

Flow sensor SFAM

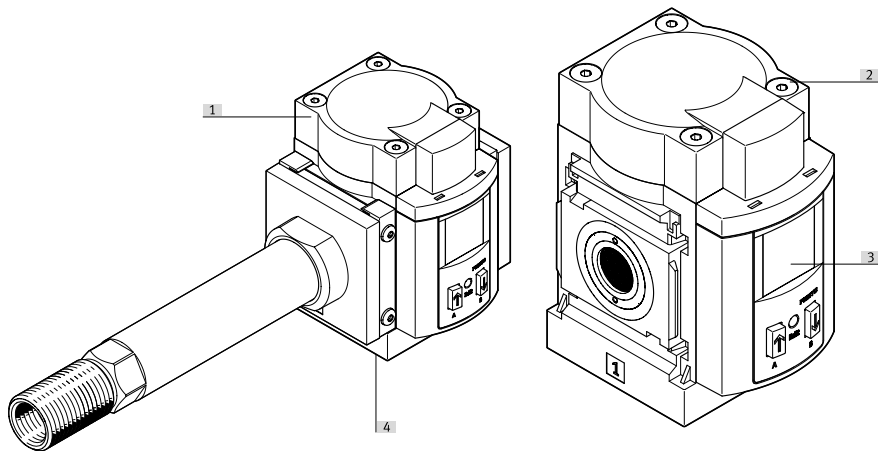
FESTO



Characteristics

At a glance

Further information → [sfam](#)



[1] Threaded mounting of individual device with laminar flow inlet

[2] Can be combined with components from the MS6 or MS9 series service units

[3] Bright LCD display with blue background and white 9-segment display. Bar chart depicts the current measured value. Colour change depending on switching point

[4] Central connection with M12 plug

Characteristics

Description

The flow sensor SFAM is suitable for monitoring compressed air and certain inert gases. Measurement is based on a thermal principle. The bypass design reduces the susceptibility to particles and moisture. The flow value as well as the pressure and the temperature of the medium can be transmitted to the connected controller as a switching and analogue signal or via IO-Link®. Thanks to the high measuring dynamics of 1:100, a measuring range of 10 to 15,000 litres can be covered in just 6 variants.

High flow rates and compact

- The modular flow sensor can be used as a stand-alone device or can be ideally combined with components from the service units of the MS-6 and MS-9 series.
- There are six different versions that together cover a very large measuring range of 10 to a maximum of 15,000 litres.

One for everything

- The built-in pressure sensor and temperature measurement offer a wide range of options for process monitoring and control.
- In addition, by eliminating the need for an additional pressure sensor the installation effort and costs can be minimised.
- The ability to measure the gases Ar, N₂, and CO₂ also allows you to monitor inert gas applications.
- Systematically more reliable

Versatile functions

- Absolute flow information with threshold values and convenient switching point adjustment via a display or IO-Link®
- Absolute pressure information with threshold values and switching point setting
- Absolute temperature information with threshold values and switching point setting
- Cumulative consumption measurement/recorder function
- Patented, adjustable consumption switching signal for air consumption measurement at control level
- The display shows the measured values and IODD in common units
- Switchable electrical outputs. Choice between PNP/NPN, NO/NC and analogue current or voltage output
- Min./max. value memory
- Optional security code can be freely selected (4 digit code), for perfect tamper protection
- ECO function with option to switch off the display
- Replicating function for easy transfer of the set parameters between two identical sensors
- Adjustable colour of the display for clear visualisation of switching statuses

IO-Link® communication

- Bidirectional communication between sensor and master via IO-Link®
- Cyclical transfer of measured values and switching statuses
- The sensor can be parameterised remotely using an IO-Link® master
- Sensors are easy to replace thanks to auto-parameterisation
- Sensor identification, diagnostics and teach-in possible via IO-Link®
- Cost-effective and standardised M12 connecting cable

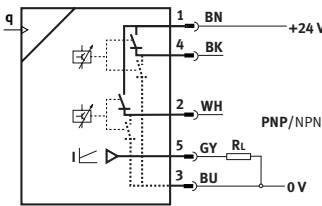
Area of application

- Compressed air consumption measurements
- Pneumatic energy consumption measurements
- Energy efficiency monitoring
- Leakage detection

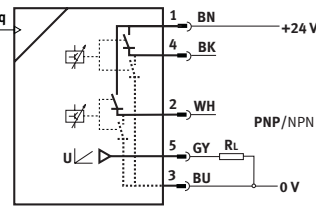
Characteristics

Electrical output 1

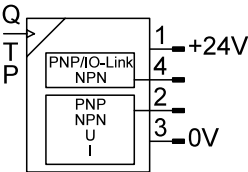
[2SA] 2x PNP or NPN, 1 analogue output 4 ... 20 mA



[2SV] 2x PNP or NPN, 1 analogue output 0 ... 10 V

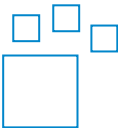


[PNLK] PNP/NPN/IO-Link



Ordering data - modular system

Further information → sfam



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

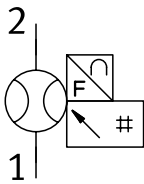
Type code

001	Series	
SFAM	Flow sensor	
002	Size [mm]	
62	62	
90	90	
003	Flow measuring range	
1000	Max. 1000 l/min	
3000	Max. 3000 l/min	
5000	Max. 5000 l/min	
10000	Max. 10000 l/min	
15000	Max. 15000 l/min	
004	Flow rate input	
L	Unidirectional, from left	
R	Unidirectional, from right	
005	Type of mounting	
M	Manifold assembly	
T	Threaded mounting	
W	Wall mounting	
006	Pneumatic connection	
	None	
G1	G1	
G12	G1/2	
G112	G1 1/2	
N1	1 NPT	
N12	1/2 NPT	
N112	1 1/2 NPT	
007	Electrical output 1	
2SA	2x PNP or NPN, 1 analogue output 4 ... 20 mA	
2SV	2x PNP or NPN, 1 analogue output 0 ... 10 V	
PNLK	PNP/NPN/IO-Link	

008	Electrical output 2	
	None	
PNVBA	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	
009	Electrical connection	
M12	Plug M12, A-coded	
010	Connecting cable, straight socket	
	None	
2.5S	2.5 m	
5S	5 m	
011	Connecting cable, angled plug socket	
	None	
2.5A	2.5 m	
5A	5 m	
012	Additional function	
	None	
EMD	Energy efficiency and maintenance diagnosis	
013	EU certification	
	None	
EX2	II 3GD	
014	Electrical accessories	
	None	
2.5A	Angled socket, cable 2.5 m	
2.5S	Straight socket, cable 2.5 m	
5A	Angled socket, cable 5 m	
5S	Straight socket, cable 5 m	
015	Certificate	
	None	
T	Test report	

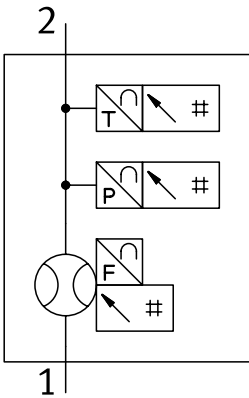
Datasheet

General technical data 2SA, 2SV



Approval	RCM trademark, c UL us - Recognized (OL)
CE mark (see declaration of conformity)	To EU EMC Directive, To EU Explosion Protection Directive (ATEX), In accordance with EU RoHS Directive
CE marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
ATEX category gas	II 3G
Explosion ignition protection type for gas	Ex nA IIC T5 X Gc
ATEX category dust	II 3D
Explosion ignition protection type for dust	Ex tc IIIB T80°C X Dc IP54
Explosion ambient temperature	0°C <= Ta <= +50°C
Certificate issuing authority	UL E322346
Note on materials	RoHS-compliant

General technical data PNLK-PNVBA



Approval	RCM trademark
CE mark (see declaration of conformity)	To EU EMC Directive, In accordance with EU RoHS Directive
CE marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
ATEX category gas	–
Explosion ignition protection type for gas	–
ATEX category dust	–
Explosion ignition protection type for dust	–
Explosion ambient temperature	–
Certificate issuing authority	–
Note on materials	RoHS-compliant

Datasheet

Input signal, measuring element 2SA, 2SV

Size [mm]	62			90	
Flow measuring range	Max. 1000 l/min	Max. 3000 l/min	Max. 5000 l/min	Max. 10000 l/min	Max. 15000 l/min
Measured variable	Volume, Volumetric flow rate				
Flow direction	Unidirectional, From left to right				
Measuring principle	Thermal				
Measurement method	Heat Loss				
Start value for flow rate measuring range	10 l/min	30 l/min	50 l/min	100 l/min	150 l/min
End value for flow rate measuring range	1,000 l/min	3,000 l/min	5,000 l/min	10,000 l/min	15,000 l/min
Operating pressure	1.6 MPa				
Operating pressure	232 psi				
Operating pressure	16 bar				
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], Nitrogen				
Media temperature	0 ... 50°C				
Ambient temperature	0 ... 50°C				
Nominal temperature	23°C				

Input signal, measuring element PNK-PNVBA

Size [mm]	62			90	
Flow measuring range	Max. 1000 l/min	Max. 3000 l/min	Max. 5000 l/min	Max. 10000 l/min	Max. 15000 l/min
Measured variable	Pressure, Mass flow rate, Temperature, Volume, Volumetric flow rate				
Flow direction	Unidirectional, From left to right				
Measuring principle	Thermal				
Measurement method	Heat transfer				
Start value for flow rate measuring range	10 l/min	30 l/min	50 l/min	100 l/min	150 l/min
End value for flow rate measuring range	1,000 l/min	3,000 l/min	5,000 l/min	10,000 l/min	15,000 l/min
Temperature measurement start value	0°C				
Temperature measurement end value	50°C				
Start value for pressure measuring range	0 MPa				
Start value for pressure measuring range	0 bar				
Start value for pressure measuring range	0 psi				
End value for pressure measuring range	1.6 MPa				
End value for pressure measuring range	16 bar				
End value for pressure measuring range	232 psi				
Operating pressure	1.6 MPa				
Operating pressure	16 bar				
Operating pressure	232 psi				
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4], Nitrogen				
Media temperature	0 ... 50°C				
Ambient temperature	0 ... 50°C				
Nominal temperature	23°C				

Datasheet

Output, general 2SA, 2SV

Accuracy of flow rate	± (3% o.m.v. + 0.3% FS)
Repetition accuracy offset in ± %FS	0.2 %FS
Repetition accuracy span in ± %FS	0.8 %FS
Temperature coefficient span in ± %FS/K	Typ. 0.1%FS/K
Pressure influence span in ± %FS/bar	0.5

Output, general PNLK-PNVBA

Accuracy of flow rate	± (3% o.m.v. + 0.3% FS)
Repetition accuracy offset in ± %FS	0.2 %FS
Repetition accuracy span in ± %FS	0.8 %FS
Temperature coefficient span in ± %FS/K	Typ. 0.1%FS/K
Temperature coefficient in ± %FS/K	0.05 %FS/K
Pressure influence span in ± %FS/bar	0.5 %FS/b.
Accuracy in ± % FS ¹⁾	1.5 %FS
Repetition accuracy ²⁾	—
Accuracy temperature in ± °C	5°C

1) Values for pressure measurement

2) Values for pressure measurement

Switching output

Switching output	2 x PNP or 2 x NPN, switchable
Switching function	Window comparator or threshold value comparator, adjustable
Switching element function	N/C or N/O contact, switchable
Max. output current	100 mA

Datasheet

Analogue output 2SA, 2SV

Size [mm]	62						90					
Flow measuring range	Max. 1000 l/min		Max. 3000 l/min		Max. 5000 l/min				Max. 10000 l/min		Max. 15000 l/min	
Analogue output	0 - 10 V	4 - 20 mA	0 - 10 V	4 - 20 mA	0 - 10 V	4 - 20 mA	0 - 10 V	4 - 20 mA	0 - 10 V	4 - 20 mA	0 - 10 V	4 - 20 mA
Flow characteristic curve start value	0 l/min											
Flow characteristic curve end value	1,000 l/min		3,000 ... 5,000 l/min	3,000 l/min	5,000 l/min				10,000 l/min		15,000 l/min	
Temperature characteristic curve start value	—											
Temperature characteristic curve end value	—											
Output characteristic curve start value ¹⁾	0 V	—	0 V	—	0 V	—	0 V	—	0 V	—	0 V	—
Output characteristic curve end value ²⁾	10 V	—	10 V	—	10 V	—	10 V	—	10 V	—	10 V	—
Output characteristic curve starting value ³⁾	—	4 mA	—	4 mA	—	4 mA	—	4 mA	—	4 mA	—	4 mA
Output characteristic curve end value ⁴⁾	—	20 mA	—	20 mA	—	20 mA	—	20 mA	—	20 mA	—	20 mA
Max. load resistance current output	—	500 Ohm	—	500 Ohm	—	500 Ohm	—	500 Ohm	—	500 Ohm	—	500 Ohm
Min. load resistance voltage output	10 kOhm	—	10 kOhm	—	10 kOhm	—	10 kOhm	—	10 kOhm	—	10 kOhm	—

1) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

2) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

3) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

4) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

Analogue output PNLK-PNVBA

Size [mm]	62			90		
Flow measuring range	Max. 1000 l/min	Max. 3000 l/min	Max. 5000 l/min		Max. 10000 l/min	Max. 15000 l/min
Analogue output	0 - 10 V, 4 - 20 mA, 1 - 5 V					
Flow characteristic curve start value	0 l/min					
Flow characteristic curve end value	1,000 l/min	3,000 l/min	5,000 l/min		10,000 l/min	15,000 l/min
Temperature characteristic curve start value	0°C					
Temperature characteristic curve end value	100°C					
Output characteristic curve start value ¹⁾	0 V					
Output characteristic curve end value ²⁾	10 V					
Output characteristic curve starting value ³⁾	4 mA					
Output characteristic curve end value ⁴⁾	20 mA					
Max. load resistance current output	500 Ohm					
Min. load resistance voltage output	20 kOhm					

1) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

2) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

3) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

4) Start and end values can be exceeded or are not reached depending on the scaling of the analogue output and the flow value.

Output, additional data

Short circuit current rating	yes
Overload protection	Available

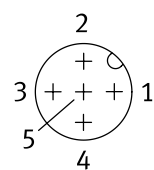
Datasheet

Communication interface	
Protocol	IO-Link®
IO-Link, revision ID	V1.1
IO-Link, device profile	Function Extended identification, Function Measurement data, standard resolution, Function Multiple switching signal, Firmware update, Function locator, Function Product URI, Function Teach single value, Identification and diagnostics, Smart sensor - SSP 4.1.2
IO-Link, transmission rate	COM3
IO-Link, SIO-Mode support	Yes
IO-Link, port type	Class A
IO-Link, process data length input	96
IO-Link, Process data content IN	Flow rate measured value 16-bit MDC, Flow rate monitoring 2-bit SSC, Temperature measured value 16 bit MDC, Temperature monitoring 2-bit SSC, Volume / mass pulse 1 bit SSC, Pressure measured value 16 bit MDC, Pressure monitoring 2 bit SSC
IO-Link, Service data IN	Volume/mass measured value 32 bit
IO-Link, minimum cycle time	1.5
IO-Link, Data storage required	0.5

Electronics 2SA, 2SV	
Operational voltage range DC	15 ... 30 V
Reverse polarity protection	For all electrical connections

Electronics PNLK-PNVBA	
Operational voltage range DC	18 ... 30 V
Reverse polarity protection	For all electrical connections

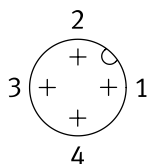
Electromechanics 2SA, 2SV



Electrical connection 1, connection type	Plugs
Electrical connection 1, connector system	M12x1, A-coded to EN 61076-2-101
Electrical connection 1, number of connections/cores	5
Electrical connection 1, used connections/cores	5
Electrical connection 1, type of mounting	Screw-type lock
Max. cable length	30 m

Datasheet

Electromechanics PNLK-PNVBA



Electrical connection 1, connection type	Plugs
Electrical connection 1, connector system	M12x1, A-coded to EN 61076-2-101
Electrical connection 1, number of connections/cores	5
Electrical connection 1, used connections/cores	4
Electrical connection 1, type of mounting	Screw-type lock
Max. cable length	20 m with IO-Link® operation, 30 m

Mechanical components

Size [mm]	62						90					
Flow measuring range	Max. 1000 l/min		Max. 3000 l/min		Max. 5000 l/min				Max. 10000 l/min		Max. 15000 l/min	
Type of mounting	In-line installation	On service unit	In-line installation	On service unit	In-line installation	On service unit	In-line installation	On service unit	In-line installation	On service unit	In-line installation	On service unit
Pneumatic connection ¹⁾	G1/2	Manifold module	G1/2	Manifold module	G1/2	Manifold module	G1	Manifold module	G1 1/2	Manifold module	G1 1/2	Manifold module
Mounting position	Horizontal											
Material housing	Die-cast aluminium, PA-reinforced											
Product weight	600 ... 1,100 g	600 g	600 ... 1,100 g	600 g	600 ... 1,100 g	600 g	600 ... 2,400 g	600 ... 1,500 g	600 ... 2,750 g	600 ... 1,500 g	600 ... 2,750 g	600 ... 1,500 g

- 1) G12 corresponds to the connecting plate and laminar flow inlet with female thread G1/2" and male thread G3/4"
N12 corresponds to the connecting plate and laminar flow inlet with female thread 1/2 NPT and male thread 3/4 NPT
G1 corresponds to the connecting plate and laminar flow inlet with female thread G1" and male thread G1 1/2"
N1 corresponds to the connecting plate and laminar flow inlet with female thread 1 NPT and male thread 1 1/2 NPT
G112 corresponds to the connecting plate and laminar flow inlet with female thread G1 1/2" and male thread G2"
N112 corresponds to the connecting plate and laminar flow inlet with female thread 1 1/2 NPT and male thread 2 NPT

Display, operation 2SA, 2SV

Size [mm]	62			90		
Flow measuring range	Max. 1000 l/min	Max. 3000 l/min	Max. 5000 l/min		Max. 10000 l/min	Max. 15000 l/min
Display type	Illuminated LCD, multi-colour					
Displayable units	l, l/min, m3, scf, scfm					
Setting options	Teach-in, Via display and keys					
Protection against tampering	PIN code					
Setting range threshold value	1 ... 100%					
Setting range hysteresis	0 ... 90%					

Display, operation PNLK-PNVBA

Size [mm]	62			90		
Flow measuring range	Max. 1000 l/min	Max. 3000 l/min	Max. 5000 l/min		Max. 10000 l/min	Max. 15000 l/min
Display type	Illuminated LCD, multi-colour					
Displayable units	MPa, bar, kPa, kg, kg/min, l, l/min, m3, m3/h, psi, scfm, scft, °C, °F					
Setting options	IO-Link®, Teach-in, Via display and keys					
Protection against tampering	IO-Link, PIN code					
Setting range threshold value	0 ... 100%					
Setting range hysteresis	0 ... 90%					

Datasheet

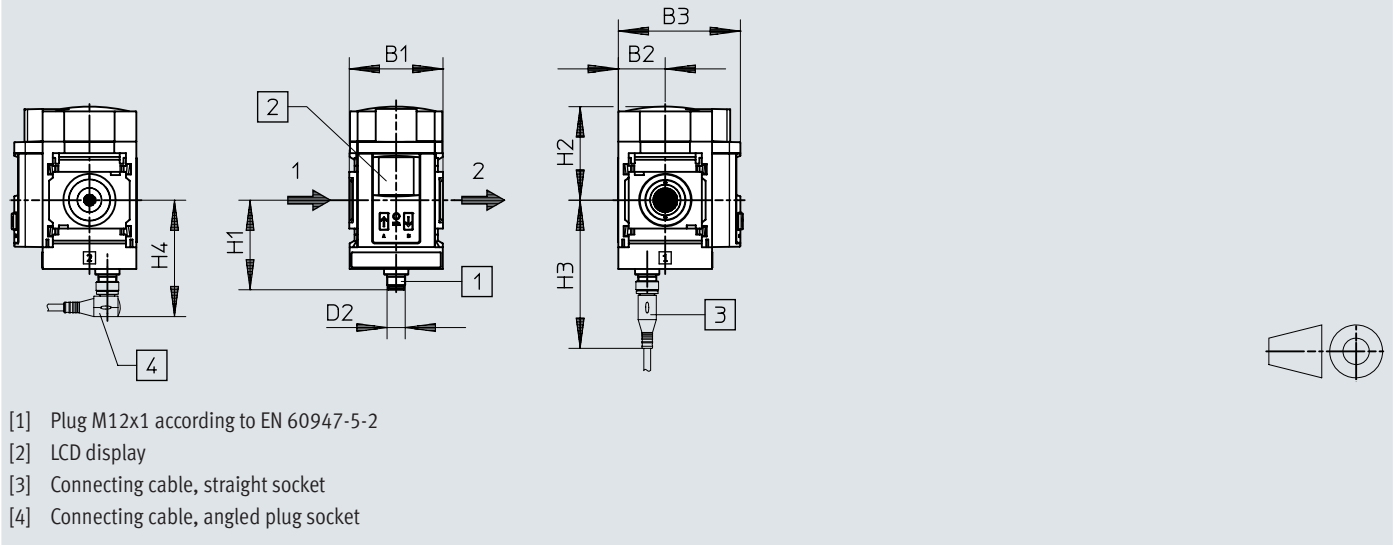
Immission, emission 2SA, 2SV	
Degree of protection	IP65
Protection class	III
Corrosion resistance class CRC	2 - Moderate corrosion stress
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Immission, emission PNLK-PNVBA	
Degree of protection	IP65, IP60
Protection class	III
Corrosion resistance class CRC	2 - Moderate corrosion stress
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Dimensions

Dimensions – SFAM-62-...-M for battery assembly in service unit component combination MS6 series

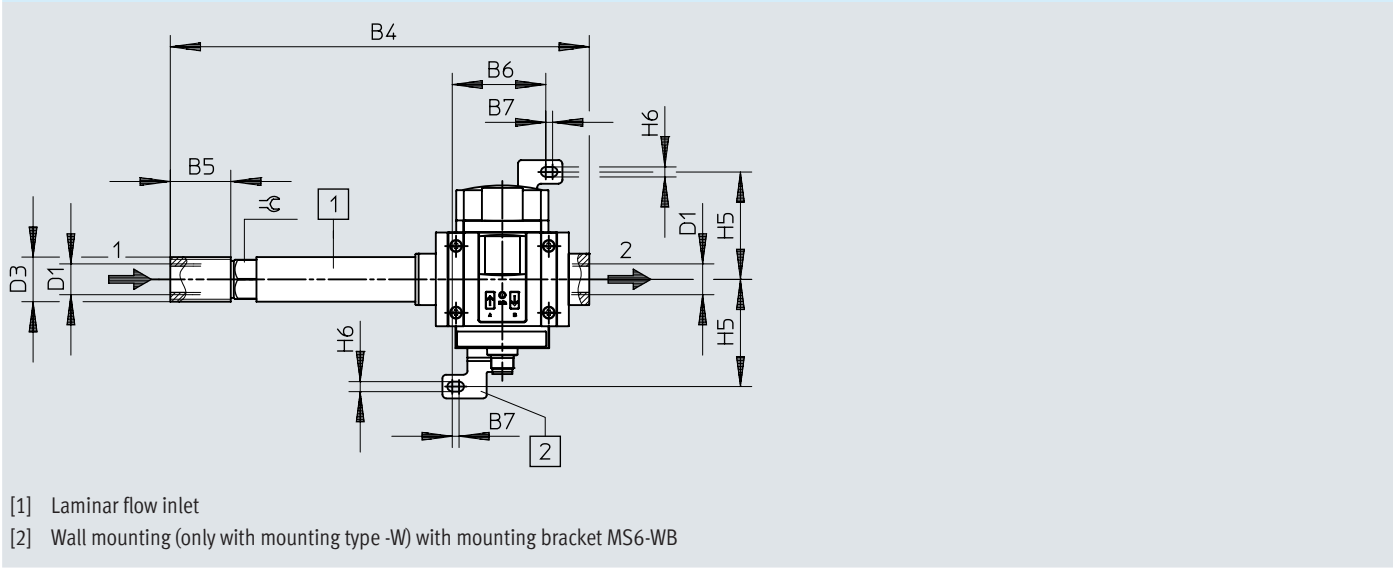
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	B1	B2	B3	D2	H1	H2	H3	H4
SFAM-62-...-M	62	31	81	M12x1	59,3	61,9	~98	~76,4

Dimensions

Dimensions – SFAM-62-...-T/W for single mounting Download CAD data → www.festo.com

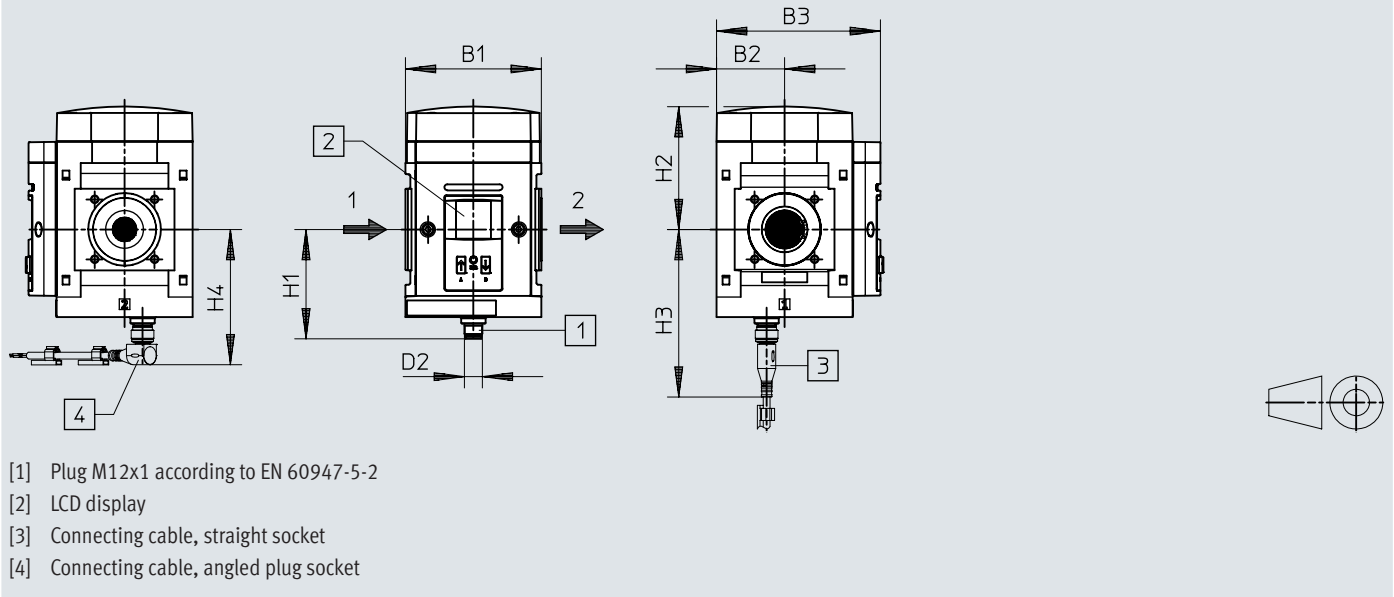


	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	H1	H2	H3	H4	H5	H6	⌀G
SFAM-62-...-TG12	62	31	78,7	277	40	-	-	G 1/2	M12x1	G 3/4	63,5	62,1	101	80	-	-	26
SFAM-62-...-WG12						61,9	4,5								71	6,6	
SFAM-62-...-TN12	62	31	78,7	277	40	-	-	1/2 NPT	M12x1	NPT 3/4	63,5	62,1	101	80	-	-	26
SFAM-62-...-WN12						61,9	4,5								71	6,6	

Dimensions

Dimensions – SFAM-90-...-M for battery assembly in service unit component combination MS9 series

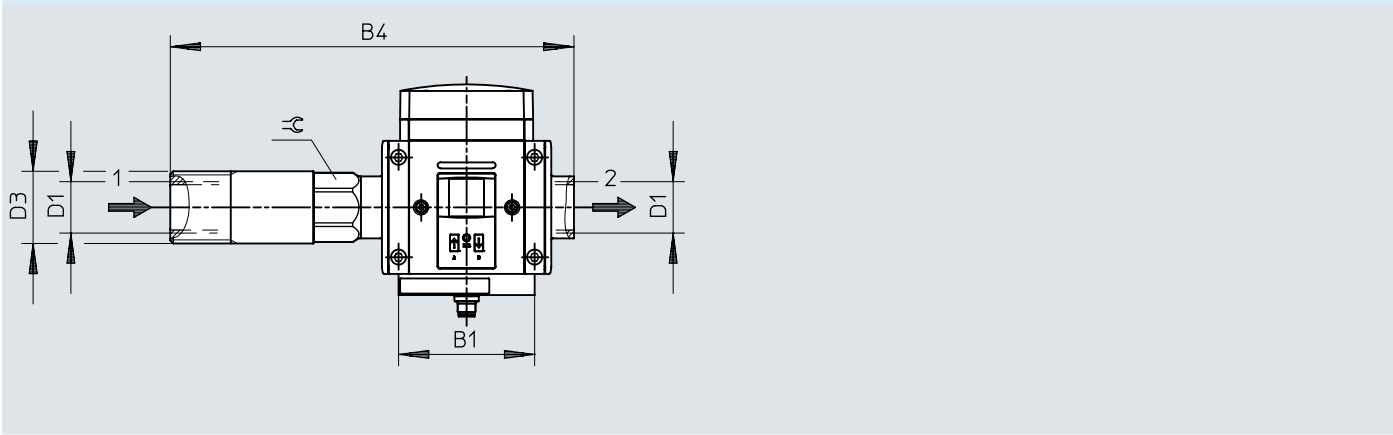
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	B1	B2	B3	D2	H1	H2	H3	H4
SFAM-90-...-M	90	45	108,5	M12x1	72,3	81,2	~111	~89,4

Dimensions

Dimensions – SFAM-90-...-T for individual mounting Download CAD data → www.festo.com

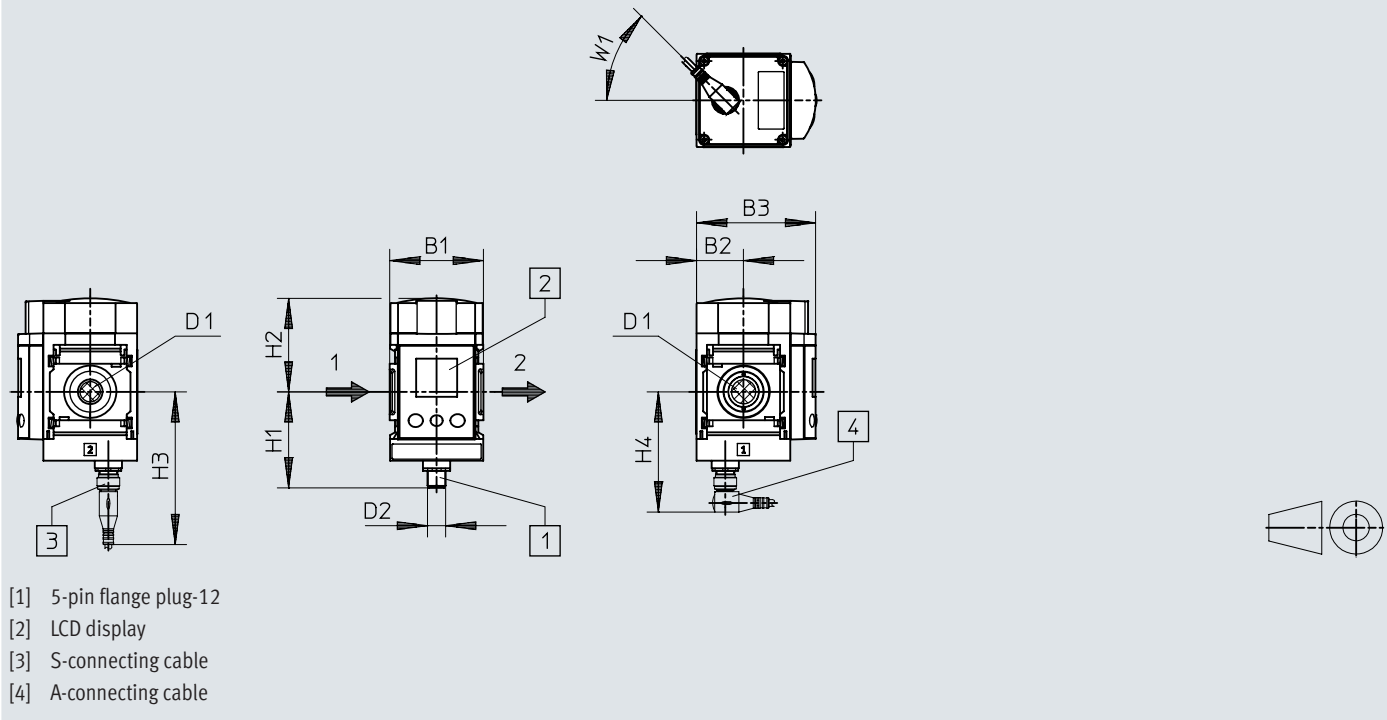


	B1	B4	D1	D3	≅
SFAM-90-...-TG1	90	267	G 1	G 1 1/2	41
SFAM-90-...-TG112		301	G 1 1/2	G2	55
SFAM-90-...-TN1	90	267	1 NPT	1 1/2 NPT	41
SFAM-90-...-TN112		301	1 1/2 NPT	2 NPT	55

Dimensions

Dimensions – SFAM-62/90-...L-M-...-2SA/V-M12-...

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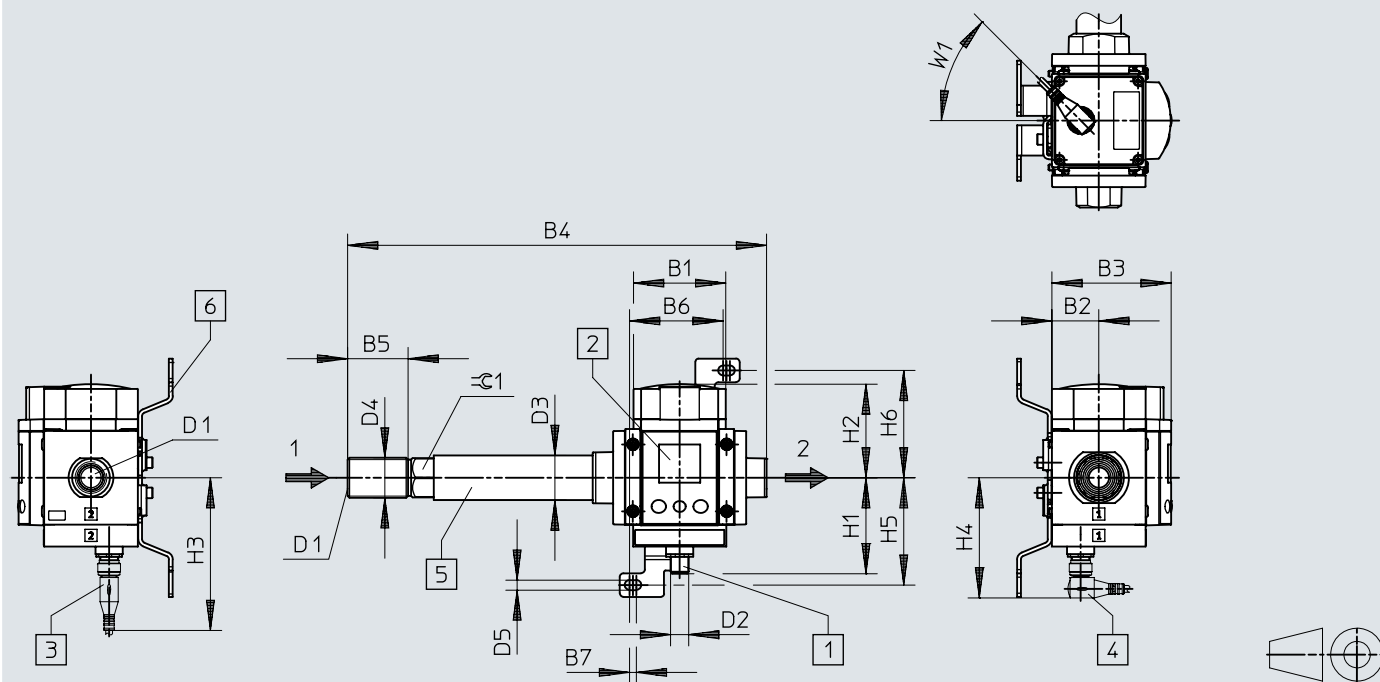


	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-62-1000L-M-2SA-M12	62	31	78,8	G1/2 1/2NPT	M12x1	63,5	61,9	~101	~80	45°
SFAM-62-1000L-M-2SV-M12										
SFAM-62-1000L-M-2SA-M12										
SFAM-62-1000L-M-2SV-M12										
SFAM-62-1000L-M-2SA-M12										
SFAM-62-1000L-M-2SA-M12										
	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-62-90L-M-2SA-M12	90	45	109	G1 NPT1	M12x1	76,5	81,2	~115,2	~93,6	45°
SFAM-62-90L-M-2SV-M12										
SFAM-62-90L-M-2SA-M12										
SFAM-62-90L-M-2SV-M12										
SFAM-62-90L-M-2SA-M12										
SFAM-62-90L-M-2SA-M12										

Dimensions

Dimensions – SFAM-62/90-...L-TG-...-2SA/V-M12-...

Download CAD data → www.festo.com



- [1] 5-pin flange plug-12
- [2] LCD display
- [3] S-connecting cable
- [4] A-connecting cable
- [5] Laminar flow inlet
- [6] Wall bracket only with type of mounting W

Dimensions

	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3
SFAM-62-1000L-M-2SA-M12	62	31	78,8	~277	~40	61,9	4,5	G1/2 1/2NPT	M12x1	29,5
SFAM-62-1000L-M-2SV-M12										
SFAM-62-3000L-M-2SA-M12										
SFAM-62-3000L-M-2SV-M12										
SFAM-62-5000L-M-2SA-M12										
SFAM-62-5000L-M-2SV-M12										

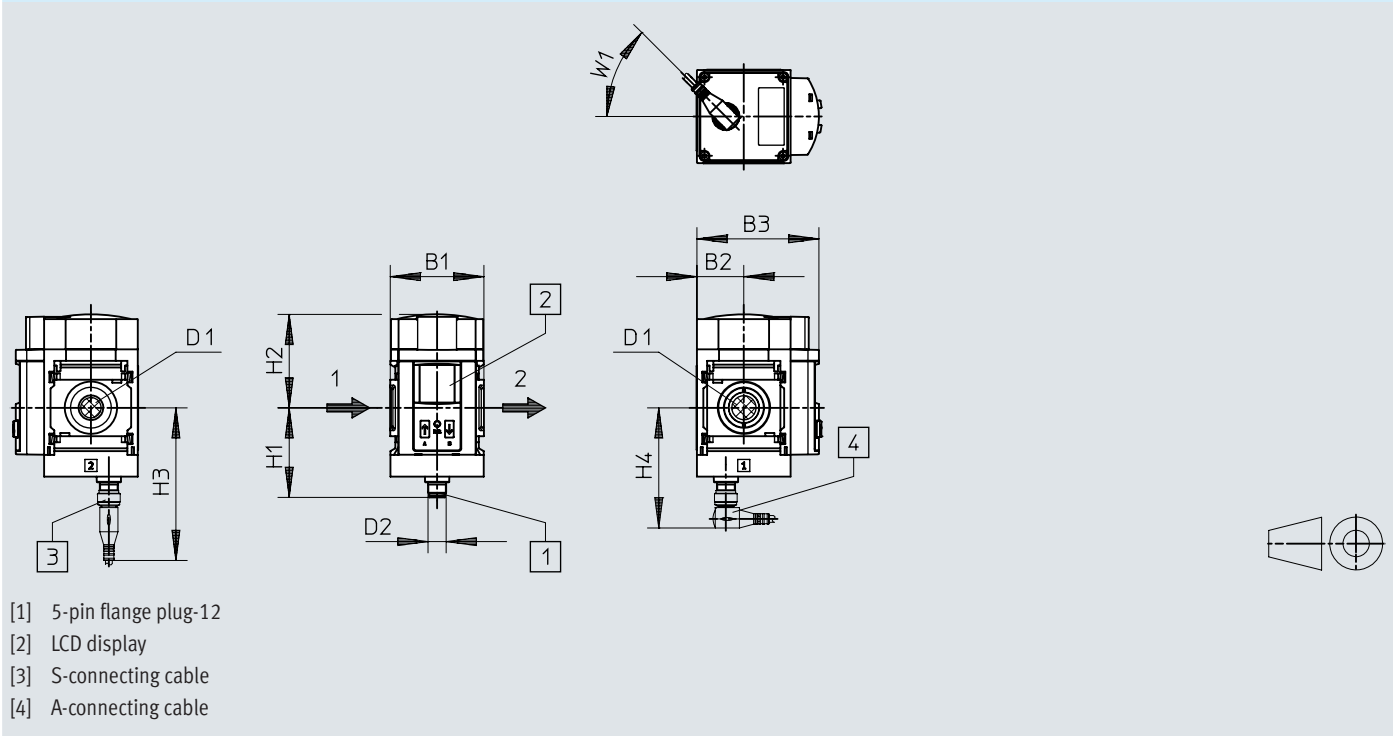
	D4	D5	H1	H2	H3	H4	H5	H6	W1	≈G1
SFAM-62-1000L-M-2SA-M12	G3/4 NPT3/4	6,6	63,5	61,9	~101	~80	71	71	45°	26
SFAM-62-1000L-M-2SV-M12										
SFAM-62-3000L-M-2SA-M12										
SFAM-62-3000L-M-2SV-M12										
SFAM-62-5000L-M-2SA-M12										
SFAM-62-5000L-M-2SV-M12										

	B1	B2	B3	B4	B6	B7	D1	D2	D3
SFAM-90-5000L-TG1-2SA-M12	90	45	109	~267	-	-	G1 NPT1	M12x1	47,8
SFAM-90-5000L-TG1-2SV-M12				~301					59,6
SFAM-90-10000L-TG112-2SA-M12				~267					47,8
SFAM-90-10000L-TG112-2SV-M12				~301					59,6
SFAM-90-15000L-TG112-2SA-M12									
SFAM-90-15000L-TG112-2SV-M12									

	D4	D5	H1	H2	H3	H4	H5	H6	W1	≈G1
SFAM-90-5000L-TG1-2SA-M12	G11/2 / NPT1 1/2	-	76,5	81,2	~115,2	~93,6	-	-	45°	41
SFAM-90-5000L-TG1-2SV-M12	G2 / NPT2									55
SFAM-90-10000L-TG112-2SA-M12										41
SFAM-90-10000L-TG112-2SV-M12	G11/2 / NPT1 1/2									
SFAM-90-15000L-TG112-2SA-M12	G2 / NPT2									55
SFAM-90-15000L-TG112-2SV-M12										

Dimensions

Dimensions – SFAM-62/90-...L-M-...-PNLK-PNVBA-M12-... Download CAD data → www.festo.com



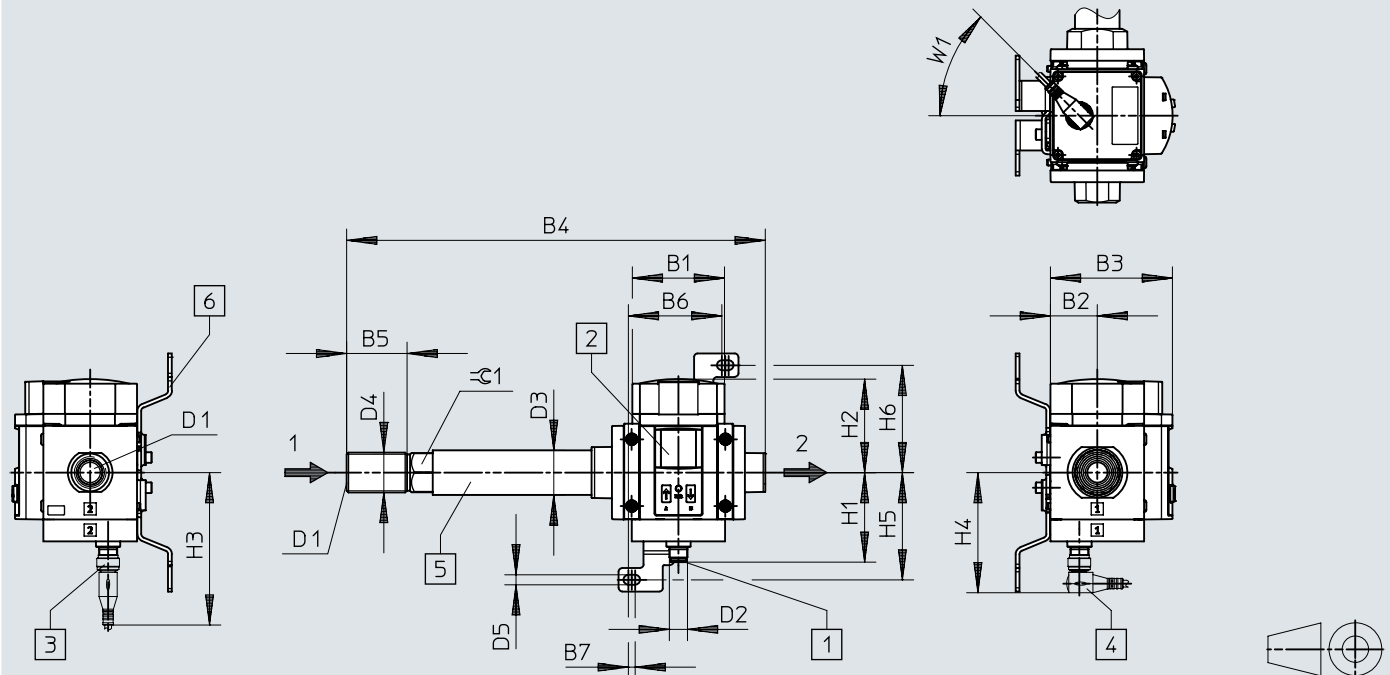
	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-62-1000L-M-...-M12	62	31	81	G1/2 NPT1/2	M12x1	59,3	61,9	~98	~76,4	45°
SFAM-62-3000L-M-...-M12										
SFAM-62-5000L-M-...-M12										

	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-90-5000L-M-TG1-...-M12	62	31	81	G1/2 NPT1/2	M12x1	59,3	61,9	~98	~76,4	45°
SFAM-90-10000L-M-TG112-...-M12										
SFAM-90-15000L-M-TG112-...-M12										

Dimensions

Dimensions – SFAM-62/90-...L-TG-...-PNLK-PNVBA-M12-...

Download CAD data → www.festo.com



- [1] 5-pin flange plug-12
- [2] LCD display
- [3] S-connecting cable
- [4] A-connecting cable
- [5] Laminar flow inlet
- [6] Wall bracket only with type of mounting W

	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3
SFAM-62-1000L-TG12-...-M12	62	31	81	~277	~40	61,9	4,5	G1/2 NPT 1/2	M12x1	29,5
SFAM-62-3000L-TG12-...-M12										
SFAM-62-5000L-TG12-...-M12										

	D4	D5	H1	H2	H3	H4	H5	H6	W1	±G1
SFAM-62-1000L-TG12-...-M12	G3/4 NPT3/4	6,6	59,3	61,9	~98	~76,4	71	71	45°	26
SFAM-62-3000L-TG12-...-M12										
SFAM-62-5000L-TG12-...-M12										

	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3
SFAM-90-5000L-TG1-...-M12	90	45	108,5	~267	-	-	-	G1 NPT1	M12x1	47,8
SFAM-90-10000L-TG112-...-M12				~301						59,6
SFAM-90-15000L-TG112-...-M12										

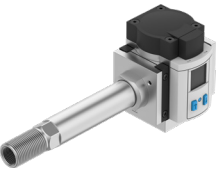
	D4	D5	H1	H2	H3	H4	H5	H6	W1	±G1
SFAM-90-5000L-TG1-...-M12	G2 NPT2	-	72,3	81,2	~111	~89,4	-	-	45°	41
SFAM-90-10000L-TG112-...-M12										55
SFAM-90-15000L-TG112-...-M12										

Ordering data

Manifold assembly in service unit component combination MS series

	Start value for flow rate measuring range	End value for flow rate measuring range	Electrical output 1	Part no.	Type
	10 l/min	1,000 l/min	2x PNP or NPN, 1 analogue output 4 ... 20 mA	564930	SFAM-62-1000L-M-2SA-M12
			2x PNP or NPN, 1 analogue output 0 ... 10 V	564932	SFAM-62-1000L-M-2SV-M12
	30 l/min	3,000 l/min	2x PNP or NPN, 1 analogue output 4 ... 20 mA	564934	SFAM-62-3000L-M-2SA-M12
			2x PNP or NPN, 1 analogue output 0 ... 10 V	564936	SFAM-62-3000L-M-2SV-M12
	50 l/min	5,000 l/min	2x PNP or NPN, 1 analogue output 4 ... 20 mA	564938	SFAM-62-5000L-M-2SA-M12
				573346	SFAM-90-5000L-M-2SA-M12
			2x PNP or NPN, 1 analogue output 0 ... 10 V	573347	SFAM-90-5000L-M-2SV-M12
				564940	SFAM-62-5000L-M-2SV-M12
	100 l/min	10,000 l/min	2x PNP or NPN, 1 analogue output 4 ... 20 mA	573348	SFAM-90-10000L-M-2SA-M12
			2x PNP or NPN, 1 analogue output 0 ... 10 V	573349	SFAM-90-10000L-M-2SV-M12
	150 l/min	15,000 l/min	2x PNP or NPN, 1 analogue output 4 ... 20 mA	573350	SFAM-90-15000L-M-2SA-M12
			2x PNP or NPN, 1 analogue output 0 ... 10 V	573351	SFAM-90-15000L-M-2SV-M12

Threaded mounting of individual device

	Electrical output 1	Start value for flow rate measuring range	End value for flow rate measuring range	Part no.	Type
	2x PNP or NPN, 1 analogue output 4 ... 20 mA	10 l/min	1,000 l/min	565375	SFAM-62-1000L-TG12-2SA-M12
		30 l/min	3,000 l/min	565379	SFAM-62-3000L-TG12-2SA-M12
		50 l/min	5,000 l/min	565383	SFAM-62-5000L-TG12-2SA-M12
				573352	SFAM-90-5000L-TG12-2SA-M12
		100 l/min	10,000 l/min	573354	SFAM-90-10000L-TG112-2SA-M12
		150 l/min	15,000 l/min	573356	SFAM-90-15000L-TG112-2SA-M12
	2x PNP or NPN, 1 analogue output 0 ... 10 V	10 l/min	1,000 l/min	565376	SFAM-62-1000L-TG12-2SV-M12
		30 l/min	3,000 l/min	565380	SFAM-62-3000L-TG12-2SV-M12
		50 l/min	5,000 l/min	573353	SFAM-90-5000L-TG12-2SV-M12
				565384	SFAM-62-5000L-TG12-2SV-M12
		100 l/min	10,000 l/min	573355	SFAM-90-10000L-TG112-2SV-M12
		150 l/min	15,000 l/min	573357	SFAM-90-15000L-TG112-2SV-M12

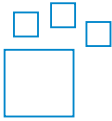
Manifold assembly, PNLK-PNVBA

	Start value for flow rate measuring range	End value for flow rate measuring range	Electrical output 1	Electrical output 2	Part no.	Type
	10 l/min	1,000 l/min	PNP/NPN/IO-Link	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	8181241	SFAM-62-1000L-M-PNLK-PNVBA-M12

Ordering data

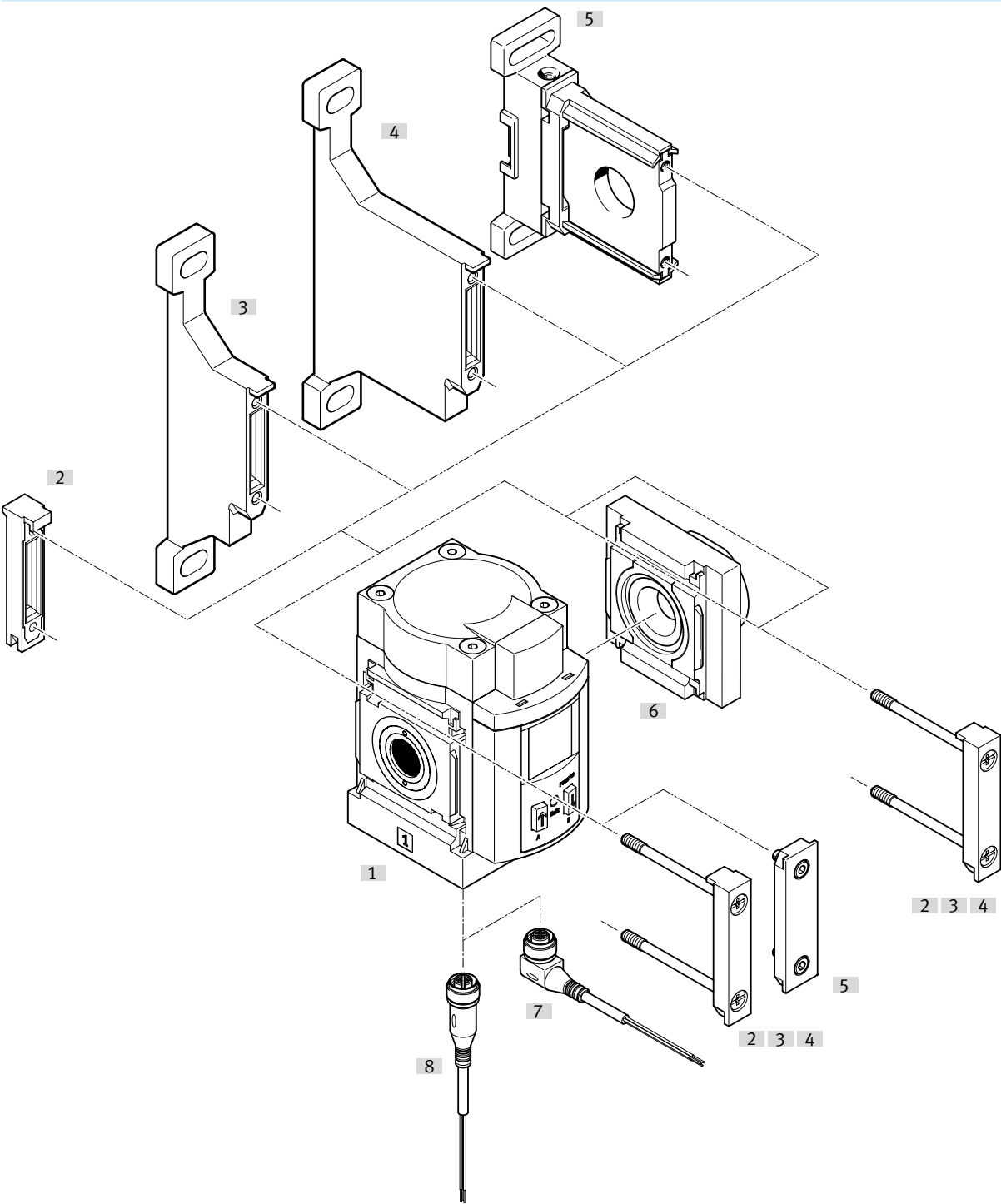
Manifold assembly, PNLK-PNVBA						
	Start value for flow rate measuring range	End value for flow rate measuring range	Electrical output 1	Electrical output 2	Part no.	Type
	30 l/min	3,000 l/min	PNP/NPN/IO-Link	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	8181242	SFAM-62-3000L-M-PNLK-PNVBA-M12
	50 l/min	5,000 l/min			8181247	SFAM-90-5000L-M-PNLK-PNVBA-M12
					8181243	SFAM-62-5000L-M-PNLK-PNVBA-M12
	100 l/min	10,000 l/min			8181248	SFAM-90-10000L-M-PNLK-PNVBA-M12
	150 l/min	15,000 l/min			8181249	SFAM-90-15000L-M-PNLK-PNVBA-M12

Threaded mounting, PNLK-PNVBA					
	Start value for flow rate measuring range	End value for flow rate measuring range	Part no.	Type	
	10 l/min	1,000 l/min	8181244	SFAM-62-1000L-TG12-PNLK-PNVBA-M12	
	30 l/min	3,000 l/min	8181245	SFAM-62-3000L-TG12-PNLK-PNVBA-M12	
	50 l/min	5,000 l/min	8181246	SFAM-62-5000L-TG12-PNLK-PNVBA-M12	
			8181250	SFAM-90-5000L-TG1-PNLK-PNVBA-M12	
	100 l/min	10,000 l/min	8181251	SFAM-90-10000L-TG112-PNLK-PNVBA-M12	
	150 l/min	15,000 l/min	8181252	SFAM-90-15000L-TG112-PNLK-PNVBA-M12	

Ordering information – Modular product system				
	Start value for flow rate measuring range	End value for flow rate measuring range	Part no.	Type
	10 ... 150 l/min	1,000 ... 15000 l/min	563796	SFAM

Peripherals

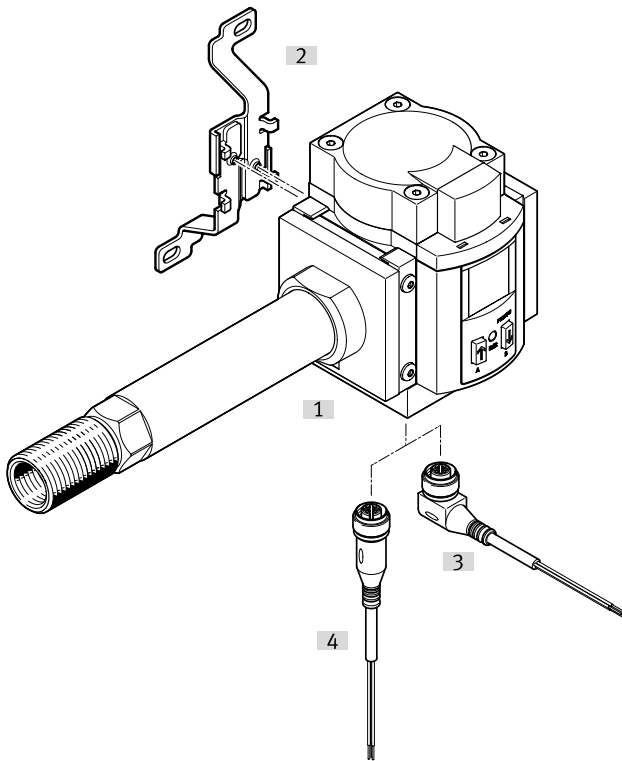
SFAM-62-...-M for manifold assembly in service unit combination MS6 series



Accessories			→ Page/Internet
Type/order code	Description		
[1] Flow sensor SFAM	Flow sensor SFAM		–
[2] Module connector MS6-MV	For manifold assembly in service unit combination MS6 series		ms6-mv
[3] Mounting bracket MS6-WP	For manifold assembly in service unit combination MS6 series		ms6-wp
[4] Mounting bracket MS6-WPB	For manifold assembly in service unit combination MS6 series		ms6-wpb
[5] Mounting bracket MS6-WPM	For manifold assembly in service unit combination MS6 series		ms6-wpm
[6] Connecting plate MS6-AG...	For manifold assembly in service unit combination MS6 series		ms6-ag
[7] Connecting cable NEBA-M12, angled socket	For manifold assembly in service unit combination MS6 series		28
[8] Connecting cable NEBA-M12, straight socket	For manifold assembly in service unit combination MS6 series		28

Peripherals

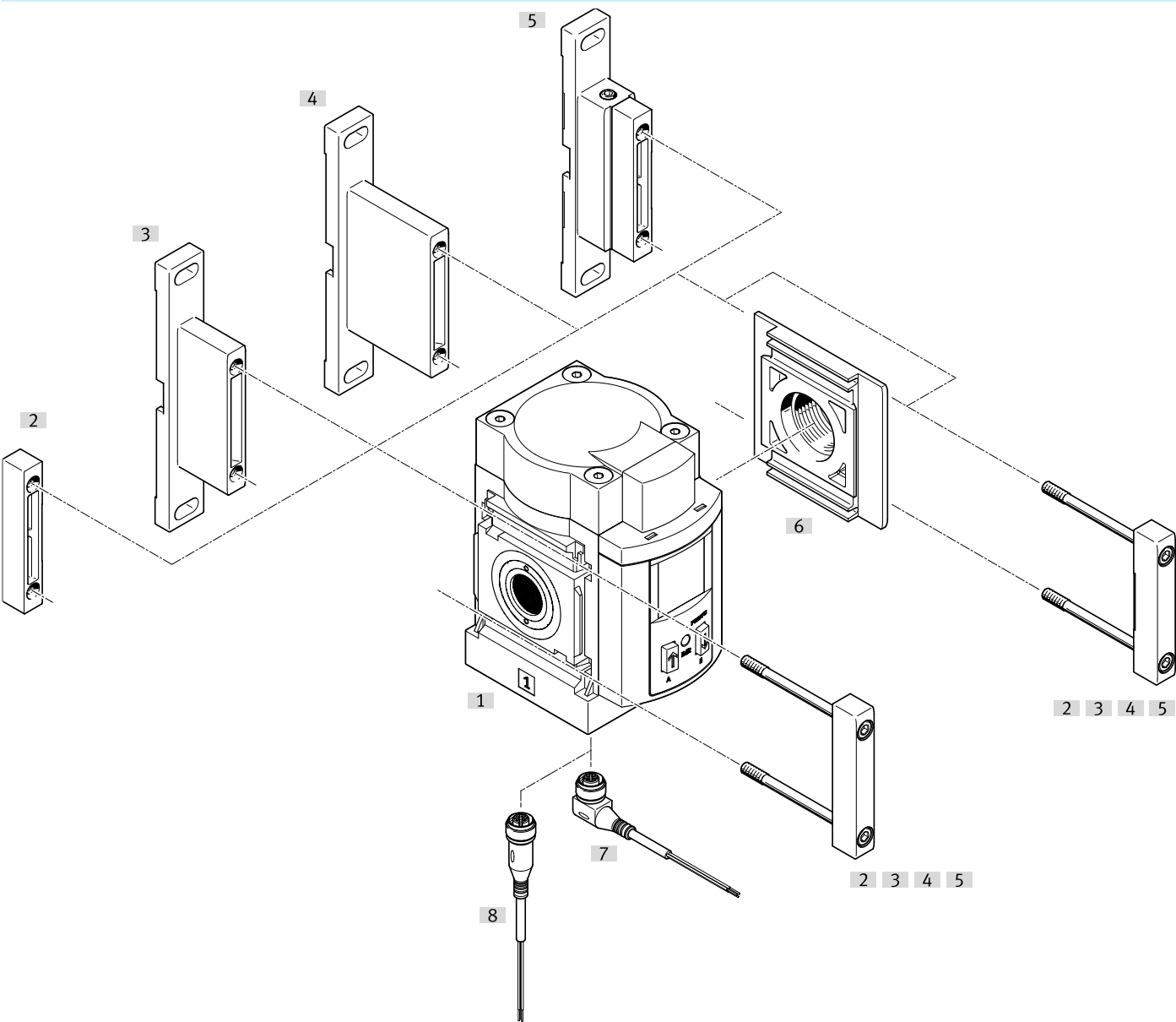
SFAM-62-...-T/W for individual assembly



Accessories			→ Page/Internet
Type/order code	Description		
[1] Flow sensor SFAM	Flow sensor SFAM		–
[2] Mounting bracket MS6-WB	For individual mounting		ms6-wb
[3] Connecting cable NEBA-M12, angled socket	For individual mounting		28
[4] Connecting cable NEBA-M12, straight socket	For individual mounting		28

Peripherals

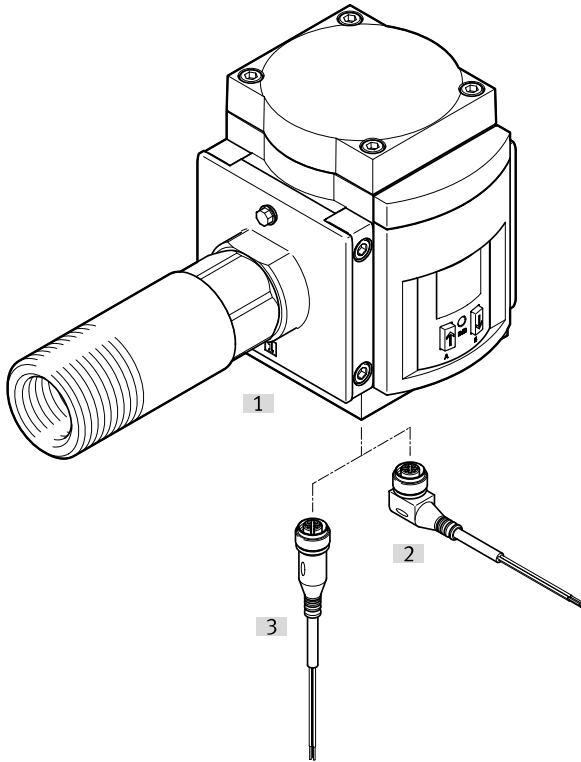
SFAM-90-...-M for manifold assembly in service unit combination MS9 series



Accessories			→ Page/Internet
Type/order code	Description		
[1]	Flow sensor SFAM	Flow sensor SFAM	–
[2]	Module connector MS9-MV	For manifold assembly in service unit combination MS9 series	ms9-mv
[3]	Mounting bracket MS9-WP	For manifold assembly in service unit combination MS9 series	ms9-wp
[4]	Mounting bracket MS9-WPB	For manifold assembly in service unit combination MS9 series	ms9-wpb
[5]	Mounting bracket MS9-WPM	For manifold assembly in service unit combination MS9 series	ms9-wpm
[6]	Connecting plate MS9-AG...	For manifold assembly in service unit combination MS9 series	ms9-ag
[7]	Connecting cable NEBA-M12, angled socket	For manifold assembly in service unit combination MS9 series	28
[8]	Connecting cable NEBA-M12, straight socket	For manifold assembly in service unit combination MS9 series	28

Peripherals

SFAM-90-...-T for individual assembly



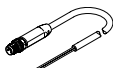
Accessories			→ Page/Internet
Type/order code	Description		
[1] Flow sensor SFAM	Flow sensor SFAM		–
[2] Connecting cable NEBA-M12, angled socket	For individual mounting		28
[3] Connecting cable NEBA-M12, straight socket	For individual mounting		28

Accessories

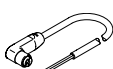
Adapter, SASC-F5-A-M12-S

Degree of protection	Ambient temperature	Product weight	Part no.	Type
IP65	-25 ... 85 °C	30 g	8156703	SASC-F5-A-M12-S

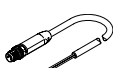
Connecting cable NEBA-M12, straight socket

	Cable structure	Cable length	Product weight	Part no.	Type
	5 x 0.25 mm²	2.5 m	85 g	8078242	NEBA-M12G5-U-2.5-N-LE5
		5 m	142 g	8078243	NEBA-M12G5-U-5-N-LE5

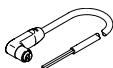
Connecting cable NEBA-M12, angled socket

	Cable structure	Cable length	Product weight	Part no.	Type
	5 x 0.25 mm²	2.5 m	76 g	8078251	NEBA-M12W5-U-2.5-N-LE5
		5 m	143 g	8078252	NEBA-M12W5-U-5-N-LE5

Connecting cable NEBA-M12, straight socket

	Cable structure	Cable length	Product weight	Part no.	Type
	4 x 0.25 mm²	2.5 m	72 g	★ 8078239	NEBA-M12G5-U-2.5-N-LE4
		5 m	134 g	★ 8078240	NEBA-M12G5-U-5-N-LE4

Connecting cable NEBA-M12, angled socket

	Cable structure	Cable length	Product weight	Part no.	Type
	4 x 0.25 mm²	2.5 m	73 g	8078248	NEBA-M12W5-U-2.5-N-LE4
		5 m	135 g	8078249	NEBA-M12W5-U-5-N-LE4