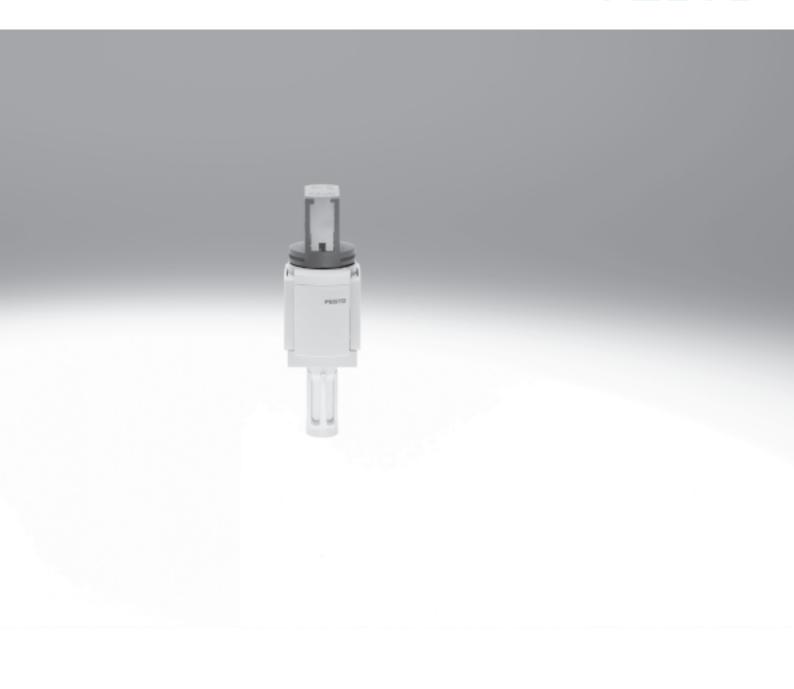
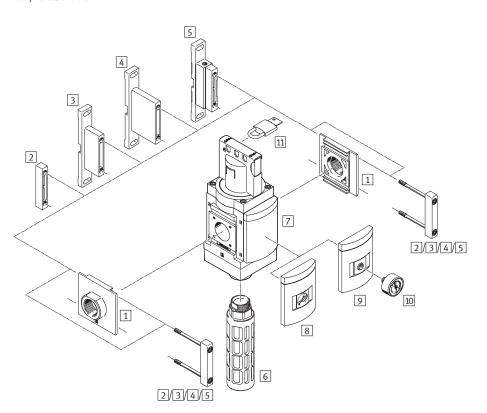
On-off valves MS-EM/EE, MS series, NPT





On-off valves MS9-EM, MS series, NPT Peripherals overview







Additional accessories:

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

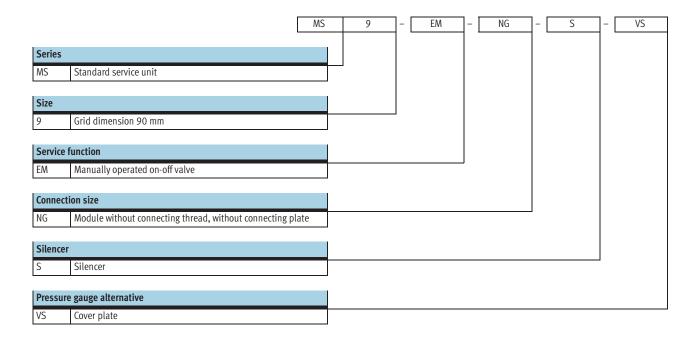
Moun	ting attachments and accessories				
		Individual component Without connecting thread	With connecting thread NPT3/4-14 or NPT1-111/2	Combination	→ Page/Internet
1	Connecting plate MS9-AQ	•	-	•	ms9-aq
2	Module connector MS9-MV	•	-	•	ms9-mv
3	Mounting bracket MS9-WP	•	•	•	ms9-wp
4	Mounting bracket MS9-WPB	•	•	•	ms9-wp
5	Mounting bracket MS9-WPM	•	-	•	ms9-wp
6	Silencer U	•	•	•	21
7	Cover plate VS	•	•	•	8
8	MS pressure gauge AG/RG	•	•	•	8
9	Adapter plate for EN pressure gauge 1/4 A4	•	•	•	8
10	Pressure gauge MA	•	•	•	21
11	Padlock LRVS-D	•	•	•	21



On-off valves MS9-EM, MS series, NPT

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Type codes



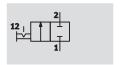
Additional variants can be ordered using the modular system → 8

- Connecting plates
- Silencer
- Pressure gauge/pressure gauge alternatives
- Alternative pressure gauge scale
- Valve function
- Type of mounting
- Alternative flow direction



alves MS9-EM, MS series, NPT FESTO

2/2-way valve, double solenoid



3/2-way valve, double solenoid



Flow rate 8,000 ... 18,000 l/min

Temperature range -10 ... +60 °C

Operating pressure 0 ... 20 bar



- Manually operated on-off valve for pressurising and venting pneumatic installations
- Ducted exhaust possible via a threaded connection with silencer
- The switching position is immediately recognisable
- Actuator secured by locking the rotary knob
- Commercially available padlock can be used for security

• Optional pressure gauge

General technical data									
Pneumatic connection 1, 2	NPT ³ / ₄ -14	NPT1-11½	NPT1/2-14 NPT11/2-111/2 (with connecting plate AQ)	- (without connecting thread NG)					
Pneumatic connection 3	NPT1-11½	'	-	•					
Design	Piston spool valve								
Type of mounting	Via accessories								
	In-line installation								
Mounting position	Any								
Regulator lock	Rotary knob with det	ent							
Pressure display	Via pressure gauge for displaying output pressure								
	Via pressure gauge with red/green scale for displaying output pressure								
	G¹⁄₄ prepared								
Valve function	2/2-way valve, double solenoid								
	3/2-way valve, double solenoid								
Exhaust air function	No flow control								
Reset method	Forced								
Type of control	Direct								
Sealing principle	Soft								





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Flow rate characteristic values								
Pneumatic connection	Connecting t	hread	Connecting	plate				None
	NPT3/4-14	NPT1-11 ¹ / ₂	AQR	AQS	AQT	AQU	AQV	NG
Standard nominal flow rate qnN ¹⁾ [l/mi	n]							
In main flow direction 1 2	14,500	18,000	8,000	14,000	18,000	18,000	18,000	18,000
In relief direction 2 3	14,900	14,100	16,500	14,400	13,800	13,200	13,200	14,100
			•					•
C value [l/s*min]								
In main flow direction 1 2	59.59	76.90	32.75	57.50	75.65	75.51	75.17	-
In relief direction 2 3	55.11	53.54	56.22	54.07	52.73	51.06	51.36	-
b value								
In main flow direction 1> 2	0.41	0.37	0.45	0.39	0.38	0.39	0.38	-
In relief direction 2 3	0.50	0.48	0.60	0.49	0.47	0.45	0.44	-

¹⁾ Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar

Operating and environmenta	perating and environmental conditions						
Operating pressure	[bar]	0 20					
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40 μm					
Ambient temperature	[°C]	-10 +60					
Temperature of medium	[°C]	-10 +60					
Corrosion resistance class CRG	C ¹⁾	2					
Noise level	[dB (A)]	93 ²⁾ with silencer					
CE mark (see declaration of co	onformity)	To EU Explosion Protection Directive (ATEX)					
ATEX		pecified types → www.festo.com					

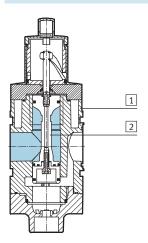
Corrosion resistance class 2 according to Festo standard 940 070

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.

2) Venting at 10 bar at a distance of 1 m.

Weight [g]	ght [g]								
On-off valve	2,200								
On-off valve with silencer S	2,400								

Materials Sectional view



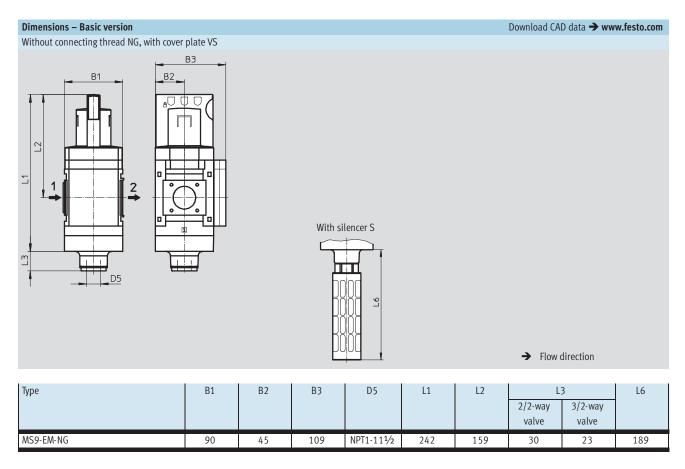
On-off valve							
1 Housing	Die-cast aluminium						
2 Piston spool	POM						
- Seals	NBR						
Note on materials	RoHS-compliant						

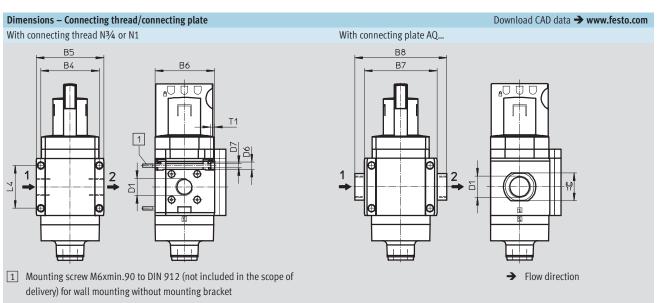


On-off valves MS9-EM, MS series, NPT

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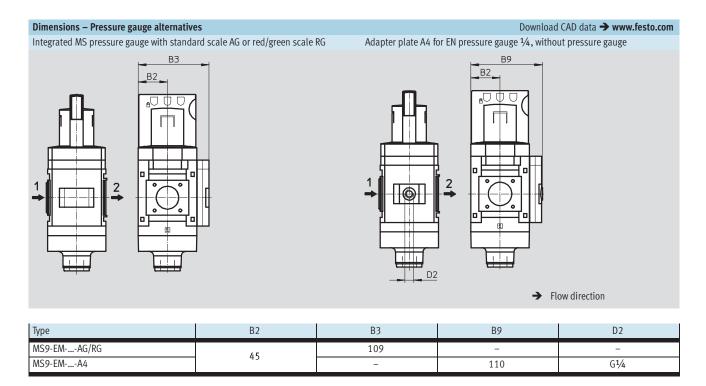
Technical data





Туре	B4	B5	В6	B7	B8	D1	D6	D7	L4	T1	=©
MS9-EM-N ³ / ₄	90	104	91.5	_	_	NPT3/4-14	11	6.5	66	6	_
MS9-EM-N1	90	104	91.5		_	NPT1-11½	11		00		
MS9-EM-AQR		_			132	NPT ¹ /2-14					30
MS9-EM-AQS					132	NPT3/4-14					36
MS9-EM-AQT	-		-	112	142	NPT1-11½ –	-	-	-	-	41
MS9-EM-AQU					162	NPT11/4-111/2					50
MS9-EM-AQV					176	NPT1½-11½					55



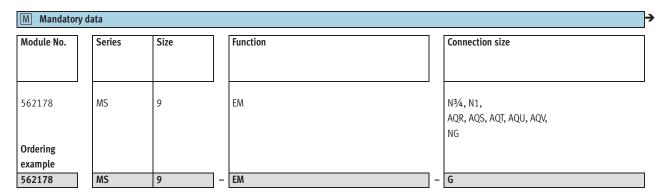


Ordering data								
3/2-way valve, with	3/2-way valve, with silencer							
Size	Connection	Part No.	Туре					
MS9	-	562954	MS9-EM-NG-S-VS					



On-off valves MS9-EM, MS series, NPT Ordering data – Modular products

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0r	dering table				
Gr	id dimension [mm]	90	Condi- tions	Code	Enter code
M	Module No.	562178			
	Series	Standard		MS	MS
	Size	9		9	9
	Function	Manual on-off valve		-EM	-EM
	Connection size	Thread N ³ / ₄		-N ³ / ₄	
		Thread N1		-N1	
		Connecting plate N½		-AQR	
		Connecting plate N ³ / ₄		-AQS	
		Connecting plate N1		-AQT	
		Connecting plate N11/4		-AQU	
		Connecting plate N1½		-AQV	
		Module without connecting thread, without connecting plate		-NG	

Transfer order						
562178	MS	9	-	EM	-	

8



On-off valves MS9-EM, MS series, NPT Ordering data – Modular products

→	O Options	M Mandatory data		O Options		
	Silencer	Pressure gauge/ pressure gauge alter- natives	Alternative pressure gauge scale	Valve function	Type of mounting	Alternative flow direction
	S	AG, VS, A4, RG	PSI, MPA, BAR	2	WP, WPM, WPB	Z
-	S -	AG –	BAR -			

Or	dering table				
Gri	d dimension [mm]	90	Condi- tions	Code	Enter code
0	Silencer	Silencer		-S	
M	Pressure gauge/pressure gauge	MS pressure gauge		-AG	
	alternatives	Cover plate		-VS	
		Adapter plate for EN pressure gauge 1/4, without pressure gauge		-A4	
		Integrated pressure gauge, red/green scale	1	-RG	
	Alternative pressure gauge scale	Psi	2	-PSI	
		MPa	2	-MPA	
		Bar	2	-BAR	
0	Valve function	Standard (3/2-way valve)		-	
		2/2-way valve	3	-2	
	Type of mounting	Mounting bracket	4	-WP	
		Mounting bracket	4	-WPM	
		Mounting bracket for large wall gap	4	-WPB	
	Alternative flow direction	Flow direction from right to left		-Z	

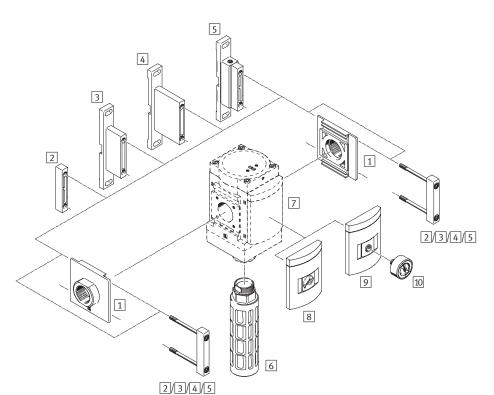
1 RG	Not with alternative pressure gauge scale PSI	3 2	Not with silencer S
	PSI scale serves only as an auxiliary scale	4 WP, WPM, WPB	Not with module NG
PSI, MPA, BAR	Not with pressure gauge alternative VS A4		

	Transfer order code						
- [-	-	-	_	-	



On-off valves MS9-EE, MS series, NPT Peripherals overview



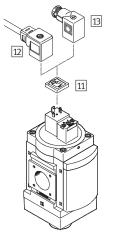


Note

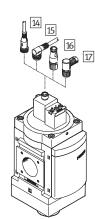
Additional accessories:

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

Supply voltage V24/V110/V230 Supply voltage V24P



10





On-off valves MS9-EE, MS series, NPT Peripherals overview



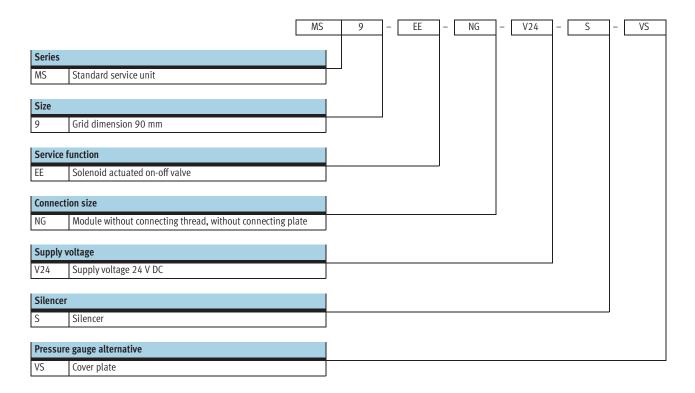
Mour	iting attachments and accessories				
		Individual component		Combination	→ Page/Internet
		Without connecting	With connecting thread		
		thread	NPT3/4-14 or NPT1-111/2		
1	Connecting plate		_		ms9-aq
	MS9-AQ	_		_	
2	Module connector		_		ms9-mv
	MS9-MV	_		_	
3	Mounting bracket				ms9-wp
	MS9-WP			_	
4	Mounting bracket				ms9-wp
	MS9-WPB				
5	Mounting bracket		_		ms9-wp
	MS9-WPM				
6	Silencer				21
	U				
7	Cover plate				18
	VS				
8	MS pressure gauge		•	•	18
	AG/RG				10
9	Adapter plate for EN pressure gauge 1/4		•	•	18
	A4				
10	Pressure gauge				21
	MA				20
11	Illuminating seal		•		20
42	MC-LD Plug socket with cable				20
12	KMC		•	•	20
13	Plug socket				20
13	MSSD-C		•	•	20
14	Connecting cable				21
14	NEBU-M12G5			•	21
15	Connecting cable				21
TD	NEBU-M12W5	•	•	-	21
16	Sensor socket				21
10	SIE-GD	•	•	•	
17	Angled plug socket				21
1/	SIE-WD	•	•	•	
	JIE WU				



On-off valves MS9-EE, MS series, NPT

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Type codes



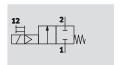
Additional variants can be ordered using the modular system ightharpoonup 18

- Connecting plates
- Supply voltage
- Silencer
- Pressure gauge/pressure gauge alternatives
- Alternative pressure gauge scale
- Valve function
- Type of mounting
- Alternative flow direction

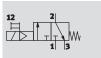


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2/2-way valve, single solenoid, closed



3/2-way valve, single solenoid, closed





Temperature range −10 ... +60 °C

Operating pressure 3 ... 16 bar



- Solenoid actuated on-off valve for pressurising and venting pneumatic installations
- Ducted exhaust possible via a threaded connection with silencer
- With solenoid coil without plug socket
- 3 voltage ranges can be selected
- Non-detenting or detenting manual override
- Optional pressure gauge

General technical data									
Pneumatic connection 1, 2	NPT3/4-14	NPT1-11½	NPT½-14 NPT1½-11½ (with connecting plate AQ)	- (without connecting thread NG)					
Pneumatic connection 3	NPT1-11½	•		•					
Design	Piston spool valve								
Type of mounting	Via accessories								
	In-line installation	In-line installation							
Mounting position	Any								
Pressure display	Via pressure gauge for displaying output pressure								
	Via pressure gauge with red/green scale for displaying output pressure								
	G1/4 prepared								
Valve function	2/2-way valve, single solenoid, closed								
	3/2-way valve, single solenoid, closed								
Exhaust air function	No flow control								
Reset method	Mechanical spring								
Type of control	Piloted								
Pilot air supply	Internal								
Sealing principle	Soft								

Electrical data						
Coil characteristics	V24/V24P	24 V DC: 4.5 W; perm. voltage fluctuations ±10%				
	V110	110 V AC: 50 Hz; pick-up power 11.5 W; holding power 8.9 W; perm. voltage fluctuations ±10%				
		0 V AC: 60 Hz; pick-up power 9.5 W; holding power 6.2 W; perm. voltage fluctuations ±10%				
	V230	230 V AC: 50 Hz; pick-up power 11.5 W; holding power 9.1 W; perm. voltage fluctuations ±10%				
		230 V AC: 60 Hz; pick-up power 9.5 W; holding power 6.4 W; perm. voltage fluctuations ±10%				
Electrical	V24/V110/V230	Plug socket, square design to DIN EN 175301-803, type A				
connection	V24P	Plug M12, 4-pin to DESINA				
Protection class for s	solenoid coil	IP65				
Duty cycle	[%]	100				



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Flow rate characteristic values								
Pneumatic connection	Connecting t	hread	Connecting	Connecting plate				
	NPT3/4-14	NPT1-11½	AQR	AQS	AQT	AQU	AQV	NG
Standard nominal flow rate qnN ¹⁾ [l/	min]							
In main flow direction 1	14,500	18,000	8,000	14,000	18,000	18,000	18,000	18,000
In relief direction 2	14,900	14,100	16,500	14,400	13,800	13,200	13,200	14,100
	•	•	•	•	•			
C value [l/s*min]								
In main flow direction 1} 2	59.59	76.90	32.75	57.50	75.65	75.51	75.17	-
In relief direction 2	55.11	53.54	56.22	54.07	52.73	51.06	51.36	-
	•	•	•	•	•			
b value								
In main flow direction 1	0.41	0.37	0.45	0.39	0.38	0.39	0.38	-
In relief direction 2 3	0.50	0.48	0.60	0.49	0.47	0.45	0.44	-

¹⁾ Measured at p1 = 6 bar and p2 = 5 bar, $\Delta p = 1$ bar

Operating and environmental conditions						
Operating pressure	[bar]	3.5 16				
Operating medium		Filtered compressed air, lubricated or unlubricated, grade of filtration 40 μm				
Ambient temperature	[°C]	-10 +60				
Temperature of medium	[°C]	-10 +60				
Corrosion resistance class CR	C ¹⁾	2				
Noise level	[dB (A)]	93 ²⁾ with silencer				
CE mark (see declaration of co	onformity)	To EU Explosion Protection Directive (ATEX)				
ATEX		Specified types → www.festo.com				

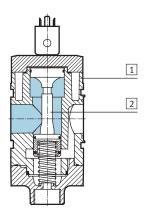
¹⁾ Corrosion resistance class 2 according to Festo standard 940 070 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

²⁾ Venting at 10 bar at a distance of 1 m.

Weight [g]	
On-off valve	2,100
On-off valve with silencer S	2,300

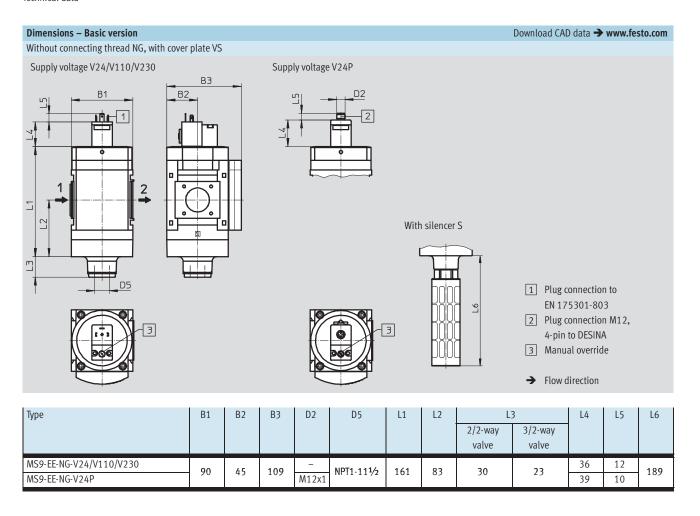
Materials

Sectional view

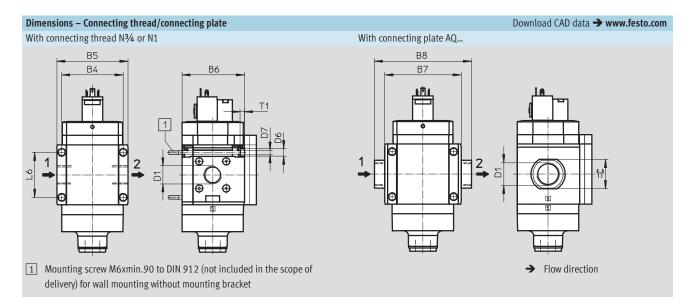


On-off valve								
1 Housing	Die-cast aluminium							
2 Piston spool	POM							
- Seals	NBR							
Note on materials	RoHS-compliant							



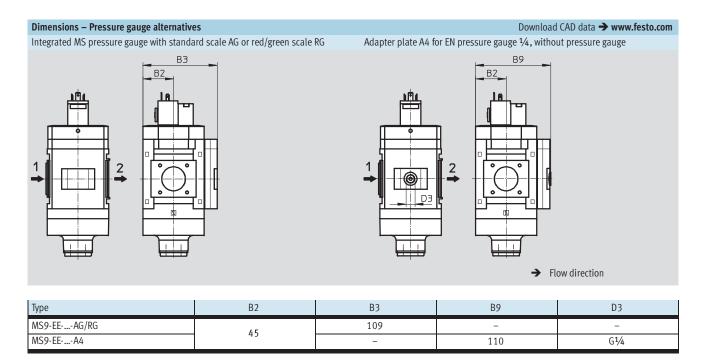






Туре	B4	B5	В6	B7	B8	D1	D6	D7	L6	T1	=©
MS9-EE-N ³ / ₄	90	104	91.5	_	_	NPT3/4-14	11	6.5	66	6	_
MS9-EE-N1	90	104	91.5	_	_	NPT1-11½	11	0.5	00	6	_
MS9-EE-AQR					132	NPT ¹ /2-14					30
MS9-EE-AQS					132	NPT3/4-14					36
MS9-EE-AQT	-	-	-	112	142	NPT1-11½	-	-	-	-	41
MS9-EE-AQU					162	NPT11/4-111/2					50
MS9-EE-AQV					176	NPT1½-11½					55





Ordering data								
3/2-way valve, with	3/2-way valve, with silencer, supply voltage 24 V DC							
Size	Connection	Part No.	Туре					
MS9	_	562946	MS9-EE-NG-V24-S-VS					



On-off valves MS9-EE, MS series, NPT Ordering data – Modular products

M Mandatory data										
Module No.	Series	Size	Function	Connection	size	Supply voltage				
			J							
562177	MS	9	EE	N3/4, N1, AQR, AQS, A	AQT, AQU, AQV,	V24, V24P, V110, V230				
Ordering example				INU						
562177	MS	9	– EE	- N1		- V24				

Ordering table				
rid dimension [mn	1] 90	Condi-	Code	Enter
		tions		code
Module No.	562177			
Series	Standard		MS	MS
Size	9		9	9
Function	Electrical on-off valve		-EE	-EE
Connection size	Thread N ³ / ₄		-N ³ / ₄	
	Thread N1		-N1	
	Connecting plate N ¹ / ₂		-AQR	
	Connecting plate N ³ / ₄		-AQS	
	Connecting plate N1		-AQT	
	Connecting plate N11/4		-AQU	
	Connecting plate N1½		-AQV	
	Module without connecting thread, without connecting plate		-NG	
Supply voltage	24 V DC (pin allocation to EN 175301), 16 bar		V24	
	24 V DC plug (connection pattern M12 to DESINA), 16 bar		V24P	
	110 V AC (pin allocation to EN 175301), 16 bar		V110	
	230 V AC (pin allocation to EN 175301), 16 bar		V230	

Transfer orde	r cod							
562177		MS	9	-	EE	-	-	



On-off valves MS9-EE, MS series, NPT Ordering data – Modular products

→	O Options	M Mandatory data	O Options						
	Silencer	Pressure gauge/ pressure gauge alter- natives	Alternative pressure gauge scale	Valve function	Type of mounting	Alternative flow direction			
	S	AG, VS, A4, RG	PSI, MPA, BAR	2	WP, WPM, WPB	Z			
-	S -	AG –	BAR –						

Or	dering table					
Gr	id dimension [mm]	90	Condi-	Code		Enter
			tions			code
0	Silencer	Silencer		-S		
M	Pressure gauge/pressure gauge	MS pressure gauge		-AG	ı	
	alternatives	Cover plate		-VS		
		Adapter plate for EN pressure gauge ¼, without pressure gauge		-A4		
		Integrated pressure gauge, red/green scale	1	-RG		
	Alternative pressure gauge scale	Psi	2	-PSI		
		MPa	2	-MPA		
		Bar	2	-BAR		
0	Valve function	Standard (3/2-way valve)		-	ı	
		2/2-way valve	3	-2		
	Type of mounting	Mounting bracket	4	-WP		
		Mounting bracket	4	-WPM		
		Mounting bracket for large wall gap	4	-WPB		
	Alternative flow direction	Flow direction from right to left		-Z		

1 RG	Not with alternative pressure gauge scale PSI	3 2	Not with silencer S
	PSI scale serves only as an auxiliary scale	4 WP, WPM, WPB	Not with module NG
2 PSI, MPA, BAR	Not with pressure gauge alternative VS, A4		

	Transfer order code						
-			-	-	_	-	

On-off valves MS-EM/EE, MS series, NPT Accessories



Ordering data - F	Plug socket MSSD		Technical data → Internet: mssd			
	Description	Operating voltage range	Electrical connection	Type of mounting cable connection	Part No.	Туре
P	for MS4/6-EE/DE	≤ 250 V AC/DC	3-pin	Clamping screws	151687	MSSD-EB
			4-pin	Insulation displace- ment technology	192745	MSSD-EB-S-M14
	for MS9-EE,	≤ 250 V AC/DC	3-pin	Clamping screws	34583	MSSD-C
	for MS12-EE/DE		4-pin	Insulation displace- ment technology	192748	MSSD-C-S-M16

Ordering data – F	Plug socket with cable K	Technical data → Internet: kmeb, kmc					
	Description	Operating voltage range	Electrical connection	Switching status display	Cable length [m]	Part No.	Туре
//	for MS4/6-EE/DE	24 V DC	2-pin	LED	2.5	547268	KMEB-3-24-2,5-LED
					5	547269	KMEB-3-24-5-LED
				-	2.5	547270	KMEB-3-24-2,5
					5	547271	KMEB-3-24-5
			3-pin	LED	2.5	151688	KMEB-1-24-2,5-LED
					5	151689	KMEB-1-24-5-LED
					10	193457	KMEB-1-24-10-LED
		230 V AC	3-pin		2.5	151690	KMEB-1-230AC-2,5
					5	151691	KMEB-1-230AC-5
- 6//	for MS9-EE,	24 V DC	3-pin	LED	2.5	30931	KMC-1-24DC-2,5-LED
	for MS12-EE/DE				5	30933	KMC-1-24DC-5-LED
					10	193459	KMC-1-24-10-LED
		230 V AC	3-pin	-	2.5	30932	KMC-1-230AC-2,5
					5	30934	KMC-1-230AC-5

Ordering data -	· Illuminating seal MEB-LD/MC-LD	Technical data → Internet: meb, mc		
	Description	Operating voltage range	Part No.	Туре
	for plug socket with cable KMEB and plug	12 24 V DC	151717	MEB-LD-12-24DC
	socket MSSD-EB	230 V DC/AC ±10%	151718	MEB-LD-230AC
	for plug socket with cable KMC and plug	12 24 V DC	19145	MC-LD-12-24DC
	socket MSSD-C	230 V DC/AC ±10%	19146	MC-LD-230AC

Ordering data - I	ocking clip CPV18-HV	Technical data → Internet: cpv18-hv			
	Description		Part No.	Туре	PU ¹⁾
	for MS4/6-EE/DEV24	Cover for manual override, the clip prevents actuation	530056	CPV18-HV	10

¹⁾ Packaging unit quantity

On-off valves MS-EM/EE, MS series, NPT Accessories



Ordering data - C	Ordering data - Connecting cable NEBU-M8 Technical data → Ir								
	Electrical connection	Number of wires	Cable length [m]	Part No.	Туре				
TWEET THE STATE OF	M8x1, straight socket	3	2.5	541333	NEBU-M8G3-K-2.5-LE3				
	M8x1, angled socket	3	2.5	541334 541338	NEBU-M8G3-K-5-LE3 NEBU-M8W3-K-2.5-LE3				
Control of the second			5	541341	NEBU-M8W3-K-5-LE3				

Ordering data - C	Ordering data - Connecting cable NEBU-M12 Technical data → Interr								
	Electrical connection	Number of wires	Cable length [m]	Part No.	Туре				
	M12x1, straight socket	4	2.5	550326	NEBU-M12G5-K-2.5-LE4				
O DE LA COMPANIA DEL COMPANIA DE LA COMPANIA DEL COMPANIA DE LA CO			5	541328	NEBU-M12G5-K-5-LE4				
	M12x1, angled socket	4	2.5	550325	NEBU-M12W5-K-2.5-LE4				
			5	541329	NEBU-M12W5-K-5-LE4				

Ordering data – Sensor socket SIE-GD		Technical data → Internet: sie-gd		
	Electrical connection	Part No.	Туре	
	M12x1, 4-pin	18494	SIE-GD	

Ordering data – Angled plug socket SIE-WD		Technical data → Internet: sie-wd		
	Electrical connection	Part No.	Туре	
	M12x1, 4-pin	12956	SIE-WD-TR	

Ordering data - S	Technical data → Internet: u			
	Description	Pneumatic connection	Part No.	Туре
THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TO PE	for MS4-EM1/EE	G1/4	6842	U-1/4-B
	for MS6-EM1/EE	G½	6844	U-1/2-B
	for MS9/12-EM/EE	G1	151990	U-1-B

Ordering data – Pressure gauge MA						
	Nominal size	Pneumatic connection	Indicating range		Part No. Type	
			[bar]	[psi]		
	Pressure gauge MA, DIN EN 837-1 Technical dat					
	40	G1/4	0 16	0 232	183901	MA-40-16-G ¹ / ₄ -EN
	Pressure gauge MA, DIN EN 837-1, with red-green range Technical data → Internet: ma					
	40	R ¹ /8	0 16	-	525726	MA-40-16-R ¹ / ₈ -E-RG
	50	R1/4	0 16	-	525729	MA-50-16-R ¹ / ₄ -E-RG

Ordering data – Padlock LRVS-D					
	Weight [g]	Part No.	Туре		
	120	193786	LRVS-D		