

Water separators MS-LWS, MS series

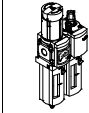
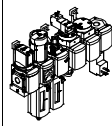
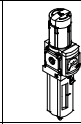
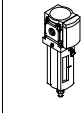
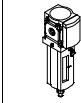
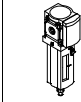
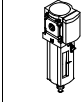
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Water separators MS-LWS, MS series



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 ...	0.05 ...	0.1 ...	0.3 ...	0.1 ...	0.5 ...	0.01	1	5	40
Code			AG.../AQ...	D2	D4	D5	D6	D7	D8	A	B	C	E
Service unit combinations													
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, G1 1/4, G1 1/2	-	-	■	■	■	■	-	-	■	■
	12	-	G1, G1 1/4, G1 1/2, 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, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	■	■
	12	-	G1, G1 1/4, G1 1/2, 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, G1 1/4, G1 1/2	-	-	-	-	-	■	■	-	-	-
	12	-	G1, G1 1/4, G1 1/2, 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, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-	-
	12	-	G1, G1 1/4, G1 1/2, 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, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-

Water separators MS-LWS, MS series

Product range overview – MS series service units



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 unit combinations																	
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

Water separators MS-LWS, MS series



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.../AQ...	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

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



Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Performance Level			Supply voltage				
				Category 1, 1-channel	Category 3, 2-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.../AQ...	C	D	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-D		4	–								
		6	G1/2	G1/4, G3/8, G1/2, G3/4	–	■	–	■	■	–	–
		9	–								
		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

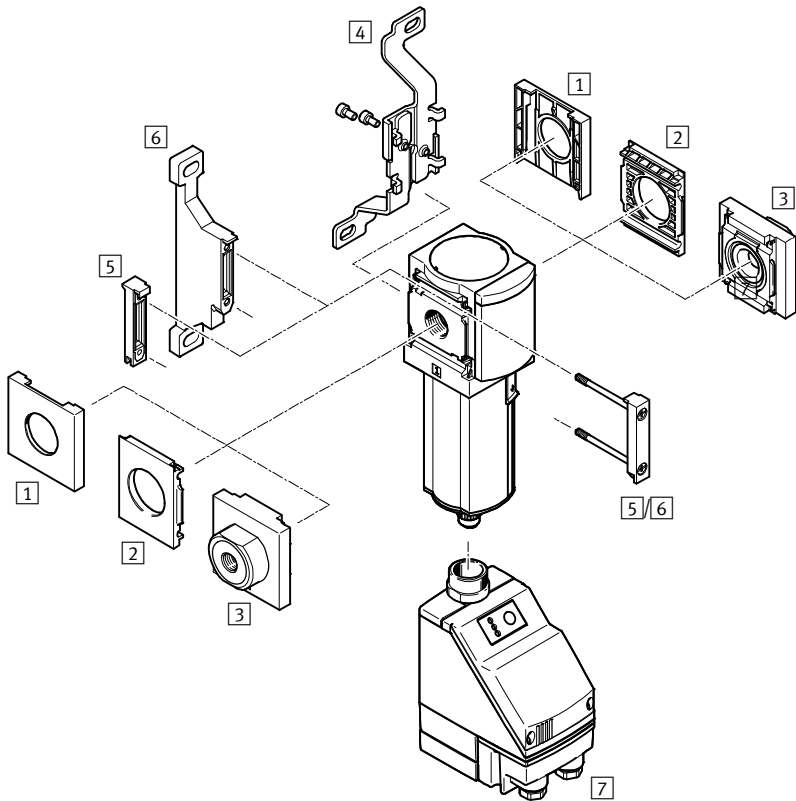


Type	Size	Bowl guard		Pressure indicator					Switch output			Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	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-D	4	-											-	
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-sv	
	9	-											-	
	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

Water separator MS6-LWS



Note

Additional accessories:

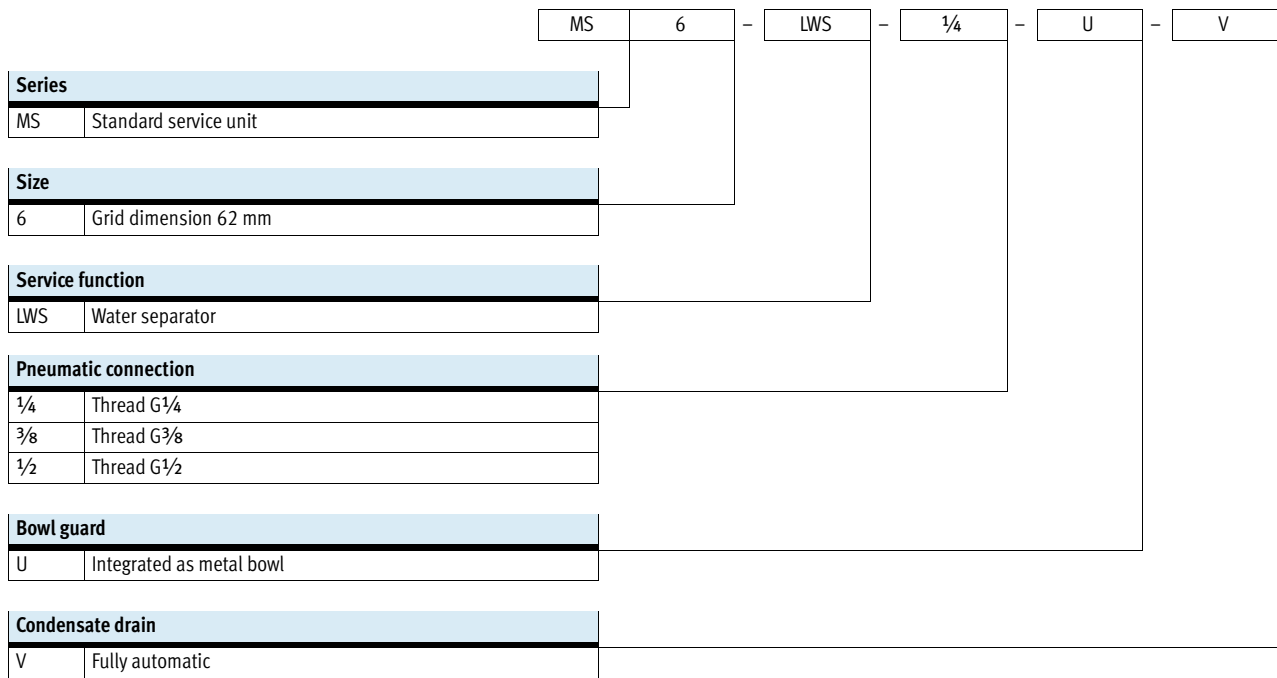
- Module connector for combination with size MS4/MS6 or size MS9 → Internet: amv, rmv, armv
- Adapter for mounting on profiles → Internet: ipm-80, ipm-40-80, ipm-80-80

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-SET MS6-AG...	-	■ ¹⁾	-	■ ¹⁾	ms6-ag
	Connecting plate-SET MS6-AQ...	-	■ ¹⁾	-	■ ¹⁾	ms6-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	■	■	■	■	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



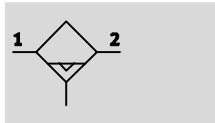
Further variants can be ordered using the modular system → 14

- Connecting plates
- Condensate drain
- Type of mounting
- EU certification
- UL certification
- 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
- - Operating pressure
0.8 ... 16 bar
- - www.festo.com



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

General technical data	
Size	MS6
Pneumatic connection 1, 2	
Female thread	G $\frac{1}{4}$, G $\frac{3}{8}$ or G $\frac{1}{2}$
Connecting plate AG...	G $\frac{1}{4}$, G $\frac{3}{8}$, G $\frac{1}{2}$ or G $\frac{3}{4}$
Connecting plate AQ...	NPT $\frac{1}{4}$, NPT $\frac{3}{8}$, NPT $\frac{1}{2}$ or NPT $\frac{3}{4}$
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 _{nN} ¹⁾			
Size	MS6		
Pneumatic connection	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
q _{nN} [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 CRC 2 to Festo standard FN 940070

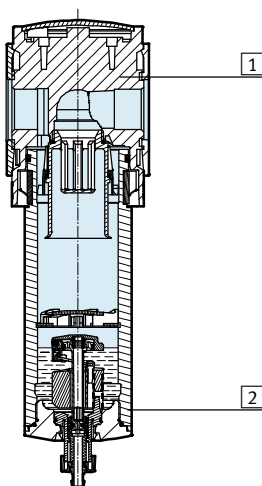
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

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]	
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

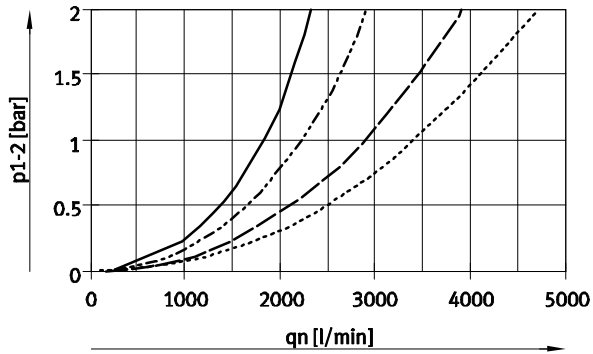
Water separators MS6-LWS, MS series

Technical data

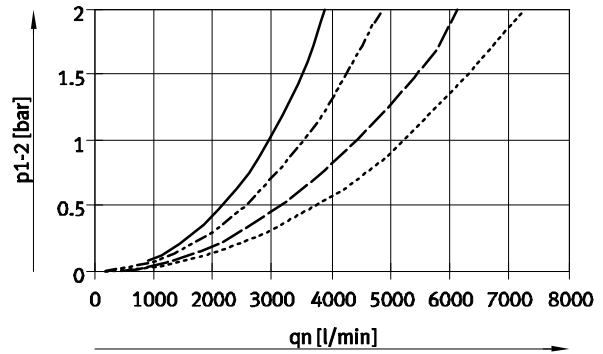
FESTO

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

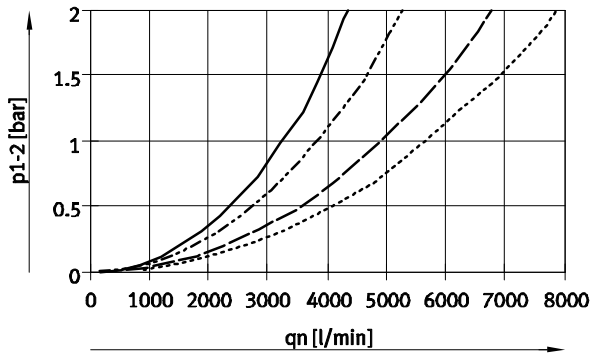
MS6-LWS- $\frac{1}{4}$



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



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



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

Water separators MS6-LWS, MS series

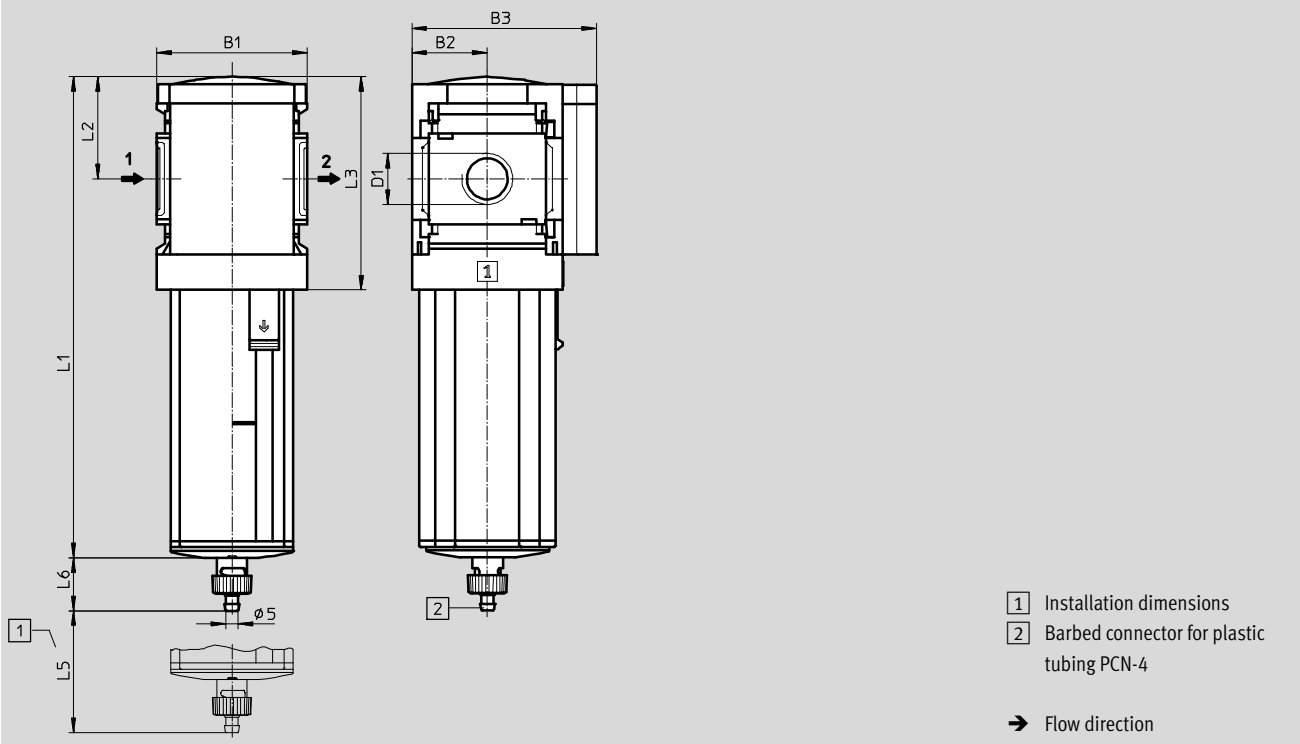
Technical data

FESTO

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					

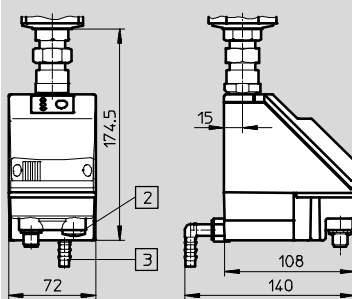
– Note: This product conforms to ISO 1179-1 and to ISO 228-1

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

M Mandatory data →						
Module No.	Series	Size	Function	Pneumatic connection	Bowl guard	Condensate drain
564858	MS	6	LWS	1/4, 3/8, 1/2, AG..., AQ...	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
	Pneumatic connection	Female thread G1/4		1	-1/4	
		Female thread G3/8		1	-3/8	
		Female thread G1/2		1	-1/2	
		Connecting plate G1/4			-AGB	
		Connecting plate G3/8			-AGC	
		Connecting plate G1/2			-AGD	
		Connecting plate G3/4			-AGE	
		Connecting plate NPT1/4		1	-AQN	
		Connecting plate NPT3/8		1	-AQP	
		Connecting plate NPT1/2		1	-AQR	
		Connecting plate NPT3/4		1	-AQS	
		Bowl guard	Metal bowl			-U
	Condensate drain	Fully automatic (P1 max. 12 bar)			-V	
		External fully automatic condensate drain, electrical, 110 V AC, terminals (P1 max. 16 bar)		1	-E2	
		External fully automatic condensate drain, electrical, 230 V AC, terminals (P1 max. 16 bar)		1	-E3	
		External fully automatic condensate drain, electrical, 24 V DC, terminals (P1 max. 16 bar)		1	-E4	

1 1/4, 3/8, 1/2, AQN, AQP, AQR, AQS, E2, E3, E4, WPM
Not with EU certification EX4

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	EU certification	UL certification	Flow direction
WP, WPM, WB	EX4	UL1	Z
- WP	-	-	-

Ordering table					
Grid dimension	[mm]		Condi- tions	Code	Enter code
0	Type of mounting	Mounting bracket standard design	2	-WP	
		Mounting bracket for attaching the service units	1 2	-WPM	
		Mounting bracket centrally at rear (wall mounting top and bottom), connecting plates not required		-WB	
	EU certification	II 2GD to EU Directive 94/9/EG		-EX4	
	UL certification	cULus, ordinary location for Canada and USA		-UL1	
	Flow direction	Flow direction from right to left		-Z	

2 WP, WPM Only with connecting plate AGB, AGC, AGD, AGE, AQN, AQP, AQR or AQS.

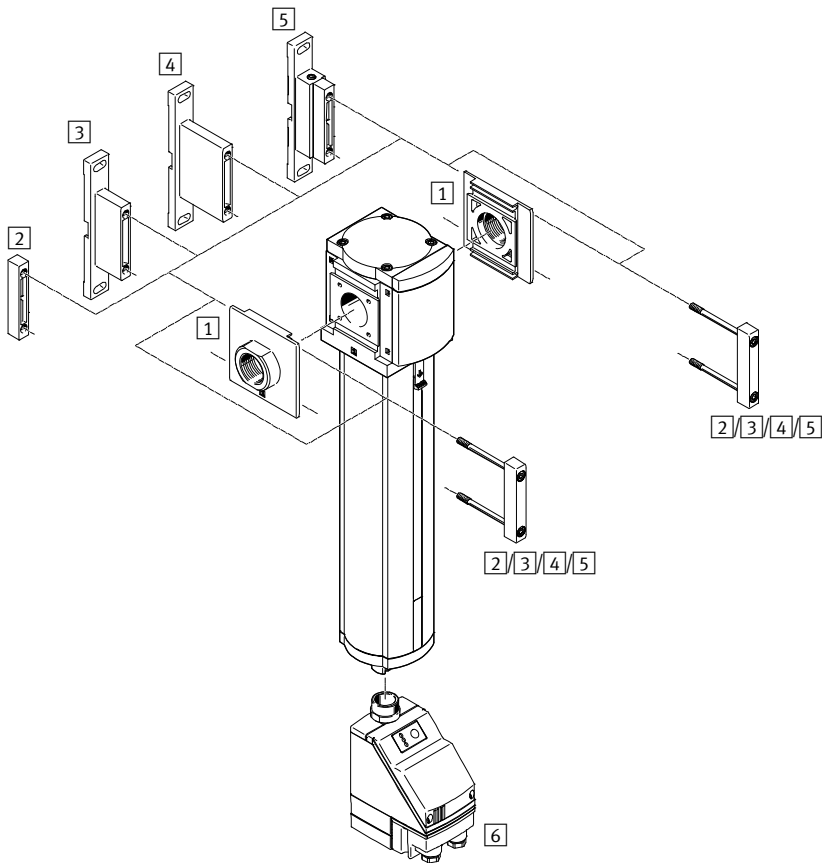
Transfer order code

- - - -

Water separators MS9-LWS, MS series

Peripherals overview

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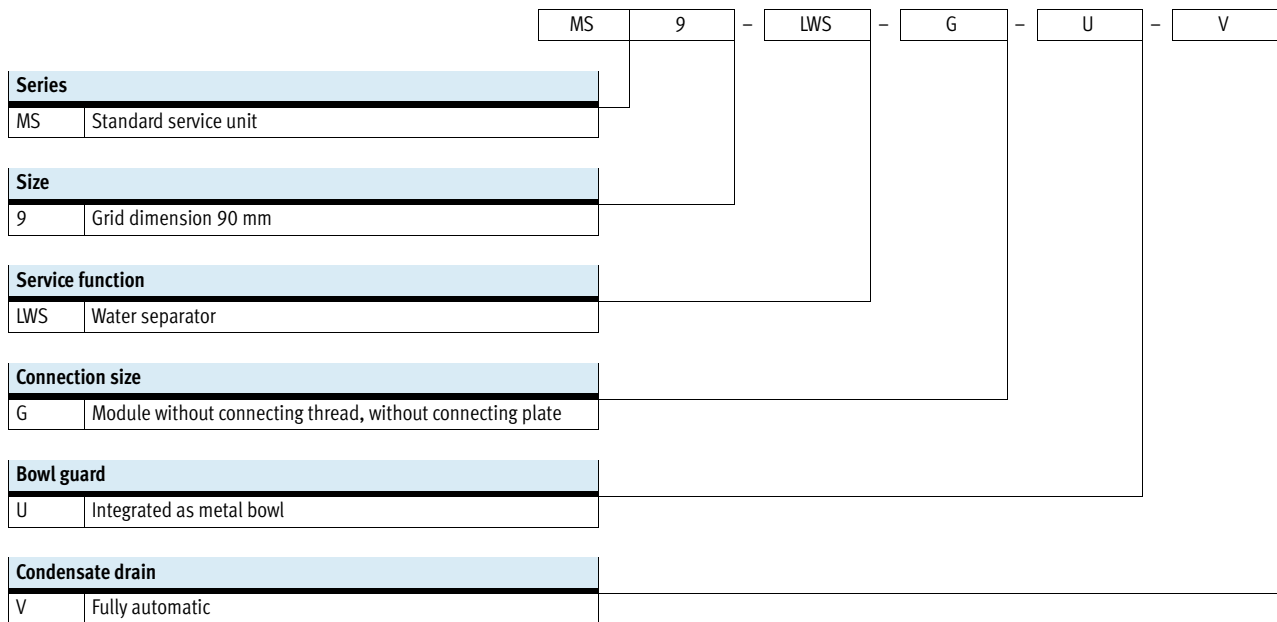


- - Note
 Additional accessories:
 - Module connector for combinations with size MS6, MS9 or MS12
 → Internet: rmv, armv

Mounting attachments and accessories					
	Individual device	With connecting plate AG...		Combination Module without connecting thread, without connecting plate G	→ Page/ Internet
		With female thread 3/4 or 1	Without EU certification EX4		
1	Connecting plate-SET 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



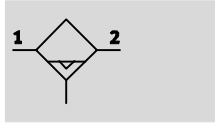
Additional variants can be ordered using the modular product system → 22

- Connecting plates
- Condensate drain
- Type of mounting
- EU certification
- UL certification
- 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	Female thread	G3/4 or G1
	Connecting plate AG...	G1/2, G3/4, G1, G1 1/4 or G1 1/2
	Module without connecting thread/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 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 qnN ¹⁾ [l/min]			
Pneumatic connection	Thread G3/4 or connecting plate AGE	Thread G1 or connecting plate AGF	Without connecting thread G
qnN [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 [-:7:4]	
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 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.

Water separators MS9-LWS, MS series

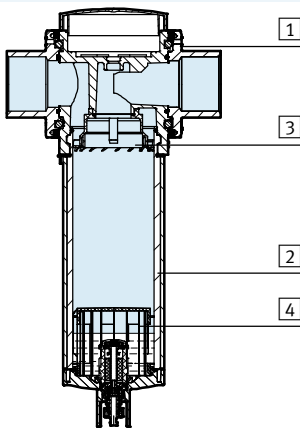
Technical data

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

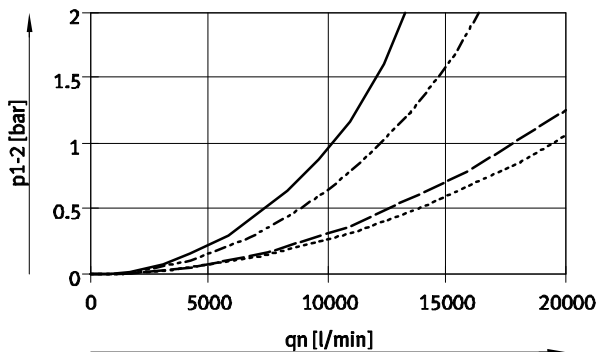
Sectional view



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)

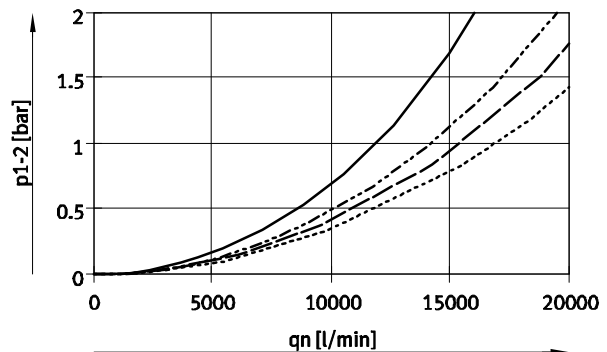
Standard flow rate qn as a function of differential pressure Δp1-2

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



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

MS9-LWS-1/AGF, pneumatic connection G1



Water separators MS9-LWS, MS series

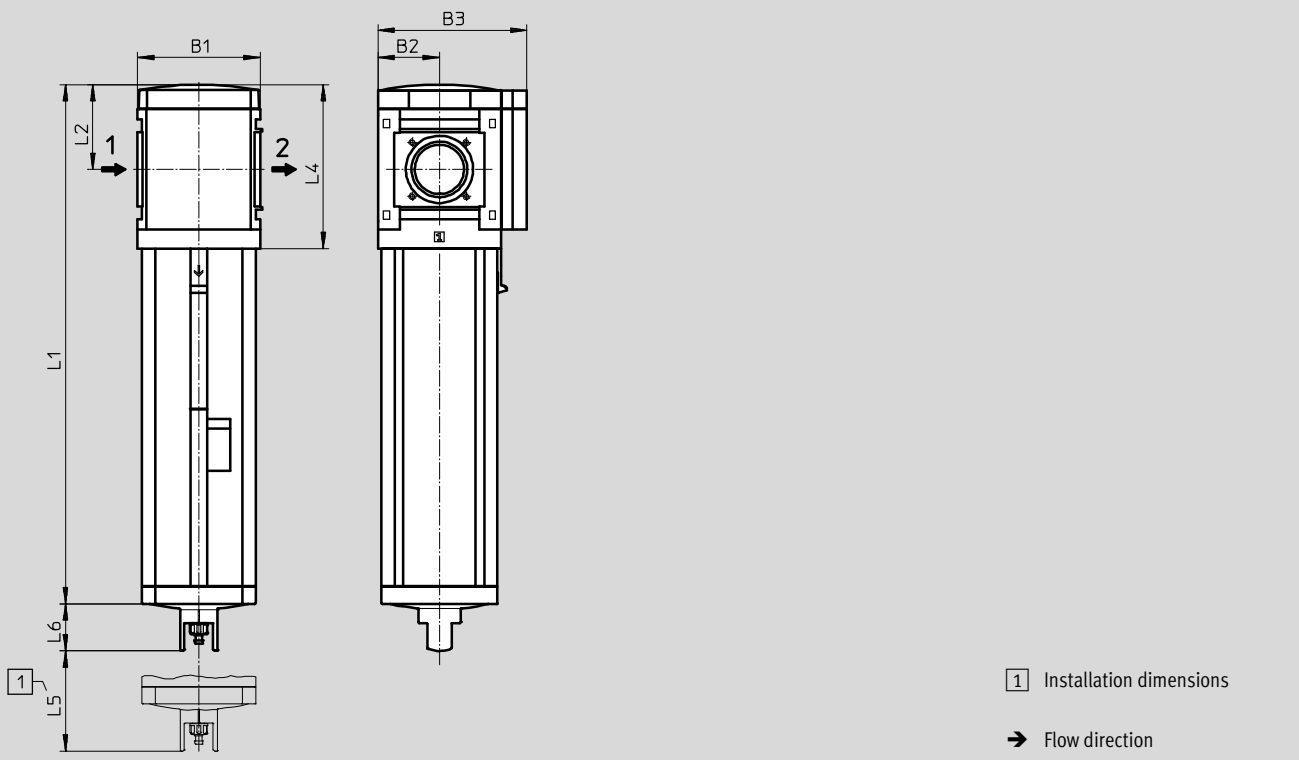
Technical data

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Dimensions – Basic version

Download CAD data → www.festo.com

Without connecting thread G, fully automatic condensate drain V



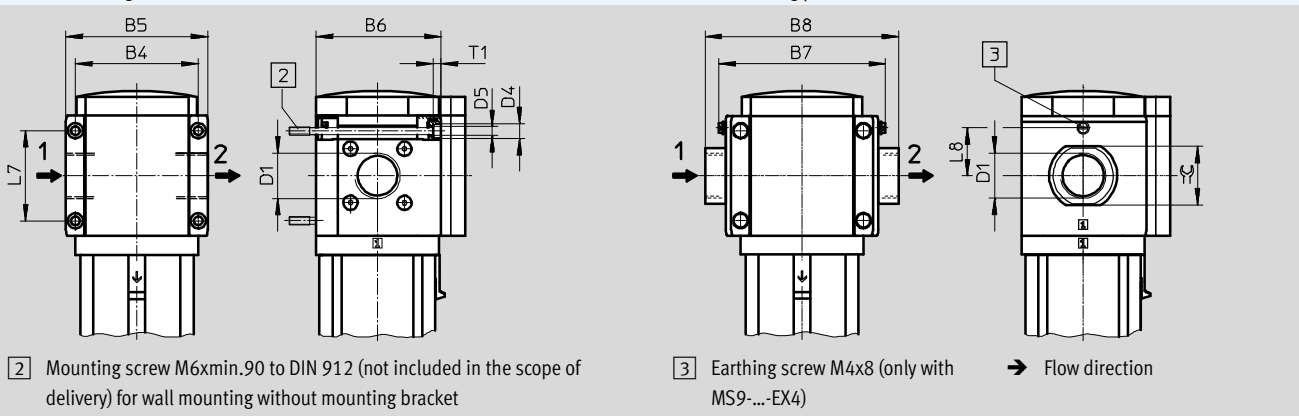
Type	B1	B2	B3	L1	L2	L4	L5	L6
MS9-LWS-G	90	45	109	310.5	62	120	50	34.5

Dimensions – Connecting thread/connecting plate

Download CAD data → www.festo.com

With connecting thread 3/4 or 1

With connecting plate AG...



Type	B4	B5	B6	B7		B8	D1	D4	D5	L7	L8		T1	≈
					EX4							EX4		
MS9-LWS-3/4	90	104	91.5	-	-	-	G3/4	11	6.5	66	-	6	-	
MS9-LWS-1							G1							
MS9-LWS-AGD	-	-	-	112	122	132	G1/2	-	-	-	35	-	30	
MS9-LWS-AGE						132	G3/4						36	
MS9-LWS-AGF						142	G1						41	
MS9-LWS-AGG						162	G1 1/4						50	
MS9-LWS-AGH						176	G1 1/2						55	

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

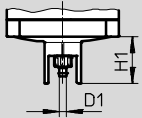
Water separators MS9-LWS, MS series

Technical data

Dimensions – Condensate drain

Download CAD data → www.festo.com

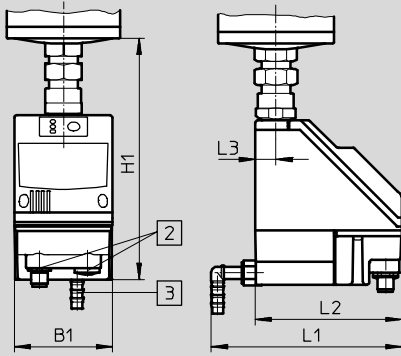
Fully automatic V



Barbed connector for plastic tubing
PCN-4

Fully automatic, electrically actuated E2/E3/E4

Technical data → Internet: pwea



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

Water separators MS9-LWS, MS series

Ordering data – Modular products

M Mandatory data →

Module No.	Series	Size	Function	Pneumatic connection	Bowl
567857	MS	9	LWS	¾, 1, AG..., 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
Pneumatic connection	Female thread G¾		<input type="checkbox"/>	-¾	
	Female thread G1		<input type="checkbox"/>	-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		<input type="checkbox"/>	-G	
↓ Bowl	Metal bowl			-U	-U

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

Mandatory data		Options		
Condensate drain	Type of mounting	EU certification	UL certification	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	Fully automatic (P1 max. 12 bar)			-V	
		External, fully automatic, electric	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 standard design		2	-WP	
		Mounting bracket for attaching the service units		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	
	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 pneumatic connection G

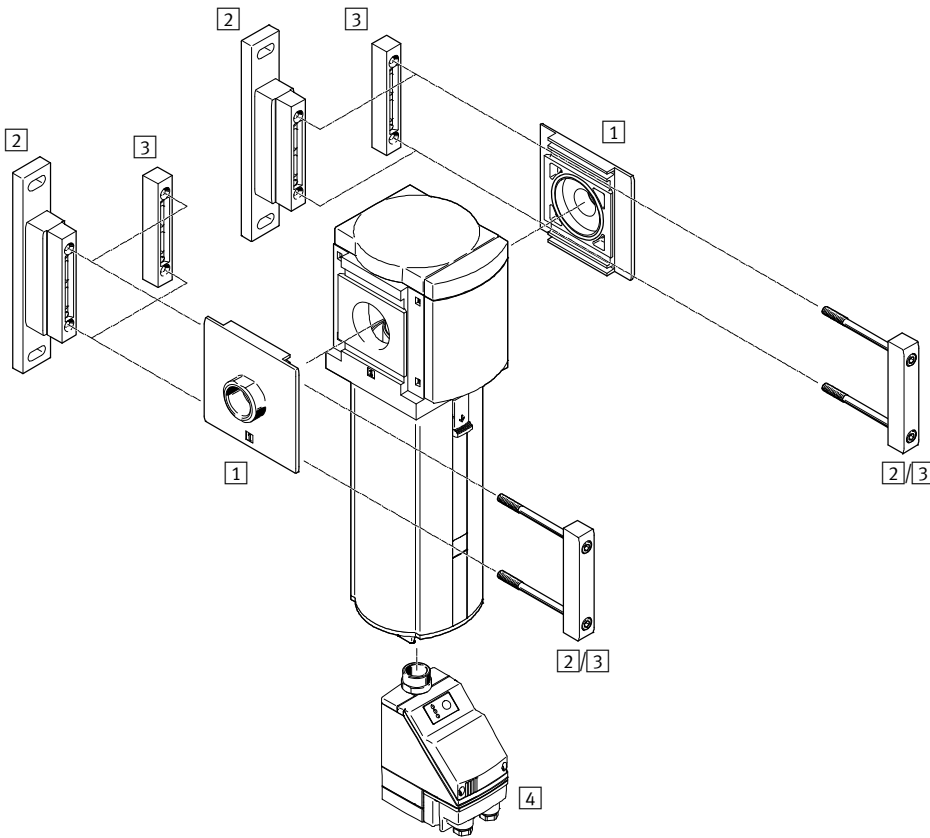
Transfer order code


- [] - [] - [] - [] - []

Water separators MS12-LWS, MS series

Peripherals overview

FESTO

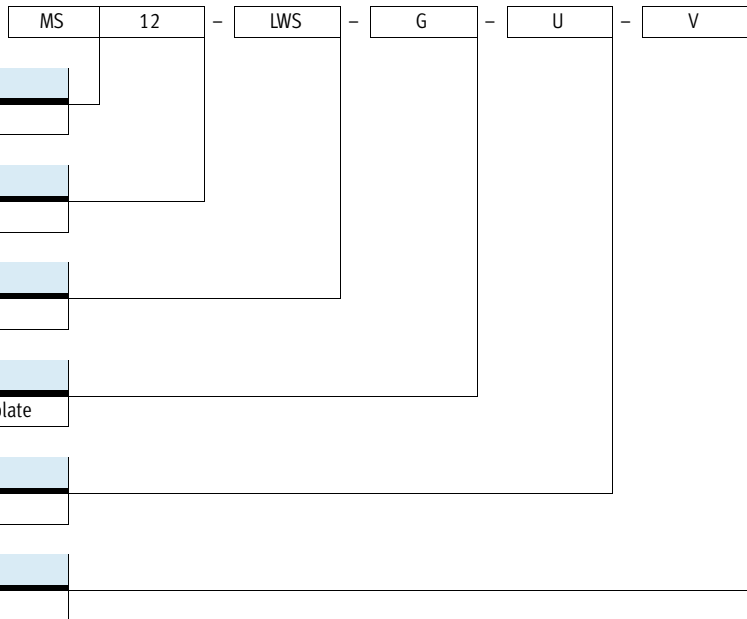


-  - Note
 Additional accessories:
 - Module connector for combination with size MS9
 → Internet: armv

Mounting attachments and accessories		→ Page/Internet
1	Connecting plate-SET 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



Additional variants can be ordered using the modular product system → 30

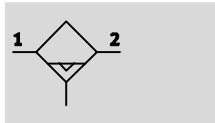
- Pneumatic connection
- Condensate drain
- Type of mounting
- Flow direction




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
- Available with fully automatic or fully automatic, electrically actuated condensate drain
- Metal bowl

General technical data		
Pneumatic connection 1, 2		
Connecting plate AG...		G1, G1¼, G1½ or G2
Module without connecting thread/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 $q_{nN}^{1)}$	[l/min]	25,000 ±15%
Max. standard flow rate $q_{n \max.}$	[l/min]	40,000 ±15%

1) Measured at $p_1 = 6 \text{ bar}$ and $\Delta p = 0.5 \text{ bar}$

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
Temperature of medium	[°C]	+5 ... +60
Storage temperature	[°C]	+5 ... +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.

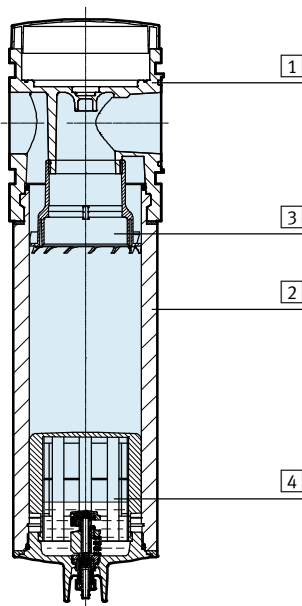
Water separators MS12-LWS, MS series

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

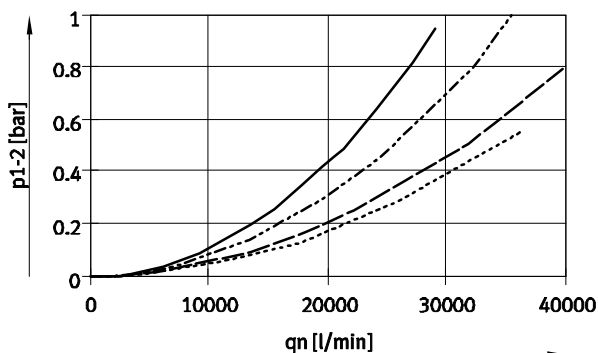
Sectional view



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



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

Water separators MS12-LWS, MS series

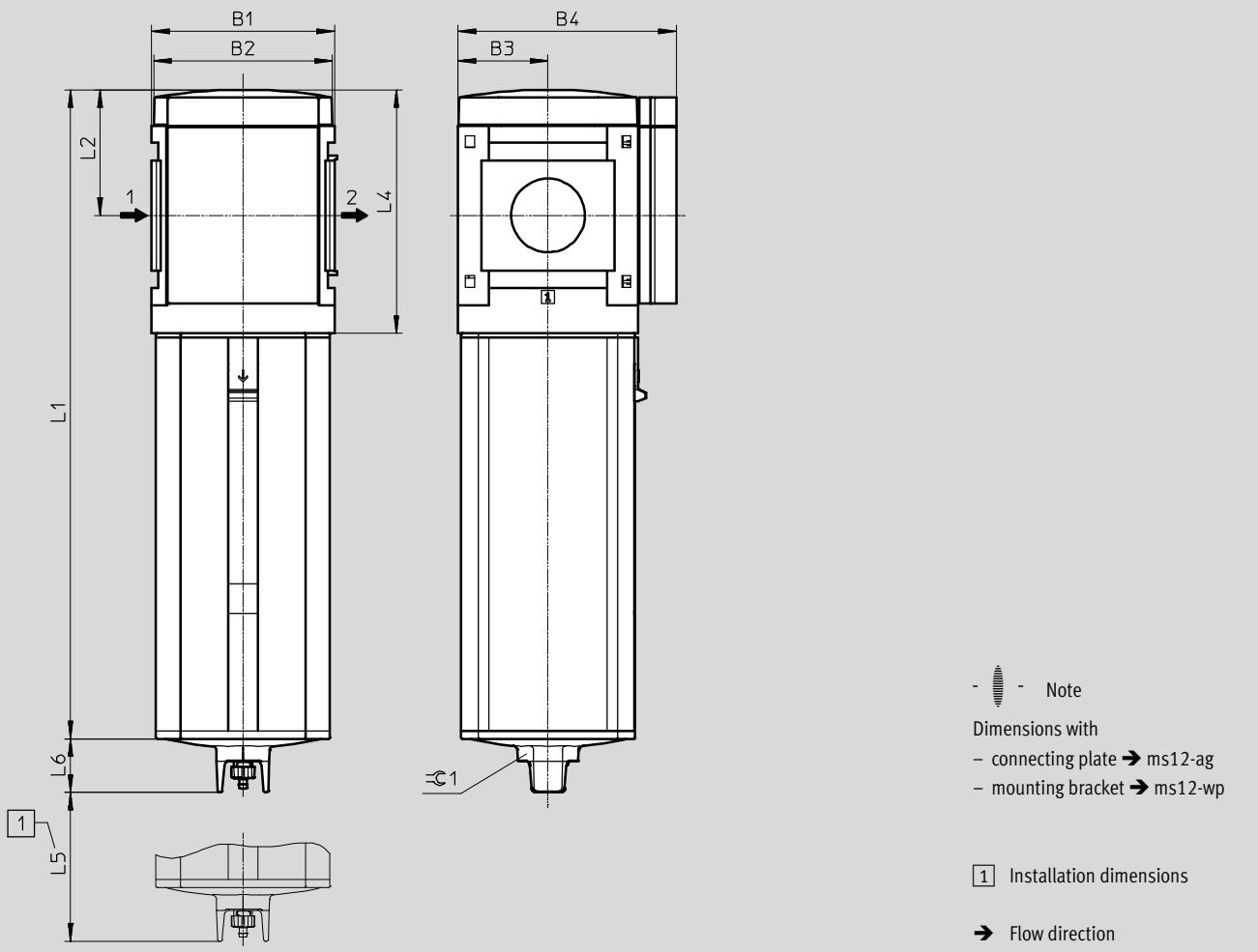
Technical data

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

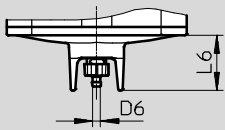
Water separators MS12-LWS, MS series

Technical data

Dimensions – Condensate drain

Download CAD data → www.festo.com

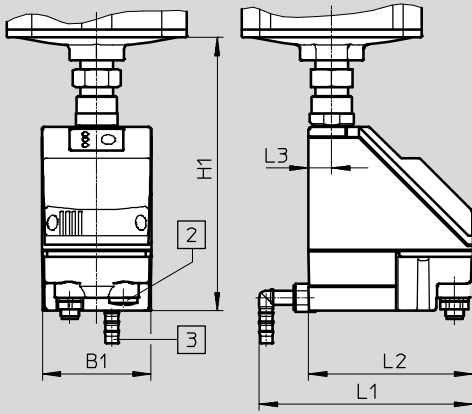
Fully automatic V



Barbed fitting for plastic tubing
PCN-4

Fully automatic, electrically actuated E2/E3/E4

Technical data → Internet: pwea



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

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	AG..., 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 G1¼			-AGG		
		Connecting plate G1½			-AGH		
		Connecting plate G2			-AGI		
		Module without connecting thread, without connecting plate		1	-G		
	Bowl	Metal bowl			-U	-U	
	Condensate drain	Fully automatic (P1 max. 12 bar)			-V		
		External, fully automatic, electric	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 standard design		2	-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	-		-		-	
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