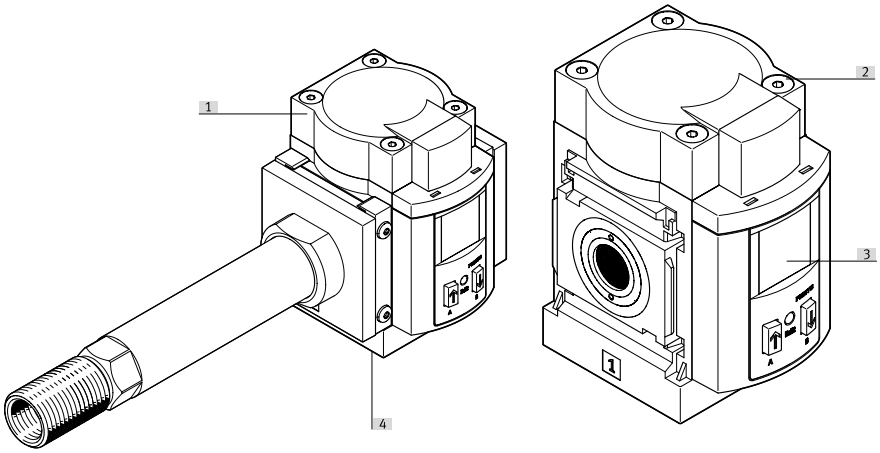
Flow sensor SFAM

Characteristics

At a glance Link 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 12-segment display. Baragraph visualises the current measured value. Colour change depending on the switching point
[4] Central connection with M12 plug

Characteristics

Description

The flow sensor SFAM is suitable for monitoring compressed air and certain inert gases. The measurement is based on the principle of a thermal process. The bypass design reduces susceptibility to particles and moisture. The flow value, pressure and temperature of the medium can be transmitted to the connected control system as a switching and analogue signal or via IO-Link®.

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.
- Thanks to the high measuring dynamics of 1:100, a very large measuring range of 10 up to a maximum of 15,000 litres can be covered in six different versions.

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 C02 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

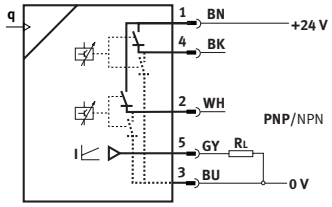
- Bidirectional communication between sensor and master via IO-Link®
- Cyclical transfer of measured values and switching statuses
- The sensor can be parameterised remotely using an IO-Link® master
- Sensors are easy to replace thanks to auto-parameterisation
- Sensor identification, diagnostics and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

Area of application

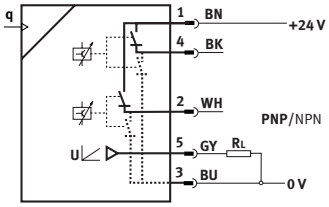
- Compressed air consumption measurements
- Pneumatic energy consumption measurements
- Energy efficiency monitoring
- Leakage detection

Electrical output 1

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

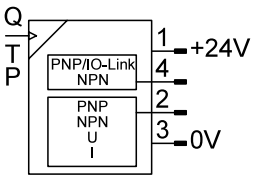


[2SV] 2x PNP or NPN, 1 analogue output 0 ... 10 V



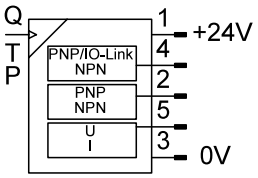
Characteristics

[PNLK] PNP/NPN/IO-Link



Electrical output 2

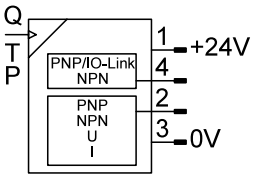
[PN] PNP or NPN



results in a variant with 5 assigned pins of the M12 plug:

1 +24V
2 configurable PN output on pin 2
3 0V
4 configurable PNLK output (switching output/IO-Link®) on pin 4
5 configurable analogue output VBA outlet pin 5

[PNVBA] PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA

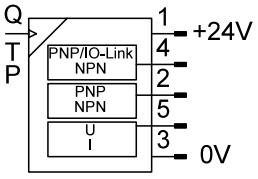


results in a variant with 4 assigned pins of the M12 plug:

1 +24V
2 configurable PNVBA output on pin 2
3 0V
4 configurable PNLK output (switching output/IO-Link®) on pin 4

Electrical output 3

[VBA] 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA



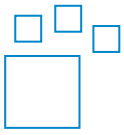
Additional function

[EMD] Energy efficiency and maintenance diagnosis

Energy efficiency and maintenance diagnostics (EMD) provides additional diagnostic functions for pneumatic systems that generate comparable pressure and flow rate signals using a reproducible and repetitive production process. The comparison of the pressure and flow rate signals with a previously recorded reference status can be used to gather information on how the connected pneumatic system is used and how energy-efficient it is.

Ordering data - modular system

Link 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	
PN	PNP or NPN	
PNVBA	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	

009	Electrical output 3	
	None	
VBA	0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	

010	Electrical connection	
M12	Plug M12, A-coded	

011	Connecting cable, straight socket	
	None	
2.5S	2.5 m	
5S	5 m	

012	Connecting cable, angled plug socket	
	None	
2.5A	2.5 m	
5A	5 m	

013	Additional function	
	None	
EMD	Energy efficiency and maintenance diagnosis	

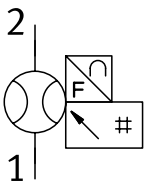
014	EU certification	
	None	
EX2	II 3GD	

015	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	

016	Certificate	
	None	
T	Test report	

Datasheet

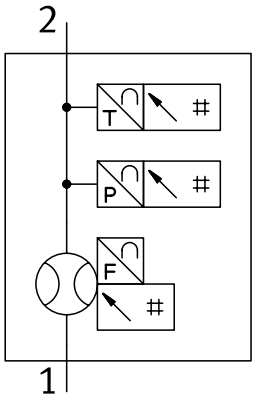
General technical data 2SA, 2SV



[2SA] 2x PNP or NPN, 1 analogue output 4 ... 20 mA
[2SV] 2x PNP or NPN, 1 analogue output 0...10 V

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
UKCA 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



[PNLK] PNP/NPN/IO-Link®

Approval	RCM trademark
CE mark (see declaration of conformity)	To EU EMC Directive, In accordance with EU RoHS Directive
UKCA 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	UL E322346
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 PNLK					
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 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
Temperature measurement start value	0°C				
Temperature measurement end value	100°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	Argon, Compressed air to ISO 8573-1:2010 [7:4:4], Carbon dioxide, 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	
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 of pressure value in ± %FS	1.5 %FS
Repetition accuracy of pressure value in ± %FS	0.3 %FS
Accuracy temperature in ± °C	5°C

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

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	
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.

Datasheet

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

Output, additional data	
Short circuit current rating	yes
Overload protection	Available

Communication interface	
Protocol	IO-Link®
IO-Link, revision ID	V1.1
IO-Link, device profile	Firmware update, Function locator, Function Product URI, Function Quantity detection, Identification and diagnostics, Smart sensor - SSP 4.1.3
IO-Link, transmission rate	COM3
IO-Link, SIO-Mode support	Yes
IO-Link, port type	Class A
IO-Link, process data length input	96 bit
IO-Link, Process data content IN	Current operating status 4 bit, Monitoring the pressure drop at peak flow 1 bit SSC, Monitoring the pressure drop at medium flow rate 1 bit SSC, Monitoring the pressure stability in active operating status 1 bit SSC, Monitoring the pressure stability in passive operating status 1 bit SSC, Pressure measured value 16 bit MDC, Pressure monitoring 2 bit SSC, Flow rate measured value 16-bit MDC, Flow rate monitoring 2-bit SSC, Monitoring the average flow rate 1 bit SSC, Reference record unusable 1 bit, Monitoring the peak flow rate 1 bit SSC, Temperature measured value 16 bit MDC, Temperature monitoring 2-bit SSC, Volume / mass pulse 1 bit SSC, Time monitoring of the active-static operating status 1 bit SSC
IO-Link, Service data IN	Volume/mass measured value 32 bit, Pneumatic energy measurement 32 bit, Pneumatic power measurement 32 bit
IO-Link, minimum cycle time	1.5 ms
IO-Link, Data storage required	1 KB

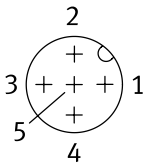
Electronics 2SA, 2SV	
Operational voltage range DC	15 ... 30 V
Reverse polarity protection	For all electrical connections

Electronics PNLK	
Operational voltage range DC [1]	15 ... 30 V
Reverse polarity protection	For all electrical connections

1) For IO-Link® 18 ... 30V

Datasheet

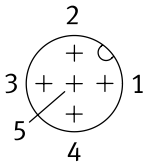
Electromechanics 2SA, 2SV



1 = Operating voltage +24 V
2 = switching output B (OutB, only for flow rate)
3 = Operating voltage 0 V
4 = switching output A (OutA), for flow rate or volume
5 = Analogue output C (OutC)

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

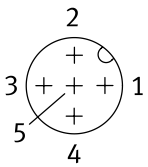
Electromechanics PNLK



1 = Operating voltage +24 V
2 = Electrical output 2 (OutB, OutD or Analogue output)
3 = Operating voltage 0 V
Electrical output 4 (OutA, pulse, C/Q line with IO-Link)
5 = n.c.

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

Electromechanics PN-VBA



1 = Operating voltage +24 V
2 = Electrical outlet 2 = (OutB, OutD)
3 = Operating voltage 0 V
Electrical output 4 (OutA, pulse, C/Q line with IO-Link)
5 = Analogue output

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

Datasheet

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	1,100 g	600 g	1,100 g	600 g	1,100 g	600 g	2,400 g	1,500 g	2,750 g	1,500 g	2,750 g	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 G11/2“
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 G11/2“ 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

Mechanics – PNLK-PN-VBA

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	optional											
Material housing	Die-cast aluminium, PA-reinforced											
Product weight	600 g											

1) G12 corresponds to the connecting plateand 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 plateand laminar flow inlet with female thread G1“ and male thread G11/2“
N1 corresponds to the connecting plateand 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 G11/2“ 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

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%				

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

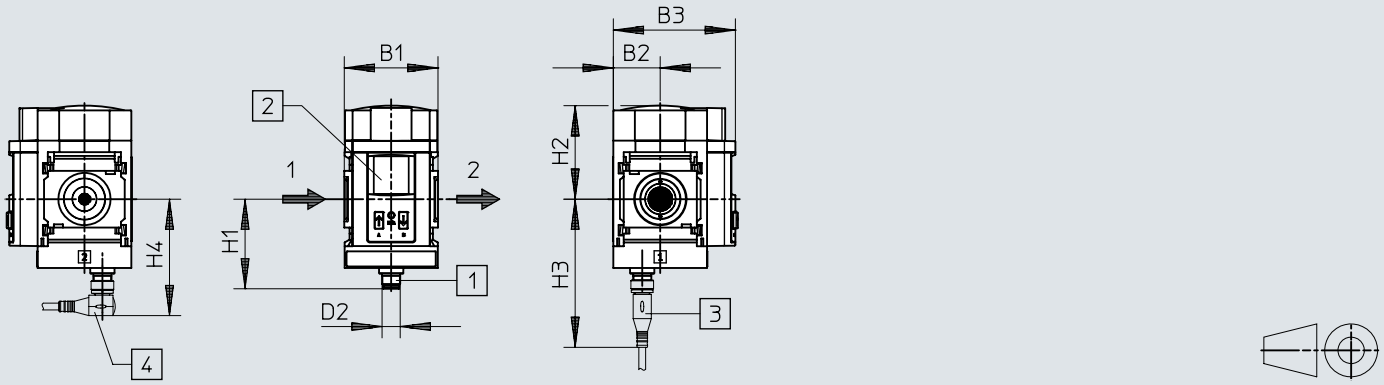
Datasheet

Immission, emission PNLK	
Degree of protection	IP65
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

Download CAD data www.festo.com

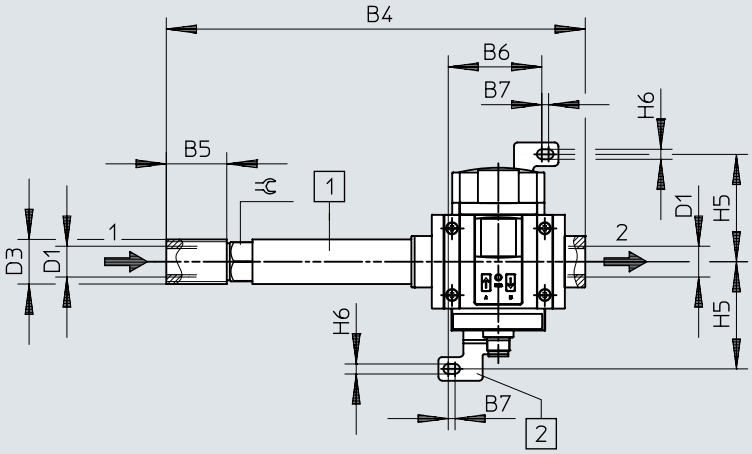


[1] M12x1, A-coded according to EN 61076-2-101
[2] LCD display
[3] Connecting cable, straight socket
[4] Connecting cable, angled plug socket

	B1	B2	B3	D2	H1	H2	H3	H4
SFAM-62-...-M	62	31	81	M12x1	59,3	61,9	~98	~77,4

Dimensions

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



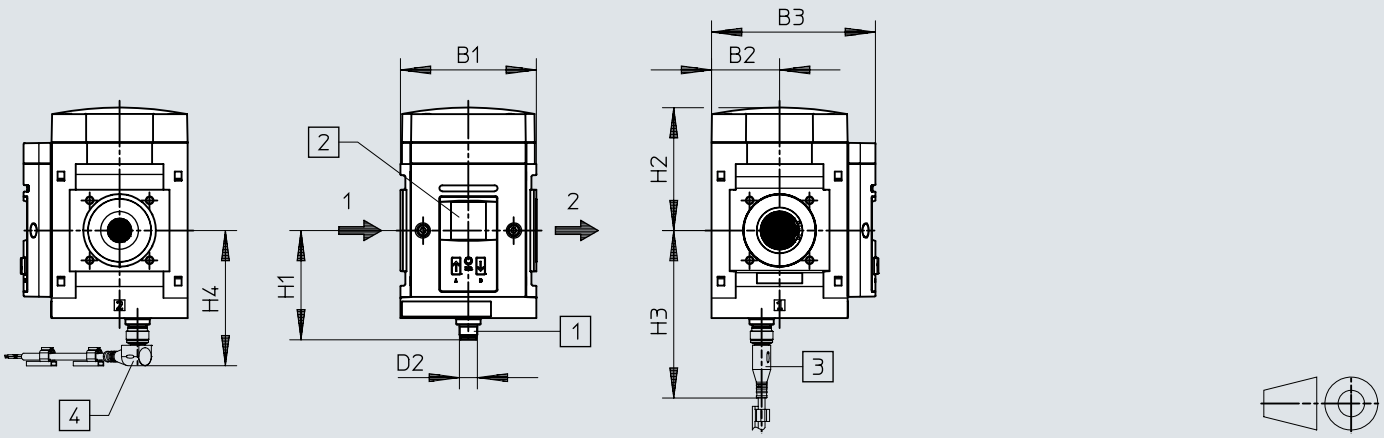
[1] Laminar flow inlet
[2] Wall mounting (only with mounting type -W) with mounting bracket MS6-WB

	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	H1	H2	H3	H4	H5	H6	⌀
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

Download CAD data www.festo.com

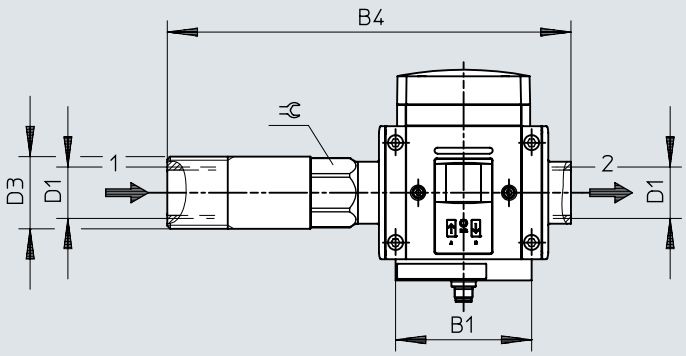


[1] M12x1, A-coded according to EN 61076-2-101
[2] LCD display
[3] Connecting cable, straight socket
[4] Connecting cable, angled plug socket

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

Dimensions

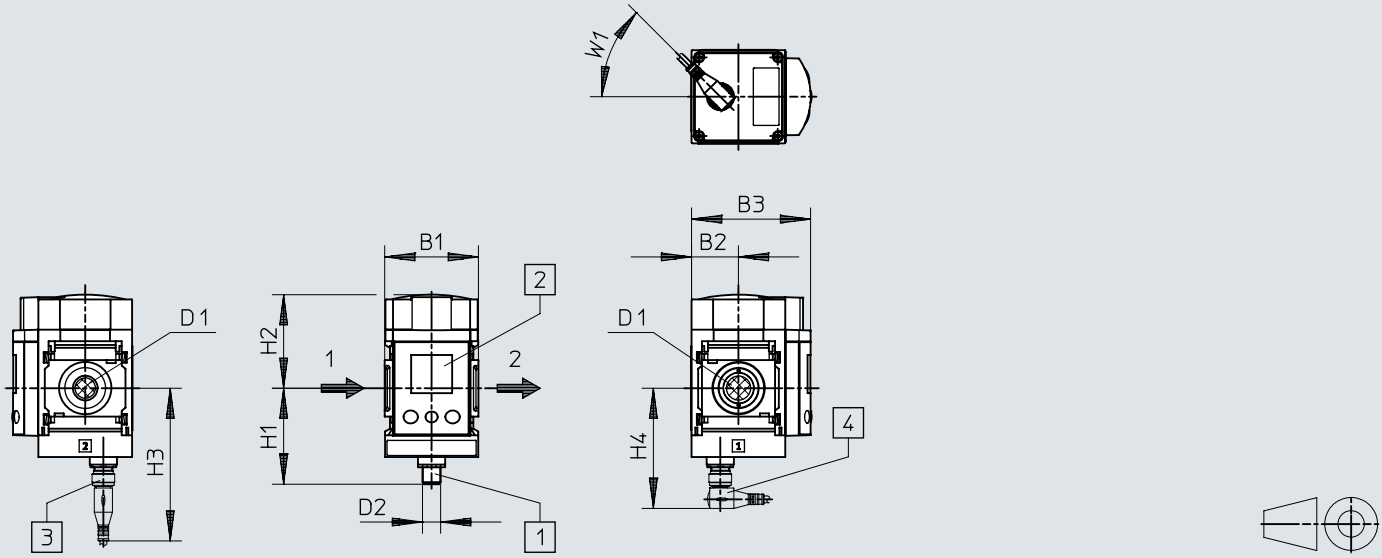
Dimensions – SFAM-90-...-T for individual mounting Download CAD data www.festo.com



	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

Dimensions

Dimensions – SFAM-62/90-...L-M-...-2SA/V-M12-... Download CAD data www.festo.com



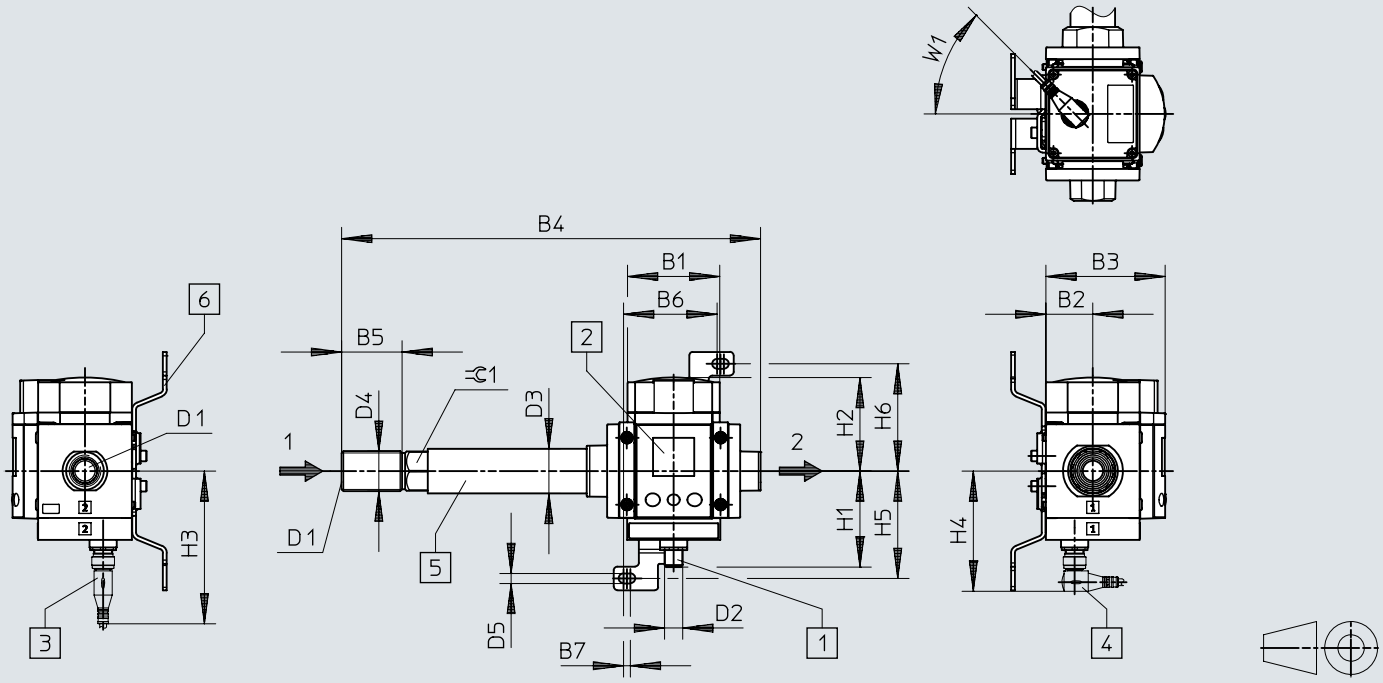
[1] M12x1, A-coded according to EN 61076-2-101
[2] LCD display
[3] S-connecting cable
[4] A-connecting cable

	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	64,1	61,9	~101	~80	45°
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-2SA-M12										

	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-90-5000L-M-2SA-M12	90	45	109	G1 NPT1	M12x1	77,1	81,2	~115,2	~93,6	45°
SFAM-90-5000L-M-2SV-M12										
SFAM-90-10000L-M-2SA-M12										
SFAM-90-10000L-M-2SV-M12										
SFAM-90-15000L-M-2SA-M12										
SFAM-90-15000L-M-2SV-M12										

Dimensions

Dimensions – SFAM-62/90-...L-TG...-2SA/V-M12-... Download CAD data www.festo.com



[1] M12x1, A-coded according to EN 61076-2-101
[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-TG12-2SA-M12	62	31	78,8	~277	~40	61,9	4,5	G1/2 NPT1/2	M12x1	29,5
SFAM-62-1000L-TG12-2SV-M12										
SFAM-62-3000L-TG12-2SA-M12										
SFAM-62-3000L-TG12-2SV-M12										
SFAM-62-5000L-TG12-2SA-M12										
SFAM-62-5000L-TG12-2SV-M12										

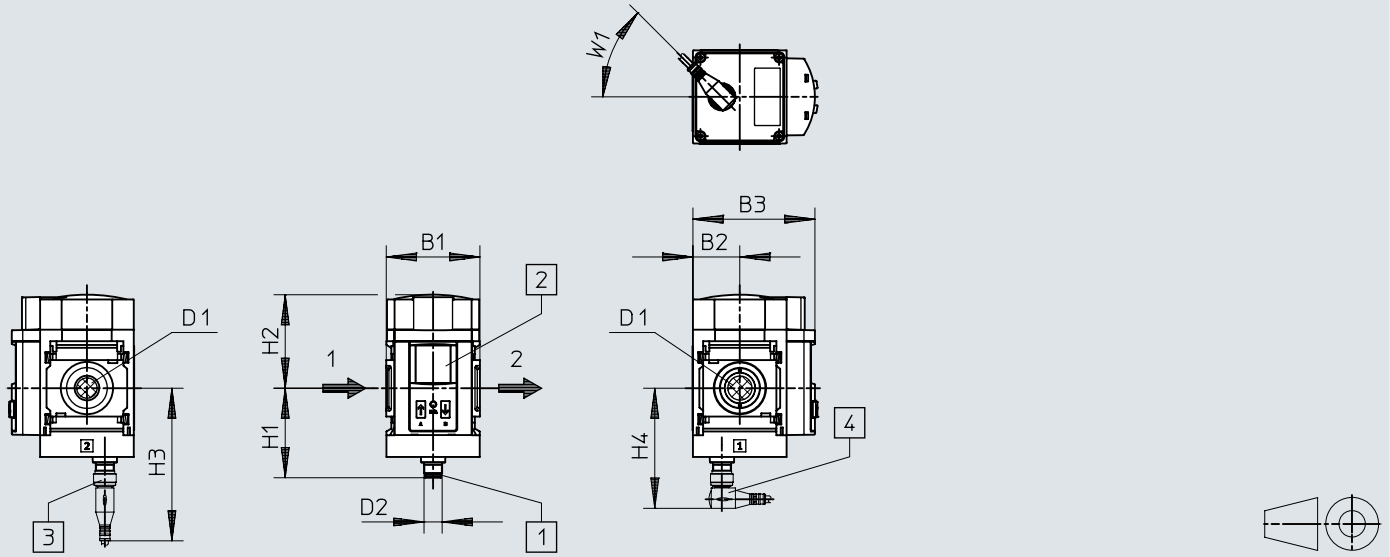
	D4	D5	H1	H2	H3	H4	H5	H6	W1	⌀C1
SFAM-62-1000L-TG12-2SA-M12	G3/4 NPT3/4	6,6	64,1	61,9	~101	~80	71	71	45°	26
SFAM-62-1000L-TG12-2SV-M12										
SFAM-62-3000L-TG12-2SA-M12										
SFAM-62-3000L-TG12-2SV-M12										
SFAM-62-5000L-TG12-2SA-M12										
SFAM-62-5000L-TG12-2SV-M12										

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

	D4	D5	H1	H2	H3	H4	H5	H6	W1	⌀C1
SFAM-90-5000L-TG1-2SA-M12	G11/2 / NPT1 1/2	–	77,1	81,2	~115,2	~93,6	–	–	45°	41
SFAM-90-5000L-TG1-2SV-M12	G2 / NPT2									55
SFAM-90-10000L-TG112-2SA-M12										
SFAM-90-10000L-TG112-2SV-M12	G11/2 / NPT1 1/2									41
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



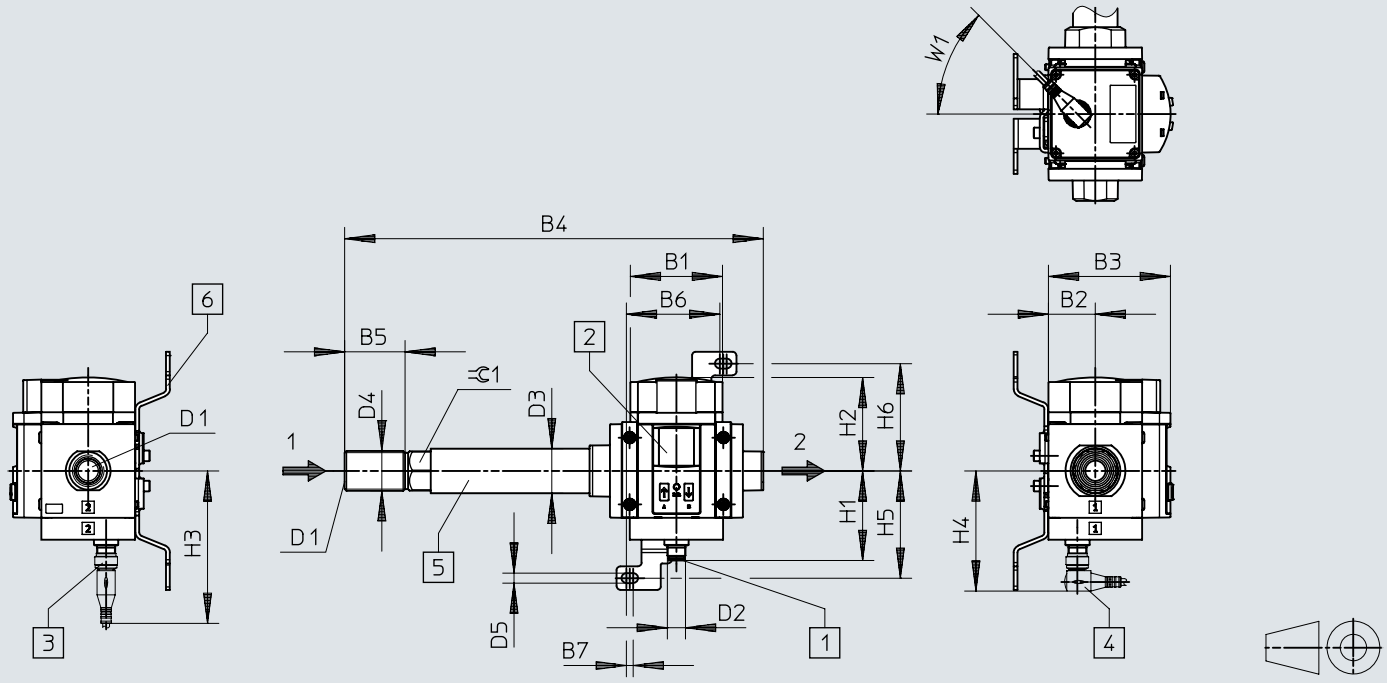
[1] M12x1, A-coded according to EN 61076-2-101
[2] LCD display
[3] S-connecting cable
[4] A-connecting cable

	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-62-1000L-M-PNLK-PNVBA-M12	62	31	81	G1/2 NPT1/2	M12x1	59,3	61,9	~98	~77,4	45°
SFAM-62-3000L-M-PNLK-PNVBA-M12										
SFAM-62-5000L-M-PNLK-PNVBA-M12										
SFAM-62-1000L-M-PNLK-PNVBA-M12-EMD										
SFAM-62-3000L-M-PNLK-PNVBA-M12-EMD										
SFAM-62-5000L-M-PNLK-PNVBA-M12-EMD										

	B1	B2	B3	D1	D2	H1	H2	H3	H4	W1
SFAM-90-5000L-M-PNLK-PNVBA-M12	90	45	108,5	G1 NPT1	M12x1	72,3	81,2	~111	~90,4	45°
SFAM-90-10000L-M-PNLK-PNVBA-M12										
SFAM-90-15000L-M-PNLK-PNVBA-M12										
SFAM-90-5000L-M-PNLK-PNVBA-M12-EMD										

Dimensions

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



[1] M12x1, A-coded according to EN 61076-2-101
[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 ø
SFAM-62-1000L-TG12-PNLK-PNVBA-M12	62	31	81	~277	~40	61,9	4,5	G1/2 NPT 1/2	M12x1	29,5
SFAM-62-3000L-TG12-PNLK-PNVBA-M12										
SFAM-62-5000L-TG12-PNLK-PNVBA-M12										
SFAM-62-1000L-TG12-PNLK-PNVBA-M12-EMD										
SFAM-62-3000L-TG12-PNLK-PNVBA-M12-EMD										
SFAM-62-5000L-TG12-PNLK-PNVBA-M12-EMD										

	D4	D5	H1	H2	H3	H4	H5	H6	W1	=⊂1
SFAM-62-1000L-TG12-PNLK-PNVBA-M12	G3/4 NPT3/4	6,6	59,3	61,9	~98	~77,4	71	71	45°	26
SFAM-62-3000L-TG12-PNLK-PNVBA-M12										
SFAM-62-5000L-TG12-PNLK-PNVBA-M12										
SFAM-62-1000L-TG12-PNLK-PNVBA-M12-EMD										
SFAM-62-3000L-TG12-PNLK-PNVBA-M12-EMD										
SFAM-62-5000L-TG12-PNLK-PNVBA-M12-EMD										

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

	D4	D5	H1	H2	H3	H4	H5	H6	W1	=⊂1
SFAM-90-5000L-TG1-PNLK-PNVBA-M12	G2 NPT2	–	72,3	81,2	~111	~90,4	–	–	45°	41
SFAM-90-10000L-TG112-PNLK-PNVBA-M12										55
SFAM-90-15000L-TG112-PNLK-PNVBA-M12										
SFAM-90-5000L-TG1-PNLK-PNVBA-M12-EMD										41

Ordering data

Manifold assembly in service unit component combination MS series

	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	**564930**	**SFAM-62-1000L-M-2SA-M12**
		30 l/min	3,000 l/min	**564934**	**SFAM-62-3000L-M-2SA-M12**
		50 l/min	5,000 l/min	**564938**	**SFAM-62-5000L-M-2SA-M12**
				573346	**SFAM-90-5000L-M-2SA-M12**
		100 l/min	10,000 l/min	**573348**	**SFAM-90-10000L-M-2SA-M12**
		150 l/min	15,000 l/min	**573350**	**SFAM-90-15000L-M-2SA-M12**
	2x PNP or NPN, 1 analogue output 0 ... 10 V	10 l/min	1,000 l/min	**564932**	**SFAM-62-1000L-M-2SV-M12**
		30 l/min	3,000 l/min	**564936**	**SFAM-62-3000L-M-2SV-M12**
		50 l/min	5,000 l/min	**573347**	**SFAM-90-5000L-M-2SV-M12**
				564940	**SFAM-62-5000L-M-2SV-M12**
		100 l/min	10,000 l/min	**573349**	**SFAM-90-10000L-M-2SV-M12**
		150 l/min	15,000 l/min	**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-TG1-2SA-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-TG1-2SV-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

	Electrical output 1	Start value for flow rate measuring range	End value for flow rate measuring range	Electrical output 2	Part no.	Type
	PNP/NPN/IO-Link	10 l/min	1,000 l/min	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	**8187361**	**SFAM-62-1000L-M-PNLK-PNVBA-M12-EMD**
					8181241	**SFAM-62-1000L-M-PNLK-PNVBA-M12**
		30 l/min	3,000 l/min		**8187362**	**SFAM-62-3000L-M-PNLK-PNVBA-M12-EMD**
					8181242	**SFAM-62-3000L-M-PNLK-PNVBA-M12**
		50 l/min	5,000 l/min		**8187367**	**SFAM-90-5000L-M-PNLK-PNVBA-M12-EMD**
					8181247	**SFAM-90-5000L-M-PNLK-PNVBA-M12**
					8187363	**SFAM-62-5000L-M-PNLK-PNVBA-M12-EMD**
					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

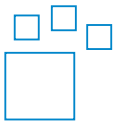
	Electrical output 1	Start value for flow rate measuring range	End value for flow rate measuring range	Electrical output 2	Part no.	Type
	PNP/NPN/IO-Link	10 l/min	1,000 l/min	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	**8181244**	**SFAM-62-1000L-TG12-PNLK-PNVBA-M12**

Ordering data

Threaded mounting, PNLK-PNVBA

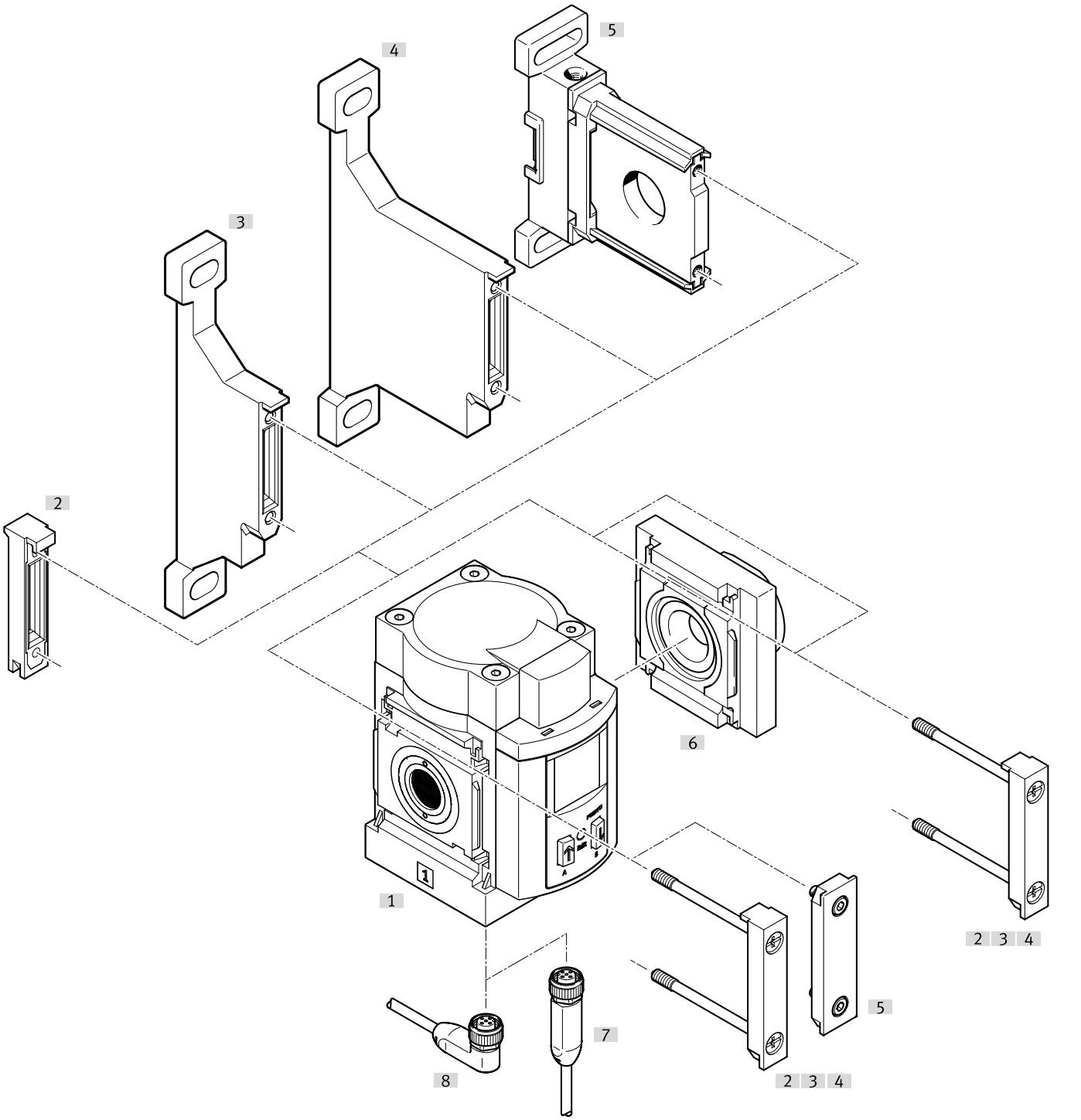
	Electrical output 1	Start value for flow rate measuring range	End value for flow rate measuring range	Electrical output 2	Part no.	Type
	PNP/NPN/IO-Link	10 l/min	1,000 l/min	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	**8187364**	**SFAM-62-1000L-TG12-PNLK-PNVBA-M12-EMD**
		30 l/min	3,000 l/min		**8181245**	**SFAM-62-3000L-TG12-PNLK-PNVBA-M12**
					8187365	**SFAM-62-3000L-TG12-PNLK-PNVBA-M12-EMD**
		50 l/min	5,000 l/min		**8187366**	**SFAM-62-5000L-TG12-PNLK-PNVBA-M12-EMD**
					8187370	**SFAM-90-5000L-TG1-PNLK-PNVBA-M12-EMD**
					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

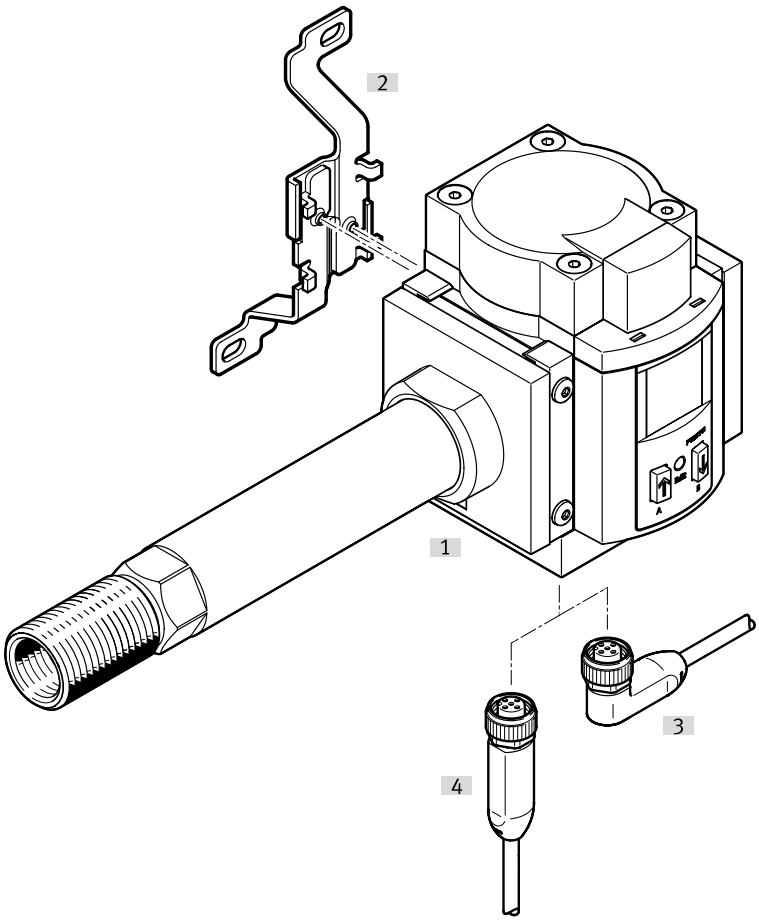
SFAM-62-...-M for manifold assembly in service unit combination MS6 series



Accessories			→ Link
	Type/order code	Description	
[1]	Flow sensor SFAM	Flow sensor SFAM	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	29
[8]	Connecting cable NEBA-M12, straight socket	For manifold assembly in service unit combination MS6 series	29

Peripherals

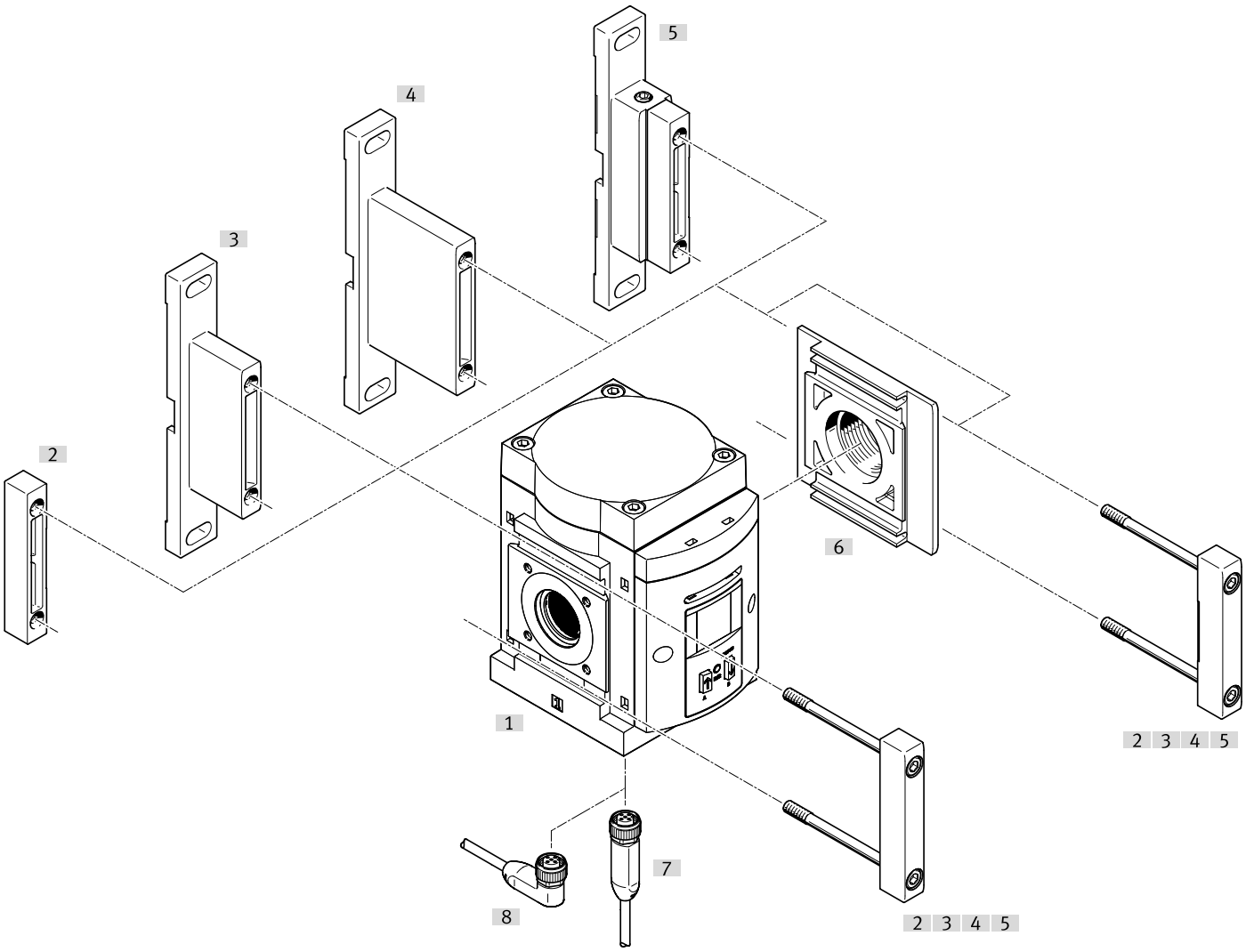
SFAM-62-...-T/W for individual assembly



Accessories			→ Link
	Type/order code	Description	
[1]	Flow sensor SFAM	Flow sensor SFAM	sfam
[2]	Mounting bracket MS6-WB	For individual mounting	ms6-wb
[3]	Connecting cable NEBA-M12, angled socket	For individual mounting	29
[4]	Connecting cable NEBA-M12, straight socket	For individual mounting	29

Peripherals

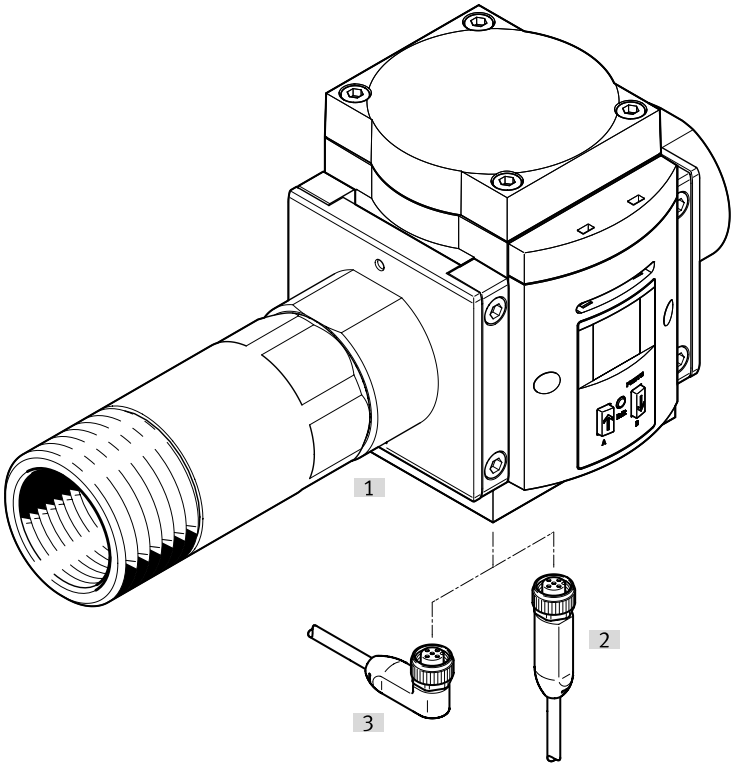
SFAM-90-...-M for manifold assembly in service unit combination MS9 series



Accessories			→ Link
	Type/order code	Description	
[1]	Flow sensor SFAM	Flow sensor SFAM	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	29
[8]	Connecting cable NEBA-M12, straight socket	For manifold assembly in service unit combination MS9 series	29

Peripherals

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



Accessories			→ Link
	Type/order code	Description	
[1]	Flow sensor SFAM	Flow sensor SFAM	sfam
[2]	Connecting cable NEBA-M12, angled socket	For individual mounting	29
[3]	Connecting cable NEBA-M12, straight socket	For individual mounting	29

Accessories

Adapter SASC, for PNLK variants to existing 2SA/2SV cables

	Cable length	Product weight	Part no.	Type
	0.3 m	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**