# Flow sensors SFAW

**FESTO**

# Flow sensors SFAW

Key features

FESTO

## General

The SFAW is intended for use in measuring and monitoring the flow, volume and temperature of liquid media in piping 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.
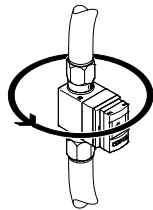
### Dismounting

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 clips on the sensor body and removing them. The fluid connections can then be detached from the sensor body.
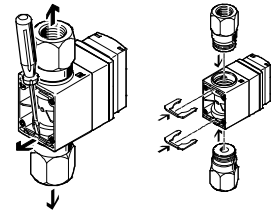
### Display

A large, illuminated LCD display increases the operational safety and makes the currently 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.
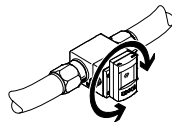
### Change in colour

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
  - Female hose connector
- 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 clips
- Option of designing dedicated, application-specific connections

### Electronics

Maximum versatility 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

# Flow sensors SFAW

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 have not been achieved 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, $m^3$, US gal, cft
- Switchable temperature units °C, °F
- ECO function with option to set display switch-off
- 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 makes it possible to significantly shorten commissioning time.
- Recorder mode for manual volume measurements with start, stop and reset functionality
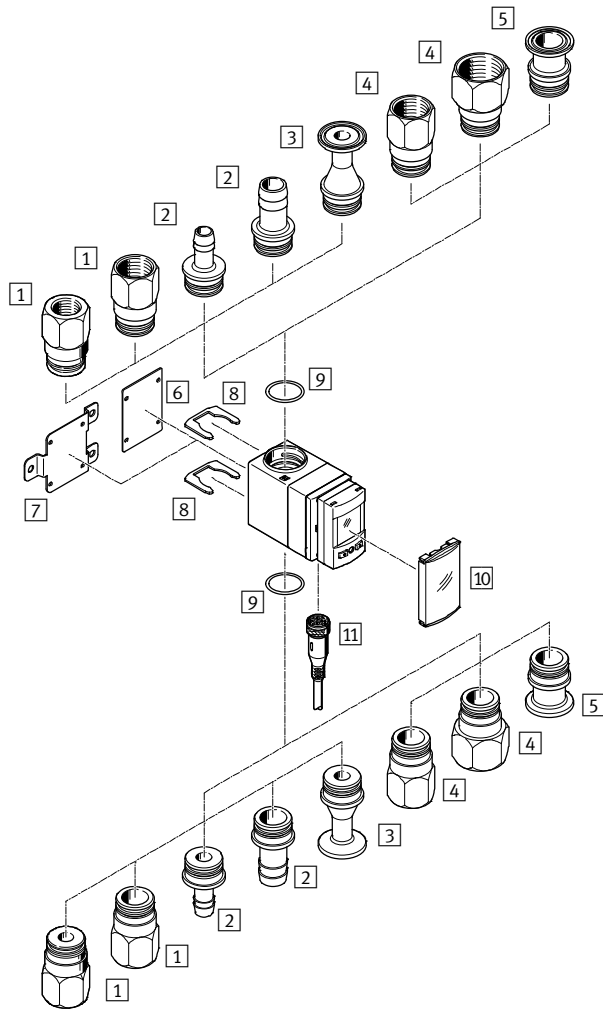- Adjustable volume pulse

## 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 sensor change: no need to repeat parameterisation and sensor settings after changing the sensor
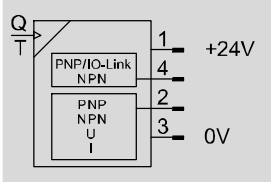
Peripherals overview



| Mounting components and accessories | | | |
|---|---|---|---|
| | | Description | ➔ Page/Internet |
| 1 | Connecting adapter<br>SASA-FW-A-32-T… | Female thread for flow measuring range 32 with connection G½, G¾, R½, R¾, NPT½, NPT¾ | 16 |
| 2 | Connecting adapter<br>SASA-FW-A-32-S… | Female hose connector for flow measuring range 32 with connection size 13 mm or 19 mm | 16 |
| 3 | Connecting adapter<br>SASA-FW-A-32-CS5… | Clamped terminal connection for flow measuring range 32 with connection DN15 | 17 |
| 4 | Connecting adapter<br>SASA-FW-A-100-T… | Female thread for flow measuring range 100 with connection G¾, G1, R¾, R1, NPT¾, NPT1 | 16 |
| 5 | Connecting adapter<br>SASA-FW-A-100-CS5… | Clamped terminal connection for flow measuring range 100 with connection DN20 | 17 |
| 6 | Locking plate<br>SFAW | For securing the clips (locking plate is screwed to the sensor body) | – |
| 7 | Wall mounting<br>SAMH-FW-W | For wall or surface mounting of the flow sensor | 14 |
| 8 | Clip<br>SAMH-FW-SB | For mounting the fluid connections on the body of the flow sensors | 15 |
| 9 | Seal<br>SASF-FW-S-E | For sealing the fluid connections against the body of the flow sensors | 14 |
| 10 | Protective cover<br>SACC-PU-G | For covering the display and control elements | 15 |
| 11 | Connecting cable<br>NEBU | – | 17 |

# Flow sensors SFAW

Type codes

|  | SFAW | – |  |  |  |  | – | E | – | PNLK | PNVBA | M12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Type**

| SFAW | Flow sensor |
|---|---|

**Flow measuring range [l/min]**

| 32 | Max. 32 |
|---|---|
| 100 | Max. 100 |

**Further measured variable**

| – | None |
|---|---|
| T | Temperature |

**Connection type, input**

| C | Clamped terminal connection |
|---|---|
| S | Female hose connector |
| T | Female thread |
| X | User-specific connection |

**Connection standard, input**

| – | None |
|---|---|
| S5 | DIN 32676 |

**Connection size, input**

| G12 | G½ female thread |
|---|---|
| G34 | G¾ female thread |
| G1 | G1 female thread |
| 13 | Female hose connector 13 mm |
| 15 | Clamped terminal connection DN 15 |
| 20 | Clamped terminal connection DN 20 |

**Connection type, output**

| E | As for input connection type |
|---|---|

**Electrical output 1**

| PNLK | PNP or NPN or IO-Link |
|---|---|

**Electrical output 2**

| PNVBA | PNP or NPN or 0 … 10 V or 1 … 5 V or 4 … 20 mA |
|---|---|

**Electrical connection**

| M12 | Straight plug, M12x1, 5-pin |
|---|---|

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

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

# Flow sensors SFAW

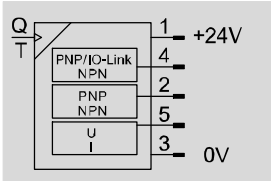Technical data

Function
SFAW-…-PNLK-PNVBA



SFAW-…-PNLK-PN-VBA



- Maximum versatility and reduced warehousing owing 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 mark |
| | c UL us - Listed (OL) |
| CE marking (see declaration of conformity) | To EU EMC Directive |
| | To EU RoHS Directive |
| KC marking | KC-EMV |
| Note on materials | RoHS compliant |

| Input signal, measuring element | | -32 | -100 |
|---|---|---|---|
| Measured variable | | Flow, temperature | |
| Direction of flow | | Unidirectional P1 $\rightarrow$ 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[1] | | 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 ≤ 1.8mm²/sec. [cSt]. Compatibility of the media with the substances in contact with the media must be ensured.
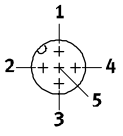
# Flow sensors SFAW

Technical data

| Electrical data | | -32 | -100 |
|---|---|---|---|
| **Output, general** | | | |
| Accuracy of zero point Flow ≤ 50% FS[1] | [% FS] | ±2 | |
| Accuracy of margin Flow ≥ 50% FS[1] | [% FS] | ±3 | |
| Repetition accuracy of zero point Flow ≤ 50% FS[2] | [% FS] | ±0.5 | |
| Repetition accuracy of margin Flow ≥ 50% FS[2] | [% 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 | | Present | |
| | | | |
| **Analog output** | | | |
| Characteristic curve for flow rate | [l/min.] | 0 … 32 | 0 … 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 at voltage output | [kOhm] | 15 | |
| | | | |
| **Output, additional data** | | | |
| Protection against short circuit | | Yes | |
| Overload protection | | Yes | |
| | | | |
| **Electronic components** | | | |
| Operating voltage range DC | [v] | 18 … 30 | |
| Max. current consumption | [mA] | 260 | |
| Protection against incorrect polarity | | For all electrical connections | |
| IO-Link, SIO mode support | | Yes | |
| | | | |
| **Electromechanical components** | | | |
| Electrical connection | | Straight plug, M12x1, 5-pin, A-coded | |
| Max. connecting cable length | [m] | 30, for IO-Link operation 20 | |

1)   Accuracy of flow value = ± 2% FS for flow ≤ 50% FS and ± 3% o.m.v. for flow ≥ 50% FS
2)   Repeat accuracy of flow value = < ± 0.5% FS for flow ≤ 50% FS < ± 1% o.m.v. for flow ≥ 50% FS

## 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 |

## Mechanical system

| | -32 | -100 |
|---|---|---|
| Type of mounting | Wall bracket | |
| Mounting position | Any | |
| Materials in contact with the medium | ETFE, PA6T/6I reinforced, EPDM (perox.), stainless steel | |
| **Materials** | | |
| Housing | PA reinforced | |
| Wall bracket | Stainless steel | |
| Protective cover | PA | |
| Key pad | 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[1] | | 3 | |
| PWIS criterion | | PWIS-free to FN 942010 | |

1)  Corrosion resistance class CRC 3 to Festo standard FN 940070
    High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

**FESTO**

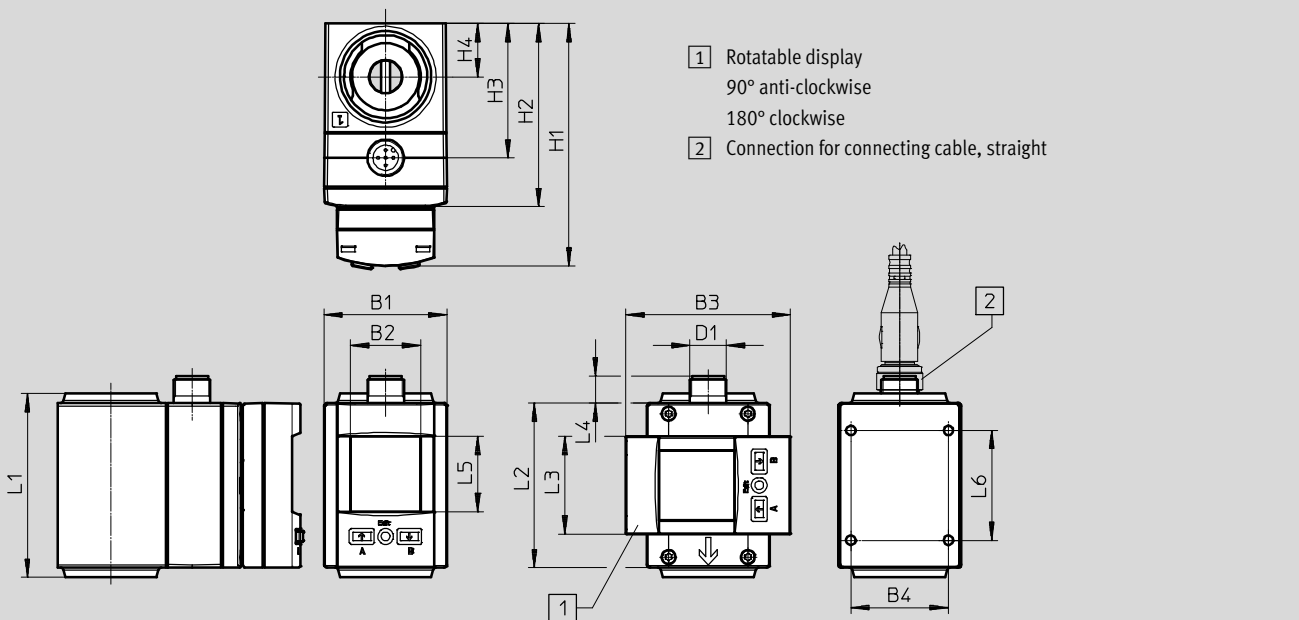| IO-Link | SFAW-...T-TG...-E-PNLK-... | SFAW-...-TG...-E-PNLK-... |
|---|---|---|
| Protocol | IO-Link | |
| Protocol version | Device V 1.1 | |
| Profile | Smart sensor profile | |
| Function classes | Binary data channel (BDC) | |
| | Process data variable (PDV) | |
| | Identification | |
| | Diagnostics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

**Dimensions**                                                    Download CAD data ➜ www.festo.com

SFAW-…-PNLK-PNVBA-M12

1 Rotatable display
  90° anti-clockwise
  180° clockwise
2 Connection for connecting cable, straight

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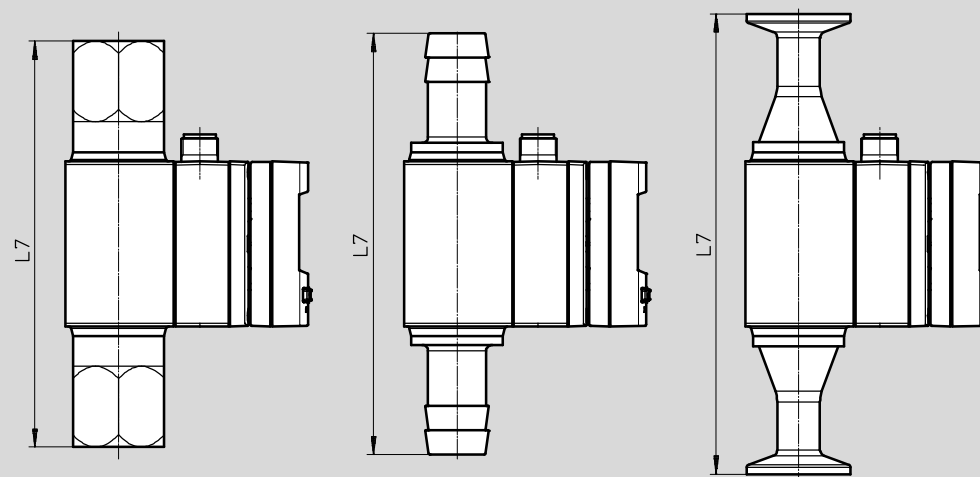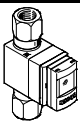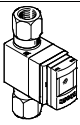
| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 | L7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFAW-32…-X-E-PNLK-PNVBA-M12 | | | | | | | | | | | | | | | | – |
| SFAW-32…-T-E-PNLK-PNVBA-M12 | | | | | | 79.5 | 60 | 44 | | | | | | | | 133.2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

# Flow sensors SFAW

Technical data

| 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 |
| | | | Female hose connector | 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 |
| | | | User-specific connection | 8036887 | SFAW-32-X-E-PNLK-PNVBA-M12 |
| | | With temperature measurement | Clamped terminal connection | 8036884 | SFAW-32T-CS515-E-PNLK-PNVBA-M12 |
| | | | Female hose connector | 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 |
| | | | User-specific connection | 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 |
| | | | User-specific connection | 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 |
| | | | User-specific connection | 8036890 | SFAW-100T-X-E-PNLK-PNVBA-M12 |

# Flow sensors SFAW

Ordering data – Modular product system

## Ordering table

| | | | Conditions | Code | Entry code |
|---|---|---|---|---|---|
| **M** | Module no. | **8022000** | | | |
| | Function | Flow sensor | | **SFAW** | -SFAW |
| **M** | Flow measuring range     l/min | Max. 32 | | **-32** | |
| | | Max. 100 | | **-100** | |
| **O** | Further measured variable | None | | | |
| | | Temperature | | **T** | |
| **M** | Connection type, input | Female thread | | **-T** | |
| | | Clamped terminal connection | | **-C** | |
| | | Female hose connector | 4 | **-S** | |
| | | User-specific connection | 1 | **-X** | |
| **O** | Connection standard, input | Not specified | | | |
| | | DIN32676 | 2 3 | **S5** | |
| | Connection size, input | Standard | | | |
| | | Female thread G½ | 4 5 6 7 | **G12** | |
| | | Female thread G¾ | 5 6 7 | **G34** | |
| | | Female thread G1 | 5 6 7 8 | **G1** | |
| | | Female thread R½ | 4 5 6 7 | **R12** | |
| | | Female thread R¾ | 5 6 7 | **R34** | |
| | | Female thread R1 | 5 6 7 8 | **R1** | |
| | | Female thread NPT½ | 4 5 6 7 | **N12** | |
| | | Female thread NPT¾ | 5 6 7 | **N34** | |
| | | Female thread NPT1 | 5 6 7 8 | **N1** | |
| | | Female hose connector 13 mm | 4 5 9 10 | **13** | |
| | | Female hose connector 19 mm | 4 5 8 9 10 | **19** | |
| | | Clamped terminal connection DN 15 | 11 | **15** | |
| | | Clamped terminal connection DN 20 | 12 | **20** | |
| **M** | Connection type, output | As for input | 13 | **-E** | |
| | | Female thread | | **-T** | |
| | | Clamped terminal connection | | **-C** | |
| | | Female hose connector | 4 | **-S** | |
| | | User-specific connection | 13 | **-X** | |
| **O** | Connection standard, output | None | | | |
| | | DIN32676 | 14 15 | **S5** | |
| | Connection size, output | Standard | | | |
| | | Female thread G½ | 16 17 18 | **G12** | |
| | | Female thread G¾ | 16 17 18 | **G34** | |
| | | Female thread G1 | 16 17 18 | **G1** | |
| | | Female thread R½ | 16 17 18 | **R12** | |
| | | Female thread R¾ | 16 17 18 | **R34** | |
| | | Female thread R1 | 16 17 18 | **R1** | |
| | | Female thread NPT½ | 16 17 18 | **N12** | |
| | | Female thread NPT¾ | 16 17 18 | **N34** | |
| | | Female thread NPT1 | 16 17 18 | **N1** | |
| | | Female hose connector 13 mm | 16 19 20 | **13** | |
| | | Female hose connector 19 mm | 4 16 19 20 | **19** | |
| | | Clamped terminal connection DN 15 | 11 | **15** | |
| | | Clamped terminal connection DN 20 | 12 | **20** | |

**Transfer order code**

| 8022000 | SFAW | – | – | – | – | – | – | – | – |
|---|---|---|---|---|---|---|---|---|---|

# Flow sensors SFAW

Ordering data – Modular product system

**Ordering table**

| | | | Conditions | Code | Entry code |
|---|---|---|---|---|---|
| Type of mounting | None | | | | |
| | Wall mounting | | | **-W** | |
| **M** Electrical output 1 | PNP or NPN or IO-Link | | | **-PNLK** | |
| Electrical output 2 | PNP or NPN | | 21 | **-PN** | |
| | PNP or NPN or 0 … 10 V or 1 … 5 V or 4 … 20 mA | | | **-PNVBA** | |
| **O** Electrical output 3 | None | | | | |
| | 0 … 10 V or 1 … 5 V or 4 … 20 mA | | 22 | **-VBA** | |
| **M** Electrical connection | M12 plug, A-coded | | | **-M12** | M12 |
| **O** Electrical accessories | None | | | | |
| | Straight socket, 2.5 m cable | | | **+2.5 S** | |
| | Straight socket, 5 m cable | | | **+5S** | |
| Protective devices | None | | | | |
| | Protective cover | | | **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, 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 |

**Transfer order code**

– ☐ – ☐ – ☐ – ☐ – **M12** – ☐ – ☐ – ☐

**Wall mounting SAMH-FW-W**
For wall or surface mounting

Materials:
Stainless steel
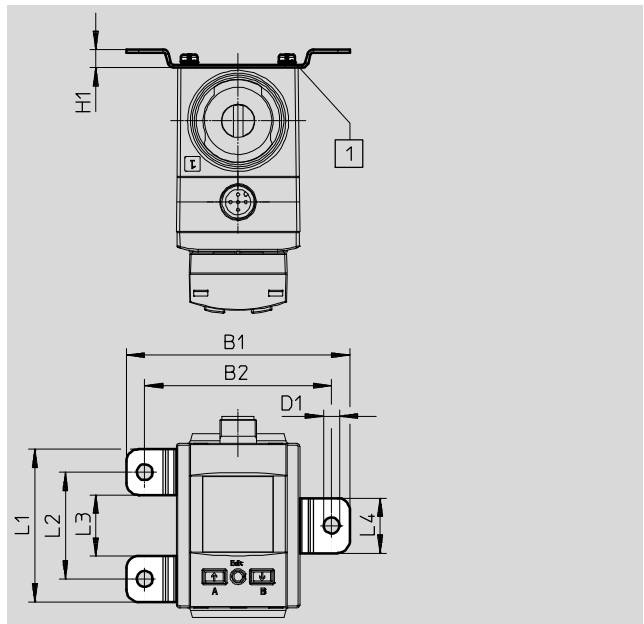


### Dimensions

| Type | B1 | B2 | D1 ∅ | 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
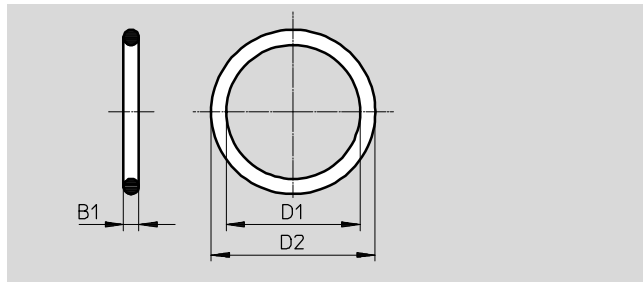


### Dimensions

| Type | B1 | D1 ∅ | D2 ∅ |
|------|-----|------|------|
| SASF-FW-S-E | 2.5 | 22 | 27 |

### Ordering data

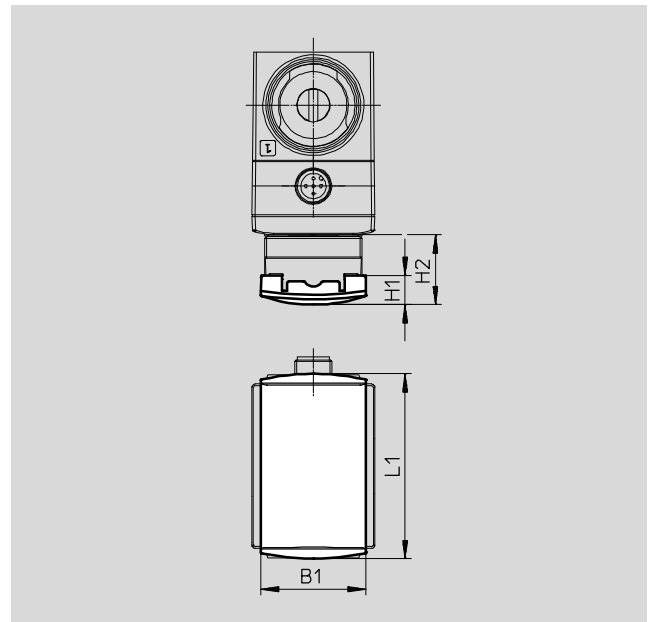| | Part No. | Type |
|---|---|---|
| Seal | **8036907** | **SASF-FW-S-E** |

# Flow sensors SFAW

Accessories

**Protective cover SACC-PU-G**

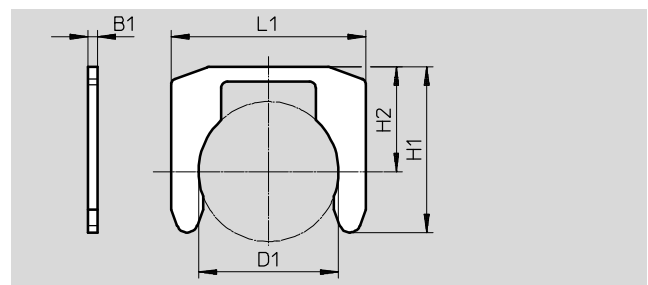For covering the display and control
elements



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

| Ordering data | | |
|---|---|---|
| | Part No. | Type |
| Protective cover | **8003353** | **SACC-PU-G** |

**Clip SAMH-FW-SB**

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



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

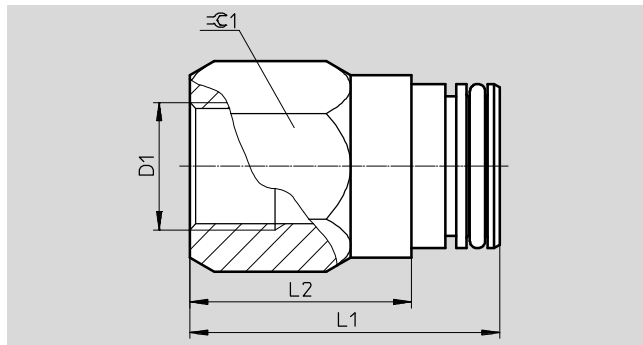| Ordering data | | |
|---|---|---|
| | Part No. | Type |
| Clip | **8036908** | **SAMH-FW-SB** |

# Flow sensors SFAW

Accessories

**Fluid connection set
SASA-FW-A- ...
Connection type female thread**

### Dimensions and ordering data

| Type | Flow measuring range [l/min.] | D1 ∅ | L1 | L2 | ⊏⊏ 1 | Part No. | Type |
|---|---|---|---|---|---|---|---|
| SASA-FW-A-32-TG12 | 32 | G½ | 51 | 36.5 | 30 | **8036891** | **SASA-FW-A-32-TG12** |
| SASA-FW-A-32-TG34 | | G¾ | | | | **8036892** | **SASA-FW-A-32-TG34** |
| SASA-FW-A-32-TR12 | | R½ | | | | **8036895** | **SASA-FW-A-32-TR12** |
| SASA-FW-A-32-TR34 | | R¾ | | | | **8036896** | **SASA-FW-A-32-TR34** |
| SASA-FW-A-32-TN12 | | ½" NPT | | | | **8036899** | **SASA-FW-A-32-TN12** |
| SASA-FW-A-32-TN34 | | ¾" NPT | | | | **8036900** | **SASA-FW-A-32-TN34** |
| SASA-FW-A-100-TG34 | 100 | G¾ | 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 | | R¾ | | | 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 | | ¾" NPT | | | 30 | **8036901** | **SASA-FW-A-100-TN34** |
| SASA-FW-A-100-TN1 | | 1NPT | | | 36 | **8036902** | **SASA-FW-A-100-TN1** |

**Fluid connection set
SASA-FW-A- ...
Connection type female hose
connector**
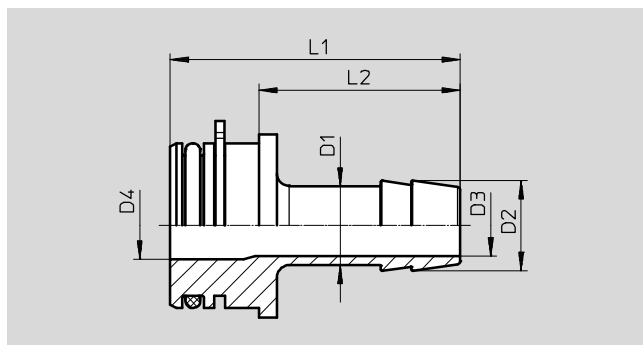
### Dimensions and ordering data

| Type | Flow measuring range [l/min.] | D1 ∅ | D2 ∅ | D3 ∅ | D4 ∅ | 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** |

# Flow sensors SFAW

Accessories

**Fluid connection set**
**SASA-FW-A- …**
**Connection type clamped terminal**
**connection**



[1] Connection geometry to DIN 32676 Series A
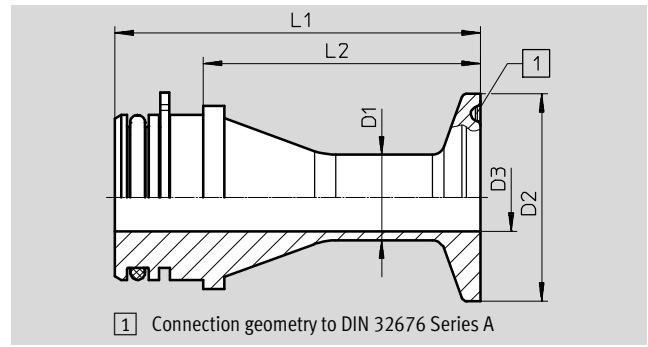
## Dimensions and ordering data

| Type | Flow measuring range [l/min.] | D1 ∅ | D2 ∅ | D3 ∅ | 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

Technical data ➔ 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** |

# Festo - Your Partner in Automation



**1** **Festo Inc.**

5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

**Festo Customer Interaction Center**
Tel:    1 877 463 3786
Fax:    1 877 393 3786
Email: customer.service.ca@festo.com

**2** **Festo Pneumatic**

Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalnepantla,
Estado de México

**Multinational Contact Center**
01 800 337 8669

ventas.mexico@festo.com

**3** **Festo Corporation**

1377 Motor Parkway
Suite 310
Islandia, NY 11749

**4** **Regional Service Center**

7777 Columbia Road
Mason, OH 45040

**Festo Customer Interaction Center**
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com

**Connect with us**

www.festo.com/socialmedia

**www.festo.com**