneumatic			-DL	-DL
	Connection size	Body thread G1/8			-1/8	
		Body thread G1/4			-1/4	
		Port plate G1/8 (dimensions → 390)			-AGA	
		Port plate G1/4 (dimensions → 390)			-AGB	
		Port plate G3/8 (dimensions → 390)			-AGC	
O	Pressure gauge alternatives	MS pressure gauge, bar (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		1	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		1	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		1	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		1	-AD4	
		Alternative pressure gauge scale	psi		2	-PSI
	MPa		2	-MPA		
	Type of mounting	Mounting bracket (dimensions → 391)		3	-WP	
		Mounting bracket (dimensions → 391)		3	-WPM	
		Mounting bracket (dimensions → 388)			-WB	
		Mounting bracket (dimensions → 388)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

- 1 AD1 ... AD4 Measuring range max. 10 bar
- 2 PSI, MPA Only with pressure gauge AG

- 3 WP, WPM Only with port plate AGA, AGB or AGC

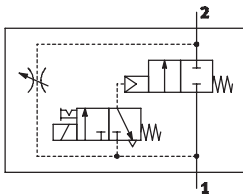
**Transfer order code**

527711 MS 4 - DL - - - - -

# Soft-start Valves MS4-DE – Metric Series

Technical Data

ISO Symbol



- Solenoid actuated soft-start valve for slowly pressurizing and venting pneumatic installations
- The duration of the pressure build-up is adjusted using the restrictor attached to the valve cap.
- The output pressure p2 rises slowly in accordance with the restrictor setting. Only the air flow from the restrictor is available when the solenoid valve is not actuated. The main seat is only opened by energizing the solenoid valve.
- The cylinders advance slowly and reliably into the initial position, sudden and erratic movements are avoided.
- When the solenoid valve is switched off, the main seat is closed and only the air flow from the flow control valve is available.



- The solenoid valve should remain switched on in order to vent a system as this increases the flow rate from 2 and 1 and reduces the exhaust time.
- Solenoid coil without plug socket, three voltage ranges available.
- Switch-through pressure can be precisely controlled using a solenoid valve
- Adjustable switching time delay
- Pushing and detenting manual override (detenting is locked on delivery)
- Solenoid actuator can be repositioned by 180°
- Optional pressure sensor with display

General Technical Data		
Pneumatic connection 1, 2	G1/8	G1/4
Operating pressure [bar]	4 ... 14 (Coil parameter V24, V110, V230)	
	4 ... 10 (Coil parameter 10V24)	
	4 ... 10 (Pressure sensor with display AD...)	

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

Standard Nominal Flow Rate qnN <sup>1)</sup> [l/min]		
Pneumatic connection 1, 2	G1/8	G1/4
In main flow direction 1 → 2	1,000	2,000
In relief direction 2 → 1 <sup>2)</sup>	1,000	2,000

1) Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar  
 2) For energized solenoid valve.

# Soft-start Valves MS4-DE – Metric Series

Technical Data

Operating and Environmental Conditions				
Variant		Coil parameter V24, V110, V230	Coil parameter 10V24	Pressure sensor with display AD...
Operating medium		Compressed air		Filtered compressed air, lubricated or unlubricated, filtration grade 40 µm
Coil characteristics	V24	24 V DC (For valves with max. inlet pressure 14 bar – only available via configurator)		
	10V24	24 V DC (For valves with max. inlet pressure 10 bar)		
	V110	110 V AC		
	V230	230 V AC		
Exhaust function		Flow control		
Direction of flow		Non-reversible		
Ambient temperature	[°C]	-10 ... +60	-10 ... +50	0 ... +50
Temperature of medium	[°C]	-10 ... +60	-10 ... +50	0 ... +50
Assembly position		Any		
Corrosion resistance	CRC <sup>1)</sup>	2		

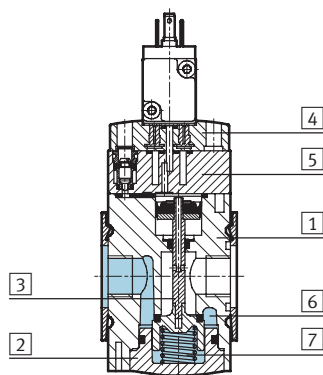
1) Corrosion resistance class 2 according to Festo standard 940 070  
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weights [g]	
Soft-start valve	263

- For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

## Materials

Sectional view



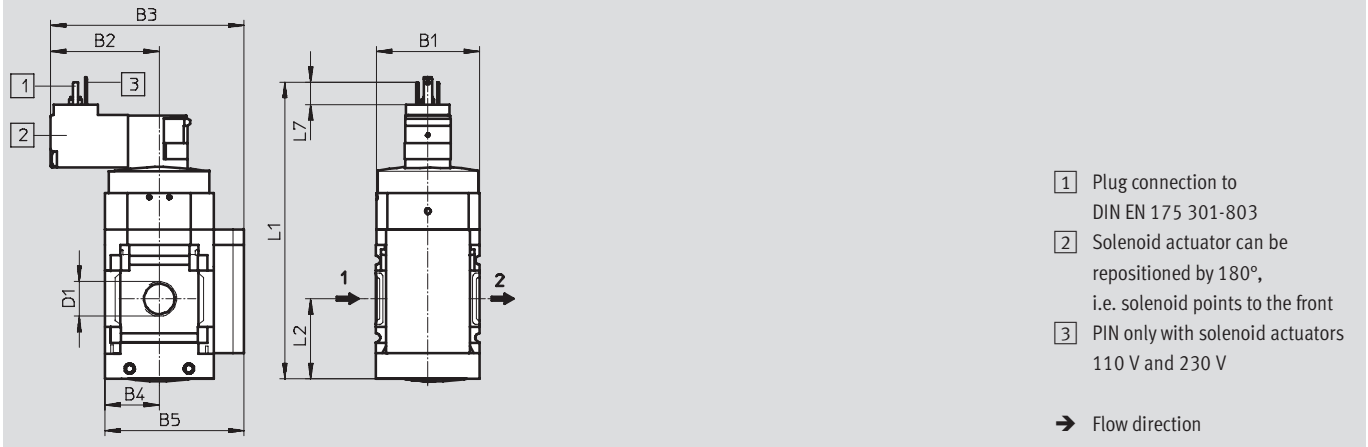
Soft-start valve		
1	Body	Die-cast aluminum
2	Base	Polyamide
3	Valve stem	Steel
4	End cap	Polyamide
5	Top plate	Polyamide
6	Seat	Aluminum/nitrile rubber
7	Springs	Spring steel
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants AG, 10V24 or AD...)

# Soft-start Valves MS4-DE – Metric Series

Dimensional Drawings

## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	B1	B2	B3	B4	B5	D1	L1	L2	L7
MS4-DE-1/8	40	42.2	75.2	21	54	G1/8	115.4	31.5	8.6
MS4-DE-1/4						G1/4			

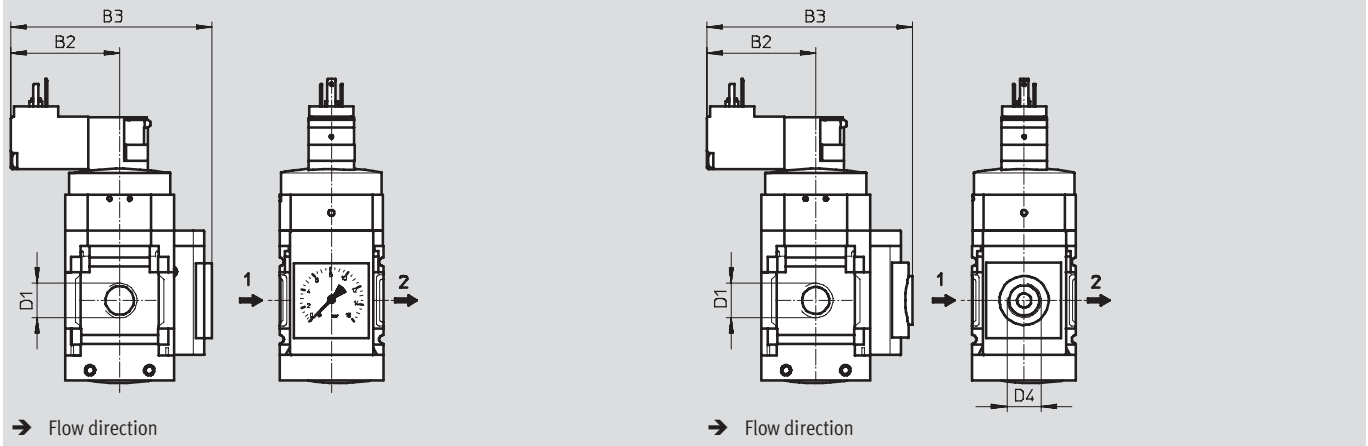
1) Dimensions are in millimeters, unless otherwise noted.

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [bar]

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



Type	B2	B3	D1	D4
MS4-DE-1/8-...-AG	42.2	86.2	G1/8	-
MS4-DE-1/4-...-AG			G1/4	
MS4-DE-1/8-...-A8	42.2	79.7	G1/8	G1/8
MS4-DE-1/4-...-A8			G1/4	
MS4-DE-1/8-...-A4	42.2	79.7	G1/8	G1/4
MS4-DE-1/4-...-A4			G1/4	

1) Dimensions are in millimeters, unless otherwise noted.

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

# Soft-start Valves MS4-DE – Metric Series



Dimensional Drawings, Ordering Data – Pre-configured Products

**Dimensions<sup>1)</sup> – Pressure Gauge Alternatives** Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)  
 Pressure sensor with display AD1 ... AD4 Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)

AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

→ Flow direction

Type	B2	B3	B4	B5	D1	D6	L5	L6
MS4-DE-1/8-...-AD1/AD2	42.2	103.8	21	82.6	G1/8	M8x1	35.1	46.7
MS4-DE-1/4-...-AD1/AD2					G1/4			
MS4-DE-1/8-...-AD3/AD4	42.2	103.8	21	82.6	G1/8	M12x1	35.1	55.8
MS4-DE-1/4-...-AD3/AD4					G1/4			

1) Dimensions are in millimeters, unless otherwise noted.

Ordering Data			
Connection	Part No.	Type	LT
Supply voltage 24 V DC			
G1/8	542560	MS4-DE-1/8-10V24	1D
G1/4	542558	MS4-DE-1/4-10V24	1D
Supply voltage 110 V AC			
G1/8	529525	MS4-DE-1/8-V110 <sup>2)</sup>	1D
G1/4	529519	MS4-DE-1/4-V110 <sup>2)</sup>	1D
Supply voltage 230 V AC			
G1/8	529527	MS4-DE-1/8-V230 <sup>2)</sup>	1D
G1/4	529521	MS4-DE-1/4-V230 <sup>2)</sup>	1D

LT = Lead time      1D typically ships same day/next day      1W typically ships within 1 week      Q request a quote for lead time

2) Free of copper and PTFE

# Soft-start Valves MS4-DE – Metric Series

Ordering Data – Configurable Products



M Mandatory Data						O Options			
Part No.	Series	Size	Function	Connection size	Supply voltage	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
527713	MS	4	DE	1/8, 1/4, AGA, AGB, AGC	V24 10V24 V110 V230	AG, A8, A4, AD1, AD2, AD3, AD4	PSI MPa	WP WPM WB WBM	Z
<b>Order example</b>									
<b>527713</b>	<b>MS</b>	<b>4</b>	<b>- DE</b>	<b>- AGA</b>	<b>- V110</b>	<b>- AG</b>	<b>- PSI</b>	<b>- WP</b>	<b>- Z</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	527713				
	Series	Standard			MS	MS
	Size	4			4	4
	Function	Soft-start valve, electrical			-DE	-DE
	Connection size	Body thread G1/8			-1/8	
		Body thread G1/4			-1/4	
		Port plate G1/8 (dimensions → 390)			-AGA	
		Port plate G1/4 (dimensions → 390)			-AGB	
		Port plate G3/8 (dimensions → 390)			-AGC	
	Supply voltage	24 V DC (connection pattern to EN 175301), 14 bar			-V24	
		24 V DC (connection pattern to EN 175301), 10 bar		1	-10V24	
		110 V AC (connection pattern to EN 175301), 14 bar			-V110	
		230 V AC (connection pattern to EN 175301), 14 bar			-V230	
	Pressure gauge alternatives	MS pressure gauge, bar (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		2	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		2	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		2	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		2	-AD4	
	Alternative pressure gauge scale	psi		3	-PSI	
		MPa		3	-MPa	
	Type of mounting	Mounting bracket (dimensions → 391)		4	-WP	
		Mounting bracket (dimensions → 391)		4	-WPM	
		Mounting bracket (dimensions → 388)			-WB	
		Mounting bracket (dimensions → 388)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

- 1 10V24 Max. inlet pressure 10 bar
- 2 AD1 ... AD4 Measuring range max. 10 bar

- 3 PSI, MPA Only with pressure gauge AG
- 4 WP, WPM Only with port plate AGA, AGB or AGC

### Transfer order code

527713	MS	4	- DE	-	-	-	-	-	-	-
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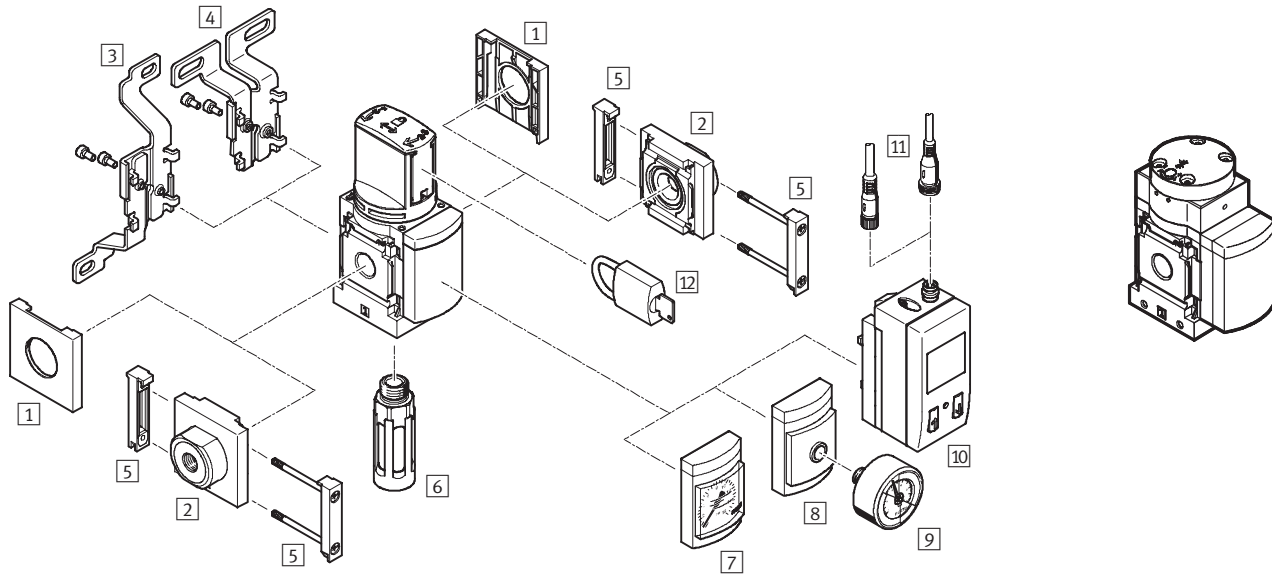
# On-off/Soft-start Valves MS4-EM1/DL – Metric Series

Accessories Overview

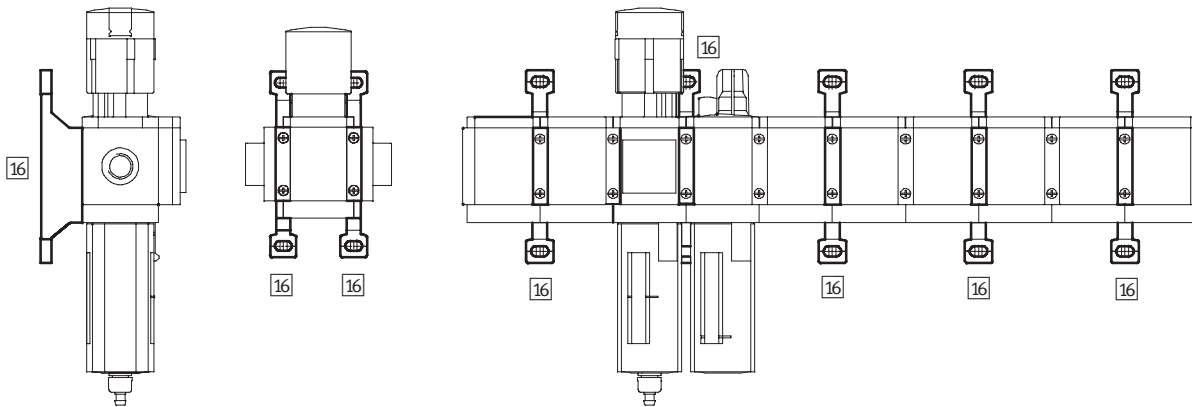
## Mounting Attachments and Accessories

On-off Valve EM1 – manually actuated

Soft-start Valve DL – pneumatically actuated



Single unit and combination unit mounting brackets.





# On-off/Soft-start Valves MS4-EM1/DL – Metric Series

Accessories Overview

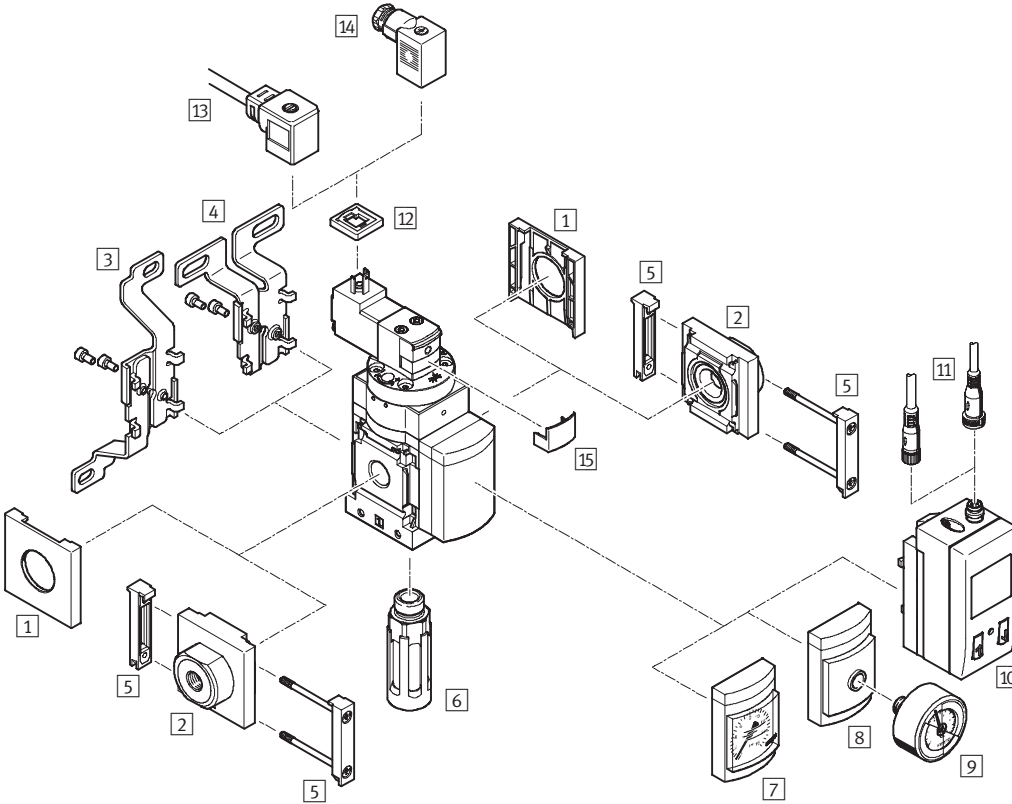
Mounting Attachments and Accessories						
		Single unit		Combination unit → 2.1-1		→ Page
		without port plate	with port plate	without port plate	with port plate	
1	Cover cap MS4-END	■	-	■	-	389
2	Port plate MS4-AG...	-	■	-	■	390
3	Mounting bracket MS4-WB	■	■	-	-	388
4	Mounting bracket MS4-WBM	■	■	-	-	388
5	Body connector MS4-MV	-	■	■	■	390
6	Silencer U	■ with EM1	■ with EM1	■ with EM1	■ with EM1	395
7	MS pressure gauge AG	■	■	■	■	EM1 366 DL 378
8	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	EM1 366 DL 378
9	Pressure gauge MA	■	■	■	■	395
10	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	EM1 366 DL 378
11	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	394
12	Padlock LRVS-D	■	■	■	■	395
16	Mounting bracket MS4-WP/WPB/WPM	-	■	■	■	391

# On-off/Soft-start Valves MS4-EE/DE – Metric Series

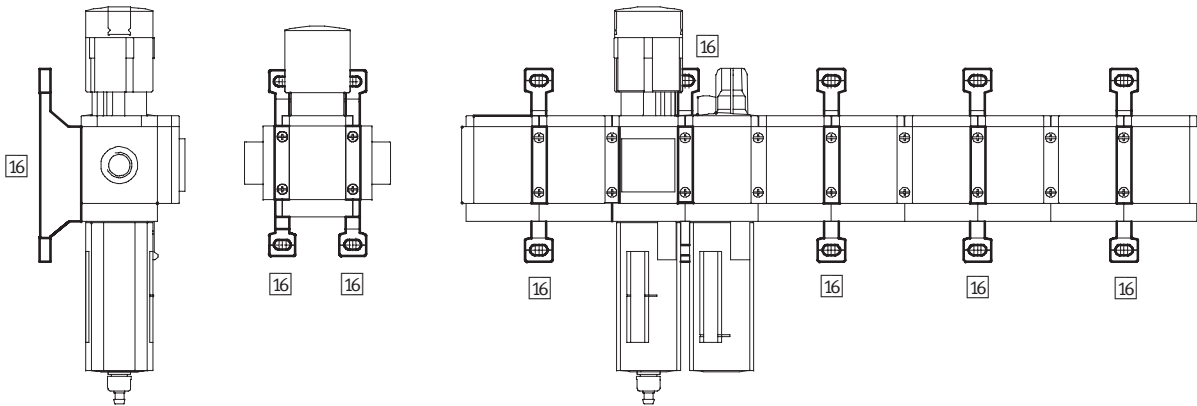
Accessories Overview

## Mounting Attachments and Accessories

On-off/Soft-start Valve EE/DE – solenoid actuated



Single unit and combination unit mounting brackets.



# On-off/Soft-start Valves MS4-EE/DE – Metric Series

Accessories Overview

Mounting Attachments and Accessories						
		Single unit		Combination unit → 2.1-1		→ Page
		without port plate	with port plate	without port plate	with port plate	
1	Cover cap MS4-END	■	-	■	-	389
2	Port plate MS4-AG...	-	■	-	■	390
3	Mounting bracket MS4-WB	■	■	-	-	388
4	Mounting bracket MS4-WBM	■	■	-	-	388
5	Body connector MS4-MV	-	■	■	■	390
6	Silencer U	■ with EE	■ with EE	■ with EE	■ with EE	395
7	Pressure gauge MS AG	■	■	■	■	EE 372 DE 383
8	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	EE 372 DE 383
9	Pressure gauge MA	■	■	■	■	395
10	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	EE 372 DE 383
11	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	394
12	Illuminating seal MEB-LD	■	■	■	■	394
13	Plug socket with cable KMEB	■	■	■	■	394
14	Plug socket MSSD-EB	■	■	■	■	394
15	Locking clip CPV18-HV	■	■	■	■	394
16	Mounting bracket MS4-WP/WPB/WPM	-	■	■	■	391

# On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series



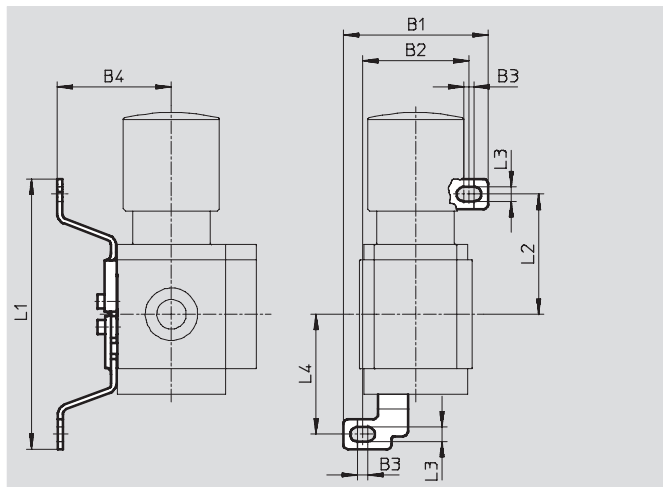
Accessories

## 3 Mounting bracket MS4-WB

- For wall mounting

Material:

Steel



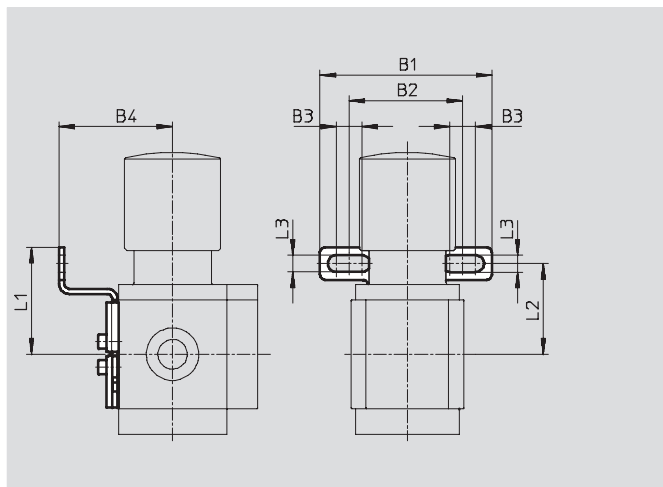
Dimensions and Ordering Data										
B1	B2	B3	B4	L1	L2	L3	L4	Weight [g]	Part No.	Type
56.2	41.2	4	44.2	104.6	46.6	5.6	46.5	46	532185	MS4-WB

## 4 Mounting bracket MS4-WBM

- For wall mounting

Material:

Steel



Dimensions and Ordering Data									
B1	B2	B3	B4	L1	L2	L3	Weight [g]	Part No.	Type
66.5	44	10	44	41.3	35	6.5	48	526062	MS4-WBM

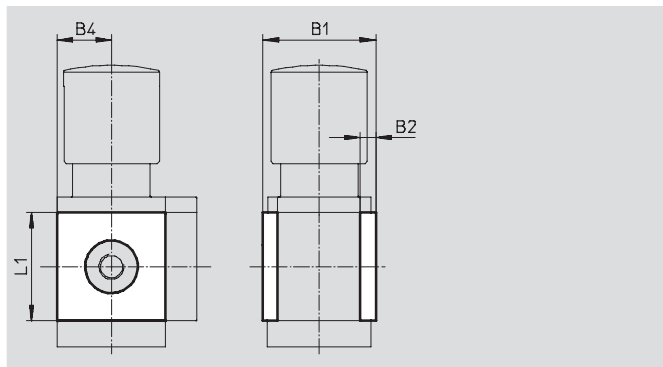
# On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series

Accessories

## 1 Cover cap MS4-END

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

Material:  
Reinforced polyamide  
Free of copper and PTFE

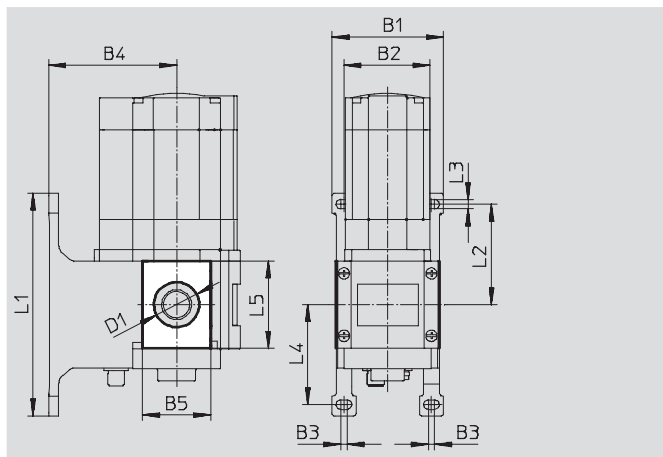


Dimensions and Ordering Data						
B1	B2	B4	L1	Part No.	Type	
43.6	6	21	42	538779	MS4-END	

## Mounting plate MS4-AEND

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

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



Dimensions and Ordering Data															
B1	B2	B3	B4		B5	D1 ∅	L1	L2	L3	L4	L5	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
			WP	WPB											
55.2	40.2	4	44	66	30.4	20.3	106	46.5	5.6	46.7	42	2	4	542966	MS4-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.

## On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series

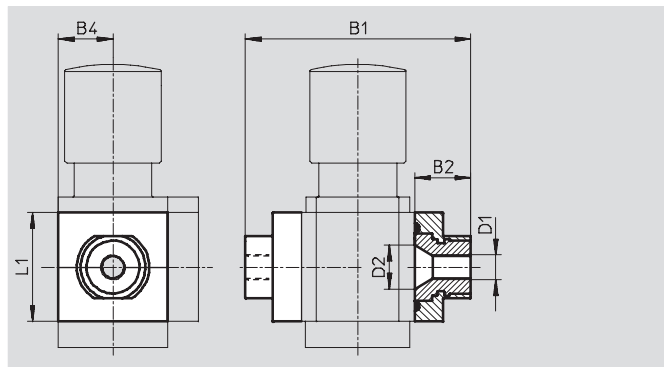
FESTO

Accessories

### 2 Port plate MS4-AG...

- Adapter for pneumatic connection

Material:  
Aluminum



Dimensions and Ordering Data								
B1	B2	B4	D1	D2	L1	Weight [g]	Part No.	Type
83.5	21.5	21	G $\frac{1}{8}$	16.8	42	128	526068	MS4-AGA
			G $\frac{1}{4}$				526069	MS4-AGB
			G $\frac{3}{8}$				526070	MS4-AGC

### 5 Body connector MS4-MV

- For connecting modules

Material:  
Stainless steel/polyacetate



Ordering Data		
Weight [g]	Part No.	Type
36	532798	MS4-MV

# On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series

Accessories

## 16 Mounting Bracket MS4-WP...

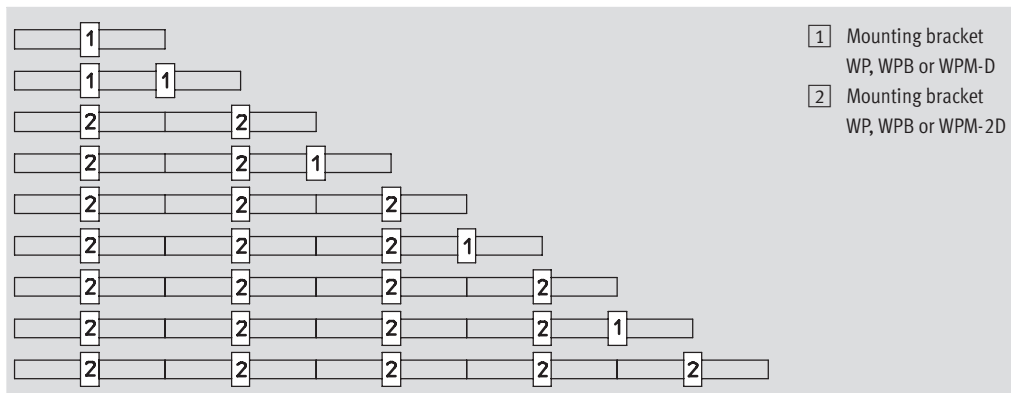
Suggested placement of wall mounting brackets when mounting air preparation combinations

1 unit: 40 mm

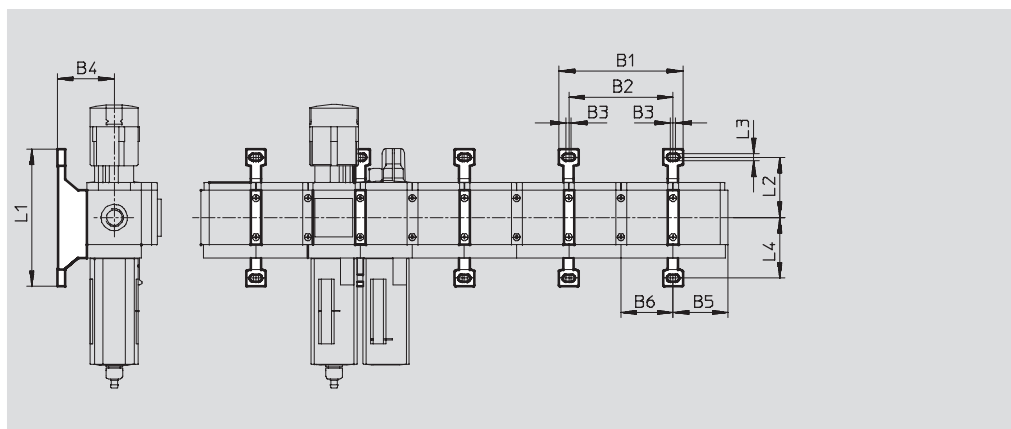
2 units: 80 mm

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						

# On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series

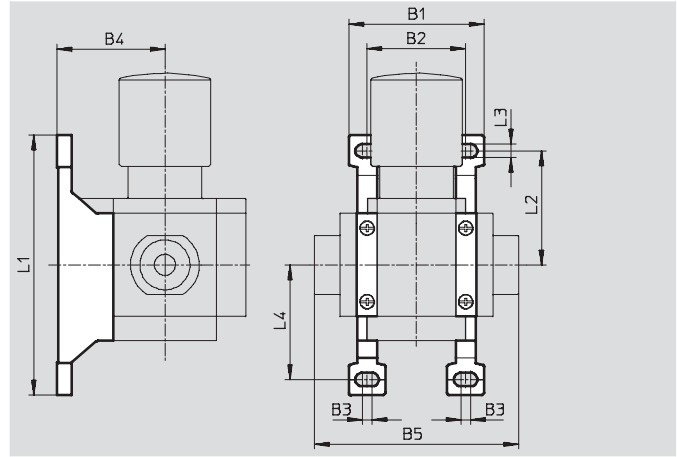


Accessories

## Mounting bracket MS4-WP

- To connect the modules for wall mounting
- In combination with a port plate MS-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS-AEND or for mounting an individual unit with body thread on a wall
- For pressure regulator LRB with angled outlet block B... at rear

Material:  
Die-cast aluminum

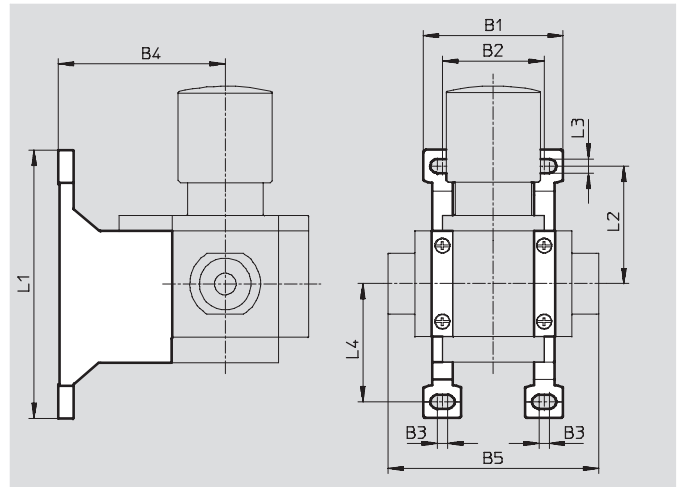


Dimensions and Ordering Data											
B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [g]	Part No.	Type
55.2	40.2	4	44	83.4	106	46.5	5.6	46.7	39	532184	MS4-WP

## Mounting bracket MS4-WPB

- To connect the modules for wall mounting
- In combination with a port plate MS-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 aluminum



Dimensions and Ordering Data											
B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [g]	Part No.	Type
55.2	40.2	4	66	83.4	106	46.5	5.6	46.7	55	526063	MS4-WPB



## On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series

FESTO

Accessories

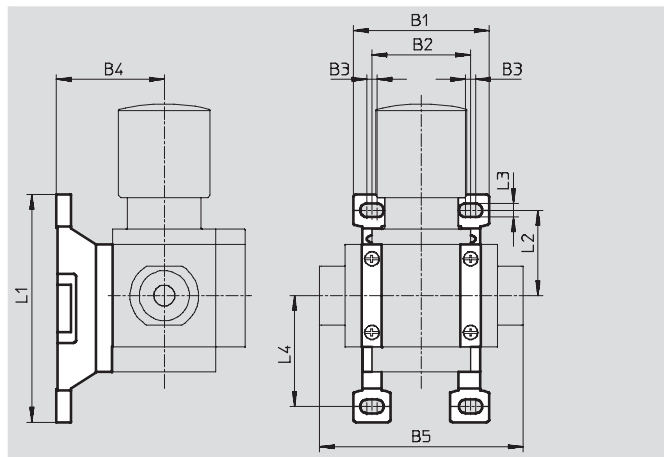
### Mounting bracket MS4-WPM

- To connect the modules for wall mounting
- In combination with a port plate MS-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 aluminum



Dimensions and Ordering Data												
B1	B2	B3	B4	B5	L1	L2	L3	L4	Clearance	Weight [g]	Part No.	Type
55.2	40	4	44	83.4	92.8	34.8	5.6	45.2	40	45	526060	MS4-WPM-D
95.2	80			123.4					80	55	526061	MS4-WPM-2D

### Body connector MS4-MVM

- For installation of modules with regulating knob pointing downwards

Material:

Die-cast aluminum





Ordering Data		
Size	Part No.	Type
MS4	532800	MS4-MVM


# On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series




Accessories



14 Ordering Data – Plug Socket MSSD					Technical data → <a href="http://www.festo.com/catalog/mssd">www.festo.com/catalog/mssd</a>	
	Description	Operating voltage range	Electrical connection	Type of mounting cable connection	Part No.	Type
	for MS4-EE/DE	≤ 250 V AC/DC	3-pin	Clamping screws	151687	MSSD-EB
			4-pin	Insulation displacement technology	192745	MSSD-EB-S-M14



13 Ordering Data – Plug Socket with Cable KMEB					Technical data → <a href="http://www.festo.com/catalog/kmeb">www.festo.com/catalog/kmeb</a>	
	Description	Operating voltage range	Switching status display	Cable length [m]	Part No.	Type
	for MS4-EE/DE	24 V DC	LED	2.5	151688	KMEB-1-24-2,5-LED
		24 V DC	LED	5	151689	KMEB-1-24-5-LED
		24 V DC	LED	10	193457	KMEB-1-24-10-LED
		230 V AC	–	2.5	151690	KMEB-1-230AC-2,5
		230 V AC	–	5	151691	KMEB-1-230AC-5

12 Ordering Data – Illuminating Seal MEB-LD			Technical data → <a href="http://www.festo.com/catalog/meb-ld">www.festo.com/catalog/meb-ld</a>		
	Description	Operating voltage range	Part No.	Type	
	for plug socket with cable KMEB and plug socket MSSD-EB	12 ... 24 V DC	151717	MEB-LD-12-24DC	
		230 V DC/AC ±10%	151718	MEB-LD-230AC	

15 Ordering Data – Locking Clip CPV18-HV				Technical data → <a href="http://www.festo.com/catalog/cpv18-hv">www.festo.com/catalog/cpv18-hv</a>	
	Description	Part No.	Type	PU <sup>1)</sup>	
	for MS4-EE/DE-...-V24		Cover for manual override, the clip prevents actuation	530056	CPV18-HV
					10

1) Packaging unit quantity


11 Ordering Data – Plug Socket with Cable SIM-M8				Technical data → <a href="http://www.festo.com/catalog/sim-m8">www.festo.com/catalog/sim-m8</a>	
	Electrical connection	Cable length [m]	Part No.	Type	
	M8x1, 3-pin	2.5	159420	SIM-M8-3GD-2,5-PU	
		5	159421	SIM-M8-3GD-5-PU	
		10	192964	SIM-M8-3GD-10-PU	
	M8x1, 3-pin	2.5	159422	SIM-M8-3WD-2,5-PU	
		5	159423	SIM-M8-3WD-5-PU	
		10	192965	SIM-M8-3WD-10-PU	


Ordering Data – Plug Socket with Cable SIM-M12			Technical data → <a href="http://www.festo.com/catalog/sim-m12">www.festo.com/catalog/sim-m12</a>		
	Electrical connection	Cable length [m]	Part No.	Type	
	M12x1, 4-pin	5	164259	SIM-M12-4GD-5-PU	
	M12x1, 4-pin	5	164258	SIM-M12-4WD-5-PU	


# On-off/Soft-start Valves MS4-EM1/EE/DL/DE – Metric Series



Accessories

9 Ordering Data – Pressure Gauge MA					Technical data → <a href="http://www.festo.com/catalog/ma">www.festo.com/catalog/ma</a>	
	Nominal size	Pneumatic connection	Indicating range		Part No.	Type
			[bar]	[psi]		
	Pressure gauge MA, DIN EN 837-1					
	40	G $\frac{1}{4}$	0 ... 16	0 ... 232	183901	MA-40-16-G $\frac{1}{4}$ -EN
	Pressure gauge MA, DIN EN 837-1, with red-green range					
	40	R $\frac{1}{8}$	0 ... 16	–	525726	MA-40-16-R $\frac{1}{8}$ -E-RG
	50	R $\frac{1}{4}$	0 ... 16	–	525729	MA-50-16-R $\frac{1}{4}$ -E-RG

6 Ordering Data – Silencer U				Technical data → <a href="http://www.festo.com/catalog/u">www.festo.com/catalog/u</a>	
	Description	Pneumatic connection	Part No.	Type	
	for MS4-EM1/EE	G $\frac{1}{4}$	6842	U- $\frac{1}{4}$ -B	

Ordering Data – Padlock LRV5-D				
	Description	Weight [g]	Part No.	Type
	for regulators, filter/regulators and manual on-off valves	120	193786	LRV5-D



## On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series



Manually operated and solenoid actuated on-off valves for pressurizing and venting pneumatic installations. Pneumatic and solenoid actuated soft-start valves for slowly pressurizing and venting pneumatic installation.

- On-off valves
  - MS4N-EM1, manually operated
  - MS4N-EE, solenoid actuated
- Soft-start valves
  - MS4N-DL, pneumatically actuated
  - MS4N-DE, solenoid actuated
- Pneumatic connection: 1/8 NPT, 1/4 NPT, 3/8 NPT
- Operating pressure
  - EM1: 0 ... 206 psi
  - EE, DL and DE: 59 ... 206 psi
- Flow rate: 35.3 ... 77.7 scfm

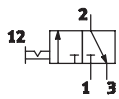
Product Range Overview														
Type	Flow rate [scfm]	Pneumatic connections		Supply voltage				Pressure indicator				Options		
		Body thread	Port plate	24 V DC (connection pattern to EN 175301)	24 V DC (connection pattern M12 to DESINA)	110 V AC (connection pattern to EN 175301)	230 V AC (connection pattern to EN 175301)	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for pressure gauge 1/8 NPT	Adapter for pressure gauge 1/4 NPT	Pressure sensor with display	Silencer	Flow direction from right to left
MS4N			AG...	V24	V24P	V110	V230	VS	AG	A8	A4	AD...	S	Z
EM1	42.4 ... 77.7	1/8 NPT, 1/4 NPT	1/8 NPT, 1/4 NPT, 3/8 NPT	-	-	-	-	■	■	■	■	■	■	■
EE	35.3 ... 70.6	1/8 NPT, 1/4 NPT	1/8 NPT, 1/4 NPT, 3/8 NPT	■	-	■	■	■	■	■	■	■	■	■
DL	35.3 ... 70.6	1/8 NPT, 1/4 NPT	1/8 NPT, 1/4 NPT, 3/8 NPT	-	-	-	-	■	■	■	■	■	-	■
DE	35.3 ... 70.6	1/8 NPT, 1/4 NPT	1/8 NPT, 1/4 NPT, 3/8 NPT	■	-	■	■	■	■	■	■	■	-	■

Contents			
MS4N-EM1	MS4N-EE	MS4N-DL	MS4N-DE
Technical Data → 398	Technical Data → 403	Technical Data → 410	Technical Data → 415
Dimensional Drawings → 399	Dimensional Drawings → 405	Dimensional Drawings → 412	Dimensional Drawings → 417
Ordering Data → 401	Ordering Data → 407	Ordering Data → 413	Ordering Data → 418
Accessories → 420	Accessories → 420	Accessories → 420	Accessories → 420
→ <a href="http://www.festo.com/catalog/msn4-em1">www.festo.com/catalog/msn4-em1</a>	→ <a href="http://www.festo.com/catalog/msn4-ee">www.festo.com/catalog/msn4-ee</a>	→ <a href="http://www.festo.com/catalog/msn4-dl">www.festo.com/catalog/msn4-dl</a>	→ <a href="http://www.festo.com/catalog/msn4-de">www.festo.com/catalog/msn4-de</a>

# On-off Valves MS4N-EM1 – Inch Series

Technical Data

ISO Symbol



- Manually operated on-off valve for pressurizing and venting pneumatic installations
- The valve is activated by turning the rotary knob
- At connection 3 there is the facility to attach a silencer and/or to duct the exhaust air
- When the valve is closed, the rotary knob can be secured with a padlock
- Optional pressure gauge
- Optional pressure sensor with display



General Technical Data		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
Pneumatic connection 3	1/4 NPT	
Operating pressure [psi]	0 ... 206 (Standard)	
	0 ... 147 (Pressure sensor with display AD...)	

Standard Nominal Flow Rate qnN <sup>1)</sup> [scfm]		
Pneumatic connection	1/8 NPT	1/4 NPT
In main flow direction 1 → 2	42.4	77.7
In relief direction 2 → 3	67.1	60.0

1) Measured at p1 = 88 psi and p2 = 74 psi, Δp = 15 psi

Operating and Environmental Conditions		
Variant	Standard	Pressure sensor with display AD...
Operating medium	Compressed air	Filtered compressed air, lubricated or unlubricated, filtration grade 40 μm
Exhaust function	No flow control	
Switching position display	Knob actuator direction = flow direction	
Ambient temperature [°F]	14 ... 140	32 ... 122
Temperature of medium [°F]	14 ... 140	32 ... 122
Assembly position	Any	
Corrosion resistance CRC <sup>2)</sup>	2	

2) 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 [lb]	
Standard	0.38
With silencer	0.42

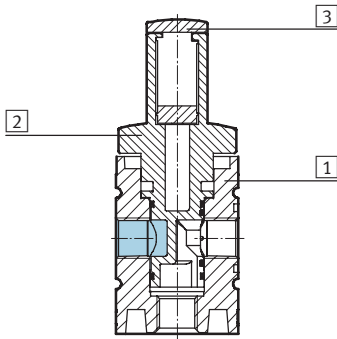
- For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

# On-off Valves MS4N-EM1 – Inch Series

Technical Data, Dimensional Drawings

## Materials

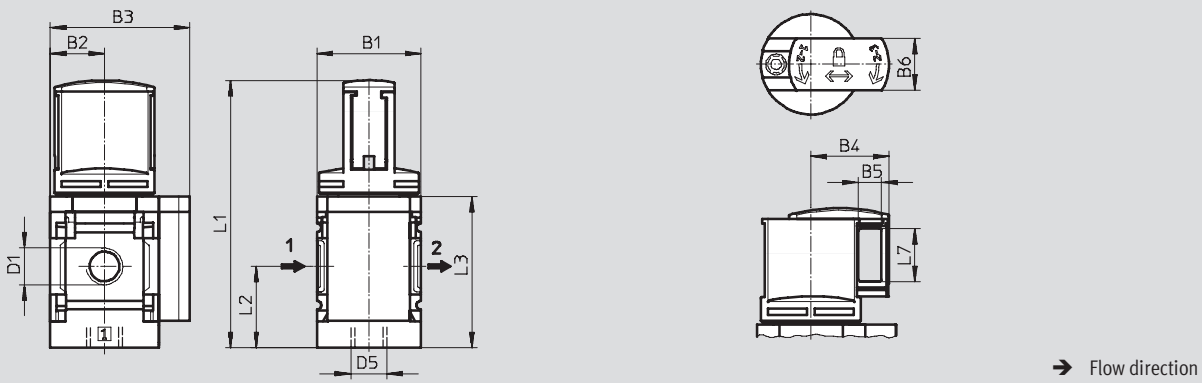
Sectional view



On-off valve		
1	Body	Die-cast aluminum
2	Rotary valve	Reinforced polyamide
3	Lock slide	Reinforced polyamide
-	Seals	Nitrile rubber, polyurethane
Note on materials		Free of copper and PTFE (not with variants AG or AD...)

## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	B1	B2	B3	B4	B5	B6	D1	D5	L1	L2	L3	L7
MS4N-EM1-1/8	1.57	0.83	2.13	1.18	0.35	0.79	1/8 NPT	1/4 NPT	4.09	1.24	2.32	0.81
MS4N-EM1-1/4							1/4 NPT					

1) Dimensions are in inches, unless otherwise noted.

# On-off Valves MS4N-EM1 – Inch Series



Dimensional Drawings

**Dimensions<sup>1)</sup> – Pressure Gauge Alternatives** Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [psi] Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge

→ Flow direction

**Pressure sensor with display AD1 ... AD4** Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)

→ Flow direction

AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

Type	B2	B3	D1	D4	D6	L5	L6
MS4N-EM1-1/8-...-AG	0.83	2.56	1/8 NPT	-	-	-	-
MS4N-EM1-1/4-...-AG			1/4 NPT				
MS4N-EM1-1/8-...-A8	0.83	2.30	1/8 NPT	1/8 NPT	-	-	-
MS4N-EM1-1/4-...-A8			1/4 NPT				
MS4N-EM1-1/8-...-A4	0.83	2.30	1/8 NPT	1/4 NPT	-	-	-
MS4N-EM1-1/4-...-A4			1/4 NPT				
MS4N-EM1-1/8-...-AD1/AD2	0.83	3.25	1/8 NPT	-	M8x1	1.38	1.84
MS4N-EM1-1/4-...-AD1/AD2			1/4 NPT				
MS4N-EM1-1/8-...-AD3/AD4	0.83	3.25	1/8 NPT	-	M12x1	1.38	2.20
MS4N-EM1-1/4-...-AD3/AD4			1/4 NPT				

1) Dimensions are in inches, unless otherwise noted.



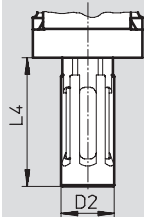
# On-off Valves MS4N-EM1 – Inch Series



Dimensional Drawings, Ordering Data – Pre-configured Products

## Dimensions<sup>1)</sup> – Silencer

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	D2	L4
MS4N-EM1-...-S	0.77	1.85

1) Dimensions are in inches, unless otherwise noted.

## Ordering Data

Connection	Standard			With silencer		
	Part No.	Type	LT	Part No.	Type	LT
1/8 NPT	541284	MS4N-EM1-1/8 <sup>2)</sup>	1D	541285	MS4N-EM1-1/8-S <sup>2)</sup>	1D
1/4 NPT	541280	MS4N-EM1-1/4 <sup>2)</sup>	1D	541281	MS4N-EM1-1/4-S <sup>2)</sup>	1D

LT = Lead time      1D typically ships same day/next day      1W typically ships within 1 week      Q request a quote for lead time

2) Free of copper and PTFE

# On-off Valves MS4N-EM1 – Inch Series



Ordering Data – Configurable Products

M Mandatory Data					O Options					
Part No.	Series	Size	Thread	Function	Connection size	Silencer	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
541288	MS	4	N	EM1	1/8, 1/4, AQK, AQN, AQP	S	AG, A8, A4, AD1, AD2, AD3, AD4	BAR MPa	WP WPM WB WBM	Z
<b>Order example</b>										
<b>541288</b>	<b>MS</b>	<b>4</b>	<b>N</b>	<b>EM1</b>	<b>1/4</b>	<b>S</b>	<b>AG</b>	<b>BAR</b>	<b>WB</b>	<b>Z</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	541288				
	Series	Standard			MS	MS
	Size	4			4	4
	Thread	NPT thread			N	N
	Function	On-off valve, manual			-EM1	-EM1
	Connection size	Body thread 1/8 NPT			-1/8	
		Body thread 1/4 NPT			-1/4	
		Port plate 1/8 NPT (dimensions → 426)			-AQK	
		Port plate 1/4 NPT (dimensions → 426)			-AQN	
		Port plate 3/8 NPT (dimensions → 426)			-AQP	
O	Silencer	Silencer			-S	
	Pressure gauge alternatives	MS pressure gauge, bar (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		1	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		1	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		1	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		1	-AD4	
	Alternative pressure gauge scale	bar		2	-BAR	
		MPa		2	-MPA	
	Type of mounting	Mounting bracket (dimensions → 427)		3	-WP	
		Mounting bracket (dimensions → 427)		3	-WPM	
		Mounting bracket (dimensions → 424)			-WB	
		Mounting bracket (dimensions → 424)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

- 1 AD1 ... AD4 Measuring range max. 147 psi
- 2 BAR, MPA Only with pressure gauge AG

- 3 WP, WPM Only with port plate AQK, AQN or AQP

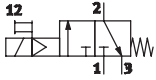
**Transfer order code**

541288	MS	4	N	-	EM1	-		-		-		-		-		-	
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# On-off Valves MS4N-EE – Inch Series

Technical Data

ISO Symbol



- Solenoid actuated on-off valve for pressurizing and venting pneumatic installations
- Ducted exhaust possible via a threaded connection with silencer
- Pushing and detenting manual override (detenting is locked on delivery)
- Solenoid coil without plug socket, three voltage ranges available.
- Solenoid actuator can be repositioned by 180°
- Optional pressure sensor with display



General Technical Data		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
Pneumatic connection 3	1/4 NPT	
Operating pressure [psi]	59 ... 206 (Coil parameter V24, V110, V230)	
	59 ... 147 (Coil parameter 10V24)	
	59 ... 147 (Pressure sensor with display AD...)	

Standard Nominal Flow Rate qnN <sup>1)</sup> [scfm]		
Pneumatic connection	1/8 NPT	1/4 NPT
In main flow direction 1 → 2	35.3	70.6
In relief direction 2 → 3	56.5	56.5

1) Measured at p1 = 88 psi and p2 = 74 psi, Δp = 15psi

Operating and Environmental Conditions			
Variant	Coil parameter V24, V110, V230	Coil parameter 10V24	Pressure sensor with display AD...
Operating medium	Compressed air		Filtered compressed air, lubricated or unlubricated, filtration grade 40 μm
Coil characteristics	V24	24 V DC (For valves with max. inlet pressure 206 psi – only available via configurator)	
	10V24	24 V DC (For valves with max. inlet pressure 147 psi)	
	V110	110 V AC	
	V230	230 V AC	
Exhaust function	Without flow control		
Ambient temperature [°F]	14 ... 140	14 ... 122	32 ... 122
Temperature of medium [°F]	14 ... 140	14 ... 122	32 ... 122
Assembly position	Any		
Corrosion resistance CRC <sup>2)</sup>	2		

2) 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 [lb]	
Standard	0.55
With silencer	0.58

• For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

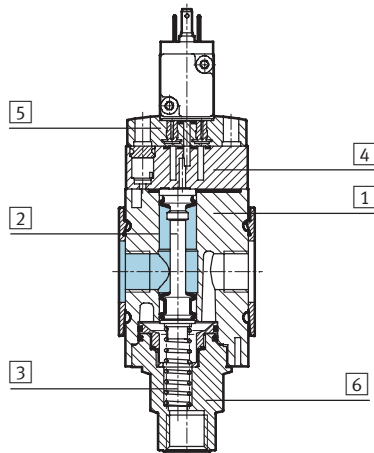
# On-off Valves MS4N-EE – Inch Series

Technical Data



## Materials

Sectional view



On-off valve		
1	Body	Die-cast aluminum
2	Piston spool	Nitrile rubber/Aluminum
3	Springs	High-alloy stainless steel
4	End cap	Polyamide
5	Top plate	Polyamide
6	Socket end connection	Polyamide
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants AG, 10V24 or AD...)

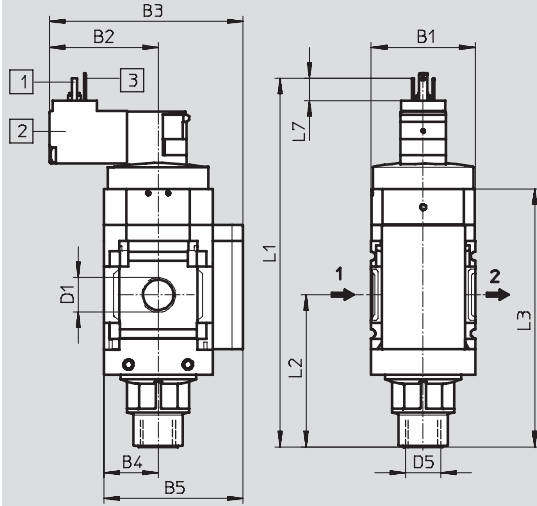
# On-off Valves MS4N-EE – Inch Series

Dimensional Drawings



## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



- 1 Plug connection to DIN EN 175 301-803
- 2 Solenoid actuator can be repositioned by 180°, i.e. solenoid points to the front
- 3 PIN only with solenoid actuators 110 V and 230 V

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D5	L1	L2	L3	L7
MS4N-EE-1/8	1.57	1.66	2.96	0.83	2.13	1/8 NPT	1/4 NPT	5.62	2.32	3.94	0.34
MS4N-EE-1/4						1/4 NPT					

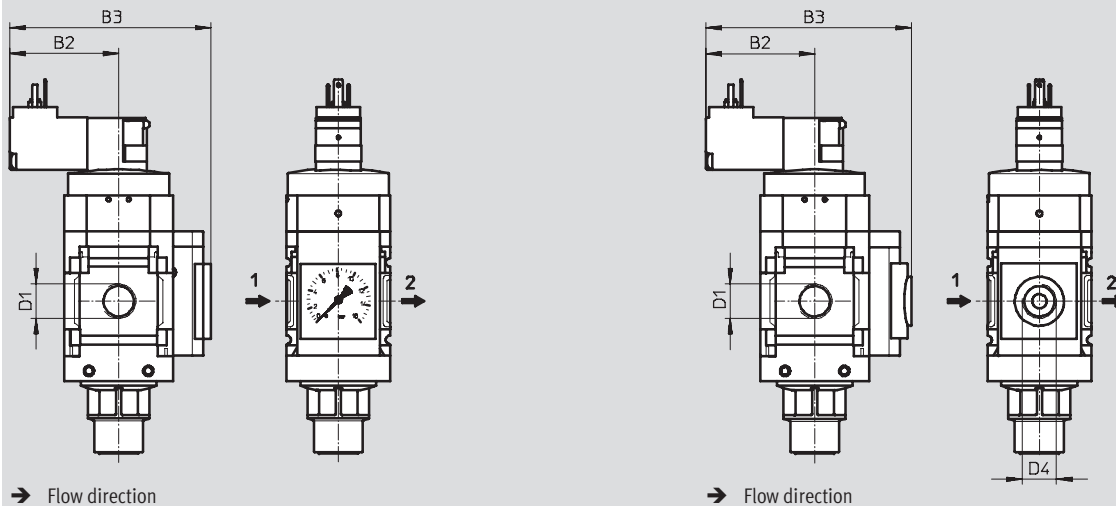
1) Dimensions are in inches, unless otherwise noted.

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [psij]

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



→ Flow direction

→ Flow direction

Type	B2	B3	D1	D4
MS4N-EE-1/8-...-AG	1.66	3.39	1/8 NPT	-
MS4N-EE-1/4-...-AG			1/4 NPT	
MS4N-EE-1/8-...-A8	1.66	3.14	1/8 NPT	1/8 NPT
MS4N-EE-1/4-...-A8			1/4 NPT	
MS4N-EE-1/8-...-A4	1.66	3.14	1/8 NPT	1/4 NPT
MS4N-EE-1/4-...-A4			1/4 NPT	

# On-off Valves MS4N-EE – Inch Series

Dimensional Drawings

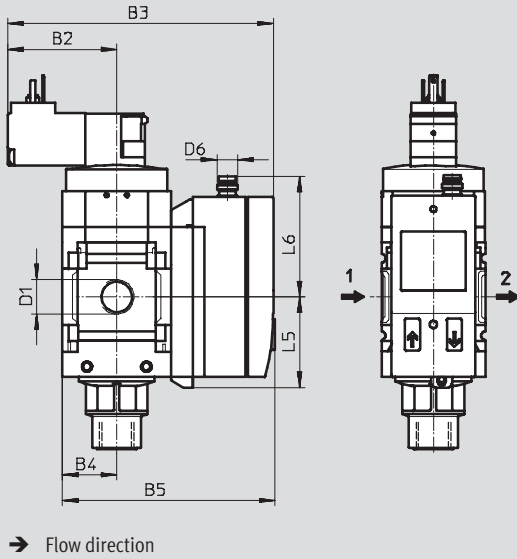


## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pressure sensor with display AD1 ... AD4

Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)



AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

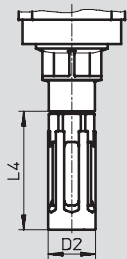
AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

Type	B2	B3	B4	B5	D1	D6	L5	L6
MS4N-EE-1/8-...-AD1/AD2	1.66	4.09	0.83	3.25	1/8 NPT	M8x1	1.38	1.84
MS4N-EE-1/4-...-AD1/AD2					1/4 NPT			
MS4N-EE-1/8-...-AD3/AD4	1.66	4.09	0.83	3.25	1/8 NPT	M12x1	1.38	2.20
MS4N-EE-1/4-...-AD3/AD4					1/4 NPT			

1) Dimensions are in inches, unless otherwise noted.

## Dimensions<sup>1)</sup> – Silencer

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Type	D2	L4
MS4N-EE-...-S	0.77	1.91

1) Dimensions are in inches, unless otherwise noted.

# On-off Valves MS4N-EE – Inch Series



Ordering Data – Pre-configured Products

Ordering Data						
Connection	Without silencer			With silencer		
	Part No.	Type	LT	Part No.	Type	LT
Supply voltage 24 V DC						
1/8 NPT	542589	MS4N-EE-1/8-10V24	1D	542610	MS4N-EE-1/8-10V24-S	Q
1/4 NPT	542588	MS4N-EE-1/4-10V24	1D	542608	MS4N-EE-1/4-10V24-S	Q
Supply voltage 110 V AC						
1/8 NPT	532084	MS4N-EE-1/8-V110 <sup>1)</sup>	1D	538755	MS4N-EE-1/8-V110-S <sup>1)</sup>	Q
1/4 NPT	532083	MS4N-EE-1/4-V110 <sup>1)</sup>	1D	538749	MS4N-EE-1/4-V110-S <sup>1)</sup>	Q
Supply voltage 230 V AC						
1/8 NPT	532088	MS4N-EE-1/8-V230 <sup>1)</sup>	1D	538757	MS4N-EE-1/8-V230-S <sup>1)</sup>	Q
1/4 NPT	532087	MS4N-EE-1/4-V230 <sup>1)</sup>	1D	538751	MS4N-EE-1/4-V230-S <sup>1)</sup>	Q

LT = Lead time      1D typically ships same day/next day      1W typically ships within 1 week      Q request a quote for lead time

1) Free of copper and PTFE

# On-off Valves MS4N-EE – Inch Series

Ordering Data – Configurable Products



**M** Mandatory Data →

Part No.	Series	Size	Thread	Function	Connection size	Supply voltage
527710	MS	4	N	EE	1/8 1/4 AQK AQN AQP	V24 10V24 V110 V230
<b>Order example</b>						
<b>527710</b>	<b>MS</b>	<b>4</b>	<b>N</b>	<b>- EE</b>	<b>- AQN</b>	<b>- V24</b>

**Ordering Table**

Grid dimension	[mm]	40	Conditions	Code	Enter code
<b>M</b> Part No.	<b>527710</b>				
Series	Standard			<b>MS</b>	MS
Size	4			<b>4</b>	4
Thread	NPT thread			<b>N</b>	N
Function	On-off valve, electrical			<b>-EE</b>	-EE
Connection size	Body thread 1/8 NPT			<b>-1/8</b>	
	Body thread 1/4 NPT			<b>-1/4</b>	
	Port plate 1/8 NPT (dimensions → 426)			<b>-AQK</b>	
	Port plate 1/4 NPT (dimensions → 426)			<b>-AQN</b>	
	Port plate 3/8 NPT (dimensions → 426)			<b>-AQP</b>	
Supply voltage	24 V DC (connection pattern to EN 175301), 206 psi			<b>-V24</b>	
	24 V DC (connection pattern to EN 175301), 147 psi		<b>1</b>	<b>-10V24</b>	
	110 V AC (connection pattern to EN 175301), 206 psi			<b>-V110</b>	
	230 V AC (connection pattern to EN 175301), 206 psi			<b>-V230</b>	

**1** 10V24 Max. inlet pressure 147 psi

Transfer order code

<b>527710</b>	<b>MS</b>	<b>4</b>	<b>N</b>	<b>- EE</b>	<b>-</b>	<b>-</b>	<b>-</b>
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# On-off Valves MS4N-EE – Inch Series

Ordering Data – Configurable Products



→ **0 Options**

Silencer	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
S	AG A8 A4 AD1 AD2 AD3 AD4	BAR MPA	WP WPM WB WBM	Z
- S	- AG	- BAR	- WP	- Z

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
0	Silencer	Silencer			-S	
	Pressure gauge alternatives	MS pressure gauge, psi (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		2	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		2	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		2	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		2	-AD4	
	Alternative pressure gauge scale	bar		3	-BAR	
		MPa		3	-MPA	
	Type of mounting	Mounting bracket (dimensions → 427)		4	-WP	
		Mounting bracket (dimensions → 427)		4	-WPM	
		Mounting bracket (dimensions → 424)			-WB	
		Mounting bracket (dimensions → 424)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

2 **AD1 ... AD4** Measuring range max. 147 psi  
 3 **BAR, MPA** Only with pressure gauge AG

4 **WP, WPM** Only with port plate AQK, AQN or AQP

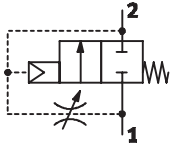
**Transfer order code**

-  -  -  -  -

# Soft-start Valves MS4N-DL – Inch Series

Technical Data

ISO Symbol



- Pneumatically actuated soft-start valve for slowly pressurizing and venting pneumatic installations (for use with on-off valves EM1 and EE)
- The duration of the pressure build-up is adjusted using the restrictor attached to the valve cap.
- The output pressure p2 rises slowly in accordance with the restrictor setting. The main seat opens when the switch-through pressure is reached.
- Pressure switching approx. 50% of supply pressure
- When the valve is exhausted, the main seat remains open until the switch-through pressure is reached. The rest of the exhaust procedure is performed using the restrictor.



- The cylinders advance slowly and reliably into the initial position.
- Sudden and erratic movements are avoided
- Adjustable switching time delay
- Optional pressure sensor with display

General Technical Data		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
Operating pressure [psi]	59 ... 206 (Standard)	
	59 ... 147 (Pressure sensor with display AD...)	

Standard Nominal Flow Rate qnN <sup>1)</sup> [scfm]		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
In main flow direction 1 → 2	35.3	70.6
In relief direction 2 → 1	35.3	70.6

1) Measured at p1 = 88 psi and p2 = 74 psi, Δp = 15 psi

Operating and Environmental Conditions		
Variant	Standard	Pressure sensor with display AD...
Operating medium	Compressed air	Filtered compressed air, lubricated or unlubricated, filtration grade 40 μm
Exhaust function	Flow control	
Direction of flow	Non-reversible	
Ambient temperature [°F]	14 ... 140	32 ... 122
Temperature of medium [°F]	14 ... 140	32 ... 122
Assembly position	Any	
Corrosion resistance CRC <sup>2)</sup>	2	

2) 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 [lb]	
Soft-start valve	0.43

• For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

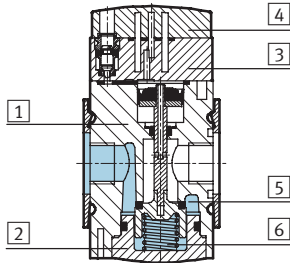
# Soft-start Valves MS4N-DL – Inch Series

Technical Data



## Materials

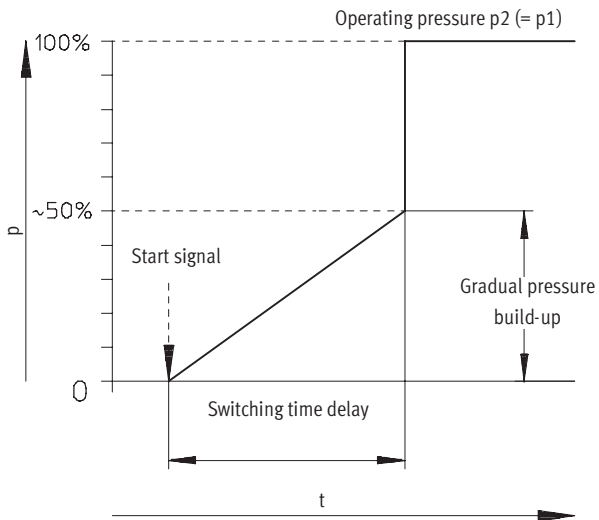
Sectional view



Soft-start valve		
1	Body	Die-cast aluminum
2	Base	Polyester
3	End cap	Polyamide
4	Top plate	Polyamide
5	Seat	Die-cast aluminum
6	Springs	Spring steel
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants AG or AD...)

## Switching Point

Pressure p as a function of time t



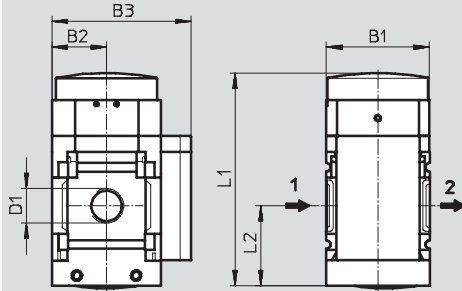
# Soft-start Valves MS4N-DL – Inch Series

Dimensional Drawings



## Dimensions<sup>1)</sup> – Standard

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



→ Flow direction

Type	B1	B2	B3	D1	L1	L2
MS4N-DL-1/8	1.57	0.83	2.13	1/8 NPT	3.26	1.22
MS4N-DL-1/4				1/4 NPT		

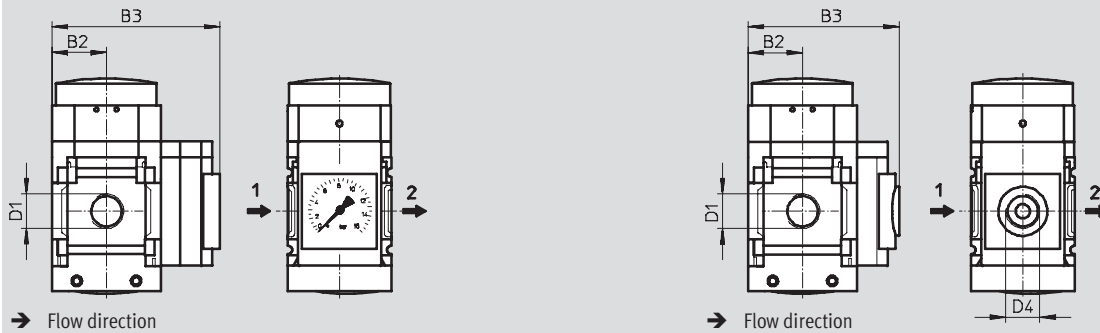
1) Dimensions are in inches, unless otherwise noted.

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [psil]

Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge



→ Flow direction

→ Flow direction

Type	B2	B3	D1	D4
MS4N-DL-1/8-...-AG	0.83	2.56	1/8 NPT	-
MS4N-DL-1/4-...-AG			1/4 NPT	
MS4N-DL-1/8-...-A8	0.83	2.30	1/8 NPT	1/8 NPT
MS4N-DL-1/4-...-A8			1/4 NPT	
MS4N-DL-1/8-...-A4	0.83	2.30	1/8 NPT	1/4 NPT
MS4N-DL-1/4-...-A4			1/4 NPT	

1) Dimensions are in inches, unless otherwise noted.

# Soft-start Valves MS4N-DL – Inch Series



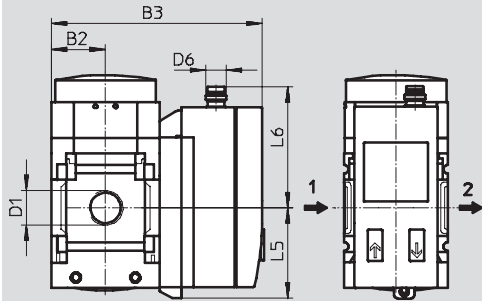
Dimensional Drawings, Ordering Data – Pre-configured Products

## Dimensions<sup>1)</sup> – Pressure Gauge Alternatives

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pressure sensor with display AD1 ... AD4

Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)



→ Flow direction

AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

Type	B2	B3	D1	D6	L5	L6
MS4N-DL-1/8-...-AD1/AD2	0.83	3.25	1/8 NPT	M8x1	1.38	1.84
MS4N-DL-1/4-...-AD1/AD2			1/4 NPT			
MS4N-DL-1/8-...-AD3/AD4	0.83	3.25	1/8 NPT	M12x1	1.38	2.20
MS4N-DL-1/4-...-AD3/AD4			1/4 NPT			

1) Dimensions are in inches, unless otherwise noted.

## Ordering Data

Connection	Part No.	Type	LT
1/8 NPT	531992	MS4N-DL-1/8 <sup>2)</sup>	1D
1/4 NPT	531991	MS4N-DL-1/4 <sup>2)</sup>	1D

LT = Lead time

1D typically ships same day/next day

1W typically ships within 1 week

Q request a quote for lead time

2) Free of copper and PTFE

# Soft-start Valves MS4N-DL – Inch Series



Ordering Data – Configurable Products

M Mandatory Data						O Options			
Part No.	Series	Size	Thread	Function	Connection size	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
527712	MS	4	N	DL	1/8, 1/4, AQK, AQN, AQP	AG, A8, A4, AD1, AD2, AD3, AD4	BAR, MPA	WP, WPM, WB, WBM	Z
<b>Order example</b>									
<b>527712</b>	<b>MS</b>	<b>4</b>	<b>N</b>	<b>-DL</b>	<b>-AQK</b>	<b>-AG</b>	<b>-BAR</b>	<b>-WB</b>	<b>-Z</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	527712				
	Series	Standard			MS	MS
	Size	4			4	4
	Thread	NPT thread			N	N
	Function	Soft-start valve, pneumatic			-DL	-DL
	Connection size	Body thread 1/8 NPT			-1/8	
		Body thread 1/4 NPT			-1/4	
		Port plate 1/8 NPT (dimensions → 426)			-AQK	
		Port plate 1/4 NPT (dimensions → 426)			-AQN	
		Port plate 3/8 NPT (dimensions → 426)			-AQP	
O	Pressure gauge alternatives	MS pressure gauge, psi (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		1	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		1	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		1	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		1	-AD4	
		Alternative pressure gauge scale	bar		2	-BAR
	MPa		2	-MPA		
	Type of mounting	Mounting bracket (dimensions → 427)		3	-WP	
		Mounting bracket (dimensions → 427)		3	-WPM	
		Mounting bracket (dimensions → 424)			-WB	
		Mounting bracket (dimensions → 424)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

1 AD1 ... AD4 Measuring range max. 147 psi

2 BAR, MPA Only with pressure gauge AG

3 WP, WPM Only with port plate AQK, AQN or AQP

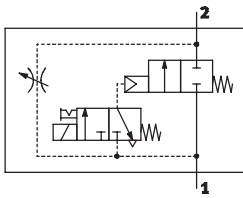
### Transfer order code

527712	MS	4	N	-DL	-		-		-		-	
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# Soft-start Valves MS4N-DE – Inch Series

Technical Data

ISO Symbol



- Solenoid actuated soft-start valve for slowly pressurizing and venting pneumatic installations
- The duration of the pressure build-up is adjusted using the restrictor attached to the valve cap.
- The output pressure p2 rises slowly in accordance with the restrictor setting. Only the air flow via the restrictor is available when the solenoid valve is not actuated. The main seat is only opened by energizing the solenoid valve.
- When the solenoid valve is switched off, the main seat is closed and only the air flow from the flow control valve is available.
- The solenoid valve should remain switched on in order to vent a system as this increases the flow rate from 2 and 1 and reduces the exhaust time.



- The cylinders advance slowly and reliably into the initial position. Sudden and erratic movements are avoided
- Switch-through pressure can be precisely controlled using a solenoid valve
- Adjustable switching time delay
- Solenoid coil without plug socket, three voltage ranges available
- Solenoid actuator can be repositioned by 180°
- Pushing and detenting manual override (detenting is locked on delivery)
- Optional pressure sensor with display

General Technical Data		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
Operating pressure [psi]	59 ... 206 (Coil parameter V24, V110, V230)	
	59 ... 147 (Coil parameter 10V24)	
	59 ... 147 (Pressure sensor with display AD...)	

Standard Nominal Flow Rate qnN <sup>1)</sup> [scfm]		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
In main flow direction 1 → 2	35.3	70.6
In relief direction 2 → 1 <sup>2)</sup>	35.3	70.6

1) Measured at p1 = 88 psi and p2 = 74 psi, Δp = 15psi  
 2) For energized solenoid valve.

# Soft-start Valves MS4N-DE – Inch Series

Technical Data

Operating and Environmental Conditions				
Variant		Coil parameter V24, V110, V230	Coil parameter 10V24	Pressure sensor with display AD...
Operating medium		Compressed air		Filtered compressed air, lubricated or unlubricated, filtration grade 40 µm
Coil characteristics	V24	24 V DC (For valves with max. inlet pressure 206 psi – only available via configurator)		
	10V24	24 V DC (For valves with max. inlet pressure 147 psi)		
	V110	110 V AC		
	V230	230 V AC		
Exhaust function		Flow control		
Direction of flow		Non-reversible		
Ambient temperature	[°F]	14 ... 140	14 ... 122	32 ... 122
Temperature of medium	[°F]	14 ... 140	14 ... 122	32 ... 122
Assembly position		Any		
Corrosion resistance	CRC <sup>1)</sup>	2		

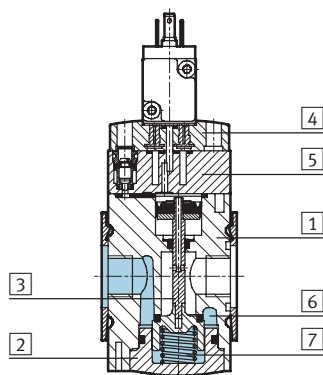
1) Corrosion resistance class 2 according to Festo standard 940 070  
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weights [lb]	
Soft-start valve	0.53

- For spare parts go to: [www.festo.com/en/spare\\_parts\\_service](http://www.festo.com/en/spare_parts_service)

## Materials

Sectional view



Soft-start valve		
1	Body	Die-cast aluminum
2	Base	Polyamide
3	Valve stem	Steel
4	End cap	Polyamide
5	Top plate	Polyamide
6	Seat	Aluminum/nitrile rubber
7	Springs	Spring steel
-	Seals	Nitrile rubber
Note on materials		Free of copper and PTFE (not with variants AG, 10V24 or AD...)



# Soft-start Valves MS4N-DE – Inch Series

Dimensional Drawings



**Dimensions<sup>1)</sup> – Standard** Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

- 1 Plug connection to DIN EN 175 301-803
- 2 Solenoid actuator can be repositioned by 180°, i.e. solenoid points to the front
- 3 PIN only with solenoid actuators 110 V and 230 V

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	L1	L2	L7
MS4N-DE-1/8	1.57	1.66	2.96	0.83	2.13	1/8 NPT	4.54	1.24	0.34
MS4N-DE-1/4						1/4 NPT			

1) Dimensions are in inches, unless otherwise noted.

**Dimensions<sup>1)</sup> – Pressure Gauge Alternatives** Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Integrated MS pressure gauge AG, display unit [psi] Adapter plate A8/A4 for EN pressure gauge 1/8/1/4, without pressure gauge

→ Flow direction

Type	B2	B3	D1	D4
MS4N-DE-1/8-...-AG	1.66	3.39	1/8 NPT	-
MS4N-DE-1/4-...-AG			1/4 NPT	
MS4N-DE-1/8-...-A8	1.66	3.14	1/8 NPT	1/8 NPT
MS4N-DE-1/4-...-A8			1/4 NPT	
MS4N-DE-1/8-...-A4	1.66	3.14	1/8 NPT	1/4 NPT
MS4N-DE-1/4-...-A4			1/4 NPT	

1) Dimensions are in inches, unless otherwise noted.

# Soft-start Valves MS4N-DE – Inch Series

Dimensional Drawings, Ordering Data – Pre-configured Products



**Dimensions<sup>1)</sup> – Pressure Gauge Alternatives** Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)  
 Pressure sensor with display AD1 ... AD4 Technical data SDE1 → [www.festo.com/catalog/sde1](http://www.festo.com/catalog/sde1)

AD1 variants:  
SDE1-D10-G2-MS-L-P1-M8 with 3-pin plug M8x1, 1 switching output PNP

AD2 variants:  
SDE1-D10-G2-MS-L-N1-M8 with 3-pin plug M8x1, 1 switching output NPN

AD3 variants:  
SDE1-D10-G2-MS-L-PI-M12 with 4-pin plug M12x1, 1 switching output PNP and 4 ... 20 mA analog

AD4 variants:  
SDE1-D10-G2-MS-L-NI-M12 with 4-pin plug M12x1, 1 switching output NPN and 4 ... 20 mA analog

→ Flow direction

Type	B2	B3	B4	B5	D1	D6	L5	L6
MS4N-DE-1/8-...-AD1/AD2	1.66	4.09	0.83	3.25	1/8 NPT	M8x1	1.38	1.84
MS4N-DE-1/4-...-AD1/AD2					1/4 NPT			
MS4N-DE-1/8-...-AD3/AD4	1.66	4.09	0.83	3.25	1/8 NPT	M12x1	1.38	2.20
MS4N-DE-1/4-...-AD3/AD4					1/4 NPT			

1) Dimensions are in inches, unless otherwise noted.

Ordering Data			
Connection	Part No.	Type	LT
Supply voltage 24 V DC			
1/8 NPT	542569	MS4N-DE-1/8-10V24	1D
1/4 NPT	542568	MS4N-DE-1/4-10V24	1D
Supply voltage 110 V AC			
1/8 NPT	532004	MS4N-DE-1/8-V110 <sup>2)</sup>	1D
1/4 NPT	532003	MS4N-DE-1/4-V110 <sup>2)</sup>	1D
Supply voltage 230 V AC			
1/8 NPT	532008	MS4N-DE-1/8-V230 <sup>2)</sup>	1D
1/4 NPT	532007	MS4N-DE-1/4-V230 <sup>2)</sup>	1D

LT = Lead time      1D typically ships same day/next day      1W typically ships within 1 week      Q request a quote for lead time

2) Free of copper and PTFE

# Soft-start Valves MS4N-DE – Inch Series



Ordering Data – Configurable Products

M Mandatory Data						O Options				
Part No.	Series	Size	Thread	Function	Connection size	Supply voltage	Pressure gauge alternatives	Alternative pressure gauge scale	Type of mounting	Reverse flow direction
527714	MS	4	N	DE	1/8, 1/4, AQK, AQN, AQP	V24 10V24 V110 V230	AG, A8, A4, AD1, AD2, AD3, AD4	BAR MPA	WP WPM WB WBM	Z
<b>Order example</b>										
<b>527714</b>	<b>MS</b>	<b>4</b>	<b>N</b>	<b>- DE</b>	<b>- AQK</b>	<b>- V110</b>	<b>- AG</b>	<b>- BAR</b>	<b>- WP</b>	<b>- Z</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	527714				
	Series	Standard			MS	MS
	Size	4			4	4
	Thread	NPT thread			N	N
	Function	Soft-start valve, electrical			-DE	-DE
	Connection size	Body thread 1/8 NPT			-1/8	
		Body thread 1/4 NPT			-1/4	
		Port plate 1/8 NPT (dimensions → 426)			-AQK	
		Port plate 1/4 NPT (dimensions → 426)			-AQN	
		Port plate 3/8 NPT (dimensions → 426)			-AQP	
	Supply voltage	24 V DC (connection pattern to EN 175301), 206 psi			-V24	
		24 V DC (connection pattern to EN 175301), 147 psi		1	-10V24	
		110 V AC (connection pattern to EN 175301), 206 psi			-V110	
		230 V AC (connection pattern to EN 175301), 206 psi			-V230	
	Pressure gauge alternatives	MS pressure gauge, psi (with adapter)			-AG	
		Adapter plate for EN pressure gauge 1/8, without pressure gauge			-A8	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge			-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin		2	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin		2	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA		2	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA		2	-AD4	
	Alternative pressure gauge scale	bar		3	-BAR	
		MPa		3	-MPA	
	Type of mounting	Mounting bracket (dimensions → 427)		4	-WP	
		Mounting bracket (dimensions → 427)		4	-WPM	
		Mounting bracket (dimensions → 424)			-WB	
		Mounting bracket (dimensions → 424)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

- 1 10V24 Max. inlet pressure 147 psi
- 2 AD1 ... AD4 Measuring range max. 147 psi

- 3 BAR, MPA Only with pressure gauge AG
- 4 WP, WPM Only with port plate AQK, AQN or AQP

**Transfer order code**

527714	MS	4	N	- DE	-	-	-	-	-	-	-
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# On-off/Soft-start Valves MS4N-EM1/DL – Inch Series

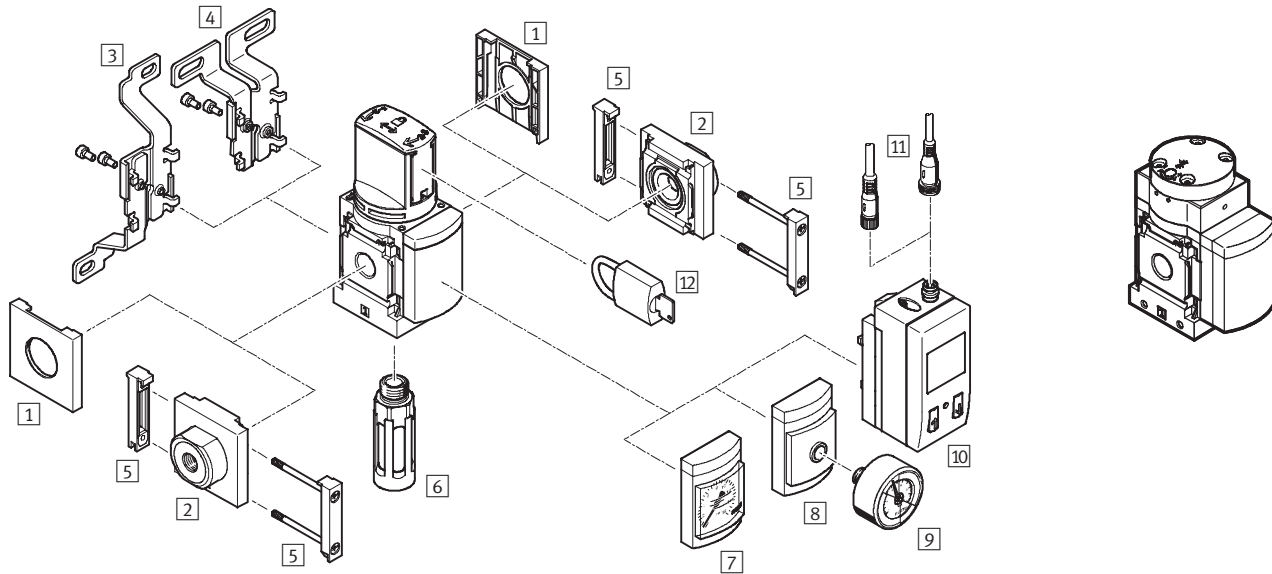


Accessories Overview

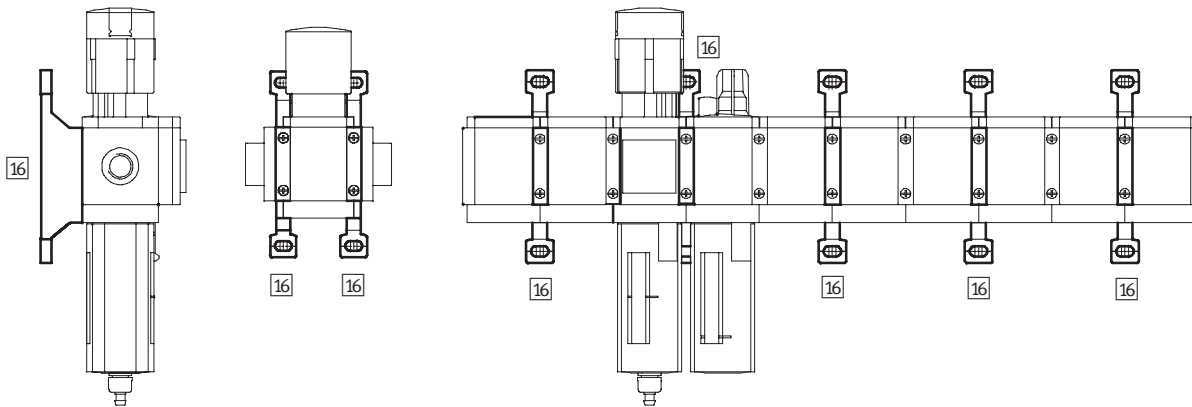
## Mounting Attachments and Accessories

On-off Valve EM1 – manually actuated

Soft-start Valve DL – pneumatically actuated



Single unit and combination unit mounting brackets.



# On-off/Soft-start Valves MS4N-EM1/DL – Inch Series

Accessories Overview

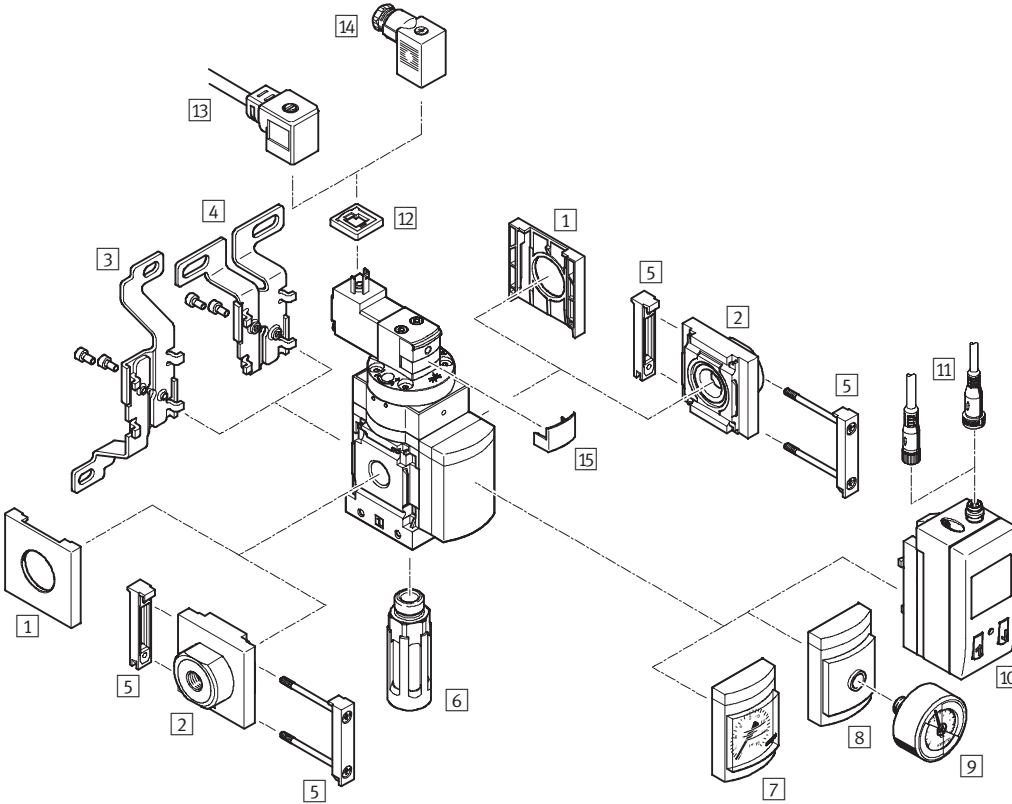
Mounting Attachments and Accessories						
		Single unit		Combination unit → 2.1-49		→ Page
		without port plate	with port plate	without port plate	with port plate	
1	Cover cap MS4-END	■	-	■	-	425
2	Port plate MS4N-AQ...	-	■	-	■	426
3	Mounting bracket MS4-WB	■	■	-	-	424
4	Mounting bracket MS4-WBM	■	■	-	-	424
5	Body connector MS4-MV	-	■	■	■	426
6	Silencer U	■ with EM1	■ with EM1	■ with EM1	■ with EM1	431
7	MS pressure gauge AG	■	■	■	■	EM1 402 DL 414
8	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	EM1 402 DL 414
9	Pressure gauge MA	■	■	■	■	431
10	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	EM1 402 DL 414
11	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	430
12	Padlock LRVS-D	■	■	■	■	431
16	Mounting bracket MS4-WP/WPB/WPM	-	■	■	■	427

# On-off/Soft-start Valves MS4N-EE/DE – Inch Series

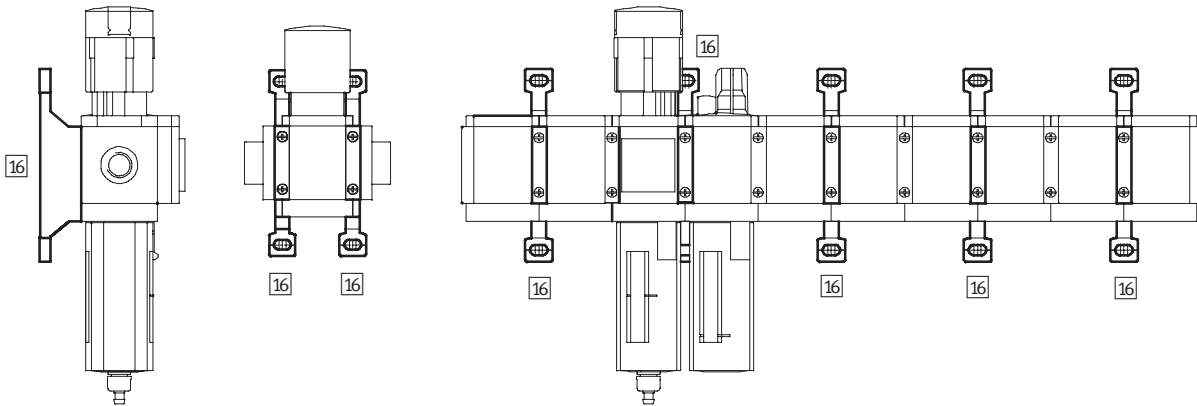
Accessories Overview

## Mounting Attachments and Accessories

On-off/Soft-start Valve EE/DE – solenoid actuated



Single unit and combination unit mounting brackets.



# On-off/Soft-start Valves MS4N-EE/DE – Inch Series

Accessories Overview

Mounting Attachments and Accessories						
		Single unit		Combination unit → 2.1-49		→ Page
		without port plate	with port plate	without port plate	with port plate	
1	Cover cap MS4-END	■	-	■	-	425
2	Port plate MS4N-AQ...	-	■	-	■	426
3	Mounting bracket MS4-WB	■	■	-	-	424
4	Mounting bracket MS4-WBM	■	■	-	-	424
5	Body connector MS4-MV	-	■	■	■	426
6	Silencer U	■ with EE	■ with EE	■ with EE	■ with EE	431
7	Pressure gauge MS AG	■	■	■	■	EE 408 DE 419
8	Adapter for EN pressure gauge 1/8/1/4 A8/A4	■	■	■	■	EE 408 DE 419
9	Pressure gauge MA	■	■	■	■	431
10	Pressure sensor SDE1-...-MS AD1 ... AD4	■	■	■	■	EE 408 DE 419
11	Plug socket with cable SIM-M8-3.../SIM-M12-4...	■	■	■	■	430
12	Illuminating seal MEB-LD	■	■	■	■	430
13	Plug socket with cable KMEB	■	■	■	■	430
14	Plug socket MSSD-EB	■	■	■	■	430
15	Locking clip CPV18-HV	■	■	■	■	430
16	Mounting bracket MS4-WP/WPB/WPM	-	■	■	■	427

# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series

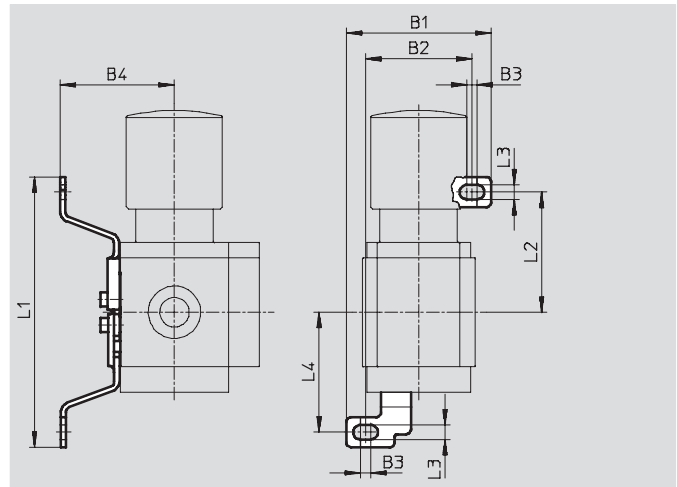


Accessories

### 3 Mounting bracket MS4-WB

- For wall mounting

Material:  
Steel

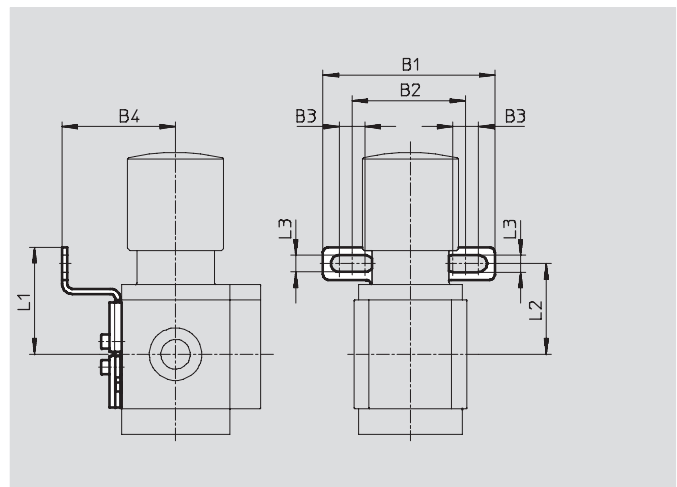


Dimensions and Ordering Data										
B1	B2	B3	B4	L1	L2	L3	L4	Weight [lb]	Part No.	Type
2.21	1.62	0.16	1.74	4.12	1.83	0.22	1.83	0.09	532185	MS4-WB

### 4 Mounting bracket MS4-WBM

- For wall mounting

Material:  
Steel



Dimensions and Ordering Data									
B1	B2	B3	B4	L1	L2	L3	Weight [lb]	Part No.	Type
2.62	1.73	0.39	1.73	1.63	1.38	0.26	0.10	526062	MS4-WBM



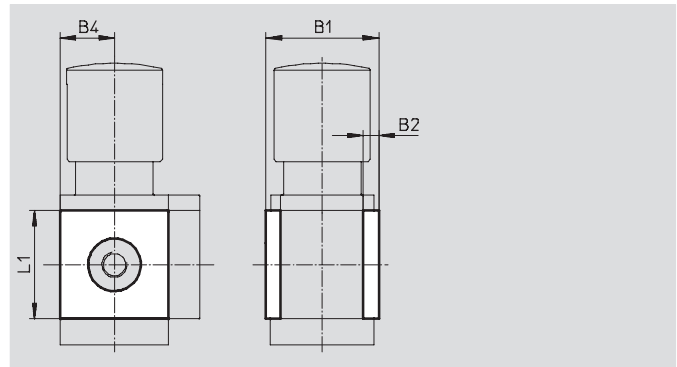
# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series

Accessories

## 1 Cover cap MS4-END

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

Material:  
Reinforced polyamide  
Free of copper and PTFE

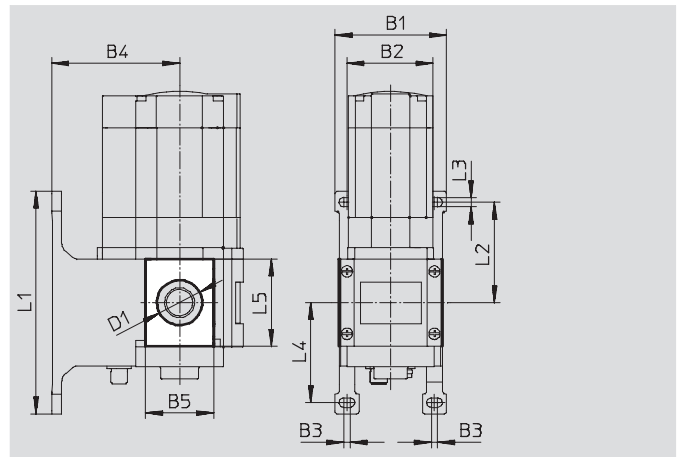


Dimensions and Ordering Data						
B1	B2	B4	L1	Part No.	Type	
1.72	0.24	0.83	1.65	538779	MS4-END	

## Mounting plate MS4-AEND

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

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



Dimensions and Ordering Data															
B1	B2	B3	B4		B5	D1 ∅	L1	L2	L3	L4	L5	CRC <sup>1)</sup>	Weight [lb]	Part No.	Type
			WP	WPB											
2.17	1.58	0.16	1.73	2.60	1.20	0.80	4.17	1.83	0.22	1.84	1.65	2	0.01	542966	MS4-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.

## On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series

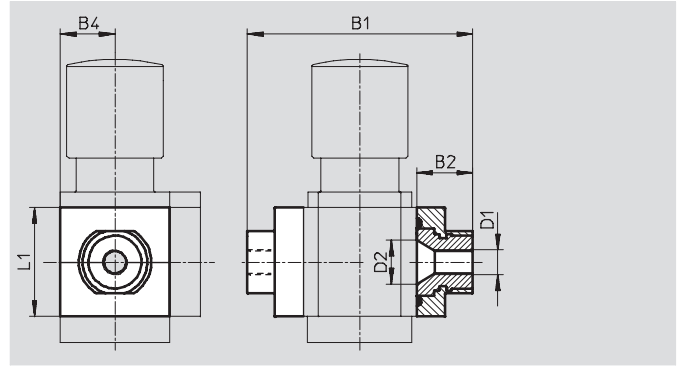
FESTO

Accessories

### 2 Port plate MS4N-AQ...

- Adapter for pneumatic connection

Material:  
Aluminum



Dimensions and Ordering Data								
B1	B2	B4	D1	D2	L1	Weight [lb]	Part No.	Type
3.29	0.85	0.83	1/8 NPT	0.66	1.65	0.26	526065	MS4N-AQK
			1/4 NPT				526066	MS4N-AQN
			3/8 NPT				526067	MS4N-AQP

### 5 Body connector MS4-MV

- For connecting modules

Material:  
Stainless steel/polyacetate



Ordering Data		
Weight [lb]	Part No.	Type
0.07	532798	MS4-MV

# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series

Accessories

## 16 Mounting Bracket MS4-WP...

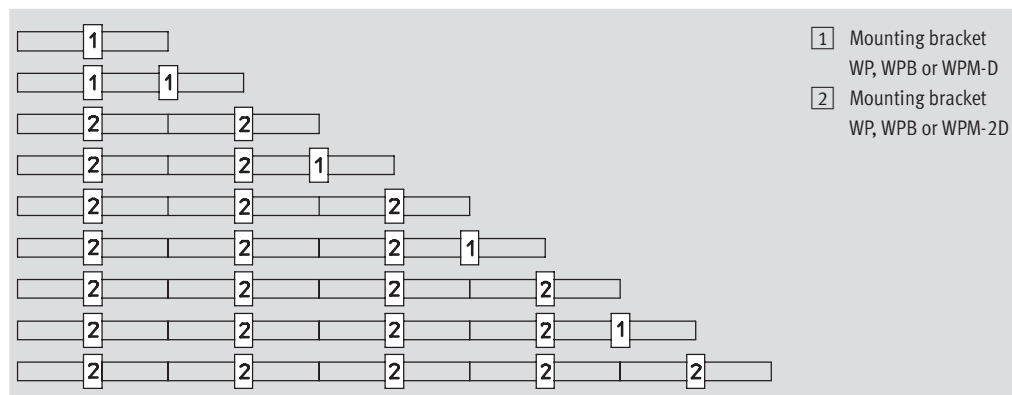
Suggested placement of wall mounting brackets when mounting air preparation combinations

1 unit: 1.575 in

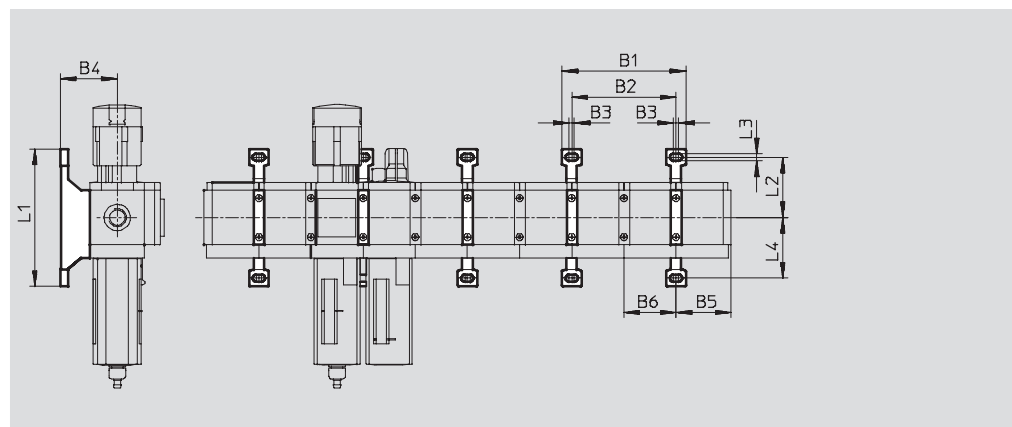
2 units: 3.15 in

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	3.75	3.15	0.16	1.73	1.65	1.57	4.17	1.83	0.22	1.84
MS4-WPB				2.60						1.57
MS4-WPM-...D				1.73						1.57

# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series

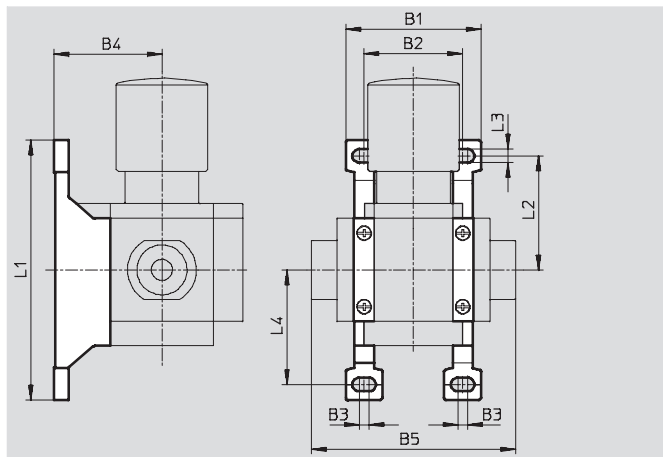


Accessories

## Mounting bracket MS4-WP

- To connect the modules for wall mounting
- In combination with a port plate MS-AG... for mounting an individual unit on a wall
- In combination with mounting plate MS-AEND or for mounting an individual unit with body thread on a wall
- For pressure regulator LRB with angled outlet block B... at rear

Material:  
Die-cast aluminum

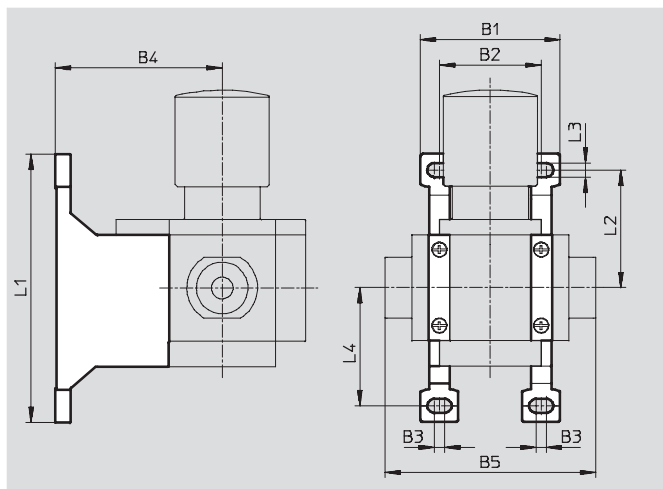


Dimensions and Ordering Data											
B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [lb]	Part No.	Type
2.17	1.58	0.16	1.73	3.28	4.17	1.83	0.22	1.84	0.08	532184	MS4-WP

## Mounting bracket MS4-WPB

- To connect the modules for wall mounting
- In combination with a port plate MS-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 aluminum



Dimensions and Ordering Data											
B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [lb]	Part No.	Type
2.17	1.58	0.16	2.60	3.28	4.17	1.83	0.22	1.84	0.11	526063	MS4-WPB

# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series



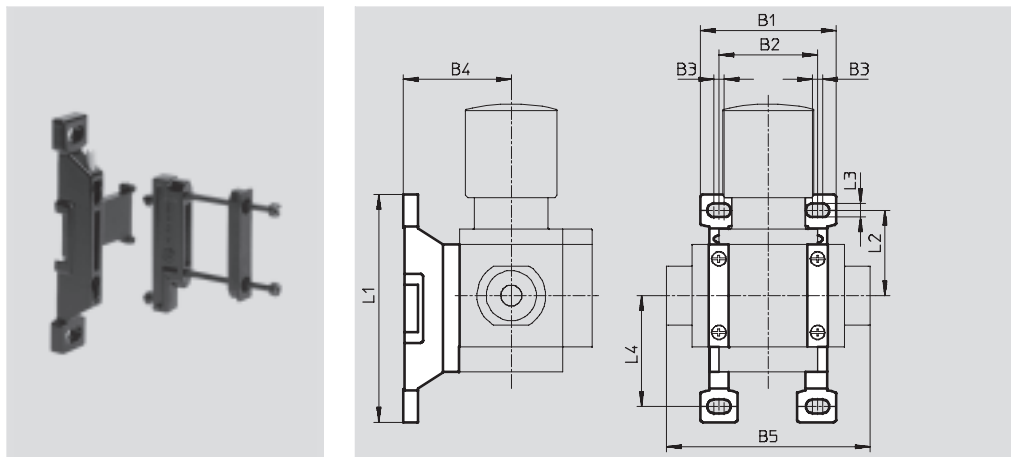
Accessories

## Mounting bracket MS4-WPM

- To connect the modules for wall mounting
- In combination with a port plate MS-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 aluminum



Dimensions and Ordering Data												
B1	B2	B3	B4	B5	L1	L2	L3	L4	Clearance	Weight [lb]	Part No.	Type
2.17	1.57	0.16	1.73	3.28	3.65	1.37	0.22	1.78	1.57	0.09	526060	MS4-WPM-D
3.75	3.15			4.86					3.15	0.11	526061	MS4-WPM-2D

## Body connector MS4-MVM

- For installation of modules with regulating knob pointing downwards

Material:  
Die-cast aluminum





Ordering Data		
Size	Part No.	Type
MS4	532800	MS4-MVM


# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series




Accessories



14 Ordering Data – Plug Socket MSSD					Technical data → <a href="http://www.festo.com/catalog/mssd">www.festo.com/catalog/mssd</a>	
	Description	Operating voltage range	Electrical connection	Type of mounting cable connection	Part No.	Type
	for MS4N-EE/DE	≤ 250 V AC/DC	3-pin	Clamping screws	151687	MSSD-EB
			4-pin	Insulation displacement technology	192745	MSSD-EB-S-M14



13 Ordering Data – Plug Socket with Cable KMEB					Technical data → <a href="http://www.festo.com/catalog/kmeb">www.festo.com/catalog/kmeb</a>	
	Description	Operating voltage range	Switching status display	Cable length [ft]	Part No.	Type
	for MS4N-EE/DE	24 V DC	LED	8.2	151688	KMEB-1-24-2,5-LED
		24 V DC	LED	16.4	151689	KMEB-1-24-5-LED
		24 V DC	LED	32.8	193457	KMEB-1-24-10-LED
		230 V AC	–	8.2	151690	KMEB-1-230AC-2,5
		230 V AC	–	16.4	151691	KMEB-1-230AC-5

12 Ordering Data – Illuminating Seal MEB-LD			Technical data → <a href="http://www.festo.com/catalog/meb-ld">www.festo.com/catalog/meb-ld</a>	
	Description	Operating voltage range	Part No.	Type
	for plug socket with cable KMEB and plug socket MSSD-EB	12 ... 24 V DC	151717	MEB-LD-12-24DC
		230 V DC/AC ±10%	151718	MEB-LD-230AC

15 Ordering Data – Locking Clip CPV18-HV				Technical data → <a href="http://www.festo.com/catalog/cpv18-hv">www.festo.com/catalog/cpv18-hv</a>		
	Description	Part No.	Type	PU <sup>1)</sup>		
	for MS4N-EE/DE...-V24		Cover for manual override, the clip prevents actuation	530056	CPV18-HV	10

1) Packaging unit quantity


11 Ordering Data – Plug Socket with Cable SIM-M8				Technical data → <a href="http://www.festo.com/catalog/sim-m8">www.festo.com/catalog/sim-m8</a>	
	Electrical connection	Cable length [ft]	Part No.	Type	
	M8x1, 3-pin	8.2	159420	SIM-M8-3GD-2,5-PU	
		16.4	159421	SIM-M8-3GD-5-PU	
		32.8	192964	SIM-M8-3GD-10-PU	
	M8x1, 3-pin	8.2	159422	SIM-M8-3WD-2,5-PU	
		16.4	159423	SIM-M8-3WD-5-PU	
		32.8	192965	SIM-M8-3WD-10-PU	


Ordering Data – Plug Socket with Cable SIM-M12				Technical data → <a href="http://www.festo.com/catalog/sim-m12">www.festo.com/catalog/sim-m12</a>	
	Electrical connection	Cable length [ft]	Part No.	Type	
	M12x1, 4-pin	16.4	164259	SIM-M12-4GD-5-PU	
	M12x1, 4-pin	16.4	164258	SIM-M12-4WD-5-PU	


# On-off/Soft-start Valves MS4N-EM1/EE/DL/DE – Inch Series



Accessories

9 Ordering Data – Pressure Gauge MA				Technical data → <a href="http://www.festo.com/catalog/ma">www.festo.com/catalog/ma</a>		
	Nominal size	Pneumatic connection	Indicating range		Part No.	Type
			[bar]	[psi]		
	Pressure gauge MA, DIN EN 837-1					
	1.57	1/4 NPT	0 ... 16	0 ... 232	183908	MA-40-16-N1/4-EN
	Pressure gauge MA, DIN EN 837-1, with red-green range					
	1.57	1/8 NPT	–	0 ... 232	530388	MA-40-232-N1/8-PSI-E-RG
	1.97	1/4 NPT	–	0 ... 232	530391	MA-50-232-N1/4-PSI-E-RG

6 Ordering Data – Silencer U			Technical data → <a href="http://www.festo.com/catalog/u">www.festo.com/catalog/u</a>	
	Description	Pneumatic connection	Part No.	Type
	for MS4N-EM1/EE	1/4 NPT	12639	U-1/4-B-NPT

Ordering Data – Padlock LRV5-D				
	Description	Weight [lb]	Part No.	Type
	for regulators, filter/regulators and manual on-off valves	0.24	193786	LRV5-D

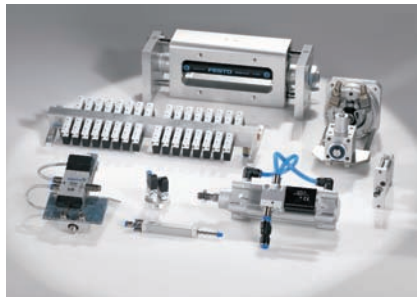




# Product Range and Company Overview

## A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



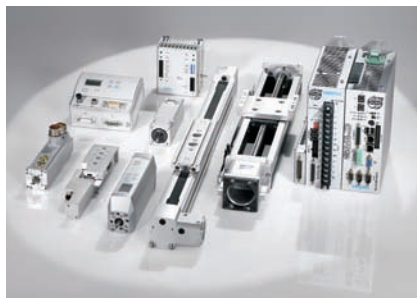
**Custom Control Cabinets**  
Comprehensive engineering support  
and on-site services



**Complete Systems**  
Shipment, stocking and storage services

## The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**  
Electromechanical actuators, motors,  
controllers & drives



**Pneumatics**  
Pneumatic linear and rotary actuators,  
valves, and air supply



**PLCs and I/O Devices**  
PLC's, operator interfaces, sensors  
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## Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 11,500 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

## Quality Assurance, ISO 9001 Certification

Festo Corporation is committed to provide Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

All Festo locations within the United States are registered to ISO 9001.



# Festo North America

## United States

### Customer Resource Center

502 Earth City Expy., Suite 125  
Earth City, MO 63045

For ordering assistance, or to find  
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**Call:** 1.800.99.FESTO

**Fax:** 1.800.96.FESTO

**Email:** customer.service@us.festo.com

For technical support,

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