**FESTO**

**Flow Sensors SFE1**

# Flow sensors SFE1-LF-...

Product overview

- Flow measuring range 0.5 ... 10 or 10 ... 200 l/min

- Switch outputs 2x PNP or 2x NPN

- Analogue output 0 ... 10 V or 4 ... 20 mA

- Freely selectable pulse output for consumption measurement

- Illuminated LCD display

- Wide variety of mounting options

Detailed product information
➔ www.festo.com/catalogue/sfe1-lf

**Sensors**
Flow sensors

**1.3**

| Product overview | | | | | | |
|---|---|---|---|---|---|---|
| Method of measure-ment | Measured variable | Type of mounting | Flow measuring range [l/min] | Pneumatic connection | Electrical output | |
| | | | | | Digital | Analogue |
| Flow sensor, thermal | Flow Consumption | Via through-hole Via DIN H-rail Via wall/surface bracket | 0.5 ... 10 | Push-in connector for tubing O.D. 6 mm | 2x PNP | 0 ... 10 V |
| | | | | | | 4 ... 20 mA |
| | | | | | 2x NPN | 0 ... 10 V |
| | | | | | | 4 ... 20 mA |
| | | | 10 ... 200 | Push-in connector for tubing O.D. 8 mm | 2x PNP | 0 ... 10 V |
| | | | | | | 4 ... 20 mA |
| | | | | | 2x NPN | 0 ... 10 V |
| | | | | | | 4 ... 20 mA |

# Flow sensors SFE1-LF

Type codes

|  | SFE1 | – | LF | – | F200 | – | H | Q8 | – | P2 | I | – | M12 |
|--|------|---|----|---|------|---|---|----|---|----|---|---|-----|

| **Type** | |
|----------|--|
| SFE1 | Flow sensor |

| **Design** | |
|------------|--|
| LF | Low Flow |

| **Flow measuring range [l/min]** | |
|----------------------------------|--|
| F10 | 0.5 … 10 |
| F200 | 10 … 200 |

| **Mounting** | |
|--------------|--|
| H | DIN H-rail mounting |
| W | Wall or surface mounting |

| **Pneumatic connection** | |
|--------------------------|--|
| Q6 | Push-in connector QS-6 |
| Q8 | Push-in connector QS-8 |

| **Switch output** | |
|-------------------|--|
| P2 | 2x PNP |
| N2 | 2x NPN |

| **Analogue output** | |
|---------------------|--|
| U | 0 … 10 V |
| I | 4 … 20 mA |

| **Electrical connection** | |
|---------------------------|--|
| M12 | Plug M12x1, 5-pin |

Sensors
Flow sensors

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# Flow sensors SFE1-LF

Technical data

| Technical data | | | |
|---|---|---|---|
| **Design** | | | |
| Flow measuring range | [l/min] | 0.5 … 10 | 10 … 200 |
| Pneumatic connection | | QS-6 | QS-8 |
| Type of display | | Illuminated LCD (optimised display) | |
| Accuracy[1] | | +/- (3% o.m.v. + 0.3% FS) | |
| | | | |
| **Electrical data** | | | |
| Switch output | | 2x PNP | |
| | | 2x NPN | |
| Analogue output | [V] | 0 … 10 | |
| | [mA] | 4 … 20 | |
| Max. output current | [mA] | 100 | |
| Switching element function | | N/O contact | |
| | | N/C contact | |
| Switching function | | Threshold comparator | |
| | | Window comparator | |
| Operating voltage range DC | [V] | 15 … 30 | |
| Electrical connection | | Straight plug, M12x1, 5-pin | |
| Protection against short circuit | | Yes | |
| Protection class | | IP65 | |
| | | | |
| **Operating and environmental conditions** | | | |
| Operating pressure | [bar] | 0 … 10 | |
| Operating medium | | Filtered compressed air, unlubricated, grade of filtration 5µm | Filtered compressed air, unlubricated, grade of filtration 40µm |
| | | Nitrogen | Nitrogen |
| | | Air quality class 3:4:1 to DIN ISO 8573-1 | Air quality class 5:4:3 to DIN ISO 8573-1 |
| Ambient temperature | [°C] | 0 … 50 | |
| CE mark (see declaration of conformity) | | In accordance with EU EMC directive | |
| Certification | | C-Tick | |
| | | | |
| **Materials** | | | |
| Housing | | Reinforced polyamide | |

1) % o.m.v. = % of measured value
   % FS = % of measuring range's final value (full scale)

| Ordering data | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variant | Flow measuring range | Analogue output | Switch output | | | | |
| | | | 2x PNP | | 2x NPN | | |
| | [l/min] | | Part No. | Type | Part No. | Type | |
| **DIN H-rail mounting** | | | | | | | |
|  | 0.5 … 10 | 0 … 10 V | 537 867 | SFE1-LF-F10-HQ6-P2U-M12 | 537 869 | SFE1-LF-F10-HQ6-N2U-M12 | |
| | | 4 … 20 mA | 537 866 | SFE1-LF-F10-HQ6-P2I-M12 | 537 868 | SFE1-LF-F10-HQ6-N2I-M12 | |
| | 10 … 200 | 0 … 10 V | 537 875 | SFE1-LF-F200-HQ8-P2U-M12 | 537 877 | SFE1-LF-F200-HQ8-N2U-M12 | |
| | | 4 … 20 mA | 537 874 | SFE1-LF-F200-HQ8-P2I-M12 | 537 876 | SFE1-LF-F200-HQ8-N2I-M12 | |
| | | | | | | | |
| **Wall or surface mounting** | | | | | | | |
|  | 0.5 … 10 | 0 … 10 V | 537 871 | SFE1-LF-F10-WQ6-P2U-M12 | 537 873 | SFE1-LF-F10-WQ6-N2U-M12 | |
| | | 4 … 20 mA | 537 870 | SFE1-LF-F10-WQ6-P2I-M12 | 537 872 | SFE1-LF-F10-WQ6-N2I-M12 | |
| | 10 … 200 | 0 … 10 V | 537 879 | SFE1-LF-F200-WQ8-P2U-M12 | 537 881 | SFE1-LF-F200-WQ8-N2U-M12 | |
| | | 4 … 20 mA | 537 878 | SFE1-LF-F200-WQ8-P2I-M12 | 537 880 | SFE1-LF-F200-WQ8-N2I-M12 | |

# Flow sensors SFE1-LF

Peripherals overview, sample applications

## Peripherals overview
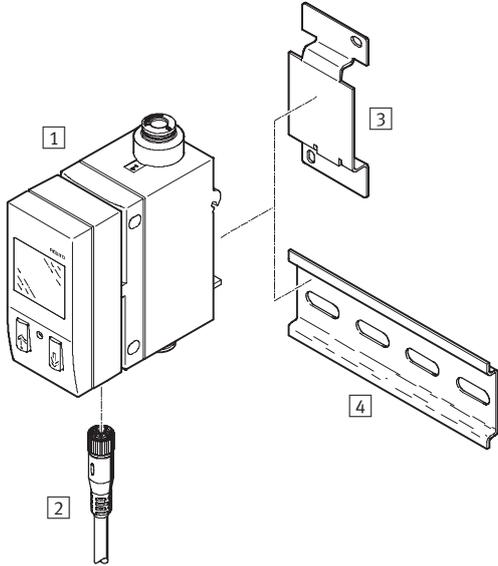


| Accessories | |
|---|---|
| 1 | Flow sensor SFE1-LF |
| 2 | Connecting cable NEBU-M12G5 with straight socket |
| 3 | Adapter plate SDE1-…-W-… |
| | (included in the scope of delivery with SFE1-LF-F…-W…) |
| 4 | Mounting rail to DIN EN 50022 |

### Ordering data – Connecting cables                          Technical data ➜ 261

| | Number of wires | Cable length [m] | Part No. | Type |
|---|---|---|---|---|
| M12x1, straight socket | | | | |
| | 5 | 2.5 | **541 330** | **NEBU-M12G5-K-2.5-LE5** |
| | 5 | 5 | **541 331** | **NEBU-M12G5-K-5-LE5** |

### Ordering data – Accessories

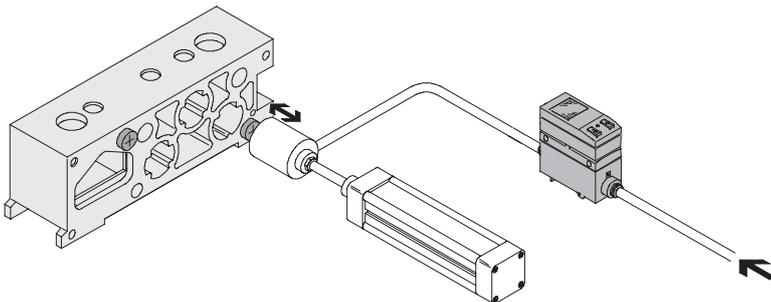| | Part No. | Type |
|---|---|---|
| | **194 297** | **SDE1-…-W-…** |

## Application examples
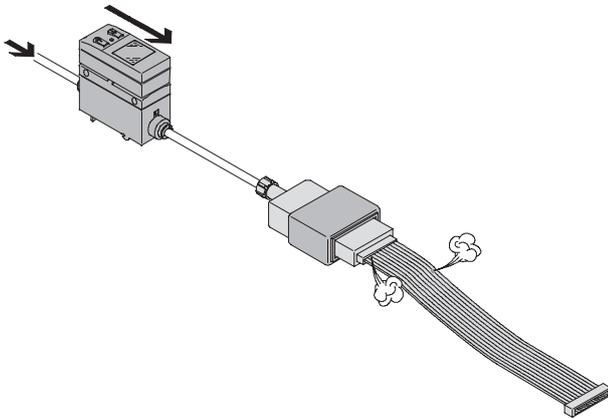


• Leak testing of cable sheaths and
waterproof push-in connectors
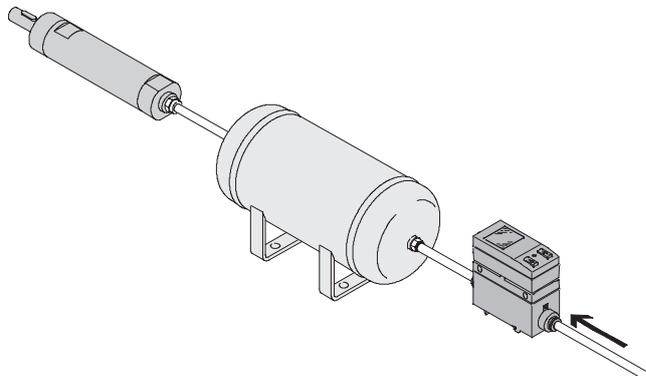


• Monitoring an air motor



• Checking for presence of screws in-
serted in a workpiece

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## A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.

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ISO 9001
ISO 14001
DNV
Certified Company
9001: CERT CCS-162248-2006-AQ-ESN-TGA
14001: CERT CCS-162248A-2006-AQ-ESN-TGA

FSC

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