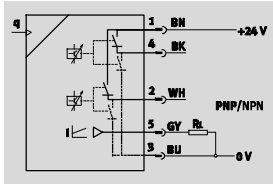


# Flow sensors SFAB

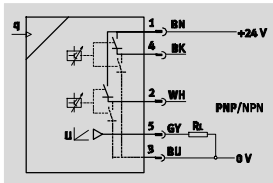
Technical data

Function

Current output 2SA



Voltage output 2SV



- Analogue output 0 ... 10 V, adjustable switching outputs 2x PNP or 2x NPN
- Analogue output 4 ... 20 mA, adjustable switching outputs 2x PNP or 2x NPN
- Freely selectable pulse output for consumption measurement
- Analogue filter for setting the rise time
- Digital filter for smoothing the display values
- Flow control element (flow control valve) for setting the flow rate



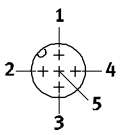
| General technical data                  |  |            |   |           |              |
|---|--|------------|---|-----------|--------------|
|   | -10U   | -50U       | -200U   | -600U     | -1000U       |
| <b>General</b>                          |  |            |   |           |              |
| Certification                           | C-Tick<br>c UL us - Recognized (OL)  |            |   |           |              |
| CE mark (see declaration of conformity) | To EU EMC Directive<br>In accordance with EU Explosion Protection Directive (ATEX) |            |   |           |              |
| Note on materials                       | RoHS-compliant   |            |   |           |              |
| <b>Input signal/measuring element</b>   |  |            |   |           |              |
| Measured variable                       | Flow rate, consumption   |            |   |           |              |
| Direction of flow                       | Unidirectional P1 → P2   |            |   |           |              |
| Measuring principle                     | Thermal  |            |   |           |              |
| Flow measuring range [l/min]            | 0.1 ... 10   | 0.5 ... 50 | 2 ... 200   | 6 ... 600 | 10 ... 1,000 |
| Operating pressure [bar]                | 0 ... 10   |            |   |           |              |
| Nominal pressure [bar]                  | 6  |            |   |           |              |
| Operating medium                        | Compressed air in accordance with ISO 8573-1:2010 [6:4:4]                          |            | Compressed air in accordance with ISO 8573-1:2010 [7:4:4] |           |              |
|   | Nitrogen   |            | Nitrogen  |           |              |
| Temperature of medium [°C]              | 0 ... 50   |            |   |           |              |
| Ambient temperature [°C]                | 0 ... 50   |            |   |           |              |
| Nominal temperature [°C]                | 23   |            |   |           |              |

# Flow sensors SFAB

Technical data

| Electrical data                         |         |   |          |           |           |             |
|---|---------|---|----------|-----------|-----------|-------------|
|   |         | -10U  | -50U     | -200U     | -600U     | -1000U      |
| Output, general <sup>1), 2)</sup>       |         |   |          |           |           |             |
| Accuracy of flow rate values            |         | +/- (3% o.m.v. + 0.3% FS)   |          |           |           |             |
| Repetition accuracy of zero point ±FS   | [%]     | 0.2   |          |           |           |             |
| Repetition accuracy of margin ±FS       | [%]     | 0.8   |          |           |           |             |
| Temperature coefficient of margin ±FS/K | [%]     | ≤0.1  |          |           |           |             |
| Pressure dependence of margin ±FS/bar   | [%]     | 0.5   |          |           |           |             |
| Switching output                        |         |   |          |           |           |             |
| Switching output                        |         | 2x PNP or 2x NPN, adjustable  |          |           |           |             |
| Switching function                      |         | Window comparator or threshold value comparator, adjustable         |          |           |           |             |
| Switching element function              |         | N/C or N/O contact, adjustable                                      |          |           |           |             |
| Switch-on time                          |         | Adjustable (factory setting: approx. 80 ms)                         |          |           |           |             |
| Switch-off time                         |         | Adjustable (factory setting: approx. 80 ms)                         |          |           |           |             |
| Max. output current                     | [mA]    | 100   |          |           |           |             |
| Voltage drop                            | [V]     | Max. 1.5  |          |           |           |             |
| Inductive protective circuit            |         | Adapted to MZ, MY, ME coils   |          |           |           |             |
| Analogue output                         |         |   |          |           |           |             |
| Characteristic flow rate curve          | [l/min] | 0 ... 10  | 0 ... 50 | 0 ... 200 | 0 ... 600 | 0 ... 1,000 |
| Output characteristic curve for current | [mA]    | 4 ... 20  |          |           |           |             |
| Output characteristic curve for voltage | [V]     | 0 ... 10  |          |           |           |             |
| Rise time                               | [ms]    | Possible settings: 15, 30, 60 (factory setting), 125, 250, 500, 999 |          |           |           |             |
| Max. load resistance at current output  | [ohms]  | 500   |          |           |           |             |
| Min. load resistance at voltage output  | [kohms] | 10  |          |           |           |             |
| Output, additional data                 |         |   |          |           |           |             |
| Protection against short circuit        |         | Yes   |          |           |           |             |
| Protection against overloading          |         | Yes   |          |           |           |             |
| Electronic components                   |         |   |          |           |           |             |
| Operating voltage range DC              | [V]     | 15 ... 30   |          |           |           |             |
| Protection against polarity reversal    |         | For all electrical connections                                      |          |           |           |             |
| Electromechanical components            |         |   |          |           |           |             |
| Electrical connection                   |         | Straight plug, M12x1, 5-pin   |          |           |           |             |
| Max. length of connecting cable         | [m]     | <10   |          |           |           |             |

1) Accuracy with nominal conditions (6 bar, 23 °C and horizontal installation position).  
 2) % FS = % of the measuring range final value (full scale).

| Pin allocation  |     |                            |
|---|-----|----------------------------|
| Plug M12x1, 5-pin   | Pin | Meaning                    |
|  | 1   | Operating voltage +24 V DC |
|   | 2   | Binary output B            |
|   | 3   | 0 V                        |
|   | 4   | Binary output A            |
|   | 5   | Analogue output C          |

# Flow sensors SFAB

Technical data

| Mechanical components  |                                 |                                 |                                 |                                |                                |
|--|---------------------------------|---------------------------------|---------------------------------|--------------------------------|--------------------------------|
|  | -10U                            | -50U                            | -200U                           | -600U                          | -1000U                         |
| Temperature dependence of the flow control valve setting <sup>1)</sup> ±FS (0 ... 50 °C) | 8                               | 8                               | 2                               | –                              | –                              |
| Mounting position  | Any                             |                                 |                                 |                                |                                |
| Pneumatic connection <sup>2)</sup>   | QS6                             | QS6                             | –                               | –                              | –                              |
|  | QS8                             | QS8                             | QS8                             |                                |                                |
|  | QS10                            | QS10                            | QS10                            | QS10                           | QS10                           |
|  | QS12                            | QS12                            | QS12                            | QS12                           | QS12                           |
|  | QS¼                             | QS¼                             | –                               | –                              | –                              |
|  | QS <sup>5</sup> / <sub>16</sub> | QS <sup>5</sup> / <sub>16</sub> | QS <sup>5</sup> / <sub>16</sub> | –                              | –                              |
|  | QS <sup>3</sup> / <sub>8</sub>  | QS <sup>3</sup> / <sub>8</sub>  | QS <sup>3</sup> / <sub>8</sub>  | QS <sup>3</sup> / <sub>8</sub> | QS <sup>3</sup> / <sub>8</sub> |
| Product weight [g]   | 160                             |                                 |                                 |                                |                                |
| Material: Housing  | PA reinforced                   |                                 |                                 |                                |                                |

- 1) The flow rate value set using the flow control valve is additionally dependent on the operating pressure. This means that the flow rate value changes if the operating pressure is changed, even if the flow control valve setting remains the same.
- 2) The pneumatic connections cannot be freely selected when configuring a sensor with flow control element, modular product system → 10.

| Display/operation                           |   |                 |               |                                      |                 |
|---|---|-----------------|---------------|--------------------------------------|-----------------|
|   | -10U                                      | -50U            | -200U         | -600U                                | -1000U          |
| Indicator type                              | Illuminated LCD, blue                     |                 |               |                                      |                 |
| Displayable units                           | l/min, l/h, scfm, l, m <sup>3</sup> , scf |                 |               | l/min, scfm, l, m <sup>3</sup> , scf |                 |
| Setting range for flow rate threshold value | 1% FS ... 100% FS                         |                 |               |                                      |                 |
| Setting range for consumption [l]           | 0.1 ... 1,999.9                           | 0.2 ... 1,999.9 | 1 ... 1,999.9 | 2 ... 1,999.9                        | 3 ... 1,999.9   |
| impulse threshold value                     | [m <sup>3</sup> ]                         | 0.01 ... 199.99 |               | 0.1 ... 1,999.9                      | 1 ... 19,999    |
|   | [scf]                                     | 0.01 ... 199.99 |               | 0.03 ... 199.99                      | 0.1 ... 1,999.9 |
| Hysteresis setting range                    | 0% FS ... 90% FS                          |                 |               |                                      |                 |

| Immissions/emissions        |  |      |       |       |        |
|-----------------------------|--|------|-------|-------|--------|
|                             | -10U   | -50U | -200U | -600U | -1000U |
| Storage temperature [°C]    | –20 ... +80 (characteristic -D: –10 ... +60) |      |       |       |        |
| Degree of protection        | IP65   |      |       |       |        |
| Pressure drop [mbar]        | <100   |      |       |       |        |
| Electrical protection class | III  |      |       |       |        |

# Flow sensors SFAB

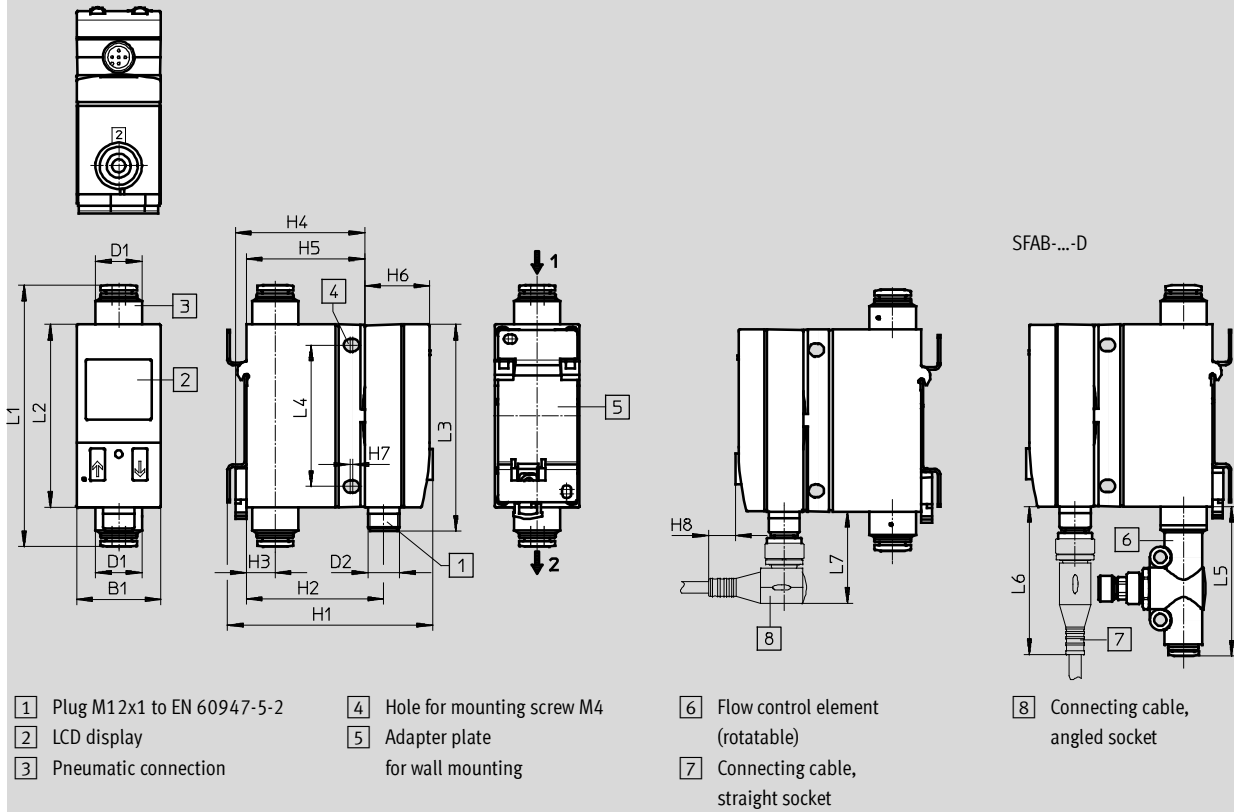
Technical data

FESTO

## Dimensions

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



SFAB-...-H/-W



| Type               | B1   | D1   | D2    | H1 | H2   | H3 | H4   | H5   | H6   | H7  | H8 | L1    | L2   | L3   | L4   | L5 | L6 | L7 |
|--------------------|------|------|-------|----|------|----|------|------|------|-----|----|-------|------|------|------|----|----|----|
| SFAB-...-HQ6       | 32.3 | 17.7 | M12x1 | -  | 51.6 | 11 | 48.5 | 44.3 | 24.4 | 1.1 | 12 | 95.6  | 69.8 | 78.9 | 54   | -  | 56 | 35 |
| SFAB-...-HQ6-...-D |      |      |       |    |      |    |      |      |      |     |    | -     |      |      | 57.1 |    |    |    |
| SFAB-...-HQ8       |      |      |       |    |      |    |      |      |      |     |    | 99.8  |      |      | -    |    |    |    |
| SFAB-...-HQ8-...-D |      |      |       |    |      |    |      |      |      |     |    | -     |      |      | 59.2 |    |    |    |
| SFAB-...-HQ10      |      |      |       |    |      |    |      |      |      |     |    | 119.8 |      |      | -    |    |    |    |
| SFAB-...-HQ12      |      |      |       |    |      |    |      |      |      |     |    | 124.4 |      |      | -    |    |    |    |
| SFAB-...-WQ6       | 32.3 | 17.7 | M12x1 | 79 | 51.6 | 11 | 48.5 | 44.3 | 24.4 | 1.1 | 12 | 95.6  | 69.8 | 78.9 | 54   | -  | 56 | 35 |
| SFAB-...-WQ6-...-D |      |      |       |    |      |    |      |      |      |     |    | -     |      |      | 57.1 |    |    |    |
| SFAB-...-WQ8       |      |      |       |    |      |    |      |      |      |     |    | 99.8  |      |      | -    |    |    |    |
| SFAB-...-WQ8-...-D |      |      |       |    |      |    |      |      |      |     |    | -     |      |      | 59.2 |    |    |    |
| SFAB-...-WQ10      |      |      |       |    |      |    |      |      |      |     |    | 119.8 |      |      | -    |    |    |    |
| SFAB-...-WQ12      |      |      |       |    |      |    |      |      |      |     |    | 124.4 |      |      | -    |    |    |    |

# Flow sensors SFAB

Technical data

| Ordering data   |  |   |            |                         |                      |
|---|--|---|------------|-------------------------|----------------------|
| Version   | Electrical output  | Flow measuring range [l/min]                    | Part No.   | Type                    |                      |
| <b>H-rail mounting</b>  |  |   |            |                         |                      |
|  | 2x PNP or NPN,<br>1 analogue output 4 ... 20 mA                                    | 0.1 ... 10                                      | 565385     | SFAB-10U-HQ6-2SA-M12    |                      |
|   |  | 0.5 ... 50                                      | 565389     | SFAB-50U-HQ6-2SA-M12    |                      |
|   |  | 2 ... 200                                       | 565393     | SFAB-200U-HQ8-2SA-M12   |                      |
|   |  | 2 ... 200                                       | 565397     | SFAB-200U-HQ10-2SA-M12  |                      |
|   |  | 6 ... 600                                       | 565401     | SFAB-600U-HQ10-2SA-M12  |                      |
|   |  | 10 ... 1,000                                    | 565405     | SFAB-1000U-HQ10-2SA-M12 |                      |
|   | 2x PNP or NPN,<br>1 analogue output 0 ... 10 V                                     | 0.1 ... 10                                      | 565386     | SFAB-10U-HQ6-2SV-M12    |                      |
|   |  | 0.5 ... 50                                      | 565390     | SFAB-50U-HQ6-2SV-M12    |                      |
|   |  | 2 ... 200                                       | 565394     | SFAB-200U-HQ8-2SV-M12   |                      |
|   |  | 2 ... 200                                       | 565398     | SFAB-200U-HQ10-2SV-M12  |                      |
|   |  | 6 ... 600                                       | 565402     | SFAB-600U-HQ10-2SV-M12  |                      |
|   |  | 10 ... 1,000                                    | 565406     | SFAB-1000U-HQ10-2SV-M12 |                      |
|   | <b>Wall or surface mounting</b>  |   |            |                         |                      |
|   |  | 2x PNP or NPN,<br>1 analogue output 4 ... 20 mA | 0.1 ... 10 | 565387                  | SFAB-10U-WQ6-2SA-M12 |
| 0.5 ... 50  |  |   | 565391     | SFAB-50U-WQ6-2SA-M12    |                      |
| 2 ... 200   |  |   | 565395     | SFAB-200U-WQ8-2SA-M12   |                      |
| 2 ... 200   |  |   | 565399     | SFAB-200U-WQ10-2SA-M12  |                      |
| 6 ... 600   |  |   | 565403     | SFAB-600U-WQ10-2SA-M12  |                      |
| 10 ... 1,000  |  |   | 565407     | SFAB-1000U-WQ10-2SA-M12 |                      |
| 2x PNP or NPN,<br>1 analogue output 0 ... 10 V                                    |  | 0.1 ... 10                                      | 565388     | SFAB-10U-WQ6-2SV-M12    |                      |
|   |  | 0.5 ... 50                                      | 565392     | SFAB-50U-WQ6-2SV-M12    |                      |
|   |  | 2 ... 200                                       | 565396     | SFAB-200U-WQ8-2SV-M12   |                      |
|   |  | 2 ... 200                                       | 565400     | SFAB-200U-WQ10-2SV-M12  |                      |
|   |  | 6 ... 600                                       | 565404     | SFAB-600U-WQ10-2SV-M12  |                      |
|   |  | 10 ... 1,000                                    | 565408     | SFAB-1000U-WQ10-2SV-M12 |                      |