

Membrane air dryers LDM1, D series

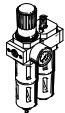
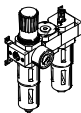
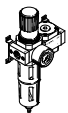
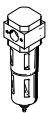
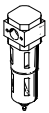
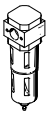
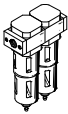
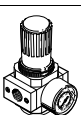
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Membrane air dryers LDM1, D series, metal design

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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
Service units																			
FRC/FRCS		Micro	■	■	■	–	–	–	–	–	■	■	■	–	–	–	–	■	–
		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	■	■
Service unit combinations																			
FRC-K		Micro	–																
		Mini	–	–	■	■	–	–	–	–	–	–	–	■	■	–	–	–	■
		Midi	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■
		Maxi	–	–	–	–	–	■	■	–	–	–	–	■	■	–	–	–	■
LFR-K LFRS-K		Micro	–																
		Mini	–	–	■	■	–	–	–	–	–	–	–	■	■	–	–	–	■
		Midi	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■
		Maxi	–	–	–	–	–	■	■	–	–	–	–	■	■	–	–	–	■
Individual devices																			
Filter regulators LFR/LFRS		Micro	■	■	■	–	–	–	–	–	■	■	■	–	–	–	–	■	–
		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	■	■
Filters LF		Micro	■	■	■	–	–	–	–	–	■	■	–	–	–	–	–	■	–
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	–	–	■	■
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	■	■
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	■	■
Fine and micro filters LFMA/LFMB		Micro	–																
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	■	■	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	■	■	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–
Active carbon filters LFX		Micro	–																
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	–	–	–	–
Filter combinations LFMBA		Micro	–																
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	–	■	■	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	–	■	■	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	–	■	■	–	–
Pressure regulators LR/LRS		Micro	■	■	■	–	–	–	–	–	■	■	■	–	–	–	–	–	–
		Mini	–	–	■	■	■	–	–	–	–	–	■	■	–	–	–	–	–
		Midi	–	–	–	■	■	■	■	–	–	–	■	■	–	–	–	–	–
		Maxi	–	–	–	–	–	■	■	■	–	–	■	■	–	–	–	–	–

Membrane air dryers LDM1, D series, metal design

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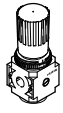
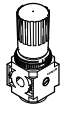
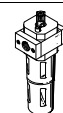
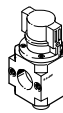
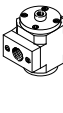
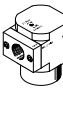
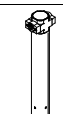
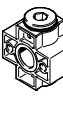
Product range overview D series service units, metal design

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	
Service units																	
FRC/FRCS	Micro	–	■	■	■	–	■	■	■	–	–	–	–	–	–	–	frc
	Mini	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–	
	Midi	■	–	■	–	■	■	■	■	■	–	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	■	■	■	–	–	–	■	■	–	
Service unit combinations																	
FRC-K	Micro	–															frc
	Mini	■	–	■	–	■	■	–	■	–	■	–	–	–	–	–	
	Midi	■	–	■	–	■	■	–	■	–	■	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	–	■	–	■	–	–	■	■	–	
LFR-K LFRS-K	Micro	–															lfr
	Mini	■	–	■	–	■	■	–	■	■	■	–	–	–	–	–	
	Midi	■	–	■	–	■	■	–	■	■	■	–	–	–	–	–	
	Maxi	■	–	■	–	■	■	–	■	■	■	–	–	■	■	–	
Individual devices																	
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

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Product range overview D series service units, metal design

Type		Size	Pneumatic connection										Pressure regulation range [bar]		
													0.5 ... 7	0.5 ... 12	
Individual devices															
Pressure regulators LRB/LRBS		Micro	–												
		Mini	–	–	–	■	–	–	–	–	–	–	–	■	■
		Midi	–	–	–	–	■	–	–	–	–	–	–	■	■
		Maxi	–												
Pressure regulator combinations LRB-K		Micro	–												
		Mini	–	–	–	■	■	–	–	–	–	–	–	■	■
		Midi	–	–	–	–	■	■	–	–	–	–	–	■	■
		Maxi	–												
Lubricators LOE		Micro	■	■	■	–	–	–	–	–	■	■	–	–	
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
On-off valves HE		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
On-off valves, electrical HEE		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
On-off valves, pneumatic HEP		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Soft-start valves HEL		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Membrane air dryers LDM1		Micro	–												
		Mini	–												
		Midi	–												
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Branching modules FRM		Micro	–												
		Mini	–	–	■	■	■	–	–	–	–	–	–	–	
		Midi	–	–	–	■	■	■	■	–	–	–	–	–	
		Maxi	–	–	–	–	–	■	■	■	–	–	–	–	
Distributor block FRZ		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	
Individual devices													
Pressure regulators LRB/LRBS	Micro	-											lrb
	Mini	-	-	-	■	■	■	-	-	-	-	-	
	Midi	-	-	-	■	■	■	-	-	-	-	-	
	Maxi	-											
Pressure regulator combinations LRB-K	Micro	-											lrb
	Mini	-	-	-	■	■	-	-	-	-	-	-	
	Midi	-	-	-	■	■	-	-	-	-	-	-	
	Maxi	-											
Lubricators LOE	Micro	-	■	-	■	-	-	-	-	-	-	-	loe
	Mini	■	-	-	■	-	-	-	-	-	-	-	
	Midi	■	-	-	■	-	-	-	-	-	-	-	
	Maxi	■	-	-	■	-	-	-	-	-	-	-	
On-off valves HE	Micro	-											he
	Mini	-	-	-	■	■	-	-	-	-	-	-	
	Midi	-	-	-	■	■	-	-	-	-	-	-	
	Maxi	-	-	-	■	■	-	-	-	-	-	-	
On-off valves, electrical HEE	Micro	-											hee
	Mini	-	-	-	■	-	-	■	■	■	-	-	
	Midi	-	-	-	■	-	-	■	■	■	-	-	
	Maxi	-	-	-	■	-	-	■	■	■	-	-	
On-off valves, pneumatic HEP	Micro	-											hep
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	-	
Soft-start valves HEL	Micro	-											hel
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	-	
Membrane air dryers LDM1	Micro	-											6
	Mini	-											
	Midi	-											
	Maxi	■	-	-	■	-	-	-	-	-	-	-	
Branching modules FRM	Micro	-											frm
	Mini	-	-	-	■	-	-	-	-	-	■	■	
	Midi	-	-	-	■	-	-	-	-	-	■	■	
	Maxi	-	-	-	■	-	-	-	-	-	■	■	
Distributor block FRZ	Micro	-	-	-	■	-	-	-	-	-	-	-	frz
	Mini	-	-	-	■	-	-	-	-	-	-	-	
	Midi	-	-	-	■	-	-	-	-	-	-	-	
	Maxi	-	-	-	■	-	-	-	-	-	-	-	

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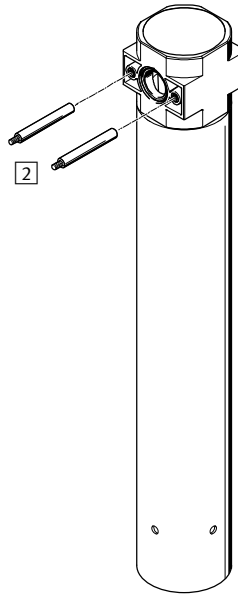
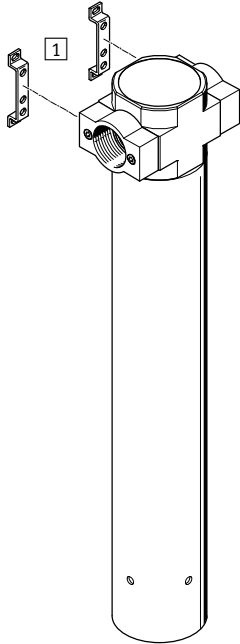
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Peripherals overview and Type codes

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

Size

MAXI Grid dimension 66 mm (without connection plates)

Standard flow rate at output $q_{n\ off}$

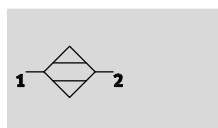
300	300 l/min
600	600 l/min
1000	1,000 l/min

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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/m³) 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 _n [l/min]			
Type	LDM1-...-300 ¹⁾	LDM1-...-600 ¹⁾	LDM1-...-1000 ²⁾
Input q _n In	353	706	1,250
Output q _n Out	300	600	1,000
Purge air q _n Purge	52.9	105.9	250

1) Measured at p₁ = 6.9 bar, θ_{pd} In = 25 °C, θ_{pd} Out = 5 °C ± 1.5 °C (θ_{pA} Out = -21.5 °C ± 1.2 °C), θ_{amb} = 25 °C

2) Measured at p₁ = 6.9 bar, θ_{pd} In = 25 °C, θ_{pd} Out = 8 °C ± 1.5 °C (θ_{pA} Out = -19.1 °C ± 1.2 °C), θ_{amb} = 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 ¹⁾	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.

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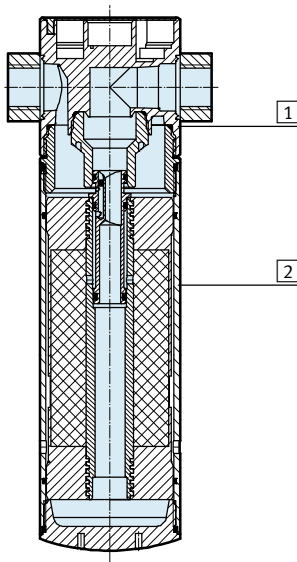
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Technical data

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

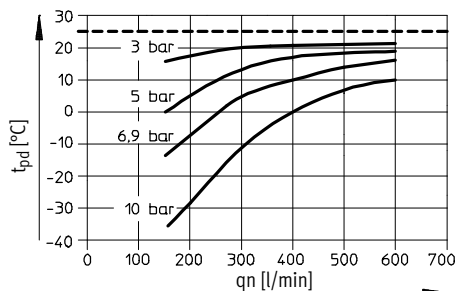
Membrane air dryers LDM1, D series, metal design

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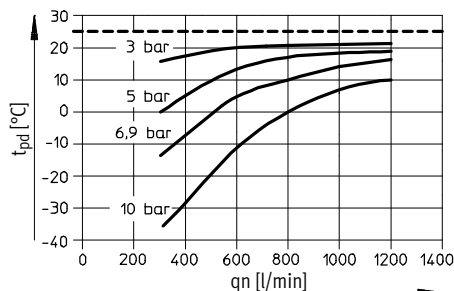
Technical data

Pressure dew point t_{pd} (output) as a function of the standard flow rate at output q_n ¹⁾

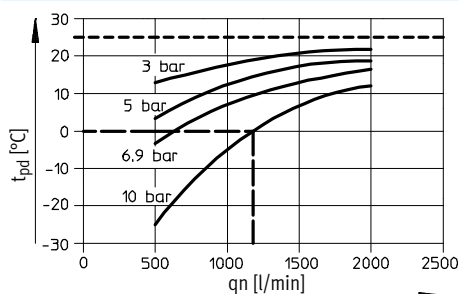
LDM1-...-300



LDM1-...-600



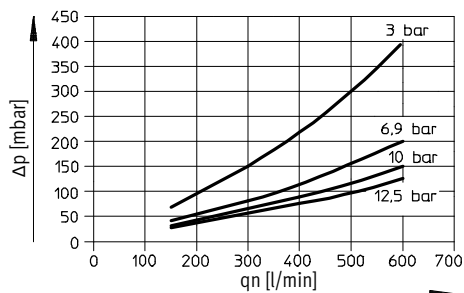
LDM1-...-1000



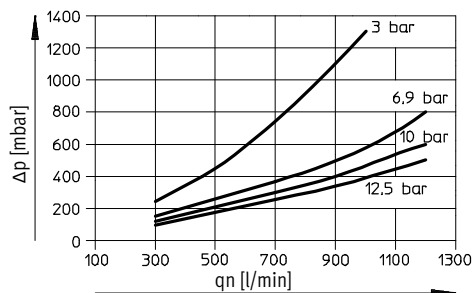
- 1) Measured at pressure dew point t_{pd} (supply) = 25 °C.
- Example LDM1-...-1000 with 10 bar supply pressure:
the pressure dew point reduction at a nominal flow rate
of $q_n = 1,200$ l/min is 25 K.

Differential pressure Δp as a function of the standard flow rate at output q_n

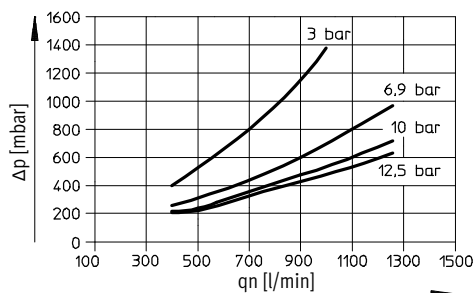
LDM1-...-300



LDM1-...-600



LDM1-...-1000



Membrane air dryers LDM1, D series, metal design

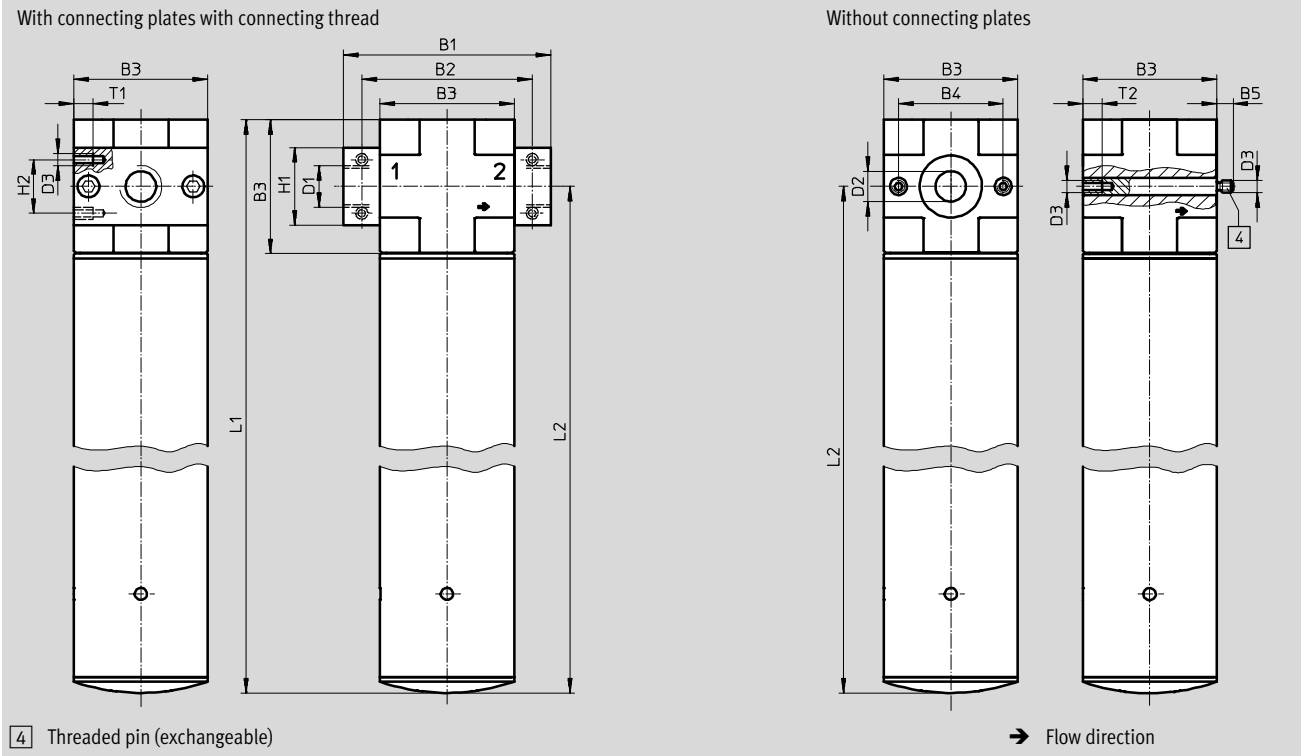
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Technical data

Dimensions

Download CAD data → www.festo.com

Maxi



Type	B1	B2	B3	B4	B5	D1	D2 Ø	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	G½	543667	LDM1-½-D-MAXI-300	543668	LDM1-½-D-MAXI-600	543669	LDM1-½-D-MAXI-1000
	G¾	543670	LDM1-¾-D-MAXI-300	543671	LDM1-¾-D-MAXI-600	543672	LDM1-¾-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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