

# Membrane Air Dryers MS4N-LDM1 – Inch Series



Membrane air dryers remove water vapor from the compressed air and lower the dew point preventing moisture from forming downstream. Pre-filtration with a grade of 0.01 micron is required.

- Pneumatic connection: 1/8 NPT, 1/4 NPT, 3/8 NPT
- Pressure dew point reduction: 20 K
- Supply pressure: 44 ... 184 psi
- Flow rate: 1.8 ... 3.5 scfm

Product Range Overview						
Type	Flow rate [scfm]	Pneumatic connections		Bowl guard		Reverse flow
		Body thread	Port plate	Plastic bowl guard	Metal bowl	Flow direction from right to left
<b>MS4N</b>			<b>AG...</b>	<b>R</b>	<b>U</b>	<b>Z</b>
LDM1	1.8 ... 3.5	1/8 NPT, 1/4 NPT	1/8 NPT, 1/4 NPT, 3/8 NPT	-	■	■

## Features

- Optimum final dryer with excellent operational reliability
- Suitable for use as an individual unit or for integration in existing service unit combinations
- Flow rate-dependent dew point reduction
- Wear-free function requiring no external energy
- 15% purge air flow rate
- Optional purge ring for ducting of purging air

- Typical areas of application:
- Drying, cleaning of precision parts
  - Measuring technology
  - Rinsing of precision glass scales
  - Painting systems
  - Paper and packaging machines

## Contents

- Technical Data → 320
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  - Ordering Data → 322
  - Accessories → 324
- [www.festo.com/catalog/ms4n-ldm](http://www.festo.com/catalog/ms4n-ldm)

# Membrane Air Dryers MS4N-LDM1 – Inch Series

Technical Data

ISO Symbol



**Note**  
 Prefiltration of the compressed air using a micro filter MS-LFM-A, filtration grade 0.01 μm (residual particles < 0.1 μm, residual oil content < 0.1 mg/m<sup>3</sup>) is vital for flawless functioning of the unit.

General Technical Data		
Pneumatic connection 1, 2	1/8 NPT	1/4 NPT
Pressure dew point reduction [°F]	68	
Supply pressure [psi]	44 ... 184	

Standard Flow Rate q <sub>n</sub> <sup>1)</sup> [scfm]		
	Cartridge P05	Cartridge P10
Input q <sub>n In</sub>	2.1	4.2
Output q <sub>n Out</sub>	1.8	3.5
Purge air q <sub>n Purge</sub>	0.3	0.6

1) Measured at p<sub>1</sub> = 102 psi, θ<sub>pd In</sub> = +77 °F, θ<sub>pd Out</sub> = +41 °F ± 3 °F (θ<sub>pA Out</sub> = -7 °F ± 2 °F), θ<sub>amb</sub> = +77 °F

Operating and Environmental Conditions	
Operating medium	Compressed air, air quality class 1.7.2 to DIN ISO 8573-1
Ambient temperature [°F]	+36 ... +122
Temperature of medium [°F]	+36 ... +122
Storage temperature [°F]	-4 ... +140
Assembly position	Vertical ±5°
Corrosion resistance class 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]		
	Cartridge P05	Cartridge P10
Membrane air dryer	0.84	1.06

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

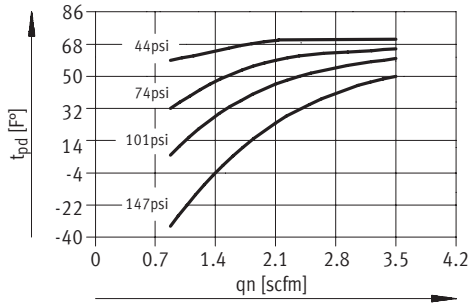
# Membrane Air Dryers MS4N-LDM1 – Inch Series

Technical Data

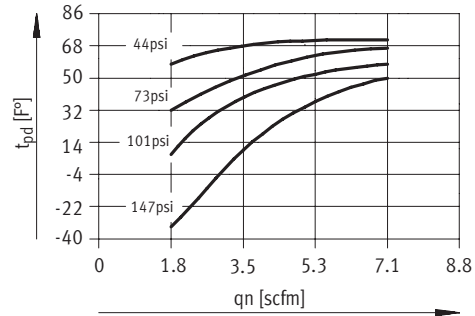


## Pressure Dew Point $t_{pd}$ (Output) as a Function of the Standard Flow Rate at Output $q_n$

MS4N-LDM1-...-P05

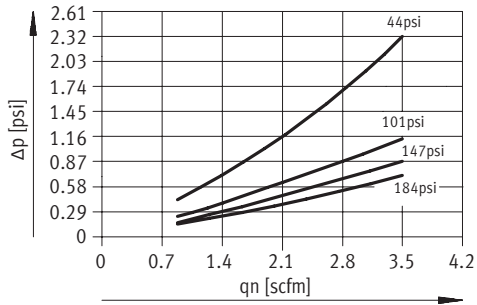


MS4N-LDM1-...-P10

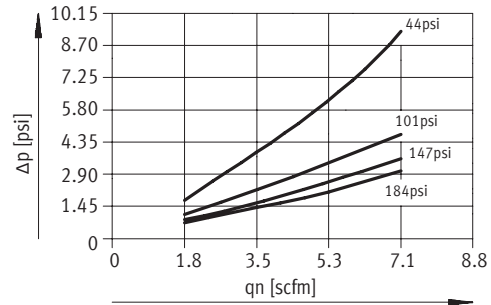


## Differential Pressure $\Delta p$ as a Function of the Standard Flow Rate at Output $q_n$

MS4N-LDM1-...-P05

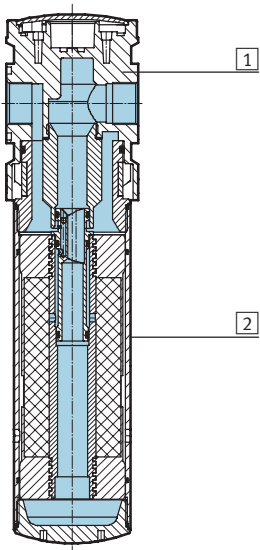


MS4N-LDM1-...-P10



## Materials

Sectional view



Membrane air dryer		
1	Housing	Die-cast aluminum
2	Bowl	Wrought aluminum alloy
-	Seals	Nitrile rubber

# Membrane Air Dryers MS4N-LDM1 – Inch Series

Dimensional Drawings, Ordering Data – Pre-configured Products



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

**1** Push-in fitting QS-1/4-10 (included in scope of delivery), for tubing with outside diameter of 10 mm and min. inside diameter of 7 mm.

→ Flow direction

Type	B1	B2	B3	D1	D2	L1	L2	L3	L4	L5
MS4N-LDM1-1/8-P05	1.57	0.83	2.13	1/8 NPT	2.52	9.65	1.14	2.36	0.71	1.57
MS4N-LDM1-1/8-P10						13.58				
MS4N-LDM1-1/4-P05	1.57	0.83	2.13	1/4 NPT	2.52	9.65	1.14	2.36	0.71	1.57
MS4N-LDM1-1/4-P10						13.58				

1) Dimensions are in inches, unless otherwise noted.

Ordering Data				
Flow cartridge	Connection	Part No.	Type	LT
P10	1/8 NPT	543634	MS4N-LDM1-1/8-P10	Q
	1/4 NPT	543636	MS4N-LDM1-1/4-P10	Q

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

# Membrane Air Dryers MS4N-LDM1 – Inch Series



Ordering Data – Configurable Products

M Mandatory Data							O Options		
Part No.	Series	Size	Thread	Function	Connection size	Flow cartridge	Purging air	Type of mounting	Reverse flow direction
543629	MS	4	N	LDM1	1/8, 1/4, AQP, AQN, AQP	P05 P10	PAC	WP WPM WB WBM	Z
<b>Order example</b>									
<b>543629</b>	<b>MS</b>	<b>4</b>	<b>N</b>	<b>- LDM1</b>	<b>- AQP</b>	<b>- P10</b>	<b>-</b>	<b>- WP</b>	<b>-</b>

Ordering Table		Grid dimension [mm]	40	Conditions	Code	Enter code
M	Part No.	543629				
	Series	Standard			MS	MS
	Size	4			4	4
	Thread	NPT thread			N	N
	Function	Membrane dryer			-LDM1	-LDM1
	Connection size	Body thread 1/8 NPT			-1/8	
		Body thread 1/4 NPT			-1/4	
		Port plate 1/8 NPT (dimensions → 328)			-AQK	
		Port plate 1/4 NPT (dimensions → 328)			-AQN	
		Port plate 3/8 NPT (dimensions → 328)			-AQP	
	Flow cartridge	1.8 scfm			-P05	
		3.5 scfm			-P10	
O	Purging air	Ducted purging air			-PAC	
	Type of mounting	Mounting bracket (dimensions → 329)		1	-WP	
		Mounting bracket (dimensions → 329)		1	-WPM	
		Mounting bracket (dimensions → 326)			-WB	
		Mounting bracket (dimensions → 326)			-WBM	
	Reverse flow direction	Flow direction from right to left			-Z	

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

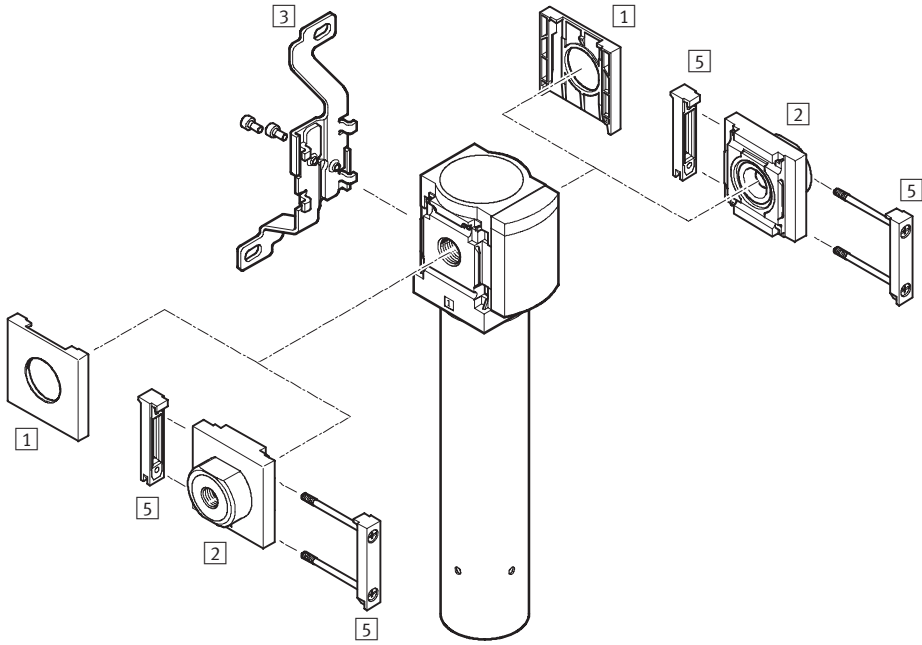
Transfer order code

543629	MS	4	N	-	LDM1	-		-		-		-	
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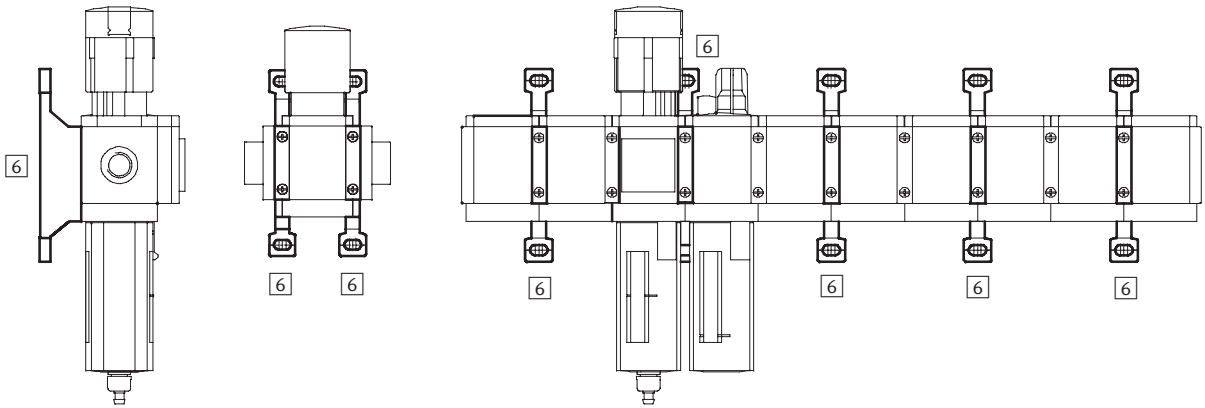
# Membrane Air Dryers MS4N-LDM1 – Inch Series

Accessories Overview

## Mounting Attachments and Accessories



Single unit and combination unit mounting brackets.



# Membrane Air Dryers MS4N-LDM1 – 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	■	-	■	-	327
2	Port plate MS4N-AQ...	-	■	-	■	328
3	Mounting bracket MS4-WB	■	■	-	-	326
5	Body connector MS4-MV	-	■	■	■	328
-	Mounting bracket MS4-WBM	■	■	-	-	326
6	Mounting bracket MS4-WP/WPB/WPM	-	■	■	■	329

# Membrane Air Dryers MS4N-LDM1 – Inch Series

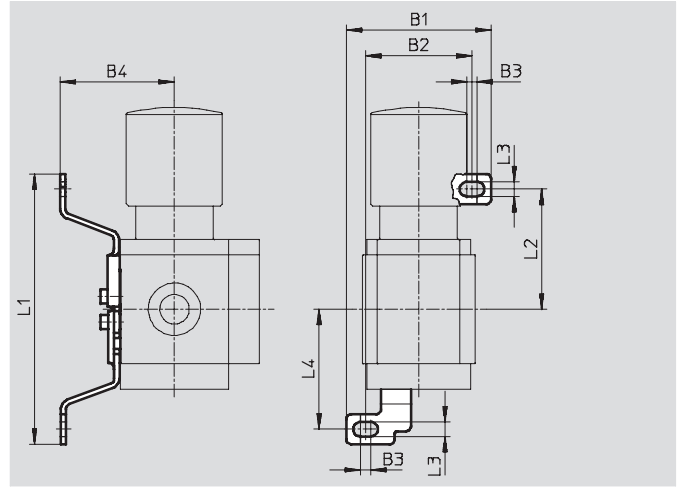


Accessories

## 3 Mounting bracket MS4-WB

- For wall mounting

Material:  
Steel

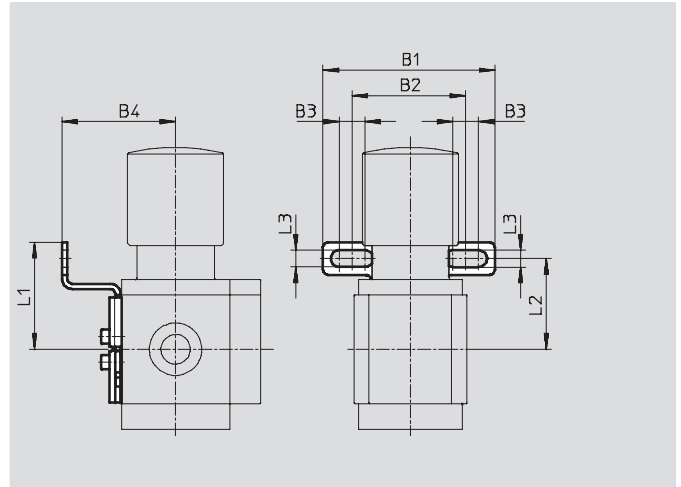


Dimensions and Ordering Data										
B1	B2	B3	B4	L1	L2	L3	L4	Weight [lb]	Part No.	Type
2.21	1.62	0.16	1.74	4.12	1.83	0.22	1.83	0.09	532185	MS4-WB

## 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



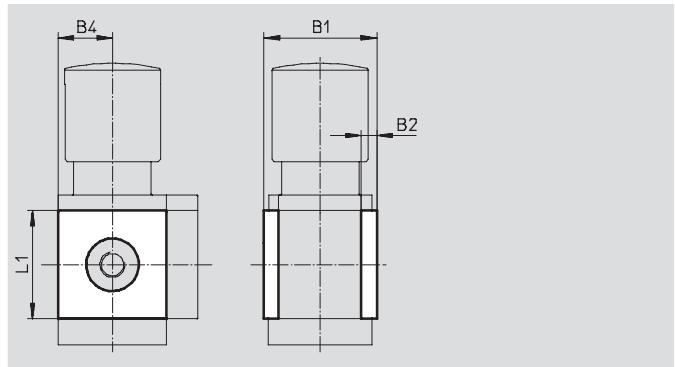
# Membrane Air Dryers MS4N-LDM1 – Inch Series

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

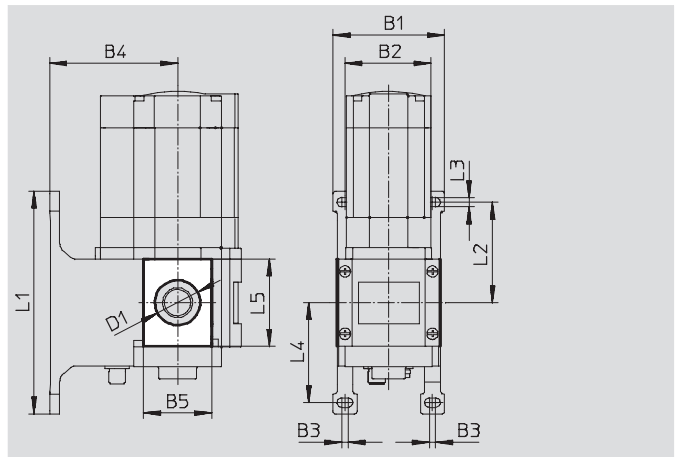


Dimensions and Ordering Data						
B1	B2	B4	L1	Part No.	Type	
1.72	0.24	0.83	1.65	538779	MS4-END	

## 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.

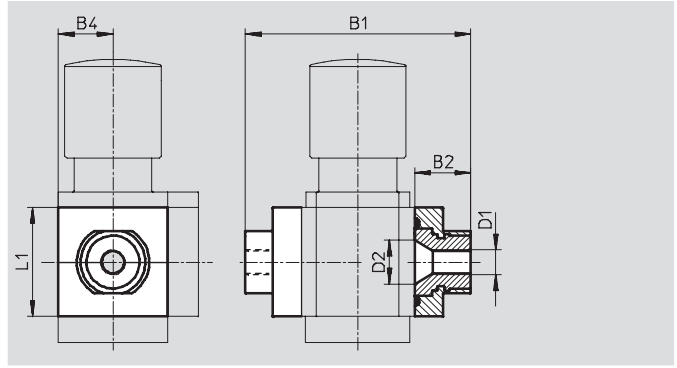
# Membrane Air Dryers MS4N-LDM1 – Inch Series

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

# Membrane Air Dryers MS4N-LDM1 – Inch Series

Accessories



## 6 Mounting Bracket MS4-WP...

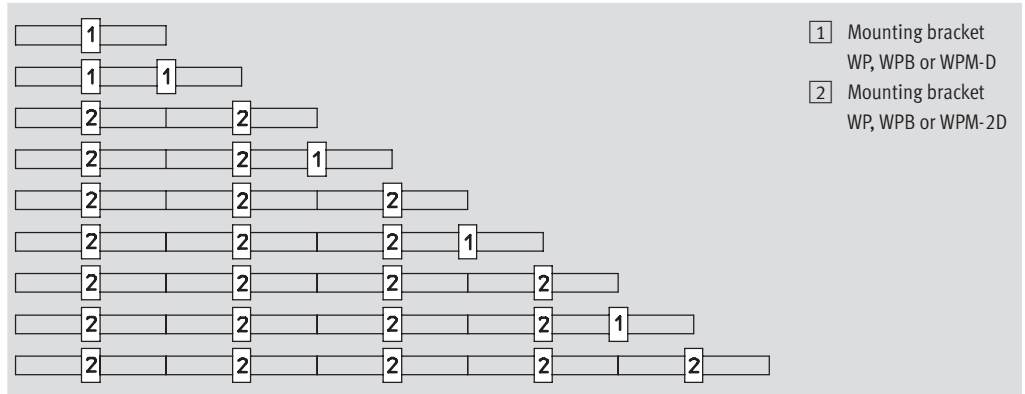
Suggested placement of wall mounting brackets when mounting air preparation combinations

1 unit: 1.575 in

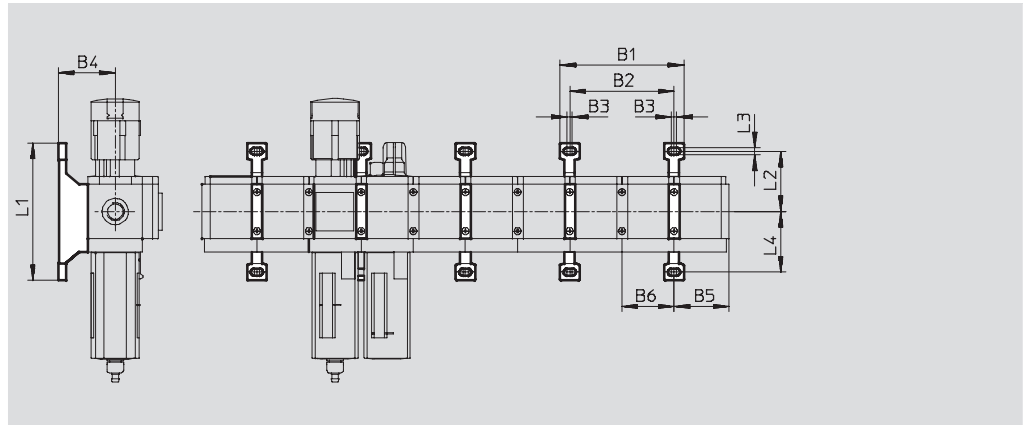
2 units: 3.15 in

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						3.65

# Membrane Air Dryers MS4N-LDM1 – Inch Series

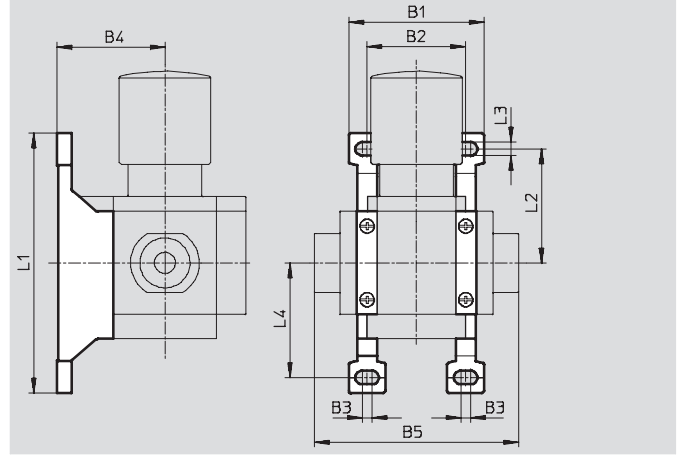


Accessories

## 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

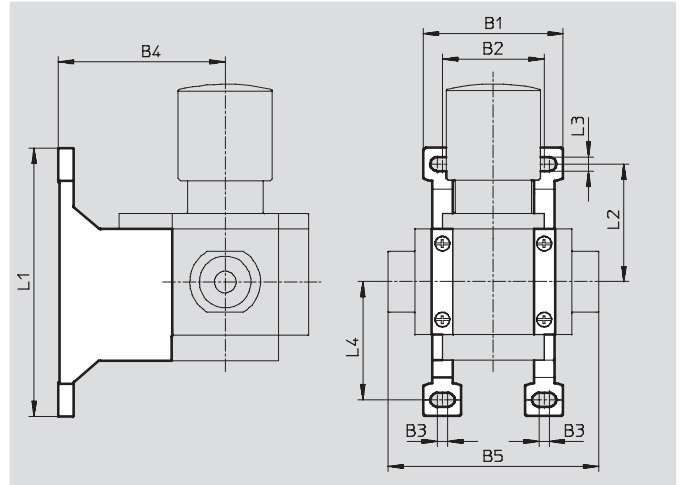


Dimensions and Ordering Data											
B1	B2	B3	B4	B5	L1	L2	L3	L4	Weight [lb]	Part No.	Type
2.17	1.58	0.16	1.73	3.28	4.17	1.83	0.22	1.84	0.08	532184	MS4-WP

## 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

# Membrane Air Dryers MS4N-LDM1 – Inch Series

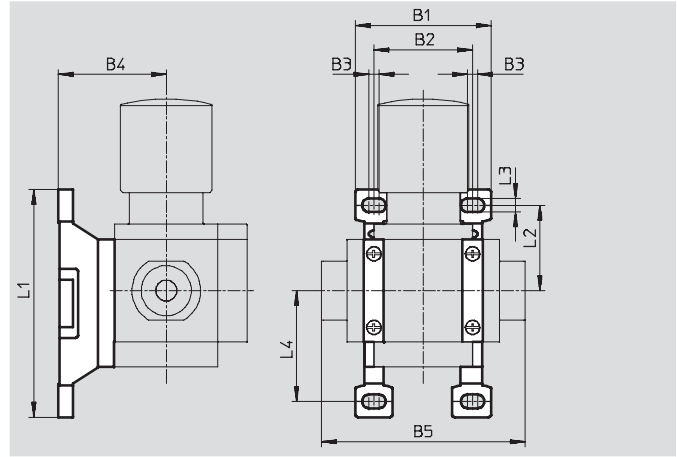
Accessories

## 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



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Subject to change