

Water separators MS-LWS, MS series

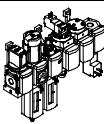
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Water separators MS-LWS, MS series

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Product range overview – MS series service units

Type	Size		Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Grade of filtration [µm]			
					0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16	0.01	1	5	40
Code				AG...	D2	D4	D5	D6	D7	D8	A	B	C	E
Service units														
MSB-FRC		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	■	■	–	–	–	■	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	■	■	–	–	–	■	■
		9	–											
		12	–											
Service unit combinations (further variants can be ordered using the configurator → Internet: msb4, msb6 or msb9)														
MSB		4	G1/4	G1/8, G1/4, G3/8	–	–	–	■	■	–	–	–	■	■
		6	G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	■	■	–	–	–	■	■
		9	–											
		12	–											
Individual devices														
Filter regulators MS-LFR		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	■	■	■	–	–	–	■	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	■	–	–	■	■
		9	G3/4, G1	G1/2, G3/4, G1, G11/4, G11/2	–	–	■	■	■	■	–	–	■	■
		12	–	G1, G11/4, G11/2, G2	–	–	–	■	■	■	–	–	■	■
Filters MS-LF		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	■	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	■	■
		9	G3/4, G1	G1/2, G3/4, G1, G11/4, G11/2	–	–	–	–	–	–	–	–	■	■
		12	–	G1, G11/4, G11/2, G2	–	–	–	–	–	–	–	–	■	■
Fine and micro filters MS-LFM		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	■	■	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	■	■	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G11/4, G11/2	–	–	–	–	–	–	■	■	–	–
		12	–	G1, G11/4, G11/2, G2	–	–	–	–	–	–	■	■	–	–
Activated carbon filters MS-LFX		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G11/4, G11/2	–	–	–	–	–	–	–	–	–	–
		12	–	G1, G11/4, G11/2, G2	–	–	–	–	–	–	–	–	–	–
Water separators MS-LWS														
	4	–												
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	–	–	–
	9	G3/4, G1	G1/2, G3/4, G1, G11/4, G11/2	–	–	–	–	–	–	–	–	–	–	–
	12	–	G1, G11/4, G11/2, G2	–	–	–	–	–	–	–	–	–	–	–

Water separators MS-LWS, MS series

Product range overview – MS series service units

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Type	Size	Bowl guard		Condensate drains				Pressure indicator					Security		Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Manual rotary	Semi-automatic	Fully automatic	External, fully automatic, electrical	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	Rotary knob with detent, lockable via accessories	Rotary knob with integrated lock	Silencer	Flow direction from right to left	
Code		R	U	M	H	V	E...	VS	AG	A8	A4	AD...	AS	E11	S	Z	
Service units																	
MSB-FRC	4	■	–	■	–	■	–	–	■	–	–	–	■	–	–	■	msb4
	6	■	■	■	–	■	–	–	■	–	–	–	■	–	–	■	msb6
	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Service unit combinations																	
MSB	4	■	■	■	–	■	–	–	■	–	–	–	■	–	–	■	msb4
	6	■	■	■	–	■	–	–	■	–	–	–	■	–	–	■	msb6
	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Individual devices																	
Filter regulators MS-LFR	4	■	■	■	■	■	–	■	■	■	■	■	■	■	–	■	ms4-lfr
	6	■	■	■	■	■	■	■	■	■	■	■	■	■	–	■	ms6-lfr
	9	–	■	■	■	■	■	■	■	■	■	■	■	■	–	■	ms9-lfr
	12	–	■	■	–	■	■	■	■	–	■	–	■	■	–	■	ms12-lfr
Filters MS-LF	4	■	■	■	■	■	–	–	–	–	–	–	–	–	–	■	ms4-lf
	6	■	■	■	■	■	■	–	–	–	–	–	–	–	–	■	ms6-lf
	9	–	■	■	■	■	■	–	–	–	–	–	–	–	–	■	ms9-lf
	12	–	■	■	–	■	■	–	–	–	–	–	–	–	–	■	ms12-lf
Fine and micro filters MS-LFM	4	■	■	■	■	■	–	–	–	–	–	–	–	–	–	■	ms4-lfm
	6	■	■	■	■	■	■	–	–	–	–	–	–	–	–	■	ms6-lfm
	9	–	■	■	■	■	■	–	–	–	–	–	–	–	–	■	ms9-lfm
	12	–	■	■	–	■	■	–	–	–	–	–	–	–	–	■	ms12-lfm
Activated carbon filters MS-LFX	4	■	■	–	–	–	–	–	–	–	–	–	–	–	–	■	ms4-lfx
	6	■	■	–	–	–	–	–	–	–	–	–	–	–	–	■	ms6-lfx
	9	–	■	–	–	–	–	–	–	–	–	–	–	–	–	■	ms9-lfx
	12	–	■	–	–	–	–	–	–	–	–	–	–	–	–	■	ms12-lfx
Water separators MS-LWS	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	■	–	–	■	■	–	–	–	–	–	–	–	–	■	8
	9	–	■	–	–	■	■	–	–	–	–	–	–	–	–	■	16
	12	–	■	–	–	■	■	–	–	–	–	–	–	–	–	■	24

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Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Supply voltage			
				0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16	24 V DC, connection pattern to EN 175301	24 V DC, connection M12 to IEC 61076-2-101	110 V AC, connection pattern to EN 175301	230 V AC, connection pattern to EN 175301
Code			AG...	D2	D4	D5	D6	D7	D8	V24	V24P	V110	V230
Individual devices													
Pressure regulators MS-LR		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	■	■	■	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	–	–	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	–	–	■	■	■	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	■	■	–	–	–	–
Pressure regulators MS-LRB		4	G1/4	G1/8, G1/4, G3/8	–	–	■	■	■	–	–	–	–
		6	G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	–	–	–	–
		9	–	–	–	–	–	–	–	–	–	–	–
		12	–	–	–	–	–	–	–	–	–	–	–
Precision pressure regulators MS-LRP		4	–	–	–	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	–	■	–	–	–	–
		9	–	–	–	–	–	–	–	–	–	–	–
		12	–	–	–	–	–	–	–	–	–	–	–
Precision pressure regulators MS-LRPB		4	–	–	–	–	–	–	–	–	–	–	–
		6	G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	–	■	–	–	–	–
		9	–	–	–	–	–	–	–	–	–	–	–
		12	–	–	–	–	–	–	–	–	–	–	–
Electrical pressure regulators MS-LRE		4	–	–	–	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	■	–	–	–	–
		9	–	–	–	–	–	–	–	–	–	–	–
		12	–	–	–	–	–	–	–	–	–	–	–
Lubricators MS-LOE		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	–	–	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–	–	–
On-off valves, manually actuated MS-EM(1)		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	–	–	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–	–	–
On-off valves, electrically actuated MS-EE		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	■	–	■	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	■	–	■	■
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	–	–	–	–	–	■	■	■	■
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	■	■	■	■
Soft-start valves, pneumatically actuated MS-DL		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–	–
		9	–	–	–	–	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–	–	–
Soft-start valves, electrically actuated MS-DE		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	■	–	■	■
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	■	–	■	■
		9	–	–	–	–	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	■	■	■	■

Water separators MS-LWS, MS series

Product range overview – MS series service units

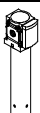
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Type	Size	Bowl guard		Pressure indicator					Security		Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	Rotary knob with detent, lockable via accessories	Rotary knob with integrated lock	Silencer	Flow direction from right to left	
Code		R	U	VS	AG	A8	A4	AD...	AS	E11	S	Z	
Individual devices													
Pressure regulators MS-LR	4	–	–	■	■	■	■	■	■	■	–	■	ms4-lr
	6	–	–	■	■	–	■	■	■	■	–	■	ms6-lr
	9	–	–	■	■	–	■	■	■	■	–	■	ms9-lr
	12	–	–	■	■	–	■	–	■	■	–	■	ms12-lr
Pressure regulators MS-LRB	4	–	–	■	■	■	■	■	■	■	–	■	ms4-lrb
	6	–	–	■	■	–	■	■	■	■	–	■	ms6-lrb
	9	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	–	–	–	–	–	–	–	–	–	–
Precision pressure regulators MS-LRP	4	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	■	–	■	■	■	■	■	–	■	ms6-lrp
	9	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	–	–	–	–	–	–	–	–	–	–
Precision pressure regulators MS-LRPB	4	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	■	–	■	■	■	■	■	–	■	ms6-lrpb
	9	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	–	–	–	–	–	–	–	–	–	–
Electrical pressure regulators MS-LRE	4	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	■	■	–	■	–	–	–	–	■	ms6-lre
	9	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	–	–	–	–	–	–	–	–	–	–
Lubricators MS-LOE	4	■	■	–	–	–	–	–	–	–	–	■	ms4-loe
	6	■	■	–	–	–	–	–	–	–	–	■	ms6-loe
	9	–	■	–	–	–	–	–	–	–	–	■	ms9-loe
	12	–	■	–	–	–	–	–	–	–	–	■	ms12-loe
On-off valves, manually actuated MS-EM(1)	4	–	–	■	■	■	■	■	–	–	■	■	ms4-em1
	6	–	–	■	■	–	■	■	–	–	■	■	ms6-em1
	9	–	–	■	■	–	■	–	–	–	■	■	ms9-em
	12	–	–	■	■	–	■	–	–	–	■	■	ms12-em
On-off valves, electrically actuated MS-EE	4	–	–	■	■	■	■	■	–	–	■	■	ms4-ee
	6	–	–	■	■	–	■	■	–	–	■	■	ms6-ee
	9	–	–	■	■	–	■	–	–	–	■	■	ms9-ee
	12	–	–	■	■	–	■	–	–	–	■	■	ms12-ee
Soft-start valves, pneumatically actuated MS-DL	4	–	–	■	■	■	■	■	–	–	–	■	ms4-dl
	6	–	–	■	■	–	■	■	–	–	–	■	ms6-dl
	9	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	■	■	–	■	–	–	–	–	■	ms12-dl
Soft-start valves, electrically actuated MS-DE	4	–	–	■	■	■	■	■	–	–	–	■	ms4-de
	6	–	–	■	■	–	■	■	–	–	–	■	ms6-de
	9	–	–	–	–	–	–	–	–	–	–	–	–
	12	–	–	■	■	–	■	–	–	–	–	■	ms12-de

Water separators MS-LWS, MS series

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Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Performance Level		Supply voltage			
				Category 1, 1-channel	Category 4, 2-channel with self-monitoring	24 V DC, connection pattern to EN 175301	24 V DC, connection M12 to IEC 61076-2-101 / to EN 60947-5-2	110 V AC, connection pattern to EN 175301	230 V AC, connection pattern to EN 175301
Code			AG...	C	E	V24	V24P	V110	V230
Individual devices									
Soft start and exhaust valves MS-SV-C		4	–						
		6	G1/2	G1/4, G3/8, G1/2, G3/4	■	–	■	■	■
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	■	–	■	■	■
		12	–						
Soft start and exhaust valves MS-SV-E		4	–						
		6	G1/2	G1/4, G3/8, G1/2, G3/4	–	■	■	–	–
		9	–						
		12	–						
Membrane air dryers MS-LDM1		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–
		9	–						
		12	–						
Branching modules MS-FRM		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–
Distributor blocks MS-FRM-FRZ		4	G1/4	–	–	–	–	–	–
		6	G1/2	–	–	–	–	–	–
		9	–						
		12	–						
Flow sensors SFAM		4	–						
		6	G1/2	G1/2	–	–	–	–	–
		9	–	G1, G1 1/2	–	–	–	–	–
		12	–						

Water separators MS-LWS, MS series

Product range overview – MS series service units

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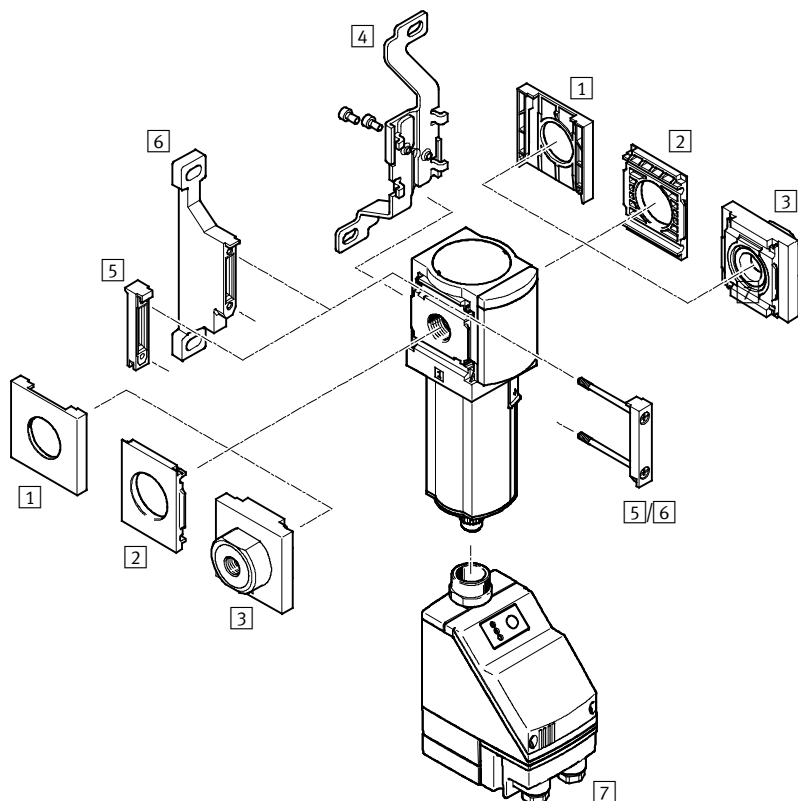
Type	Size	Bowl guard		Pressure indicator					Switch output		Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	2x PNP or NPN, 1 analogue output 4 ... 20 mA	2x PNP or NPN, 1 analogue output 0 ... 10 V	Silencer	Flow direction from right to left	
Code		R	U	VS	AG	A8	A4	AD...	2SA	2SV	S	Z/R	
Individual devices													
Soft start and exhaust valves MS-SV-C	4	–											–
	6	–	–	■	■	–	■	■	–	–	■	■	ms6-sv
	9	–	–	■	■	–	■	■	–	–	■	■	ms9-sv
	12	–											–
Soft start and exhaust valves MS-SV-E	4	–											–
	6	–	–	■	■	–	■	■	–	–	■	■	ms6-sv
	9	–											–
	12	–											–
Membrane air dryers MS-LDM1	4	–	■	–	–	–	–	–	–	–	–	■	ms4-ldm1
	6	–	■	–	–	–	–	–	–	–	–	■	ms6-ldm1
	9	–											–
	12	–											–
Branching modules MS-FRM	4	–	–	■	■	■	■	■	–	–	–	■	ms4-frm
	6	–	–	■	■	–	■	■	–	–	–	■	ms6-frm
	9	–	–	■	■	–	■	■	–	–	–	■	ms9-frm
	12	–	–	■	–	–	–	–	–	–	–	–	ms12-frm
Distributor blocks MS-FRM-FRZ	4	–	–	–	–	–	–	–	–	–	–	■	ms4-frm
	6	–	–	–	–	–	–	–	–	–	–	■	ms6-frm
	9	–											–
	12	–											–
Flow sensors SFAM	4	–											–
	6	–	–	–	–	–	–	–	■	■	–	■	sfam-62
	9	–	–	–	–	–	–	–	■	■	–	■	sfam-90
	12	–											–

Water separators MS6-LWS, MS series

Peripherals overview

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Water separator MS6-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 MS6-AG...	–	■ ¹⁾	–	■ ¹⁾	ms6-ag
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	■	■	■	■	14

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

Water separators MS6-LWS, MS series

Type codes

		MS	6	-	LWS	-	1/4	-	U	-	V
Series											
MS	Standard service unit										
Size											
6	Grid dimension 62 mm										
Service function											
LWS	Water separator										
Pneumatic connection											
1/4	Thread G1/4										
3/8	Thread G3/8										
1/2	Thread G1/2										
Bowl guard											
U	Integrated as metal bowl										
Condensate drain											
V	Fully automatic										

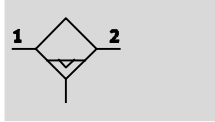
Further variants can be ordered using the modular system → 14

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

Water separators MS6-LWS, MS series

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	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{1}{4}$... G $\frac{3}{4}$ (with connecting plate AG...)
Constructional 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 in accordance with ISO 8573-1:2010 [7:7:4] (with variant E2, E3 or E4: [-: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			

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

Standard nominal flow rate q _N ¹⁾			
Size	MS6		
Pneumatic connection	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
q _N [l/min]	2,400	3,500	3,800

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

Water separators MS6-LWS, MS series

Technical data

Operating and environmental conditions		
Condensate drain	Fully automatic V	Fully automatic, electrical E2/E3/E4
Size	MS6	MS6
Operating pressure [bar]	2 ... 12 (2 ... 10) ¹⁾	0.8 ... 16 (0.8 ... 10) ¹⁾
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]	Compressed air in accordance with ISO 8573-1:2010 [-:-:-]
	Inert gases	
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 ²⁾	2	
UL certification	cULus recognized (OL)	

1) Value in brackets applies to MS6-LWS with UL certification.

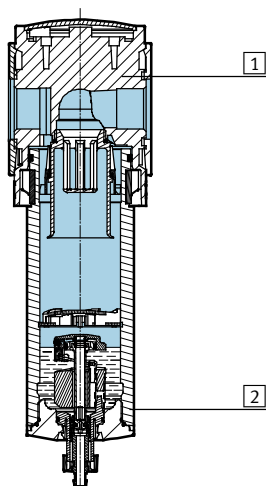
2) Corrosion resistance class 2 according to Festo standard 940 070

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]	
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		RoHS-compliant (not with variant E2, E3 or E4)
		Free of copper and PTFE

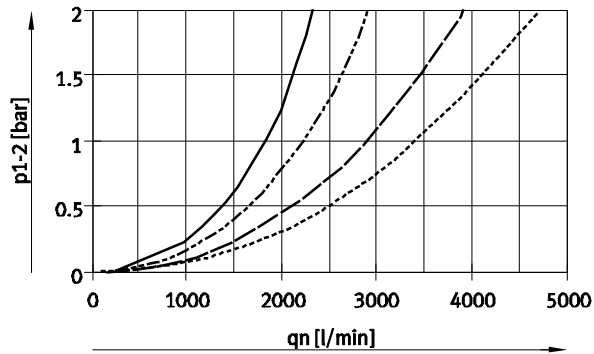
Water separators MS6-LWS, MS series

Technical data

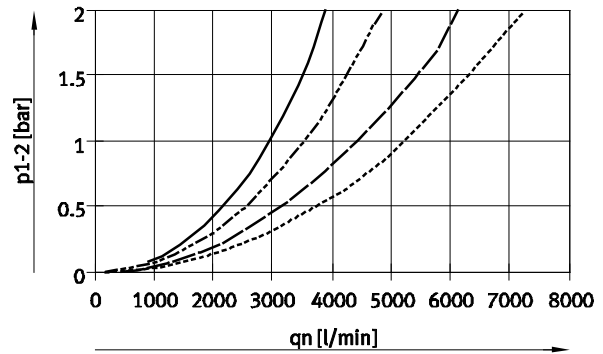
FESTO

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

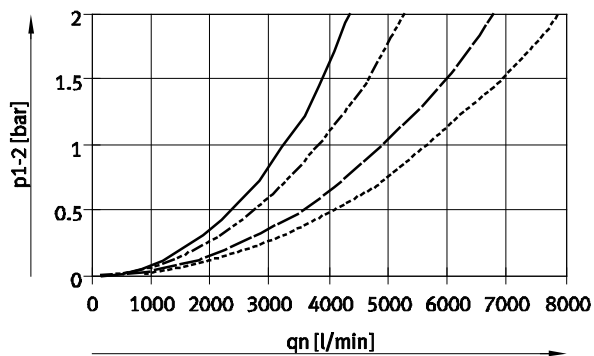
MS6-LWS- $\frac{1}{4}$



MS6-LWS- $\frac{3}{8}$



MS6-LWS- $\frac{1}{2}$



— 4 bar
- - - 6 bar
- · - 10 bar
· · · 14 bar

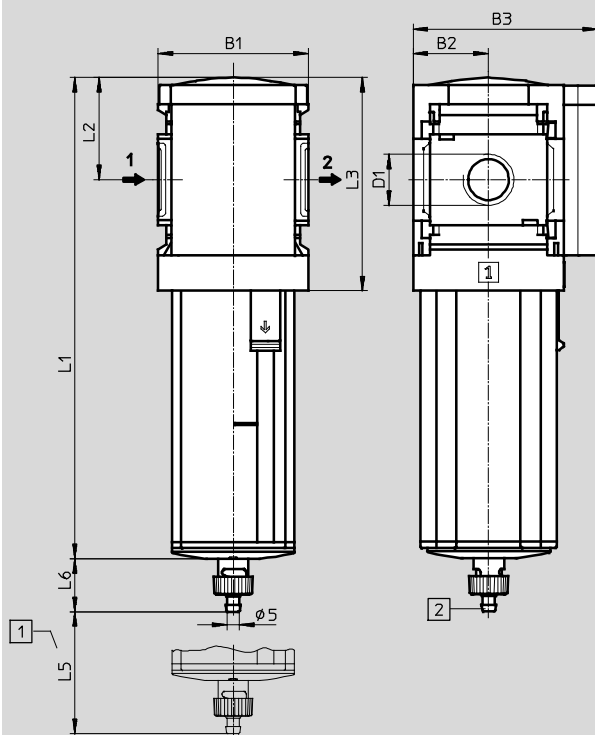
Water separators MS6-LWS, MS series

Technical data

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
MS6-LWS-1/4-...-V	62	31	76	G1/4	198	42	87	68	22
MS6-LWS-3/8-...-V				G3/8					
MS6-LWS-1/2-...-V				G1/2					

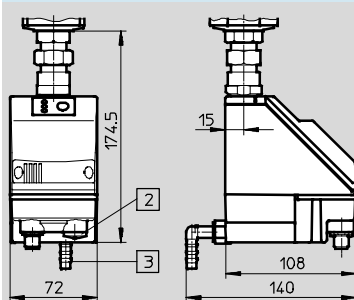
• Note: This product conforms to ISO 1179-1 and to ISO 228-1

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	G1/4	564868	MS6-LWS-1/4-U-V
		G3/8	564869	MS6-LWS-3/8-U-V
		G1/2	564870	MS6-LWS-1/2-U-V

Water separators MS6-LWS, MS series

Ordering data – Modular products

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M Mandatory data →						
Module No.	Series	Size	Function	Connection size	Bowl guard	Condensate drain
564858	MS	6	LWS	1/4, 3/8, 1/2, AGB, AGC, AGD, AGE	U	V, E2, E3, E4
Ordering example						
564858	MS	6	- LWS	- AGB	- U	- V

Ordering table					
Grid dimension	[mm]	62	Condi- tions	Code	Enter code
M Module No.	564858				
Series	Standard			MS	MS
Size	6			6	6
Function	Water separator			-LWS	-LWS
Connection size	Thread G1/4			-1/4	
	Thread G3/8			-3/8	
	Thread G1/2			-1/2	
	Connecting plate G1/4			-AGB	
	Connecting plate G3/8			-AGC	
	Connecting plate G1/2			-AGD	
	Connecting plate G3/4			-AGE	
Bowl guard	Metal bowl			-U	-U
Condensate drain	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	
	External fully automatic condensate drain, electrical, 24 V DC, terminals (P1 max. 16 bar)			-E4	

Transfer order code

564858	MS	6	- LWS		-U	
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Water separators MS6-LWS, MS series

Ordering data – Modular products

Options		
Type of mounting	UL certification	Alternative flow direction
WP, WPM, WB	UL1	Z
- WP	-	-

Ordering table					
Grid dimension	[mm]	62	Condi- tions	Code	Enter code
Type of mounting	Mounting bracket		1	-WP	
	Mounting bracket		1	-WPM	
	Mounting bracket			-WB	
UL certification	cULus, ordinary location for Canada and USA			-UL1	
Alternative flow direction	Flow direction from right to left			-Z	

1 WP, WPM Only with connecting plate AGB, AGC, AGD or AGE

Transfer order code

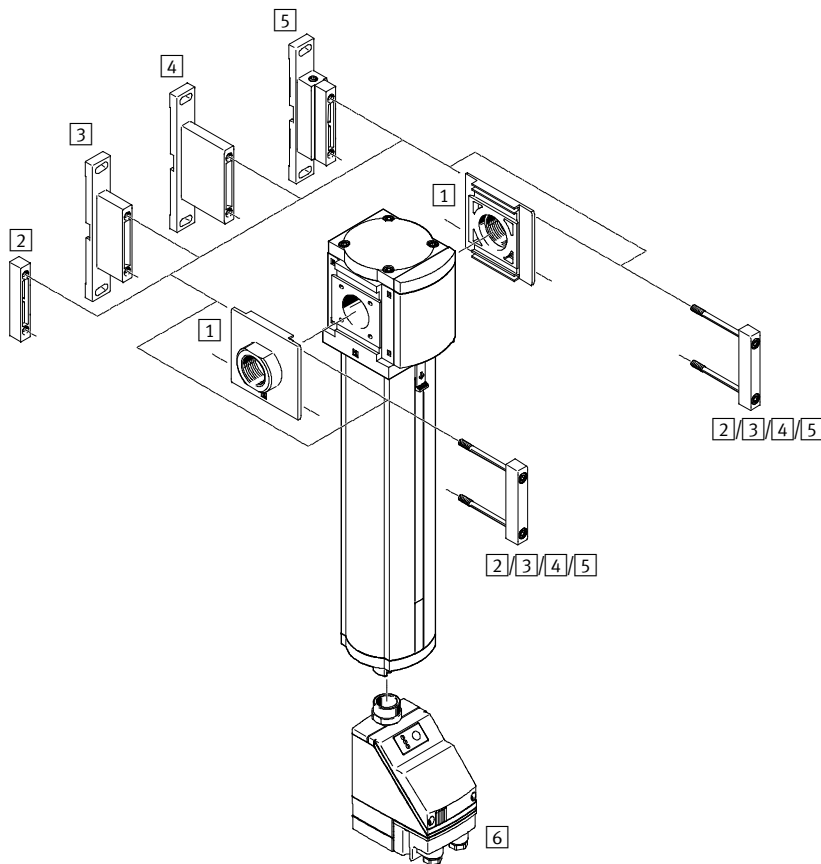
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New
Variant EX4, UL1

Water separators MS9-LWS, MS series

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
		With female thread ¾ or 1	With connecting plate AG...		Module without connect- ing thread, without connecting plate G	
			Without EU certification EX4	With EU certification EX4		
1	Connecting plate MS9-AG...	–	■	■	■	ms9-ag
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	■	■	–	■	22

Water separators MS9-LWS, MS series

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										

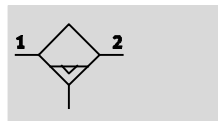
Additional variants can be ordered using the modular product system → 22

- Connecting plates
- Condensate drain
- Type of mounting
- EU certification
- UL certification
- Alternative flow direction

Water separators MS9-LWS, MS series

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
- Optional device variant EX4 for use in potentially explosive areas in zones 1, 2, 21 and 22

General technical data				
Size	MS9			
Pneumatic connection 1, 2	G¾	G1	G½ ... G1½ (with connecting plate AG...)	– (without connecting thread G)
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 [–:7:4]			
Bowl guard	Integrated as metal bowl			
Condensate drain	Fully automatic			
	Fully automatic, electrically actuated			
Degree of condensate separation [%]	99			
Max. condensate volume [ml]	220			

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

Standard nominal flow rate q _N ¹⁾ [l/min]			
Pneumatic connection	Thread G¾ or connecting plate AGE	Thread G1 or connecting plate AGF	Without connecting thread G
q _N [l/min]	12,000 ±15%	15,000 ±15%	15,000 ±15%

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
Operating 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]	+5 ... +60	+1 ... +60
Corrosion resistance class CRC ¹⁾	2	
Certification (variant UL1)	cULus recognized (OL)	

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.

Water separators MS9-LWS, MS series

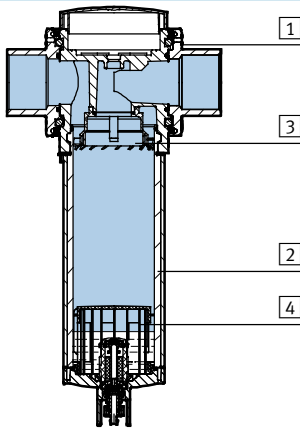
Technical data

ATEX	
EU certification	EX4
ATEX category gas	II 2G
Ex-ignition protection type gas	c T6 X
ATEX category dust	II 2D
Ex-ignition protection type dust	c 60 °C X
ATEX ambient temperature	+5 °C ≤ Ta ≤ +60 °C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)

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

Materials

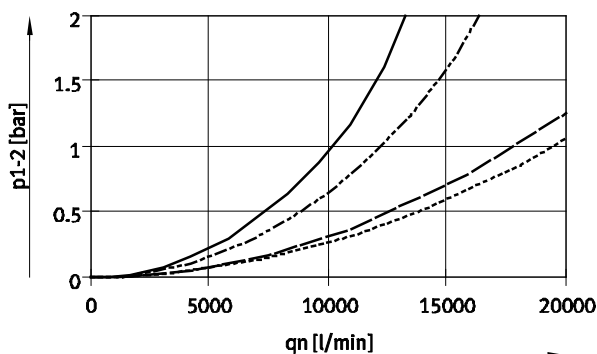
Sectional view



Water separator	
1 Housing	Die-cast aluminium
2 Bowl	Wrought aluminium alloy
Inspection window	PA
3 Spin disc	POM
4 Isolating 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)

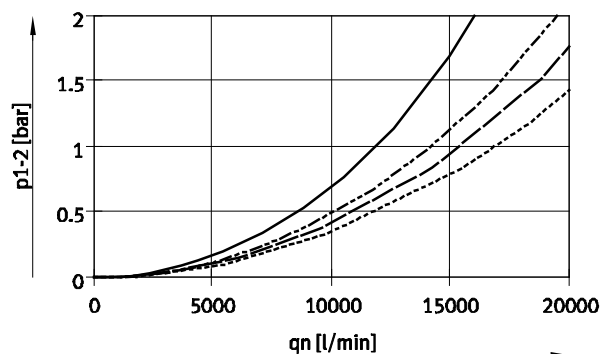
Standard flow rate q_n as a function of differential pressure Δp_{1-2}

MS9-LWS-3/4/AGE, pneumatic connection G3/4



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

MS9-LWS-1/AGF, pneumatic connection G1



 New
Variant EX4, UL1

Water separators MS9-LWS, MS series

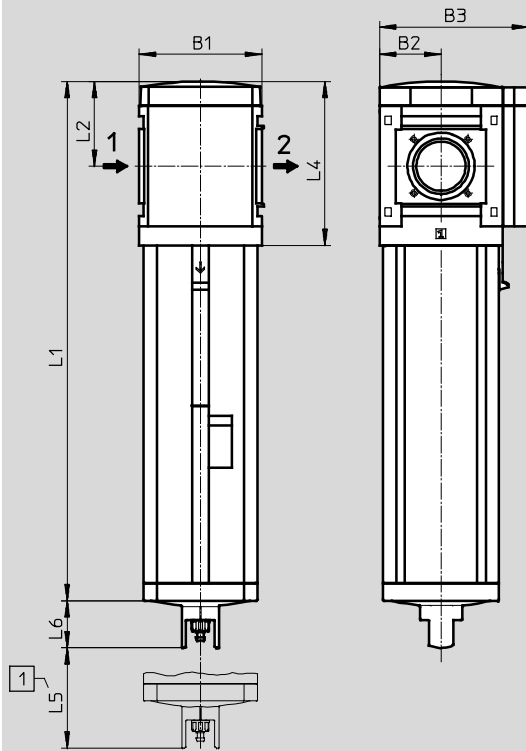
Technical data

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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

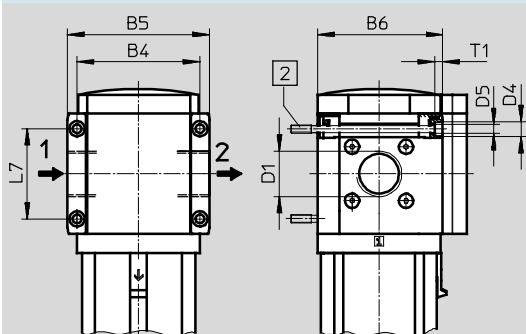
Type	B1	B2	B3	L1	L2	L4	L5	L6
MS9-LWS-G	90	45	109	310.5	62	120	50	34.5

Dimensions – Connecting thread/connecting plate

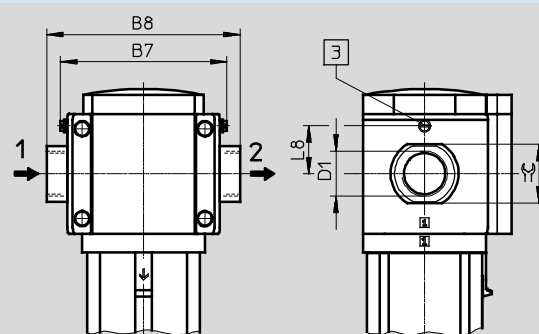
Download CAD data → www.festo.com

With connecting thread 3/4 or 1

With connecting plate AG...



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



3 Earthing screw M4x8 (only with MS9-...-EX4)

→ Flow direction

Type	B4	B5	B6	B7		B8	D1	D4	D5	L7	L8	T1	≅
					EX4						EX4		
MS9-LWS-¾	90	104	91.5	-	-	-	G¾	11	6.5	66	-	6	-
MS9-LWS-1							G1						
MS9-LWS-AGD	-	-	-	112	122	132	G½	-	-	-	35	-	30
MS9-LWS-AGE						132	G¾						36
MS9-LWS-AGF						142	G1						41
MS9-LWS-AGG						162	G1¼						50
MS9-LWS-AGH						176	G1½						55

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

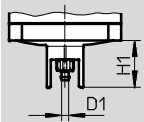
Water separators MS9-LWS, MS series

Technical data

Dimensions – Condensate drain

Download CAD data → www.festo.com

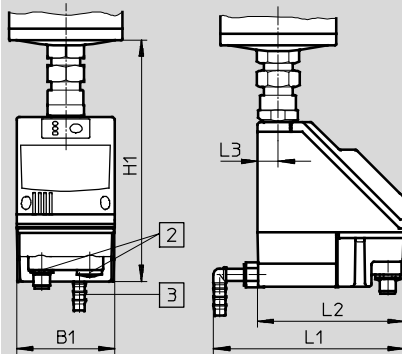
Fully automatic V



Barbed connector for plastic tubing
PCN-4

Fully automatic, electrically actuated E2/E3/E4

Technical data → Internet: [pwea](http://pwea.festo.com)



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-U-V

 New
Variant EX4, UL1

Water separators MS9-LWS, MS series

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Ordering data – Modular products

M Mandatory data →					
Module No.	Series	Size	Function	Connection size	Bowl
567857	MS	9	LWS	¾, 1, AGD, AGE, AGF, AGG, AGH, G	U
Ordering example					
567857	MS	9	- LWS	- AGD	- U

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 G¾		1	-¾	
	Thread G1		1	-1	
	Connecting plate G½			-AGD	
	Connecting plate G¾			-AGE	
	Connecting plate G1			-AGF	
	Connecting plate G1¼			-AGG	
	Connecting plate G1½			-AGH	
	Module without connecting thread, without connecting plate		1	-G	
↓ Bowl	Metal bowl			-U	-U

1 ¾, 1, G, E2, E3, E4, WPM

Not with EU certification EX4

Transfer order code

567857	MS	9	- LWS	-	- U
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Water separators MS9-LWS, MS series

Ordering data – Modular products

→ M Mandatory data		O Options		
Condensate drain	Type of mounting	EU certification	UL certification	Alternative flow direction
V, E2, E3, E4	WP, WPM, WPB	EX4	UL1	Z
- V	- WP	-	-	- Z

Ordering table					
Grid dimension	[mm]	90	Condi- tions	Code	Enter code
M Condensate drain	External, fully automatic, electric	Fully automatic (P1 max. 12 bar)		-V	
		110 V AC, terminals (P1 max. 16 bar)	1	-E2	
		230 V AC, terminals (P1 max. 16 bar)	1	-E3	
		24 V DC, terminals (P1 max. 16 bar)	1	-E4	
O Type of mounting		Mounting bracket	2	-WP	
		Mounting bracket	1 2	-WPM	
		Mounting bracket for large wall gap	2	-WPB	
EU certification		II 2GD to EU Directive 94/9/EG		-EX4	
UL certification		cULus, ordinary location for Canada and USA		-UL1	
Alternative flow direction		Flow direction from right to left		-Z	

1 ¾, 1, G, E2, E3, E4, WPM

Not with EU certification EX4

2 WP, WPM, WPB

Not with module G

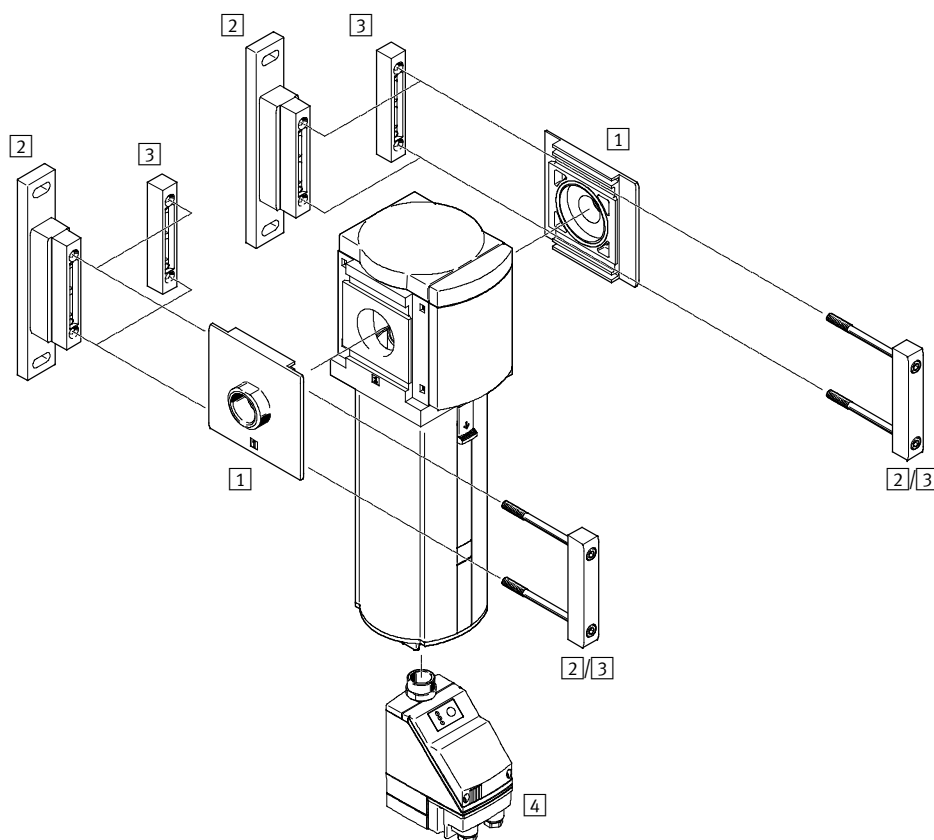
Transfer order code

- - - - -

Water separators MS12-LWS, MS series

Peripherals overview

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 Note

Additional accessories:

– Module connector for combination with size MS9

→ Internet: armv

Mounting attachments and accessories		→ Page/Internet
1	Connecting plate MS12-AG...	ms12-ag
2	Mounting bracket MS12-WP	ms12-wp
3	Module connector MS12-MV	ms12-mv
4	Fully automatic, electrically actuated condensate drain E2/E3/E4	30

Water separators MS12-LWS, MS series

Type codes

		MS	12	-	LWS	-	G	-	U	-	V
Series											
MS	Standard service unit										
Size											
12	Grid dimension 124 mm										
Service function											
LWS	Water separator										
Pneumatic connection											
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 → 30

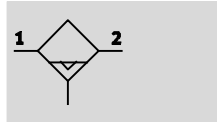
- Pneumatic connection
- Condensate drain
- Type of mounting
- Flow direction

Water separators MS12-LWS, MS series

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Technical data

Condensate drain,
fully automatic



-  - Flow rate
25,000 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					
Pneumatic connection 1, 2	G1 (with connecting plate AGF)	G1¼ (with connecting plate AGG)	G1½ (with connecting plate AGH)	G2 (with connecting plate AGI)	– (module without connecting thread, without connecting plate G)
Design	Centrifugal separator				
Type of mounting	Via accessories In-line installation				
Mounting position	Vertical ±5°				
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]	400				

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

Flow rates	
Standard nominal flow rate [l/min] q _N N ¹⁾	25,000 ±15%
Max. standard flow rate [l/min] q _N max.	40,000 ±15%

1) Measured at p₁ = 6 bar and Δp = 0.5 bar

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.

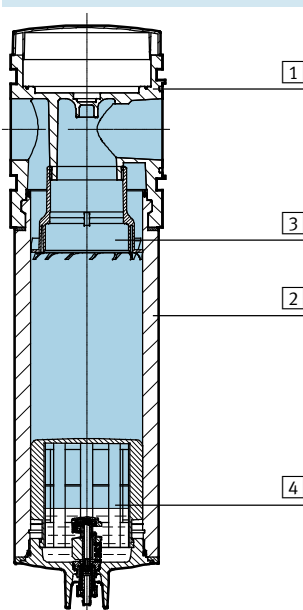
Water separators MS12-LWS, MS series

Technical data

Weight [g]	
Water separator	6,300
Water separator with fully automatic, electrically actuated condensate drain E2/E3/E4	7,000
Accessories	
Connecting plate AG...	1,300
Mounting bracket WP	700

Materials

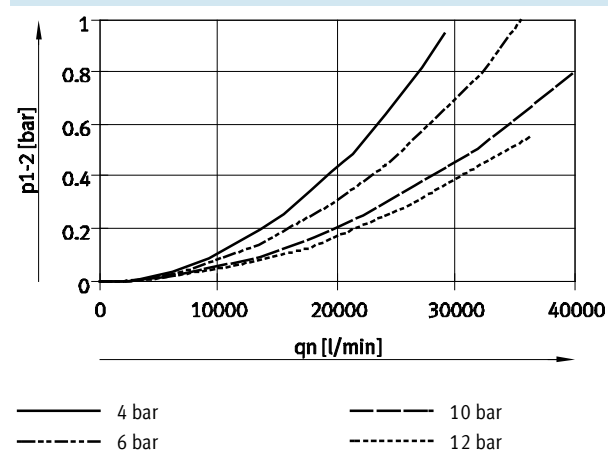
Sectional view



Water separator		
1	Housing	Die-cast aluminium
2	Bowl	Wrought aluminium alloy
	Inspection window	PA
3	Spin disc	POM
4	Separating plate	POM
–	Cover	PA reinforced
–	Connecting plate, module connector, mounting bracket	Die-cast aluminium
–	Seals	Nitrile rubber
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}

MS12-LWS-AGH/AGI, pneumatic connection G1½/G2



Water separators MS12-LWS, MS series

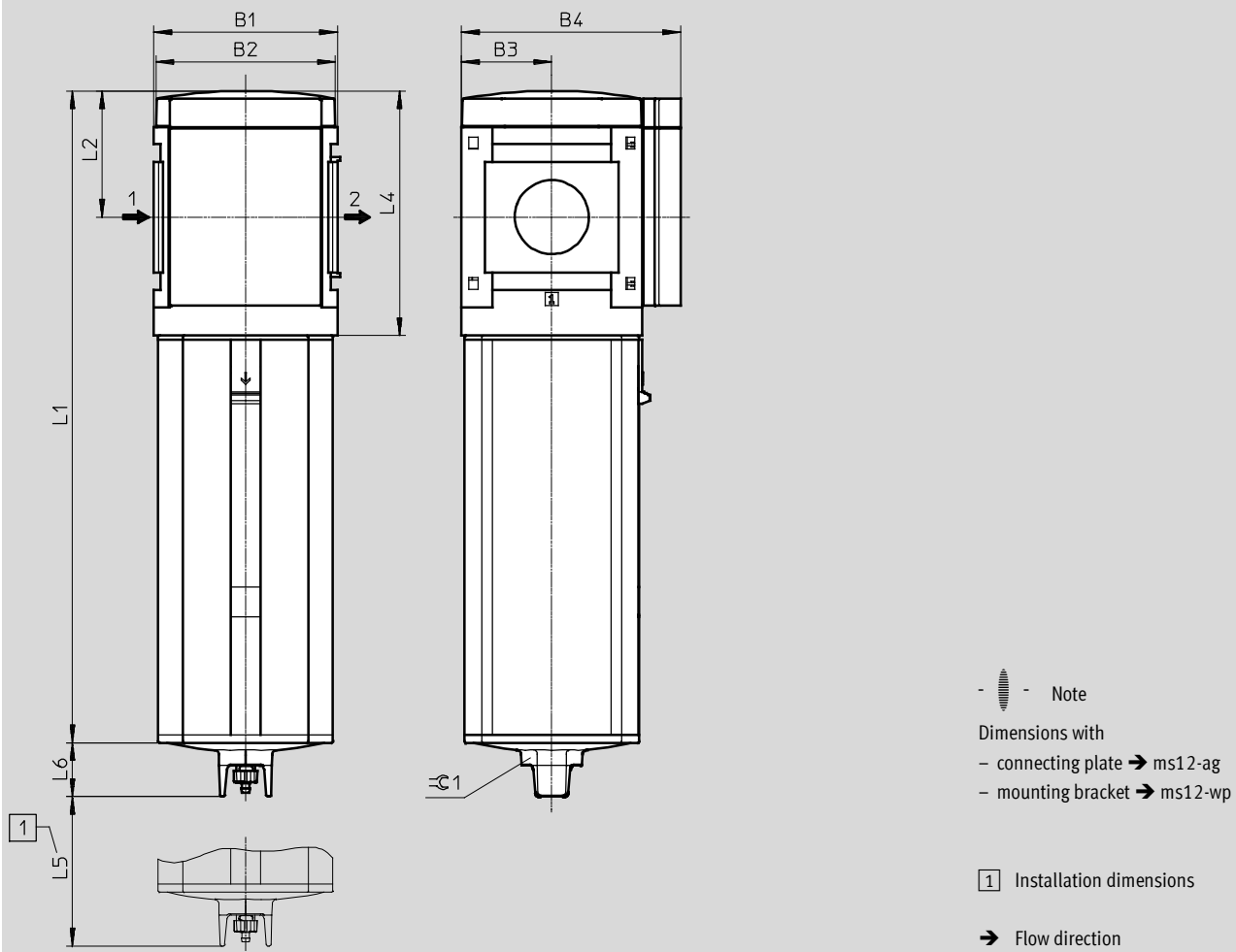
Technical data

FESTO

Dimensions – Basic design

Download CAD data → www.festo.com

Module without connecting thread, without connecting plate G, fully automatic condensate drain V



Type	B1	B2	B3	B4	L1	L2	L4	L5	L6	∅ 1
MS12-LWS-G	124	122	61	148	441	85	165	60	36	36

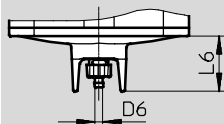
Water separators MS12-LWS, MS series

Technical data

Dimensions – Condensate drain

Download CAD data → www.festo.com

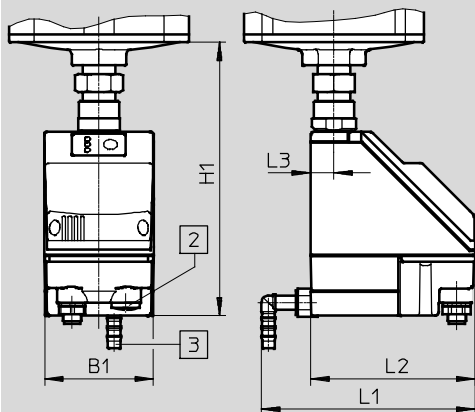
Fully automatic V



Barbed fitting for plastic tubing
PCN-4

Fully automatic, electrically actuated E2/E3/E4

Technical data → Internet: [pwea](http://pwea.festo.com)



Condensate drain PWEA:

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

Type	B1	D6	H1	L1	L2	L3	L6
MS12-LWS-...-V	–	5	–	–	–	–	36
MS12-LWS-...-E2/E3/E4	72	–	179	140	108	15.4	–

Ordering data

Size	Condensate drain	Connection	Part No.	Type
MS12	Fully automatic	–	8005550	MS12-LWS-G-U-V

Water separators MS12-LWS, MS series

FESTO

Ordering data – Modular products

M Mandatory data							O Options	
Module No.	Series	Size	Function	Pneumatic connection	Bowl	Condensate drain	Type of mounting	Flow direction
569827	MS	12	LWS	AGF, AGG, AGH, AGI, G	U	V, E2, E3, E4	WP	Z
Ordering example								
569827	MS	12	- LWS	- G	- U	- V	-	-

Ordering table						Grid dimension	[mm]	124	Condi- tions	Code	Enter code
M	Module No.	569827									
	Series	Standard								MS	MS
	Size	12								12	12
	Function	Water separator								-LWS	-LWS
	Pneumatic connection	Connecting plate G1								-AGF	
		Connecting plate G1 ¼								-AGG	
		Connecting plate G1 ½								-AGH	
		Connecting plate G2								-AGI	
		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, electric								-E2	
		110 V AC, terminals (P1 max. 16 bar)								-E3	
		230 V AC, terminals (P1 max. 16 bar)								-E4	
		24 V DC, terminals (P1 max. 16 bar)								-E4	
O	Type of mounting	Mounting bracket								-WP	
	Flow direction	Flow direction from right to left								-Z	

- 1 G** Not with mounting type WP.
2 WP Only with connecting plate AGF, AGG, AGH or AGI.

Transfer order code

569827 MS 12 - LWS - U - V - Z