

Overview



The 2-path flowmeter SITRANS FUS380 comes as battery or mains-powered and is designed to measure water flow in district heating plants local networks, boiler stations, substations, chiller plants (including glycol mixes), and other general water applications.

The type-approved flowmeter version is named SITRANS FUE380 - see page 3/303.

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 15 Hz/0.5 Hz (230 V AC/Battery)
- Easy one-button straight forward display
- 2-path measuring principle for optimum accuracy
- Compact or remote mounting
- Measures on most district water qualities and water conductivities
- No pressure drop
- Long-term stability
- 2 galvanically isolated digital outputs for easy connection to a calculator (potential-free)
- Analog output 4 to 20 mA
- Bidirectional measurement, with 2 totalizers and outputs
- Dynamic range Q_i (min) : Q_s (max) up to 1:400

Application

The main application for SITRANS FUS380 is measurement of water flow or water flow in energy meter systems in district heating networks or chilled water (including glycol mixes).

Design

The 2-path design of SITRANS FUS380 ensures maximum accuracy under short inlet conditions. The flowmeter consists of a flow sensor pipe, 4 transducers/transducer cables and a transmitter SITRANS FUS080.

The unit is available in a compact or a remote version. Both versions are pre-mounted with short coax-cables. Remote transmitter up to a distance of 30 m by one Sensor link cable (SSL).

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 FUS380 has two digital output functions that can be individually selected.

Pulse output rate is defined when ordering. To get optimal benefit the pulse value must be selected as low as possible.

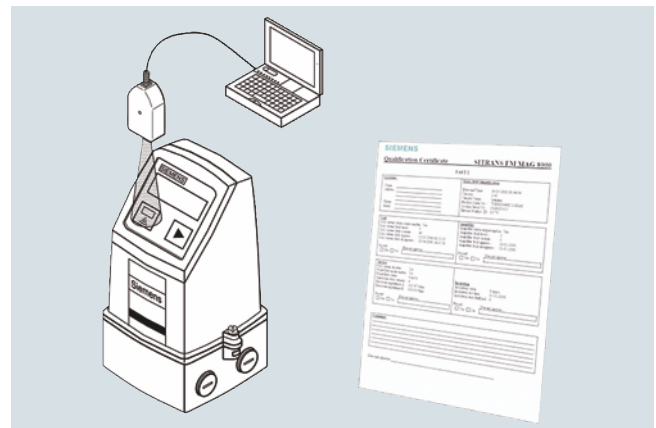
If the flowmeter forms part of an energy meter system for custody transfer, no further approvals are needed, except possible local approvals on the flowmeter.

Function

Together with the SIMATIC PDM tool the FUS380 offers the possibility of testing and verifying the flowmeter on site and creating a printed "Qualification Certificate" with specific data that defines the quality status of the measurement.

The Qualification Certificate shows information about the actual status of the flowmeter:

- General settings, flowmeter and battery information, totalizer values, and pulse output settings
- Detailed information about the transmitter and the sensor functionality, and a main parameter list for evaluating the functionality of the flowmeter



Flow Measurement

SITRANS F US Inline

Flowmeter SITRANS FUS380 standard

Configuration SITRANS FUS380

Selection guide SITRANS FUS380, standard version

| DN | Q _s (m ³ /h) | Q _{max} (m ³ /h) (105 % of Q _s) | Q _p (m ³ /h) | Q _i (m ³ /h) (1:100 of Q _p) | Cut-off (m ³ /h) | Cut-off (% of Q _{max}) | Typical pulse value ¹⁾ (l/pulse) |
|-------|------------------------------------|--|------------------------------------|--|-----------------------------|-------------------------------------|--|
| 50 | 15 | 15.75 | 15 | 0.15 | 0.075 | 0.48 | 1 |
| 50 | 45 | 47.25 | 15 | 0.15 | 0.075 | 0.16 | 1 |
| 50 | 45 | 47.25 | 30 | 0.3 | 0.150 | 0.32 | 1 |
| 65 | 25 | 26.25 | 25 | 0.25 | 0.125 | 0.48 | 1 |
| 65 | 72 | 75.6 | 25 | 0.25 | 0.125 | 0.17 | 1 |
| 65 | 72 | 75.6 | 50 | 0.5 | 0.250 | 0.33 | 1 |
| 80 | 40 | 42 | 40 | 0.4 | 0.200 | 0.48 | 2.5 |
| 80 | 120 | 126 | 40 | 0.4 | 0.200 | 0.16 | 2.5 |
| 80 | 120 | 126 | 80 | 0.8 | 0.400 | 0.32 | 2.5 |
| 100 | 60 | 63 | 60 | 0.6 | 0.300 | 0.48 | 2.5 |
| 100 | 180 | 189 | 60 | 0.6 | 0.300 | 0.16 | 2.5 |
| 100 | 240 | 252 | 120 | 1.2 | 0.600 | 0.24 | 2.5 |
| 125 | 10 | 10.5 | 100 | 1 | 0.500 | 4.76 | 2.5 |
| 125 | 280 | 294 | 100 | 1 | 0.500 | 0.17 | 2.5 |
| 125 | 400 | 420 | 200 | 2 | 1.000 | 0.24 | 2.5 |
| 150 | 150 | 157.5 | 150 | 1.5 | 0.750 | 0.48 | 10 |
| 150 | 420 | 441 | 150 | 1.5 | 0.750 | 0.17 | 10 |
| 150 | 560 | 588 | 300 | 3 | 1.500 | 0.26 | 10 |
| 200 | 250 | 262.5 | 250 | 2.5 | 1.250 | 0.48 | 10 |
| 200 | 700 | 735 | 250 | 2.5 | 1.250 | 0.17 | 10 |
| 200 | 900 | 945 | 500 | 5 | 2.500 | 0.26 | 10 |
| 250 | 400 | 420 | 400 | 4 | 2.000 | 0.48 | 10 |
| 250 | 1 120 | 1 176 | 400 | 4 | 2.000 | 0.17 | 10 |
| 250 | 1 400 | 1 470 | 800 | 8 | 4.000 | 0.27 | 10 |
| 300 | 560 | 588 | 560 | 5.6 | 2.800 | 0.48 | 50 |
| 300 | 1 560 | 1 638 | 560 | 5.6 | 2.800 | 0.17 | 50 |
| 300 | 2 100 | 2 205 | 1 120 | 11.2 | 5.600 | 0.25 | 50 |
| 350 | 750 | 787.5 | 750 | 7.5 | 3.750 | 0.48 | 50 |
| 350 | 2 100 | 2 205 | 750 | 7.5 | 3.750 | 0.17 | 50 |
| 350 | 2 800 | 2 940 | 1 500 | 15 | 7.500 | 0.26 | 50 |
| 400 | 950 | 9 97.5 | 950 | 9.5 | 4.750 | 0.48 | 50 |
| 400 | 2 660 | 2 793 | 950 | 9.5 | 4.750 | 0.17 | 50 |
| 400 | 3 600 | 3 780 | 1 900 | 19 | 9.500 | 0.25 | 50 |
| 500 | 1 475 | 1 548.75 | 1 475 | 14.75 | 7.375 | 0.48 | 100 |
| 500 | 4 130 | 4 336.5 | 1 475 | 14.75 | 7.375 | 0.17 | 100 |
| 500 | 5 500 | 5 775 | 2 950 | 29.5 | 14.750 | 0.26 | 100 |
| 600 | 2 150 | 2 257.5 | 2 150 | 21.5 | 10.750 | 0.48 | 100 |
| 600 | 6 020 | 6 321 | 2 150 | 21.5 | 10.750 | 0.17 | 100 |
| 600 | 8 000 | 8 400 | 4 300 | 43 | 21.500 | 0.26 | 100 |
| 700 | 2 900 | 3 045 | 2 900 | 29 | 14.500 | 0.48 | 100 |
| 700 | 8 120 | 8 526 | 2 900 | 29 | 14.500 | 0.17 | 100 |
| 700 | 10 800 | 11 340 | 5 800 | 58 | 29.000 | 0.26 | 100 |
| 800 | 3 800 | 3 990 | 3 800 | 38 | 19.000 | 0.48 | 100 |
| 800 | 10 640 | 11 172 | 3 800 | 38 | 19.000 | 0.17 | 100 |
| 800 | 14 200 | 14 910 | 7 600 | 76 | 38.000 | 0.25 | 100 |
| 900 | 5 000 | 5 250 | 3 800 | 38 | 19.000 | 0.36 | 100 |
| 900 | 14 000 | 14 700 | 5 000 | 50 | 25.000 | 0.17 | 100 |
| 900 | 20 000 | 21 000 | 5 000 | 50 | 25.000 | 0.12 | 100 |
| 1 000 | 6 000 | 6 300 | 3 800 | 38 | 19.000 | 0.30 | 100 |
| 1 000 | 16 800 | 17 640 | 6 000 | 60 | 30.000 | 0.17 | 100 |
| 1 000 | 24 000 | 25 200 | 12 000 | 120 | 60.000 | 0.24 | 100 |
| 1 200 | 9 000 | 9 450 | 3 800 | 38 | 19.000 | 0.20 | 100 |
| 1 200 | 25 200 | 26 460 | 9 000 | 90 | 45.000 | 0.17 | 100 |
| 1 200 | 36 000 | 37 800 | 18 000 | 180 | 90.000 | 0.24 | 100 |

The values Q_i, Q_p and Q_s are shown on the system label of the FUS380. Q_i (Q_{min}) means the minimal and Q_p (Q_{nom}) the nominal flow rate. Q_s is the highest operatable flow rate. The maximum flow rate (Q_{max}) is 105 % of Q_s. The low flow cut-off is 50 % of Q_i.

In order to obtain best pulse output resolution in the range Q_{min} to Q_s of approx. 100 Hz at Q_s, two or three flow values for every dimension can be selected at ordering. Therefore the ordering data table also shows Q_p (Q_n). This flow rate is between Q_i (Q_{min}) and Q_s and indicates the normal or typical flow.

To get optimal benefit of the pulses the pulse value and pulse length shall be selected as low as possible. The following calculation formula can be used for determining the shortest pulse value at a pulse length of 5 ms: L/pulse > Q_s (m³/h) /360.

For example Q_s = 300 m³/h; L/pulse > 300/360; L/pulse > 0.83; therefore the pulse value must be 1 l/pulse

¹⁾ Typical pulse values for SITRANS FUS380 with pulse length 5 ms. Other values are possible - please see the selections at the 7ME340 Order codes.

Technical specifications

| | |
|---|--|
| Sensor design | 2-path sensor with flanges and inline transducers wet-calibrated from factory |
| Nominal size (DN 50 ... DN 80 in bronze) | DN 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 500, 600, 700, 800, 900, 1000, 1200 |
| Pressure rate | PN 16, PN 25, PN 40 EN 1092-1 flanges: • type 01 (B): DN 100 to DN 125 • type 11 (B): DN 150 to DN 1200 • type 11 (B) 'design': DN 50 to DN 80 |
| Pipe material | • DN 100 ... DN 1200: Carbon Steel EN 1.0345/P235 GH, painted in light-gray. • DN 50 ... 80: Die-cast bronze G-CuSn10/W2.1050.01 (EN 1982) |
| Transducer design | • DN 100 ... DN 1200: Inline version and welded onto the pipe • DN 50 ... DN 80: Screwed into the pipe |
| Transducer material | Stainless steel (AISI 316/1.4404)/brass (CuZn ₃₆ Pb ₂ As) |

Sensor operating conditions

| | |
|-------------------------------|--|
| Ambient temperature | |
| • Operation | -10 ... +60 °C (14 ... 140 °F) (MID version: -10 ... +55 °C (14 ... 131 °F)) |
| • Storage | -40 ... +85 °C (-40 ... +185 °F) |
| Measured media | Heating water, according to VDI-2035 (pH 8.2 - 10.5), industrial VdTUV information sheet 1466 and AGFW information sheet FW 510. |
| Media/surface temperature | |
| • DN 100 ... DN 1200 | Remote: 2 ... 200 °C (35.6 ... 392 °F) |
| • DN 50 ... DN 80 | Remote: 2 ... 150 °C (35.6 ... 302 °F) |
| • DN 50 ... DN 1200 | Compact: 2 ... 120 °C (35.6 ... 248 °F) |
| Degree of protection | Sensor connection IP67/NEMA 4X/6 |
| Max. flow velocity | DN 50 ... DN 1200: 9 m/s (29.5 ft/s) |
| Electromagnetic compatibility | |
| • Emitted interference | To EN 55011/CSPRI-11 |
| • Noise immunity | To EN/IEC 61236-1 (Industry) |

Transmitter

The transmitter related to this system is the SITRANS FUS080. Technical specifications to the FUS080 see page 3/262 ff.

Sensor cable

| | |
|--------------------------------|--|
| Transducer cable length | Pre-mounted with short coax-cables |
| Sensor link cable length (SSL) | 5, 10, 20, 30 m (16.4, 32.8, 65.6, 98.4 ft) |

Certificates and approvals

| | |
|-----------------------------|--|
| Conformity certificate (CE) | The devices are supplied as standard with a Siemens Certificate of Conformity on DVD |
| Material certificate | Material certificate according EN 3.1 is optionally available |
| Calibration report | A standard calibration report is shipped with every flowmeter. Extended accredited ISO/IEC 17025 calibration certificates optionally available |
| Approvals | No custody transfer approvals |

The sensors are approved according to EU directive 2014/68/EU dated 27 June 2014 regarding fluid group 1, classified in category III. Design according to EN 13480 (PED Directive).

SITRANS FUS380 uncertainty

| | FUS380 |
|--|---|
| Flow value setting | Predefined settings according to dimension |
| Approval | No approval |
| Flow rate v_f | 0.02 ... 9 m/s (0.065 ... 29.5 ft/s) |
| Output A | Pulse: forward, reverse, forward net, reverse net (Preset: forward) |
| Output B | Pulse (forward, reverse, forward net, reverse net, alarm, call-up (Preset: alarm)) |
| Pulse value A & B (depending on DN value) | 0.1 l/p, 0.25 l/p, 0.5 l/p, 1 l/p, 2.5 l/p, 10 l/p, 25 l/p, 50 l/p, 100 l/p, 250 l/p, 500 l/p, 1 m ³ /p, 2.5 m ³ /p, 5 m ³ /p, 10 m ³ /p, 25 m ³ /p, 50 m ³ /p, 100 m ³ /p, 250 m ³ /p, 500 m ³ /p, 1000 m ³ /p |
| Pulse width | 5/10/20/50/100/200/500 ms |
| Flow unit setup | Preset: m ³ /h |
| Volume unit setup | Preset: m ³ |

Flowmeter Calibration and traceability

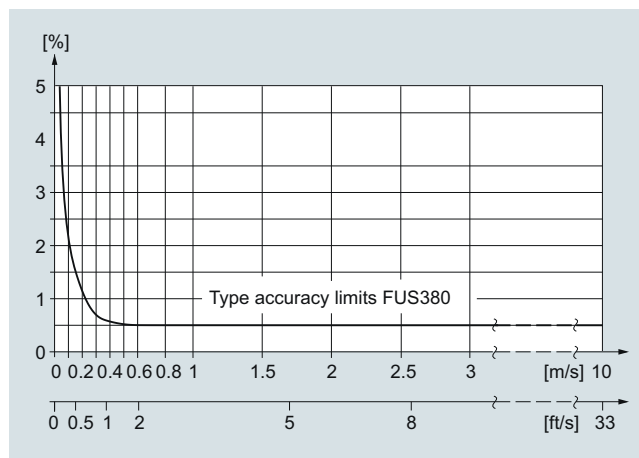
To ensure continuous accurate measurement, flowmeters must be calibrated. The calibration is conducted at Siemens flow facilities with traceable instruments referring directly to the physical unit of measurement according to the International System of Units (SI).

Therefore, the calibration certificate ensures recognition of the test results worldwide, including the US (NIST traceability). Siemens offers accredited calibrations assured to ISO 17025 in the flow range from 0.0001 m³/h to 10 000 m³/h. Siemens Flow Instruments accredited laboratories are recognized by ILAC MRA (International Laboratory Accreditation Corporation - Mutual Recognition Arrangement) ensuring international traceability and recognition of the test results worldwide.

A standard calibration certificate with Q_n as selected flow is shipped with each SITRANS FUS380. This production calibration protocol consists of 2 x 3 points at Q_i , 10 % Q_p and Q_p (max. 4 200 m³/h).

Accuracy SITRANS FUS380:

± 0.5 % for 0.5 m/s < v < 10 m/s and ± 0.25/V_{act} [%] below 0.5 m/s



Flow Measurement

SITRANS F US Inline

Flowmeter SITRANS FUS380 standard

Selection and Ordering data

Article-No.

Order code

Flowmeter SITRANS FUS380 (standard)

7ME3400 - 0 - A

➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

| Diameter | Approval | Pressure rating | Flow setting [m ³ /h] | | |
|--------------------------------|----------|--------------------|----------------------------------|----------------|-----|
| | | | Q _p (Q _n) | Q _s | |
| Pipe material: Die-cast bronze | | | | | |
| DN 50 (2") | EN 1434 | PN 40 | 15 | 15 | 1 A |
| DN 50 (2") | EN 1434 | PN 40 | 15 | 45 | 1 C |
| DN 50 (2") | OIML R75 | PN 40 | 30 | 45 | 1 D |
| DN 65 (2½") | EN 1434 | PN 40 | 25 | 25 | 1 E |
| DN 65 (2½") | EN 1434 | PN 40 | 25 | 72 | 1 G |
| DN 65 (2½") | OIML R75 | PN 40 | 50 | 72 | 1 H |
| DN 80 (3") | EN 1434 | PN 40 | 40 | 40 | 1 J |
| DN 80 (3") | EN 1434 | PN 40 | 40 | 120 | 1 L |
| DN 80 (3") | OIML R75 | PN 40 | 80 | 120 | 1 M |
| Pipe material: Carbon steel | | | | | |
| DN 100 (4") | EN 1434 | PN16, PN 40 | 60 | 60 | 1 N |
| DN 100 (4") | EN 1434 | PN16, PN 40 | 60 | 180 | 1 Q |
| DN 100 (4") | OIML R75 | PN16, PN 40 | 120 | 240 | 1 R |
| DN 125 (5") | EN 1434 | PN16, PN 40 | 100 | 100 | 1 S |
| DN 125 (5") | EN 1434 | PN16, PN 40 | 100 | 280 | 1 U |
| DN 125 (5") | OIML R75 | PN16, PN 40 | 200 | 400 | 1 V |
| DN 150 (6") | EN 1434 | PN16, PN 40 | 150 | 150 | 2 A |
| DN 150 (6") | EN 1434 | PN16, PN 40 | 150 | 420 | 2 C |
| DN 150 (6") | OIML R75 | PN16, PN 40 | 300 | 560 | 2 D |
| DN 200 (8") | EN 1434 | PN16, PN 25, PN 40 | 250 | 250 | 2 E |
| DN 200 (8") | EN 1434 | PN16, PN 25, PN 40 | 250 | 700 | 2 G |
| DN 200 (8") | OIML R75 | PN16, PN 25, PN 40 | 500 | 900 | 2 H |
| DN 250 (10") | EN 1434 | PN16, PN 25, PN 40 | 400 | 400 | 2 J |
| DN 250 (10") | EN 1434 | PN16, PN 25, PN 40 | 400 | 1 120 | 2 L |
| DN 250 (10") | OIML R75 | PN16, PN 25, PN 40 | 800 | 1 400 | 2 M |
| DN 300 (12") | EN 1434 | PN16, PN 25 | 560 | 560 | 2 N |
| DN 300 (12") | EN 1434 | PN16, PN 25 | 560 | 1 560 | 2 Q |
| DN 300 (12") | OIML R75 | PN16, PN 25 | 1 120 | 2 100 | 2 R |
| DN 350 (14") | EN 1434 | PN16, PN 25 | 750 | 750 | 2 S |
| DN 350 (14") | EN 1434 | PN16, PN 25 | 750 | 2 100 | 2 U |
| DN 350 (14") | OIML R75 | PN16, PN 25 | 1 500 | 2 800 | 2 V |
| DN 400 (16") | EN 1434 | PN16, PN 25 | 950 | 950 | 3 A |
| DN 400 (16") | EN 1434 | PN16, PN 25 | 950 | 2 660 | 3 C |
| DN 400 (16") | OIML R75 | PN16, PN 25 | 1 900 | 3 600 | 3 D |
| DN 500 (20") | EN 1434 | PN16, PN 25 | 1 475 | 1 475 | 3 J |
| DN 500 (20") | EN 1434 | PN16, PN 25 | 1 475 | 4 130 | 3 L |
| DN 500 (20") | OIML R75 | PN16, PN 25 | 2 950 | 5 500 | 3 M |
| DN 600 (24") | EN 1434 | PN16, PN 25 | 2 150 | 2 150 | 3 S |
| DN 600 (24") | EN 1434 | PN16, PN 25 | 2 150 | 6 020 | 3 U |
| DN 600 (24") | OIML R75 | PN16, PN 25 | 4 300 | 8 000 | 3 V |
| DN 700 (28") | EN 1434 | PN16, PN 25 | 2 900 | 2 900 | 4 E |
| DN 700 (28") | EN 1434 | PN16, PN 25 | 2 900 | 8 120 | 4 G |
| DN 700 (28") | OIML R75 | PN16, PN 25 | 5 800 | 10 800 | 4 H |
| DN 800 (32") | EN 1434 | PN16, PN 25 | 3 800 | 3 800 | 4 N |
| DN 800 (32") | EN 1434 | PN16, PN 25 | 3 800 | 10 640 | 4 Q |
| DN 800 (32") | OIML R75 | PN16, PN 25 | 7 600 | 14 200 | 4 R |

| Selection and Ordering data | | | | | Article-No. | Order code |
|--|----------|-----------------|---|--------|-------------|------------|
| Flowmeter SITRANS FUS380 (standard) | | | | | 7ME3400 - | 0 - A |
| Diameter | Approval | Pressure rating | Flow setting [m ³ /h] Qp (Qn) | Qs | | |
| <u>Remote only</u> | | | | | | |
| DN 900 (36") | EN 1434 | PN16, PN 25 | 5 000 | 5 000 | 5 A | |
| DN 900 (36") | EN 1434 | PN16, PN 25 | 5 000 | 14 000 | 5 C | |
| DN 900 (36") | OIML R75 | PN16, PN 25 | 10 000 | 20 000 | 5 D | |
| DN 1 000 (40") | EN 1434 | PN16, PN 25 | 6 000 | 6 000 | 5 J | |
| DN 1 000 (40") | EN 1434 | PN16, PN 25 | 6 000 | 16 800 | 5 L | |
| DN 1 000 (40") | OIML R75 | PN16, PN 25 | 12 000 | 24 000 | 5 M | |
| DN 1 200 (48") | EN 1434 | PN16 | 9 000 | 9 000 | 5 S | |
| DN 1 200 (48") | EN 1434 | PN16 | 9 000 | 25 200 | 5 U | |
| DN 1 200 (48") | OIML R75 | PN16 | 18 000 | 36 000 | 5 V | |
| Flange norm and pressure rating | | | | | | |
| System without sensor - only a transmitter FUS080 as spare part - settings as defined with this Article No. | | | | | | |
| <u>EN 1092-1 Flanges</u> | | | | | | |
| PN 16 (DN 100 ... DN 1 200) | | | | | | |
| PN 25 (DN 200 ... DN 1 000) | | | | | | |
| PN 40 (DN 50 ... DN 250) | | | | | | |
| Compact/remote connection | | | | | | |
| Note: Sensor cable always firmly connected to connection box. | | | | | | |
| Compact version, Liquid max. 120 °C (248 °F) | | | | | | |
| <u>Remote version, Liquid max. 150/200 °C (302/392 °F)</u> | | | | | | |
| Sensor link cable (SSL) | | | | | | |
| <ul style="list-style-type: none"> • 5 m (16.4 ft) • 10 m (32.8 ft) • 20 m (65.6 ft) • 30 m (98.4 ft) | | | | | | |
| Pulse output value setup | | | | | | |
| To get optimal benefit of the pulses the pulse value and pulse length shall be selected as low as possible. The following calculation formula can be used for determining the shortest pulse value at a pulse length of 5 ms: $L/pulse > Q_s (m^3/h) / 360$. For example $Q_s = 300 m^3/h$; $L/pulse > 300/360$; $L/pulse > 0.83$; therefore the pulse value must be 1 l/pulse | | | | | | |
| Pulse value | | | | | | |
| <ul style="list-style-type: none"> • 0.1 l/pulse • 1 l/pulse • 2.5 l/pulse • 10 l/pulse • 50 l/pulse • 100 l/pulse • 250 l/pulse • 1 m³/pulse • 0.25 l/pulse • 0.5 l/pulse • 5 l/pulse • 25 l/pulse • 500 l/pulse • 2.5 m³/pulse • 5 m³/pulse • 10 m³/pulse • 25 m³/pulse • 50 m³/pulse • 100 m³/pulse • 250 m³/pulse • 500 m³/pulse • 1000 m³/pulse | | | | | | |
| | | | | | 0 | |
| | | | | | 2 | |
| | | | | | 3 | |
| | | | | | 4 | |
| | | | | | 5 | |
| | | | | | 1 | |
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| | | | | | 8 | |
| | | | | | 9 | N 0 A |
| | | | | | 9 | N 0 B |
| | | | | | 9 | N 0 C |
| | | | | | 9 | N 0 D |
| | | | | | 9 | N 0 E |
| | | | | | 9 | N 0 F |
| | | | | | 9 | N 0 G |
| | | | | | 9 | N 0 H |
| | | | | | 9 | N 0 J |
| | | | | | 9 | N 0 K |
| | | | | | 9 | N 0 L |
| | | | | | 9 | N 0 M |
| | | | | | 9 | N 0 N |
| | | | | | 9 | N 0 P |

Flow Measurement

SITRANS F US Inline

Flowmeter SITRANS FUS380 standard

| Selection and Ordering data | Article-No. | Order code |
|--|-------------|------------------|
| Flowmeter SITRANS FUS380 (standard) | 7ME3400 - | 0 - A |
| Transmitter variant FUS080 power/analog output | | B D E G |
| 115 ... 230 V AC | | |
| 3.6 V Lithium battery, dual pack is included | | |
| 115 ... 230 V AC, backup 3.6 V DC Lithium battery, single pack is included | | |
| 3.6 V battery version (no battery pack included) | | |
| Option with 4 ... 20 mA analog output module | | R U |
| • 115 ... 230 V AC | | |
| • 115 ... 230 V AC, backup 3.6 V DC, Lithium battery, single pack is included | | |
| Note: 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. | | |
| Pulse width setup | | |
| Pulse width | | |
| • 5 ms (standard) | | 2 |
| • 10 ms | | 3 |
| • 20 ms | | 4 |
| • 50 ms | | 5 |
| • 100 ms | | 6 |
| • 200 ms | | 7 |
| • 500 ms | | 8 |

| Selection and Ordering data | Order code |
|---|-----------------|
| Additional information | |
| Please add „-Z“ to Article No. and following add-on code(s) with plain text. | |
| Calibration/certificate FUS380 | |
| Production calibration for DN 50 ... DN 1200 with Q_n as selected in diameter. Incl. Calibration protocol: 2 x 3 points, Q_i , 10 % Q_p and Q_p (max. 8000 m ³ /h). | Included |
| Accredited Siemens ISO/IEC 17025 calibration for DN 50 ... DN 200 with Q_n as selected in diameter. Certificate: 2 x 5 points, Q_i , 5 %, 10 %, 50 % and 100 % of Q_p (max. 630 m ³ /h). | D20 |
| Accredited Siemens ISO/IEC 17025 calibration for DN 250 ... DN 600 with Q_n as selected in diameter. Certificate: 2 x 5 points, 5 %, 10 %, 50 % and 100 % of Q_p (max. 2800 m ³ /h). | D21 |
| Accredited Siemens ISO/IEC 17025 calibration, DN 500 ... DN 1200 with Q_n as selected in diameter. Certificate: 2 x 5 points, Q_i , 5 %, 10 %, 50 % and 100 % of Q_p (max. 8000 m ³ /h). | D22 |
| Output B as reverse flow pulses. No calibration/verification of this function. | E21 |
| Material certificate | |
| EN 10204-3.1 (pipe material) | C12 |
| Regional specific approval | |
| KCC marking for Korea | W28 |
| Tag name plate | |
| Stainless steel TAG plate (1 x 24 x 80 mm), wire fixed. Font size depends on text length: 8 mm for 1 ... 10 characters, 4 mm for 11 ... 20 characters (specify in plain text). | Y17 |

Flowmeter SITRANS FUS380 operating instructions, accessories and spare parts

Operating instructions

| Description | Article No. |
|-------------|--------------------|
| • English | A5E00730100 |
| • German | A5E00740611 |

All literature is available to download for free, in a range of languages, at www.siemens.com/processinstrumentation/documentation

For accessories and spare parts see chapter of transmitter SITRANS FUS080/FUE080 on page 3/266.



Please use online Product selector to get latest updates. Product selector link:

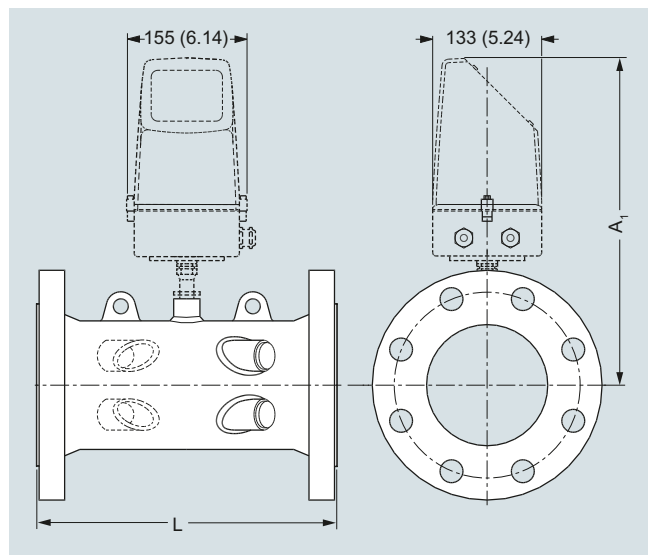
www.pia-portal.automation.siemens.com

Flow Measurement

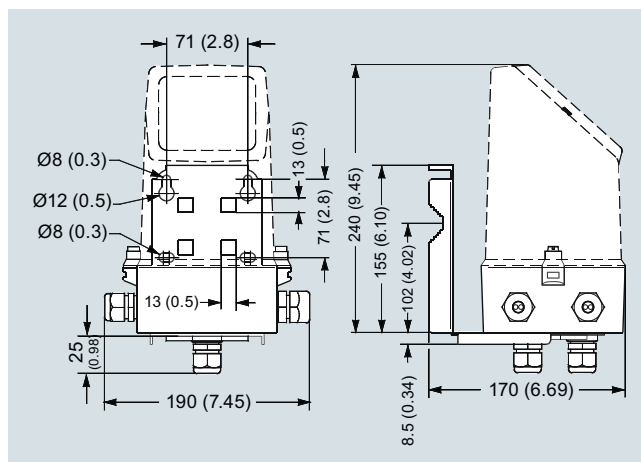
SITRANS F US InLine

Flowmeter SITRANS FUS380 and FUE380

Dimensional drawings



Transmitter IP67/NEMA 4X/6, wall mounting



Dimensions in mm (inch)

Sensor dimensions for FUS380 and FUE380

| Size | PN 16 | | PN 25 | | PN 40 | | A ₁ | 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 | 363 | No |
| 80 | - | - | - | - | 350 +0/-2 | 18 | 370 | No |
| 100 | 350 +0/-2 | 15 | - | - | 350 +0/-2 | 18 | 372 | No |
| 125 | 350 +0/-2 | 18 | - | - | 350 +0/-2 | 24 | 385 | No |
| 150 | 500 +0/-3 | 28 | - | - | 500 +0/-3 | 34 | 399 | No |
| 200 | 500 +0/-3 | 38 | 500 +0/-3 | 47 | 500 +0/-3 | 55 | 425 | Yes |
| 250 | 600 +0/-3 | 60 | 600 +0/-3 | 76 | 600 +0/-3 | 91 | 452 | Yes |
| 300 | 500 +0/-3 | 66 | 500 +0/-3 | 81 | - | - | 478 | Yes |
| 350 | 550 +0/-3 | 94 | 550 +0/-3 | 121 | - | - | 495 | Yes |
| 400 | 600 +0/-3 | 124 | 600 +0/-3 | 153 | - | - | 520 | Yes |
| 500 | 625 +0/-3 | 194 | 625 +0/-3 | 231 | - | - | 570 | Yes |
| 600 | 750 +0/-3 | 303 | 750 +0/-3 | 365 | - | - | 622 | Yes |
| 700 | 875 +0/-3 | 361 | 875 +0/-3 | 553 | - | - | 673 | Yes |
| 800 | 1000 +0/-3 | 494 | 1000 +0/-3 | 770 | - | - | 724 | Yes |
| 900 | 1230 +0/-6 | 535 | 1300 +0/-6 | 835 | - | - | 775 | Yes |
| 1000 | 1300 +0/-6 | 594 | 1370 +0/-6 | 1000 | - | - | 826 | Yes |
| 1200 | 1360 +0/-6 | 732 | - | - | - | - | 928 | Yes |

Notes:

- Weight for transmitter/electronics 1.5 kg (compact version) or approximately 3 kg (remote version including 10 m cable set)
- - Means not available
- All weights are **approximate**
- For flange values - see norm EN 1092-1

| Size inch | PN 16 | | PN 25 | | PN 40 | | A ₁ inch | Lift hug |
|--------------|----------------|--------------|----------------|--------------|----------------|--------------|------------------------|----------|
| | L inch | Weight lb | L inch | Weight lb | L inch | Weight lb | | |
| 2 | - | - | - | - | 11.81 +0/-0.08 | 22 | 13.78 | No |
| 2½ | - | - | - | - | 11.81 +0/-0.08 | 33 | 14.30 | No |
| 3 | - | - | - | - | 13.78 +0/-0.08 | 40 | 14.57 | No |
| 4 | 13.78 +0/-0.08 | 33 | - | - | 13.78 +0/-0.08 | 40 | 14.65 | No |
| 5 | 13.78 +0/-0.08 | 40 | - | - | 13.78 +0/-0.08 | 53 | 15.16 | No |
| 6 | 19.68 +0/-0.12 | 62 | - | - | 19.68 +0/-0.12 | 75 | 15.71 | No |
| 8 | 19.68 +0/-0.12 | 84 | 19.68 +0/-0.12 | 104 | 19.68 +0/-0.12 | 121 | 16.74 | Yes |
| 10 | 23.62 +0/-0.12 | 132 | 23.62 +0/-0.12 | 168 | 23.62 +0/-0.12 | 201 | 17.80 | Yes |
| 12 | 19.68 +0/-0.12 | 146 | 19.68 +0/-0.12 | 179 | - | - | 18.82 | Yes |
| 14 | 21.65 +0/-0.12 | 207 | 21.65 +0/-0.12 | 267 | - | - | 19.49 | Yes |
| 16 | 23.62 +0/-0.12 | 273 | 23.62 +0/-0.12 | 337 | - | - | 20.48 | Yes |
| 20 | 24.61 +0/-0.12 | 428 | 24.61 +0/-0.12 | 509 | - | - | 22.45 | Yes |
| 24 | 29.53 +0/-0.12 | 668 | 29.53 +0/-0.12 | 805 | - | - | 24.49 | Yes |
| 28 | 34.45 +0/-0.12 | 796 | 34.45 +0/-0.12 | 1246 | - | - | 26.50 | Yes |
| 32 | 39.37 +0/-0.12 | 1089 | 39.37 +0/-0.12 | 1698 | - | - | 28.51 | Yes |
| 36 | 48.43 +0/-0.24 | 1179 | 51.18 +0/-0.24 | 1841 | - | - | 30.52 | Yes |
| 40 | 51.18 +0/-0.24 | 1310 | 53.94 +0/-0.24 | 2205 | - | - | 32.52 | Yes |
| 48 | 53.54 +0/-0.24 | 1614 | - | - | - | - | 36.54 | Yes |

Notes:

- Weight for transmitter/electronics 3.3 lb (compact version) or approximately 6.6 lb (remote version including 32.8 ft cable set)
- - Means not available
- All weights are **approximate**
- For flange values - see norm EN 1092-1

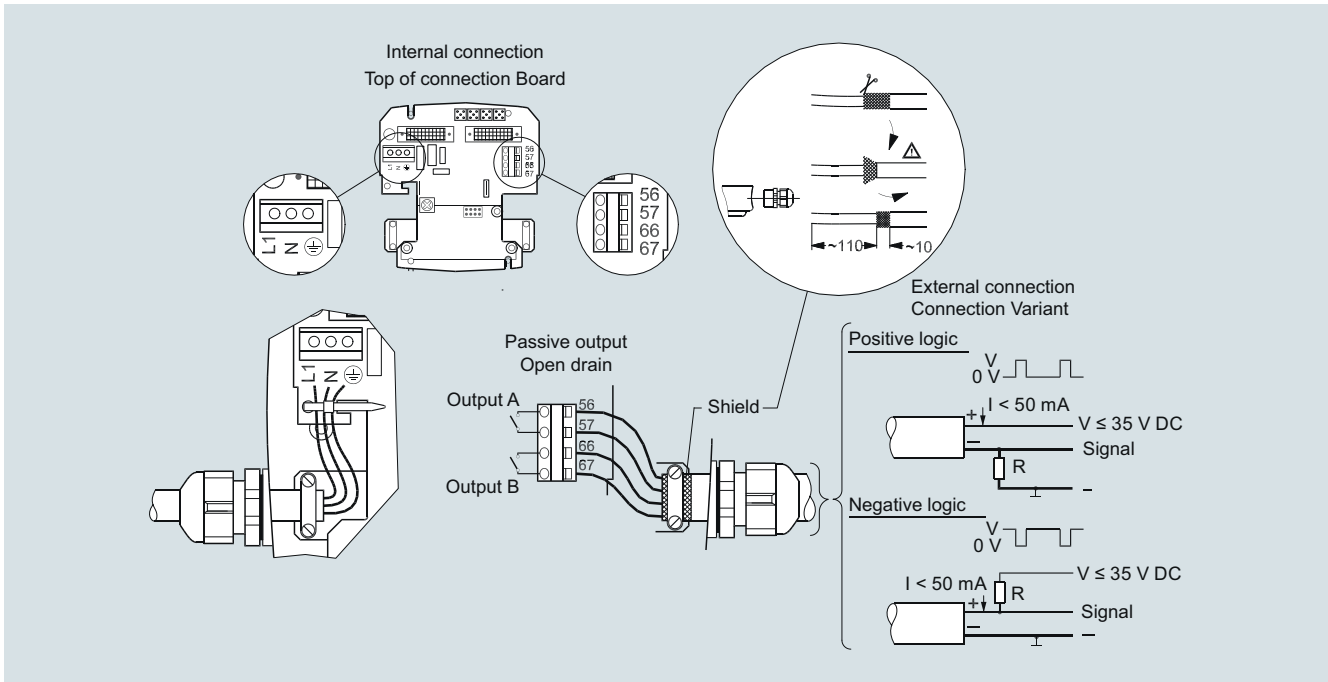
Flow Measurement

SITRANS F US Inline

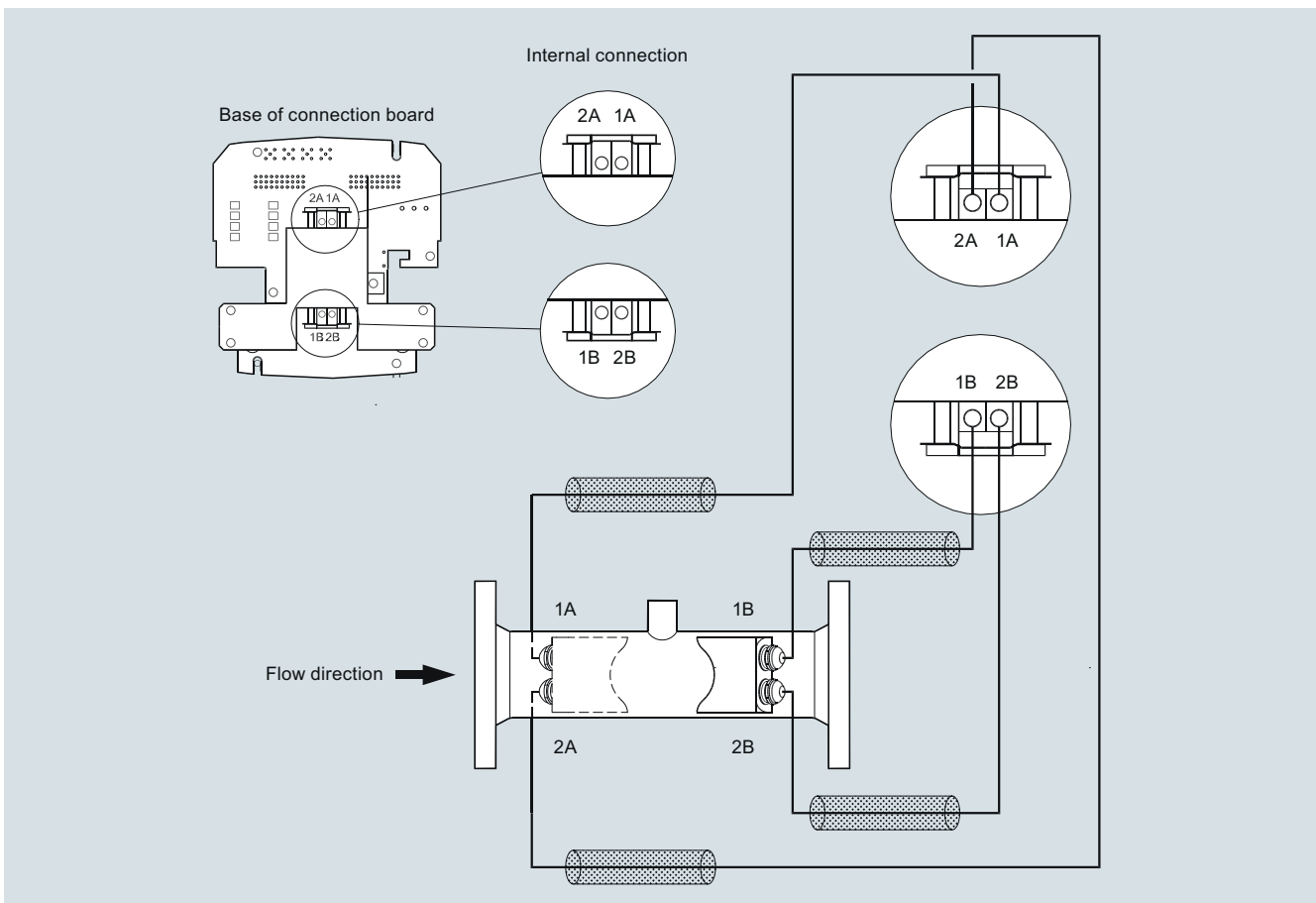
Flowmeter SITRANS FUS380 and FUE380

Schematics

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Electrical connection of transmitter SITRANS FUS/FUE380



Electrical connection of sensor SITRANS FUS/FUE380