

Water separators MS-LWS, MS series, NPT

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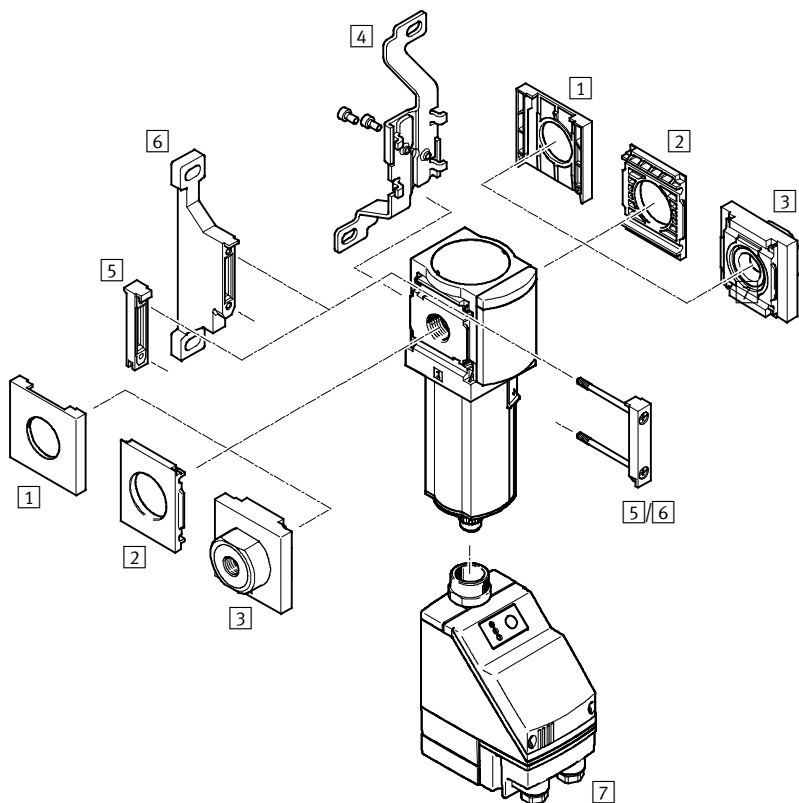


Water separators MS6N-LWS, MS series, NPT

Peripherals overview

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Water separator MS6N-LWS



Note

Additional accessories:

- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

Mounting attachments and accessories

		Individual device		Combination		→ Page/Internet
		Without connecting plate	With connecting plate	Without connecting plate	With connecting plate	
1	Cover cap MS6-END	■	–	■	–	ms6-end
2	Mounting plate MS6-AEND	■ ¹⁾	–	■ ¹⁾	–	ms6-aend
3	Connecting plate MS6N-AQ...	–	■ ¹⁾	–	■ ¹⁾	ms6n-aq
4	Mounting bracket MS6-WB	■	■	–	–	ms6-wb
5	Module connector MS6-MV	–	■	■	■	ms6-mv
6	Mounting bracket MS6-WP	■	■	■	■	ms6-wp
	Mounting bracket (not illustrated) MS6-WPB/WPE/WPM	■	■	■	■	ms6-wp
7	Fully automatic, electrically actuated condensate drain E2/E3/E4	■	■	■	■	7

1) Module connector MS6-MV [5] or mounting bracket MS6-WP/WPB/WPE/WPM [6] is required for mounting.

Water separators MS6N-LWS, MS series, NPT

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Type codes

		MS	6	N	-	LWS	-	1/4	-	U	-	V
Series												
MS	Standard service unit											
Size												
6	Grid dimension 62 mm											
Thread												
N	NPT thread											
Service function												
LWS	Water separator											
Pneumatic connection												
1/4	Thread NPT1/4-18											
3/8	Thread NPT3/8-18											
1/2	Thread NPT1/2-14											
Bowl guard												
U	Integrated as metal bowl											
Condensate drain												
V	Fully automatic											

Further variants can be ordered using the modular system → 7

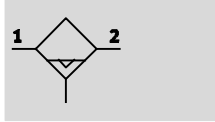
- Connecting plates
- Condensate drain
- Type of mounting
- Alternative flow direction

Water separators MS6N-LWS, MS series, NPT

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Technical data

Condensate drain,
fully automatic



-  Flow rate
2,400 ... 3,800 l/min
-  Temperature range
+1 ... +60 °C
-  Supply pressure
0.8 ... 16 bar



The maintenance-free water separator removes condensate from the compressed air.

- Constantly high condensate separation (99%) up to the maximum flow rate
- Metal bowl
- Available with fully automatic or fully automatic, electrically actuated condensate drain

General technical data				
Size	MS6			
Pneumatic connection 1, 2	NPT1/4-18	NPT3/8-18	NPT1/2-14	NPT1/4-18 ... NPT3/4-14 (with connecting plate AQ...)
Constructional design	Centrifugal separator			
Type of mounting	Via accessories			
	In-line installation			
Mounting position	Vertical ±5°			
Air purity class at the output	Compressed air in accordance with ISO 8573-1:2010 [7:7:4]			
Bowl guard	Integrated as metal bowl			
Condensate drain	Fully automatic			
	Fully automatic, electrically actuated			
Degree of condensate separation [%]	99			
Max. condensate volume [ml]	38			

Standard nominal flow rate q _N ¹⁾			
Size	MS6		
Pneumatic connection	NPT1/4-18	NPT3/8-18	NPT1/2-14
q _N [l/min]	2,400	3,500	3,800

1) Measured at p₁ = 6 bar and Δp = 1 bar

Operating and environmental conditions		
Condensate drain	Fully automatic V	Fully automatic, electrically actuated E2/E3/E4
Size	MS6	MS6
Supply pressure [bar]	2 ... 12	0.8 ... 16
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [-:-:-]	
Ambient temperature [°C]	+5 ... +60	+1 ... +60
Temperature of medium [°C]	+5 ... +60	+1 ... +60
Storage temperature [°C]	-10 ... +60	+1 ... +60
Corrosion resistance class CRC ¹⁾	2	

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

Water separators MS6N-LWS, MS series, NPT

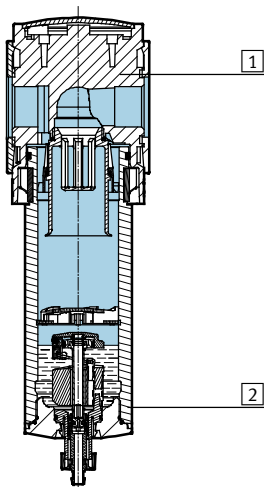
Technical data

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Weight [g]	
Size	MS6
Water separator	820
Water separator with fully automatic, electrically actuated condensate drain E2/E3/E4	1,800

Materials

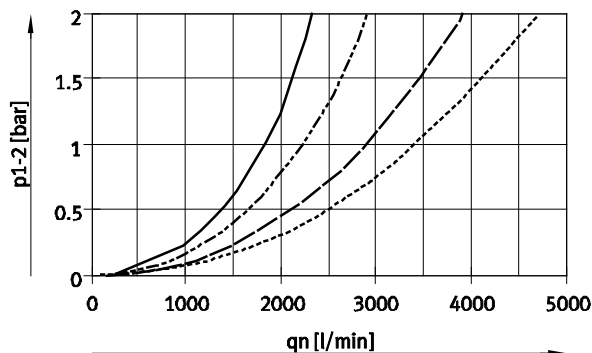
Sectional view



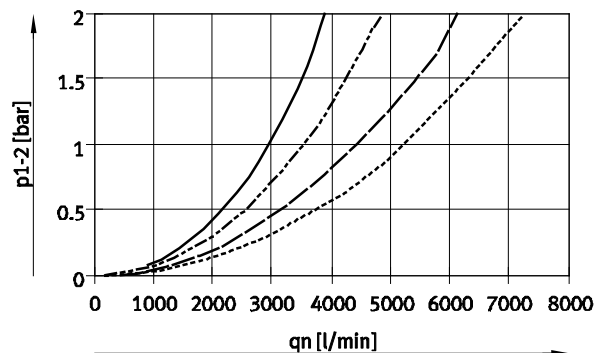
Water separator		
1	Housing	Die-cast aluminium
2	Bowl	Wrought aluminium alloy
	Inspection window	PA
–	Seals	NBR
Note on materials		Free of copper and PTFE
		RoHS-compliant (not with variant E2, E3 or E4)

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

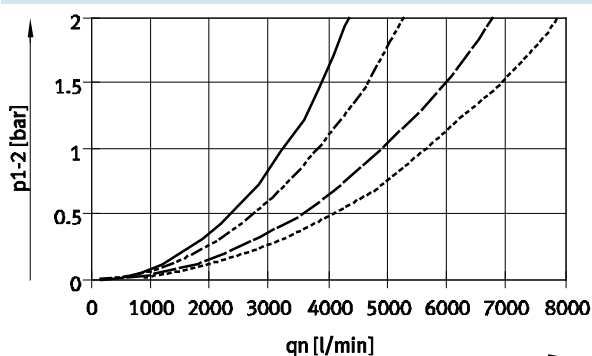
MS6N-LWS-1/4



MS6N-LWS-3/8



MS6N-LWS-1/2



— 4 bar
 - - - 6 bar
 - . - . 10 bar
 - . - . 14 bar

Water separators MS6N-LWS, MS series, NPT

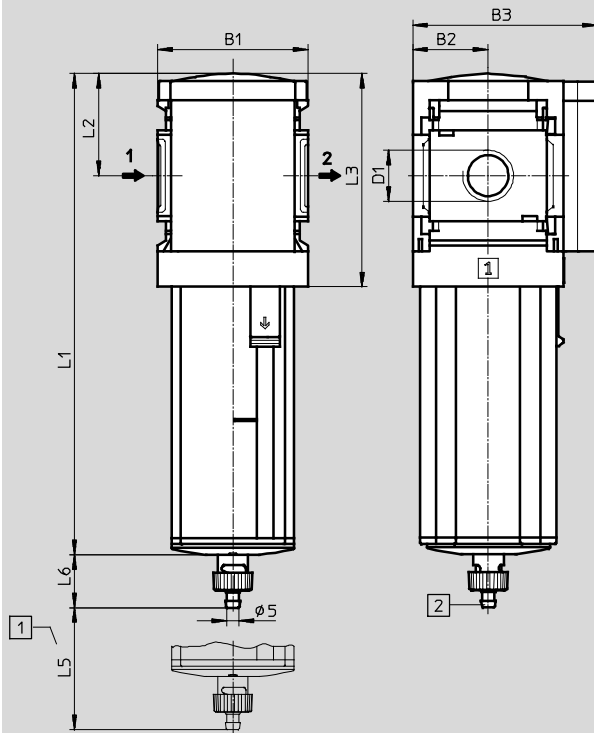
Technical data

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Dimensions – Standard

Download CAD data → www.festo.com

Fully automatic condensate drain V



- 1 Installation dimensions
- 2 Barbed connector for plastic tubing PCN-4

→ Flow direction

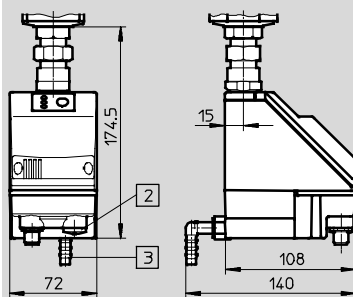
Type	B1	B2	B3	D1	L1	L2	L3	L5	L6
MS6N-LWS-1/4-...-V	62	31	76	NPT1/4-18	198	42	87	68	22
MS6N-LWS-3/8-...-V				NPT3/8-18					
MS6N-LWS-1/2-...-V				NPT1/2-14					

Dimensions – Condensate drain

Download CAD data → www.festo.com

Fully automatic, electrically actuated E2/E3/E4

Technical data → Internet: pwea



Condensate drain PWEA:

- 2 Electrical connection: Screw terminal PG9
- 3 Connection 360° rotatable for plastic tubing PUN-H-12x2

Ordering data

Size	Condensate drain	Connection	Part No.	Type
Integrated as metal bowl				
MS6	Fully automatic	NPT1/4-18	564871	MS6N-LWS-1/4-U-V
		NPT3/8-18	564872	MS6N-LWS-3/8-U-V
		NPT1/2-14	564873	MS6N-LWS-1/2-U-V

Water separators MS6N-LWS, MS series, NPT

Ordering data – Modular products

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M Mandatory data								O Options	
Module No.	Series	Size	Thread	Function	Connection size	Bowl guard	Condensate drain	Type of mounting	Alternative flow direction
564898	MS	6	N	LWS	1/4, 3/8, 1/2, AQN, AQP, AQR, AQS	U	V, E2, E3, E4	WP, WPM, WB	Z
Ordering example									
564898	MS	6	N	- LWS	- AQN	- U	- V	- WP	- Z

Ordering table						Condi- tions	Code	Enter code
Grid dimension	[mm]	62						
M Module No.	564898							
Series	Standard						MS	MS
Size	6						6	6
Thread	NPT thread						N	N
Function	Water separator						-LWS	-LWS
Connection size	Thread NPT1/4						-1/4	
	Thread NPT3/8						-3/8	
	Thread NPT1/2						-1/2	
	Connecting plate NPT1/4						-AQN	
	Connecting plate NPT3/8						-AQP	
	Connecting plate NPT1/2						-AQR	
Bowl guard	Metal bowl						-U	-U
	Fully automatic (P1 max. 12 bar)						-V	
	External fully automatic condensate drain, electrical, 110 V AC, terminals (P1 max. 16 bar)						-E2	
	External fully automatic condensate drain, electrical, 230 V AC, terminals (P1 max. 16 bar)						-E3	
Condensate drain	External fully automatic condensate drain, electrical, 24 V DC, terminals (P1 max. 16 bar)						-E4	
	Mounting bracket					1	-WP	
	Mounting bracket					1	-WPM	
	Mounting bracket						-WB	
Alternative flow direction	Flow direction from right to left						-Z	

1 WP, WPM Only with connecting plate AQN, AQP, AQR or AQS

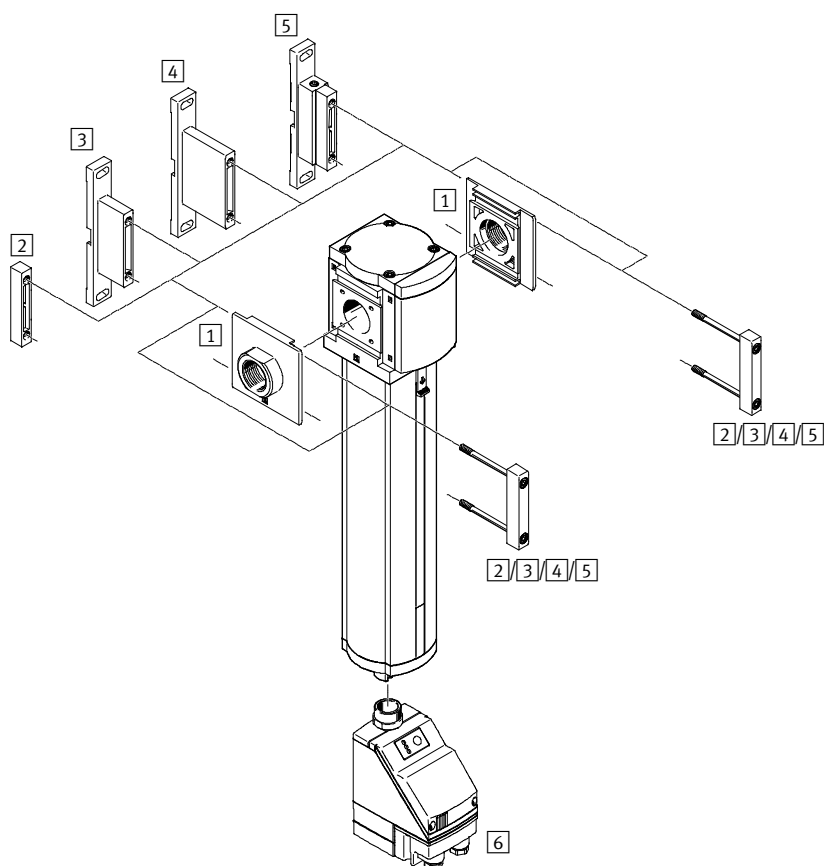
Transfer order code

564898	MS	6	N	- LWS	-	-U	-	-	-
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Water separators MS9-LWS, MS series, NPT

Peripherals overview

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 Note

Additional accessories:

- Module connector for combinations with size MS6, MS9 or MS12

→ Internet: rmv, armv

Mounting attachments and accessories					
		Individual device		Combination	➔ Page/Internet
		without connecting thread	with connecting thread NPT¾-14 or NPT1-11½		
1	Connecting plate MS9-AQ...	■	–	■	ms9-aq
2	Module connector MS9-MV	■	–	■	ms9-mv
3	Mounting bracket MS9-WP	■	■	■	ms9-wp
4	Mounting bracket MS9-WPB	■	■	■	ms9-wp
5	Mounting bracket MS9-WPM	■	–	■	ms9-wp
6	Condensate drain, fully automatic, electrically actuated E2/E3/E4	■	■	■	14

Water separators MS9-LWS, MS series, NPT

Type codes

		MS	9	-	LWS	-	G	-	U	V
Series										
MS	Standard service unit									
Size										
9	Grid dimension 90 mm									
Service function										
LWS	Water separator									
Connection size										
G	Module without connecting thread, without connecting plate									
Bowl guard										
U	Integrated as metal bowl									
Condensate drain										
V	Fully automatic									

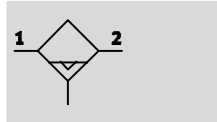
Additional variants can be ordered using the modular product system → 14

- Connecting plates
- Condensate drain
- Type of mounting
- Alternative flow direction

Water separators MS9-LWS, MS series, NPT

Technical data

Condensate drain,
fully automatic



-  - Flow rate
12,000 ... 15,000 l/min
-  - Temperature range
+1 ... +60 °C
-  - Operating pressure
0.8 ... 16 bar



The water separator removes
condensate from the compressed air.

- Constantly high condensate separation (99%) up to the maximum flow rate
- Metal bowl
- Available with fully automatic or fully automatic, electrically actuated condensate drain

General technical data				
Size	MS9			
Pneumatic connection 1, 2	NPT $\frac{3}{4}$ -14	NPT1-11 $\frac{1}{2}$	NPT $\frac{1}{2}$ -14 ... NPT1 $\frac{1}{2}$ -11 $\frac{1}{2}$ (with connecting plate AQ...)	– (without connecting thread G)
Design	Centrifugal separator			
Type of mounting	Via accessories In-line installation			
Mounting position	Vertical $\pm 5^\circ$			
Air purity class at the output	Compressed air to ISO 8573-1:2010 [–:7:4]			
Bowl guard	Integrated as metal bowl			
Condensate drain	Fully automatic Fully automatic, electrically actuated			
Degree of condensate separation [%]	99			
Max. condensate volume [ml]	220			

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]			
Pneumatic connection	Thread NPT $\frac{3}{4}$ -14 or connecting plate AQS	Thread NPT1-11 $\frac{1}{2}$ or connecting plate AQT	Without connecting thread G
q_{nN} [l/min]	12,000 $\pm 15\%$	15,000 $\pm 15\%$	15,000 $\pm 15\%$

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

Water separators MS9-LWS, MS series, NPT

Technical data

Operating and environmental conditions		
Condensate drain	Fully automatic V	Fully automatic, electrically actuated E2/E3/E4
Operating pressure [bar]	2 ... 12	0.8 ... 16
Operating medium	Compressed air to ISO 8573-1:2010 [-:-:-]	
Ambient temperature [°C]	+5 ... +60	+1 ... +60
Temperature of medium [°C]	+5 ... +60	+1 ... +60
Storage temperature [°C]	+5 ... +60	+1 ... +60
Corrosion resistance class CRC ¹⁾	2	

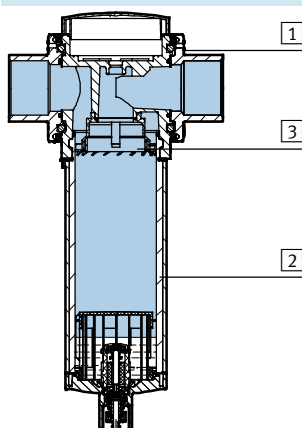
1) Corrosion resistance class 2 according to Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]	
Water separator	2,000
Water separator with condensate drain, fully automatic, electrically actuated E2/E3/E4	2,400

Materials

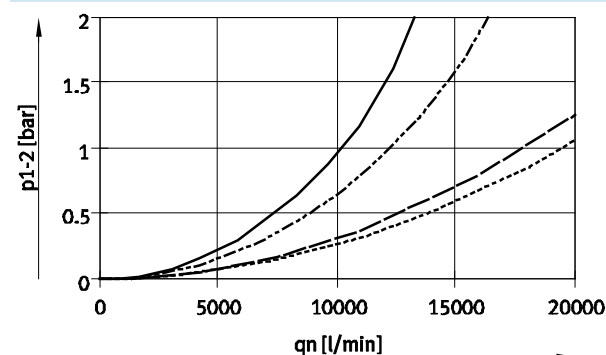
Sectional view



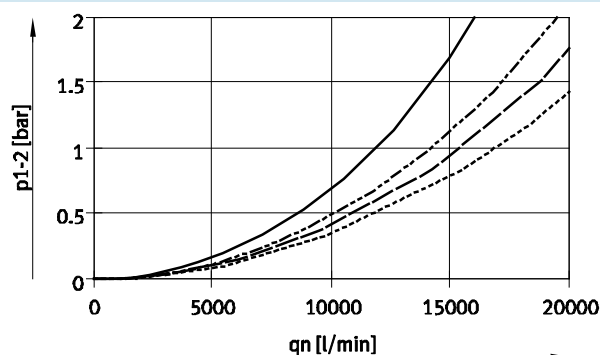
Water separator		
1	Housing	Die-cast aluminium
2	Bowl	Wrought aluminium alloy
	Inspection window	PA
3	Spin disc	POM
-	Cover	PA, reinforced
-	Connecting plate, module connector, mounting bracket	Die-cast aluminium
-	Seals	NBR
Note on materials		RoHS-compliant (not with variant E2, E3 or E4)

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

MS9-LWS-N $\frac{3}{4}$ /AQS, pneumatic connection NPT $\frac{3}{4}$ -14

MS9-LWS-N1/AQT, pneumatic connection NPT1-11 $\frac{1}{2}$


— 4 bar - · - · 10 bar
 - - - 6 bar · · · 12 bar



Water separators MS9-LWS, MS series, NPT

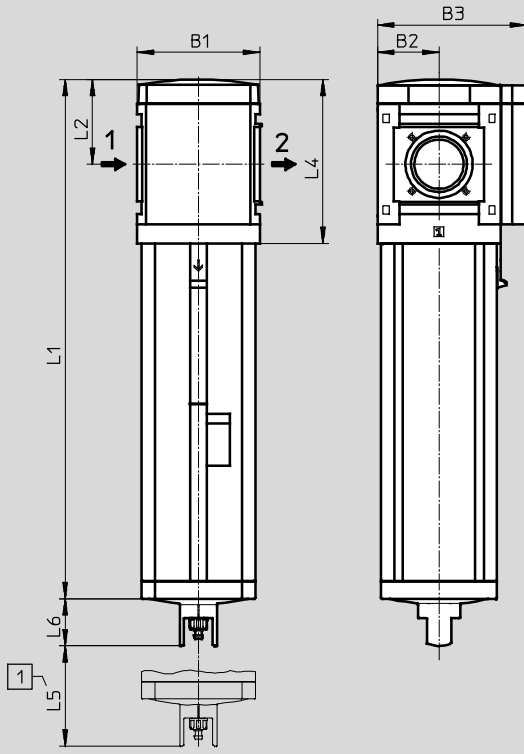
Technical data

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Dimensions – Basic version

Download CAD data → www.festo.com

Without connecting thread G, fully automatic condensate drain V



1 Installation dimensions

→ Flow direction

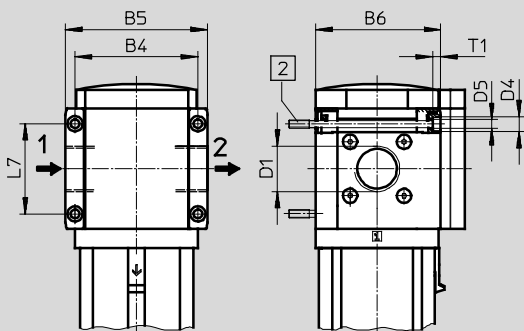
Type	B1	B2	B3	L1	L2	L4	L5	L6
MS9-LWS-G	90	45	109	310.5	62	120	50	34.5

Dimensions – Connecting thread/connecting plate

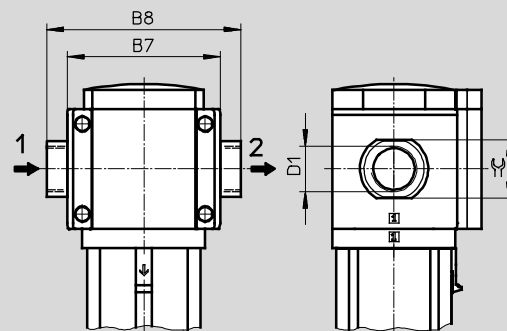
Download CAD data → www.festo.com

With connecting thread N $\frac{3}{4}$ or N1

With connecting plate AQ...



2 Mounting screw M6xmin.90 to DIN 912 (not included in the scope of delivery) for wall mounting without mounting bracket



→ Flow direction

Type	B4	B5	B6	B7	B8	D1	D4	D5	L7	T1	≅
MS9-LWS-N $\frac{3}{4}$	90	104	91.5	-	-	NPT $\frac{3}{4}$ -14	11	6.5	66	6	-
MS9-LWS-N1						NPT1-11 $\frac{1}{2}$					
MS9-LWS-AQR	-	-	-	112	132	NPT $\frac{1}{2}$ -14	-	-	-	-	30
MS9-LWS-AQS					132	NPT $\frac{3}{4}$ -14					36
MS9-LWS-AQT					142	NPT1-11 $\frac{1}{2}$					41
MS9-LWS-AQU					162	NPT1 $\frac{1}{4}$ -11 $\frac{1}{2}$					50
MS9-LWS-AQV					176	NPT1 $\frac{1}{2}$ -11 $\frac{1}{2}$					55

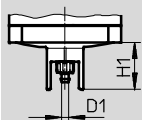
Water separators MS9-LWS, MS series, NPT

Technical data

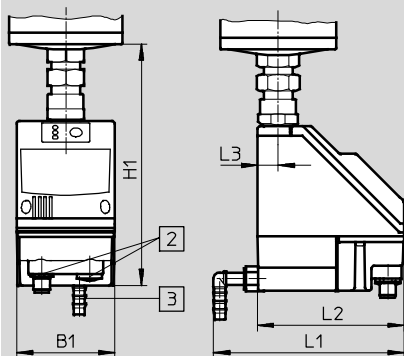
Dimensions – Condensate drain

Download CAD data → www.festo.com

Fully automatic V


Barbed connector for plastic tubing
PCN-4

Fully automatic, electrically actuated E2/E3/E4

Technical data → Internet: pwea


Condensate drain PWEA:

- 2 Electrical connection: Screw terminal PG9
- 3 Connection 360° rotatable for plastic tubing PUN-H-12x2

Type	B1	D1	H1	L1	L2	L3
MS9-LWS-...-V	–	5	34.5	–	–	–
MS9-LWS-...-E2/E3/E4	72	–	178	140	108	15

Ordering data

Size	Condensate drain	Connection	Part No.	Type
MS9	Fully automatic	–	571468	MS9-LWS-G-UV

Water separators MS9-LWS, MS series, NPT

Ordering data – Modular products

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M Mandatory data							O Options	
Module No.	Series	Size	Function	Connection size	Bowl	Condensate drain	Type of mounting	Alternative flow direction
567857	MS	9	LWS	N $\frac{3}{4}$, N1, AQR, AQS, AQT, AQU, AQV, G	U	V, E2, E3, E4	WP, WPM, WPB	Z
Ordering example								
567857	MS	9	- LWS	- AQR	- U	- V	- WP	- Z

Ordering table					Grid dimension	[mm]	90	Condi- tions	Code	Enter code
M	Module No.	567857								
	Series	Standard							MS	MS
	Size	9							9	9
	Function	Water separator							-LWS	-LWS
	Connection size	Thread NPT $\frac{3}{4}$							-N $\frac{3}{4}$	
		Thread NPT1							-N1	
		Connecting plate NPT $\frac{1}{2}$							-AQR	
		Connecting plate NPT $\frac{3}{4}$							-AQS	
		Connecting plate NPT1							-AQT	
		Connecting plate NPT1 $\frac{1}{4}$							-AQU	
		Connecting plate NPT1 $\frac{1}{2}$							-AQV	
		Module without connecting thread, without connecting plate							-G	
	Bowl	Metal bowl							-U	-U
	Condensate drain	Fully automatic (P1 max. 12 bar)							-V	
		External, fully automatic, 110 V AC, terminals (P1 max. 16 bar)							-E2	
		230 V AC, terminals (P1 max. 16 bar)							-E3	
		24 V DC, terminals (P1 max. 16 bar)							-E4	
O	Type of mounting	Mounting bracket						1	-WP	
		Mounting bracket						1	-WPM	
		Mounting bracket for large wall gap						1	-WPB	
	Alternative flow direction	Flow direction from right to left							-Z	

1 WP, WPM, WPB Not with module G

Transfer order code

567857 MS 9 - LWS - U - - - -