

# 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 and OIML R75 MID class 2 and 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.

#### 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  $Q_{\min}:Q_{\max}$  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 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.

#### Configuration SITRANS FUE380 type approved

#### Selection guide SITRANS FUE380, type approved flowmeter

Flowmeter values according to EN 1434 class 2 or MID

Flowmeter size nominal to EN 1092-1			DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
Flow range <sup>1)</sup>	$Q_{\max}$ ( $q_s$ )	m <sup>3</sup> /h	15 or 45	25 or 72	40 or 120	120 or 180	200 or 280	300 or 420	500 or 700	800 or 1120	1120 or 1560
	$Q_{\text{nom}}$ ( $q_p$ )	m <sup>3</sup> /h	15	25	40	60	100	150	250	400	560
- range 1:100	$Q_{\min}$ ( $q_i$ )	m <sup>3</sup> /h	0.15	0.25	0.4	0.6	1.0	1.5	2.5	4.0	5.6
- range 1:50	$Q_{\min}$ ( $q_i$ )	m <sup>3</sup> /h	0.3	0.5	0.8	1.2	2	3	5	8	11.2
Pulse value <sup>2)</sup>		l/pulse	1	1	2.5	2.5	2.5	10	10	10	50

Flowmeter size nominal to EN 1092-1			DN 350	DN 400	DN 500	DN 600	DN 700	DN 800	DN 900	DN 1000	DN 1200
Flow range <sup>1)</sup>	$Q_{\max}$ ( $q_s$ )	m <sup>3</sup> /h	1500 or 2100	1900 or 2660	2950 or 4130	4300 or 6020	5800 or 8120	7600 or 10640	12000 or 16800	12000 or 16800	18000 or 25200
	$Q_{\text{nom}}$ ( $q_p$ )	m <sup>3</sup> /h	750	950	1475	2150	2900	3800	6000	6000	9000
- range 1:100	$Q_{\min}$ ( $q_i$ )	m <sup>3</sup> /h	7.5	9.5	14.75	21.5	29.0	38.0	60	60	90
- range 1:50	$Q_{\min}$ ( $q_i$ )	m <sup>3</sup> /h	15	19	29.5	43	58	76	120	120	180
Pulse value <sup>2)</sup>		l/pulse	50	50	100	100	100	100	100	100	100

Flowmeter values according to OIML R75, class 2 or MID

Flowmeter size nominal to EN 1092-1			DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
Flow range <sup>1)</sup>	$Q_{\max}$ ( $q_s$ )	m <sup>3</sup> /h	45	72	120	180	280	420	700	1120	1560
	$Q_{\text{nom}}$ ( $q_p$ )	m <sup>3</sup> /h	30	50	80	120	200	300	500	800	1120
	$Q_{\min}$ ( $q_i$ )	m <sup>3</sup> /h	0.3	0.5	0.8	1.2	2.0	3.0	5.0	8.0	11.2
	cut off	m <sup>3</sup> /h	0.06	0.1	0.16	0.24	0.4	0.6	1	1.6	2.24
Pulse value <sup>2)</sup>		l/pulse				2.5	2.5	10	10	10	50

Flowmeter size nominal to EN 1092-1			DN 350	DN 400	DN 500	DN 600	DN 700	DN 800	DN 900	DN 1000	DN 1200
Flow range <sup>1)</sup>	$Q_{\max}$ ( $q_s$ )	m <sup>3</sup> /h	2100	2660	4160	6020	8120	10640	16800	16800	25200
	$Q_{\text{nom}}$ ( $q_p$ )	m <sup>3</sup> /h	1500	1900	2950	4300	5800	7600	12000	12000	18000
	$Q_{\min}$ ( $q_i$ )	m <sup>3</sup> /h	15.0	19.5	29.5	43.0	58.0	76.0	120	120	180
	cut off	m <sup>3</sup> /h	3	3.8	5.9	8.6	11.6	15.2	24	24	36
Pulse value <sup>2)</sup>		l/pulse	50	50	100	100	100	100	100	100	100

Dynamic range  $q_i$ :  $q_p$ : better than 1:100 or 1:50 according to EN 1434, OIML R75 class 2 and MID.

Low flow cut off: 0.2% of  $q_p$  ( $q_p$ : nominal flow rate)

In order to obtain best pulse output resolution in the range  $Q_{\min}$  -  $Q_{\max}$  of approx. 100 Hz at  $q_s$ , two or three flow values for every dimension can be selected at ordering.

<sup>1)</sup> Other typical flow ranges - see Selection and Ordering data table.

<sup>2)</sup> In connection with SITRANS FUE950 - other pulse values - see Selection and Ordering data table

#### Technical specifications SITRANS FUE380

Pipe design	2-track sensor with flanges and integrated transducers wet calibrated from factory	<b>Sensor operating conditions</b>	
Nominal size welded version	DN 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 500, 600, 700, 800, 900, 1000, 1200	Storage	-40 ... +85 °C (-40 ... +185 °F)
Pressure rate	PN 16, PN 25, PN 40 EN 1092-1	Liquid temperature	DN 100 ... 1200: • Remote: 2 ... 200 °C (35.6 ... 392 °F) DN 50 ... 80: • Remote: 2 ... 150 °C (35.6 ... 302 °F) DN 50 ... 1200: • Compact: 2 ... 120 °C (35.6 ... 248 °F)
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: red brass</li> </ul>	Degree of protection	Sensor connection IP67/NEMA 4X/6
Transducer design	<ul style="list-style-type: none"> <li>DN 100 ... 1200: Integrated version welded onto the pipe</li> <li>DN 50 ... 80: Mounted in the pipe</li> </ul>	Max. flow velocity	DN 50 ... 1200: 6 m/s (19.7 ft/s)
Transducer material	Stainless steel (AISI 316/1.4404)/brass (CuZn36Pb2as)		

# SITRANS F flowmeters

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### Flowmeter FUE380 with approval

#### Transmitter

Display	LCD, 8 digits, additional 2 digits and symbols for status information
Push button	One push button for display information
Communication	<p>IrDA – optical communication interface with MODBUS RTU protocol</p> <p>Add-on modules:</p> <ul style="list-style-type: none"> <li>• RS 232 serial interface with MODBUS RTU (Rx/Tx/GND), point to point with max. 15 m cable</li> <li>• RS 485 serial interface with MODBUS RTU (+/-GND), multi-drop with up to 32 devices with max. 1000 m cable</li> </ul> <p>MODBUS RTU protocol is an open protocol (further information available on request)</p> <p>Serial speed 1200, 2400, 4800, 9600, 19200, 38400 Baud</p>
Enclosure	IP67/NEMA 4X/6 to EN 60529 and DIN 40050
Temperature ambient	0 ... 60 °C (32 ... 140 °F)
Temperature storage	-40 ... +85 °C (-40 ... +185 °F) (battery included)
Installation	<p>Compact on sensor: max. 120 °C (248 °F),</p> <p>Separate: max. 30 m (98.4 ft) from transmitter</p>
Mechanical vibration	2 g, 1 ... 800 Hz sinusoidal in all directions to IEC 68-2-6
Design	Fibre-glass reinforced polyamide
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>
Measuring rate	<p>Battery mode: 0.5 Hz</p> <p>Mains supply: 20 Hz</p> <p>Back-up mode: 0.5 Hz (at mains supply drop)</p>
Digital output	Two passive individual galvanically isolated MOS relay outputs, A and B, max. $\pm 35$ V AC/DC, 50 mA
Max pulse frequency	100 Hz
Alarm indication	Track 1 (F1), track 2 (F2), Low battery indication (F5), qs overflow (F6), pulse overflow (F7)
Cable length	Max. 30 m (98.4 ft) between transmitter and sensor
EMC	<ul style="list-style-type: none"> <li>• Emission EN 61000-6-4</li> <li>• Immunity EN 61000-6-2</li> </ul>
Approvals	<ul style="list-style-type: none"> <li>• EN 1434 and OIML R75 Class 2 (EN version from 1. July 2002)</li> <li>• MID 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 ... 6 m/s (0.065 ... 19.7 ft/s)
Output A	Preset: Forward
Output B	Preset: Alarm
Output B, function	Preset: Alarm
Pulse value A & B (depending on DN value)	<p>Preset: See scheme - previous page</p> <p>Preset for SITRANS FUE950 or free selectable</p>
Pulse width	Preset: 5 ms
Flow unit setup	Preset: $m^3/h$
Volume unit setup	Preset: $m^3$

#### 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.

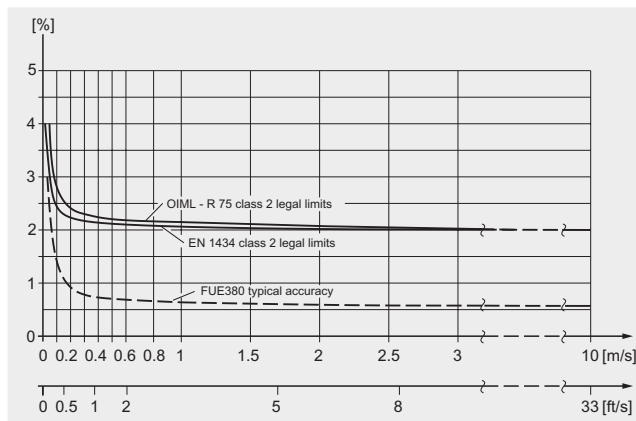
#### Typical accuracy SITRANS FUE380:

$0.5 + 0.02 q_p/q$  [%]

$q_p$  according to EN 1434/OIML requirements.

Example: DN 100,  $q_p = 60 m^3/h$  at  $q = 1.2 m^3/h$ :

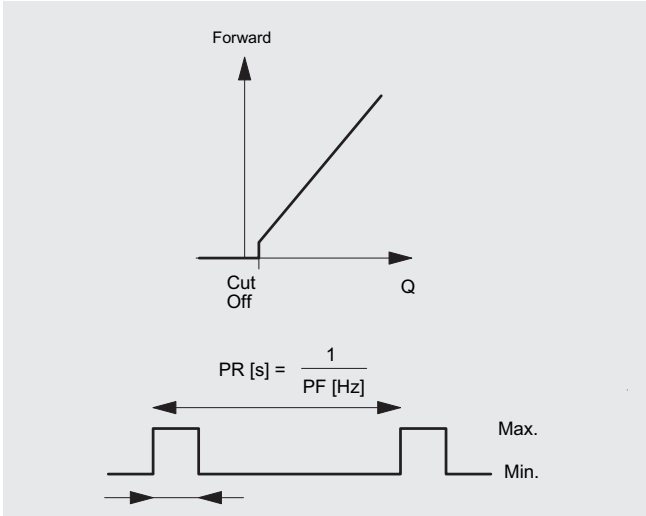
Accuracy = typical 1.5 %



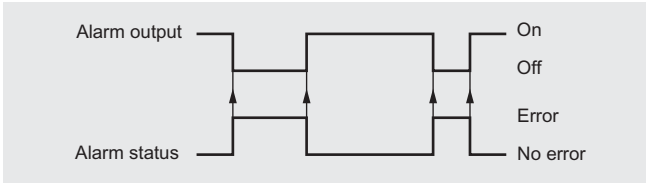
SITRANS FUE380 fulfils the requirements

$E_f = \pm (2 + 0.02 q_p/q_i)$  max.  $\pm 5\%$ , according to EN 1434 and OIML R75, class 2 revised 1. July 2002 or MID requirements.

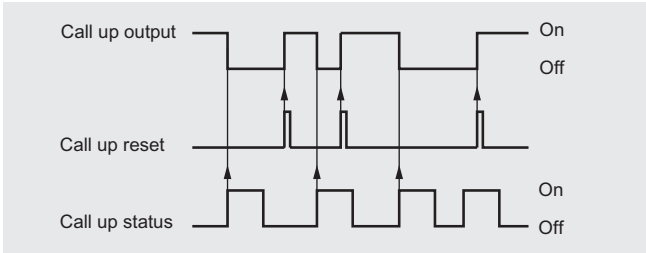
Output configuration SITRANS FUE380



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).



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

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### Flowmeter FUE380 with approval

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Selection and Ordering data		Order-No.	Order code
Flowmeter SITRANS FUE380 (type approved)		F) 7ME3410-	
Diameter	max. flow range Qp [m³/h] Qs [m³/h]		
DN 50 (2") <sup>1)</sup>	15 <sup>2)</sup> 30	1 B	
DN 50 (2") <sup>1)</sup>	15 <sup>2)</sup> 45	1 C	
DN 50 (2") <sup>1)</sup>	30 <sup>3)</sup> 45	1 D	
DN 60 (2½") <sup>1)</sup>	25 <sup>2)</sup> 50	1 F	
DN 60 (2½") <sup>1)</sup>	25 <sup>2)</sup> 72	1 G	
DN 60 (2½") <sup>1)</sup>	50 <sup>3)</sup> 72	1 H	
DN 80 (3") <sup>1)</sup>	40 <sup>2)</sup> 80	1 K	
DN 80 (3") <sup>1)</sup>	40 <sup>2)</sup> 120	1 L	
DN 80 (3") <sup>1)</sup>	80 <sup>3)</sup> 120	1 M	
DN 100 (4")	60 <sup>2)</sup> 120	1 P	
DN 100 (4")	60 <sup>2)</sup> 180	1 Q	
DN 100 (4")	120 <sup>3)</sup> 180	1 R	
DN 125 (5")	100 <sup>2)</sup> 200	1 T	
DN 125 (5")	100 <sup>2)</sup> 280	1 U	
DN 125 (5")	200 <sup>3)</sup> 280	1 V	
DN 150 (6")	150 <sup>2)</sup> 300	2 B	
DN 150 (6")	150 <sup>2)</sup> 420	2 C	
DN 150 (6")	300 <sup>3)</sup> 420	2 D	
DN 200 (8")	250 <sup>2)</sup> 500	2 F	
DN 200 (8")	250 <sup>2)</sup> 700	2 G	
DN 200 (8")	500 <sup>3)</sup> 700	2 H	
DN 250 (10")	400 <sup>2)</sup> 800	2 K	
DN 250 (10")	400 <sup>2)</sup> 1120	2 L	
DN 250 (10")	800 <sup>3)</sup> 1120	2 M	
DN 300 (12")	560 <sup>2)</sup> 1120	2 P	
DN 300 (12")	560 <sup>2)</sup> 1560	2 Q	
DN 300 (12")	1120 <sup>3)</sup> 1560	2 R	
DN 350 (14")	750 <sup>2)</sup> 1500	2 T	
DN 350 (14")	750 <sup>2)</sup> 2100	2 U	
DN 350 (14")	1500 <sup>3)</sup> 2100	2 V	
DN 400 (16")	950 <sup>2)</sup> 1900	3 B	
DN 400 (16")	950 <sup>2)</sup> 2660	3 C	
DN 400 (16")	1900 <sup>3)</sup> 2660	3 D	
DN 500 (20")	1475 <sup>2)</sup> 2950	3 K	
DN 500 (20")	1475 <sup>2)</sup> 4130	3 L	
DN 500 (20")	2950 <sup>3)</sup> 4130	3 M	
DN 600 (24")	2150 <sup>2)</sup> 4300	3 T	
DN 600 (24")	2150 <sup>2)</sup> 6020	3 U	
DN 600 (24")	4300 <sup>3)</sup> 6020	3 V	
DN 700 (28")	2900 <sup>2)</sup> 5800	4 F	
DN 700 (28")	2900 <sup>2)</sup> 8120	4 G	
DN 700 (28")	5800 <sup>3)</sup> 8120	4 H	
DN 800 (32")	3800 <sup>2)</sup> 7600	4 P	
DN 800 (32")	3800 <sup>2)</sup> 10640	4 Q	
DN 800 (32")	7600 <sup>3)</sup> 10640	4 R	
DN 900 (36")	5000 <sup>2)</sup> 76000	5 B	
DN 900 (36")	5000 <sup>2)</sup> 14000	5 C	
DN 900 (36")	10000 <sup>3)</sup> 14000	5 D	
DN 1000 (40")	6000 <sup>2)</sup> 7600	5 K	
DN 1000 (40")	6000 <sup>2)</sup> 16800	5 L	
DN 1000 (40")	12000 <sup>3)</sup> 16800	5 M	
DN 1200 (48")	6000 <sup>2)</sup> 9000	5 T	
DN 1200 (48")	6000 <sup>2)</sup> 25200	5 U	
DN 1200 (48")	6000 <sup>3)</sup> 25200	5 V	

Selection and Ordering data		Order-No.	Order code
Flowmeter SITRANS FUE380 (type approved)		F) 7ME3410-	
Flange norm and pressure rating			
System without sensor - only a transmitter			
EN 1092-1			
PN 16 (DN 100 ... 1200)		C	
PN 25 (DN 200 ... 1000)		D	
PN 40 (DN 50 ... 250) <sup>4)</sup>		E	
Compact / remote connection			
Compact version, max. 120 °C (248 °F)		0	
Remote version, max. 200 °C (392 °F)			
5 m (16.4 ft)		2	
10 m (32.8 ft)		3	
20 m (65.6 ft)		4	
30 m (98.4 ft)		5	
Approvals / pulse output			
Without approval (neutral)		0	
Selectable pulse output (following code can be 1 ... 9)			
With approval marks		1	
Selectable pulse output (following code can be 1 ... 9)			
With approval marks and seal		2	
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)		3	
With approval marks		4	
Preset pulse output for FUE950 energy meter (following code must be 2 ... 6, dimension depending )			
With approval marks and seal		5	
Preset pulse output for FUE950 energy meter (following code must be 2 ... 6)			
Pulse output value setup			
0.1 l/pulse (option for DN 50 ... DN 65)		1	
1 l/pulse (typical for DN 50 ... DN 65)		2	
2.5 l/pulse (typical for DN 80 ... DN 125)		3	
10 l/pulse (typical for DN 150 ... DN 250)		4	
50 l/pulse (typical for DN 300 ... DN 400)		5	
100 l/pulse (typical for DN 500 ... DN 1200)		6	
Optional pulse values			
250 l/pulse		7	
1 m³/pulse		8	
0.25 l/pulse		9	N 0 A
0.5 l/pulse		9	N 0 B
5 l/pulse		9	N 0 C
25 l/pulse		9	N 0 D
500 l/pulse		9	N 0 E
2.5 m³/pulse		9	N 0 F
5 m³/pulse		9	N 0 G
10 m³/pulse		9	N 0 H
25 m³/pulse		9	N 0 J
50 m³/pulse		9	N 0 K
100 m³/pulse		9	N 0 L
250 m³/pulse		9	N 0 M
500 m³/pulse		9	N 0 N
1000 m³/pulse		9	N 0 P

F) Subject to export regulations AL: 91999, ECCN: N.

Selection and Ordering data	Order-No.	Order code
<b>Flowmeter SITRANS FUE380</b> (type approved)	F) <b>7ME3410-</b>	
<b>Transmitter SITRANS FUE080</b>		
IP67/NEMA 4X/6 115 ... 230 V AC	B	
IP67/NEMA 4X/6 (3.6 V battery supply)	D	
IP67/NEMA 4X/6 115 ... 230 V AC, including 3.6 V battery back up	E	
IP67/NEMA 4X/6 3.6 V battery version (no battery included) <sup>5)</sup>	G	
<b>Country / approval type <sup>6)</sup></b>		
Neutral, no approval mark	A	
Denmark, EN 1434/OIML R75	E	
Finland, EN 1434/OIML R75	F	
Germany, EN 1434/OIML R75	G	
Russia, EN 1434/OIML R75	M	
Ukraine, EN 1434/OIML R75	P	
China	Z	Q0C
MID-Approval, (EN 1434/OIML R75), English	R	
MID-Approval, (EN 1434/OIML R75), German	S	
MID-Approval, (EN 1434/OIML R75), Polish	T	
MID-Approval, (EN 1434/OIML R75), French	U	
<b>Pulse width setup</b>		
5 ms (standard)	2	
10 ms	3	
20 ms	4	
50 ms	5	
100 ms	6	
200 ms	7	
500 ms	8	

1) Pipe material red press

2) EN 1434 flow values

3) OIML R75 flow values

4) PN 40 standard for DN 50 ... 80 red brass pipes

5) 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.

6) Other countries in progress

Please also see [www.siemens.com/SITRANSOrdering](http://www.siemens.com/SITRANSOrdering) 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>Verification FUE380</b>	
Verification certificate 2 x 3 points. Max. flow 50 ... 250 m <sup>3</sup> /h depending on dimension	<b>D10</b>
Verification certificate 2 x 3 points. Max flow 250 ... 1300 m <sup>3</sup> /h depending on dimension	<b>D11</b>
Verification certificate 2 x 3 points. Max flow 1400 ... 4200 m <sup>3</sup> /h depending on dimension	<b>D12</b>
<b>Accredited Siemens calibration FUE380</b>	
Accredited Siemens ISO/IEC 17025 calibration. Max. flow 50 ... 250 m <sup>3</sup> /h, depending on dimension (DN 50 ... 200)	<b>D20</b>
Accredited Siemens ISO/IEC 17025 calibration Max. flow 250 ... 1300 m <sup>3</sup> /h depending on dimension (DN 100 ... 500)	<b>D21</b>
Accredited Siemens ISO/IEC 17025 calibration Max. flow 1400 ... 4200 m <sup>3</sup> /h depending on dimension (DN 300 ... 1200)	<b>D22</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.com](http://www.pia-selector.com)











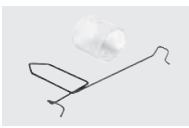



# SITRANS F flowmeters



## SITRANS F US

### Flowmeter FUS380 and FUE380

#### Accessories / Spare parts to Flowmeter FUS380 and FUE380

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

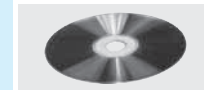
Type/description	Order No. <sup>F)</sup>	Symbol
Dual battery pack (6 year life-time) 33 Ah	<b>FDK-087H2255</b>	
Single battery back-up to main supply 13.5 Ah	<b>FDK-087L4201</b>	
Battery cover for transmitter FUS080	<b>A5E00694468</b>	
PG 13.5 set (2 pcs.) for main cable/pulse cable	<b>FDK-083G0228</b>	
PG 13.5 set (2 pcs.) for dual coax cable (6 mm)	<b>A5E00694500</b>	
Wall mounting kit for remote mounting including printed circuit board (DN 50 ... 1200 (2" ... 48") only)	<b>A5E00694509</b>	
Terminal box for compact mounting for DN 50 ... 80 (2" ... 3") compact versions including printed circuit board	<b>A5E01208138</b>	
Terminal box for compact mounting for DN 100 ... 1200 (4" ... 48") compact versions including printed circuit board	<b>A5E00694660</b>	
Brace (holder) for optical IrDA eye	<b>A5E00695277</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. <sup>F)</sup>	Symbol
5 m (16.4 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting	<b>A5E01208092</b>	
10 m (32.8 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting	<b>A5E01208114</b>	
20 m (65.6 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting	<b>A5E01208117</b>	
30 m (98.4 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") remote mounting	<b>A5E01208121</b>	
1 m (3.28 ft) cable set (4 pcs.) for DN 50 ... 80 (2" ... 3") for compact version	<b>A5E01208126</b>	
5 m (16.4 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting	<b>A5E00695476</b>	
10 m (32.8 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting	<b>A5E00695479</b>	
20 m (65.6 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting	<b>A5E00695480</b>	
30 m (98.4 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") remote mounting	<b>A5E00695483</b>	
1 m (3.28 ft) cable set (4 pcs.) for DN 100 ... 1200 (4" ... 48") for compact version	<b>A5E00695486</b>	

#### Process Device Manager SIMATIC PDM

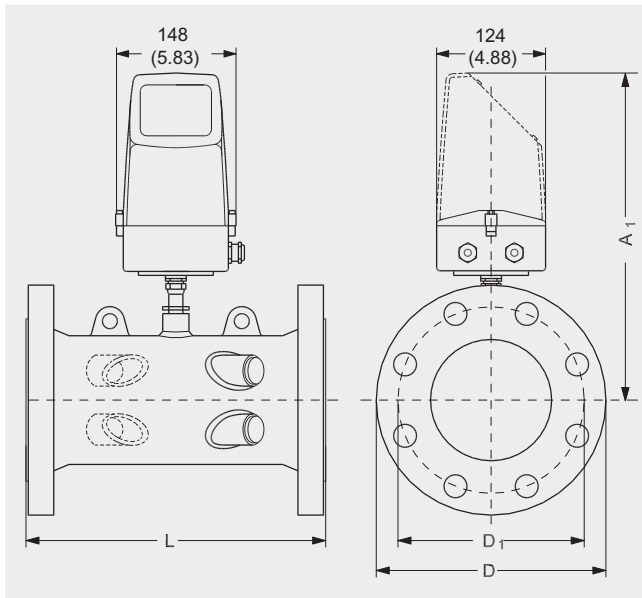
**SIMATIC PDM Single Point V6.0**  
For operation and parameterization of one field device, communication using PROFIBUS DP/PA or HART modem, incl. 1 TAG  
**Cannot** be expanded by further functions or TAG  
option/power-pack 5 languages (German, English, French, Spanish, Italian) executes with Windows 2000 Professional or Windows XP Professional

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

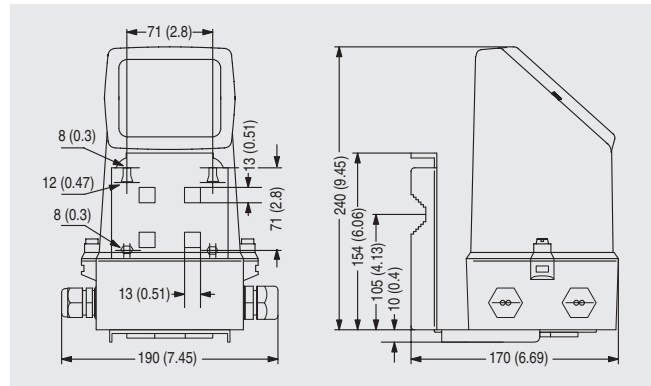


Downloads for DEVICE description FUE380  
<http://support.automation.siemens.com/WW/view/en/17320235>

#### Dimensional drawings



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



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#### Pipe Dimensions for FUS380 and FUE380

Size	PN 16		PN 25		PN 40					
	L	Weight	L	Weight	L	Weight	A1	D	D <sub>1</sub>	Lift hug
DN	mm	kg	mm	kg	mm	kg	mm	mm	mm	
50	-	-	-	-	300+0-2	10	320	165	125	No
65	-	-	-	-	300+0-2	15	330	185	145	No
80	-	-	-	-	350+0-3	18	350	200	160	No
100	350+0-2	20	-	-	350+0-3	16.5	361	220	180	No
125	350+0-2	23	-	-	350+0-3	53	374	250	210	No
150	500+0-3	26	-	-	500+0-3	32	388	285	240	Yes
200	500+0-3	38	500+0-3	47	500+0-3	55	414	340	295	Yes
250	600+0-3	60	600+0-3	76	600+0-3	91	440	405	355	Yes
300	500+0-3	66	500+0-3	81	-	-	466	460	410	Yes
350	550+0-3	94	550+0-3	121	-	-	-	-	-	-
400	550+0-3	124	550+0-3	153	-	-	507	580	525	Yes
500	625+0-3	190	625+0-3	244	-	-	558	715	650	Yes
600	750+0-3	303	750+0-3	365	-	-	609	840	770	Yes
700	875+0-3	361	875+0-3	552	-	-	660	910	840	Yes
800	1000+0-3	494	1000+0-3	770	-	-	710	1025	950	Yes
900	1230+0-6	475	1300+0-6	835	-	-	810	1125	1050	Yes
1000	1300+0-6	594	1370+0-6	1078	-	-	910	1255	1170	Yes
1200	1360+0-6	732	-	-	-	-	1100	1485	1390	Yes



# SITRANS F flowmeters

## SITRANS F US

### Flowmeter FUS380 and FUE380

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Size	PN 16		PN 25		PN 40					
	L	Weight	L	Weight	L	Weight	A1	D	D <sub>1</sub>	Lift hug
inch	inch	lb	inch	lb	inch	lb	inch	inch	inch	
2	-	-	-	-	12+0-0.08	22	12.8	6.6	5	No
2½	-	-	-	-	12+0-0.08	33	13.2	7.4	5.8	No
3	-	-	-	-	14+0-0.08	40	14	8	6.4	No
4	13.77+0-0.08	44	-	-	13.77+0-0.12	36	14.21	8.66	7.09	No
5	13.77+0-0.08	50	-	-	13.77+0-0.12	117	14.72	9.84	8.27	No
6	19.68+0-0.12	57	-	-	19.68+0-0.12	71	15.28	11.22	9.45	Yes
8	19.68+0-0.12	84	19.68+0-0.12	104	19.68+0-0.12	121	16.30	13.39	11.61	Yes
10	23.62+0-0.12	132	23.62+0-0.12	168	23.62+0-0.12	201	17.32	15.94	13.98	Yes
12	19.68+0-0.12	146	19.68+0-0.12	179	-	-	18.35	18.11	16.14	Yes
14	21.65+0-0.12	207	21.65+0-0.12	267	-	-	-	-	-	-
16	21.65+0-0.12	273	21.65+0-0.12	337	-	-	19.96	22.83	20.67	Yes
20	24.61+0-3	419	24.61+0-3	538	-	-	21.97	28.15	25.59	Yes
24	29.53+0-0.12	668	29.53+0-0.12	805	-	-	23.98	33.07	30.31	Yes
28	34.45+0-0.12	796	34.45+0-0.12	1217	-	-	25.98	35.83	33.07	Yes
32	39.37+0-0.12	1089	39.37+0-0.12	1698	-	-	27.95	40.35	37.40	Yes
36	39.2+0-0.24	1047	52+0-0.24	1841	-	-	32.4	45	42	Yes
40	52+0-0.24	1309	54.8+0-0.12	2376	-	-	36.4	50.2	46.8	Yes
48	54.4+0-0.24	1614	-	-	-	-	44.4	59.4	55.6	Yes

#### Notes:

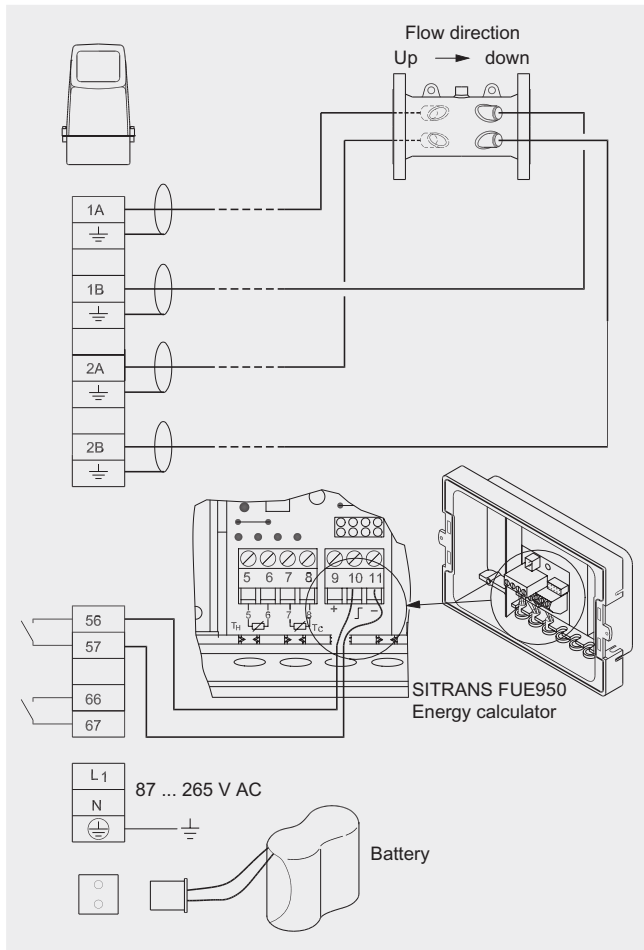
Weight for transmitter/electronics 1.5 kg (3.3 lb)

D and D<sub>1</sub> are values for standard versions (with standard flanges). For versions with higher pressure ratings see EN 1092-1.

- Means not available

### 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.