

# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUE380 with approval

#### Overview



The 2-track flowmeter SITRANS FUE380 comes as battery or mains powered and is designed to measure water flow in district heating plants, local networks, boiler stations, substations, chiller plants and other general water applications.

The flowmeter FUE380 is approved according to heat meter standards EN 1434 class 2, OIML R75 class 2 and MID class 2. Metrological parameters are protected against manipulation. The type approved flowmeter version is named SITRANS FUE380. For a standard flowmeter type FUS380 without a type approval see separate FUS380 chapter.

Technically the meter types SITRANS FUS380 and SITRANS FUE380 are completely identical, only difference is the calibration limit and the type approval for custody transfer.

#### Benefits

- Battery powered up to 6 years
- 115/230 V mains powered with back-up battery option in case of mains power failure
- Fast measuring frequency 20 Hz/0.5 Hz (230 V AC/Battery)
- Easy one button straight forward display
- 2-track measuring principle for optimum accuracy
- Compact or remote mounting
- Measures on all district water qualities and water conductivities
- No pressure drop
- Long-term stability
- 2 galvanic isolated digital outputs for easy connection to a calculator (potential free)
- Bidirectional measurement, with 2 totalizers and outputs
- Dynamic range  $Q_i:Q_p$  up to 1:50/100 or max. range  $Q_i:Q_s$  up to 1:400
- MODBUS RTU/RS 232, RS 485

#### Application

The main application for SITRANS FUE380 is measurement of water flow or water flow in heat meter systems for custody transfer in district heating networks or chilled water.

Combined with an energy calculator and a pair of temperature sensors, SITRANS FUE380 can be used as part of an energy meter system. For this purpose Siemens offers energy calculator SITRANS FUE950.

#### Design

The 2-track design of SITRANS FUE380 ensures maximum accuracy under short inlet conditions. The flowmeter consists of a flow sensor pipe, 4 transducers/transducer cables and a approved transmitter SITRANS FUS080.

The unit is available in a compact or a remote version with up to 30 meter distance from flowmeter to transmitter. When ordering a compact version the transducer cables are pre-mounted and ready for installation.

Compact mounting is only possible up to 120 °C (248 °F). The sensor must be isolated to protect transmitter from heat. The transmitter is available in an IP67/NEMA 4X/6 enclosure.

#### Integration

The flowmeter digital output is often used as input for an energy meter or as input for digital systems for remote reading.

SITRANS FUE380 has two digital output functions that can be individually selected, and optional MODBUS RTU communication modules.

Pulse output rate is defined when ordering.

If the flowmeter forms part of an energy meter system for custody transfer, no further approvals are needed, except eventually local approvals on the flowmeter.

# SITRANS F flowmeters

## SITRANS F US

Flowmeter FUE380 with approval

**Configuration SITRANS FUE380 type approved***Selection guide SITRANS FUE380, type approved flowmeter*

| DN  | Q <sub>s</sub> (m³/h) | Q <sub>max</sub> (m³/h)<br>(105% of Q <sub>s</sub> ) | Q <sub>p</sub> (m³/h) | Q <sub>i</sub> (m³/h)<br>(1:50 of Q <sub>p</sub> ) | Q <sub>i</sub> (m³/h)<br>(1:100 of Q <sub>p</sub> ) | Cutoff (m³/h)<br>(50% of Q <sub>i</sub> ) | Cutoff<br>(% of Q <sub>max</sub> ) | Typical pulse<br>value <sup>1)</sup><br>(l/pulse) |
|-----|-----------------------|------------------------------------------------------|-----------------------|----------------------------------------------------|-----------------------------------------------------|-------------------------------------------|------------------------------------|---------------------------------------------------|
| 50  | 30                    | 31.5                                                 | 15 <sup>2)</sup>      | 0.3                                                | 0.15                                                | 0.075                                     | 0.24                               | 1                                                 |
| 50  | 45                    | 47.25                                                | 15 <sup>2)</sup>      | 0.3                                                | 0.15                                                | 0.075                                     | 0.16                               | 1                                                 |
| 50  | 45                    | 47.25                                                | 30 <sup>3)</sup>      | 0.3                                                | 0.30                                                | 0.150                                     | 0.32                               | 1                                                 |
| 65  | 50                    | 52.5                                                 | 25 <sup>2)</sup>      | 0.5                                                | 0.25                                                | 0.125                                     | 0.24                               | 1                                                 |
| 65  | 72                    | 75.6                                                 | 25 <sup>2)</sup>      | 0.5                                                | 0.25                                                | 0.125                                     | 0.17                               | 1                                                 |
| 65  | 72                    | 75.6                                                 | 50 <sup>3)</sup>      | 0.5                                                | 0.50                                                | 0.250                                     | 0.33                               | 1                                                 |
| 80  | 80                    | 84                                                   | 40 <sup>2)</sup>      | 0.8                                                | 0.40                                                | 0.200                                     | 0.24                               | 2.5                                               |
| 80  | 120                   | 126                                                  | 40 <sup>2)</sup>      | 0.8                                                | 0.40                                                | 0.200                                     | 0.16                               | 2.5                                               |
| 80  | 120                   | 126                                                  | 80 <sup>3)</sup>      | 0.8                                                | 0.80                                                | 0.400                                     | 0.32                               | 2.5                                               |
| 100 | 120                   | 126                                                  | 60 <sup>2)</sup>      | 1.2                                                | 0.60                                                | 0.300                                     | 0.24                               | 2.5                                               |
| 100 | 180                   | 189                                                  | 60 <sup>2)</sup>      | 1.2                                                | 0.60                                                | 0.300                                     | 0.16                               | 2.5                                               |
| 100 | 180                   | 189                                                  | 120 <sup>3)</sup>     | 1.2                                                | 1.20                                                | 0.600                                     | 0.32                               | 2.5                                               |
| 125 | 200                   | 210                                                  | 100 <sup>2)</sup>     | 2.0                                                | 1.00                                                | 0.500                                     | 0.24                               | 2.5                                               |
| 125 | 280                   | 294                                                  | 100 <sup>2)</sup>     | 2.0                                                | 1.00                                                | 0.500                                     | 0.17                               | 2.5                                               |
| 125 | 280                   | 294                                                  | 200 <sup>3)</sup>     | 2.0                                                | 2.00                                                | 1.000                                     | 0.34                               | 2.5                                               |
| 150 | 300                   | 315                                                  | 150 <sup>2)</sup>     | 3.0                                                | 1.50                                                | 0.750                                     | 0.24                               | 10                                                |
| 150 | 420                   | 441                                                  | 150 <sup>2)</sup>     | 3.0                                                | 1.50                                                | 0.750                                     | 0.17                               | 10                                                |
| 150 | 420                   | 441                                                  | 300 <sup>3)</sup>     | 3.0                                                | 3.00                                                | 1.500                                     | 0.34                               | 10                                                |
| 200 | 500                   | 525                                                  | 250 <sup>2)</sup>     | 5.0                                                | 2.50                                                | 1.250                                     | 0.24                               | 10                                                |
| 200 | 700                   | 735                                                  | 250 <sup>2)</sup>     | 5.0                                                | 2.50                                                | 1.250                                     | 0.17                               | 10                                                |
| 200 | 700                   | 735                                                  | 500 <sup>3)</sup>     | 5.0                                                | 5.00                                                | 2.500                                     | 0.34                               | 10                                                |
| 250 | 800                   | 840                                                  | 400 <sup>2)</sup>     | 8.0                                                | 4.00                                                | 2.000                                     | 0.24                               | 10                                                |
| 250 | 1120                  | 1176                                                 | 400 <sup>2)</sup>     | 8.0                                                | 4.00                                                | 2.000                                     | 0.17                               | 10                                                |
| 250 | 1120                  | 1176                                                 | 800 <sup>3)</sup>     | 8.0                                                | 8.00                                                | 4.000                                     | 0.34                               | 10                                                |
| 300 | 1120                  | 1176                                                 | 560 <sup>2)</sup>     | 11.2                                               | 5.60                                                | 2.800                                     | 0.24                               | 50                                                |
| 300 | 1560                  | 1638                                                 | 560 <sup>2)</sup>     | 11.2                                               | 5.60                                                | 2.800                                     | 0.17                               | 50                                                |
| 300 | 1560                  | 1638                                                 | 1120 <sup>3)</sup>    | 11.2                                               | 11.20                                               | 5.600                                     | 0.34                               | 50                                                |
| 350 | 1500                  | 1575                                                 | 750 <sup>2)</sup>     | 15.0                                               | 7.50                                                | 3.750                                     | 0.24                               | 50                                                |
| 350 | 2100                  | 2205                                                 | 750 <sup>2)</sup>     | 15.0                                               | 7.50                                                | 3.750                                     | 0.17                               | 50                                                |
| 350 | 2100                  | 2205                                                 | 1500 <sup>3)</sup>    | 15.0                                               | 15.00                                               | 7.500                                     | 0.34                               | 50                                                |
| 400 | 1900                  | 1995                                                 | 950 <sup>2)</sup>     | 19.0                                               | 9.50                                                | 4.750                                     | 0.24                               | 50                                                |
| 400 | 2660                  | 2793                                                 | 950 <sup>2)</sup>     | 19.0                                               | 9.50                                                | 4.750                                     | 0.17                               | 50                                                |
| 400 | 2660                  | 2793                                                 | 1900 <sup>3)</sup>    | 19.0                                               | 19.00                                               | 9.500                                     | 0.34                               | 50                                                |
| 500 | 2950                  | 3097.5                                               | 1475 <sup>2)</sup>    | 29.5                                               | 14.75                                               | 7.375                                     | 0.24                               | 100                                               |
| 500 | 4130                  | 4336.5                                               | 1475 <sup>2)</sup>    | 29.5                                               | 14.75                                               | 7.375                                     | 0.17                               | 100                                               |
| 500 | 4130                  | 4336.5                                               | 2950 <sup>3)</sup>    | 29.5                                               | 29.50                                               | 14.750                                    | 0.34                               | 100                                               |
| 600 | 4300                  | 4515                                                 | 2150 <sup>2)</sup>    | 43.0                                               | 21.50                                               | 10.750                                    | 0.24                               | 100                                               |
| 600 | 6020                  | 6321                                                 | 2150 <sup>2)</sup>    | 43.0                                               | 21.50                                               | 10.750                                    | 0.17                               | 100                                               |
| 600 | 6020                  | 6321                                                 | 4300 <sup>3)</sup>    | 43.0                                               | 43.00                                               | 21.500                                    | 0.34                               | 100                                               |
| 700 | 5800                  | 6090                                                 | 2900 <sup>2)</sup>    | 58.0                                               | 29.00                                               | 14.500                                    | 0.24                               | 100                                               |
| 700 | 8120                  | 8526                                                 | 2900 <sup>2)</sup>    | 58.0                                               | 29.00                                               | 14.500                                    | 0.17                               | 100                                               |
| 700 | 8120                  | 8526                                                 | 5800 <sup>3)</sup>    | 58.0                                               | 58.00                                               | 29.000                                    | 0.34                               | 100                                               |
| 800 | 7600                  | 7980                                                 | 3800 <sup>2)</sup>    | 76.0                                               | 38.00                                               | 19.000                                    | 0.24                               | 100                                               |
| 800 | 10640                 | 11172                                                | 3800 <sup>2)</sup>    | 76.0                                               | 38.00                                               | 19.000                                    | 0.17                               | 100                                               |
| 800 | 10640                 | 11172                                                | 7600 <sup>3)</sup>    | 76.0                                               | 76.00                                               | 38.000                                    | 0.34                               | 100                                               |
| 900 | 10000                 | 10500                                                | 5000 <sup>2)</sup>    | 100.0                                              | 50.00                                               | 25.000                                    | 0.24                               | 100                                               |
| 900 | 14000                 | 14700                                                | 5000 <sup>2)</sup>    | 100.0                                              | 50.00                                               | 25.000                                    | 0.17                               | 100                                               |
| 900 | 14000                 | 14700                                                | 10000 <sup>3)</sup>   | 100.0                                              | 100.00                                              | 50.000                                    | 0.34                               | 100                                               |

# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUE380 with approval

| DN   | Q <sub>s</sub> (m <sup>3</sup> /h) | Q <sub>max</sub> (m <sup>3</sup> /h)<br>(105% of Q <sub>s</sub> ) | Q <sub>p</sub> (m <sup>3</sup> /h) | Q <sub>i</sub> (m <sup>3</sup> /h)<br>(1:50 of Q <sub>p</sub> ) | Q <sub>i</sub> (m <sup>3</sup> /h)<br>(1:100 of Q <sub>p</sub> ) | Cutoff (m <sup>3</sup> /h)<br>(50% of Q <sub>i</sub> ) | Cutoff<br>(% of Q <sub>max</sub> ) | Typical pulse<br>value <sup>1)</sup><br>(l/pulse) |
|------|------------------------------------|-------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------|------------------------------------|---------------------------------------------------|
| 1000 | 12000                              | 12600                                                             | 6000 <sup>2)</sup>                 | 120.0                                                           | 60.00                                                            | 30.000                                                 | 0.24                               | 100                                               |
| 1000 | 16800                              | 17640                                                             | 6000 <sup>2)</sup>                 | 120.0                                                           | 60.00                                                            | 30.000                                                 | 0.17                               | 100                                               |
| 1000 | 16800                              | 17640                                                             | 12000 <sup>3)</sup>                | 120.0                                                           | 120.00                                                           | 60.000                                                 | 0.34                               | 100                                               |
| 1200 | 18000                              | 18900                                                             | 9000 <sup>2)</sup>                 | 180.0                                                           | 90.00                                                            | 45.000                                                 | 0.24                               | 100                                               |
| 1200 | 25200                              | 26460                                                             | 9000 <sup>2)</sup>                 | 180.0                                                           | 90.00                                                            | 45.000                                                 | 0.17                               | 100                                               |
| 1200 | 25200                              | 26460                                                             | 18000 <sup>3)</sup>                | 180.0                                                           | 180.00                                                           | 90.000                                                 | 0.34                               | 100                                               |

Dynamic range Q<sub>i</sub>:Q<sub>p</sub>: better than 1:100 or 1:50 according to EN 1434, OIML R75 class 2 and MID class 2.

Q<sub>i</sub> (Q<sub>min</sub>) means the minimal and Q<sub>p</sub> (Q<sub>nom</sub>) the nominal flow rate according to the approval requirements.

Q<sub>s</sub> is the highest operatable flow rate. The maximal flow rate (Q<sub>max</sub>) is 105 % of Q<sub>s</sub>. The low flow cut off is 50 % of Q<sub>i</sub>.

Q<sub>i</sub>, Q<sub>p</sub> and Q<sub>s</sub> are shown on the system label of the FUE380.

In order to obtain best pulse output resolution in the range Q<sub>min</sub> to Q<sub>s</sub> of approx. 100 Hz at Q<sub>s</sub>, two or three flow values for every dimension can be selected at ordering. Therefore the ordering data table also shows Q<sub>p</sub> (Q<sub>n</sub>). This flow rate is between Q<sub>i</sub> (Q<sub>min</sub>) and Q<sub>s</sub> and indicates the normal or typical flow according to the approval requirements.

<sup>1)</sup> In connection with SITRANS FUE950 - other pulse values - see Selection and Ordering data table.

<sup>2)</sup> EN 1434 and MID flow values

<sup>3)</sup> OIML R75 and MID flow values

### Technical specifications SITRANS FUE380

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                                                                                                                                                                                                                                                                  |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pipe design                          | 2-track sensor with flanges and integrated transducers wet calibrated from factory                                                                                                                                                                                                                                                                                                                                                     |                      | Add-on modules:                                                                                                                                                                                                                                                  |
| Nominal size welded version          | DN 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 500, 600, 700, 800, 900, 1000, 1200                                                                                                                                                                                                                                                                                                                                             |                      | <ul style="list-style-type: none"> <li>RS 232 serial interface with MOD-BUS RTU (Rx/Tx/GND), point to point with max. 15 m cable</li> <li>RS 485 serial interface with MOD-BUS RTU (+/-/GND), multi-drop with up to 32 devices with max. 1000 m cable</li> </ul> |
| Pressure rate                        | PN 16, PN 25, PN 40 EN 1092-1                                                                                                                                                                                                                                                                                                                                                                                                          |                      | MODBUS RTU protocol is an open protocol (further information available on request)                                                                                                                                                                               |
| Pipe material                        | <ul style="list-style-type: none"> <li>DN 100 ... 1200: Carbon Steel EN 1.0345/P235 GH, painted in light-gray.</li> <li>DN 50 ... 80: Die-cast bronze G-CuSn10/W2.1050.01 (EN1982)</li> </ul>                                                                                                                                                                                                                                          |                      | Serial speed 1200, 2400, 4800, 9600, 19200, 38400 Baud                                                                                                                                                                                                           |
| Transducer design                    | <ul style="list-style-type: none"> <li>DN 100 ... 1200: Integrated version and welded onto the pipe</li> <li>DN 50 ... 80: Screwed into the pipe</li> </ul>                                                                                                                                                                                                                                                                            | Enclosure            | IP67/NEMA 4X/6 to EN 60529 and DIN 40050                                                                                                                                                                                                                         |
| Transducer material                  | Stainless steel (AISI 316/1.4404)/brass (CuZn36Pb2as)                                                                                                                                                                                                                                                                                                                                                                                  | Temperature ambient  | 0 ... 60 °C (32 ... 140 °F)<br>MID: Climatic class -10 ... +55 °C (-14 ... +131 °F)                                                                                                                                                                              |
| <b>Sensor operating conditions</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                        | Temperature storage  | -40 ... +85 °C (-40 ... +185 °F) (battery included)                                                                                                                                                                                                              |
| Storage                              | -40 ... +85 °C (-40 ... +185 °F)                                                                                                                                                                                                                                                                                                                                                                                                       | Installation         | Compact on sensor: max. 120 °C (248 °F),<br>Separate: max. 30 m (98.4 ft) from transmitter                                                                                                                                                                       |
| Media/surface temperature            | DN 100 ... 1200:<br><ul style="list-style-type: none"> <li>Remote: 2 ... 200 °C (35.6 ... 392 °F)</li> <li>MID: min. +15 °C/+59 °F</li> </ul> DN 50 ... 80:<br><ul style="list-style-type: none"> <li>Remote: 2 ... 150 °C (35.6 ... 302 °F)</li> <li>MID: min. +15 °C/+59 °F</li> </ul> DN 50 ... 1200:<br><ul style="list-style-type: none"> <li>Compact: 2 ... 120 °C (35.6 ... 248 °F)</li> <li>MID: min. +15 °C/+59 °F</li> </ul> | Mechanical vibration | 2 g, 1 ... 800 Hz sinusoidal in all directions to IEC 68-2-6                                                                                                                                                                                                     |
| Degree of protection                 | Sensor connection IP67/NEMA 4X/6                                                                                                                                                                                                                                                                                                                                                                                                       | Design               | Fibre-glass reinforced polyamide                                                                                                                                                                                                                                 |
| Max. flow velocity at Q <sub>s</sub> | DN 50 ... 1200: 7 m/s (22.9 ft/s)                                                                                                                                                                                                                                                                                                                                                                                                      | Power supply         | <ul style="list-style-type: none"> <li>Battery: replaceable 3.6 V LiSOCl (Lithium Thionyl Chloride) battery pack 32 Ah</li> <li>Mains: 87 ... 265 V AC (50 ... 60 Hz)</li> </ul>                                                                                 |
| <b>Transmitter</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                        | Measuring rate       | Battery mode: 0.5 Hz<br>Mains supply: 20 Hz<br>Back-up mode: 0.5 Hz (at mains supply drop)                                                                                                                                                                       |
| Display                              | LCD, 8 digits, additional 2 digits and symbols for status information                                                                                                                                                                                                                                                                                                                                                                  | Digital output       | Two passive individual galvanically isolated MOS relay outputs, A and B, max. ± 35 V AC/DC, 50 mA                                                                                                                                                                |
| Push button                          | One push button for display information                                                                                                                                                                                                                                                                                                                                                                                                | Max pulse frequency  | 100 Hz at Q <sub>max</sub>                                                                                                                                                                                                                                       |
| Communication                        | IrDA – optical communication interface with MODBUS RTU protocol                                                                                                                                                                                                                                                                                                                                                                        | Alarm indication     | Track 1 (F1), track 2 (F2), internal failure (F3, F4), Low battery indication (F5), Q <sub>max</sub> overflow (F6), pulse overflow (F7, F8), internal data logger warning (F9)                                                                                   |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cable length         | Max. 30 m (98.4 ft) between transmitter and sensor                                                                                                                                                                                                               |

# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUE380 with approval

|           |                                                                                                                                                               |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMC       | <ul style="list-style-type: none"> <li>Emission EN 61000-6-4</li> <li>Immunity EN 61000-6-2</li> <li>MID: Environment class E2 and M1</li> </ul>              |
| Approvals | <ul style="list-style-type: none"> <li>EN 1434 and OIML R75 Class 2 (PTB approval based on EN1434)</li> <li>MID class 2 approval and certification</li> </ul> |

#### Type dependent settings

|                                           | FUE380                                                                                                              |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Flow value                                | Predefined according to EN 1434 / OIML R75 / MID                                                                    |
| Approval                                  | Country specific                                                                                                    |
| Flow rate $v_f$                           | 0.02 ... 7 m/s (0.065 ... 22.9 ft/s)                                                                                |
| Output A                                  | Preset: Forward pulses                                                                                              |
| Output B                                  | Preset: Alarm                                                                                                       |
| Pulse value A & B (depending on DN value) | Preset: See scheme - previous page<br>Preset for SITRANS FUE950 or free selectable depending on flow rate ( $Q_s$ ) |
| Pulse width                               | Preset: 5 ms                                                                                                        |
| Flow unit setup                           | Preset: m <sup>3</sup> /h                                                                                           |
| Volume unit setup                         | Preset: m <sup>3</sup>                                                                                              |

#### SITRANS FUE380 uncertainty

To ensure continuous accurate measurement, flowmeters must be calibrated. The calibration is conducted at SIEMENS flow facilities accredited according to ISO/IEC 17025 by DANAK or UKAS.

The accreditation bodies DANAK and UKAS have signed the ILAC MRA agreement (International Laboratory Accreditation Corporation - Mutual Recognition Arrangement). Therefore the accreditation ensures international traceability and recognition of the test results in 39 countries world wide, including the US (NIST traceability).

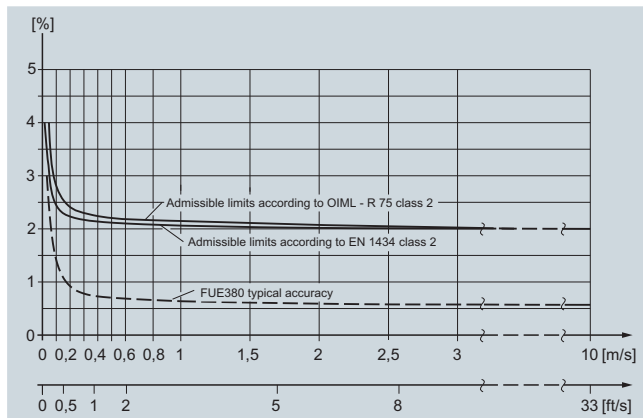
A standard calibration certificate is shipped with every SITRANS FUE380.

#### Typical accuracy SITRANS FUE380:

$$0.5 + 0.02 Q_p/Q [\%]$$

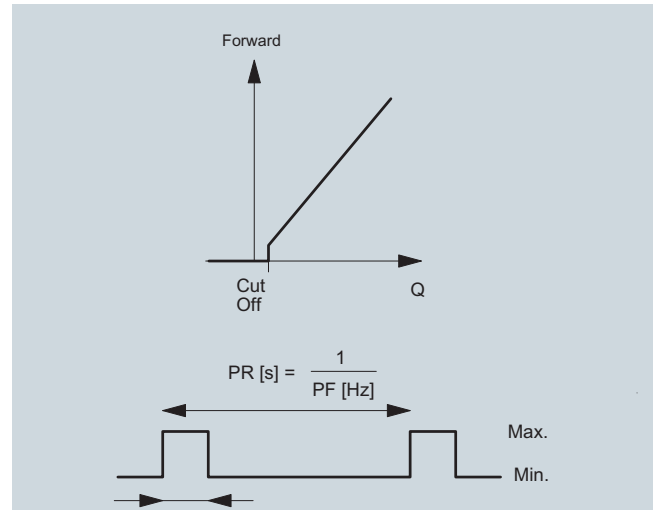
$Q_p$  according to EN 1434/OIML requirements.

Example: DN 100,  $Q_p = 60 \text{ m}^3/\text{h}$  at  $Q = 1.2 \text{ m}^3/\text{h}$ :  
Accuracy = typical 1.5 %

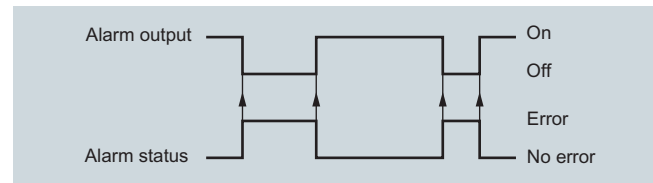


SITRANS FUE380 fulfils the requirements  
 $E_f = \pm (2 + 0.02 Q_p/Q_i)$  max.  $\pm 5\%$ , according to EN 1434 and OIML R75, class 2 or MID class 2 requirements.

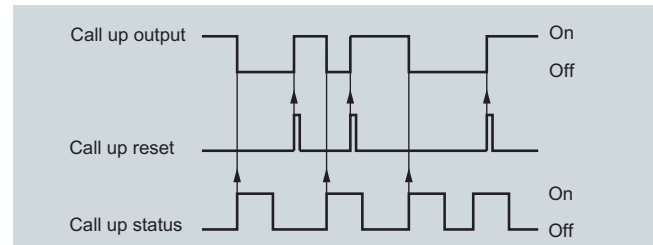
#### Output configuration SITRANS FUE380



Pulse volume: output A/B configured as volume per pulse, calculated on forward/reverse or net forward/reverse flow. The volume per pulse is free scaleable (via PDM software) if the seal-ing is open.



Pulse output B can be used as stated above or as alarm or call up function.



Call up: the call up output is active until manually reset by use of PDM program. The callup function is activated when an alarm is activated.

# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUE380 with approval

| Selection and Ordering data                        |                                                                                                       |            | Order No.             | Order code |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------|-----------------------|------------|
| <b>Flowmeter SITRANS FUE380</b><br>(type approved) |                                                                                                       |            | <b>7 ME 3 4 1 0 -</b> |            |
| <b>Diameter</b>                                    | <b>Flow setting [m<sup>3</sup>/h]</b><br><b>Qp[m<sup>3</sup>/h]<sup>1)</sup> Qs [m<sup>3</sup>/h]</b> |            |                       |            |
| DN 50 (2") <sup>2)</sup>                           | 15 <sup>3)</sup> 30                                                                                   | <b>1 B</b> |                       |            |
| DN 50 (2") <sup>2)</sup>                           | 15 <sup>3)</sup> 45                                                                                   | <b>1 C</b> |                       |            |
| DN 50 (2") <sup>2)</sup>                           | 30 <sup>4)</sup> 45                                                                                   | <b>1 D</b> |                       |            |
| DN 65 (2½") <sup>2)</sup>                          | 25 <sup>3)</sup> 50                                                                                   | <b>1 F</b> |                       |            |
| DN 65 (2½") <sup>2)</sup>                          | 25 <sup>3)</sup> 72                                                                                   | <b>1 G</b> |                       |            |
| DN 65 (2½") <sup>2)</sup>                          | 50 <sup>4)</sup> 72                                                                                   | <b>1 H</b> |                       |            |
| DN 80 (3") <sup>2)</sup>                           | 40 <sup>3)</sup> 80                                                                                   | <b>1 K</b> |                       |            |
| DN 80 (3") <sup>2)</sup>                           | 40 <sup>3)</sup> 120                                                                                  | <b>1 L</b> |                       |            |
| DN 80 (3") <sup>2)</sup>                           | 80 <sup>4)</sup> 120                                                                                  | <b>1 M</b> |                       |            |
| DN 100 (4")                                        | 60 <sup>3)</sup> 120                                                                                  | <b>1 P</b> |                       |            |
| DN 100 (4")                                        | 60 <sup>3)</sup> 180                                                                                  | <b>1 Q</b> |                       |            |
| DN 100 (4")                                        | 120 <sup>4)</sup> 180                                                                                 | <b>1 R</b> |                       |            |
| DN 125 (5")                                        | 100 <sup>3)</sup> 200                                                                                 | <b>1 T</b> |                       |            |
| DN 125 (5")                                        | 100 <sup>3)</sup> 280                                                                                 | <b>1 U</b> |                       |            |
| DN 125 (5")                                        | 200 <sup>4)</sup> 280                                                                                 | <b>1 V</b> |                       |            |
| DN 150 (6")                                        | 150 <sup>3)</sup> 300                                                                                 | <b>2 B</b> |                       |            |
| DN 150 (6")                                        | 150 <sup>3)</sup> 420                                                                                 | <b>2 C</b> |                       |            |
| DN 150 (6")                                        | 300 <sup>4)</sup> 420                                                                                 | <b>2 D</b> |                       |            |
| DN 200 (8")                                        | 250 <sup>3)</sup> 500                                                                                 | <b>2 F</b> |                       |            |
| DN 200 (8")                                        | 250 <sup>3)</sup> 700                                                                                 | <b>2 G</b> |                       |            |
| DN 200 (8")                                        | 500 <sup>4)</sup> 700                                                                                 | <b>2 H</b> |                       |            |
| DN 250 (10")                                       | 400 <sup>3)</sup> 800                                                                                 | <b>2 K</b> |                       |            |
| DN 250 (10")                                       | 400 <sup>3)</sup> 1120                                                                                | <b>2 L</b> |                       |            |
| DN 250 (10")                                       | 800 <sup>4)</sup> 1120                                                                                | <b>2 M</b> |                       |            |
| DN 300 (12")                                       | 560 <sup>3)</sup> 1120                                                                                | <b>2 P</b> |                       |            |
| DN 300 (12")                                       | 560 <sup>3)</sup> 1560                                                                                | <b>2 Q</b> |                       |            |
| DN 300 (12")                                       | 1120 <sup>4)</sup> 1560                                                                               | <b>2 R</b> |                       |            |
| DN 350 (14")                                       | 750 <sup>3)</sup> 1500                                                                                | <b>2 T</b> |                       |            |
| DN 350 (14")                                       | 750 <sup>3)</sup> 2100                                                                                | <b>2 U</b> |                       |            |
| DN 350 (14")                                       | 1500 <sup>4)</sup> 2100                                                                               | <b>2 V</b> |                       |            |
| DN 400 (16")                                       | 950 <sup>3)</sup> 1900                                                                                | <b>3 B</b> |                       |            |
| DN 400 (16")                                       | 950 <sup>3)</sup> 2660                                                                                | <b>3 C</b> |                       |            |
| DN 400 (16")                                       | 1900 <sup>4)</sup> 2660                                                                               | <b>3 D</b> |                       |            |
| DN 500 (20")                                       | 1475 <sup>3)</sup> 2950                                                                               | <b>3 K</b> |                       |            |
| DN 500 (20")                                       | 1475 <sup>3)</sup> 4130                                                                               | <b>3 L</b> |                       |            |
| DN 500 (20")                                       | 2950 <sup>4)</sup> 4130                                                                               | <b>3 M</b> |                       |            |
| DN 600 (24")                                       | 2150 <sup>3)</sup> 4300                                                                               | <b>3 T</b> |                       |            |
| DN 600 (24")                                       | 2150 <sup>3)</sup> 6020                                                                               | <b>3 U</b> |                       |            |
| DN 600 (24")                                       | 4300 <sup>4)</sup> 6020                                                                               | <b>3 V</b> |                       |            |
| DN 700 (28")                                       | 2900 <sup>3)</sup> 5800                                                                               | <b>4 F</b> |                       |            |
| DN 700 (28")                                       | 2900 <sup>3)</sup> 8120                                                                               | <b>4 G</b> |                       |            |
| DN 700 (28")                                       | 5800 <sup>4)</sup> 8120                                                                               | <b>4 H</b> |                       |            |
| DN 800 (32")                                       | 3800 <sup>3)</sup> 7600                                                                               | <b>4 P</b> |                       |            |
| DN 800 (32")                                       | 3800 <sup>3)</sup> 10640                                                                              | <b>4 Q</b> |                       |            |
| DN 800 (32")                                       | 7600 <sup>4)</sup> 10640                                                                              | <b>4 R</b> |                       |            |
| DN 900 (36")                                       | 5000 <sup>3)</sup> 10000                                                                              | <b>5 B</b> |                       |            |
| DN 900 (36")                                       | 5000 <sup>3)</sup> 14000                                                                              | <b>5 C</b> |                       |            |
| DN 900 (36")                                       | 10000 <sup>4)</sup> 14000                                                                             | <b>5 D</b> |                       |            |
| DN 1000 (40")                                      | 6000 <sup>3)</sup> 12000                                                                              | <b>5 K</b> |                       |            |
| DN 1000 (40")                                      | 6000 <sup>3)</sup> 16800                                                                              | <b>5 L</b> |                       |            |
| DN 1000 (40")                                      | 12000 <sup>4)</sup> 16800                                                                             | <b>5 M</b> |                       |            |
| DN 1200 (48")                                      | 9000 <sup>3)</sup> 18000                                                                              | <b>5 T</b> |                       |            |
| DN 1200 (48")                                      | 9000 <sup>3)</sup> 25200                                                                              | <b>5 U</b> |                       |            |
| DN 1200 (48")                                      | 18000 <sup>4)</sup> 25200                                                                             | <b>5 V</b> |                       |            |

| Selection and Ordering data                                                                             |  |          | Order No.             | Order code   |
|---------------------------------------------------------------------------------------------------------|--|----------|-----------------------|--------------|
| <b>Flowmeter SITRANS FUE380</b><br>(type approved)                                                      |  |          | <b>7 ME 3 4 1 0 -</b> |              |
| <b>Flange norm and pressure rating</b>                                                                  |  |          |                       |              |
| System without sensor - only a transmitter                                                              |  |          |                       |              |
| <u>EN 1092-1</u>                                                                                        |  |          |                       |              |
| PN 16 (DN 100 ... 1200)                                                                                 |  | <b>C</b> |                       |              |
| PN 25 (DN 200 ... 1000)                                                                                 |  | <b>D</b> |                       |              |
| PN 40 (DN 50 ... 250) <sup>5)</sup>                                                                     |  | <b>E</b> |                       |              |
| <b>Compact / remote connection</b>                                                                      |  |          |                       |              |
| Compact version, max. 120 °C (248 °F)                                                                   |  | <b>0</b> |                       |              |
| Remote version, max. 200 °C (392 °F)                                                                    |  |          |                       |              |
| 5 m (16.4 ft)                                                                                           |  | <b>2</b> |                       |              |
| 10 m (32.8 ft)                                                                                          |  | <b>3</b> |                       |              |
| 20 m (65.6 ft)                                                                                          |  | <b>4</b> |                       |              |
| 30 m (98.4 ft)                                                                                          |  | <b>5</b> |                       |              |
| <b>Approvals / pulse output</b>                                                                         |  |          |                       |              |
| Without approval (neutral)                                                                              |  | <b>0</b> |                       |              |
| Selectable pulse output (following code can be 1 ... 9)                                                 |  |          |                       |              |
| With approval marks                                                                                     |  | <b>1</b> |                       |              |
| Selectable pulse output (following code can be 1 ... 9)                                                 |  |          |                       |              |
| With approval marks and seal                                                                            |  | <b>2</b> |                       |              |
| Selectable pulse output (following code can be 1 ... 9)                                                 |  |          |                       |              |
| Without approval (neutral) Preset pulse output for FUE950 energy meter (following code must be 2 ... 6) |  | <b>3</b> |                       |              |
| With approval marks                                                                                     |  | <b>4</b> |                       |              |
| Preset pulse output for FUE950 energy meter (following code must be 2 ... 6, dimension depending )      |  |          |                       |              |
| With approval marks and seal                                                                            |  | <b>5</b> |                       |              |
| Preset pulse output for FUE950 energy meter (following code must be 2 ... 6)                            |  |          |                       |              |
| <b>Pulse output value setup</b>                                                                         |  |          |                       |              |
| 0.1 l/p (option for DN 50 ... DN 65) with 5 ms                                                          |  | <b>1</b> |                       |              |
| 1 l/p (typical for DN 50 ... DN 65) with 5 ms                                                           |  | <b>2</b> |                       |              |
| 2.5 l/p (typical for DN 80 ... DN 125) with 5 ms                                                        |  | <b>3</b> |                       |              |
| 10 l/p (typical for DN 150 ... DN 250) with 5 ms                                                        |  | <b>4</b> |                       |              |
| 50 l/p (typical for DN 300 ... DN 400) with 5 ms                                                        |  | <b>5</b> |                       |              |
| 100 l/p (typical for DN 500 ... DN 1200) with 5 ms                                                      |  | <b>6</b> |                       |              |
| <b>Optional pulse values</b>                                                                            |  |          |                       |              |
| 250 l/pulse                                                                                             |  | <b>7</b> |                       |              |
| 1 m <sup>3</sup> /pulse                                                                                 |  | <b>8</b> |                       |              |
| 0.25 l/pulse                                                                                            |  | <b>9</b> |                       | <b>N 0 A</b> |
| 0.5 l/pulse                                                                                             |  | <b>9</b> |                       | <b>N 0 B</b> |
| 5 l/pulse                                                                                               |  | <b>9</b> |                       | <b>N 0 C</b> |
| 25 l/pulse                                                                                              |  | <b>9</b> |                       | <b>N 0 D</b> |
| 500 l/pulse                                                                                             |  | <b>9</b> |                       | <b>N 0 E</b> |
| 2.5 m <sup>3</sup> /pulse                                                                               |  | <b>9</b> |                       | <b>N 0 F</b> |
| 5 m <sup>3</sup> /pulse                                                                                 |  | <b>9</b> |                       | <b>N 0 G</b> |
| 10 m <sup>3</sup> /pulse                                                                                |  | <b>9</b> |                       | <b>N 0 H</b> |
| 25 m <sup>3</sup> /pulse                                                                                |  | <b>9</b> |                       | <b>N 0 J</b> |
| 50 m <sup>3</sup> /pulse                                                                                |  | <b>9</b> |                       | <b>N 0 K</b> |
| 100 m <sup>3</sup> /pulse                                                                               |  | <b>9</b> |                       | <b>N 0 L</b> |
| 250 m <sup>3</sup> /pulse                                                                               |  | <b>9</b> |                       | <b>N 0 M</b> |
| 500 m <sup>3</sup> /pulse                                                                               |  | <b>9</b> |                       | <b>N 0 N</b> |
| 1000 m <sup>3</sup> /pulse                                                                              |  | <b>9</b> |                       | <b>N 0 P</b> |

For notes 1) to 8) see next page

# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUE380 with approval

| Selection and Ordering data                                                   | Order No.        | Order code |
|-------------------------------------------------------------------------------|------------------|------------|
| <b>Flowmeter SITRANS FUE380 (type approved)</b>                               | <b>7ME3410 -</b> |            |
| <b>Transmitter SITRANS FUE080</b>                                             |                  |            |
| IP67/NEMA 4X/6 115 ... 230 V AC                                               |                  | <b>B</b>   |
| IP67/NEMA 4X/6 3.6 V battery version D, incl. dual battery pack               |                  | <b>D</b>   |
| IP67/NEMA 4X/6 115 ... 230 V AC, including 3.6 V single battery backup        |                  | <b>E</b>   |
| IP67/NEMA 4X/6 3.6 V battery version (no battery pack included) <sup>6)</sup> |                  | <b>G</b>   |
| <b>Country / approval type <sup>7)</sup></b>                                  |                  |            |
| Neutral, no approval mark                                                     |                  | <b>A</b>   |
| Denmark <sup>8)</sup> , EN 1434/OIML R75                                      |                  | <b>E</b>   |
| Finland <sup>8)</sup> , EN 1434/OIML R75                                      |                  | <b>F</b>   |
| Germany <sup>8)</sup> , EN 1434 (PTB approval, DN 80 ... 1200)                |                  | <b>G</b>   |
| Russia, EN 1434/OIML R75                                                      |                  | <b>M</b>   |
| Ukraine, EN 1434/OIML R75                                                     |                  | <b>P</b>   |
| China                                                                         |                  | <b>Z</b>   |
| MID-Approval, (EN 1434/OIML R75), English                                     |                  | <b>R</b>   |
| MID-Approval, (EN 1434/OIML R75), German                                      |                  | <b>S</b>   |
| MID-Approval, (EN 1434/OIML R75), Polish                                      |                  | <b>T</b>   |
| MID-Approval, (EN 1434/OIML R75), French                                      |                  | <b>U</b>   |
| <b>Pulse width setup</b>                                                      |                  |            |
| 5 ms (standard)                                                               |                  | <b>2</b>   |
| 10 ms                                                                         |                  | <b>3</b>   |
| 20 ms                                                                         |                  | <b>4</b>   |
| 50 ms                                                                         |                  | <b>5</b>   |
| 100 ms                                                                        |                  | <b>6</b>   |
| 200 ms                                                                        |                  | <b>7</b>   |
| 500 ms                                                                        |                  | <b>8</b>   |

<sup>1)</sup>  $Q_p$  ( $Q_n$ ) is the normal flow according to the approval requirements.  $Q_p$  and  $Q_s$  is shown on the system label.

<sup>2)</sup> Pipe material bronze brass

<sup>3)</sup> EN 1434 flow values

<sup>4)</sup> OIML R75 flow values

<sup>5)</sup> PN 40 standard for DN 50 ... 80 die-cast bronze pipes

<sup>6)</sup> Lithium batteries are subject to special transportation regulations according to United Nations "Regulation of Dangerous Goods, UN 3090 and UN 3091". Special transport documentation is required to observe these regulations. This may influence both transport time and costs.

<sup>7)</sup> Other countries in progress

<sup>8)</sup> In Europe the MID approval is the standard, please use following selections.

Please also see [www.siemens.com/SITRANSFordering](http://www.siemens.com/SITRANSFordering) for practical examples of ordering.

| Selection and Ordering data                                                                                                                                                                  | Order code      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Additional information</b>                                                                                                                                                                |                 |
| Please add „Z“ to Order No. and following add-on code(s) with plain text.                                                                                                                    |                 |
| <b>Calibration / certificate FUE380</b>                                                                                                                                                      |                 |
| Approval, verification and sealing as defined with the order number. See order code.                                                                                                         |                 |
| Production calibration for DN 50 ... DN 1200 with $Q_n$ as selected in diameter<br>Calibration protocol: 2 x 3 points, $Q_i$ , 10% $Q_p$ and $Q_p$ (max. 4200 m <sup>3</sup> /h).            | <b>Included</b> |
| Accredited Siemens ISO/IEC 17025 calibration for DN 50 ... 200 with $Q_n$ as selected in diameter.<br>Certificate: 2 x 3 points, $Q_i$ , 10% $Q_p$ and $Q_p$ (max. 250 m <sup>3</sup> /h).   | <b>D20</b>      |
| Accredited Siemens ISO/IEC 17025 calibration for DN 100 ... 500 with $Q_n$ as selected in diameter.<br>Certificate: 2 x 3 points, $Q_i$ , 10% $Q_p$ and $Q_p$ (max. 1300 m <sup>3</sup> /h). | <b>D21</b>      |
| Accredited Siemens ISO/IEC 17025 calibration, DN 300 ... 1200 with $Q_n$ as selected in diameter.<br>Certificate: 2 x 3 points, $Q_i$ , 10% $Q_p$ and $Q_p$ (max. 4200 m <sup>3</sup> /h).   | <b>D22</b>      |
| Output B as reverse flow pulses.<br>No calibration/verification.                                                                                                                             | <b>E21</b>      |
| <b>Material certificate</b>                                                                                                                                                                  |                 |
| EN 10204-3.1                                                                                                                                                                                 | <b>F10</b>      |
| <b>Tag name plate</b>                                                                                                                                                                        |                 |
| Stainless steel tag with 12 mm characters, max. 15 characters (add plain text)                                                                                                               | <b>Y17</b>      |
| Self-adhesive plastic tag with 8 mm characters, max. 15 characters (add plain text)                                                                                                          | <b>Y18</b>      |

### MLFB Ordering example

Customer requires a flowmeter for custody transfer:

- DN 250, PN 25, compact version (media temperature max. 120 °C), battery version.
- Type approved according to EN 1434, verified and sealed for Germany.
- Material certificate and metal tag name plate.
- Pulse output for energymeter SITRANS FUE950.

### Ordering:

FUE380: **7ME3410-2LD05-4DG2-Z, F10, Y17**

Example of appropriate energy meter:

Energy meter type: **FUE950-03110-0R1CB-10300-DK2-00012**



Please use online Product selector to get latest updates.

Product selector link:

[www.pia-selector.automation.siemens.com](http://www.pia-selector.automation.siemens.com)



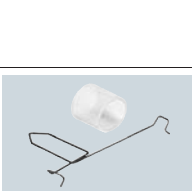
# SITRANS F flowmeters

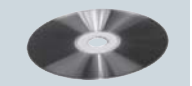
## SITRANS F US

### Flowmeter FUS380 and FUE380

#### Accessories and spare parts to Flowmeter FUS380 and FUE380

##### SITRANS FUS380/FUE380 - Spare parts

| Type/description                                                                                                                               | Order No.                       |                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|
| Dual battery pack (6 year life-time) 33 Ah                                                                                                     | <b>FDK-087H2255</b>             |    |
| Single battery back-up to main supply 13.5 Ah                                                                                                  | <b>FDK-087L4201</b>             |    |
| Battery cover for transmitter FUS080                                                                                                           | <b>A5E00694468</b>              |    |
| PG 13.5 set (2 pcs.) for main cable/pulse cable                                                                                                | <b>FDK-083G0228</b>             |    |
| PG 13.5 set (2 pcs.) for dual coax cable (6 mm)                                                                                                | <b>A5E00694500</b>              |                                                                                     |
| SITRANS FUS/FUE380 wall mounting kit for remote transmitter mounting, including connection plate (DN 50 ... 1200/2" ... 48")                   | <b>A5E00694509</b>              |   |
| SITRANS FUS/FUE380 terminal box for compact transmitter mounting, including connection plate, (bronze sensors only, DN 50 ... 80/2" ... 3")    | <b>A5E01208138<sup>F)</sup></b> |  |
| SITRANS FUS/FUE380 terminal box for compact transmitter mounting, including connection plate, (steel sensors only, DN 100 ... 1200/4" ... 48") | <b>A5E00694660<sup>F)</sup></b> |  |
| Brace (holder) for optical IrDA eye                                                                                                            | <b>A5E00695277<sup>F)</sup></b> |                                                                                     |
| IrDA infrared interface adapter with USB for data acquisition with 1.2 m (3.9 ft) cable                                                        | <b>FDK-087L4163</b>             |  |
| RS 232 add-on module, point to point communication interface with MODBUS RTU protocol                                                          | <b>FDK-087L4212</b>             |  |
| RS 485 add-on module, multi-drop communication interface with MODBUS RTU protocol                                                              | <b>FDK-087L4213</b>             |                                                                                     |

| Type/description                                                                      | Order No.                       |                                                                                       |
|---------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------------|
| 5 m (16.4 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting         | <b>A5E01208092<sup>F)</sup></b> |    |
| 10 m (32.8 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting        | <b>A5E01208114<sup>F)</sup></b> |                                                                                       |
| 20 m (65.6 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting        | <b>A5E01208117<sup>F)</sup></b> |                                                                                       |
| 30 m (98.4 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting        | <b>A5E01208121<sup>F)</sup></b> |                                                                                       |
| 1 m (3.28 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") for compact version     | <b>A5E01208126<sup>F)</sup></b> |                                                                                       |
| 5 m (16.4 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting     | <b>A5E00695476<sup>F)</sup></b> |                                                                                       |
| 10 m (32.8 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting    | <b>A5E00695479<sup>F)</sup></b> |  |
| 20 m (65.6 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting    | <b>A5E00695480<sup>F)</sup></b> |                                                                                       |
| 30 m (98.4 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting    | <b>A5E00695483<sup>F)</sup></b> |                                                                                       |
| 1 m (3.28 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") for compact version | <b>A5E00695486<sup>F)</sup></b> |                                                                                       |

#### Process Device Manager SIMATIC PDM

##### SIMATIC PDM Single Point V6.0

For operation and parameterization of one field device, communication using PROFIBUS DP/PA or HART modem, incl. 1 TAG  
**Cannot** be expanded by further functions or TAG  
 option/power-pack 5 languages (German, English, French, Spanish, Italian) executes with Windows 2000 Professional or Windows XP Professional

**6ES7658-3HX06-0YA5**

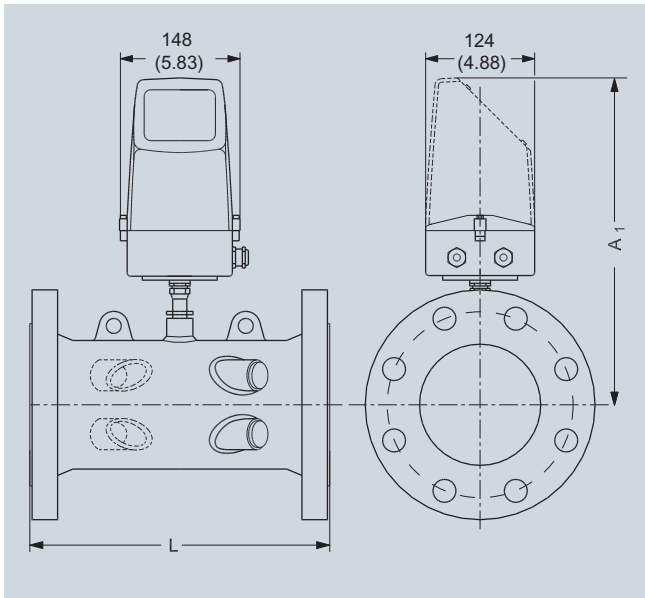
Downloads for DEVICE description FUE380  
<http://support.automation.siemens.com/WW/view/en/17320235>

# SITRANS F flowmeters

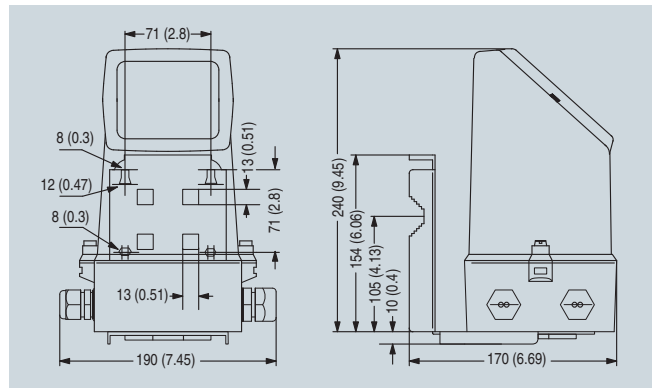
## SITRANS F US

Flowmeter FUS380 and FUE380

### Dimensional drawings



### Transmitter IP67/NEMA 4X/6, wall mounting



### Pipe Dimensions for FUS380 and FUE380

| Size | PN 16      |        | PN 25      |        | PN 40     |        | A1   | Lift hug |
|------|------------|--------|------------|--------|-----------|--------|------|----------|
|      | L          | Weight | L          | Weight | L         | Weight |      |          |
| DN   | mm         | kg     | mm         | kg     | mm        | kg     | mm   |          |
| 50   | -          | -      | -          | -      | 300 +0/-2 | 10     | 350  | No       |
| 65   | -          | -      | -          | -      | 300 +0/-2 | 15     | 360  | No       |
| 80   | -          | -      | -          | -      | 350 +0/-3 | 18     | 370  | No       |
| 100  | 350 +0/-2  | 15     | -          | -      | 350 +0/-3 | 18     | 375  | No       |
| 125  | 350 +0/-2  | 18     | -          | -      | 350 +0/-3 | 24     | 380  | No       |
| 150  | 500 +0/-3  | 28     | -          | -      | 500 +0/-3 | 34     | 390  | Yes      |
| 200  | 500 +0/-3  | 38     | 500 +0/-3  | 47     | 500 +0/-3 | 55     | 414  | Yes      |
| 250  | 600 +0/-3  | 60     | 600 +0/-3  | 76     | 600 +0/-3 | 91     | 440  | Yes      |
| 300  | 500 +0/-3  | 66     | 500 +0/-3  | 81     | -         | -      | 466  | Yes      |
| 350  | 550 +0/-3  | 94     | 550 +0/-3  | 121    | -         | -      | 495  | Yes      |
| 400  | 600 +0/-3  | 124    | 600 +0/-3  | 153    | -         | -      | 507  | Yes      |
| 500  | 625 +0/-3  | 176    | 625 +0/-3  | 235    | -         | -      | 558  | Yes      |
| 600  | 750 +0/-3  | 244    | 750 +0/-3  | 292    | -         | -      | 609  | Yes      |
| 700  | 875 +0/-3  | 258    | 875 +0/-3  | 416    | -         | -      | 660  | Yes      |
| 800  | 1000 +0/-3 | 338    | 1000 +0/-3 | 562    | -         | -      | 710  | Yes      |
| 900  | 1230 +6/-6 | 475    | 1300 +6/-6 | 835    | -         | -      | 810  | No       |
| 1000 | 1300 +6/-6 | 594    | 1370 +6/-6 | 1078   | -         | -      | 910  | No       |
| 1200 | 1360 +6/-6 | 860    | -          | -      | -         | -      | 1110 | No       |

#### Notes:

- Weight for transmitter/electronics 1.5 kg (3.3 lb)
- - Means not available
- All weights are **approximately**
- For flange values - see norm EN 1092-1



# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUS380 and FUE380

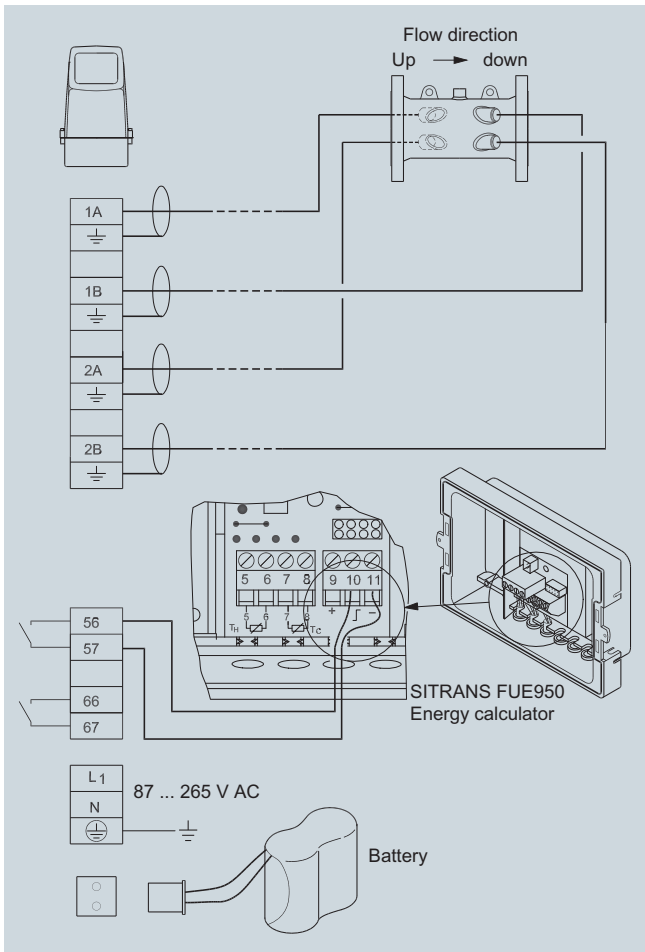
| Size | PN 16          |        | PN 25          |        | PN 40          |        | A1    | Lift hug |
|------|----------------|--------|----------------|--------|----------------|--------|-------|----------|
|      | L              | Weight | L              | Weight | L              | Weight |       |          |
| inch | inch           | lb     | inch           | lb     | inch           | lb     | inch  |          |
| 2    | -              | -      | -              | -      | 12 +0/-0.08    | 22     | 14    | No       |
| 2½   | -              | -      | -              | -      | 12 +0/-0.08    | 33     | 14.4  | No       |
| 3    | -              | -      | -              | -      | 14 +0/-0.08    | 40     | 14.8  | No       |
| 4    | 13.77 +0/-0.08 | 33     | -              | -      | 13.77 +0/-0.12 | 40     | 15    | No       |
| 5    | 13.77 +0/-0.08 | 40     | -              | -      | 13.77 +0/-0.12 | 53     | 15.2  | No       |
| 6    | 19.68 +0/-0.12 | 62     | -              | -      | 19.68 +0/-0.12 | 75     | 15.6  | Yes      |
| 8    | 19.68 +0/-0.12 | 84     | 19.68 +0/-0.12 | 104    | 19.68 +0/-0.12 | 121    | 16.30 | Yes      |
| 10   | 23.62 +0/-0.12 | 132    | 23.62 +0/-0.12 | 168    | 23.62 +0/-0.12 | 201    | 17.32 | Yes      |
| 12   | 19.68 +0/-0.12 | 146    | 19.68 +0/-0.12 | 179    | -              | -      | 18.35 | Yes      |
| 14   | 21.65 +0/-0.12 | 207    | 21.65 +0/-0.12 | 267    | -              | -      | 19.8  | Yes      |
| 16   | 23.62 +0/-0.12 | 273    | 23.62 +0/-0.12 | 337    | -              | -      | 19.96 | Yes      |
| 20   | 24.61 +0/-3    | 419    | 24.61 +0/-0.12 | 538    | -              | -      | 21.97 | Yes      |
| 24   | 29.53 +0/-0.12 | 668    | 29.53 +0/-0.12 | 805    | -              | -      | 23.98 | Yes      |
| 28   | 34.45 +0/-0.12 | 796    | 34.45 +0/-0.12 | 1217   | -              | -      | 25.98 | Yes      |
| 32   | 39.37 +0/-0.12 | 1089   | 39.37 +0/-0.12 | 1698   | -              | -      | 27.95 | Yes      |
| 36   | 39.2 +0/-0.24  | 1047   | 52.00 +0/-0.24 | 1841   | -              | -      | 32.4  | No       |
| 40   | 52 +0/-0.24    | 1310   | 54.80 +0/-0.12 | 2376   | -              | -      | 36.4  | No       |
| 48   | 54.4 +0/-0.24  | 1892   | -              | -      | -              | -      | 44.4  | No       |

#### Notes:

- Weight for transmitter/electronics 1.5 kg (3.3 lb)
- - Means not available
- All weights are **approximately**
- For flange values - see norm EN 1092-1

### Schematics

#### Electrical connection FUS380 and FUE380



The scheme shows the transducer cable connections between transmitter terminals and respective transducer and the electrical connection of the energy calculator SITRANS FUE950.