## SITRANS FX300

### Overview

SITRANS F X vortex flowmeters provide accurate volumetric and mass flow measurement of steam, gases and liquids as an all-in-one solution with integrated temperature and pressure compensation.

### Benefits

- All devices have 2-wire technology and HART communication
- Temperature compensation for saturated steam as standard feature
- Integrated temperature and pressure measurement enabling direct compensation of density
- Pressure, temperature and flow can be read at a single point. No additional installation of pressure and temperature sensors
- Direct measurement of energy or energy consumption
- Optimum process reliability thanks to Intelligent Signal Processing (ISP) - stable readings, free of external perturbations
- Fully welded stainless steel construction with high corrosion, pressure and temperature resistance
- Maintenance-free sensor design
- Ready to use due to plug & play feature. No additional cabling work
- Minimal pressure drop
- Compact or remote design
- Pressure and temperature compensation for fluctuating volume flows
- Measurement of comsumption in compressed air systems
- No risk of deposits or damage (sensor in the turbulent area)
- All units parameterized prior to delivery

### Application

The SITRANS FX300 is a flowmeter in a single or dual transmitter version, suitable for measuring industrial steam,
gases, as well as conductive and non-conductive liquids. E.g. steam (saturated steam, superheated steam), industrial gases (compressed air, nitrogen, liquefied gases, flue gases), and conductive and non-conductive liquids (demineralized water, boiler feed water, solvents, heat transfer oil).

### Design

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

The main applications of SITRANS FX300 can be found in the following sectors:

- Chemical
- Petrochemical
- Oil & Gas
- Power plants
  - Air
  - Heating
  - Cooling
  - Chilling
- Food & beverage
  - Pharmaceutical
  - Sugar refineries
  - Dairies
  - Breweries
  - Production of soft drinks
- Refining
- Water & waste water

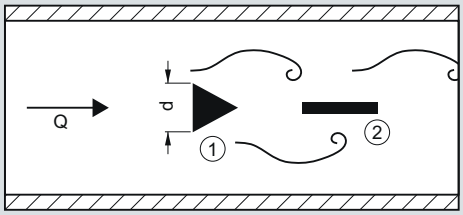
***System Overview***

| Version | Single transmitter | | | Dual transmitter |
|---|---|---|---|---|
| Options | Standard | Pressure sensor | Pressure sensor and isolation valve | Standard |
| Flange |  |  |  |  |
| Sandwich |  |  |  | |

### Function

***Operating Principle***

SITRANS F X vortex flowmeters measure flow rate by detecting the frequency at which alternating vortices are shed from a bluff body inserted into the flow stream. This principle of measurement is known as Von Karman's vortex street principle: alternating vortices form behind an object in a stream. The frequency of the alternating vortices is proportional to the flow rate.
The passage of a vortex causes a slight stress on a pick-up placed downstream of the bluff body. The stress is picked up and counted as pressure surges by a dual Piezo crystal placed inside the wing.




① = Bluff Body, ② = Pick-up

The flowmeter calculates the flow velocity using the following equation:

$Q = A \cdot V = A \cdot d / St \cdot f = 101{,}93 \cdot f / K$ [$m^3/h$]

Where:

Q = flow rate [$m^3/h$]
f = vortex shedding frequency [Hz]
K = calibration constant [pulses/$m^3$]
d = width of the bluff body [m]
St = Strouhal Number
A = cross-section area [$m^2$]
V = flow velocity [m/s]

### *Requirements*

In order to generate the vortex streets, the medium must have a minimum velocity:

- For steam and gases, the flow velocity must be 2 to 80 m/s (6.6 to 262 ft/s)
- For liquids the flow velocity must be 0.4 to 10 m/s (1.3 to 32.8 ft/s)

### *Design*

SITRANS FX300 volumetric and mass flowmeter is available in the following configurations:

SITRANS FX300 Single transmitter

The single transmitter is available as a flange or sandwich solution in the following versions:

- Vortex standard flowmeter
  Measurement with integrated temperature sensor as standard feature
- Vortex flowmeter with pressure sensor
  Measurement with integrated temperature and pressure sensors for compensation of gases, wet gases, gas mixtures or steam (for engergy measurement).
- Vortex flowmeter with pressure sensor and isolation valve
  Allowing the pressure sensor to be shut off for the purpose of pressure or leak testing of the pipeline or for being exchanged without interrupting the process. Using the built-in two-way valve, the pressure sensor can also be calibrated and tested at a later time.

SITRANS FX300 Dual transmitter

This is a genuine redundant system with two independent sensors and two converters providing twofold functional reliability and availability of the measurement. This variant is optimally suited for measurements in multi-product pipelines.

The dual converter is available as:

- Vortex standard flowmeter
  Measurement with temperature sensor for saturated steam compensation as standard feature

## Technical specifications

| | |
|---|---|
| **Input** | |
| Measuring range limits | See „Dimensional Drawings“ |
| Media pressure | 1 ... 100 bar (14.5 ... 1450 psi)<br>(Higher pressures on request) |
| **Output** | |
| Current output | |
| • Measuring range | 4 … 20 mA |
| • Over range | 20.8 mA ± 1 % (105 % ± 1 %) |
| • Load | |
| - min. | 100 Ω |
| - max. | $R_{max} = (U_{Power\ Supply} - 14\ V)/22\ mA$ |
| • Error signal | NAMUR NE 43 |
| • Maximum output | 22 mA (112.5 %) |
| • Multidrop mode | 4 mA |
| Digital output | |
| • Communication | HART |
| • Physical layer | FSK |
| • Device category | Transmitter |
| **Pulse output** | |
| (Passive pulse output, needs separate power supply. Pulse output has to be defined in the Option menu Y47 totalizer or energy unit has to be entered.<br>E.g.: 1 pulse/kg or 1 pulse/10 $m^3$) | |
| • Pulse frequency | Max. 0.5 Hz |
| • Power supply | Min. 24 V DC as NAMUR or |
| • Non-Ex version | open < 1 mA, max. 36 V,<br>closed 100 mA, $U$ < 2 V |
| • Ex version | open < 1 mA, max. 30 V,<br>closed 100 mA, $U$ < 2 V |
| **Accuracy** | |
| Standard version | |
| • For liquids | |
| - Re ≥ 20 000 | ± 0.75 % |
| • For steam and gases | |
| - Re ≥ 20 000 | ± 1 % |
| • For steam, gases and liquids | |
| - 10 000 < Re < 20 000 | ± 2 % |
| Pressure and temperature-compensated version | |
| • For liquids | |
| - 10 000 < Re < 20 000 | ± 2 % |
| - Re ≥ 20 000 | ± 0.75 % |
| • For gases and steam | |
| - 10 000 < Re < 20 000 | ± 2.5 % |
| - Re ≥ 20 000 | ± 1.5 % |
| Repeatability | ± 0,1 % |
| **Installation conditions** | |
| (At different conditions, e.g. installation after control valve, bends or reductions, please refer to the operating instructions.) | |
| • Inlet run | ≥ 20 x DN |
| • Outlet run | ≥ 5 x DN |

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## SITRANS FX300

| | |
|---|---|
| **Software** | |
| Uncompensated for gases, steam and liquids, but temperature-compensated for saturated steam | Order option 1 |
| Density-compensated by temperature and pressure for superheated steam, no energy calculation | Order option 4 |
| Gross heat<br>When the device has to operate as a energy calculation device | Order option 5 |
| In options Y51 to Y56 add information regarding: | • Y51 Variable current output<br>• Y52 Power unit<br>Select one of the following units from power units table in Y52: kJ/h, MJ/h, GJ/h, Btu/h, kcal/h, kW, MW or special (custom)<br>• Y53 Fullscale power value<br>• Y54 Variable pulse output<br>• Y55 Totalizer on/off<br>• Y56 Configures for totalizer select one of the following units from energy units table in Y56: kJ, MJ, GJ, Btu th, kcal, kWh, MWh or special (custom). |
| Gases and wet gases | Order option 7 |
| Wet gases | Select Y49 and enter relative humidity in % |
| FAD - Free Air Delivery<br>When the device has to operate close to a compressor | Order option 8 |
| In Y81 to Y87 add information regarding: | • Y81 Inlet suction temperature<br>• Y82 Atmosphere pressure<br>• Y83 Pressure drop at inlet filter<br>• Y84 Inlet relative humidity<br>• Y85 Actual revolutions per minute (of compressor)<br>• Y86 Rated rpm of compressor<br>• Y87 Outlet relative humidity. This information is available from compressor supplier. |
| Mixed gases | When the fluid is a gas mixture, contact your local Siemens representative and provide gas names and amount in % |
| **Rated operation conditions** | |
| Ambient temperature | |
| • Non-Ex version | -40 … +85 °C (-40 … +185 °F) |
| • Ex version | -40 … +65 °C (-40 … +149 °F) |
| Storage temperature | -50 … +85 °C (-58 … +185 °F) |
| Media temperature | -40 … +240 °C (-40 … +464 °F) |
| Density | Taken into consideration when rating |
| Viscosity | <10 cP |
| Reynolds number | 10 000 … 2 300 000 |
| Media pressure limit | Max. 100 bar (1450 psi)<br>Higher pressure on request (contact your local Siemens representative) |

| | |
|---|---|
| **Design** | |
| Material | |
| • Sensor: house/pick-up | AISI 316L (1.4404)/<br>AISI 316L (1.4435)<br>Hastelloy C22/2.4602 available on request (contact your local Siemens representative) |
| • Housing: transmitter | Aluminum for increased requirements |
| • Sensor gaskets: for pick-up and pressure sensor | AISI 316L (1.4435) / FPM or FFKM<br>FPM (Viton) by steam and non-aggressive gases.<br>FFKM (Kalrez) by chlorine and other aggressive gases (only available together with a pressure sensor). |
| Process connections | Flange norm EN 1092-1 form B1/B2 or ASME B16.5 RF.<br>Other flanges on request (contact your local Siemens representative) |
| • Flange version | DN 15 … 300 (½ … 12") |
| • Sandwich version | DN 15 … 100 (½ … 4") |
| Degree of protection | IP66/IP67 |
| Dimensions and weights | See „Dimensional Drawings“ |
| **Display and operating interface** | |
| Local display | 2 lines, 10 characters per line |
| Languages | German, English, French |
| **Power supply** | |
| • Standard version | 14 … 36 V DC |
| • Ex version | 14 … 30 V DC |
| **Certificates and approvals** | |
| Explosion protection | |
| • ATEX | II 2G EEx d ia [ia] IIC T6 |
| • FM US/C | Class I, II, III, Div. 1 and 2 |
| **Calibration** | All flowmeters will be delivered with a 3 point calibration certificate |
| **Material Certificate** | Certificate of compliance, pressure test, material certificate, material in acc. of NACE and PMI of pressure bearing metal parts. |
| **Cleaning** | Choose Cleaning Class1 when fluid is oxygen or contains chloride. |
| **Certificates** | X-ray test on pressurized weldings and dye penetration test on pressure bearing weldings<br>Dye penetration test |

| Selection and Ordering data | | Order No. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SITRANS FX300 Flanged**<br>**Single transmitter and $T_{max}$ = 240 °C (464 °F)** | | **7ME2600 -** | | | | | - | | | | | |
| **Connection size** | **Sensor size** | | | | | | | | | | | |
| DN 15 (½") | DN 15 | **1** | **A** | | | | | | | | | |
| DN 25 (1") | DN 25 | **2** | **B** | | | | | | | | | |
| DN 40 (1½") | DN 40 | **2** | **K** | | | | | | | | | |
| DN 50 (2") | DN 50 | **2** | **R** | | | | | | | | | |
| DN 80 (3") | DN 80 | **3** | **L** | | | | | | | | | |
| DN 100 (4") | DN 100 | **3** | **S** | | | | | | | | | |
| DN 150 (6") | DN 150 | **4** | **M** | | | | | | | | | |
| DN 200 (8") | DN 200 | **4** | **T** | | | | | | | | | |
| DN 250 (10") | DN 250 | **4** | **W** | | | | | | | | | |
| DN 300 (12") | DN 300 | **5** | **E** | | | | | | | | | |
| **Flange norm and nominal pressure** | | | | | | | | | | | | |
| **Form B1/B2** | **EN 1092-1** | | | | | | | | | | | |
| PN 10 | DN 200 ... 300 | | | **A** | | | | | | | | |
| PN 16 | DN 50 ... 300 | | | **B** | | | | | | | | |
| PN 25 | DN 200 ... 300 | | | **C** | | | | | | | | |
| PN 40 | DN 15 ... 300 | | | **D** | | | | | | | | |
| PN 63 | DN 50 ... 150 | | | **E** | | | | | | | | |
| PN 100 | DN 15 ... 150 | | | **F** | | | | | | | | |
| **RF** | **ASME B16.5** | | | | | | | | | | | |
| 150 lb | ½ ... 12" | | | **J** | | | | | | | | |
| 300 lb | ½ ... 12" | | | **K** | | | | | | | | |
| 600 lb | ½ ... 6" | | | **L** | | | | | | | | |
| **Sensor material/Gasket** | | | | | | | | | | | | |
| St. steel AISI 316L (1.4404)/AISI 316L (1.4435)/ FPM | | | | | **1** | | | | | | | |
| St. steel AISI 316L (1.4404)/AISI 316L (1.4435)/ FFKM | | | | | **5** | | | | | | | |
| **Transmitter design** | | | | | | | | | | | | |
| Compact version - no cable | | | | | | **1** | | | | | | |
| Remote version: | | | | | | | | | | | | |
| 5 m (16.4 ft) | | | | | | **2** | | | | | | |
| 10m (32.8 ft) | | | | | | **3** | | | | | | |
| 15 m (49.2 ft) | | | | | | **4** | | | | | | |
| 20 m (65.6 ft) | | | | | | **5** | | | | | | |
| 25 m (82.0 ft) | | | | | | **6** | | | | | | |
| 30 m (98.4 ft) | | | | | | **7** | | | | | | |
| **Approval and cable gland** | | | | | | | | | | | | |
| Non-Ex, M20 x 1.5 | | | | | | | **1** | | | | | |
| Non-Ex, ½" NPT | | | | | | | **2** | | | | | |
| ATEX, M20 x 1.5 | | | | | | | **4** | | | | | |
| ATEX, ½" NPT | | | | | | | **5** | | | | | |
| FM US/C, M20 x 1.5 | | | | | | | **6** | | | | | |
| FM US/C, ½" NPT | | | | | | | **7** | | | | | |
| **Transmitter, display and communication** | | | | | | | | | | | | |
| With display, HART | | | | | | | | **A** | | | | |
| **Pressure sensor and isolation valve** | | | | | | | | | | | | |
| Without pressure sensor | | | | | | | | | **A** | | | |
| With pressure sensor, range: | | | | | | | | | | | | |
| 4 bar (58 psi) | | | | | | | | | **B** | | | |
| 6 bar (87 psi) | | | | | | | | | **D** | | | |
| 10 bar (145 psi) | | | | | | | | | **E** | | | |
| 16 bar (232 psi) | | | | | | | | | **G** | | | |
| 25 bar (363 psi) | | | | | | | | | **H** | | | |
| 40 bar (580 psi) | | | | | | | | | **K** | | | |
| 60 bar (870 psi) | | | | | | | | | **L** | | | |
| 100 bar (1450 psi) | | | | | | | | | **N** | | | |
| With isolation valve and pressure sensor, range: | | | | | | | | | | | | |
| 4 bar (58 psi) | | | | | | | | | **P** | | | |
| 6 bar (87 psi) | | | | | | | | | **Q** | | | |
| 10 bar (145 psi) | | | | | | | | | **R** | | | |
| 16 bar (232 psi) | | | | | | | | | **S** | | | |
| 25 bar (363 psi) | | | | | | | | | **U** | | | |
| 40 bar (580 psi) | | | | | | | | | **V** | | | |
| 60 bar (870 psi) | | | | | | | | | **W** | | | |
| 100 bar (1450 psi) | | | | | | | | | **Y** | | | |

| Selection and Ordering data | Order No. | | | | | | |
|---|---|---|---|---|---|---|---|
| **SITRANS FX300 Flanged**<br>**Single transmitter and $T_{max}$ = 240 °C (464 °F)** | **7ME2600 -** | | | | | - | |
| **Software** | | | | | | | |
| Uncompensated for gases, wet gases, steam and liquids, respectively, temperature compensation for saturated steam | | | | | | | **1** |
| Density compensation for superheated steam | | | | | | | **4** |
| Density compensation for superheated steam and setting of Gross heat Opt. Y51 ... Y56 for Energy measuring | | | | | | | **5** |
| Density compensation for gases and wet gases and setting of Relative humidity at opt. Y49 | | | | | | | **7** |
| Density compensation for gases, wet gases and setting of FAD - free air delivery Opt. Y49 and Y81 ... Y87 for Compressor settings | | | | | | | **8** |

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## SITRANS FX300

| Selection and Ordering data | Order code |
|---|---|
| ***Additional information***<br>Please add **"-Z"** to Order No. and specify as minimum Order code Y40, Y41, Y42 and Y45 and plain text. | |
| **Input process data** | |
| Medium: Specify steam, gas, liquid or customised | **Y40** |
| Temperature: Specify max. operating temperature and units | **Y41** |
| Pressure: Specify max. operating pressure and units | **Y42** |
| Density (only by customer-specified medium): Specify medium density and units | **Y43** |
| Viscosity (only by customer-specified medium): Specify medium viscosity and units | **Y44** |
| Flow rate: Specify min./max. flow rate and units | **Y45** |
| Setting of pulse output: Specify totalizer or energy unit (1 pulse/unit) | **Y47** |
| Relative humidity (amount in % of process medium) | **Y49** |
| **Settings of gross heat** | |
| Variable current output | **Y51** |
| Power unit (specify: kJ/h, MJ/h, GJ/h, Btu/h, kcal/h, kW, MW or special (custom)) | **Y52** |
| Fullscale power value | **Y53** |
| Variable pulse output | **Y54** |
| Totalizer on/off | **Y55** |
| Configure totalizer (specify: kJ, MJ, GJ, Btu th, kcal, kWh, MWh or special (custom)) | **Y56** |
| **Settings of FAD** | |
| Inlet suction temperature | **Y81** |
| Atmosphere pressure | **Y82** |
| Pressure drop filter | **Y83** |
| Inlet relative humidity | **Y84** |
| Actual revolutions per minute (of compressor) | **Y85** |
| Rated Rpm of compressor | **Y86** |
| Outlet relative humidity<br>This information is available from compressor supplier. | **Y87** |

### *Operating instructions*

| Description | Order No. |
|---|---|
| English | **A5E2100423** |

This device is shipped with a Quick Start guide and a CD containing further SITRANS F literature.

All literature is also available for free at:
http://www.siemens.com/flowdocumentation

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Please add **"-Z"** to Order No. and specify Order code. | |
| **Converter housing material** | |
| Aluminum for increased requirement, color: petrol green | **A10** |
| **Material certificate** | |
| Certificate of compliance EN 10204-2.1 | **C10** |
| Pressure test + 3.1 accordance EN 10204 | **C11** |
| Material certificate pressure parts + certificate 3.1 | **C12** |
| Material in accordance with NACE MR 0175-01 | **C13** |
| PMI of pressure bearing metal parts + certificate 3.1 | **C14** |
| Material certificate pressure parts + PMI/certificate 3.1 | **C15** |
| **Calibration certificate FX300**<br>As standard the flow device has a 3-point calibration certificate. | |
| Calibration certificate (5 point) | **D11** |
| **Hardness test** | |
| Hardness test on pressure bearing parts + 3.1 Equotip LD procedure according to NACE MR 0175-01 | **H30** |
| **Cleaning for oil and fat** | |
| Class 1 increased requirement (customer-specified) and 3.1 (EN 10204) | **K46** |
| Class 2 and 3.1 (EN 10204) | **K48** |
| **Certificates** | |
| X-ray test on ppressure bearing weldings | **M56** |
| Dye penetration test on pressure bearing weldings | **M58** |
| **Tag name plate** | |
| Stainless steel tag with 3 mm characters, max. 2 x 8 characters (40 x 20 mm, add plain text) | **Y17** |
| Stainless steel tag with 2.5 mm characters, max. 8 x 40 characters (120 x 46 mm, add plain text) | **Y18** |

| Selection and Ordering data | | Order No. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **SITRANS FX300 Sandwich**<br>**Single transmitter and $T_{max}$ = 240 °C (464 °F)** | | **7ME2700 -** | | | | | | | | |
| **Connection size** | **Sensor size** | | | | | | | | | |
| DN 15 (½") | DN 15 | **1** | **A** | | | | | | | |
| DN 25 (1") | DN 25 | **2** | **B** | | | | | | | |
| DN 40 (1½") | DN 40 | **2** | **K** | | | | | | | |
| DN 50 (2") | DN 50 | **2** | **R** | | | | | | | |
| DN 80 (3") | DN 80 | **3** | **L** | | | | | | | |
| DN 100 (4") | DN 100 | **3** | **S** | | | | | | | |
| **Nominal pressure** | | | | | | | | | | |
| **EN** | | | | | | | | | | |
| PN 16 | DN 50 ... 100 | | | **B** | | | | | | |
| PN 40 | DN 15 ... 100 | | | **D** | | | | | | |
| PN 63 | DN 50 ... 100 | | | **E** | | | | | | |
| PN 100 | DN 15 ... 100 | | | **F** | | | | | | |
| **ASME** | | | | | | | | | | |
| 150 lb | ½ ... 4" | | | **J** | | | | | | |
| 300 lb | ½ ... 4" | | | **K** | | | | | | |
| 600 lb | ½ ... 4" | | | **L** | | | | | | |
| **Sensor material/Gasket** | | | | | | | | | | |
| St. steel AISI 316L (1.4404)/AISI 316L (1.4435)/FPM | | | | | **1** | | | | | |
| St. steel AISI 316L (1.4404)/AISI 316L (1.4435)/FFKM | | | | | **5** | | | | | |
| **Transmitter design** | | | | | | | | | | |
| Compact version - no cable | | | | | | **1** | | | | |
| Remote version: | | | | | | | | | | |
| 5 m (16.4 ft) | | | | | | **2** | | | | |
| 10m (32.8 ft) | | | | | | **3** | | | | |
| 15 m (49.2 ft) | | | | | | **4** | | | | |
| 20 m (65.6 ft) | | | | | | **5** | | | | |
| 25 m (82.0 ft) | | | | | | **6** | | | | |
| 30 m (98.4 ft) | | | | | | **7** | | | | |
| **Approval and cable gland** | | | | | | | | | | |
| Non-Ex, M20 x 1.5 | | | | | | | **1** | | | |
| Non-Ex, ½" NPT | | | | | | | **2** | | | |
| ATEX, M20 x 1.5 | | | | | | | **4** | | | |
| ATEX, ½" NPT | | | | | | | **5** | | | |
| FM US/C, M20 x 1.5 | | | | | | | **6** | | | |
| FM US/C, ½" NPT | | | | | | | **7** | | | |
| **Transmitter, display and communication** | | | | | | | | | | |
| With display, HART | | | | | | | | **A** | | |
| **Pressure sensor and isolation valve** | | | | | | | | | | |
| Without pressure sensor | | | | | | | | | **A** | |
| With pressure sensor, range: | | | | | | | | | | |
| 4 bar (58 psi) | | | | | | | | | **B** | |
| 6 bar (87 psi) | | | | | | | | | **D** | |
| 10 bar (145 psi) | | | | | | | | | **E** | |
| 16 bar (232 psi) | | | | | | | | | **G** | |
| 25 bar (363 psi) | | | | | | | | | **H** | |
| 40 bar (580 psi) | | | | | | | | | **K** | |
| 60 bar (870 psi) | | | | | | | | | **L** | |
| 100 bar (1450 psi) | | | | | | | | | **N** | |
| With isolation valve and pressure sensor, range: | | | | | | | | | | |
| 4 bar (58 psi) | | | | | | | | | **P** | |
| 6 bar (87 psi) | | | | | | | | | **Q** | |
| 10 bar (145 psi) | | | | | | | | | **R** | |
| 16 bar (232 psi) | | | | | | | | | **S** | |
| 25 bar (363 psi) | | | | | | | | | **U** | |
| 40 bar (580 psi) | | | | | | | | | **V** | |
| 60 bar (870 psi) | | | | | | | | | **W** | |
| 100 bar (1450 psi) | | | | | | | | | **Y** | |

| Selection and Ordering data | Order No. | |
|---|---|---|
| **SITRANS FX300 Sandwich**<br>**Single transmitter and $T_{max}$ = 240 °C (464 °F)** | **7ME2700 -** | |
| **Software** | | |
| Uncompensated for gases, wet gases, steam and liquids respectively temperature compensation for saturated steam | | **1** |
| Density compensation for superheated steam | | **4** |
| Density compensation for superheated steam and setting of Gross heat Opt. Y51 ... Y56 for Energy measuring | | **5** |
| Density compensation for gases and wet gases and setting of Relative humidity at opt. Y49 | | **7** |
| Density compensation for gases, wet gases and setting of FAD - free air delivery Opt. Y49 and Y81 ... Y87 for Compressor settings | | **8** |

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## SITRANS FX300

| Selection and Ordering data | Order code |
|---|---|
| ***Additional information***<br>Please add "**-Z**" to Order No. and specify as minimum Order code Y40, Y41, Y42 and Y45 and plain text. | |
| **Input process data** | |
| Medium: Specify steam, gas, liquid and customised | **Y40** |
| Temperature: Specify max. operating temperature and units | **Y41** |
| Pressure: Specify max. operating pressure and units | **Y42** |
| Density (only by customer-specified medium): Specify medium density and units | **Y43** |
| Viscosity (only by customer-specified medium): Specify medium viscosity and units | **Y44** |
| Flow rate: Specify min./max. flow rate and units | **Y45** |
| Setting of pulse output: Specify totalizer or energy unit (1 pulse/unit) | **Y47** |
| Relative humidity (amount in % of process medium) | **Y49** |
| **Settings of gross heat** | |
| Variable current output | **Y51** |
| Power unit (specify: kJ/h, MJ/h, GJ/h, Btu/h, kcal/h, kW, MW or special (custom)) | **Y52** |
| Fullscale power value | **Y53** |
| Variable pulse output | **Y54** |
| Totalizer on/off | **Y55** |
| Configure totalizer (specify: kJ, MJ, GJ, Btu th, kcal, kWh, MWh or special (custom)) | **Y56** |
| **Settings of FAD** | |
| Inlet suction temperature | **Y81** |
| Atmosphere pressure | **Y82** |
| Pressure drop filter | **Y83** |
| Inlet relative humidity | **Y84** |
| Actual revolutions per minute (of compressor) | **Y85** |
| Rated Rpm of compressor | **Y86** |
| Outlet relative humidity<br>This information is available from compressor supplier. | **Y87** |

### *Operating instructions*

| Description | Order No. |
|---|---|
| English | **A5E2100423** |

This device is shipped with a Quick Start guide and a CD containing further SITRANS F literature.

All literature is also available for free at:
http://www.siemens.com/flowdocumentation

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Please add **"-Z"** to Order No. and specify Order code. | |
| **Converter housing material** | |
| Aluminum for increased requirement, color: petrol green | **A10** |
| **Material certificate** | |
| Certificate of compliance EN 10204-2.1 | **C10** |
| Pressure test + 3.1 accordance EN 10204 | **C11** |
| Material certificate pressure parts + certificate 3.1 | **C12** |
| Material in accordance with NACE MR 0175-01 | **C13** |
| PMI of pressure bearing metal parts + certificate 3.1 | **C14** |
| Material certificate pressure parts + PMI/certificate 3.1 | **C15** |
| **Calibration certificate FX300**<br>As standard the flow device has a 3-point calibration certificate. | |
| Calibration certificate (5-point) | **D11** |
| **Hardness test** | |
| Hardness test on pressure bearing parts + 3.1 Equotip LD procedure according to NACE MR 0175-01 | **H30** |
| **Cleaning for oil and fat** | |
| Class 1 increased requirement (customer-specified) and 3.1 (EN 10204) | **K46** |
| Class 2 and 3.1 (EN 10204) | **K48** |
| **Certificates** | |
| X-ray test on pressure bearing weldings | **M56** |
| Dye penetration test on pressure bearing weldings | **M58** |
| **Tag name plate** | |
| Stainless steel tag with 3 mm characters, max. 2 x 8 characters (40 x 20 mm, add plain text) | **Y17** |
| Stainless steel tag with 2.5 mm characters, max. 8 x 40 characters (120 x 46 mm, add plain text) | **Y18** |

| Selection and Ordering data | | Order No. |
|---|---|---|
| **SITRANS FX300 Flanged**<br>**Dual transmitter and $T_{max}$ = 240 °C (464 °F)** | | **7ME2800 -** |
| **Connection size** | **Sensor size** | |
| DN 40 (1½") | DN 40 | **2K** |
| DN 50 (2") | DN 50 | **2R** |
| DN 80 (3") | DN 80 | **3L** |
| DN 100 (4") | DN 100 | **3S** |
| DN 150 (6") | DN 150 | **4M** |
| DN 200 (8") | DN 200 | **4T** |
| DN 250 (10") | DN 250 | **4W** |
| DN 300 (12") | DN 300 | **5E** |
| **Flange norm and nominal pressure** | | |
| **Form B1/B2** | **EN 1092-1** | |
| PN 10 | DN 200 ... 300 | **A** |
| PN 16 | DN 50 ... 300 | **B** |
| PN 25 | DN 200 ... 300 | **C** |
| PN 40 | DN 40 ... 300 | **D** |
| PN 63 | DN 50 ... 150 | **E** |
| PN 100 | DN 40 ... 150 | **F** |
| **RF** | **ASME B16.5** | |
| 150 lb | 1½ ... 12" | **J** |
| 300 lb | 1½ ... 12" | **K** |
| 600 lb | 1½ ... 6" | **L** |
| **Sensor material/Gasket** | | |
| Stainless steel AISI 316L (1.4404)/ AISI 316L (1.4435)/FPM | | **1** |
| Stainless steel AISI 316L (1.4404)/ AISI 316L (1.4435)/FFKM | | **5** |
| **Transmitter design** | | |
| Compact version - no cable | | **1** |
| Remote version: | | |
| 5 m (16.4 ft) | | **2** |
| 10 m (32.8 ft) | | **3** |
| 15 m (49.2 ft) | | **4** |
| 20 m (65.6 ft) | | **5** |
| 25 m (82.0 ft) | | **6** |
| 30 m (98.4 ft) | | **7** |
| **Approval and cable gland** | | |
| Non-Ex, M20 x 1.5 | | **1** |
| Non-Ex, ½" NPT | | **2** |
| ATEX, M20 x 1.5 | | **4** |
| ATEX, ½" NPT | | **5** |
| FM US/C, M20 x 1.5 | | **6** |
| FM US/C, ½" NPT | | **7** |
| **Transmitter, display and communication** | | |
| With display, HART | | **A** |
| **Pressure sensor and isolation valve** | | |
| Without pressure sensor | | **A** |
| **Software** | | |
| Uncompensated for gases, wet gases, steam and liquids respectively temperature compensation for saturated steam | | **1** |

| Selection and Ordering data | Order code |
|---|---|
| ***Additional information***<br>Please add "**-Z**" to Order No. and specify as minimum Order code Y40, Y41, Y42 and Y45 and plain text. | |
| **Input process data** | |
| Medium: Specify steam, gas, liquid and customised | **Y40** |
| Temperature: Specify max. operating temperature and units | **Y41** |
| Pressure: Specify max. operating pressure and units | **Y42** |
| Density (only by customer-specified medium): Specify medium density and units | **Y43** |
| Viscosity (only by customer-specified medium): Specify medium viscosity and units | **Y44** |
| Flow rate: Specify min./max. flow rate and units | **Y45** |
| Setting of pulse output; Specify totalizer or energy unit (1 pulse/unit) | **Y47** |
| Relative humidity (amount in % of process medium) | **Y49** |

***Operating instructions for SITRANS FX300***

| Description | Order No. |
|---|---|
| English | **A5E2100423** |

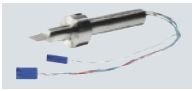
This device is shipped with a Quick Start guide and a CD containing further SITRANS F literature.

All literature is also available for free at:
http://www.siemens.com/flowdocumentation

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Please add "**-Z**" to Order No. and specify Order code. | |
| **Converter housing material** | |
| Aluminum for increased requirement, color: petrol green | **A10** |
| **Material certificate** | |
| Certificate of compliance EN 10204-2.1 | **C10** |
| Pressure test + 3.1 accordance EN 10204 | **C11** |
| Material certificate pressure parts + certificate 3.1 | **C12** |
| Material in accordance with NACE MR 0175-01 | **C13** |
| PMI of pressure bearing metal parts + certificate 3.1 | **C14** |
| Material certificate pressure parts + PMI/certificate 3.1 | **C15** |
| **Calibration certificate FX300**<br>As standard the flow device has a 3-point calibration certificate. | |
| Calibration certificate (5-point) | **D11** |
| **Hardness test** | |
| Hardness test on pressure bearing parts + 3.1 Equotip LD procedure according to NACE MR 0175-01 | **H30** |
| **Cleaning for oil and fat** | |
| Class 1 increased requirement (customer-specified) and 3.1 (EN 10204) | **K46** |
| Class 2 and 3.1 (EN 10204) | **K48** |
| **Certificates** | |
| X-ray test on pressure bearing weldings | **M56** |
| Dye penetration test on pressure bearing weldings | **M58** |
| **Tag name plate** | |
| Stainless steel tag with 3 mm characters, max. 2 x 8 characters (40 x 20 mm, add plain text) | **Y17** |
| Stainless steel tag with 2.5 mm characters, max. 8 x 40 characters (120 x 46 mm, add plain text) | **Y18** |

## SITRANS FX300

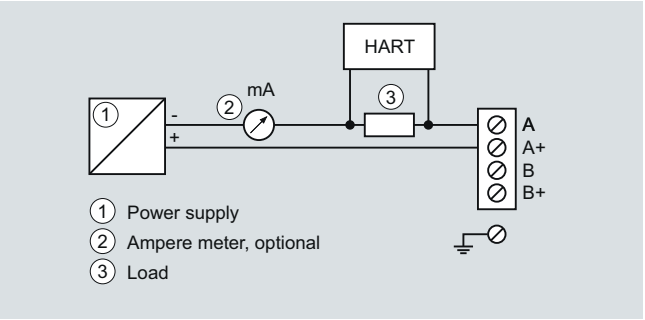
### SITRANS FX300 spare parts

| Description | Order No. | |
|---|---|---|
| Seal disc 21.8-12-0.1 | **A5E02181439** | |
| Socket only for DN 15/25 ; 1/2" | **On request** | |
| Socket only for DN 15/25 ; 1" | **On request** | |
| Pickup AISI 316L/1.4404 | **On request** | |
| O-ring pickup | **A5E02181464** | |
| O-ring for pressure screw 17.13 x 2.62-FPM-70 | **A5E02181488** | |
| Pressure sensor 4/6/10/16/25/40/60/100 bar | **On request** | |
| Cover gasket O-Ring 91.67 x 3.5 | **A5E02181492** | |
| Converter housing gasket 59,35,5-2-N | **A5E02181495** | |
| O-ring DIN3771-20 x 1-FPM for sensor | **A5E02181515** | |
| O-ring 10x2-NBR for lead-through | **A5E02181525** | |
| DUBOX plug, 5-pole-RM2 | **A5E02181527** | |
| Electronic | |  |
| • Basic D-HART | **A5E02181531** | |
| • Steam D-HART | **A5E02181541** | |
| • Gas D-HART | **A5E02181544** | |
| Display | **A5E02181558** |  |
| Cable feedthrough 10-pole (non-Ex).<br>O-ring for cable feedthrough 21.89 x 2.62<br>10-pole plug | **A5E02181562** | |
| Sensor replacement (incl. Seal disc, pickup, O-rings for pickup, and pressure screw | |  |
| • DN 15 (incl. ½" socket) | **A5E02181087** | |
| • DN 25 (incl. 1" socket) | **A5E02181116** | |
| • DN 40 ... 100 | **A5E02181152** | |
| • DN 150 ... 300 | **A5E02275105**[F)] | |
| Pressure sensor replacement (Incl. pressure sensor, DUBOX plug, 2 O-rings and calibration certificate) | |  |
| • 4 bar (58 psi) | **A5E02181157** | |
| • 6 bar (87 psi) | **A5E02181175** | |
| • 10 bar (145 psi) | **A5E02181180** | |
| • 16 bar (232 psi) | **A5E02181221** | |
| • 25 bar (363 psi) | **A5E02181307** | |
| • 40 bar (580 psi) | **A5E02181316** | |
| • 60 bar (870 psi) | **A5E02181322** | |
| • 100 bar (1450 psi) | **A5E02181437** | |

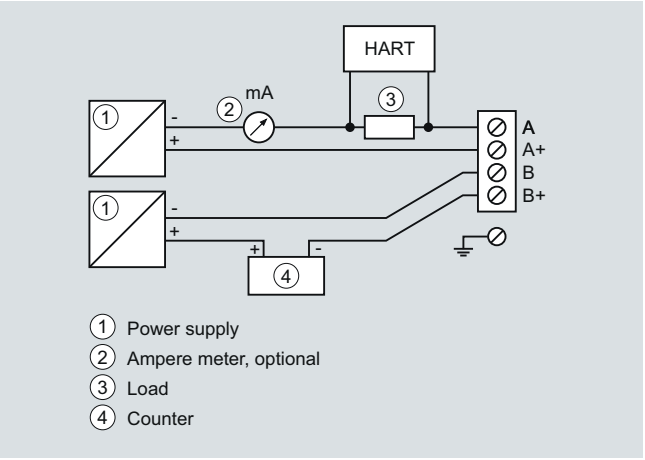
| Description | Order No. | |
|---|---|---|
| Service Toolbox for changing software (basic, steam and gas) and different settings in the electronic. | **A5E02375819** |  |

F) Subject to export regulations AL: 9I999, ECCN: N.

### Schematics

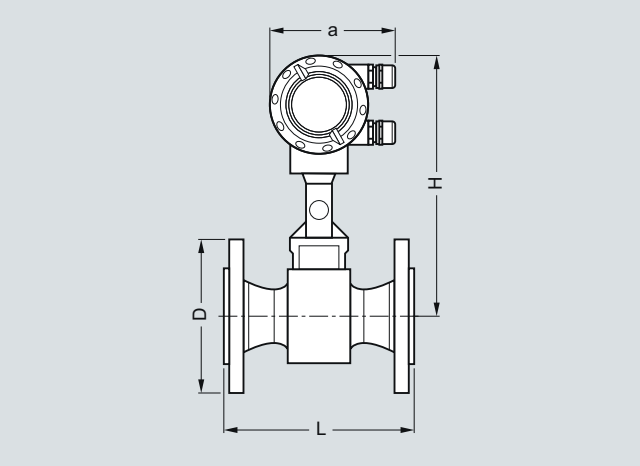



Load for HART communication

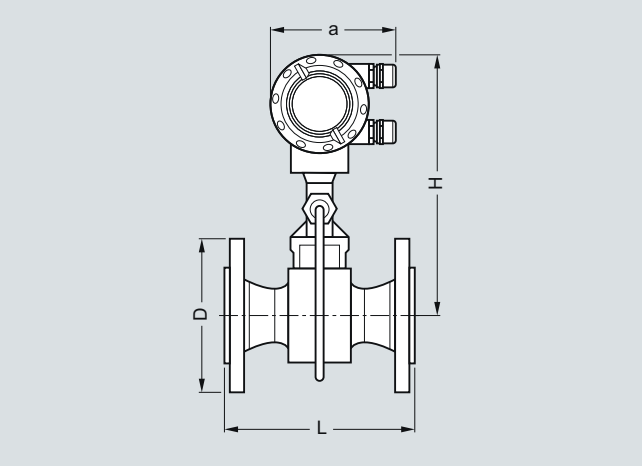



Connection pulse output

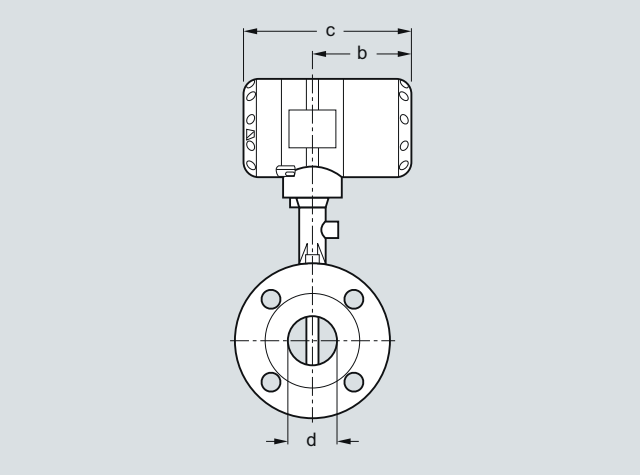
## Dimensional drawings



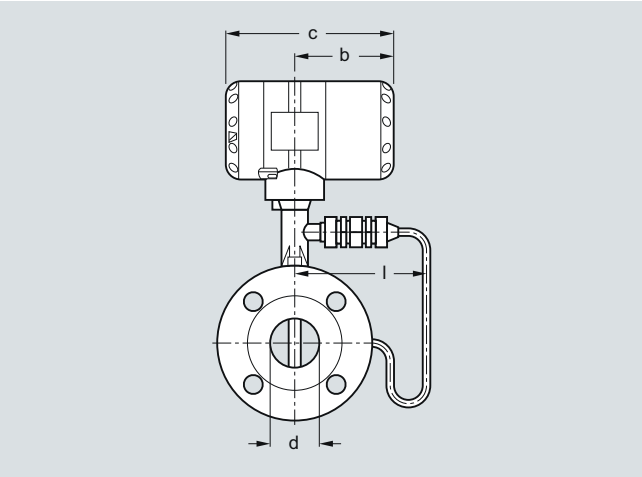

Flange version, frontal view, a = 133 mm (5.24 inch)



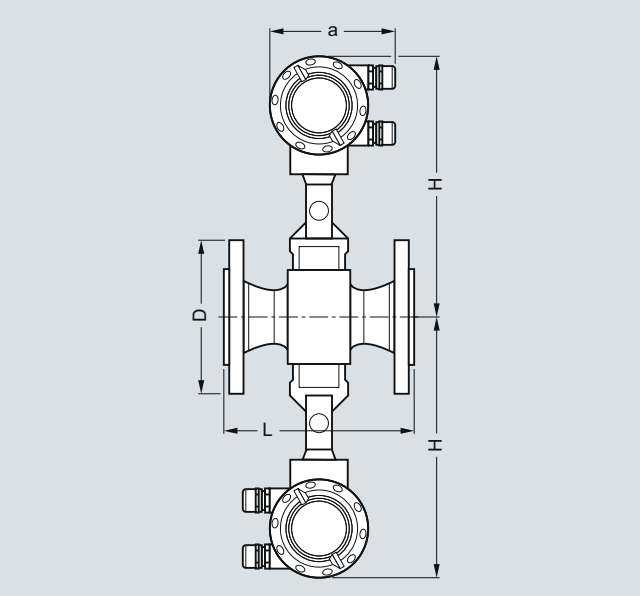

Flange version with pressure sensor, frontal view,
a = 133 mm (5.24 inch)




Flange version, side view, b = 105 mm (4.13 inch),
c = 179 mm (7.05 inch)




Flange version with pressure sensor, side view,
b = 105 mm (4.13 inch), c = 179 mm (7.05 inch)




Flange version, dual converter, specified weight + 2.80 kg (6.17 lb)

## SITRANS FX300

***Flange version EN1092-1***

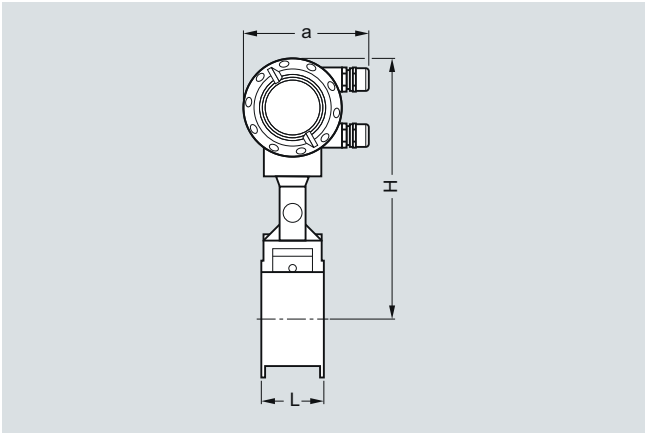
| Size | Pressure rating | Dimensions [mm (inch)] | | | | | Weight [kg (lb)] | |
|---|---|---|---|---|---|---|---|---|
| DN | PN | d | D | L | H | I | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| 15 | 40 | 17.3 (0.68) | 95 (3.74) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 5.5 (12.13) | 6.1 (13.45) |
| 15 | 100 | 17.3 (0.68) | 105 (4.13) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 6.5 (14.33) | 7.1 (15.65) |
| 25 | 40 | 28.5 (1.12) | 115 (4.53) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 7.3 (16.09) | 7.9 (17.42) |
| 25 | 100 | 28.5 (1.12) | 140 (5.51) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 9.3 (20.50) | 9.9 (21.83) |
| 40 | 40 | 43.1 (1.70) | 150 (5.91) | 200 (7.87) | 270 (10.63) | 144 (5.67) | 10.2 (22.49) | 10.8 (23.81) |
| 40 | 100 | 42.5 (1.67) | 170 (6.69) | 200 (7.87) | 270 (10.63) | 144 (5.67) | 14.2 (31.31) | 14.8 (32.63) |
| 50 | 16 | 54.5 (2.15) | 165 (6.50) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 12.1 (26.68) | 12.7 (28.00) |
| 50 | 40 | 54.5 (2.15) | 165 (6.50) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 12.3 (27.12) | 12.9 (28.44) |
| 50 | 63 | 54.5 (2.15) | 180 (7.09) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 16.3 (35.94) | 16.9 (37.26) |
| 50 | 100 | 53.9 (2.12) | 195 (7.68) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 17.8 (39.24) | 18.4 (40.57) |
| 80 | 16 | 82.5 (3.25) | 200 (7.87) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 16.8 (37.04) | 17.4 (38.36) |
| 80 | 40 | 82.5 (3.25) | 200 (7.87) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 18.8 (41.45) | 19.4 (42.77) |
| 80 | 63 | 81.7 (3.22) | 215 (8.46) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 22.8 (50.27) | 23.4 (51.59) |
| 80 | 100 | 80.9 (3.19) | 230 (9.06) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 26.8 (59.08) | 27.4 (60.41) |
| 100 | 16 | 107.1 (4.22) | 220 (8.66) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 21.4 (47.18) | 22 (48.50) |
| 100 | 40 | 107.1 (4.22) | 235 (9.25) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 24.4 (53.79) | 25 (55.12) |
| 100 | 63 | 106.3 (4.19) | 250 (9.84) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 29.4 (64.82) | 30 (66.14) |
| 100 | 100 | 104.3 (4.11) | 265 (10.43) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 35.4 (78.04) | 36 (79.37) |
| 150 | 16 | 159.3 (6.27) | 285 (11.22) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 35.2 (77.60) | 35.8 (78.93) |
| 150 | 40 | 159.3 (6.27) | 300 (11.81) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 41.2 (90.83) | 41.8 (92.15) |
| 150 | 63 | 157.1 (6.19) | 345 (13.58) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 59.2 (130.51) | 59.8 (131.84) |
| 150 | 100 | 154.1 (6.07) | 355 (13.98) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 67.2 (148.15) | 67.8 (149.47) |
| 200 | 10 | 206.5 (8.13) | 340 (13.39) | 300 (11.81) | 350 (13.78) | 194 (7.64) | 37.8 (83.33) | 38.4 (84.66) |
| 200 | 16 | 206.5 (8.13) | 340 (13.39) | 300 (11.81) | 350 (13.78) | 194 (7.64) | 37.8 (83.33) | 38.4 (84.66) |
| 200 | 25 | 206.5 (8.13) | 360 (14.17) | 300 (11.81) | 350 (13.78) | 194 (7.64) | 46.8 (103.18) | 47.4 (104.50) |
| 200 | 40 | 206.5 (8.13) | 375 (14.76) | 300 (11.81) | 350 (13.78) | 194 (7.64) | 54.8 (120.81) | 55.4 (122.14) |
| 250 | 10 | 260.4 (10.25) | 395 (15.55) | 380 (14.96) | 370 (14.57) | 224 (8.82) | 57.4 (126.55) | 58.0 (127.87) |
| 250 | 16 | 260.4 (10.25) | 405 (15.94) | 380 (14.96) | 370 (14.57) | 224 (8.82) | 58.4 (128.75) | 59.0 (130.07) |
| 250 | 25 | 258.8 (10.19) | 425 (16.73) | 380 (14.96) | 370 (14.57) | 224 (8.82) | 74.4 (164.02) | 75.0 (165.35) |
| 250 | 40 | 258.8 (10.19) | 450 (17.72) | 380 (14.96) | 370 (14.57) | 224 (8.82) | 92.4 (203.71) | 93.0 (205.03) |
| 300 | 10 | 309.7 (12.19) | 445 (17.52) | 450 (17.72) | 395 (15.55) | 244 (9.61) | 75.7 (166.89) | 76.3 (168.21) |
| 300 | 16 | 309.7 (12.19) | 460 (18.11) | 450 (17.72) | 395 (15.55) | 244 (9.61) | 82.2 (181.22) | 82.8 (182.54) |
| 300 | 25 | 307.9 (12.12) | 485 (19.09) | 450 (17.72) | 395 (15.55) | 244 (9.61) | 98.7 (217.60) | 99.3 (218.92) |
| 300 | 40 | 307.9 (12.12) | 515 (20.28) | 450 (17.72) | 395 (15.55) | 244 (9.61) | 127.5 (281.09) | 128.1 (282.41) |

***Flange version ASME B16.5***

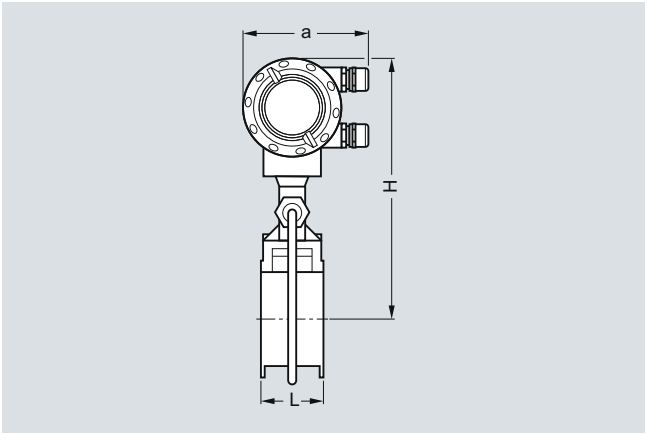
| Size | Pressure rating | Dimensions [mm (inch)] | | | | | Weight [kg (lb)] | |
|---|---|---|---|---|---|---|---|---|
| DN | Class | d | D | L | H | I | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| ½ | 150 | 15.8 (0.62) | 90 (3.54) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 4.5 (9.92) | 5.1 (11.24) |
| ½ | 300 | 15.8 (0.62) | 95 (3.74) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 4.9 (10.80) | 5.5 (12.13) |
| ½ | 600 | 13.9 (0.55) | 95 (3.74) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 5.1 (11.24) | 5.7 (12.57) |
| 1 | 150 | 26.6 (1.05) | 110 (4.33) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 6.2 (13.67) | 6.8 (14.99) |
| 1 | 300 | 26.6 (1.05) | 125 (4.92) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 7.2 (15.87) | 7.8 (17.20) |
| 1 | 600 | 24.3 (0.96) | 125 (4.92) | 200 (7.87) | 265 (10.43) | 144 (5.67) | 7.5 (16.53) | 8.1 (17.86) |
| 1½ | 150 | 40.9 (1.61) | 125 (4.92) | 200 (7.87) | 270 (10.63) | 144 (5.67) | 8.3 (18.30) | 8.9 (19.62) |
| 1½ | 300 | 40.9 (1.61) | 155 (6.10) | 200 (7.87) | 270 (10.63) | 144 (5.67) | 10.4 (22.93) | 11 (24.25) |
| 1½ | 600 | 38.1 (1.50) | 155 (6.10) | 200 (7.87) | 270 (10.63) | 144 (5.67) | 11.4 (25.13) | 12 (26.46) |
| 2 | 150 | 52.6 (2.07) | 150 (5.91) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 11 (24.25) | 11.6 (25.57) |
| 2 | 300 | 52.6 (2.07) | 165 (6.50) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 12.4 (27.34) | 13 (28.66) |
| 2 | 600 | 49.3 (1.94) | 165 (6.50) | 200 (7.87) | 275 (10.83) | 144 (5.67) | 13.9 (30.64) | 14.5 (31.97) |
| 3 | 150 | 78 (3.07) | 190 (7.48) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 19.8 (43.65) | 20.4 (44.97) |
| 3 | 300 | 78 (3.07) | 210 (8.27) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 22.8 (50.27) | 23.4 (51.59) |
| 3 | 600 | 73.7 (2.90) | 210 (8.27) | 200 (7.87) | 290 (11.42) | 154 (6.06) | 23.8 (52.47) | 24.4 (53.79) |
| 4 | 150 | 102.4 (4.03) | 230 (9.06) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 23.4 (51.59) | 24 (52.91) |
| 4 | 300 | 102.4 (4.03) | 255 (10.04) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 31.4 (69.23) | 32 (70.55) |
| 4 | 600 | 97.2 (3.83) | 275 (10.83) | 250 (9.84) | 310 (12.20) | 164 (6.46) | 40.4 (89.07) | 41 (90.39) |
| 6 | 150 | 154.2 (6.07) | 280 (11.02) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 36.2 (79.81) | 36.8 (81.13) |
| 6 | 300 | 154.2 (6.07) | 320 (12.60) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 51.2 (112.88) | 51.8 (114.20) |
| 6 | 600 | 146.3 (5.76) | 355 (13.98) | 300 (11.81) | 325 (12.80) | 174 (6.85) | 46.2 (101.85) | 76.8 (169.31) |
| 8 | 150 | 202.7 (7.98) | 345 (13.58) | 300 (11.81) | 350 (13.78) | 194 (7.64) | 50.0 (110.23) | 50.6 (111.55) |
| 8 | 300 | 202.7 (7.98) | 380 (14.96) | 300 (11.81) | 350 (13.78) | 194 (7.64) | 74.8 (164.91) | 75.4 (166.23) |
| 10 | 150 | 254.5 (10.02) | 405 (15.94) | 380 (14.96) | 370 (14.57) | 224 (8.82) | 74.4 (164.02) | 75.0 (165.35) |
| 10 | 300 | 254.5 (10.02) | 455 (17.91) | 380 (14.96) | 370 (14.57) | 224 (8.82) | 106.4 (234.57) | 107.0 (235.89) |
| 12 | 150 | 304.8 (12.00) | 485 (19.09) | 450 (17.72) | 395 (15.55) | 244 (9.61) | 106.3 (234.35) | 106.9 (235.67) |
| 12 | 300 | 304.8 (12.00) | 520 (20.47) | 450 (17.72) | 395 (15.55) | 244 (9.61) | 151.3 (333.56) | 151.9 (334.88) |

## SITRANS FX300

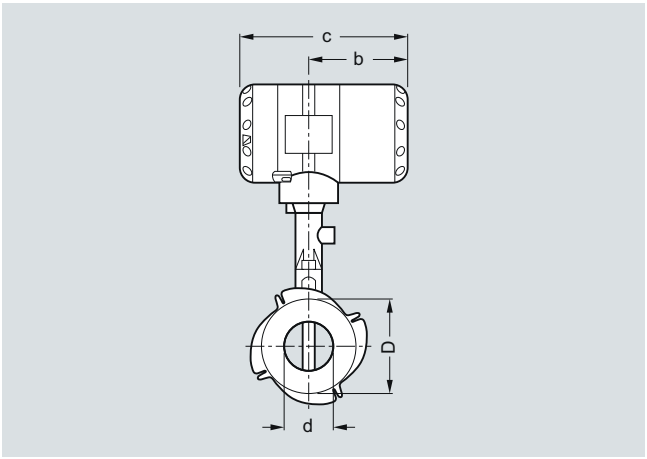




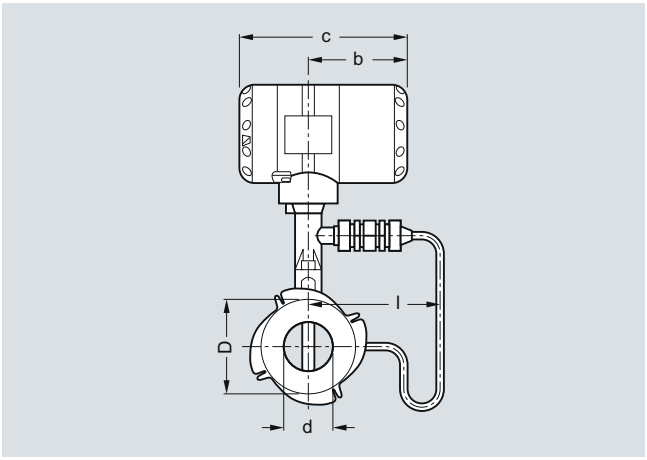

Sandwich version, front view, a = 133 mm (5.24 inch)




Sandwich version with pressure sensor, front view,
a = 133 mm (5.24 inch)




Sandwich version, side view, b = 105 mm (4.13 inch),
c = 179 mm (7.05 inch)




Sandwich version with pressure sensor, side view,
b = 105 mm (4.13 inch), c = 179 mm (7.05 inch)

***Sandwich version EN***

| Size | Pressure rating | Dimensions [mm (inch)] | | | | | Weight [kg (lb)] | |
|---|---|---|---|---|---|---|---|---|
| DN | PN | d | D | L | H | I | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| 15 | 16 ... 100 | 16 (0.63) | 45 (1.77) | 65 (2.56) | 265 (10.43) | 144 (5.67) | 3.5 (7.72) | 4.1 (9.04) |
| 25 | 16 ... 100 | 24 (0.94) | 65 (2.56) | 65 (2.56) | 265 (10.43) | 144 (5.67) | 4.3 (9.48) | 4.9 (10.80) |
| 40 | 16 ... 100 | 38 (1.50) | 82 (3.23) | 65 (2.56) | 270 (10.63) | 144 (5.67) | 4.9 (10.80) | 5.5 (12.13) |
| 50 | 16 ... 100 | 50 (1.97) | 102 (4.02) | 65 (2.56) | 275 (10.83) | 144 (5.67) | 6 (13.23) | 6.6 (14.55) |
| 80 | 16 ... 100 | 74 (2.91) | 135 (5.31) | 65 (2.56) | 290 (11.42) | 155 (6.10) | 8.2 (18.08) | 8.8 (19.40) |
| 100 | 16 ... 100 | 97 (3.82) | 158 (6.22) | 65 (2.56) | 310 (12.20) | 164 (6.46) | 9.5 (20.94) | 10.1 (22.27) |

***Sandwich version ASME***

| Size | Pressure rating | Dimensions [inch] | | | | | Weight [lb] | |
|---|---|---|---|---|---|---|---|---|
| DN | Class | d | D | L | H | I | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| ½" | 150, 300, 600 | 0.63 | 1.77 | 2.56 | 10.43 | 5.67 | 7.72 | 9.04 |
| 1" | 150, 300, 600 | 0.94 | 2.56 | 2.56 | 10.43 | 5.67 | 9.48 | 10.80 |
| 1½" | 150, 300, 600 | 1.50 | 3.23 | 2.56 | 10.63 | 5.67 | 10.80 | 12.13 |
| 2" | 150, 300, 600 | 1.97 | 4.02 | 2.56 | 10.83 | 5.67 | 13.23 | 14.55 |
| 3" | 150, 300, 600 | 2.91 | 5.31 | 2.56 | 11.42 | 6.10 | 18.08 | 19.40 |
| 4" | 150, 300, 600 | 3.82 | 6.22 | 2.56 | 12.20 | 6.46 | 20.94 | 22.27 |

## SITRANS FX300

### *Flow tables*

Measuring Range Limits

#### *Water*

| Size DN to EN 1092-1 | DN to ASME B16.5 | $Q_{min}$ EN 1092-1 [$m^3/h$] | $Q_{max}$ EN 1092-1 [$m^3/h$] | $Q_{min}$ ASME B16.5 [$m^3/h$] | $Q_{max}$ ASME B16.5 [$m^3/h$] |
|---|---|---|---|---|---|
| 15 | ½" | 0.45 | 5.07 | 0.44 | 4.94 |
| 25 | 1" | 0.81 | 11.40 | 0.81 | 11.40 |
| 40 | 1½" | 2.04 | 28.58 | 2.04 | 28.58 |
| 50 | 2" | 3.53 | 49.48 | 3.53 | 49.48 |
| 80 | 3" | 7.74 | 108.37 | 7.74 | 108.37 |
| 100 | 4" | 13.30 | 186.22 | 13.30 | 186.21 |
| 150 | 6" | 30.13 | 421.86 | 30.13 | 421.86 |
| 200 | 8" | 56.60 | 792.42 | 56.60 | 792.42 |
| 250 | 10" | 90.48 | 1 266.8 | 90.48 | 1 266.8 |
| 300 | 12" | 131.41 | 1 839.8 | 131.41 | 1 839.8 |

Values based on water at 20 °C (68 °F)

#### *Air*

| Size DN to EN 1092-1 | DN to ASME B16.5 | $Q_{min}$ EN 1092-1 [$m^3/h$] | $Q_{max}$ EN 1092-1 [$m^3/h$] | $Q_{min}$ ASME B16.5 [$m^3/h$] | $Q_{max}$ ASME B16.5 [$m^3/h$] |
|---|---|---|---|---|---|
| 15 | ½" | 6.80 | 25.33 | 6.72 | 24.70 |
| 25 | 1" | 10.20 | 81.43 | 10.20 | 81.43 |
| 40 | 1½" | 25.35 | 326.63 | 25.35 | 326.63 |
| 50 | 2" | 43.89 | 565.49 | 43.89 | 565.49 |
| 80 | 3" | 96.14 | 1 238.64 | 96.14 | 1 238.60 |
| 100 | 4" | 165.19 | 2 128.27 | 165.19 | 2 128.27 |
| 150 | 6" | 374.23 | 4 821.60 | 374.23 | 4 821.60 |
| 200 | 8" | 702.95 | 9 056.8 | 702.95 | 9 056.8 |
| 250 | 10" | 1 123.7 | 14 478.0 | 1 123.7 | 14 478.0 |
| 300 | 12" | 1 632.1 | 21 028.0 | 1 632.1 | 21 028.0 |

Values based on air at 20 °C (68 °F) and 1.013 $bar_{abs}$ (14.7 $psi_{abs}$)

Flow rate limits

| Product | Nominal diameters to EN | to ASME | Minimum flow rates [m/s] | Maximum flow rates [m/s] |
|---|---|---|---|---|
| Liquids | DN 15 … DN 300 | DN ½"…DN 12" | $0.5 \times (998/\rho)^{0.5}$ 1) | $7 \times (998/\rho)^{0.47}$ 1) |
| Gas, steam/vapor | DN 15 … DN 300 | DN ½"…DN 12" | $6 \times (1.29/\rho)^{0.5}$ 2) | $7 \times (998/\rho)^{0.47}$ 3) |

$\rho$ = operating density [$kg/m^3$]

1) Minimum flow rate 0.3 m/s (0.984 ft/s), maximum flow rate 7 m/s (23 ft/s)
2) Minimum flow rate 2 m/s (6.6 ft/s)
3) Maximum flow rate 80 m/s (262 ft/s); DN 15: 45 m/s (148 ft/s) and DN 25: 70 m/s (230 ft/s)

Measuring range saturated steam: 1 to 7 bar

| **Overpressure [bar]** | | **1** | | **3.5** | | **5.2** | | **7** | |
|---|---|---|---|---|---|---|---|---|---|
| **Density [kg/m³]** | | **1.13498** | | **2.4258** | | **3.27653** | | **4.16732** | |
| **Temperature [°C]** | | **120.6** | | **148.2** | | **160.4** | | **170.6** | |
| **Flow [kg/h]** | | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** |
| **DN to EN 1092-1** | **DN to ASME B16.5** | | | | | | | | |
| 15 | ½" | 5.87 | 28.75 | 7.68 | 61.46 | 8.93 | 83.01 | 10.06 | 105.57 |
| 25 | 1" | 11.82 | 92.42 | 17.28 | 197.53 | 20.09 | 266.81 | 22.66 | 339.35 |
| 40 | 1½" | 29.64 | 370.71 | 43.33 | 792.33 | 50.63 | 1 070.2 | 56.8 | 1 361.2 |
| 50 | 2" | 51.31 | 641.82 | 75.02 | 1 371.8 | 87.19 | 1 852.8 | 98.33 | 2 356.6 |
| 80 | 3" | 112.41 | 1 405.8 | 164.33 | 3 004.7 | 191 | 4 058.4 | 215.39 | 5 161.8 |
| 100 | 4" | 193.14 | 2 415.5 | 282.36 | 5 162.7 | 328.16 | 6 973.3 | 370.09 | 8 869.2 |
| 150 | 6" | 437.56 | 5 472.4 | 639.69 | 11 696 | 743.45 | 15 798 | 838.44 | 20 093 |
| 200 | 8" | 821.9 | 10 279.0 | 1 201.6 | 21 970.0 | 1 396.5 | 29 675.0 | 1 574.9 | 37 743 |
| 250 | 10" | 1 313.9 | 16 433.0 | 1 920.9 | 35 122.0 | 2 232.5 | 47 439.0 | 2 517.7 | 60 337 |
| 300 | 12" | 1 908.3 | 23 866.0 | 2 789.8 | 51 010.0 | 3 242.4 | 68 899.0 | 3 656.6 | 87 630 |

Measuring range saturated steam: 10.5 to 20 bar

| **Overpressure [bar]** | | **10.5** | | **14** | | **17.5** | | **20** | |
|---|---|---|---|---|---|---|---|---|---|
| **Density [kg/m³]** | | **5.88803** | | **7.60297** | | **9.31702** | | **10.5442** | |
| **Temperature [°C]** | | **186.2** | | **198.5** | | **208.7** | | **215** | |
| **Flow [kg/h]** | | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** |
| **DN to EN 1092-1** | **DN to ASME B16.5** | | | | | | | | |
| 15 | ½" | 12.78 | 149.17 | 16.51 | 192.61 | 20.23 | 236.04 | 22.89 | 267.12 |
| 25 | 1" | 26.93 | 479.46 | 30.6 | 619.11 | 33.87 | 758.69 | 36.04 | 858.62 |
| 40 | 1½" | 67.51 | 1 878.2 | 76.72 | 2 150.7 | 84.93 | 2 395.3 | 90.35 | 2 557.7 |
| 50 | 2" | 116.89 | 3 251.7 | 132.82 | 3 723.4 | 147.03 | 4 147 | 156.42 | 4 428.1 |
| 80 | 3" | 256.03 | 7 122.4 | 290.93 | 8 155.8 | 322.06 | 9 083.7 | 342.62 | 9 699.3 |
| 100 | 4" | 439.91 | 12 238 | 499.9 | 14 013 | 553.38 | 15 608 | 588.69 | 16 666 |
| 150 | 6" | 996.62 | 27 725 | 1 132.5 | 31 747 | 1 253.7 | 35 359 | 1 333.7 | 37 756 |
| 200 | 8" | 1 872.1 | 52 079 | 2 127.3 | 59 634 | 2 354.9 | 66 419 | 2 505.2 | 70 921 |
| 250 | 10" | 2 992.7 | 83 254 | 3 400.7 | 95 333 | 3 764.6 | 106 180 | 4 004.9 | 113 380 |
| 300 | 12" | 4 346.5 | 120 920 | 4 939.1 | 138 460 | 5 467.5 | 154 210 | 5 816.5 | 164 660 |

## SITRANS FX300

Measuring range saturated steam: 15 to 100 psig

| **Overpressure [psig]** | | **15** | | **50** | | **75** | | **100** | |
|---|---|---|---|---|---|---|---|---|---|
| **Density [lbs/ft³]** | | **0.0719** | | **0.1497** | | **0.2036** | | **0.2569** | |
| **Temperature [°F]** | | **249.98** | | **297.86** | | **320.36** | | **338.184** | |
| **Flow [lbs/h]** | | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** |
| **DN to EN 1092-1** | **DN to ASME B16.5** | | | | | | | | |
| 15 | ½" | 12.95 | 64.35 | 16.83 | 133.87 | 19.62 | 182.02 | 22.04 | 229.63 |
| 25 | 1" | 26.25 | 206.83 | 37.86 | 430.3 | 44.15 | 585.06 | 49.59 | 738.09 |
| 40 | 1½" | 65.81 | 829.61 | 94.92 | 1 726 | 110.68 | 2 346.7 | 124.32 | 2 960.5 |
| 50 | 2" | 113.94 | 1 436.3 | 164.34 | 2 988 | 191.63 | 4 062.9 | 215.23 | 5 125.6 |
| 80 | 3" | 249.57 | 3 146.1 | 360 | 6 545.3 | 419.74 | 8 899.4 | 471.45 | 11 227 |
| 100 | 4" | 428.81 | 5 405.7 | 618.51 | 11 246 | 721.21 | 15 291 | 810.06 | 19 291 |
| 150 | 6" | 971.47 | 12 246 | 1 401.2 | 25 478 | 1 633.9 | 34 642 | 1 835.2 | 43 703 |
| 200 | 8" | 1 824.8 | 23 004 | 2 632.1 | 47 859 | 3 069.1 | 65 072 | 3 447.2 | 82 092 |
| 250 | 10" | 2 917.2 | 36 774 | 4 207.7 | 76 508 | 4 906.4 | 104 030 | 5 510.8 | 131 230 |
| 300 | 12" | 4 236.8 | 53 410 | 6 111.1 | 111 120 | 7 125.8 | 151 080 | 8 003.6 | 190 600 |

Measuring range saturated steam: 150 to 300 psig

| **Overpressure [psig]** | | **150** | | **200** | | **250** | | **300** | |
|---|---|---|---|---|---|---|---|---|---|
| **Density [lbs/ft³]** | | **0.3627** | | **0.4681** | | **0.5735** | | **0.6792** | |
| **Temperature [°F]** | | **366.08** | | **388.04** | | **406.22** | | **422.06** | |
| **Flow [lbs/h]** | | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** |
| **DN to EN 1092-1** | **DN to ASME B16.5** | | | | | | | | |
| 15 | ½" | 27.79 | 324.21 | 35.86 | 418.47 | 43.94 | 512.66 | 52.04 | 607.12 |
| 25 | 1" | 58.93 | 1 042.1 | 66.94 | 1 345.1 | 74.1 | 1 647.8 | 80.63 | 1 951.5 |
| 40 | 1½" | 147.72 | 4 107.2 | 167.83 | 4 702.8 | 185.76 | 5 237 | 202.15 | 5 728 |
| 50 | 2" | 255.75 | 7 111.9 | 290.56 | 8 141.9 | 321.6 | 9 066.8 | 350 | 9 917 |
| 80 | 3" | 560.19 | 15 578 | 636.44 | 17 834 | 704.43 | 19 860 | 766.6 | 21 722 |
| 100 | 4" | 962.54 | 26 766 | 1 093.5 | 30 643 | 1 210.4 | 34 124 | 1 317.2 | 37 324 |
| 150 | 6" | 2 180.6 | 60 639 | 2 477.4 | 69 421 | 2 742.1 | 77 307 | 2 984 | 84 556 |
| 200 | 8" | 4 096.1 | 113 900 | 4 653.6 | 130 400 | 5 150.7 | 145 210 | 5 605.2 | 158 830 |
| 250 | 10" | 6 548.1 | 182 090 | 7 439.3 | 208 460 | 8 234.1 | 232 140 | 8 960.6 | 253 910 |
| 300 | 12" | 9 510.2 | 264 460 | 10 805 | 302 760 | 11 959 | 337 150 | 13 014 | 368 770 |