

Branching module MS9-FRM

FESTO

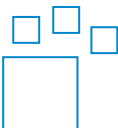


Characteristics

At a glance

- Air distributor with 4 connections
- Grid dimension: 90 mm
 - Support for additional modules
 - Outlet at top and bottom
 - Can be used as an intermediate distributor for varying air qualities

Ordering data - modular system



Configurable product
This product and all its product options can be ordered online via the configurator.

Pneumatic connection

- Depending on the size, different connection types can be selected:
- Individual fittings that are fastened via a female thread
 - Connecting plates with female thread

Pressure gauge alternatives

Two pressure gauge connections for variable installation

Alternative pressure gauge scale

The scaling of the built-in pressure gauge can be selected. The unit options available are [MPa], [bar] / [psi].

Pressure switch

Optionally available with different pressure switches.

Type of mounting

[WP] Mounting bracket basic design



- For wall mounting a single device or a service unit combination

[WPB] Mounting bracket for large wall gap



For wall mounting an individual device

[WPM] Mounting bracket for hooking in service unit components



For wall mounting an individual device

EU certification

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

UL certification

Optional device variant UL1, which meets the safety requirements for the Canadian and US markets.

Characteristics

Flow direction

Available with flow in the opposite direction.

Type code

001	Series	
MS9	MS-series, size 9	

002	Size	
9	Grid dimension 90 mm	

003	Function	
FRM	Branching module	

004	Pneumatic connection	
3/4	Female thread G3/4	
1	Female thread G1	
AGD	Sub-base G1/2	
AGE	Sub-base G3/4	
AGF	Sub-base G1	
AGG	Connecting plate G1 1/4	
AGH	Connecting plate G1 1/2	
N3/4	Female thread 3/4 NPT	
N1	Female thread 1 NPT	
AQR	Sub-base 1/2 NPT	
AQS	Sub-base 3/4 NPT	
AQT	Sub-base 1 NPT	
AQU	Sub-base 1 1/4 NPT	
AQV	Sub-base 1 1/2 NPT	
G	Module without connecting thread, without sub-base	
NG	Module without connecting thread, without sub-base (inch)	

005	Pressure gauge alternatives	
A4	Adapter for EN pressure gauge 1/4, without pressure gauge	
A8	Adapter for EN pressure gauge 1/8, without pressure gauge	
AD7	Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O	
AD8	Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/C	
AD9	Pressure sensor with switching display, M8 plug, window comparator, PNP, N/O	
AD10	Pressure sensor with operational status indicator, M8 plug, window comparator, PNP, N/C	
AG	MS pressure gauge	
RG	Integrated pressure gauge, red/green scale	
VS	Cover plate	

006	Alternative pressure gauge scale	
	MS pressure gauge	
PSI	psi	
BAR	bar	
MPA	MPa	

007	Pressure switch	
	None	
X	Pressure switch PEV with display, plug socket, EN 175301, type A, cube	
Y	Pressure switch PEV without display, plug socket, EN 175301, type A, cube	
M12	Pressure switch PEV without display, plug socket, round, M12, 4-pin	

008	Type of mounting	
	Without mounting bracket	
WP	Mounting bracket basic design	
WPB	Mounting bracket for large wall gap	
WPM	Mounting bracket for hooking in service unit components	

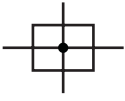
009	EU certification	
	None	
EX4	II 2GD	

010	UL certification	
	None	
UL1	cULus ordinary location for Canada and USA	

011	Flow direction	
	Flow direction from left to right	
Z	Flow direction from right to left	

Datasheet

General technical data



Pneumatic connection, port 3 ¹⁾	G1	1 NPT
Pneumatic connection, port 4	G1	1 NPT
Design	Branching module	
Type of mounting	Either: Front panel mounting In-line installation With accessories	
Mounting position	optional	
Flow direction	From left to right	

1) Pneumatic connection 1, 2: further connections can be realised via sub-bases with female thread connection (modular system).

Standard nominal flow rate

Pneumatic connection, port 3	G1, 1 NPT
Standard nominal flow rate in main flow direction 1->2	10,000 ... 50,000 l/min

Electrical data

Operational voltage range AC ¹⁾	0 ... 250 V
Operational voltage range DC ²⁾	0 ... 125 V

1) Only in combination with pressure switch

2) Only in combination with pressure switch

Operating and environmental conditions

Operating pressure	0 ... 20 bar	0 ... 12 bar
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating and pilot medium	Lubricated operation possible	
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	
Storage temperature	-10 ... 60°C	
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress	
Approval ²⁾	—	c UL us - Recognized (OL)

1) Further information www.festo.com/x/topic/crc

2) Further information www.festo.com/catalogue/ms-frm → Support/Downloads.

ATEX

ATEX category gas	II 2G
Explosion ignition protection type for gas	Ex h IIC T6 Gb X
ATEX category dust	II 2D
Explosion ignition protection type for dust	Ex h IIIC T60°C Db X
Explosion ambient temperature	-10°C ≤ Ta ≤ +60°C
CE mark (see declaration of conformity) ¹⁾	To EU Explosion Protection Directive (ATEX)

1) More information www.festo.com/catalogue/ms-frm → Support/Downloads.

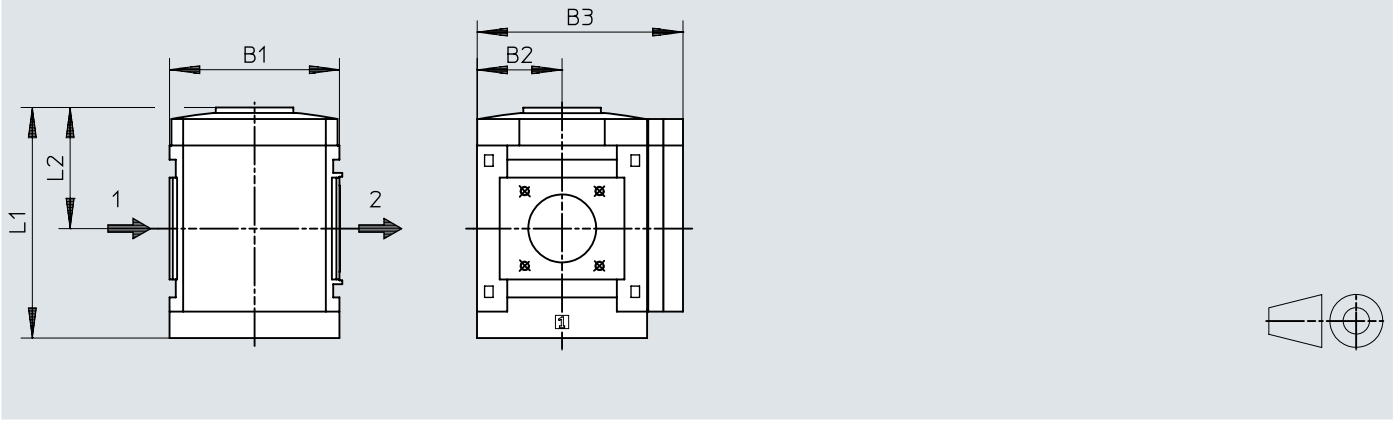
Datasheet

Materials		
Pneumatic connection, port 3	G1	1 NPT
Material housing	Die-cast aluminium	
Material covering	PA-reinforced	
Material sub-base	Die-cast aluminium	
Material mounting bracket	Die-cast aluminium	
Material module connector	Die-cast aluminium	
Note on materials	RoHS-compliant	
LABS (PWIS) conformity	VDMA24364-B1/B2-L	VDMA24364-B2-L

Dimensions

Dimensions – Basic version

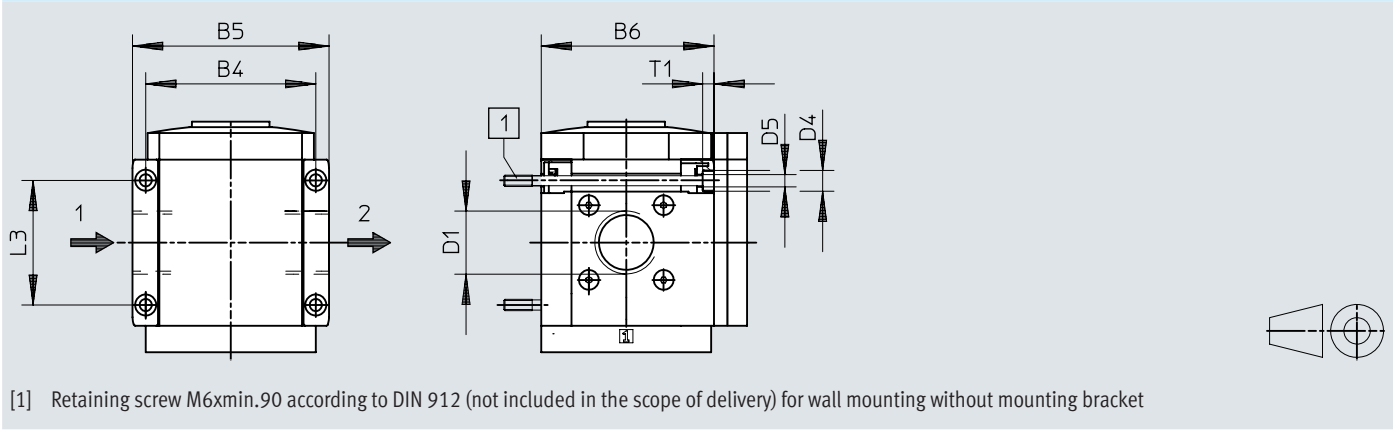
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	B1	B2	B3	L1	L2
MS9-FRM-G/NG-VS	90	45	109	122	64

Dimensions

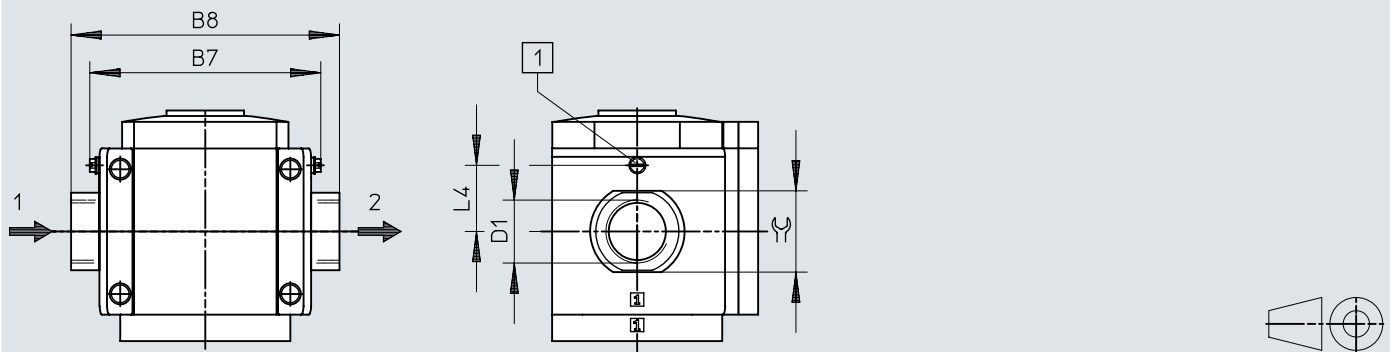
Dimensions – Female thread 3/4, 1, N3/4, N1 Download CAD data www.festo.com



	B4	B5	B6	D1	D4	D5	L3	T1
MS9-FRM-3/4	90	104	91,5	G3/4	11	6,5	66	6
MS9-FRM-1				G1				
MS9-FRM-N3/4				3/4 NPT				
MS9-FRM-N1				1 NPT				

Dimensions

Dimensions – Connecting plate AG..., AQ...

[Download CAD data](#) www.festo.com


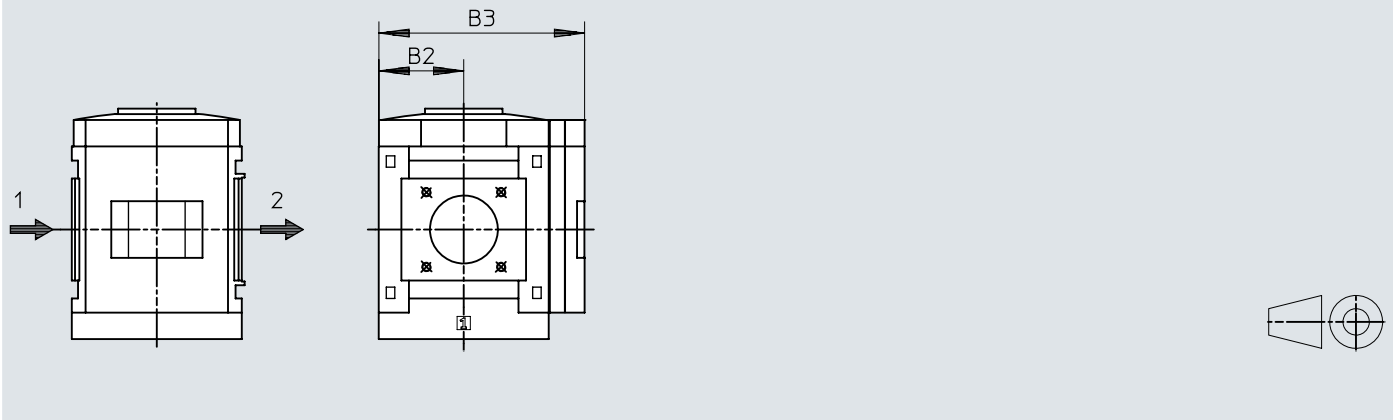
[1] Earthing screw M4x8 (only for MS9-...-EX4)

	B7		B8	D1	L4	
		[EX4]			[EX4]	≅
MS9-FRM-AGD	112	122	132	G1/2	35	30
MS9-FRM-AGE			132	G3/4		36
MS9-FRM-AGF			142	G1		41
MS9-FRM-AGG			162	G1 1/4		50
MS9-FRM-AGH			176	G1 1/2		55
MS9-FRM-AQR	112	-	132	1/2 NPT	-	30
MS9-FRM-AQS			132	3/4 NPT		36
MS9-FRM-AQT			142	1 NPT		41
MS9-FRM-AQU			162	1 1/4 NPT		50
MS9-FRM-AQV			176	1 1/2 NPT		55

Dimensions

Dimensions – AG integrated MS pressure gauge with standard scale, RG integrated MS pressure gauge with red/green scale

Download CAD data www.festo.com

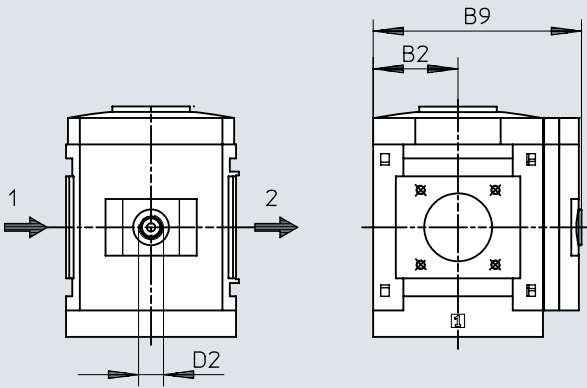


	B2	B3
MS9-FRM-...-AG/RG	45	109

Dimensions

Dimensions – A8 adapter for EN pressure gauge 1/8, without pressure gauge,
A4 adapter for EN pressure gauge 1/4, without pressure gauge

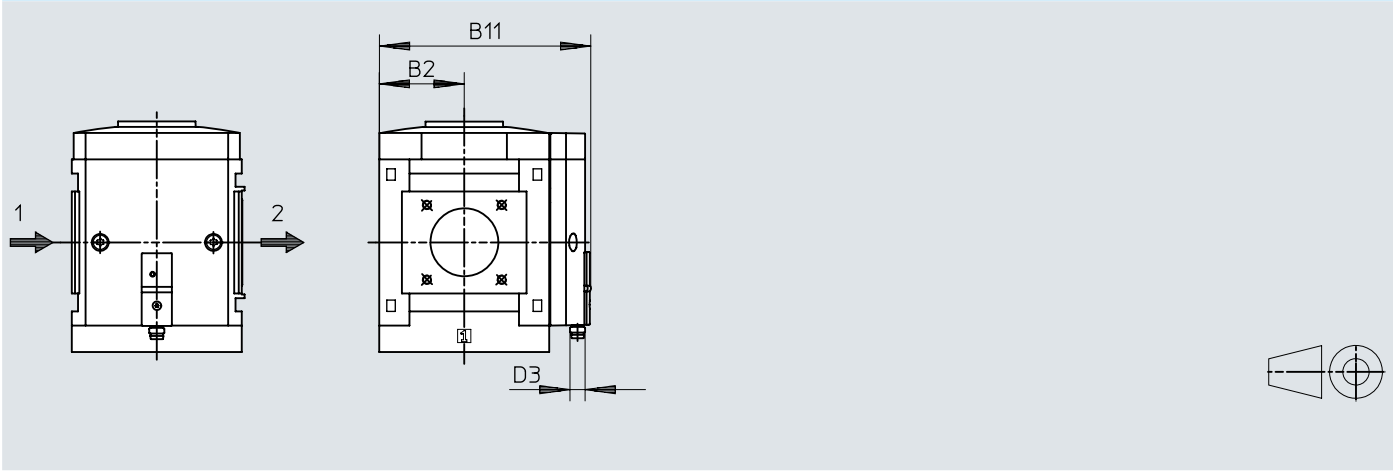
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	B2	B9	D2
MS9-FRM-...-A8	45	110	G1/8
MS9-FRM-...-A4			G1/4

Dimensions

Dimensions – AD7/AD8/AD9/AD10 pressure sensor with switching indicator www.festo.com

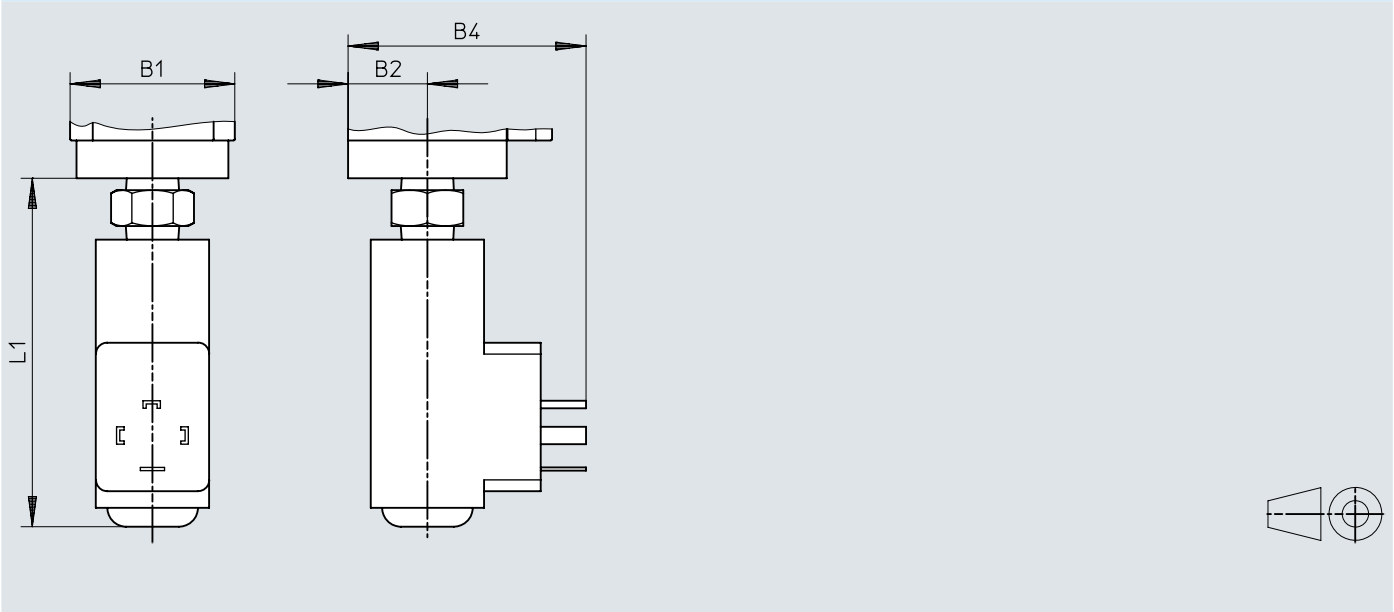


	B2	B11	D3
MS9-FRM-...-AD7/AD8/AD9/AD10	45	112	M8

Dimensions

Dimensions – X/Y pressure switch with adjustable pressure switch point

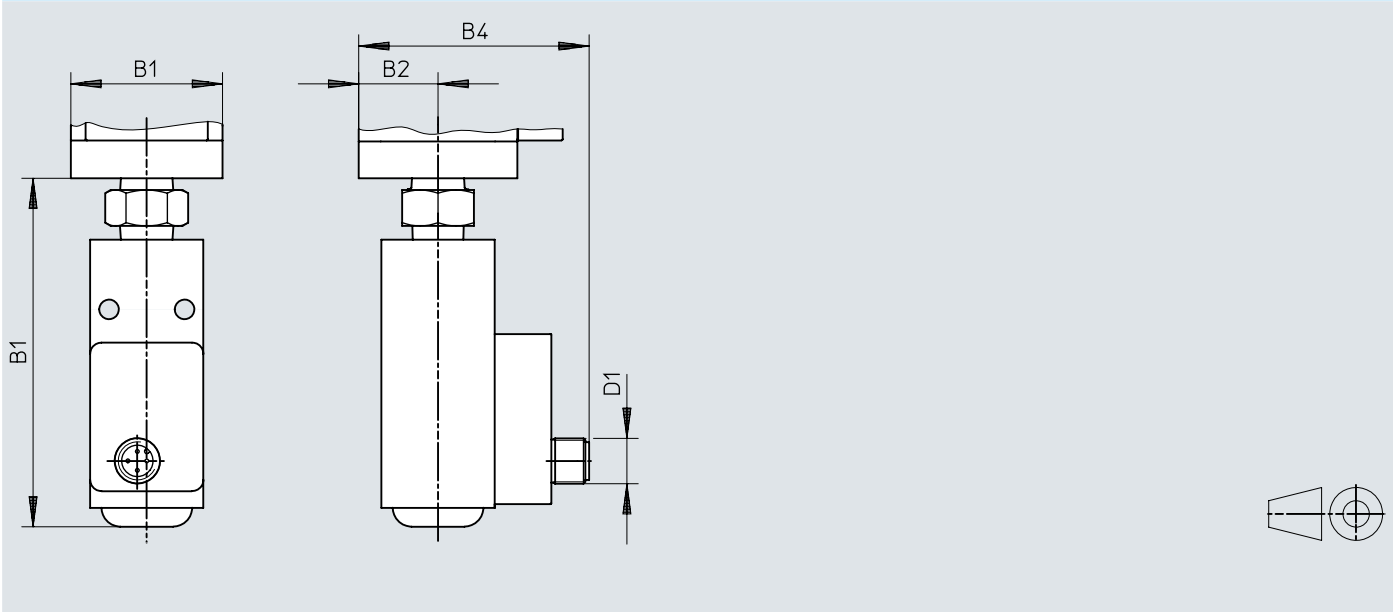
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	B1	B2	B4	L1
MS9-FRM-...-X/Y	90	45	87	105

Dimensions

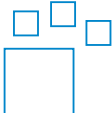
Dimensions – M12 pressure switch with adjustable pressure switch point Download CAD data www.festo.com



	B1	B2	B4	D1	L1
MS9-FRM-...-M12	90	45	85	M12x1	105

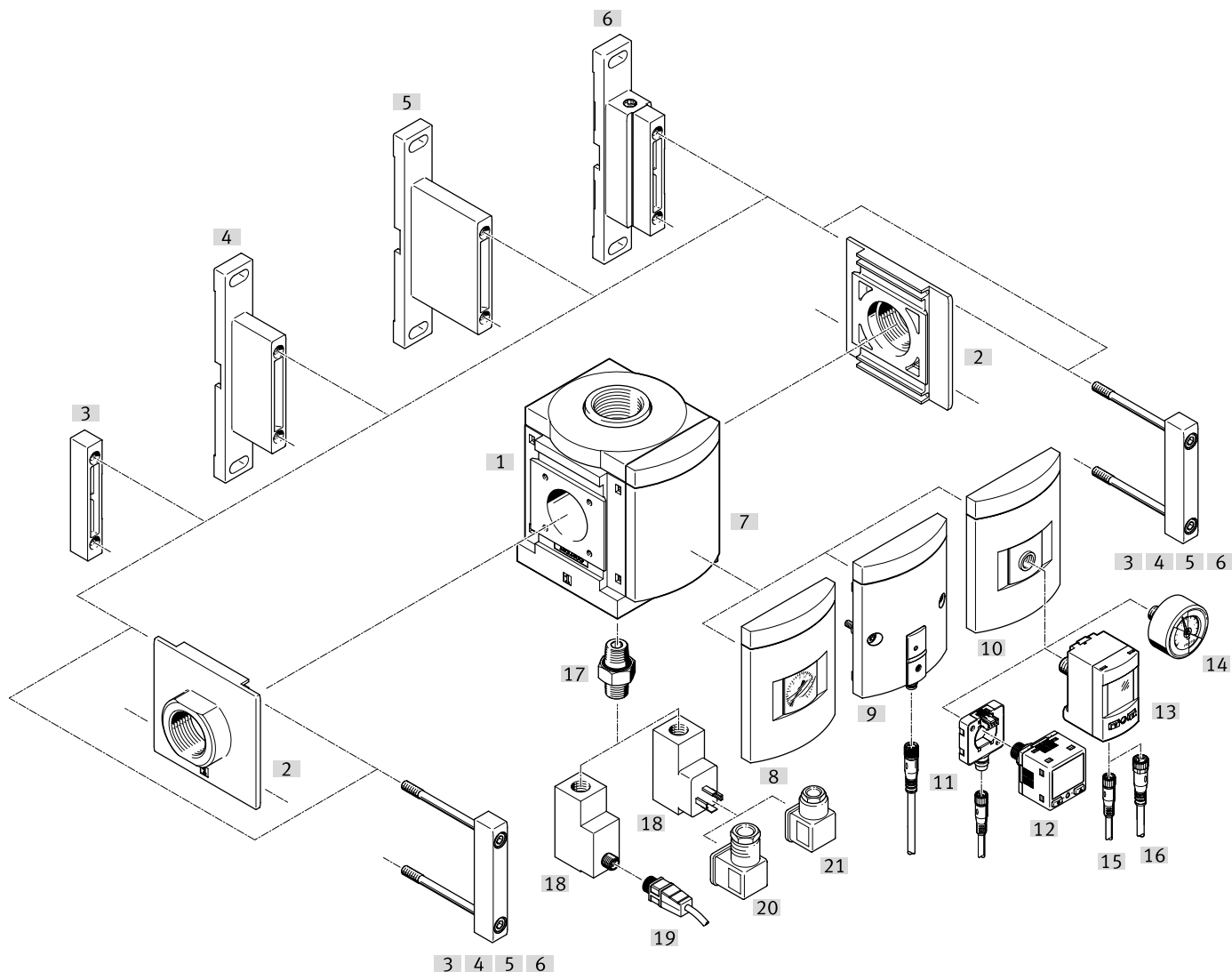
Ordering data

Ordering data						
	Pneumatic connection, port 3	Pneumatic connection, port 4	Pressure switch	Product weight	Part no.	Type
	G1	G1	None	1,000 g	564145	MS9-FRM-G-VS
			Pressure switch PEV without display, plug socket, EN 175301, type A, cube	1,100 g	564147	MS9-FRM-G-VS-Y
	1 NPT	1 NPT	None	1,000 g	564148	MS9-FRM-NG-VS
			Pressure switch PEV without display, plug socket, EN 175301, type A, cube	1,100 g	564150	MS9-FRM-NG-VS-Y

Ordering information – Modular product system			
	Design	Part no.	Type
	Branching module	562534	MS9-FRM

Peripherals

Peripherals overview

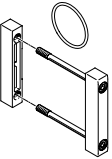


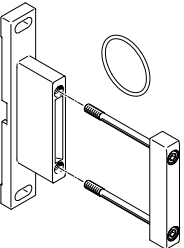
Accessories		→ Link
[1]	Branching module MS9-FRM	ms9-frm
[2]	Connecting plate SET MS9-A...	Order code [AG...]; module connector MS9-MV [3] or mounting bracket MS6-WP [4], WPB [5], WPM [6] is required for mounting. ms9-frm
[3]	Module connector MS9-MV	18
[4]	Mounting bracket MS9-WP	Order code [WP] 18
[5]	Mounting bracket MS9-WPB	Order code [WPB] 18
[6]	Mounting bracket MS9-WPM	Order code [WPM] 18
[7]	Cover plate	Order code [VS] ms9-frm
[8]	Pressure gauge MS	Order code [AG], [RG] ms9-frm
[9]	Pressure sensor with status indicator SDE5	Order code [AD7], [AD8], [AD9], [AD10] sde5
[10]	Adapter for EN pressure gauge 1/8, 1/4	Order code [A8], [A4] ms9-frm
[11]	Electrical adapter SASC	18
[12]	Pressure sensor SPAN	19
[13]	Pressure sensor SPAU-...-T	19
[14]	Pressure gauge MA	19
[15]	Connecting cable NEBA-M8...-LE3	19
[16]	Connecting cable NEBA-M8...-LE4, NEBA-M12...-LE4	19
[17]	Double nipple ESK	Included in the scope of delivery 20
[18]	Pressure switch PEV	Order code: [X], [Y], [M12], module connector [3] is included in the scope of delivery. pev

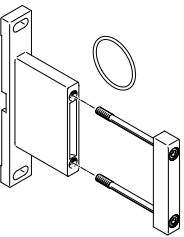
Peripherals

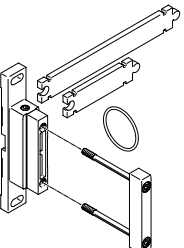
Accessories		→ Link
Type/order code	Description	
[19]	Connecting cable NEBA-M12...-LE4	19
[20]	Angled plug socket PEV-1/4-WD-LED-...	20
[21]	Plug socket MSSD-C-4P	20

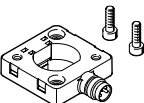
Accessories

Module connector MS9-MV			
	Size	Part no.	Type
	9	552950	MS9-MV

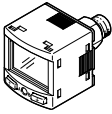
Mounting bracket MS9-WP			
	Size	Part no.	Type
	9	552947	MS9-WP

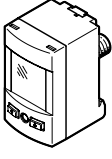
Mounting bracket MS9-WPB			
	Size	Part no.	Type
	9	552949	MS9-WPB

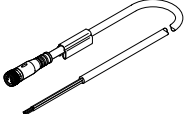
Mounting bracket MS9-WBM			
	Size	Part no.	Type
	9	552948	MS9-WPM

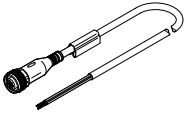
Electrical adapter SASC			
	Short type code	Part no.	Type
	SASC	★ 8000326	SASC-P4-A-M8-A

Accessories

Pressure sensor SPAN					
	Pneumatic connection	Analogue output	Part no.	Type	
	Male thread G1/8, Female thread M5		★ 8035544	SPAN-P10R-G18M-PN-PN-L1	
		0 - 10 V, 4 - 20 mA, 1 - 5 V	★ 8035533	SPAN-P10R-G18M-PNLK-PNVBA-L1	
	Male thread R1/8, Female thread M5		★ 8035547	SPAN-P10R-R18M-PN-PN-L1	
		0 - 10 V, 4 - 20 mA, 1 - 5 V	★ 8035536	SPAN-P10R-R18M-PNLK-PNVBA-L1	

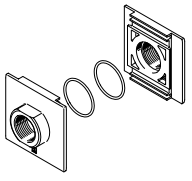
Pressure sensor SPAU-...-T					
	Pneumatic connection	Electrical connection 1, connector system	Part no.	Type	
	R1/8	M12x1, A-coded to EN 61076-2-101	8001206	SPAUP10R-T-R18M-L-PNLK-PNVBA-M12D	
		M8x1, A-coded, to EN 61076-2-104	8001203	SPAUP10R-T-R18M-L-PNLK-PNVBA-M8D	
	R1/4	M12x1, A-coded to EN 61076-2-101	8001208	SPAUP10R-T-R14M-L-PNLK-PNVBA-M12D	
		M8x1, A-coded, to EN 61076-2-104	8001209	SPAUP10R-T-R14M-L-PNLK-PNVBA-M8D	

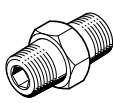
Connecting cable NEBA-M8						
	Electrical connection 1, connector system	Electrical connection 1, number of connections/cores	Electrical connection 1, cable outlet	Cable length	Part no.	Type
	M8x1, A-coded, to EN 61076-2-104	3	Straight	2.5 m	★ 8078223	NEBA-M8G3-U-2.5-N-LE3
				5 m	★ 8078224	NEBA-M8G3-U-5-N-LE3
			Angled	2.5 m	★ 8078230	NEBA-M8W3-U-2.5-N-LE3
				5 m	★ 8078231	NEBA-M8W3-U-5-N-LE3
		4	Straight	2.5 m	★ 8078227	NEBA-M8G4-U-2.5-N-LE4
				5 m	★ 8078228	NEBA-M8G4-U-5-N-LE4
			Angled	2.5 m	★ 8078233	NEBA-M8W4-U-2.5-N-LE4
				5 m	★ 8078234	NEBA-M8W4-U-5-N-LE4

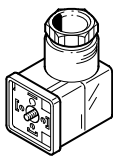
Connecting cable NEBA-M12						
	Electrical connection 1, connector system	Electrical connection 1, number of connections/cores	Electrical connection 1, cable outlet	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	5	Straight	2.5 m	★ 8078239	NEBA-M12G5-U-2.5-N-LE4
					8078236	NEBA-M12G5-U-2.5-N-LE3
				5 m	★ 8078240	NEBA-M12G5-U-5-N-LE4
			Angled		8078237	NEBA-M12G5-U-5-N-LE3
				2.5 m	★ 8078248	NEBA-M12W5-U-2.5-N-LE4
				5 m	★ 8078249	NEBA-M12W5-U-5-N-LE4

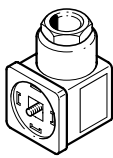
Pressure gauge MA			
	Pneumatic connection	Part no.	Type
	G1/4	183901	MA-40-16-G1/4-EN
	R1/8	525726	MA-40-16-R1/8-E-RG
	R1/4	187080	MA-40-16-R1/4-EN
		525729	MA-50-16-R1/4-E-RG

Accessories

Connecting plate SET MS9-A...					
	Size	Pneumatic connection, port 1	Pneumatic connection, port 2	Part no.	Type
	9	G1/2	G1/2	552954	MS9-AGD
		G3/4	G3/4	552955	MS9-AGE
		G1	G1	552956	MS9-AGF
		G1 1/4	G1 1/4	552957	MS9-AGG
		G1 1/2	G1 1/2	552958	MS9-AGH
		1/2 NPT	1/2 NPT	552959	MS9-AQR

Double nipple ESK				
	Pneumatic connection, port 1	Pneumatic connection, port 2	Part no.	Type
	R1/4	R1/4	151521	ESK-1/4-1/4
		R1/2	534153	ESK-1/4-1/2

Angled plug socket PEV						
	Operational voltage range AC	Operational voltage range DC	Electrical connection	Switching status indication	Part no.	Type
		15 ... 30 V		Yellow LED, Green LED	164274	PEV-1/4-WD-LED-24
	150 ... 230 V	140 ... 180 V			164275	PEV-1/4-WD-LED-230

Plug socket MSSD				
	Electrical connection	Type of mounting	Part no.	Type
	3-pin, Angled socket, Type A, To DIN EN 175301-803, Square design MSC, Square design MSN1	On solenoid valve via M3 central screw	171157	MSSD-C-4P