

## Flow sensors SFAW

**FESTO**



## Key features

### General

The SFAW is intended to measure and monitor the flow, volume and temperature of liquid media in piping systems or in terminals in industry. The flow velocity is recorded in accordance with the vortex principle. The flow rate and the accumulated volume are calculated from the flow velocity. An optional,

integrated temperature sensor records the temperature of the media. Connection to higher-level systems is provided by 2 switching outputs, an analogue output and/or an IO-Link interface, depending on the type. The outputs can be configured as appropriate to the application.

The switching outputs can be configured to monitor a threshold value or a range. Either PNP or NPN and either normally open (NO) or normally closed (NC) can be set for the outputs. Process values can be read out and parameters changed and transmitted to additional devices via the IO-Link interface.

### Application

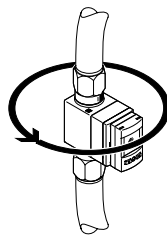
- Cooling circuit monitoring
- Monitoring for leaks and line breaks
- Process water monitoring
- Filling volume monitoring

### Overview

An installation concept with short mounting and dismounting times that is easy to implement in all installation situations.

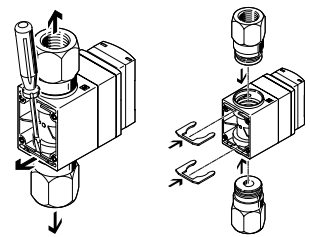
#### Mounting

The sensor can be rotated through 360° in the direction of flow, so that once it has been installed it can be aligned without the need for tools.



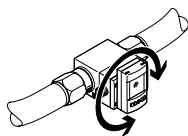
#### Dismounting

After the screwed-in locking plate (not shown) has been disconnected, it can be removed. The sensor can then be exchanged quickly by undoing the clamps on the sensor body and removing them. The fluid connections can then be detached from the sensor body.



#### Display

A large, illuminated LCD display increases the operational safety and makes the displayed values for flow rate or medium temperature and the accumulated volume easy to read. The rotatable display ensures ease of readability and usability when mounted either horizontally or vertically.



#### Change in colour

Depending on the switching status (e.g. a flow threshold has not been achieved or media temperature exceeded) a change in colour to red can be set in the display for the switching outputs. As a result, it is possible to reliably identify the system status from a large distance or in inaccessible areas.

#### Media connections

- Free choice of various media connections:
  - Threaded connection (female thread) (G, RC, NPT)
  - Clamped terminal connection to DIN 32676
  - Barbed hose fitting
- Free choice of media connection type on sensor input and sensor output side
- Basic sensor body and media connections can be obtained separately
- Ultra-simple and fast mounting of media connections using clamps
- Option of designing dedicated, application-specific connections

#### Electronics

Maximum flexibility and reduced warehousing thanks to switchable electrical outputs:

- PNP/NPN
- NC/NO contact function
- Current output 4 ... 20 mA or voltage output 1 ... 5 V, 0 ... 10 V

#### Sensor signal monitoring

Flow signal monitoring to detect unstable flows. Possible causes for unstable flows include:

- Air in the line
- Line filling during start-up
- Turbulent flows as a result of unfavourable or incorrect installation

## Key features

### Operation

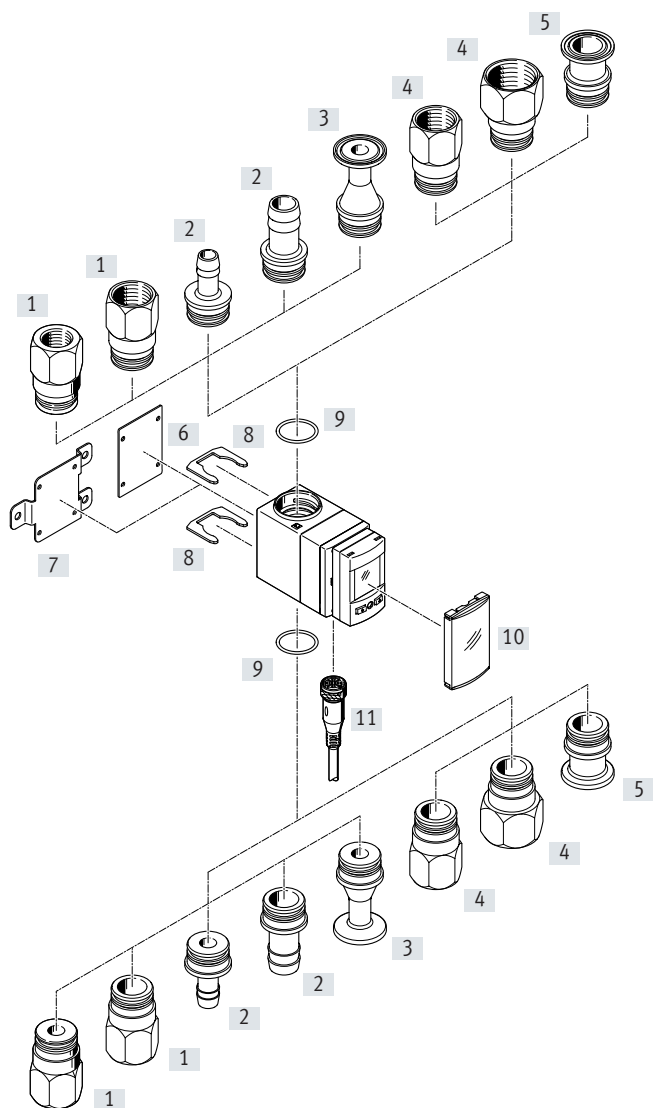
Monitoring and setting a flow threshold, a flow range, a temperature threshold and a temperature range using a teach-in function or by entering values.

- Flow indication, medium temperature indication, switching outputs and analogue value output for flow rates and temperature can be set on site in one device
- Fast commissioning of the flow sensor thanks to intuitive menu navigation
- Display colour red/blue as visual feedback that the flow rate or temperature thresholds are not met or have been exceeded
- Min./max. value memory for monitoring the flow and temperature (storage of flow and temperature peaks)
- To prevent undesirable switching status changes – an integrated adjustable filter damps the sensor signal generated by flow peaks
- Scaling the analogue output to increase the signal dynamics
- Switchable flow and volume units l/min, l/h, US gal/min, cfm, l, m<sup>3</sup>, US gal, cft
- Switchable temperature units °C, °F
- ECO function with option to switch off the display
- Optional security code can be freely chosen (4-digit code)
- All settings that have been carried out on one sensor (master) can be transferred (replication) to other, identical sensors (device). This significantly shortens the commissioning time.
- Recorder mode for manual volume measurements with start, stop and reset functionality
- Adjustable volume pulse

### IO-Link

- Serial communication integrated using IO-Link 1.1
- Analogue process values are provided digitally
- The sensor can be parameterised and maintained remotely at control level using an IO-Link master
- Automatic parameterisation following a sensor change means there is no need to repeat parameterisation and sensor settings after changing the sensor

## Peripherals overview



## Mounting components and accessories

		Description	→ Page
[1]	Connecting adapter SASA-FW-A-32-T...	Female thread for flow measuring range 32 with connection size G1/2, G3/4, R1/2, R3/4, NPT1/2, NPT3/4	16
[2]	Connecting adapter SASA-FW-A-32-S...	Barbed hose fitting for flow measuring range 32 with connection size 13 mm or 19 mm	16
[3]	Connecting adapter SASA-FW-A-32-CS5...	Clamped terminal connection for flow measuring range 32 with connection size DN15	17
[4]	Connecting adapter SASA-FW-A-100-T...	Female thread for flow measuring range 100 with connection size G3/4, G1, R3/4, R1, NPT3/4, NPT1	16
[5]	Connecting adapter SASA-FW-A-100-CS5...	Clamped terminal connection for flow measuring range 100 with connection size DN20	17
[6]	Locking plate SFAW	For securing the clamps (locking plate is screwed to the sensor body)	–
[7]	Wall mounting SAMH-FW-W	For wall or surface mounting of the flow sensor	14
[8]	Clamp SAMH-FW-SB	For mounting the fluid connections on the body of the flow sensors	15
[9]	Seal SASF-FW-S-E	For sealing the fluid connections against the body of the flow sensors	14
[10]	Safety guard SACC-PU-G	For covering the display and operating components	15
[11]	Connecting cable NEBU	–	17

## Type codes

001	Series	
SFAW	Flow sensor	

002	Flow measuring range	
32	Max. 32 l/min	
100	Max. 100 l/min	

003	Additional measured variable	
	None	
T	Temperature	

004	Connection type, input	
C	Terminal connection	
S	Tubing sleeve	
T	Female thread	
X	Connection provided by the user	

005	Connection standard, input	
	None	
S5	DIN 32676	

006	Connection size, input	
	Standard	
G1	G1	
N1	1 NPT	
R1	R1	
G12	G1/2	
G34	G3/4	
N12	1/2 NPT	
N34	3/4 NPT	
R12	R1/2	
R34	R3/4	
13	13 mm	
15	DN 15	
19	19 mm	
20	DN 20	

007	Connection type, output	
C	Terminal connection	
E	As input	
S	Tubing sleeve	
T	Female thread	
X	Connection provided by the user	

008	Connection standard, output	
	None	
S5	DIN 32676	

009	Connection size, output	
	Standard	
G1	G1	
N1	1 NPT	
R1	R1	
G12	G1/2	
G34	G3/4	
N12	1/2 NPT	
N34	3/4 NPT	
R12	R1/2	
R34	R3/4	
13	13 mm	
15	DN 15	
19	19 mm	
20	DN 20	

010	Type of mounting	
	None	
W	Wall mounting	

011	Electrical output 1	
PNLK	PNP/NPN/IO-Link	

012	Electrical output 2	
PN	PNP or NPN	
PNVBA	PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	

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

014	Electrical connection	
M12	Plug M12, A-coded	

015	Electrical accessories	
	None	
5S	Straight socket, cable 5 m	
2.5S	Straight socket, cable 2.5 m	

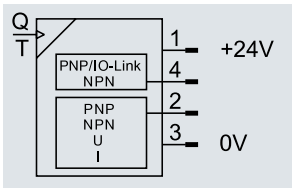
016	Protective devices	
	None	
G	Protective hood	

Additional variants can be ordered using the modular product system → 12

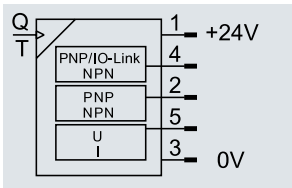
- Additional connection options for input and output
- Electrical accessories
- Protective devices

Data sheet

Function  
SFAW-...-PNLK-PNVBA



SFAW-...-PNLK-PN-VBA



- Maximum flexibility and reduced warehousing thanks to switchable electrical outputs:
  - PNP/NPN, switchable
  - N/C or N/O contact, switchable
  - Current output 4 ... 20 mA or voltage output 1 ... 5 V, 0 ... 10 V, switchable
- Pulse output for volume measurement can be freely selected
- Measuring signal filter for setting the rise time
- Additional filter for smoothing the display values



General technical data			
Certification		RCM	
		c UL us listed (OL)	
CE marking (see declaration of conformity)		To EU EMC Directive	
		To EU RoHS Directive	
KC mark		KC EMC	
Note on materials		RoHS-compliant	

Input signal, measuring element			
		-32	-100
Measured variable		Flow, temperature	
Flow direction		Unidirectional P1 } P2	
Measuring principle for flow		Vortex	
Measuring principle for temperature		PT1000	
Flow measuring range	[l/min]	1.8 ... 32	5 ... 100
Temperature measuring range	[°C]	0 ... 90	
Operating pressure	[bar]	0 ... 12; max. 12 bar at 40°C, max. 6 bar at 100°C	
Max. overload pressure	[bar]	40	
Operating medium <sup>1)</sup>		Liquid media, neutral liquids, water	
Temperature of medium	[°C]	0 ... 90	
Ambient temperature	[°C]	0 ... 50	
Nominal temperature	[°C]	23	

1) Media with a kinematic viscosity ≤ 1.8 mm²/sec. [cSt]. Compatibility of the media with the substances in contact with the media must be ensured.

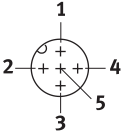
## Data sheet

Electrical data		
	-32	-100
General output		
Accuracy of zero point Flow ≤ 50% FS <sup>1)</sup>	[% FS]	±2
Accuracy of margin Flow ≥ 50% FS <sup>1)</sup>	[% FS]	±3
Repetition accuracy of zero point Flow ≤ 50% FS <sup>2)</sup>	[% FS]	±0.5
Repetition accuracy of spread Flow ≥ 50% FS <sup>2)</sup>	[% FS]	±1
Accuracy of temperature	[°C]	±2
Temperature coefficient of margin	[% FS]	Typ. ±0.05% FS/K
Switching output		
Switching output	2 x PNP or 2 x NPN or IO-Link, switchable	
Switching function	Threshold value comparator or window comparator, freely programmable	
Switching element function	N/C contact or N/O contact, switchable	
Switch-on time	[ms]	400 with filter time constant 150 ms (adjustable)
Switch-off time	[ms]	300 with filter time constant 150 ms (adjustable)
Max. output current	[mA]	100
Voltage drop	[V]	Max. 1.5
Pull-down / pull-up resistor	PNP: integrated; NPN: not integrated	
Inductive protective circuit	Available	
Analogue output		
Characteristic flow rate curve	[l/min]	0 ... 320 ... 100
Characteristic curve for temperature	[°C]	0 ... 100
Output characteristic curve for current	[mA]	4 ... 20
Output characteristic curve for voltage	[V]	0 ... 10 or 1 ... 5, adjustable
Rise time	[ms]	900 with filter time constant 150 ms (adjustable)
Max. load resistance at current output	[ohm]	500
Min. load resistance of voltage output	[kOhm]	15
Output, additional data		
Short circuit current rating	Yes	
Overload protection	Available	
Electronics		
Operating voltage range DC	[v]	18 ... 30
Max. current consumption	[mA]	260
Reverse polarity protection	For all electrical connections	
IO-Link, SIO mode support	Yes	
Electromechanical systems		
Electrical connection	Straight plug, M12x1, 5-pin, A-coded	
Max. cable length	[m]	30, for IO-Link operation 20

1) Accuracy of flow rate value = ± 2% FS for flow rate ≤ 50% FS and ± 3% of measured value for flow rate ≥ 50% FS

2) Repetition accuracy of flow rate = &lt; ± 0.5% FS for flow rate ≤ 50% FS &lt; ± 1% of measured value for flow rate ≥ 50% FS

## Data sheet

Pin allocation		
	Pin	Meaning
Plug M12x1, 5-pin		
	1	Operating voltage +24 V DC
	2	Switching output OutB or OutD or analogue output
	3	0 V
	4	Switching output OutA or OutC or IO-Link (C/Q line)
	5	Analogue output or not assigned
Mechanics		
	-32	-100
Type of mounting	Wall bracket	
Mounting position	Any	
Materials in contact with the media	ETFE, PA6T/6I reinforced, EPDM (perox.), stainless steel	
Information on materials		
Housing	Reinforced PA	
Wall bracket	Stainless steel	
Safety guard	PA	
Keypad	TPE-O	
Inspection window	PA	
Sealing ring	EPDM	
Display/operation		
	-32	-100
Display type	Illuminated LCD, blue	
Displayable units	l/min, l/h, ft³/min, US gal/min, l, m³, ft³, US gal, °C, °F	
Switching status indication	Visual	
Setting options	Teach-in, IO-Link, via display and keys	
Tamper-proof	Electronic locking	
Setting range for threshold value	[l]	0.1 ... 1999.9
Volume pulse	[m³]	0.01 ... 199.99
	[ft³]	0.01 ... 199.9
	[US gal]	1 ... 19999
Adjustable hysteresis	[% FS]	0 ... 90
Immissions/emissions		
	-32	-100
Storage temperature	[°C]	−20 ... +80
Degree of protection	IP65	
Protection class	III	
Shock resistance	Shock test SG2 to FN/EN	
Vibration resistance	EN60068-2-6/2-200Hz/0.7 mm	
Corrosion resistance class CRC <sup>1)</sup>	3	
PWIS criterion	Free of paint-wetting impairment substances to FN 942010	

1) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.



## Data sheet

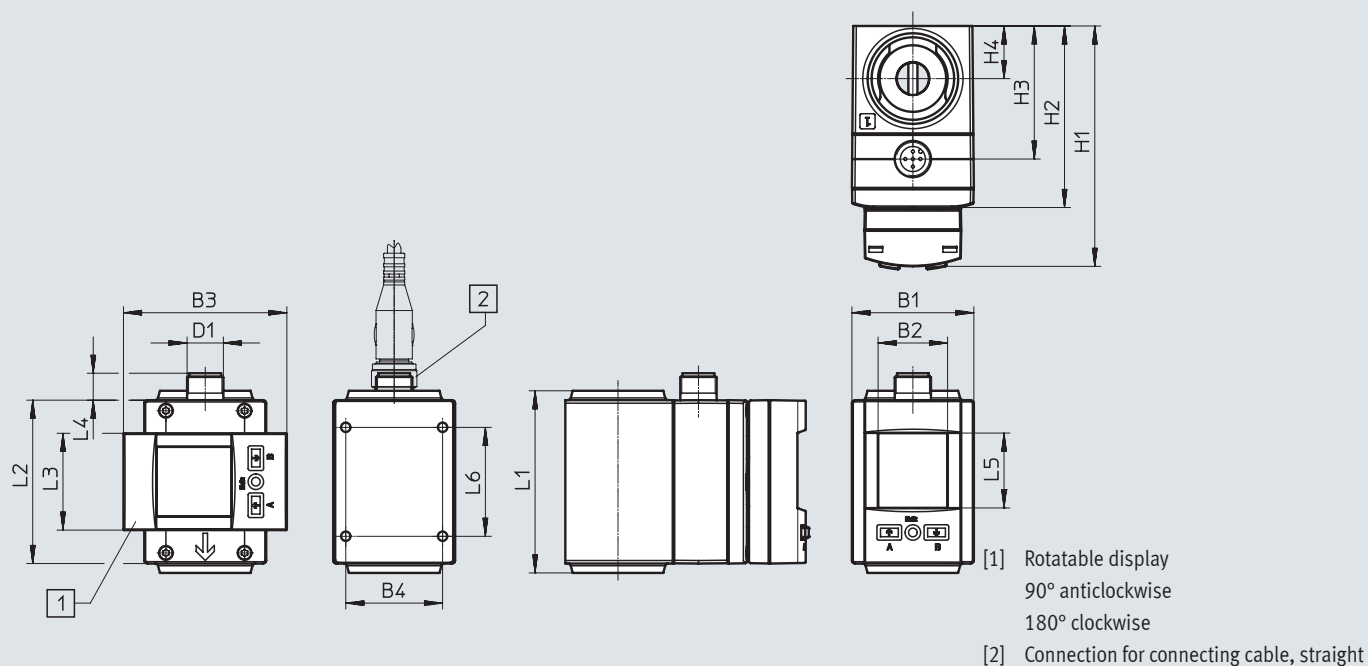
IO-Link	SFAW-...T-TG...-E-PNLK...	SFAW-...TG...-E-PNLK...
Protocol	IO-Link	
Protocol version	Device V 1.1	
Profile	Smart sensor profile	
Function classes	Binary data channel (BDC)	
	Process data variable (PDV)	
	Identification	
	Diagnostics	
	Teach channel	
Communication mode	COM2 (38.4 kBd)	
SIO mode support	Yes	
Port class	A	
Process data width OUT	0 bytes	
Process data width IN	5 bytes	3 bytes
Process data content IN	1 bit BDC (temperature monitoring)	–
	14 bit PDV (measured temperature value)	–
	14 bit PDV (measured flow value)	
	2 bit BDC (flow monitoring)	
	1 bit BDC (volume monitoring)	
IO-Link, service data contents IN	32 bit PDV (measured volume value)	
IO-Link, minimum cycle time	5 ms	
IO-Link, data memory required	0.5 KB	

## Data sheet

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

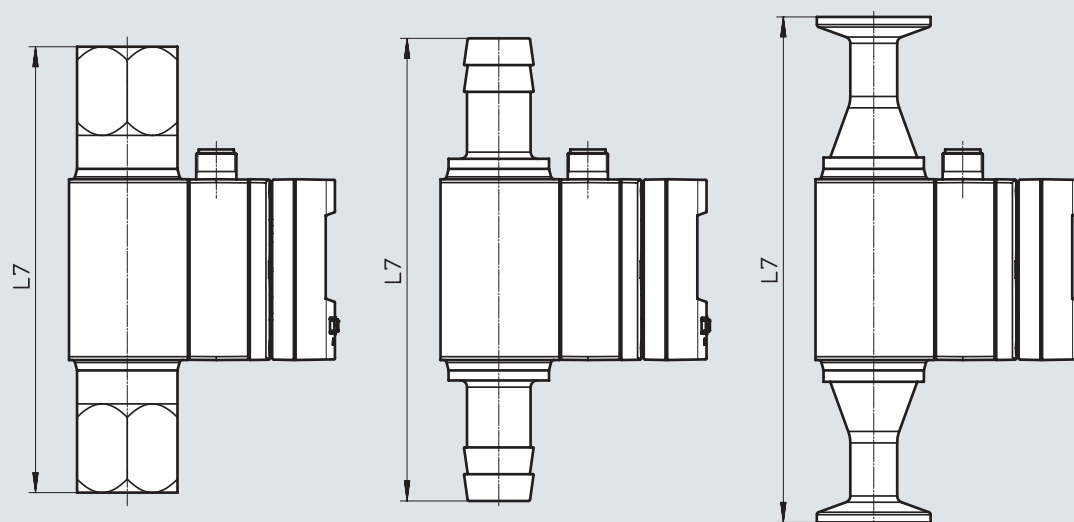
SFAW-...-PNLK-PNVBA-M12



SFAW-...-T-...

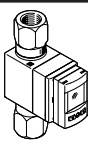
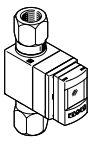
SFAW-...-S-...

SFAW-...-C-...



Type	B1	B2	B3	B4	D1	H1	H2	H3	H4	L1	L2	L3	L4	L5	L6	L7
SFAW-32...-X-E-PNLK-PNVBA-M12	40.3	23	54	32	M12x1	79.5	60	44	17.4	60.2	54	32	8.9	24.8	36	–
SFAW-32...-T-E-PNLK-PNVBA-M12																133.2
SFAW-32...-S-E-PNLK-PNVBA-M12																126.2
SFAW-32...-C-E-PNLK-PNVBA-M12																151
SFAW-100...-X-E-PNLK-PNVBA-M12						83.5	64	48								–
SFAW-100...-T-E-PNLK-PNVBA-M12																133.2
SFAW-100...-S-E-PNLK-PNVBA-M12																138.2
SFAW-100...-C-E-PNLK-PNVBA-M12																111

## Data sheet

Ordering data					
Design	Flow measuring range [l/min]	Measured variable	Connection type	Part no.	Type
	32	Without temperature measurement	Clamped terminal connection	8036883	SFAW-32-CS515-E-PNLK-PNVBA-M12
			Barbed hose fitting	8036879	SFAW-32-S13-E-PNLK-PNVBA-M12
			Female thread	8036871	SFAW-32-TG12-E-PNLK-PNVBA-M12
				8036873	SFAW-32-TG34-E-PNLK-PNVBA-M12
			Connection by the user	8036887	SFAW-32-X-E-PNLK-PNVBA-M12
		With temperature measurement	Clamped terminal connection	8036884	SFAW-32T-CS515-E-PNLK-PNVBA-M12
			Barbed hose fitting	8036880	SFAW-32T-S13-E-PNLK-PNVBA-M12
			Female thread	8036872	SFAW-32T-TG12-E-PNLK-PNVBA-M12
				8036874	SFAW-32T-TG34-E-PNLK-PNVBA-M12
			Connection by the user	8036888	SFAW-32T-X-E-PNLK-PNVBA-M12
	100	Without temperature measurement	Clamped terminal connection	8036885	SFAW-100-CS520-E-PNLK-PNVBA-M12
			Female thread	8036877	SFAW-100-TG1-E-PNLK-PNVBA-M12
				8036875	SFAW-100-TG34-E-PNLK-PNVBA-M12
			Connection by the user	8036889	SFAW-100-X-E-PNLK-PNVBA-M12
		With temperature measurement	Clamped terminal connection	8036886	SFAW-100T-CS520-E-PNLK-PNVBA-M12
			Female thread	8036878	SFAW-100T-TG1-E-PNLK-PNVBA-M12
				8036876	SFAW-100T-TG34-E-PNLK-PNVBA-M12
			Connection by the user	8036890	SFAW-100T-X-E-PNLK-PNVBA-M12

## Ordering data – Modular product system

Ordering table		Conditions	Code	Enter code
Module no.	8022000			
Function	Flow sensor		SFAW	-SFAW
Flow measuring range l/min	Max. 32		-32	
	Max. 100		-100	
Additional measured variable	None			
	Temperature		T	
Connection type, input	Female thread		-T	
	Clamped terminal connection		-C	
	Barbed hose fitting	[4]	-S	
	Connection by the user	[1]	-X	
Connection standard, input	n/a			
	DIN32676	[2] [3]	S5	
Connection size, input	Standard			
	Female thread G1/2	[4] [5] [6] [7]	G12	
	Female thread G3/4	[5] [6] [7]	G34	
	Female thread G1	[5] [6] [7] [8]	G1	
	Female thread R1/2	[4] [5] [6] [7]	R12	
	Female thread R3/4	[5] [6] [7]	R34	
	Female thread R1	[5] [6] [7] [8]	R1	
	Female thread NPT1/2	[4] [5] [6] [7]	N12	
	Female thread NPT3/4	[5] [6] [7]	N34	
	Female thread NPT1	[5] [6] [7] [8]	N1	
	Barbed hose fitting 13 mm	[4] [5] [9] [10]	13	
	Barbed hose fitting 19 mm	[4] [5] [8] [9] [10]	19	
	Clamped terminal connection DN15	[11]	15	
	Clamped terminal connection DN20	[12]	20	
Connection type, output	As input	[13]	-E	
	Female thread		-T	
	Clamped terminal connection		-C	
	Barbed hose fitting	[4]	-S	
	Connection by the user	[13]	-X	
Connection standard, output	None			
	DIN32676	[14] [15]	S5	
Connection size, output	Standard			
	Female thread G1/2	[16] [17] [18]	G12	
	Female thread G3/4	[16] [17] [18]	G34	
	Female thread G1	[16] [17] [18]	G1	
	Female thread R1/2	[16] [17] [18]	R12	
	Female thread R3/4	[16] [17] [18]	R34	
	Female thread R1	[16] [17] [18]	R1	
	Female thread NPT1/2	[16] [17] [18]	N12	
	Female thread NPT3/4	[16] [17] [18]	N34	
	Female thread NPT1	[16] [17] [18]	N1	
	Barbed hose fitting 13 mm	[16] [19] [20]	13	
	Barbed hose fitting 19 mm	[4] [16] [19] [20]	19	
	Clamped terminal connection DN15	[11]	15	
	Clamped terminal connection DN20	[12]	20	

## Ordering data – Modular product system

Ordering table		Conditions	Code	Enter code
Type of mounting	None			
	Wall mounting		-W	
Electrical output 1	PNP or NPN or IO-Link		-PNLK	
Electrical output 2	PNP or NPN	[21]	-PN	
	PNP or NPN or 0 ... 10V or 1 ... 5V or 4 ... 20 mA		-PNVBA	
Electrical output 3	None			
	0 ... 10 V or 1 ... 5 V or 4 ... 20 mA	[22]	-VBA	
Electrical connection	M12 plug, A-coded		-M12	M12
Electrical accessories	None			
	Straight socket, cable 2.5 m		+2.5S	
	Straight socket, cable 5 m		+5S	
Protective devices	None			
	Safety guard		G	

- [1] X Not in combination with connection standard input and not connection size input
- [2] S5 Mandatory specification in combination with connection type, input, C
- [3] S5 Not in combination with connection type, input, S, T, X
- [4] G12, N12, R12, 10, 13, 19, S Not in combination with flow measuring range 100
- [5] G1, N1, R1, G12, G34, N12, N34, R12, R34, 13, 19 Not in combination with connection type, input, X, C  
Not in combination with connection standard, input, S5
- [6] G1, N1, R1, G12, G34, N12, N34, R12, R34 Not in combination with connection type, input, S
- [7] G1, N1, R1, G12, G34, N12, N34, R12, R34 Mandatory specification in combination with connection type, input, T
- [8] G1, N1, R1, 20 Not in combination with flow measuring range 32
- [9] 13, 19 Not in combination with connection type, input, T
- [10] 13, 19 Mandatory specification in combination with connection type, input, S
- [11] 15, 15 Mandatory specification in combination with flow measuring range 32 and C
- [12] 20, 20 Mandatory specification in combination with flow measuring range 100 and C
- [13] E, X Not in combination with connection standard output and not connection size output
- [14] S5 Mandatory specification in combination with connection type, output, C
- [15] S5 Not in combination with connection type, output, E, T, X, S
- [16] G1, N1, R1, G12, G34, N12, N34, R12, R34, 13, 19 Not in combination with connection type, output, E, X, C  
Not in combination with connection standard, output S5
- [17] G1, N1, R1, G12, G34, N12, N34, R12, R34 Not in combination with connection type, output, S
- [18] G1, N1, R1, G12, G34, N12, N34, R12, R34 Mandatory specification in combination with connection type, output, T
- [19] 13, 19 Not in combination with connection type, output, T
- [20] 13, 19 Mandatory specification in combination with connection type, output, S
- [21] PN Mandatory specification only in combination with VBA (electrical output 3)
- [22] VBA Not in combination with electrical output 2, PNVBA

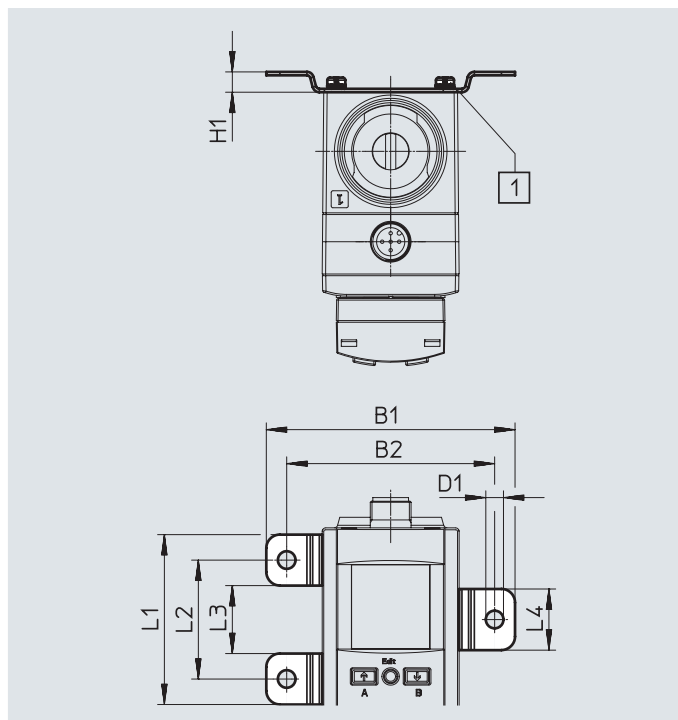
## Accessories

### Wall mounting SAMH-FW-W

For wall or surface mounting

Material:

Stainless steel



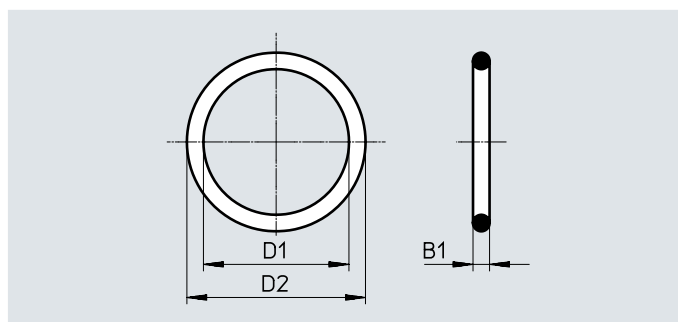
Dimensions								
Type	B1	B2	D1 Ø	H1	L1	L2	L3	L4
SAMH-FW-W	73.2	61.2	5.2	6	50	35	20	18

### Ordering data

	Part no.	Type
Wall mounting	8036909	SAMH-FW-W

### Seal SASF-FW-S-E

For sealing the fluid connections against the body of the flow sensors



Dimensions			
Type	B1	D1 Ø	D2 Ø
SASF-FW-S-E	2.5	22	27

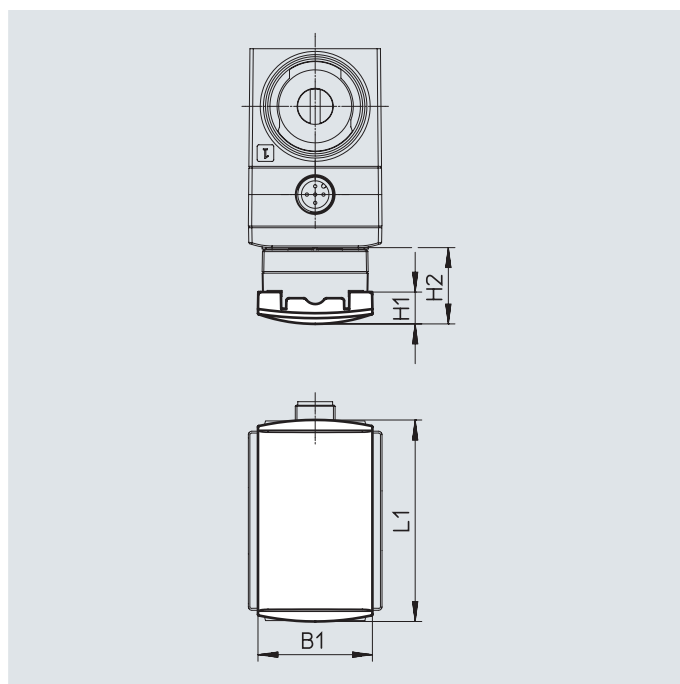
### Ordering data

	Part no.	Type
Seal	8036907	SASF-FW-S-E

## Accessories

### Safety guard SACC-PU-G

For covering the display and operating components

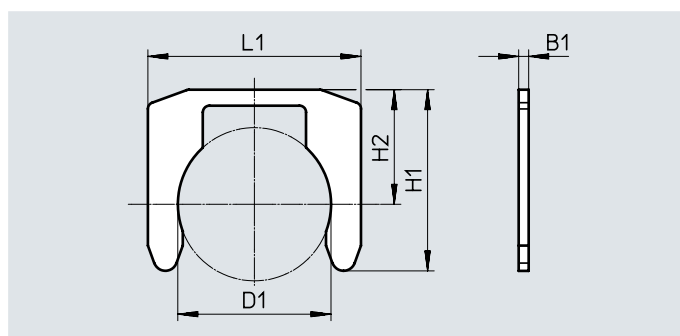


Dimensions				
Type	B1	L1	H1	H2
SACC-PU-G	34.5	60.8	9.6	23

Ordering data		
	Part no.	Type
Safety guard	8003353	SACC-PU-G

### Clamp SAMH-FW-SB

For mounting the fluid connections on the body of the flow sensors



Dimensions					
Type	B1	D1 Ø	H1	H2	L1
SAMH-FW-SB	1.5	23	27.2	17.2	32

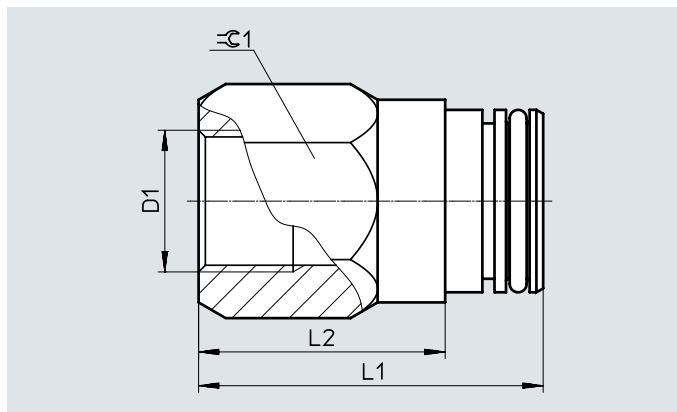
Ordering data		
	Part no.	Type
Clamp	8036908	SAMH-FW-SB

## Accessories

## Fluid connector set

SASA-FW-A- ...

Connection type: Female thread



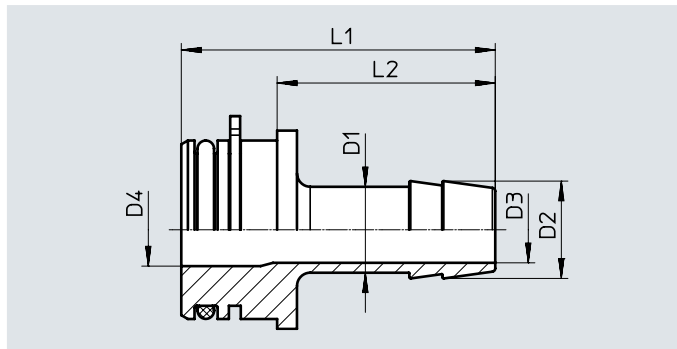
## Dimensions and ordering data

Type	Flow measuring range [l/min]	D1 Ø	L1	L2	$\varnothing 1$	Part no.	Type
SASA-FW-A-32-TG12	32	G1/2	51	36.5	30	8036891	SASA-FW-A-32-TG12
SASA-FW-A-32-TG34		G3/4				8036892	SASA-FW-A-32-TG34
SASA-FW-A-32-TR12		R1/2				8036895	SASA-FW-A-32-TR12
SASA-FW-A-32-TR34		R3/4				8036896	SASA-FW-A-32-TR34
SASA-FW-A-32-TN12		NPT1/2				8036899	SASA-FW-A-32-TN12
SASA-FW-A-32-TN34		NPT3/4				8036900	SASA-FW-A-32-TN34
SASA-FW-A-100-TG34	100	G3/4	51	36.5	30	8036893	SASA-FW-A-100-TG34
SASA-FW-A-100-TG1		G1			36	8036894	SASA-FW-A-100-TG1
SASA-FW-A-100-TR34		R3/4			30	8036897	SASA-FW-A-100-TR34
SASA-FW-A-100-TR1		R1			36	8036898	SASA-FW-A-100-TR1
SASA-FW-A-100-TN34		NPT3/4			30	8036901	SASA-FW-A-100-TN34
SASA-FW-A-100-TN1		NPT1			36	8036902	SASA-FW-A-100-TN1

## Fluid connector set

SASA-FW-A- ...

Connection type: Barbed hose fitting



## Dimensions and ordering data

Type	Flow measuring range [l/min]	D1 Ø	D2 Ø	D3 Ø	D4 Ø	L1	L2	Part no.	Type
SASA-FW-A-32-S13	32	13	14.8	10	11	47.5	33	8036903	SASA-FW-A-32-S13
SASA-FW-A-32-S19		19	20.8	15	19	53.5	39	8036904	SASA-FW-A-32-S19

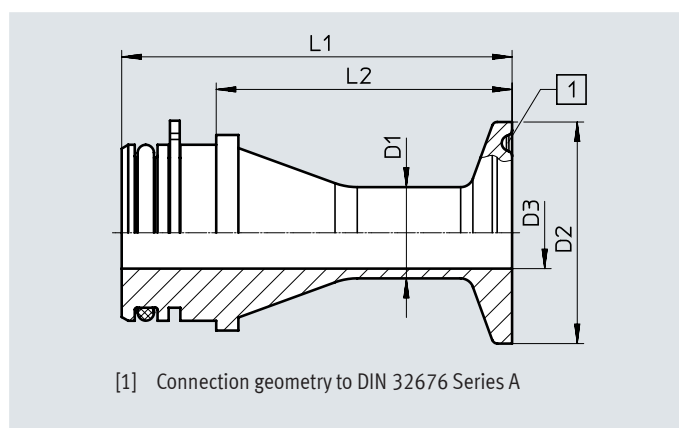


## Accessories

### Fluid connector set

SASA-FW-A- ...

Connection type: Clamped terminal connection





### Dimensions and ordering data

Type	Flow measuring range [l/min]	D1 Ø	D2 Ø	D3 Ø	L1	L2	Part no.	Type
SASA-FW-A-32-CS515	32	14	34	11	59.9	45.4	8036905	SASA-FW-A-32-CS515
SASA-FW-A-100-CS520	100	23	34	19	39.9	25.4	8036906	SASA-FW-A-100-CS520

### Ordering data – Connecting cables

Data sheets → Internet: nebu

		Number of wires	Cable length [m]	Part no.	Type
M12x1, straight socket					
	4	2.5	550326	NEBU-M12G5-K-2.5-LE4	
		5	541328	NEBU-M12G5-K-5-LE4	
M12x1, straight socket					
	5	2.5	541330	NEBU-M12G5-K-2.5-LE5	
		5	541331	NEBU-M12G5-K-5-LE5	

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