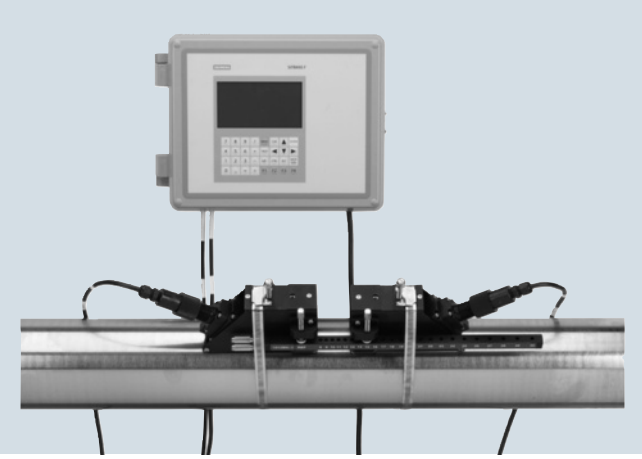
## SITRANS FUS1010 (Standard)



### Overview



SITRANS FUS1010 is the most versatile clamp-on ultrasonic flow display transmitter 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) wall mount, IP65 (NEMA7) compact 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 sensors 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 sensors 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

SITRANS 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
  - Batching
  - Rate indication
  - Volumetric and mass measurement

### Design

SITRANS FUS1010 is available in three configurations:

- IP65 (NEMA 4X) wall mount 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, with glass window
  - Single channel
  - Dual channel/dual path
  - Four channel (optional)

### Function

- IP65 (NEMA 4X) and IP66 (NEMA 7) flow display transmitters 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 transmitter has a 2 x 16 Alphanumeric LCD display
- Current, voltage, status alarm, frequency and RS 232 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 selectable on IP65 (NEMA 7) enclosures[1)]

[1)] Available on NEMA 7 compact as MLFB option, all others are software selectable.

## SITRANS FUS1010 (Standard)



### Technical specifications

SITRANS FUS1010IP65 (NEMA 4X) wall mount

| Enclosure IP65 (NEMA 4X) | |
|---|---|
| **Input** | |
| Flow range | ± 12 m/s (± 40 ft/s), bidirectional |
| Pipe size | 6.4 mm ... 9.14 m (0.25“ ... 360“) |
| Optional inputs<br>Single channel | • Current: 20 mA DC<br>• Voltage: 10 V DC<br>• Temperature: wire 1 kΩ RTD |
| **Output** | |
| Standard outputs | • Current: 20 mA DC (1 kΩ at 30 V DC)<br>• Voltage: 10 V DC (5 kΩ min.)<br>• Status Alarm: 4 x SPDT relays<br>• Form C relays<br>• Frequency: 5 kHz<br>• RS 232 |
| Optional outputs | • Expanded I/Os (additional 4 ... 20 mA outputs) with form c relays<br>• uniMass capability with 1 RTD input and 20 mA analog input<br>• Modbus |
| **Accuracy** | |
| Accuracy | ± 0.5 % ... 1.0 % of flow, for velocities greater than 0.3 m/s (1 ft/s)<br>± 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)<br>± 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<br>9 ... 36 V DC, 12 W |
| **Indication and operation** | |
| Data logger memory | 1 MByte |
| Display | 128 x 240 pixel LCD with back-light |
| Keypad | 33 keypad buttons with tactile feedback |
| Language options | English, Spanish, German, Italian, French selectable by software |
| **Certificates and approvals** | |
| FM and CSA ratings | • Transmitter<br>N-I Class I, Div 2<br>S Class II, Div 2<br>• Sensor<br>I.S. Class I, II, Div 1 |
| CE | EMC Directive 2004/108/EC<br>ATEX Directive 94/9/EC |
| C-TICK | |
| ATEX ratings | • Transmitter:<br>Ex II (1) G [Ex ia] IIC<br>Ex II 3 (1) G Ex nC [ia] IIC T5<br>• Sensors:<br>Ex II 1 G Ex ia IIC T5 |
| INMETRO Ratings | • Transmitter:<br>[BR-Ex ia] IIC<br>BR-Ex nC [ia] IIC T5<br>• Sensors:<br>BR-Ex ia IIC T5 |
| IECEx | Pending |

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 per channel | • Current: 1 x 4 … 20 mA DC<br>• Temperature: 2 x 4 wire 1 kΩ RTD |
| **Output** | |
| Outputs | • Current (externally powered): 1 x 4 … 20 mA DC (1 kΩ at 30 V DC)<br>• Status Alarm: 1 x Isolated open collector<br>• Frequency: 2 x 0 … 5 kHz<br>• RS 232 |
| **Accuracy** | |
| | ± 0.5 % ... 1.0 % of flow, for velocities greater than 0.3 m/s (1 ft/s)<br>± 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)<br>± 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 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, 15 VA or<br>9 ... 36 V DC, 10 W<br>9 ... 36 V DC, 10 W - ground<br>9 ... 36 V DC, 10 W + ground |

| 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 |
| **Certificates and approvals** | |
| FM and CSA ratings | • Transmitter<br>XP Class I, Div 1<br>D-I Class II, Div 1<br>N-I Class I, Div 2<br>S Class II, Div 2<br>• Sensor<br>I.S. Class I, II, Div 1 |
| ATEX ratings | • Flow transmitter: Ex II 2 (1) G Ex d [ia] IIB + H2 T5<br>• Sensors: Ex II 1 G Ex ia IIC T5 |
| INMETRO ratings (Brazil) | • Transmitter: BR Ex d [ia] IIC T5<br>• Sensors: BR-Ex ia IIC T5 |
| IECEx | Pending |
| CE | EMC Directive 2004/108/EC<br>ATEX Directive 94/9/EC |

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## SITRANS FUS1010 (Standard)

SITRANS FUS1010 IP66 (NEMA 7) wall mount explosionproof

| 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 per channel | • Current: 2 x 4 … 20 mA DC<br>• Voltage: 2 x 0 … 10 V DC<br>• Temperature: 2 x 4 wire 1 kΩ RTD |
| **Output** | |
| Outputs single channel | • Current: 2 x 4 … 20 mA DC (1 kΩ at 30 V DC)<br>• Voltage: 2 x 0 … 10 V DC (5 kΩ min.)<br>• Status Alarm: 4 x SPDT Relays<br>• Frequency: 2 x 0 … 5 kHz<br>• RS 232 |
| **Accuracy** | |
| Accuracy | ± 0.5 % ... 1.0 % of flow, for velocities greater than 0.3 m/s (1 ft/s)<br>± 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)<br>± 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 | 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<br>9 ... 36 V DC, 12 W |

| Indication and operation | |
|---|---|
| Data logger memory | 1 MByte |
| Display | 128 x 240 pixel LCD with back-light |
| Keypad | 33 keypad buttons with tactile feedback |
| Language options | English, Spanish, German, Italian, French |
| **Certificates and approvals** | |
| FM and CSA ratings | • Transmitter<br>XP Class I, Div 1<br>D-I Class II, Div 1<br>N-I Class I, Div 2<br>S Class II, Div 2<br>• Sensor<br>I.S. Class I, II, Div 1 |
| CE | EMC Directive 2004/108/EC<br>ATEX Directive 94/9/EC |
| C-TICK | |
| ATEX ratings | • Flow transmitter<br>Ex II (1) G [Ex ia] IIC<br>Ex II 3 (1) G Ex nC [ia] IIC T5<br>Ex II 2 (1) G Ex d [ia IIC] IIB + H2 T5<br>• Sensors:<br>Ex II 1 G Ex ia IIC T5 |
| INMETRO ratings (Brazil) | • Flow transmitter:<br>[BR-Ex ia] IIC<br>BR-Ex d [ia IIC] IIB T5<br>• Sensors:<br>BR-Ex ia IIC T5 |
| IECEx | Pending |

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

| Selection and Ordering data | | Article No. | Order code |
|---|---|---|---|
| **SITRANS FUS1010 (Standard)** | | 7ME353 - ■■■■■ - 0■■■ | ■■■ + K02 + K02 + R02 |
| **Design** | | | |
| IP65 (NEMA 4X) wall mount | | 0 | |
| **Number of channels/ultrasonic paths** | | | |
| Single channel | | 1 | |
| Dual channel/Dual path | | 2 | |
| **Flowmeter functions and I/O configurations** includes graphic display and Reflexor capability | | | |
| Standard outputs<br>• 2 x 0 ... 10 V<br>• 2 x 4 ... 20 mA<br>• 2 x pulse output<br>• 4 x relay C type | | A | |
| **Meter power options** | | | |
| 90 ... 240 V AC | | A | |
| 9 ... 36 V DC (except NEMA 7 compact) | | B | |
| **Communication options** | | | |
| RS 232 (standard) | | 0 | |
| **RTD temperature sensor** | | | |
| (include mounting hardware for pipes between 1.5" and 24" outer diameter) | | | |
| No RTDs | | 0 | |
| 1x standard clamp-on | | 1 | |
| 2x standard clamp-on | | 2 | |
| 1x submersible | | 3 | |
| 2x submersible | | 4 | |
| **Sensor for channel 1** (includes pipe mounting kit and spacer bar for indicated max. OD listed) See "Sensor selection charts" for specifications. | | | |
| no sensor | | | A |
| A2 universal | Trackmount and straps provided up to 75 mm (3") | | B |
| B3 universal | Trackmount and straps provided up to 125 mm (5") | | C |
| C3 universal | Mounting frame and straps provided up to 300 mm (13") | | D |
| D3 universal | Mounting frame and straps provided up to 600 mm (24") | | E |
| E2 universal | Mounting frame and straps provided up to 1200 mm (48")[1)] | | F |
| C1H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2)] | | M |
| C2H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2)] | | N |
| D1H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2)] | | P |
| D4H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2)] | | R |
| Doppler | to 12" with strap kit (not for IP65 (NEMA7)), for up to 121 °C (250 °F) | | S |
| D1H | High temperature range 104 °C/220 °F HP[2)] | | Z P1P |

## SITRANS FUS1010 (Standard)

| Selection and Ordering data | | Article No. / Order code |
|---|---|---|
| **SITRANS FUS1010 (Standard)** | | 7ME3533-■■■■■-0■■■ ■■■ + K02 + K02 + R02 |
| **Sensor for channel 2** (includes pipe mounting kit for indicated max. OD listed) See "Sensor selection charts" for specifications. | | |
| No sensor | | A |
| A2 universal | Trackmount and straps provided up to 75 mm (3") | B |
| B3 universal | Trackmount and straps provided up to 125 mm (5") | C |
| C3 universal | Mounting frame and straps provided up to 300 mm (13") | D |
| D3 universal | Mounting frame and straps provided up to 600 mm (24") | E |
| E2 universal | Mounting frame and straps provided up to 1200 mm (48")[1] | F |
| C1H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2] | M |
| C2H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2] | N |
| D1H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2] | P |
| D4H (high precision) | Mounting frame and straps provided up to 1200 mm (48")[2] | R |
| Doppler | to 12" with strap kit (not for IP65 (NEMA7)), for up to 121 °C (250 °F) | S |
| D1H | High temperature range 104 °C/220 °F HP[2] | Z Q1P |
| **Approvals** | | |
| FM/CSA, CE (default) | | 1 |
| ATEX, CE, C-TICK | | 2 |

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

[2] Supplied spacer bar supports pipes up to 750 mm (30 inch). For pipes larger than 750 mm (30 inch) purchase also, spare part 7ME3960-0MS40 (1012BN-4)

Standard MLFB product offering represents 4 to 6 weeks delivery time.

For sensor and RTD cables for quick delivery see tables at end of section.

| Selection and Ordering data | Article No. | Ord. code |
|---|---|---|
| **SITRANS FUS1010 (Standard)** | | |
| • IP65 (NEMA 4X) wall mount | **7ME3530-** | |
| • IP65 (NEMA 7) compact explosionproof | **7ME3531-** | |
| • IP66 (NEMA 7) wall mount explosionproof | **7ME3533-** | |
| | **0 -** | |
| **Number of channels/ultrasonic paths** | | |
| Single channel | **1** | |
| Dual channel/Dual path | **2** | |
| Special: Four channel/Four path (NEMA 4X wall mount and NEMA 7 wall mount explosionproof only) | **9** | **H 1 A** |
| **Flowmeter functions and I/O configurations** includes graphic or digital display and Reflexor capability for all except IP65 (NEMA 7) compact units | | |
| IP65 (NEMA 4X) wall mount and IP66 (NEMA 7 wall mount explosionsproof) units | | |
| • Standard outputs<br>- 2 x 0 ... 10 V<br>- 2 x 4 ... 20 mA<br>- 2 x pulse output<br>- 4 x relay C type | **A** | |
| For H1A multi channel option above:<br>- 4 x 0 ... 10 V<br>- 4 x 4 ... 20 mA<br>- 4 x relay C type | | |
| • Standard outputs with optional input adder<br>- UniMass capability with 2 x RTD input (1 x RTD only for H1A multi channel option)<br>- 4 x 4 ... 20 mA analog input | **C** | |
| • Extended outputs plus optional inputs (Dual channel only)<br>Outputs:<br>- 2 x 0 ... 10 V<br>- 2 x 4 ... 20 mA active<br>- 4 x 4 ... 20 mA passive<br>- 2 x 0 ... 5K pulse<br>- 4 x relay C type<br>Inputs:<br>- 4 x 4 ... 20 mA<br>- 1 x RTD inputs per chanel | **Z** | **J 1 B** |
| IP65 (NEMA 7) compact explosionproof units | | |
| • Standard outputs<br>- 1 x 4 ... 20 mA (Loop) and 1 x status (open collector) **per channel**<br>- 1 x pulse output for single channel units only | **D** | |
| • Standard outputs with optional input adder<br>- UniMass capability with 1 RTD input (1x RTD only, for H1A multi channel option)<br>- 1 x analog input **per channel** | **F** | |
| **Meter power options** | | |
| 90 ... 240 V AC | **A** | |
| 9 ... 36 V DC (except compact NEMA 7) | **B** | |
| 9 ... 36 V DC negative GND (compact only) | **J** | |
| 9 ... 36 V DC positive GND (compact only) | **K** | |

| Selection and Ordering data | Article No. | Ord. code |
|---|---|---|
| **SITRANS FUS1010 (Standard)** | | |
| • IP65 (NEMA 4X) wall mount | **7ME3530-** | |
| • IP65 (NEMA 7) compact explosionproof | **7ME3531-** | |
| • IP66 (NEMA 7) wall mount explosionproof | **7ME3533-** | |
| | **0 -** | |
| **Communication options** | | |
| RS 232 (standard) | **0** | |
| Standard MODBUS configurations include Baudrate: 9600, Parity: None, Stop Bits: 1, Data bits: 8, MODBUS data: 16 bit, Data format: word normal, Mode: RTU, and MODBUS format: Gould. For other configurations please select option 9 and L1Y and state requirements in plain text. | | |
| MODBUS (excludes compact) for Single channel systems | **1** | |
| MODBUS (excludes compact) for Dual channel systems | **2** | |
| MODBUS (excludes compact) for Dual path systems | **3** | |
| MODBUS (excludes compact) for Four channel systems | **4** | |
| MODBUS (excludes compact) for Four path systems | **5** | |
| Other Version,MODBUS, N2, Other Baud Rate, Other Parity, State in Plain Text | **9** | |
| **RTD temperature sensor** (includes mounting hardware for pipes between 1.5“ and 24“ outer diameter) | | |
| No RTDs | **0** | |
| 1 x Standard clamp-on RTD | **1** | |
| 2 x Standard clamp-on RTD | **2** | |
| 1 x Submersible clamp-on RTD | **3** | |
| 2 x Submersible clamp-on RTD | **4** | |
| 1 x Insertion style RTD with thermowell and lagging | **9** | **N 1 A** |
| 2 x Insertion style RTD with thermowell and lagging | **9** | **N 1 B** |
| **Sensor for channel 1** Including pipe mounting tracks for sizes A & B sensors indented for pipe with a OD less than 125 mm (5") and mounting frame/spacer bars for sizes C, D & E sensors. Straps provided are for the indicated maximum OD listed below. Strap kits are available to accommodate larger pipes (refer to spare part list). Refer to "Sensor Selection Charts" for the sensor suitability of pipe size and wall thickness". | | |
| no sensor | **A** | |
| A2 universal — Trackmount and straps provided up to 75 mm (3”) | **B** | |
| B3 universal — Trackmount and straps provided up to 125 mm (5”) | **C** | |
| C3 universal — Mounting frame and straps provided up to 300 mm (13”) | **D** | |
| D3 universal — Mounting frame and straps provided up to 600 mm (24”) | **E** | |
| E2 universal — Mounting frame and straps provided up to 1200 mm (48”)[1)] | **F** | |

## SITRANS FUS1010 (Standard)



| Selection and Ordering data | Article No. | Ord. code |
|---|---|---|
| **SITRANS FUS1010 (Standard)** | | |
| • IP65 (NEMA 4X) wall mount | **7ME3530-** | |
| • IP65 (NEMA 7) compact explosionproof | **7ME3531-** | |
| • IP66 (NEMA 7) wall mount explosionproof | **7ME3533-** | |
| | ■■■■ **0 -** ■■■■ | ■■■ |
| **Sensor for channel 1 (continued)** | | |
| For the following A1H to D4H sensors, temperature range is -40 °C ... 65 °C | | |
| A2H (high precision) Trackmount and straps provided up to 75 mm (3") | | **H** |
| A3H (high precision) Trackmount and straps provided up to 75 mm (3") | | **J** |
| B1H (high precision) Trackmount and straps provided up to 125 mm (5") | | **K** |
| B2H (high precision) Trackmount and straps provided up to 125 mm (5") | | **L** |
| C1H (high precision) Mounting frame and straps provided up to 1200 mm (48") | | **M** |
| C2H (high precision) Mounting frame and straps provided up to 1200 mm (48") | | **N** |
| D1H (high precision) Mounting frame and straps provided up to 1200 mm (48")[2] | | **P** |
| D2H (high precision) Mounting frame and straps provided up to 1200 mm (48")[2] | | **Q** |
| D4H (high precision) Mounting frame and straps provided up to 1200 mm (48")[2] | | **R** |
| Doppler to 12" with strap kit (not for IP65 (NEMA 7)), for up to 121 °C (250 °F) | | **S** |
| High temperature sensor size 2 for up to 230 °C (446 °F) (30 to 200 mm diam. (1.18 to 7.67 inch diam.)) | | **Z** **P 1 A** |
| High temperature sensor size 3 for up to 230 °C (446 °F) (150 to 610 mm diam. (5.90 to 24 inch diam.)) | | **Z** **P 1 B** |
| High temperature sensor size 4 for up to 230 °C (446 °F) (400 to 1200 mm diam. (15.75 to 47.25 inch diam.)) | | **Z** **P 1 C** |
| For the following B1H to D4H sensors, temperature range is -1 °C up to 104 °C (30 °F up to 220 °F), nominal 65 °C (150 °F): | | |
| B1H (high temperature range HP) | | **Z** **P 1 K** |
| B2H (high temperature range HP) | | **Z** **P 1 L** |
| C1H (high temperature range HP) | | **Z** **P 1 M** |
| C2H (high temperature range HP) | | **Z** **P 1 N** |
| D1H (high temperature range HP)[2] | | **Z** **P 1 P** |
| D2H (high temperature range HP)[2] | | **Z** **P 1 Q** |
| D4H (high temperature range HP)[2] | | **Z** **P 1 R** |

| Selection and Ordering data | Article No. | Ord. code |
|---|---|---|
| **SITRANS FUS1010 (Standard)** | | |
| • IP65 (NEMA 4X) wall mount | **7ME3530-** | |
| • IP65 (NEMA 7) compact explosionproof | **7ME3531-** | |
| • IP66 (NEMA 7) wall mount explosionproof | **7ME3533-** | |
| | ■■■■ **0 -** ■■■■ | ■■■ |
| **Sensor for channel 2** (includes pipe mounting kit for indicated max. OD listed) See "Sensor selection charts" for specifications. | | |
| no sensor | | **A** |
| A2 universal Trackmount and straps provided up to 75 mm (3") | | **B** |
| B3 universal Trackmount and straps provided up to 125 mm (5") | | **C** |
| C3 universal Mounting frame and straps provided up to 300 mm (13") | | **D** |
| D3 universal Mounting frame and straps provided up to 600 mm (24") | | **E** |
| E2 universal Mounting frame and straps provided up to 1200 mm (48")[1] | | **F** |
| For the following A1H to D4H sensors, temperature range is -40 °C to 65 °C (-41 °F to 150 °F), nominal 21 °C (70 °F): | | |
| A2H (high precision) Trackmount and straps provided up to 75 mm (3") | | **H** |
| A3H (high precision) Trackmount and straps provided up to 75 mm (3") | | **J** |
| B1H (high precision) Trackmount and straps provided up to 125 mm (5") | | **K** |
| B2H (high precision) Trackmount and straps provided up to 125 mm (5") | | **L** |
| C1H (high precision) Mounting frame and straps provided up to 1200 mm (48") | | **M** |
| C2H (high precision) Mounting frame and straps provided up to 1200 mm (48") | | **N** |
| D1H (high precision) Mounting frame and straps provided up to 1200 mm (48")e[2] | | **P** |
| D2H (high precision) Mounting frame and straps provided up to 1200 mm (48")[2] | | **Q** |
| D4H (high precision) Mounting frame and straps provided up to 1200 mm (48")[2] | | **R** |
| Doppler to 12" with strap kit (not for IP65 (NEMA 7)), for up to 121 °C (250 °F) | | **S** |

| Selection and Ordering data | Article No. | Ord. code |
|---|---|---|
| **SITRANS FUS1010 (Standard)** | | |
| • IP65 (NEMA 4X) wall mount | **7ME3530-** | |
| • IP65 (NEMA 7) compact explosionproof | **7ME3531-** | |
| • IP66 (NEMA 7) wall mount explosionproof | **7ME3533-** | |
| | **0 -** | |
| **Sensor for channel 2 (continued)** | | |
| High temperature sensor size 2 for up to 230 °C (446 °F) (30 to 200 mm diam. (1.18 to 7.67 inch diam.)) | | **Z Q 1 A** |
| High temperature sensor size 3 for up to 230 °C (446 °F) (150 to 610 mm diam. (5.90 to 24 inch diam.)) | | **Z Q 1 B** |
| High temperature sensor size 4 for up to 230 °C (446 °F) (400 to 1200 mm diam. (15.75 to 47.25 inch diam.)) | | **Z Q 1 C** |
| For the following B1H to D4H sensors, temperature range is -1 °C up to 104 °C (30 °F up to 220 °F), nominal 65 °C (150 °F): | | |
| B1H (high temperature range HP) | | **Z Q 1 K** |
| B2H (high temperature range HP) | | **Z Q 1 L** |
| C1H (high temperature range HP) | | **Z Q 1 M** |
| C2H (high temperature range HP) | | **Z Q 1 N** |
| D1H (high temperature range HP)[2] | | **Z Q 1 P** |
| D2H (high temperature range HP)[2] | | **Z Q 1 Q** |
| D4H (high temperature range HP)[2] | | **Z Q 1 R** |
| **Approvals** | | |
| FM/CSA, CE | | **1** |
| ATEX, CE, C-TICK | | **2** |
| INMETRO (Brazil) | | **3** |

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

[2] Supplied spacer bar supports pipes up to 750 mm (30 inch). For pipes larger than 750 mm (30 inch) purchase also, spare part 7ME3960-0MS40 (1012BN-4).

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs*** | |
| Please add "**-Z**" to Article No. and specify Order code(s). | |
| Cable assembly for sensors (add for No. of channels) See "Sensor 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 sensor cable | **T01** |
| • Termination for submersible sensor cable | **T11** |
| • RTD cable termination kit for standard RTD | **T21** |
| • RTD cable termination kit for submersible RTD | **T31** |
| • Insert RTD cable termination kit | **T41** |
| Languages (Meter and Documentation), English (default) for compact NEMA 7 only | |
| • German | **B10** |
| • French | **B12** |
| • Spanish | **B13** |
| • Italian | **B14** |
| Wet flow transfer calibration (priced on request) | |
| 6 point calibration 2/water (Price per channel) | |
| • 2SS40 pipe | **D01** |
| • 3CS40 pipe | **D02** |
| • 4CS40 pipe | **D03** |
| • 4SS40 pipe | **D04** |
| • 6CS40 pipe | **D05** |
| • 6SS40 pipe | **D06** |
| • 6CS120 pipe | **D07** |
| • 8CS40 pipe | **D08** |
| • 8SS40 pipe | **D09** |
| • 8CS120 pipe | **D10** |
| • 10CS Standard pipe | **D11** |
| • 10CS40 pipe | **D12** |
| • 10SS40 pipe | **D13** |
| • 12CS Standard pipe | **D14** |
| • 12CS40 pipe | **D15** |
| • 14CS30 pipe | **D16** |
| • 14CS40 pipe | **D17** |
| • 16CS Standard pipe | **D18** |
| • 16CS40 pipe | **D19** |
| • 18CS Standard pipe | **D20** |
| • 20CS20 pipe | **D21** |
| • 20CS30 pipe | **D22** |
| • 24CS Standard pipe | **D23** |
| • 24CS20 pipe | **D24** |
| • 24CS30 pipe | **D25** |
| • 30CS Standard pipe | **D26** |
| • 36CS Standard pipe | **D27** |
| • Other pipe, other liquid, additional points, witness | **Y28** |
| Tag name plate | |
| • Stainless steel tag with 3.2 mm (0.13 inch) character size (68 characters max.) | **Y19** |
| **Operating Instructions for SITRANS FUS1010** | Article No. |
| English NEMA 4X wall mount & NEMA 7 wall mount explosionproof | **A5E02951520** |
| German NEMA 4X & wall mount NEMA 7 wall mount explosionproof | **A5E02951532** |
| NEMA 7 compact explosionproof | **CQO:1010XFM-3** |

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/flowdocumtenion

## SITRANS FUS1010 (Standard)



### MLFB example

#### *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 Article No.: **7ME3530-2AB00-0QQ1-Z**
**K03 + K03**

| Selection and Ordering data | Article No. | Ord. code |
|---|---|---|
| **SITRANS FUS1010 meter family** | **7 M E 3 5 3 -** | **0 -** |
| IP65 (NEMA 4X) enclosure | **0** | |
| Dual Path | **2** | |
| Standard I/O option | **A** | |
| 9 ... 36 V DC power option | **B** | |
| RS 232 Standard | **0** | |
| No RTD required | | **0** |
| Sensor code for path 1 | | **Q** |
| Sensor code for path 2 | | **Q** |
| FM approval required | | **1** |
| 30 m (100 ft) sensor cable for path 1 | | **K 0 3** |
| 30 m (100 ft) sensor cable for path 2 | | **K 0 3** |

#### *Universal sensor selection chart IP68*

| Based on pipe size (pipes other than steel) | | | | | |
|---|---|---|---|---|---|
| **Sensor** | **Order Code** | **Outer diameter range (mm)** | | **Outer diameter range (inch)** | |
| **Pipe size** | | **min.** | **max.** | **min.** | **max.** |
| A2 | **B** | 12.7 | 50.8 | 0.5 | 2 |
| B3 | **C** | 19 | 127 | 0.75 | 5 |
| C3 | **D** | 51 | 305 | 2 | 12 |
| D3 | **E** | 203 | 610 | 8 | 24 |
| E2 | **F** | 254 | 6 096 | 10 | 240 |

#### *High precision sensor selection chart IP68*

| Based on pipe wall thickness (steel pipes only) | | | | | |
|---|---|---|---|---|---|
| **Sensor** | **Order Code** | **Pipe wall (mm)** | | **Pipe wall (inch)** | |
| **Pipe wall** | | **min.** | **max.** | **min.** | **max.** |
| A1H | **G** | 0.64 | 1.02 | 0.025 | 0.04 |
| A2H | **H** | 1.02 | 1.52 | 0.04 | 0.06 |
| A3H | **J** | 1.52 | 2.03 | 0.06 | 0.08 |
| B1H | **K** | 2.03 | 3.05 | 0.08 | 0.12 |
| B2H | **L** | 3.05 | 4.06 | 0.12 | 0.16 |
| C1H | **M** | 4.06 | 5.84 | 0.16 | 0.23 |
| C2H | **N** | 5.84 | 8.13 | 0.23 | 0.32 |
| D1H | **P** | 8.13 | 11.18 | 0.32 | 0.44 |
| D2H | **Q** | 11.18 | 15.75 | 0.44 | 0.62 |
| D4H | **R** | 15.75 | 31.75 | 0.62 | 1.25 |

#### *Sensor cable (pair) selection chart*

| Sensor cable codes for length and type options | | | | |
|---|---|---|---|---|
| **Cable length m (ft)** | **Standard (PVC jacket)** -40…+80 °C (-40…+176 °F) | **Submersible (polyethylene jacket)** -40…+80 °C (-40…+176 °F) | **Plenum Rated (teflon jacket)** -40…+200 °C (-40…+392 °F) | **Armored** -40…+80 °C (-40…+176 °F) |
| | **Order code** | | | |
| 6 (20) | **K01**[1] | **K11** | **K21** | **K31** |
| 15 (50) | **K02**[1] | **K12**[1] | **K22** | **K32**[1] |
| 30 (100) | **K03**[1] | **K13**[1] | **K23** | **K33** |
| 46 (150) | **K04**[1] | **K14** | **K24** | **K34** |
| 61 (200) | **K05** | **K15** | **K25** | **K35** |
| 91 (300) | **K06**[1] | **K16** | **K26** | **K36** |

#### *RTD cable (single) selection chart*

| RTD cable codes for length and type | | | |
|---|---|---|---|
| **Cable length m (ft)** | **Standard (teflon wrapped)** -40 ... +200 °C (-40 … +392 °F) | **Submersible (extruded jacket)** -40 ... +200 °C (-40 … +392 °F) | |
| | **Order code** | | |
| 6 (20) | **R01**[1] | **R11** | |
| 15 (50) | **R02**[1] | **R12** | |
| 30 (100) | **R03**[1] | **R13** | |
| 46 (150) | **R04** | **R14** | |
| 61 (200) | **R05** | **R15** | |
| 91 (300) | **R06** | **R16** | |

[1] Standard MLFB for quick delivery