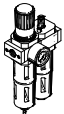

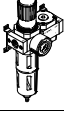
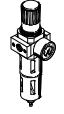
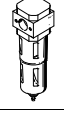
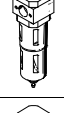
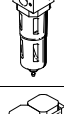
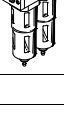



**Membrane air dryers LDM1, D series**



# Membrane air dryers LDM1, D series, metal design

Product range overview D series service units, metal design

Type	Size	Pneumatic connection										Pressure regulation range [bar]			Grade of filtration [µm]			
		M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	0.5 ...	0.5 ...	2.5 ...	0.01	1	5	40
<b>Service units</b>																		
<b>FRC/FRCS</b> 	Micro	■	■	■	-	-	-	-	-	■	■	■	-	-	-	-	■	-
	Mini	-	-	■	■	■	-	-	-	-	-	■	■	-	-	-	■	■
	Midi	-	-	-	■	■	■	■	-	-	-	■	■	-	-	-	■	■
	Maxi	-	-	-	-	-	■	■	■	-	-	■	■	-	-	-	■	■
<b>Service unit combinations</b>																		
<b>FRC-K</b> 	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mini	-	-	■	■	-	-	-	-	-	-	■	■	-	-	-	-	■
	Midi	-	-	-	■	■	■	-	-	-	-	■	■	-	-	-	-	■
	Maxi	-	-	-	-	-	■	■	-	-	-	■	■	-	-	-	-	■
<b>LFR-K LFRS-K</b> 	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mini	-	-	■	■	-	-	-	-	-	-	■	■	-	-	-	-	■
	Midi	-	-	-	■	■	■	-	-	-	-	■	■	-	-	-	-	■
	Maxi	-	-	-	-	-	■	■	-	-	-	■	■	-	-	-	-	■
<b>Individual devices</b>																		
<b>Filter regulators LFR/LFRS</b> 	Micro	■	■	■	-	-	-	-	-	■	■	■	-	-	-	-	■	-
	Mini	-	-	■	■	■	-	-	-	-	-	■	■	-	-	-	■	■
	Midi	-	-	-	■	■	■	■	-	-	-	■	■	-	-	-	■	■
	Maxi	-	-	-	-	-	■	■	■	-	-	■	■	-	-	-	■	■
<b>Filters LF</b> 	Micro	■	■	■	-	-	-	-	-	■	■	-	-	-	-	-	■	-
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	-	-	■	■
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	-	-	■	■
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	-	-	■	■
<b>Fine and micro filters LFMA/LFMB</b> 	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	■	■	-	-
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	■	■	-	-
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	■	■	-	-
<b>Active carbon filters LFX</b> 	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	-	-	-	-
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	-	-	-	-
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	-	-	-	-
<b>Filter combinations LFMBA</b> 	Micro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mini	-	-	■	■	■	-	-	-	-	-	-	-	-	■	■	-	-
	Midi	-	-	-	■	■	■	■	-	-	-	-	-	-	■	■	-	-
	Maxi	-	-	-	-	-	■	■	■	-	-	-	-	-	■	■	-	-
<b>Pressure regulators LRS/LRS</b> 	Micro	■	■	■	-	-	-	-	-	■	■	■	-	-	-	-	-	-
	Mini	-	-	■	■	■	-	-	-	-	-	■	■	-	-	-	-	-
	Midi	-	-	-	■	■	■	■	-	-	-	■	■	-	-	-	-	-
	Maxi	-	-	-	-	-	■	■	■	-	-	■	■	-	-	-	-	-

# Membrane air dryers LDM1, D series, metal design

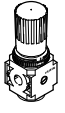
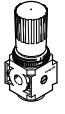
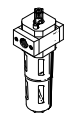
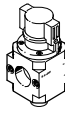

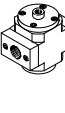
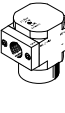
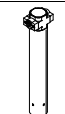

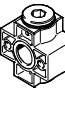
Product range overview D series service units, metal design

Type	Size	Bowl guard		Condensate drain			Pressure indication		Actuator lock		Supply voltage			Options			→ Page/ Internet
		Metal bowl guard	Plastic bowl	Manual rotary	Semi-automatic	Fully automatic	With pressure gauge	Without pressure gauge	Rotary knob with detent	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	Directly actuated pressure regulator with integrated return flow function	Pilot actuated pressure regulator with integrated return flow function	Differential pressure indicator	
<b>Service units</b>																	
FRC/FRCS	Micro	-	■	■	■	-	■	■	■	-	-	-	-	-	-	-	frc
	Mini	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Midi	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	■	■	■	-	-	-	■	■	-	
<b>Service unit combinations</b>																	
FRC-K	Micro	-															frc
	Mini	■	-	■	-	■	■	-	■	-	■	-	-	-	-	-	
	Midi	■	-	■	-	■	■	-	■	-	■	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	-	■	-	■	-	-	■	■	-	
LFR-K LFRS-K	Micro	-															lfr
	Mini	■	-	■	-	■	■	-	■	■	■	-	-	-	-	-	
	Midi	■	-	■	-	■	■	-	■	■	■	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	-	■	■	■	-	-	■	■	-	
<b>Individual devices</b>																	
Filter regulators LFR/LFRS	Micro	-	■	■	■	-	■	■	■	-	-	-	-	-	-	-	lfr
	Mini	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Midi	■	-	■	-	■	■	■	■	■	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	■	■	■	-	-	-	■	■	-	
Filters LF	Micro	-	■	■	■	-	-	-	-	-	-	-	-	-	-	-	lf
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	-	-	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	-	
Fine and micro filters LFMA/LFMB	Micro	-															lfma, lfmb
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
Active carbon filters LFX	Micro	-															lfx
	Mini	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Midi	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Maxi	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Filter combinations LFMBA	Micro	-															lfmba
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	-	■	
Pressure regulators LR/LRS	Micro	-	-	-	-	-	■	■	■	-	-	-	-	-	-	-	lr
	Mini	-	-	-	-	-	■	■	■	■	-	-	-	■	-	-	
	Midi	-	-	-	-	-	■	■	■	■	-	-	-	■	-	-	
	Maxi	-	-	-	-	-	■	■	■	■	-	-	-	■	■	-	

# Membrane air dryers LDM1, D series, metal design

FESTO

Product range overview D series service units, metal design

Type	Size	Pneumatic connection										Pressure regulation range [bar]		
		M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	0.5 ... 7	0.5 ... 12	
<b>Individual devices</b>														
Pressure regulators <b>LRB/LRBS</b>		Micro	-											
		Mini	-	-	-	■	-	-	-	-	-	-	■	■
		Midi	-	-	-	-	■	-	-	-	-	-	■	■
		Maxi	-											
Pressure regulator combinations <b>LRB-K</b>		Micro	-											
		Mini	-	-	-	■	■	-	-	-	-	-	■	■
		Midi	-	-	-	-	■	■	-	-	-	-	■	■
		Maxi	-											
Lubricators <b>LOE</b>		Micro	■	■	■	-	-	-	-	-	■	■	-	-
		Mini	-	-	■	■	■	-	-	-	-	-	-	-
		Midi	-	-	-	■	■	■	■	-	-	-	-	-
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
On-off valves <b>HE</b>		Micro	-											
		Mini	-	-	■	■	■	-	-	-	-	-	-	-
		Midi	-	-	-	■	■	■	■	-	-	-	-	-
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
On-off valves, electrical <b>HEE</b>		Micro	-											
		Mini	-	-	■	■	■	-	-	-	-	-	-	-
		Midi	-	-	-	■	■	■	■	-	-	-	-	-
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
On-off valves, pneumatic <b>HEP</b>		Micro	-											
		Mini	-	-	■	■	■	-	-	-	-	-	-	-
		Midi	-	-	-	■	■	■	■	-	-	-	-	-
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
Soft-start valves <b>HEL</b>		Micro	-											
		Mini	-	-	■	■	■	-	-	-	-	-	-	-
		Midi	-	-	-	■	■	■	■	-	-	-	-	-
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
Membrane air dryers <b>LDM1</b>		Micro	-											
		Mini	-											
		Midi	-											
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
Branching modules <b>FRM</b>		Micro	-											
		Mini	-	-	■	■	■	-	-	-	-	-	-	-
		Midi	-	-	-	■	■	■	■	-	-	-	-	-
		Maxi	-	-	-	-	-	■	■	■	-	-	-	-
Distributor block <b>FRZ</b>		Micro	-											
		Mini	-											
		Midi	-											
		Maxi	-											

# Membrane air dryers LDM1, D series, metal design

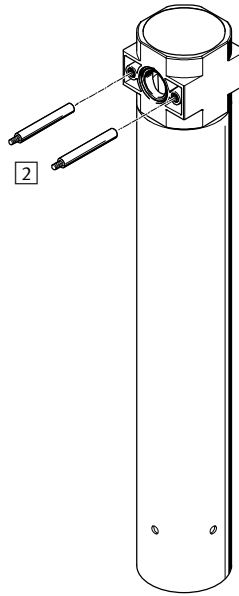
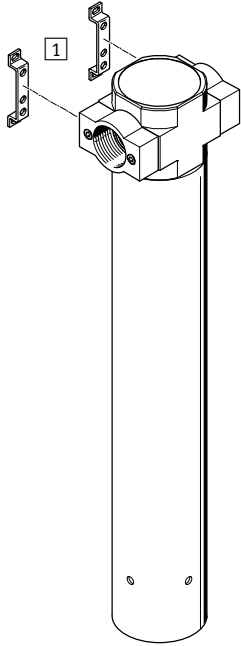
Product range overview D series service units, metal design

Type	Size	Bowl guard		Pressure indication		Actuator lock		Supply voltage			Options		→ Page/ Internet
		Metal bowl guard	Plastic bowl	With pressure gauge	Without pressure gauge	Rotary knob with detent	Rotary knob with integrated lock	24 V DC	110 V AC	230 V AC	Non-return function	Pressure switch	
<b>Individual devices</b>													
Pressure regulators <b>LRB/LRBS</b>	Micro	-	-	-	■	■	■	-	-	-	-	-	lrb
	Mini	-	-	-	■	■	■	-	-	-	-	-	
	Midi	-	-	-	■	■	■	-	-	-	-	-	
	Maxi	-	-	-	■	■	■	-	-	-	-	-	
Pressure regulator combinations <b>LRB-K</b>	Micro	-	-	-	■	■	-	-	-	-	-	-	lrb
	Mini	-	-	-	■	■	-	-	-	-	-	-	
	Midi	-	-	-	■	■	-	-	-	-	-	-	
	Maxi	-	-	-	■	■	-	-	-	-	-	-	
Lubricators <b>LOE</b>	Micro	-	■	-	■	-	-	-	-	-	-	-	loe
	Mini	■	-	-	■	-	-	-	-	-	-	-	
	Midi	■	-	-	■	-	-	-	-	-	-	-	
	Maxi	■	-	-	■	-	-	-	-	-	-	-	
On-off valves <b>HE</b>	Micro	-	-	-	■	■	-	-	-	-	-	-	he
	Mini	-	-	-	■	■	-	-	-	-	-	-	
	Midi	-	-	-	■	■	-	-	-	-	-	-	
	Maxi	-	-	-	■	■	-	-	-	-	-	-	
On-off valves, electrical <b>HEE</b>	Micro	-	-	-	■	-	-	■	■	■	-	-	hee
	Mini	-	-	-	■	-	-	■	■	■	-	-	
	Midi	-	-	-	■	-	-	■	■	■	-	-	
	Maxi	-	-	-	■	-	-	■	■	■	-	-	
On-off valves, pneumatic <b>HEP</b>	Micro	-	-	-	■	-	-	-	-	-	-	-	hep
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	-	
Soft-start valves <b>HEL</b>	Micro	-	-	-	■	-	-	-	-	-	-	-	hel
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	-	
Membrane air dryers <b>LDM1</b>	Micro	-	-	-	■	-	-	-	-	-	-	-	6
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	■	-	-	■	-	-	-	-	-	-	-	
Branching modules <b>FRM</b>	Micro	-	-	-	■	-	-	-	-	-	■	■	frm
	Mini	-	-	-	■	-	-	-	-	-	■	■	
	Midi	-	-	-	■	-	-	-	-	-	■	■	
	Maxi	-	-	-	■	-	-	-	-	-	■	■	
Distributor block <b>FRZ</b>	Micro	-	-	-	■	-	-	-	-	-	-	-	frz
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	-	

# Membrane air dryers LDM1, D series, metal design

Peripherals overview and Type codes

**Maxi**  
 Individual unit with connection plates Individual unit without connection plates, for service unit combination



Mounting attachments and accessories						
	Individual unit		Combination		→ Page/ Internet	
	with connection plates	without connection plates	with connection plates	without connection plates		
1	Mounting bracket HFOE	■	-	■	-	hfoe-d
2	Threaded pin (included in scope of delivery) FRB	-	-	■	■	frb-d

## Type codes

LDM1 – 1/2 – D – MAXI – 300

### Basic function

LDM1	Membrane air dryer
------	--------------------

### Pneumatic connection

-	Without connection plates
1/2	Connecting plates with connecting thread G1/2
3/4	Connecting plates with connecting thread G3/4
1	Connecting plates with connecting thread G1

### Series

D	Series
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### Size

MAXI	Grid dimension 66 mm (without connection plates)
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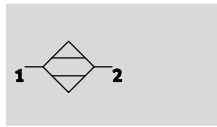
### Standard flow rate at output q<sub>n Off</sub>

300	300 l/min
600	600 l/min
1000	1,000 l/min

# Membrane air dryers LDM1, D series, metal design

Technical data

Function



- - Flow rate  
300 ... 1,000 l/min
- - Temperature range  
+2 ... +50 °C
- - Operating pressure  
3 ... 12.5 bar

Pressure dew point reduction:  
LDM1-...-300/600: 20 K  
LDM1-...-1000: 17 K



- Optimum final dryer with excellent operational reliability
- Suitable for use as an individual device or for integration in existing service unit combinations
- Flow rate-dependent dew point reduction

- Wear-free function requiring no external energy
- The composition of the compressed air remains almost unchanged due to the drying process
- 15% purge air flow rate with the LDM1-...-300/600 and 20% with the LDM1-...-1000

Typical areas of application:

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

Note  
Prefiltration of the compressed air using a micro filter LFMA-D-MAXI, grade of filtration 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				
Size	Maxi			
Pneumatic connection 1, 2	G½	G¾	G1	-1)
Design	Membrane dryer with internal air consumption			
Type of mounting	Via accessories In-line installation			
Assembly position	Vertical ±5°			

1) Without connection plates  
- Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard flow rate q <sub>n</sub> [l/min]			
Type	LDM1-...-300 <sup>1)</sup>	LDM1-...-600 <sup>1)</sup>	LDM1-...-1000 <sup>2)</sup>
Input q <sub>n In</sub>	353	706	1,250
Output q <sub>n Out</sub>	300	600	1,000
Purge air q <sub>n Purge</sub>	52.9	105.9	250

1) Measured at p<sub>1</sub> = 6.9 bar, θ<sub>pd In</sub> = 25 °C, θ<sub>pd Out</sub> = 5 °C ± 1.5 °C (θ<sub>pA Out</sub> = -21.5 °C ± 1.2 °C), θ<sub>amb</sub> = 25 °C  
2) Measured at p<sub>1</sub> = 6.9 bar, θ<sub>pd In</sub> = 25 °C, θ<sub>pd Out</sub> = 8 °C ± 1.5 °C (θ<sub>pA Out</sub> = -19.1 °C ± 1.2 °C), θ<sub>amb</sub> = 25 °C

Operating and environmental conditions			
Type	LDM1-...-300	LDM1-...-600	LDM1-...-1000
Operating pressure [bar]	3 ... 12,5		
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [1:3:1]		
Pressure dew point reduction [K]	20	20	17
Ambient temperature [°C]	+2 ... +50		
Temperature of medium [°C]	+2 ... +50		
Storage temperature [°C]	-20 ... +60		
Corrosion resistance class CRC <sup>1)</sup>	2		

1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

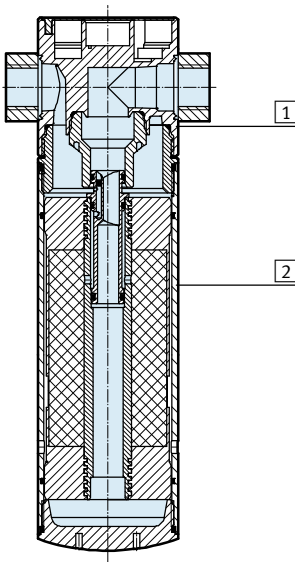
# Membrane air dryers LDM1, D series, metal design

Technical data

Weights [g]				
Port	Without connection plates	Connecting plates with connecting thread		
		G $\frac{1}{2}$	G $\frac{3}{4}$	G1
LDM1-...-300	1,650	1,800	1,900	2,000
LDM1-...-600	2,100	2,250	2,350	2,450
LDM1-...-1000	2,100	2,250	2,350	2,450

## Materials

Sectional view



Membrane air dryer	
1	Housing Die-cast zinc
2	Bowl Wrought aluminium alloy
-	Seals NBR

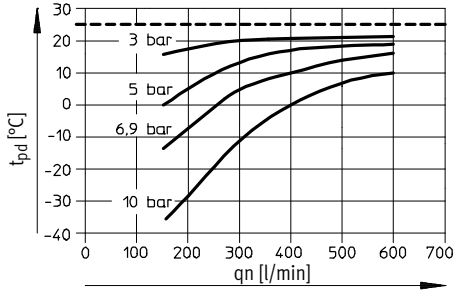


# Membrane air dryers LDM1, D series, metal design

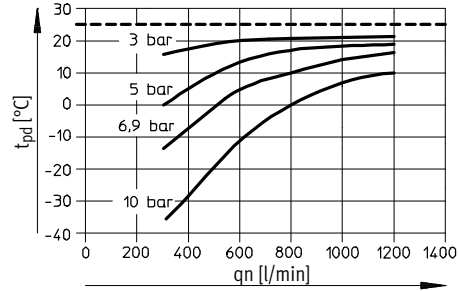
Technical data

## Pressure dew point $t_{pd}$ (output) as a function of the standard flow rate at output $q_n$ <sup>1)</sup>

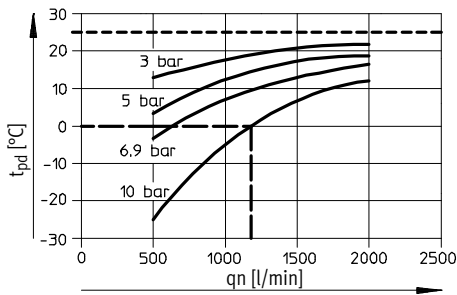
LDM1-...-300



LDM1-...-600



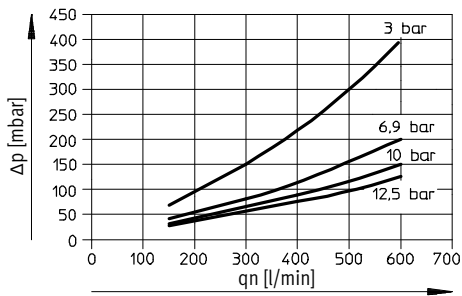
LDM1-...-1000



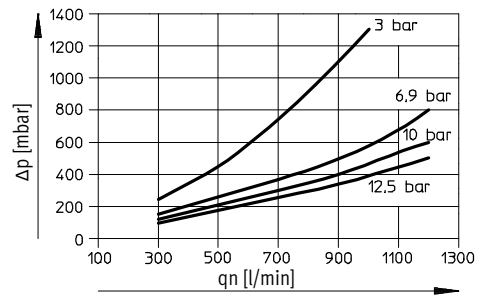
- 1) Measured at pressure dew point  $t_{pd}$  (supply) = 25 °C.
- Example LDM1-...-1000 with 10 bar supply pressure:  
the pressure dew point reduction at a nominal flow rate  
of  $q_n = 1,200$  l/min is 25 K.

## Differential pressure $\Delta p$ as a function of the standard flow rate at output $q_n$

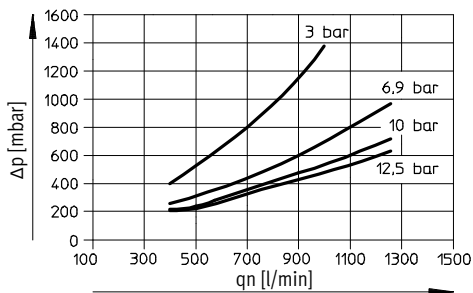
LDM1-...-300



LDM1-...-600



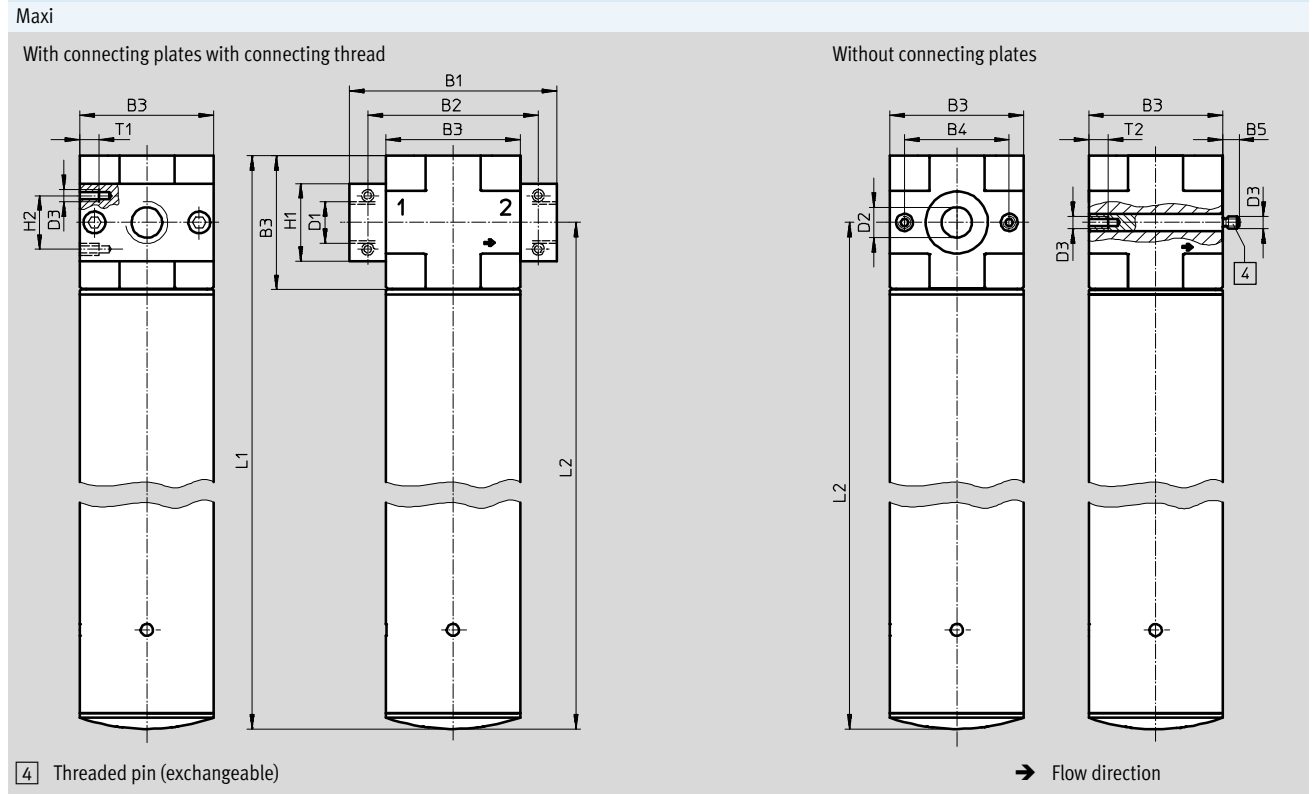
LDM1-...-1000



# Membrane air dryers LDM1, D series, metal design

Technical data

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



Type	B1	B2	B3	B4	B5	D1	D2 ∅	D3	H1	H2	L1	L2	T1	T2
LDM1-1/2-D-MAXI-300	96	80	66	46	-	G1/2	-	M5	32	22	329	296	8	-
LDM1-1/2-D-MAXI-600											519	486		
LDM1-1/2-D-MAXI-1000											519	486		
LDM1-3/4-D-MAXI-300	96	80	66	46	-	G3/4	-	M5	36	22	329	296	8	-
LDM1-3/4-D-MAXI-600											519	486		
LDM1-3/4-D-MAXI-1000											519	486		
LDM1-1-D-MAXI-300	116	91	66	46	-	G1	-	M5	41	22	329	296	8	-
LDM1-1-D-MAXI-600											519	486		
LDM1-1-D-MAXI-1000											519	486		
LDM1-D-MAXI-300	-	-	66	46	7	-	30	M5	-	-	329	296	-	11
LDM1-D-MAXI-600											519	486		
LDM1-D-MAXI-1000											519	486		

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Ordering data							
Size	Connection	LDM1-...-300		LDM1-...-600		LDM1-...-1000	
		Part No.	Type	Part No.	Type	Part No.	Type
Without connecting plates							
Maxi	-	543664	LDM1-D-MAXI-300	543665	LDM1-D-MAXI-600	543666	LDM1-D-MAXI-1000
Connecting plates with connecting thread							
Maxi	G1/2	543667	LDM1-1/2-D-MAXI-300	543668	LDM1-1/2-D-MAXI-600	543669	LDM1-1/2-D-MAXI-1000
	G3/4	543670	LDM1-3/4-D-MAXI-300	543671	LDM1-3/4-D-MAXI-600	543672	LDM1-3/4-D-MAXI-1000
	G1	543673	LDM1-1-D-MAXI-300	543674	LDM1-1-D-MAXI-600	543675	LDM1-1-D-MAXI-1000

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