SITRANS F US
SITRANS FUS1010 Standard clamp-on

Overview

SITRANS FUS1010 is the most versatile clamp-on ultrasonic flow display computer available today. It can operate in either Wide-Beam Transit-Time or Reflexor (Doppler) mode, making it suitable for virtually any liquid, even those with high aeration or suspended solids.

SITRANS FUS1010 is available in single, dual and optional four path configurations, with your choice of IP65 (NEMA 4X) or IP65 (NEMA 7) and IP66 (NEMA 7) explosionproof enclosures.

Benefits

- Versatility; there is no need to change meters when operating conditions change
- Easy installation; no need to cut pipe or stop flow
- Minimal maintenance; external transducers do not require periodic cleaning
- No moving parts to foul or wear
- No pressure drop or energy loss
- Wide turn-down ratio
- Choice of single channel or dual channel/dual path, with doppler capability. Four channel/four path optional.
  - Optional four channels allow measurement of four independent pipes at the same time, reducing overall ownership costs
  - Dual mode allows for transit time and reflexor operation at the same time on the same pipe
  - Dual path allows for two sets of transducers to be set up on one pipe and averaged for higher accuracy
- Zeromatic Path automatically sets zero without stopping flow and reduces zero drift, even at low flow

Application

FUS1010 is suitable for a wide variety of liquid applications, including the following:

- Water industry
  - Raw water
  - Potable water
  - Chemicals
- Wastewater industry
  - Raw sewage
  - Effluent
  - Sludges
  - Mixed liquor
  - Chemicals
- HVAC industry
  - Chillers
  - Condensers
  - Hot and cold water systems
- Power industry
  - Nuclear
  - Fossil
  - Hydroelectric
- Processing industry
  - Process control
  - Batchind
  - Rate indication
  - Volumetric and mass measurement

Design

FUS1010 is available in three configurations:

- IP65 (NEMA 4X) enclosure constructed of fiberglass reinforced polyester with stainless steel hardware and polyester keypad
  - Single channel
  - Dual channel / dual path
  - Four channel (optional)
- IP65 (NEMA 7) Compact explosionproof enclosure constructed of cast aluminum with glass window, stainless steel hardware
  - Single channel
  - Dual channel / dual path
- IP66 (NEMA 7) Wall mount explosionproof enclosure constructed of cast aluminum, stainless steel hardware, optional glass window
  - Single channel
  - Dual channel / dual path
  - Four channel (optional)

Function

- IP65 (NEMA 4X) and IP66 (NEMA 7) flow display computers have integral 33 button keypads and large (128 x 240 pixel) graphic displays visible up to 12 m (40 ft) away
- IP65 (NEMA 7) compact flow display computer has a 2 x 16 Alphanumeric LCD display
- Current, voltage, status alarm, frequency and RS232 outputs (see specification section for details)
- Optional current, voltage and temperature inputs (see specification section for details)
- Zeromatic Path automatically sets zero
- Bidirectional flow operation
- 1 MByte data logger with both site and data logger storage
- English, spanish, german, italian and french language options
## Technical specifications

**SITRANS FUS1010, IP65 (NEMA 4X) Flow display computer**

### Enclosure IP65 (NEMA 4X)

<table>
<thead>
<tr>
<th>Input</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow range</strong></td>
<td>± 12 m/s (± 40 ft/s), bidirectional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pipe size</strong></td>
<td>6.4 mm ... 9.14 m (0.25” ... 360”)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Optional inputs**

- Single channel
  - Current: 2 x 4 ... 20 mA DC
  - Voltage: 2 x 0 ... 10 V DC
  - Temperature: 2 x 4 wire 1 kΩ RTD

### Output

- **Type 3 outputs**
  - Current: 2 x 4 ... 20 mA DC (1 kΩ at 30 V DC)
  - Voltage: 2 x 0 ... 10 V DC (5 kΩ min.)
  - Status Alarm: 4 x SPDT relays
  - Mercury wetted relays
  - Frequency: 2 x 0 ... 5 kHz
  - RS232

- **Optional Type 3 outputs**
  - Mercury wetted relays
  - Expanded I/Os (4 additional 4 ... 20 mA outputs) with form c relays
  - Expanded I/Os with Mercury wetted relays
  - uniMass capability with 1 RTD input and 4 x 4 ... 20 mA analog input

### Accuracy

- **Accuracy**
  - ± 0.5% ... 1.0% of flow, for velocities greater than 0.3 m/s (1 ft/s)
  - ± 0.0015 ... 0.003 m/s (± 0.005 ... 0.01 ft/s), for velocities less than 0.3 m/s (1 ft/s)

- **Batch repeatability**
  - ± 0.15% of flow, for velocities greater than 0.3 m/s (1 ft/s)
  - ± 0.0005 m/s (± 0.0015 ft/s), for velocities less than 0.3 m/s (1 ft/s)

### Data refresh rate

- 5 Hz

### Rated operation conditions

- **Degree of protection**
  - IP65 (NEMA 4X)

- **Liquid temperature**
  - Standard: -40 ... +120 °C (-40 ... +250 °F)
  - Optional: -40 ... +230 °C (-40 ... +450 °F)

- **Ambient temperature**
  - -18 ... +60 °C (0 ... 140 °F)

### Design

- **Dimensions**
  - see SITRANS F US Clamp-on “System info and selection guide”

- **Weight**
  - see diagrams

### Power supply

- 90 ... 240 V AC, 50 ... 60 Hz, 30 VA or 9 ... 36 V DC, 12 W

### Indication and operation

- **Data logger memory**
  - 1 MByte

- **Display**
  - 128 x 240 pixel LCD with backlight

- **Keypad**
  - 33 keypad buttons with tactile feedback

- **Language options**
  - English, spanish, german, italian, french

### Certificates and approvals

- **FM and CSA ratings**
  - I.S. Class I, II, Div 1
  - N-I Class I, Div 2
  - S Class II, Div 2

- **ATEX ratings**
  - Flow display computer
    - Ex II (1) G [EEx ia] IIC
    - Ex II 3 (1) G EEx nC [ia] IIC T5
  - Transducers
    - Ex II 1 G EEx ia IIC T5
    - Ex II 2 G EEx m II T5 (for use with flowmeter in safe area)
SITRANS FF flowmeters
SITRANS F US

SITRANS FUS1010 Standard clamp-on

SITRANS FUS1010, IP65 (NEMA 7) Compact explosionproof

Enclosure IP65 (NEMA 7)

Input
Flow range
± 12 m/s (± 40 ft/s), bidirectional
Pipe size
6.4 mm ... 9.14 m (0.25” ... 360”)
Optional inputs
• Current: 1 x 4 … 20 mA DC
• Temperature: 2 x 4 wire 1 kΩ RTD

Output
Outputs
• Current (externally powered): 1 x 4 … 20 mA DC
• Status Alarm: 1 x Isolated open collector
• Frequency: 2 x 0 … 5 kHz
• RS232

Accuracy
± 0.5% ... 1.0% of flow, for velocities greater than 0.3 m/s (1 ft/s)
± 0.0015 ... 0.003 m/s (± 0.005 ... 0.01 ft/s), for velocities less than 0.3 m/s (1 ft/s)

Batch repeatability
± 0.15% of flow, for velocities greater than 0.3 m/s (1 ft/s)
± 0.0005 m/s (± 0.0015 ft/s), for velocities less than 0.3 m/s (1 ft/s)

Data refresh rate
5 Hz

Certificates and approvals

Indication and operation
Data logger memory
1 MByte
Display
2 x 16 alphanumeric LCD display
Keypad
5 Magnetic hall effect switches
Language options
English, spanish, german, italian, french

FM and CSA ratings
XP Class I, Div 1
D-I Class II, Div 1
I.S. Class I, Div 1
N-I Class I, Div 2
S Class II, Div 2

ATEX ratings
• Flow display computer Ex II 2 (1) G Ex d [ia] IIB + H2 T5
• Transducers

INMETRO ratings (Brazil)
• Flow display computer Ex IIC T5
• Transducers BR Ex d [ia] IIC T5

Power supply
90 ... 240 V AC, 50 ... 60 Hz, 15 VA or 9 ... 36 V DC, 10 W

Design
Dimensions
see SITRANS F US Clamp-on "System info and selection guide"
Weight
see diagrams

Rated operation conditions
Degree of protection
IP65 (NEMA 7)
Liquid temperature
• Standard
-40 ... +120 °C (-40 ... +250 °F)
• Optional
-40 ... +230 °C (-40 ... +450 °F)
Ambient temperature
-18 ... +60 °C (0 ... 140 °F)
SITRANS FUS1010, IP66 (NEMA 7) Wall mount explosionproof enclosure

**Enclosure IP66 (NEMA 7)**

**Input**
- Flow range: ± 12 m/s (± 40 ft/s), bidirectional
- Pipe size: 6.4 mm ... 9.14 m (0.25" ... 360")
- Optional Inputs:
  - Current: 2 x 4 ... 20 mA DC
  - Voltage: 2 x 0 ... 10 V DC
  - Temperature: 2 x 4 wire 1 kΩ RTD

**Output**
- Output:
  - Current: 2 x 4 ... 20 mA DC
  - Voltage: 2 x 0 ... 10 V DC
  - Status Alarm: 4 x SPDT Relays
  - Frequency: 2 x 0 ... 5 kHz
- Single channel

**Accuracy**
- Accuracy:
  - ± 0.5% ... 1.0% of flow, for velocities greater than 0.3 m/s (1 ft/s)
  - ± 0.0015 ... 0.003 m/s (± 0.005 ... 0.01 ft/s), for velocities less than 0.3 m/s (1 ft/s)
- Batch repeatability:
  - ± 0.15% of flow, for velocities greater than 0.3 m/s (1 ft/s)
  - ± 0.005 m/s (± 0.0015 ft/s), for velocities less than 0.3 m/s (1 ft/s)

**Data refresh rate**
- 5 Hz

**Rated operation conditions**
- Degree of protection: IP66 (NEMA 7)
- Liquid temperature:
  - Standard: -40 ... +120 °C (-40 ... +250 °F)
  - Optional: -40 ... +230 °C (-40 ... +450 °F)
- Ambient temperature: -18 ... +60 °C (0 ... 140 °F)

**Design**
- Dimensions: see SITRANS F US Clamp-on “System info and selection guide”
- Weight: see diagrams
- Power supply: 90 ... 240 V AC, 50 ... 60 Hz, 30 VA or 9 ... 36 V DC, 12 W

**Indication and operation**
- Data logger memory: 1 MByte
- Display: 128 x 240 pixel LCD with backlight
- Keypad: 33 keypad buttons with tactile feedback
- Language options: English, spanish, german, italian, french

**Certificates and approvals**
- FM and CSA ratings:
  - XP Class I, Div 1
  - D-I Class II, Div 1
  - I.S. Class I, Div 1
  - N-I Class I, Div 2
  - S Class II, Div 2
- ATEX ratings:
  - Flow display computer: Ex II (1) G [Ex ia] IIC Ex II 3 (1) G Ex nC [ia] IIC T5 Ex II 2 (1) G Ex d [ia II] IIB + H2 T5
  - Transducers:
    - Ex II 1 G EEx ia IIC T5
    - INMETRO ratings (Brazil):
      - Flow display computer: [BR-Ex ia] IIC BR-Ex d [ia IIC] IIB + H2 T5
      - Transducers:
        - BR-Ex ia IIC T5

-50 °C ≤ Ta ≤ +60 °C

© Siemens AG 2009
### SITRANS FUS1010 Standard clamp-on

**Standard MLFB for quick delivery on SITRANS FUS1010 (Dedicated standard)**

#### Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Order code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7ME3530000</td>
<td>K02 + K02 + R02</td>
</tr>
</tbody>
</table>

#### Design (Includes cable glands)

**IP65 (NEMA 4X)**

#### Number of channels/ultrasonic paths

- Single channel
- Dual channel/Dual path

#### Flowmeter functions and I/O configurations

Includes graphic display and Reflexor capability

- Type 1 Standard
  - 2 x 0 ... 10 V
  - 2 x 4 ... 20 mA
  - 2 x pulse output
  - 4 x relay C type

#### Meter power options

90 ... 240 V AC

#### Communication options

RS 232 (standard)

### Transducer for channel 1

(includes pipe mounting kit and spacer bar for indicated max. OD listed)

See „Transducer selection charts“ for specifications.

- no transducer
- A2 universal Trackmount and straps provided upt to 75 mm (3"
- B3 universal Trackmount and straps provided upt to 125 mm (5"
- C3 universal Mounting frame and straps provided up to 300 mm (13"
- D3 universal Mounting frame and straps provided up to 600 mm (24"
- E2 universal Mounting frame and straps provided up to 1200 mm (48")
- C1H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- C2H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D1H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D2H (high precision) Mounting frame and straps provided up to 1200 mm (48")

### Transducer for channel 2

(includes pipe mounting kit for indicated max. OD listed)

See „Transducer selection charts“ for specifications.

- no transducer
- A2 universal Trackmount and straps provided upt to 75 mm (3"
- B3 universal Trackmount and straps provided upt to 125 mm (5"
- C3 universal Mounting frame and straps provided up to 300 mm (13"
- D3 universal Mounting frame and straps provided up to 600 mm (24"
- E2 universal Mounting frame and straps provided up to 1200 mm (48")
- C1H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- C2H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D1H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D2H (high precision) Mounting frame and straps provided up to 1200 mm (48")

#### Approvals

- FM/CSA (default)
- ATEX Exia

1) Supplied spacer bar supports pipes up to 1050 mm (42 inches). For pipes larger than 1050 mm (42 inches) purchase also, spare part 7ME3960-0MS40 (1012BN-4)

Standard MLFB product offering represents 4 to 6 weeks delivery time

K) Subject to export regulations AL; N, ECCN: 5A991X.
### SITRANS FUS1010 Standard clamp-on

#### Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Ord. code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7ME3530-</td>
<td>K</td>
</tr>
<tr>
<td>7ME3531-</td>
<td>K</td>
</tr>
<tr>
<td>7ME3532-</td>
<td>K</td>
</tr>
<tr>
<td>7ME3533-</td>
<td>K</td>
</tr>
</tbody>
</table>

### Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Ord. code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7ME3530-</td>
<td>K</td>
</tr>
<tr>
<td>7ME3531-</td>
<td>K</td>
</tr>
<tr>
<td>7ME3532-</td>
<td>K</td>
</tr>
<tr>
<td>7ME3533-</td>
<td>K</td>
</tr>
</tbody>
</table>

### Flowmeter functions and I/O configurations
- Includes graphic or digital display and Reflexor capability for all except IP65 (NEMA 7) compact units.
- Type 1 Standard (2 x 0 ... 10 V, 2 x 4 ... 20 mA, - 1 x pulse output per channel, - 1 x x relay C type)
- Type 3 option adder
  - UniMass capability with 2 x RTD input and - 1 x analog input per channel
- Other version (Expanded I/O and/or Mercury wetted relays)
  - Add order code and plain text.
- Type 3 with Mercury wetted relays
- Type 3 with expanded I/Os (4 additional 4 ... 20 mA outputs) and C relay
- Type 3 with expanded I/Os and Mercury wetted relays
- Type 1 with Mercury wetted relays

### Meter power options
- 90 ... 240 V AC
- 9 ... 36 V DC (except compact NEMA 7)
- 9 ... 36 V DC negative GND (compact only)
- 9 ... 36 V DC positive GND (compact only)

### Communication options
- RS232 (standard)
- MODBUS (dedicated only, excludes NEMA 7 compact)

### RTD temperature sensor
- Includes mounting hardware for pipes between 1.5" and 24" outer diameter.
- No RTDs
- 1 x standard clamp-on RTD
- 2 x standard clamp-on RTD
- 1 x submersible clamp-on RTD
- 2 x submersible clamp-on RTD
- Special (for insert style RTDs), describe RTD length, thermowell and lagging
- 1 x Insertion style RTD with thermowell and lagging
- 2 x Insertion style RTD with thermowell and lagging

### Transducer for channel 1
- Including pipe mounting tracks for sizes A & B transducers intended for pipe with a OD less than 125 mm (5") and mounting frame/spacer bars for sizes C, D & E transducers. Straps provided are for the maximum OD listed below. Strap kits are available to accommodate larger pipes (refer to spare part list). Refer to "Transducer Selection Charts" for the transducer suitability of pipe size and wall thickness

<table>
<thead>
<tr>
<th>Transducer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2 universal</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>B3 universal</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>C3 universal</td>
<td>Mounting frame and straps provided up to 300 mm (13&quot;)</td>
</tr>
<tr>
<td>D3 universal</td>
<td>Mounting frame and straps provided up to 600 mm (24&quot;)</td>
</tr>
<tr>
<td>E2 universal</td>
<td>Mounting frame and straps provided up to 1200 mm (48&quot;)</td>
</tr>
</tbody>
</table>

For the following A1H to D4H transducers:
- Temperature range is -40 °C to 65 °C (-41 °F to 150 °F), nominal 21 °C (70 °F):
- A1H (high precision) Trackmount and straps provided up to 75 mm (3")
- A2H (high precision) Trackmount and straps provided up to 75 mm (3")
- A3H (high precision) Trackmount and straps provided up to 125 mm (5")
- B1H (high precision) Trackmount and straps provided up to 125 mm (5")
- B2H (high precision) Trackmount and straps provided up to 125 mm (5")
- C1H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- C2H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D1H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D2H (high precision) Mounting frame and straps provided up to 1200 mm (48")
- D4H (high precision) Mounting frame and straps provided up to 1200 mm (48")

1) Supplied spacer bar supports pipes up to 1050 mm (42") for pipes larger than 1050 mm (42") purchase also, spare part 7ME3960-0MS40 (1012BN-4)
2) Supplied spacer bar supports pipes up to 750 mm (30") for pipes larger than 750 mm (30") purchase also, spare part 7ME3960-0MS40 (1012BN-4)
K) Subject to export regulations AL: N, ECCN: 5A991X.
### SITRANS F US

#### SITRANS FUS1010 Standard clamp-on

<table>
<thead>
<tr>
<th>Selection and Ordering data</th>
<th>Order No.</th>
<th>Ord. code</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITRANS FUS1010 Standard clamp-on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>· IP65 (NEMA 4X)</td>
<td>7ME3530-</td>
<td>K</td>
</tr>
<tr>
<td>· IP65 (NEMA 7) compact</td>
<td>7ME3531-</td>
<td>K</td>
</tr>
<tr>
<td>· IP66 (NEMA 7) wall mounted</td>
<td>7ME3532-</td>
<td>K</td>
</tr>
<tr>
<td>· IP66 (NEMA 7) with display window</td>
<td>7ME3533-</td>
<td>K</td>
</tr>
</tbody>
</table>

#### Transducer for channel 1 (continued)

<table>
<thead>
<tr>
<th>Z</th>
<th>P</th>
<th>Y</th>
</tr>
</thead>
</table>

| Other versions (different size, mount, type or pipe larger than DN 1200 (48"), or corrosion resistant), add Order code and plain text. | Z | P | 1 |
|---|---|---|
| High temperature transducer size 2 for up to 230 °C (446 °F) (30 to 200 mm diam. (1.18 to 7.67 inch diam.)) | Z | P | 1 |
| High temperature transducer size 3 for up to 230 °C (446 °F) (150 to 610 mm diam. (5.90 to 24 inch diam.)) | Z | P | 1 |
| High temperature transducer size 4 for up to 230 °C (446 °F) (400 to 1200 mm diam. (15.75 to 47.25 inch diam.)) | Z | P | 1 |

For the following B1H to D4H transducers, temperature range is -1 °C up to 104 °C (30 °F up to 220 °F), nominal 65 °C (150 °F):

<table>
<thead>
<tr>
<th>Z</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1H (high temperature range HP)</td>
<td>C2H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>L</td>
</tr>
<tr>
<td>C1H (high temperature range HP)</td>
<td>C2H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>M</td>
</tr>
<tr>
<td>C2H (high temperature range HP)</td>
<td>C2H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>N</td>
</tr>
<tr>
<td>C1H (high temperature range HP)</td>
<td>C1H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>O</td>
</tr>
<tr>
<td>D1H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>D2H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
<td>D2H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>Q</td>
</tr>
<tr>
<td>D4H (high temperature range HP)</td>
<td>D4H (high temperature range HP)</td>
<td>D4H (high temperature range HP)</td>
</tr>
<tr>
<td>Z</td>
<td>P</td>
<td>R</td>
</tr>
</tbody>
</table>

#### Transducer for channel 2 (continued)

<table>
<thead>
<tr>
<th>Z</th>
<th>P</th>
<th>Y</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2 universal</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A3 universal</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>B3 universal</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>C3 universal</td>
<td>Mounting frame and straps provided up to 300 mm (13&quot;)</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>D3 universal</td>
<td>Mounting frame and straps provided up to 600 mm (24&quot;)</td>
</tr>
<tr>
<td>E2 universal</td>
<td>Mounting frame and straps provided up to 1200 mm (48&quot;)</td>
</tr>
</tbody>
</table>

For the following A1H to D4H transducers, temperature range is -40 °C to 65 °C (-41 °F to 150 °F), nominal 21 °C (70 °F):

<table>
<thead>
<tr>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A2H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A3H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>J</td>
<td>K</td>
</tr>
<tr>
<td>B1H (high precision)</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>B2H (high precision)</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>L</td>
<td>M</td>
</tr>
<tr>
<td>C1H (high precision)</td>
<td>Mounting frame and straps provided up to 1200 mm (48&quot;)</td>
</tr>
</tbody>
</table>

#### Transducer for channel 2

<table>
<thead>
<tr>
<th>Z</th>
<th>P</th>
<th>Y</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>no transducer</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>B3 universal</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>D3 universal</td>
<td>Mounting frame and straps provided up to 600 mm (24&quot;)</td>
</tr>
<tr>
<td>G</td>
<td>H</td>
</tr>
<tr>
<td>A1H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A2H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A3H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>J</td>
<td>K</td>
</tr>
<tr>
<td>B1H (high precision)</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>B2H (high precision)</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>L</td>
<td>M</td>
</tr>
<tr>
<td>C1H (high precision)</td>
<td>Mounting frame and straps provided up to 1200 mm (48&quot;)</td>
</tr>
</tbody>
</table>

#### Approvals

<table>
<thead>
<tr>
<th>F</th>
<th>M</th>
<th>C</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM/CSCA</td>
<td>ATEX</td>
<td>INMETRO (Brazil)</td>
<td>Special ATEX Ex m</td>
</tr>
</tbody>
</table>

For the following A1H to D4H transducers, temperature range is -1 °C up to 104 °C (30 °F up to 220 °F), nominal 65 °C (150 °F):

<table>
<thead>
<tr>
<th>Z</th>
<th>Q</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1H (high temperature range HP)</td>
<td>Z</td>
<td>Q</td>
</tr>
<tr>
<td>C1H (high temperature range HP)</td>
<td>Z</td>
<td>Q</td>
</tr>
<tr>
<td>C2H (high temperature range HP)</td>
<td>Z</td>
<td>Q</td>
</tr>
<tr>
<td>D2H (high temperature range HP)</td>
<td>Z</td>
<td>Q</td>
</tr>
<tr>
<td>D2H (high temperature range HP)</td>
<td>Z</td>
<td>Q</td>
</tr>
<tr>
<td>D4H (high temperature range HP)</td>
<td>Z</td>
<td>Q</td>
</tr>
</tbody>
</table>

Other versions (different size, mount, type or pipe larger than DN 1200 (48"), or corrosion resistant), add Order code and plain text.

<table>
<thead>
<tr>
<th>Z</th>
<th>Q</th>
<th>Y</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2 universal</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A3 universal</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>B3 universal</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>D3 universal</td>
<td>Mounting frame and straps provided up to 600 mm (24&quot;)</td>
</tr>
<tr>
<td>G</td>
<td>H</td>
</tr>
<tr>
<td>A1H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A2H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>A3H (high precision)</td>
<td>Trackmount and straps provided up to 75 mm (3&quot;)</td>
</tr>
<tr>
<td>J</td>
<td>K</td>
</tr>
<tr>
<td>B1H (high precision)</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>B2H (high precision)</td>
<td>Trackmount and straps provided up to 125 mm (5&quot;)</td>
</tr>
<tr>
<td>L</td>
<td>M</td>
</tr>
<tr>
<td>C1H (high precision)</td>
<td>Mounting frame and straps provided up to 1200 mm (48&quot;)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1)</th>
<th>2)</th>
</tr>
</thead>
</table>

1) Supplied spacer bar supports pipes up to 1050 mm (42 inches). For pipes larger than 1050 mm (42 inches) purchase also, spare part 7ME8960-0MS40 (10128N-4).

2) Supplied spacer bar supports pipes up to 750 mm (30 inches). For pipes larger than 750 mm (30 inches) purchase also, spare part 7ME8960-0MS40 (10128N-4).

K) Subject to export regulations AL: N, ECCN: 5A991X.
Application example

A clamp-on meter is required for a 12" carbon steel jet fuel line, with a wall thickness of 12.7 mm (0.5"). Meter electronics are to be located in a Class I Div 2 area only 18 m (60 ft) from the pipeline. 12 V DC power is available at the site.

Dual path operation is desired for improved accuracy and redundant measurement.

MLFB Order No.: 7ME3530-2AB00-0QQ1-Z  K03 + K03

Selection and Ordering data

Order No.  Ord. code
FUS1010 meter family  7 ME 3 5 3 - - 0 - - - -
IP65 (NEMA 4X) enclosure  0
Dual Path  2
Standard I/O option  A
9 ... 36 V DC power option  B
RS232 Standard  0
No RTD required  0
Transducer code for path 1  Q
Transducer code for path 2  Q
FM approval required  1
30 m (100 ft) transducer cable for path 1  K 0 3
30 m (100 ft) transducer cable for path 2  K 0 3

Languages (Meter and Documentation), English (default)
- German  B10
- French  B12
- Spanish  B13
- Italian  B14

Selection and Ordering data

Order code
■ MLFB example

Cableassembly for transducers (add for No. of channels)
See „Transducer cable selection chart”  K..

Cable assembly for RTDs (add for No. of RTDs)
See „RTD cable selection chart”  R..

Cable termination kit (for one cable pair)
- Termination for standard, plenum and armored transducer cable  T01
- Termination for submersible transducer cable  T11
- RTD cable termination kit for standard RTD  T21
- RTD cable termination kit for submersible RTD  T31
- Insert RTD cable termination kit  T41

Tag name plate
- Stainless steel tag with 3.2 mm (0.13 inch) character size (26 characters max.)  Y17
- Stainless steel tag with 3.2 mm (0.13 inch) character size (68 characters max.)  Y19
SITRANS F flowmeters
SITRANS F US

SITRANS FUS1010 Standard clamp-on

Transducer selection charts

Universal transducers for any pipe material

<table>
<thead>
<tr>
<th>Transducer</th>
<th>Order Code</th>
<th>Outer diameter range (mm)</th>
<th>Outer diameter range (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size code</td>
<td>min.</td>
<td>max.</td>
<td>min.</td>
</tr>
<tr>
<td>A2 B</td>
<td>12.7</td>
<td>50.8</td>
<td>0.5</td>
</tr>
<tr>
<td>B3 C</td>
<td>19</td>
<td>127</td>
<td>0.75</td>
</tr>
<tr>
<td>C3 D</td>
<td>51</td>
<td>305</td>
<td>2</td>
</tr>
<tr>
<td>D3 E</td>
<td>203</td>
<td>610</td>
<td>8</td>
</tr>
<tr>
<td>E2 F</td>
<td>254</td>
<td>6096</td>
<td>10</td>
</tr>
</tbody>
</table>

High precision transducers for steel pipe with outer diameter/wall thickness ratio >10

<table>
<thead>
<tr>
<th>Transducer</th>
<th>Order Code</th>
<th>Pipe wall (mm)</th>
<th>Pipe wall (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size code</td>
<td>min.</td>
<td>max.</td>
<td>min.</td>
</tr>
<tr>
<td>A1H G</td>
<td>0.64</td>
<td>1.02</td>
<td>0.025</td>
</tr>
<tr>
<td>A2H H</td>
<td>1.02</td>
<td>1.52</td>
<td>0.04</td>
</tr>
<tr>
<td>A3H J</td>
<td>1.52</td>
<td>2.03</td>
<td>0.06</td>
</tr>
<tr>
<td>B1H K</td>
<td>2.03</td>
<td>3.05</td>
<td>0.08</td>
</tr>
<tr>
<td>B2H L</td>
<td>3.05</td>
<td>4.06</td>
<td>0.12</td>
</tr>
<tr>
<td>C1H M</td>
<td>4.06</td>
<td>5.84</td>
<td>0.16</td>
</tr>
<tr>
<td>C2H N</td>
<td>5.84</td>
<td>8.13</td>
<td>0.23</td>
</tr>
<tr>
<td>D1H P</td>
<td>8.13</td>
<td>11.18</td>
<td>0.32</td>
</tr>
<tr>
<td>D2H Q</td>
<td>11.18</td>
<td>15.75</td>
<td>0.44</td>
</tr>
<tr>
<td>D4H R</td>
<td>15.75</td>
<td>31.75</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Transducer cable selection chart

Transducer cable codes for length and type options

<table>
<thead>
<tr>
<th>Cable length m (ft)</th>
<th>Standard (PVC jacket) -40...+80 °C (-40...+176 °F)</th>
<th>Submersible (polyethylene jacket) -40...+80 °C (-40...+176 °F)</th>
<th>Plenum Rated (teflon jacket) -40...+200 °C (-40...+392 °F)</th>
<th>Armored -40...+80 °C (-40...+176 °F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 (20)</td>
<td>K01 K11 K21 K31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 (50)</td>
<td>K02 K12 K22 K32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 (100)</td>
<td>K03 K13 K23 K33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46 (150)</td>
<td>K04 K14 K24 K34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 (200)</td>
<td>K05 K15 K25 K35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91 (300)</td>
<td>K06 K16 K26 K36</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RTD cable selection chart

RTD cable codes for length and type

<table>
<thead>
<tr>
<th>Cable length m (ft)</th>
<th>Standard (teflon wrapped) -40...+200 °C (-40...+392 °F)</th>
<th>Submersible (extruded jacket) -40...+200 °C (-40...+392 °F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 (20)</td>
<td>R01 R11</td>
<td></td>
</tr>
<tr>
<td>15 (50)</td>
<td>R02 R12</td>
<td></td>
</tr>
<tr>
<td>30 (100)</td>
<td>R03 R13</td>
<td></td>
</tr>
<tr>
<td>46 (150)</td>
<td>R04 R14</td>
<td></td>
</tr>
<tr>
<td>61 (200)</td>
<td>R05 R15</td>
<td></td>
</tr>
<tr>
<td>91 (300)</td>
<td>R06 R16</td>
<td></td>
</tr>
</tbody>
</table>