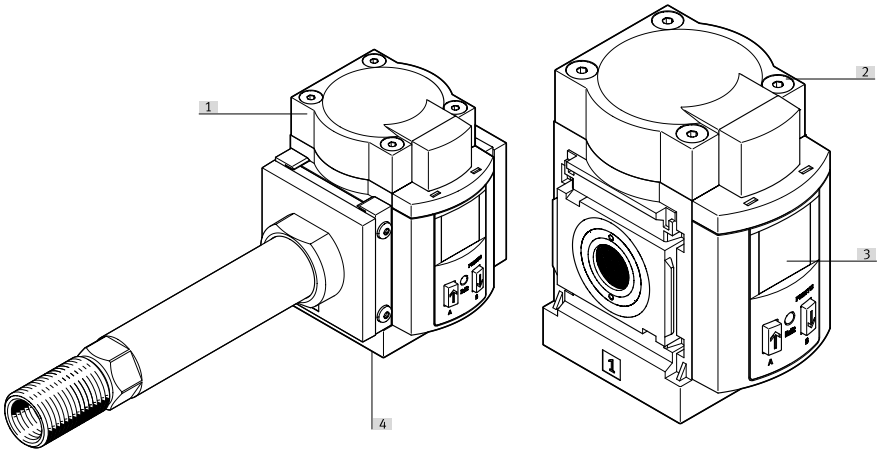
Flow sensor SFAM



Characteristics

At a glance Link sfam



[1] Threaded mounting of individual device with laminar flow inlet
[2] Can be combined with MS6 or MS9 series service unit combination
[3] Bright LCD display with blue background and white 12-segment display. Baragraph visualizes the current measured value. Color change depending on switching point
[4] Central connection with M12 plug

Characteristics

Description

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

High flow rates and compact

- The modular flow sensor acts either as a stand-alone device or as an ideal and space-saving combination with the air preparation 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 and up to a maximum of 15000 liters 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, the installation effort and costs can be minimized by eliminating the need for an additional pressure sensor.
- The ability to measure the gases Ar, N2,and C02 also allows you to monitor inert gas applications.
- Systematically safer

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 pulse for air consumption measurement at control level
- Output of measured values in the display and IO-Link® in common units
- Switchable electrical outputs. Selectable between PNP/NPN, NO/NC, and analog current or voltage output
- Min./max value memory
- Security code selectable and freely adjustable (4 digit code), for perfect tamper protection
- ECO function via adjustable display switch-off
- Replication function for easy transfer of the set parameters between two identical sensors
- Adjustable color change on the display for good visualization of switching statuses

IO-Link® communication

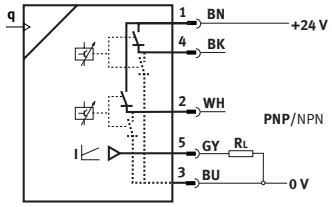
- Bidirectional communication between sensor and master via IO-Link®
- Cyclical transmission of measured values and switching statuses
- Remote parameterization of the sensor possible using an IO-Link® master
- Simple replacement of the sensors thanks to auto-parameterization
- Sensor identification, diagnostics and teach-in possible via IO-Link®
- Cost-effective and standardized M12 connecting cable

Area of application

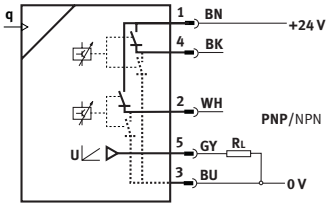
- Compressed air consumption measurements
- Pneumatic energy consumption measurements
- Energy efficiency monitoring
- Leakage detection

Electrical output 1

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

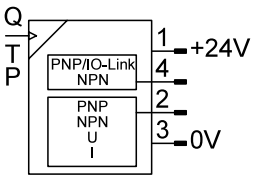


[2SV] 2x PNP or NPN, 1 analog output 0 ... 10 V



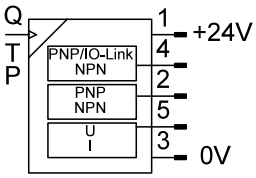
Characteristics

[PNLK]	PNP/NPN/IO-Link



Electrical output 2

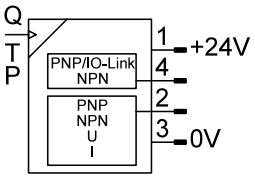
[PN]	PNP or NPN



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 output Pin 5

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

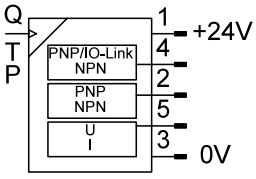


results in a variant with 4 assigned pins of the M12 plug:

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



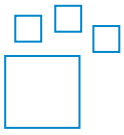
Additional function

[EMD]	Energy efficiency and maintenance diagnostics

Energy efficiency and maintenance diagnostics (EMD) provides additional diagnostic functions for pneumatic systems that generate comparable pressure and flow signals through a reproducible, repetitive production process. By comparing the pressure and flow signals with a previously recorded reference state, information on use and energy efficiency for the connected pneumatic system can be derived.

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	Air 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 input	
L	Unidirectional, from left	
R	Unidirectional, from right	

005	Type of mounting	
M	Manifold assembly	
T	Thread mounting	
W	Wall mounting	

006	Pneumatic connection	
	Without	
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 analog output 4 ... 20 mA	
2SV	2x PNP or NPN, 1 analog output 0 ... 10 V	
PNLK	PNP/NPN/IO-Link	

008	Electrical output 2	
	Without	
PN	PNP or NPN	
PNVBA	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	

009	Electrical output 3	
	Without	
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	
	Without	
2.5S	2.5 m	
5S	5 m	

012	Connecting cable, angled plug socket	
	Without	
2.5A	2.5 m	
5A	5 m	

013	Additional function	
	Without	
EMD	Energy efficiency and maintenance diagnostics	

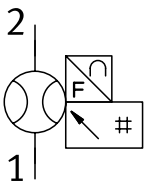
014	EX certification EU	
	None	
EX2	II 3GD	

015	Electrical accessories	
	Without	
2.5A	Angled plug socket, cable 2.5 m	
2.5S	Straight socket, 2.5 m cable	
5A	Angled plug socket, cable 5 m	
5S	Straight socket, 5 m cable	

016	Certificate	
	Without	
T	Test report	

Datasheet

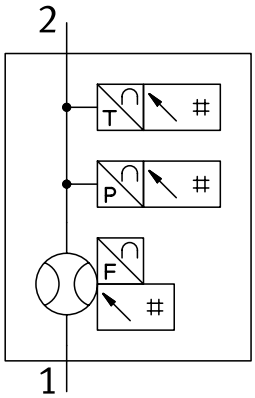
General technical data 2SA, 2SV



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

Certification	RCM compliance mark, c UL us - Listed (OL)
CE marking (see declaration of conformity)	As per EU EMC directive, as per EU explosion protection directive (ATEX), As per EU RoHS directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
ATEX category gas	II 3G
Type of ignition protection for gas	Ex nA IIC T5 X Gc
ATEX category for dust	II 3D
Type of (ignition) protection for dust	Ex tc IIIB T80°C X Dc IP54
Explosive 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®

Certification	RCM compliance mark, c UL us - Listed (OL)
CE marking (see declaration of conformity)	As per EU EMC directive, As per EU RoHS directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions
ATEX category gas	–
Type of ignition protection for gas	–
ATEX category for dust	–
Type of (ignition) protection for dust	–
Explosive 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				
Method of measurement	Heat loss				
Flow measuring range start value	10 l/min	30 l/min	50 l/min	100 l/min	150 l/min
Flow measuring range end value	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 as per ISO 8573-1:2010 [7:4:4], Nitrogen				
Temperature of medium	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, Temperature, Volume, Volumetric flow rate				
Flow direction	Unidirectional, From left to right				
Measuring principle	Thermal				
Method of measurement	Heat loss				
Flow measuring range start value	10 l/min	30 l/min	50 l/min	100 l/min	150 l/min
Flow measuring range end value	1,000 l/min	3,000 l/min	5,000 l/min	10,000 l/min	15,000 l/min
Temperature measuring range start value	0°C				
Temperature measuring range end value	100°C				
Pressure measuring range initial value	0 MPa				
Pressure measuring range initial value	0 bar				
Pressure measuring range initial value	0 psi				
Pressure measuring range end value	1.6 MPa				
Pressure measuring range end value	16 bar				
Pressure measuring range end value	232 psi				
Operating pressure	1.6 MPa				
Operating pressure	16 bar				
Operating pressure	232 psi				
Operating medium	Argon, Compressed air as per ISO 8573-1:2010 [7:4:4], Carbon dioxide, Nitrogen				
Temperature of medium	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)
Zero point repetition accuracy in ± %FS	0.2 %FS
Repetition accuracy margin in ± %FS	0.8 %FS
Temperature co-efficient margin in ± %FS/K	typ. 0.1%FS/K
Pressure influence of margin in ±%FS/bar	0.5

Output, general PNLK	
Accuracy of flow rate	±(3% o.m.v. + 0.3% FS)
Zero point repetition accuracy in ± %FS	0.2 %FS
Repetition accuracy margin in ± %FS	0.8 %FS
Temperature co-efficient margin in ± %FS/K	typ. 0.1%FS/K
Temperature co-efficient in ± %FS/K	0.05 %FS/K
Pressure influence of margin 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 of 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 contact/N/O contact, switchable
Max. output current	100 mA

Analog 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	
Analog 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 initial value [1]	0 V	–	0 V	–	0 V	–	0 V	–	0 V	–	0 V	–
End value output characteristic curve [2]	10 V	–	10 V	–	10 V	–	10 V	–	10 V	–	10 V	–
Output characteristic curve initial value [3]	–	4 mA	–	4 mA	–	4 mA	–	4 mA	–	4 mA	–	4 mA
End value output characteristic curve [4]	–	20 mA	–	20 mA	–	20 mA	–	20 mA	–	20 mA	–	20 mA
Max. load resistance of current output	–	500 Ohm	–	500 Ohm	–	500 Ohm	–	500 Ohm	–	500 Ohm	–	500 Ohm
Min. load resistance of voltage output	10 kOhm	–	10 kOhm	–	10 kOhm	–	10 kOhm	–	10 kOhm	–	10 kOhm	–

1) Start and end values can be exceeded or fallen short of depending on the scaling of the analogue output and the flow value.
2) Start and end values can be exceeded or fallen short of depending on the scaling of the analogue output and the flow value.
3) Start and end values can be exceeded or fallen short of depending on the scaling of the analogue output and the flow value.
4) Start and end values can be exceeded or fallen short of depending on the scaling of the analogue output and the flow value.

Datasheet

Analog 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
Analog 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 initial value [1]	0 V				
End value output characteristic curve [2]	10 V				
Output characteristic curve initial value [3]	4 mA				
End value output characteristic curve [4]	20 mA				
Max. load resistance of current output	500 Ohm				
Min. load resistance of voltage output	20 kOhm				

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

Output, further data	
Short-circuit protection	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 diagnosis, 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 of pressure stability in passive operating status 1 bit SSC, Pressure measured value 16 bit MDC, Flow-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 contents IN	Volume / mass measured value 32-bit, Pneumatic energy measurement 32 bit, Pneumatic power measurement value 32 bit
IO-Link®, minimum cycle time	1.5 ms
IO-Link®, data memory required	1 KB

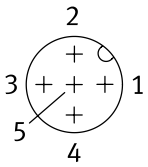
Electronics 2SA, 2SV	
DC operating voltage range	15 ... 30 V
Reverse polarity protection	for all electrical connections

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

1) With IO-Link 18 ... 30V

Datasheet

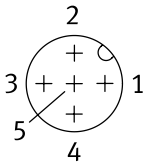
Electromechanics 2SA, 2SV



1 = operating voltage +24 V
2 = switching output B (OutB, only for flow)
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	Plug
Electrical connection 1, connection technology	M12x1 A-coded as per EN 61076-2-101
Electrical connection 1, number of pins/wires	5
Electrical connection 1, occupied pins/wires	5
Electrical connection 1, type of mounting	Screw-type lock
Max. cable length	30 m

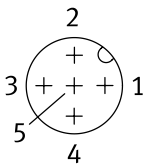
Electromechanics PNLK



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

Electrical connection 1, connection type	Plug
Electrical connection 1, connection technology	M12x1 A-coded as per EN 61076-2-101
Electrical connection 1, number of pins/wires	5
Electrical connection 1, occupied pins/wires	4
Electrical connection 1, type of mounting	Screw-type lock
Max. cable length	20 m for IO-Link® operation, 30 m

Electromechanics PN-VBA



1 = operating voltage +24 V
2 = Electrical output 2 = (OutB, OutD)
3 = operating voltage 0 V
4 = Electrical output 1 (OutA, pulse, C/Q Line with IO-Link®)
5 = analog output

Electrical connection 1, connection type	Plug
Electrical connection 1, connection technology	M12x1 A-coded as per EN 61076-2-101
Electrical connection 1, number of pins/wires	5
Electrical connection 1, occupied pins/wires	4
Electrical connection 1, type of mounting	Screw-type lock
Max. cable length	20 m for IO-Link® operation, 30 m

Datasheet

Mechanical system

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											
Housing material	Die-cast aluminum, 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 internal thread G1/2“ and external thread G3/4“
N12 corresponds to the connecting plate and laminar flow inlet with internal thread 1/2 NPT and external thread 3/4 NPT
G1 corresponds to the connecting plate and laminar flow inlet with internal thread G1“ and external thread G11/2“
N1 corresponds to the connecting plate and laminar flow inlet with internal thread 1 NPT and external thread 1 1/2 NPT
G112 corresponds to connecting plate and laminar flow inlet with internal thread G11/2“ and external thread G2“
N112 corresponds to the connecting plate and laminar flow inlet with internal thread 1 1/2 NPT and external 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	Any											
Housing material	Die-cast aluminum, PA-reinforced											
Product weight	600 g											

1) G12 corresponds to the sub-base and laminar flow inlet with internal thread G1/2“ and external thread G3/4“
N12 corresponds to the sub-base and laminar flow inlet with internal thread 1/2 NPT and external thread 3/4 NPT
G1 corresponds to the sub-base and laminar flow inlet with internal thread G1“ and external thread G11/2“
N1 corresponds to the sub-base and laminar flow inlet with internal thread 1 NPT and external thread 1 1/2 NPT
G112 corresponds to sub-base and laminar flow inlet with internal thread G11/2“ and external thread G2“
N112 corresponds to the sub-base and laminar flow inlet with internal thread 1 1/2 NPT and external 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	Multi-color backlit LCD				
Displayable unit(s)	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	Multi-color backlit LCD				
Displayable unit(s)	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
Contamination level	3

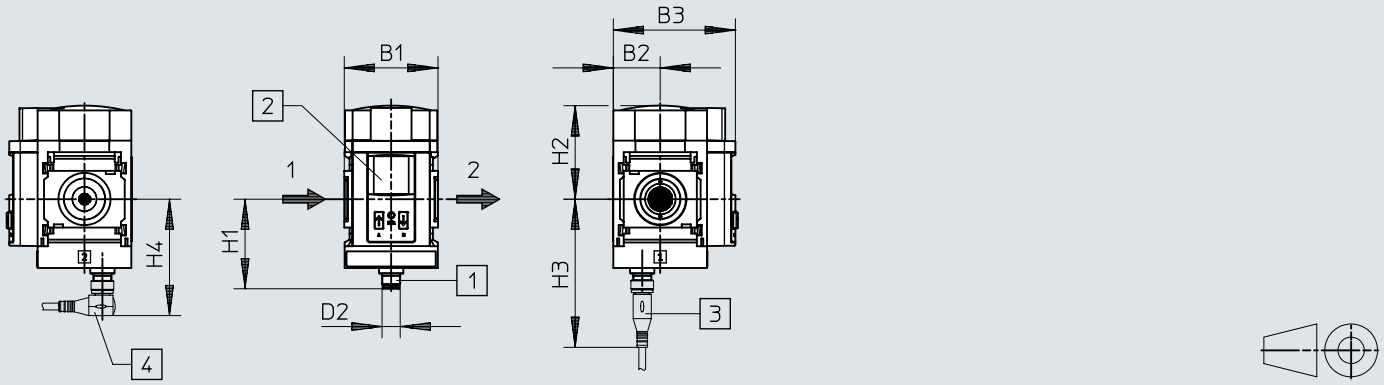
Datasheet

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
Contamination level	3

Dimensions

Dimensions – SFAM-62-...-M for battery assembly in air preparation unit combination MS6 series

Download CAD data www.festo.com

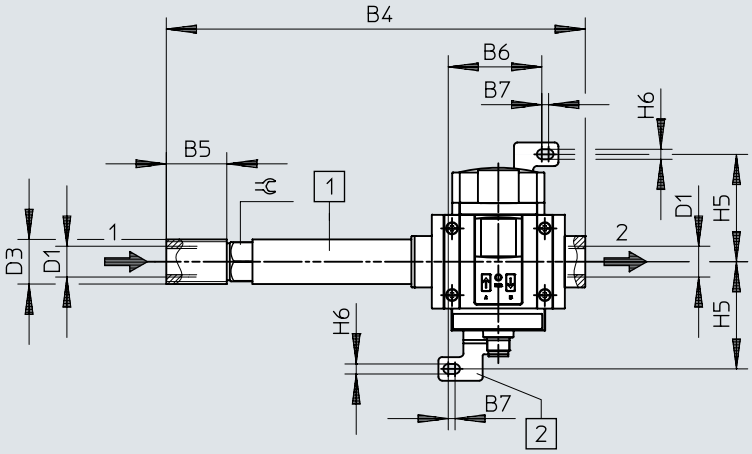


[1] M12x1, A-coded as per EN 61076-2-101
[2] LCD display
[3] Connecting cable, straight socket
[4] Connecting cable, angled plug socket

	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



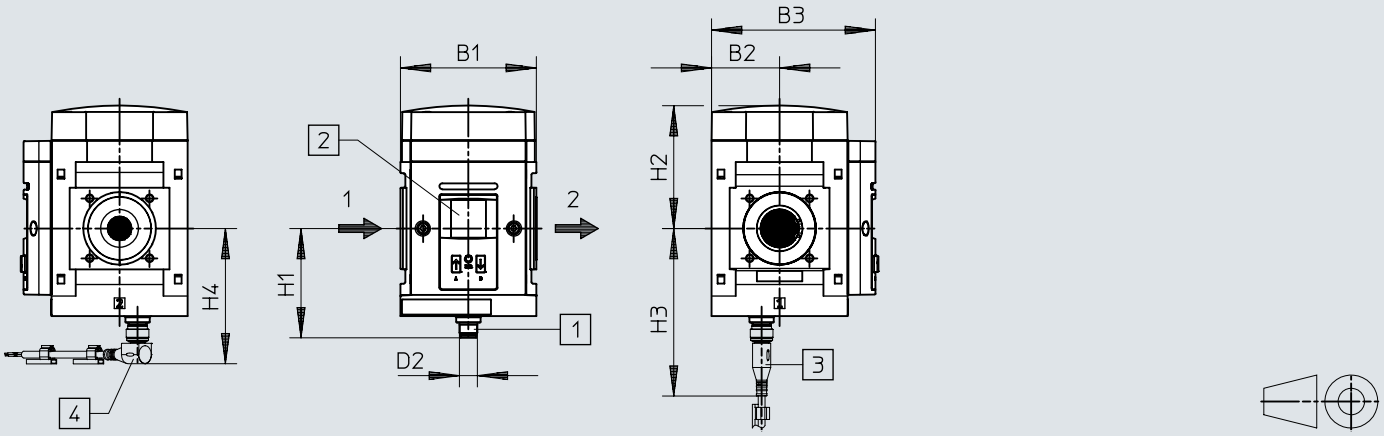
[1] Laminar flow inlet
[2] Wall mounting (only with type of mounting -W) with mounting bracket MS6-WB

	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 air preparation unit combination MS9 series

Download CAD data www.festo.com

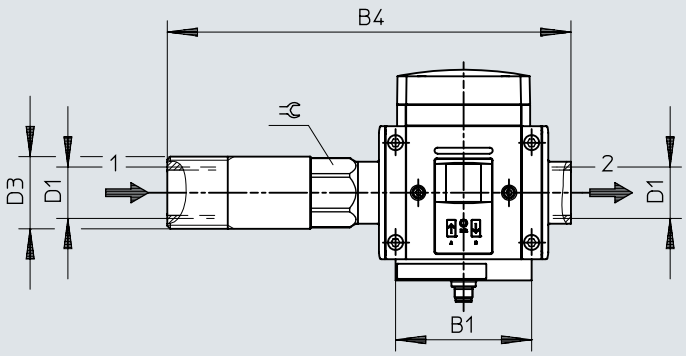


[1] M12x1, A-coded as per EN 61076-2-101
[2] LCD display
[3] Connecting cable, straight socket
[4] Connecting cable, angled plug socket

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

Dimensions

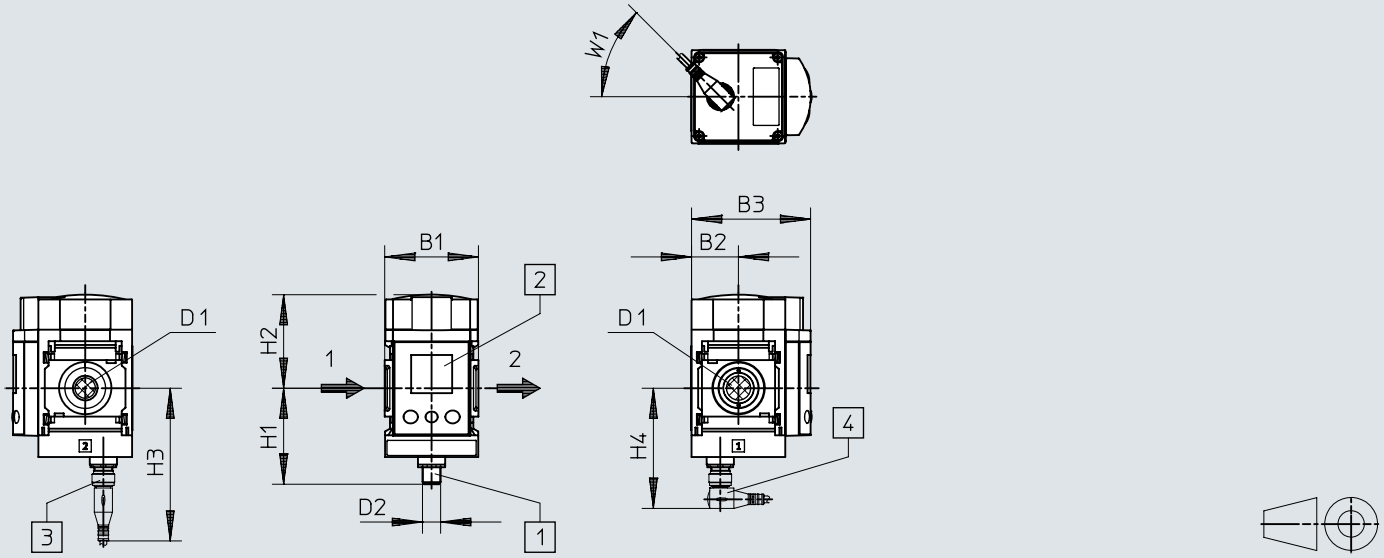
Dimensions – SFAM-90-...-T for single mounting Download CAD data www.festo.com



	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



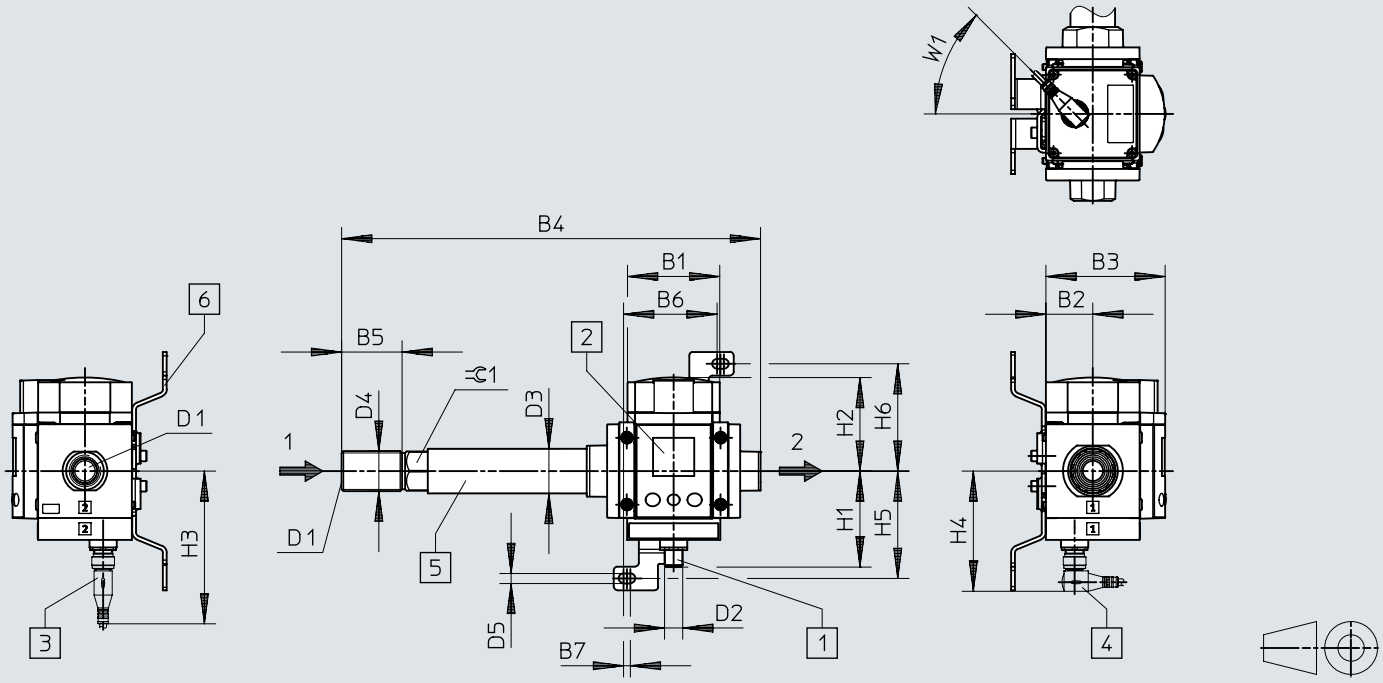
[1] M12x1, A-coded as per EN 61076-2-101
[2] LCD display
[3] S-connecting cable
[4] A-connecting cable

	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 as per 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										

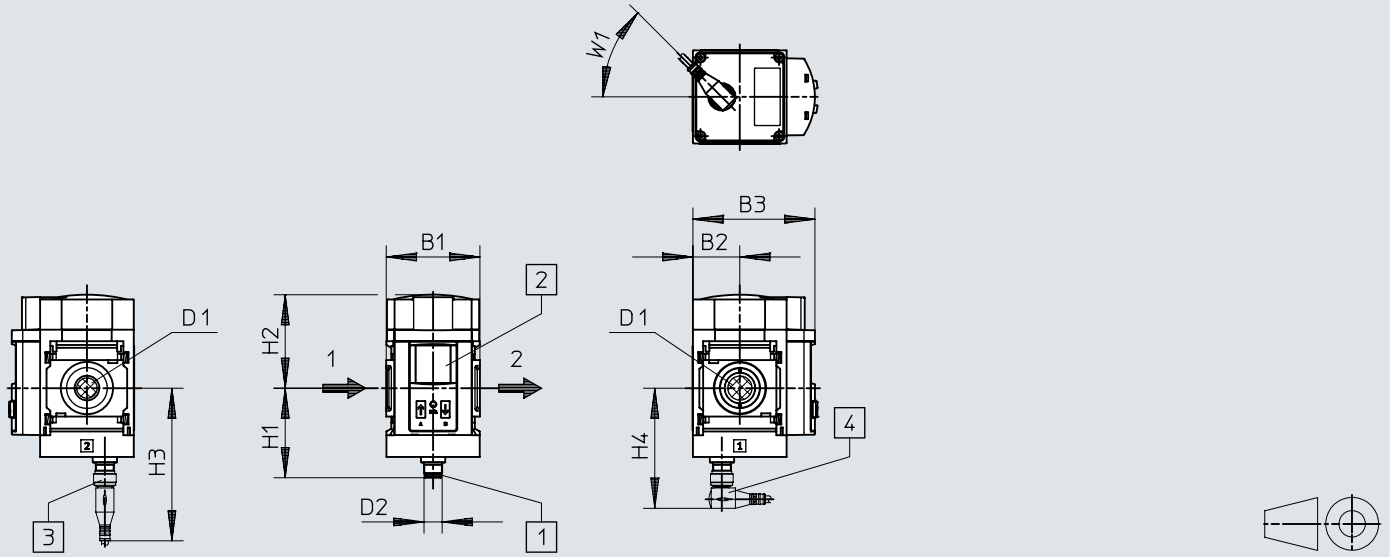
	D4	D5	H1	H2	H3	H4	H5	H6	W1	⌀C1
SFAM-62-1000L-TG12-2SA-M12	G3/4 NPT3/4	6,6	64,1	61,9	~101	~80	71	71	45°	26
SFAM-62-1000L-TG12-2SV-M12										
SFAM-62-3000L-TG12-2SA-M12										
SFAM-62-3000L-TG12-2SV-M12										
SFAM-62-5000L-TG12-2SA-M12										
SFAM-62-5000L-TG12-2SV-M12										

	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



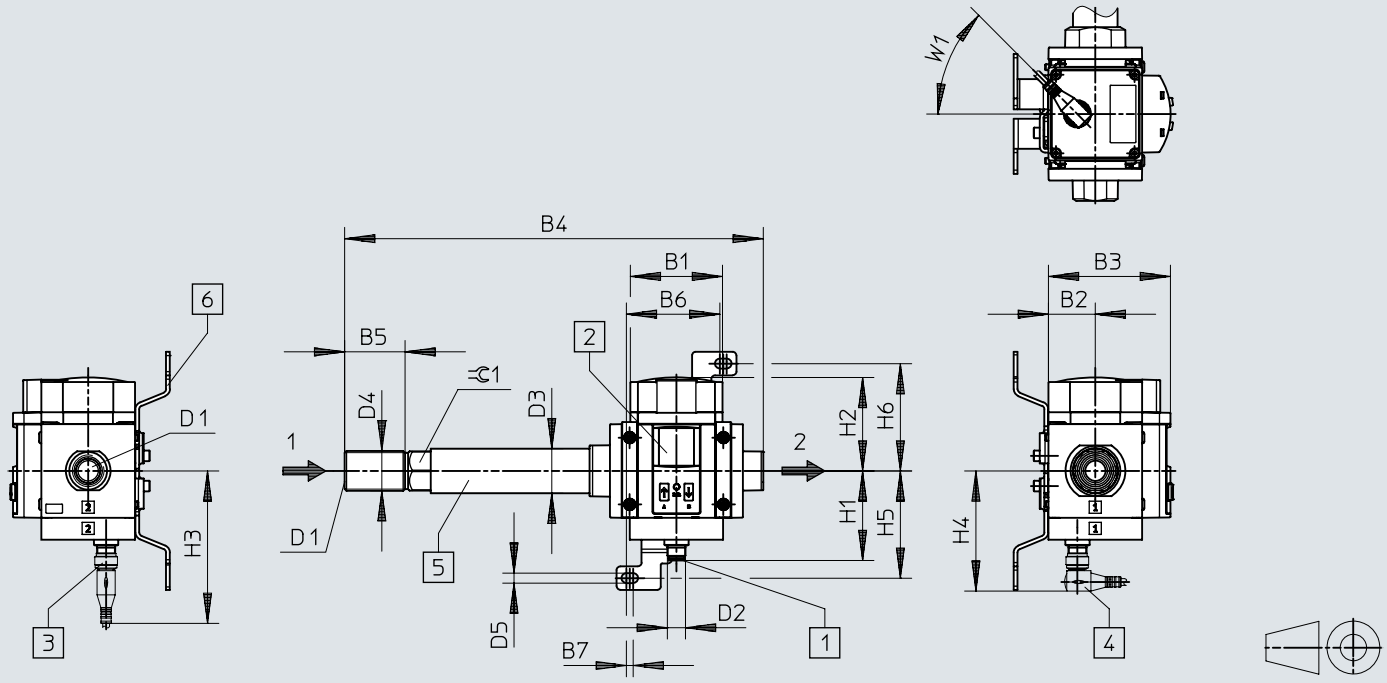
[1] M12x1, A-coded as per EN 61076-2-101
[2] LCD display
[3] S-connecting cable
[4] A-connecting cable

	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 as per 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	⌀C1
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	⌀C1
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 combination MS series

	Electrical output 1	Flow measuring range start value	Flow measuring range end value	Part no.	Type
	2x PNP or NPN, 1 analog 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 analog 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	Flow measuring range start value	Flow measuring range end value	Part no.	Type
	2x PNP or NPN, 1 analog 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 analog 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	Flow measuring range start value	Flow measuring range end value	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

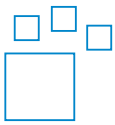
	Electrical output 1	Flow measuring range start value	Flow measuring range end value	Electrical output 2	Part no.	Type
	PNP/NPN/IO-Link	10 l/min	1,000 l/min	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	8181244	SFAM-62-1000L-TG12-PNLK-PNVBA-M12

Ordering data

Threaded mounting, PNLK-PNVBA

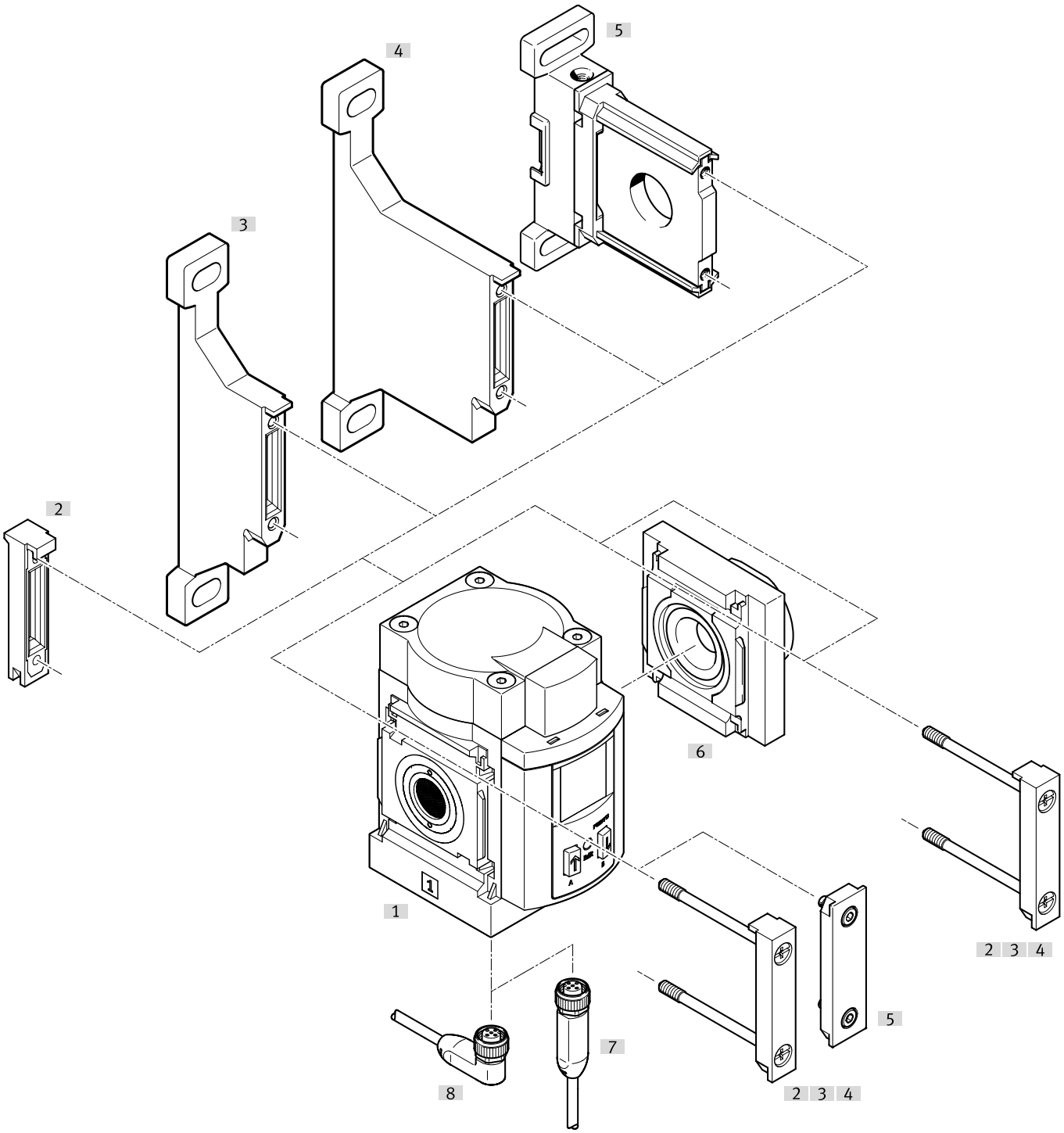
	Electrical output 1	Flow measuring range start value	Flow measuring range end value	Electrical output 2	Part no.	Type
	PNP/NPN/IO-Link	10 l/min	1,000 l/min	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	**8187364**	**SFAM-62-1000L-TG12-PNLK-PNVBA-M12-EMD**
		30 l/min	3,000 l/min		**8181245**	**SFAM-62-3000L-TG12-PNLK-PNVBA-M12**
					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 data– Modular product system

	Flow measuring range start value	Flow measuring range end value	Part no.	Type
	10 ... 150 l/min	1,000 ... 15000 l/min	**563796**	**SFAM**

Peripherals overview

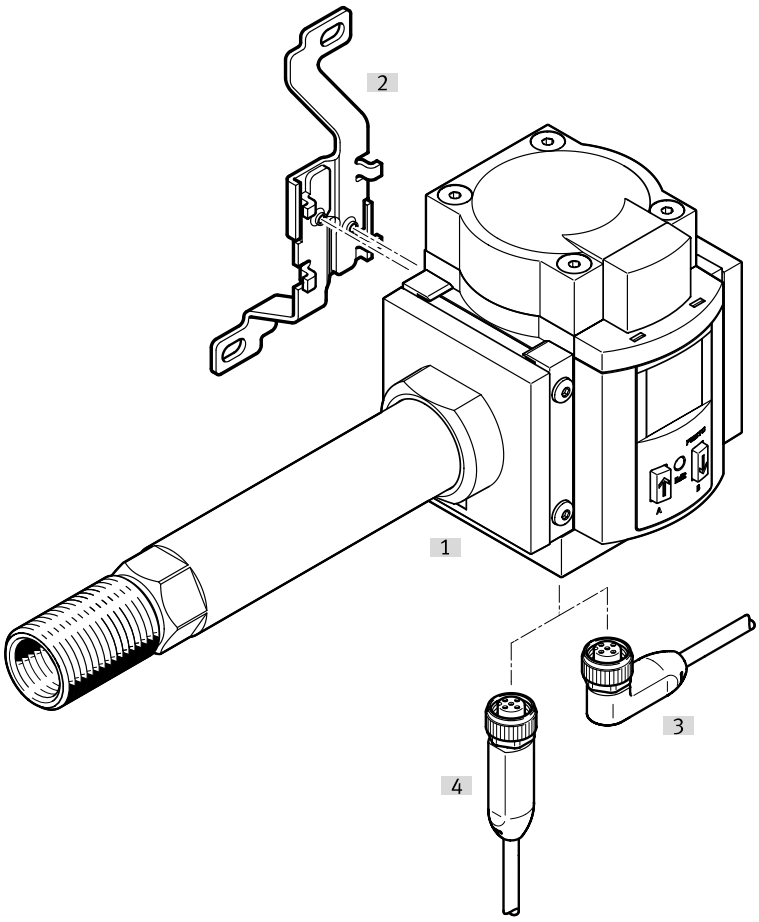
SFAM-62-...-M for battery assembly in air preparation unit combination MS6 series



Accessories			→ Page/Internet
	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 overview

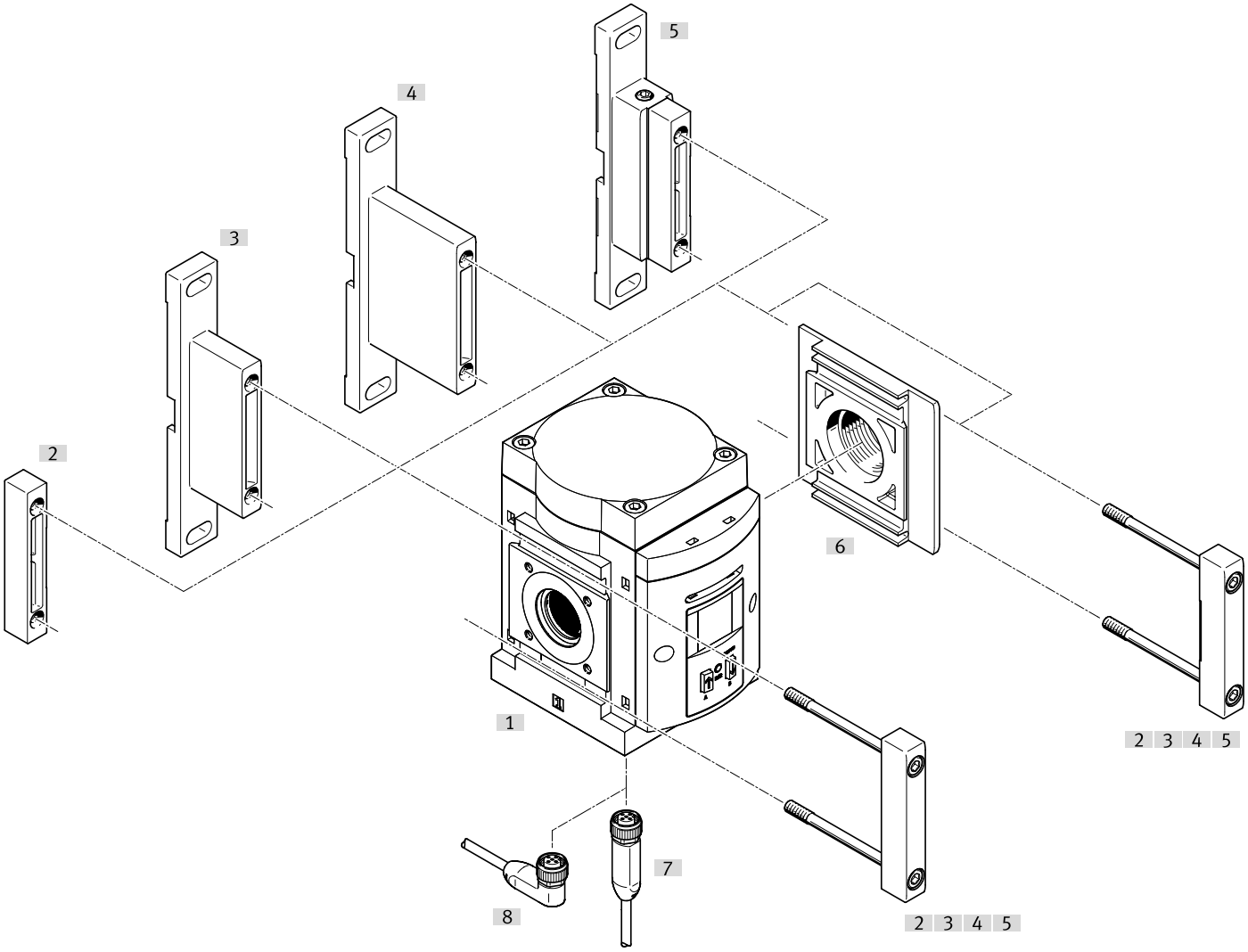
SFAM-62-...-T/W for individual assembly



Accessories			→ Page/Internet
	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 overview

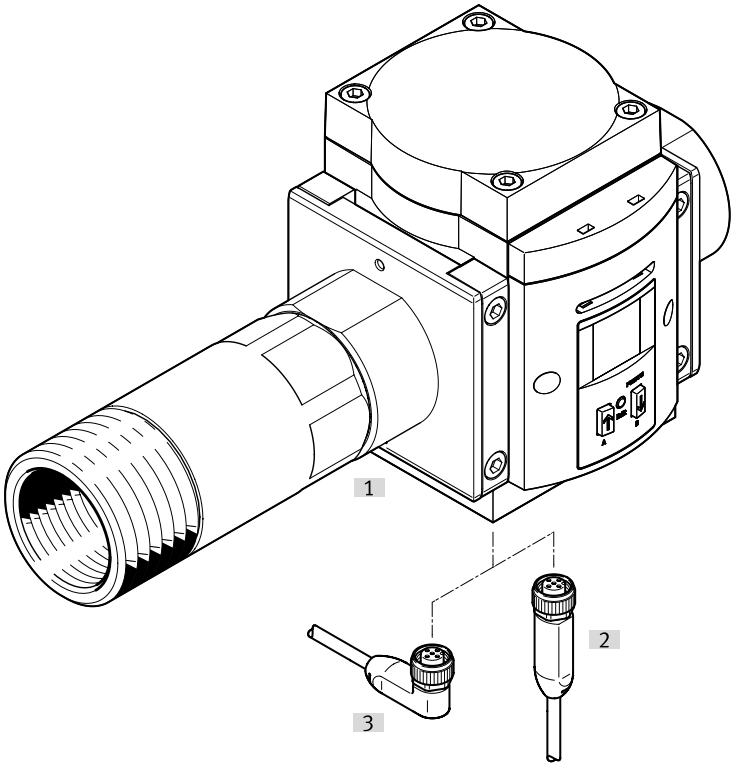
SFAM-90-...-M for battery assembly in air preparation unit combination MS9 series



Accessories			→ Page/Internet
	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 overview

SFAM-90-...-T for single mounting



Accessories			→ Page/Internet
	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 Lines

	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 design	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 design	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 design	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 design	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**