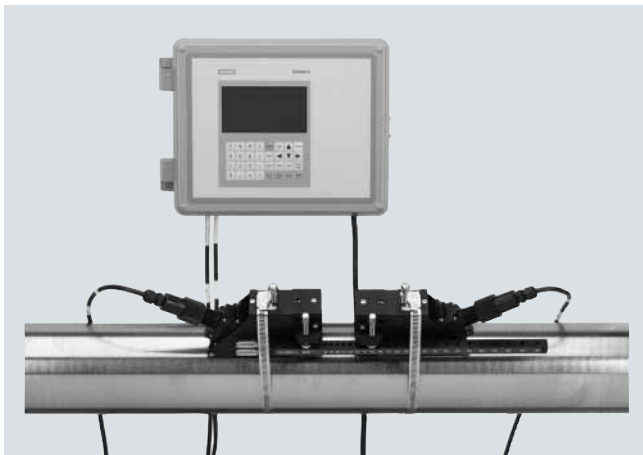## Overview

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) 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 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

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

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, 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 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 selectable on compact 7 enclosures

Flow Measurement
SITRANS F US Clamp-on

SITRANS FUS1010 Standard clamp-on

■ **Technical specifications**

SITRANS FUS1010, IP65 (NEMA 4X) Flow transmitter

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 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	
Standard 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 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
CE	EMC Directive 2004/108/EC LVD Directive 2006/95/EG C-TICK
ATEX ratings	• Transmitter: Ex II (1) G [Ex ia] IIC Ex II 3 (1) G Ex nC [ia] IIC T5 • Sensors: Ex II 1 G Ex ia IIC T5
INMETRO Ratings	• Transmitter: [BR-Ex ia] IIC BR-Ex nC [ia] IIC T5 • Sensors: BR-Ex ia IIC T5

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 single channel	• 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 (1 kΩ at 30 V 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
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 9 ... 36 V DC, 10 W

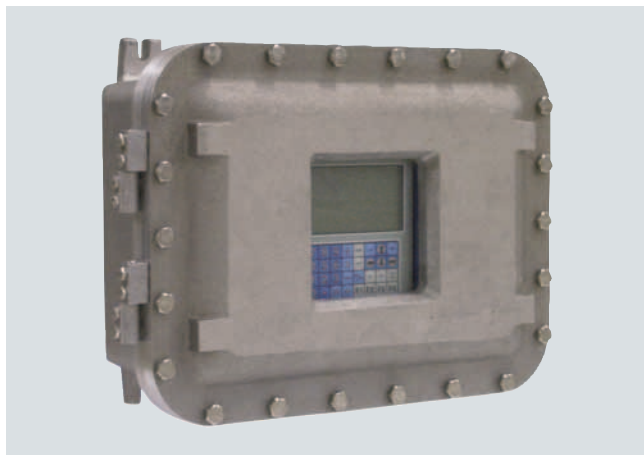| Indication and operation	
Data logger memory	1 MByte
Display	2 x 16 alphanumeric LCD display
Keypad	5 Magnetic hall effect switches
Language options	English, spanish, german, italian, french
Certificates and approvals	
FM and CSA ratings	XP Class I, Div 1 D-I Class II, Div 1 I.S. Class I, Div 1 N-I Class I, Div 2 S Class II, Div 2
ATEX ratings	• Flow transmitter: Ex II 2 (1) G Ex d [ia] IIB + H2 T5 • Sensors: Ex II 1 G Ex ia IIC T5
INMETRO ratings (Brazil)	• Transmitter: BR Ex d [ia] IIC T5 • Sensors: BR-Ex ia IIC T5

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Flow Measurement
SITRANS F US Clamp-on

SITRANS FUS1010 Standard clamp-on

SITRANS FUS1010, IP66 (NEMA 7) Wall mount explosionproof enclosure

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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 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	
Outputs single channel	• 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 • Frequency: 2 x 0 … 5 kHz • RS232
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	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 back-light
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
CE	EMC Directive 2004/108/EC
	LVD Directive 2006/95/EG
	C-TICK
ATEX ratings	• Flow tranmitter 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 IIC] IIB + H2 T5 • Sensors: Ex II 1 G Ex ia IIC T5
INMETRO ratings (Brazil)	• Flow transmitter: [BR-Ex ia] IIC BR-Ex d [ia IIC] IIB T5 • Sensors: BR-Ex ia IIC T5

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

Selection and Ordering data		Order No.	Order code
SITRANS FUS1010 Standard clamp-on	L)	7ME353■ - ■■■■■ - 0■■■	■■■ + K02 + K02 + R02
Design			
IP65 (NEMA 4X)		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		A	
• 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		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))	S	
D1H	High temperature range 104 °C / 220 °F HP[2]	Z	P1P

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Flow Measurement
SITRANS F US Clamp-on

SITRANS FUS1010 Standard clamp-on

Selection and Ordering data		Order No.	Order code
SITRANS FUS1010 Standard clamp-on		L) **7ME353■** - **■■■■■** - **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))	**S**
D1H	High temperature range 104 °C / 220 °F HP[2]	**Z** **Q1P**

Approvals

FM/CSA, CE, C-TICK (default)	**1**
ATEX, CE, C-TICK	**2**

[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)

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

Standard MLFB product offering represents 4 to 6 weeks delivery time

L) Subject to export regulations AL: N, ECCN: 3A991X.

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

Selection and Ordering data		Order No.	Ord. code
SITRANS FUS1010 Standard clamp-on			
• IP65 (NEMA 4X)	L)	**7ME3530-**	
• IP65 (NEMA 7) compact	L)	**7ME3531-**	
• IP66 (NEMA 7) wall mounted	L)	**7ME3533-**	
		■■■■0 - ■■■■ ■■■	

Number of channels/ultrasonic paths

Single channel	**1**	
Dual channel / Dual path	**2**	
Special: Four channel / Four path (NEMA 4X and NEMA 7 wall mount 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) and IP66 (NEMA 7 wall mounted) units

• Standard outputs
  - 2 x 0 ... 10 V
  - 2 x 4 ... 20 mA
  - 2 x pulse output
  - 4 x relay C type
	A	

• Standard outputs with optional input adder
  - UniMass capability with 2 x RTD input and
  - 4 x 4 ... 20 mA analog input
	C	

IP65 (NEMA 7) compact units

• Standard outputs
  - 1 x 4 ... 20 mA (Loop) and 1 x status (open collector) **per channel**
  - 1 x pulse output for single channel units only
	D	

• Standard outputs with optional input adder
  - UniMass capability with 1 RTD input and
  - 1 x analog input **per channel**
	F	

• Standard outputs with Mercury wetted relays and optional input adder	**Z**	**J 1 A**
• Extended outputs adder with optional input adder (4 additional 4 ... 20 mA outputs) and form C relay	**Z**	**J 1 B**
• Extended outputs adder with optional input adder (4 additional 4 ... 20mA outputs) and Mercury wetted relays	**Z**	**J 1 C**
• Standard outputs with Mercury wetted relays	**Z**	**J 1 D**

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**	

Communication options

RS232 (standard)	**0**	
MODBUS (dedicated only, excludes NEMA 7 compact)	**1**	

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"

		Ord. code
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):

		Ord. code
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))	**S**

[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)

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

L) Subject to export regulations AL: N, ECCN: 5A991X.

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Flow Measurement
SITRANS F US Clamp-on

SITRANS FUS1010 Standard clamp-on

Selection and Ordering data	Order No.	Ord. code
SITRANS FUS1010 Standard clamp-on		
• IP65 (NEMA 4X)	L) **7ME3530-**	
• IP65 (NEMA 7) compact	L) **7ME3531-**	
• IP66 (NEMA 7) wall mounted	L) **7ME3533-**	
	▪▪▪▪ 0 - ▪▪▪▪ ▪▪▪	

Sensor for channel 1 (continued)

		Ord. code
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):

	Ord. code
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

Sensor for channel 2
(includes pipe mounting kit for indicated max. OD listed)
See „Sensor selection charts" for specifications.

		Ord. code
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):

		Ord. code
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

Selection and Ordering data	Order No.	Ord. code
SITRANS FUS1010 Standard clamp-on		
• IP65 (NEMA 4X)	L) **7ME3530-**	
• IP65 (NEMA 7) compact	L) **7ME3531-**	
• IP66 (NEMA 7) wall mounted	L) **7ME3533-**	
	▪▪▪▪ 0 - ▪▪▪▪ ▪▪▪	

Sensor for channel 2 (continued)

		Ord. code
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))	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 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):

	Ord. code
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

	Ord. code
FM/CSA, CE, C-TICK	1
ATEX, CE, C-TICK	2
INMETRO (Brazil)	3

[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).

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

L) Subject to export regulations AL: N, ECCN: 5A991X.

Selection and Ordering data	Order code
Further designs	
Please add „**-Z**" to Order 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)	
• German	**B10**
• French	**B12**
• Spanish	**B13**
• Italian	**B14**
Wet flow transfer calibration (priced on request)	
• 6 point up to 4 inch (DN 100)	**D10**
• 6 point up to 5 to 8 inch (DN 125 to DN 200)	**D11**
• 6 point up to 10 to 12 inch (DN 250 to DN 300)	**D12**
• 6 point up to 14 to 16 inch (DN 350 to DN 400)	**D13**
• 6 point up to 18 to 20 inch (DN 450 to DN 500)	**D14**
• 6 point up to 22 to 24 inch (DN 550 to DN 600)	**D15**
• 6 point up to 26 to 30 inch (DN 650 to DN 750)	**D16**
• 6 point up to 32 to 36 inch (DN 800 to DN 900)	**D17**
Tag name plate	
• Stainless steel tag with 3.2 mm (0.13 inch) character size (68 characters max.)	**Y19**
Operating Instructions for FUS1010	Order No.
English NEMA 4x & NEMA 7 Wall Mount	**A5E02951520A**
German NEMA 4x & NEMA 7 Wall Mount	**A5E02951532A**
NEMA 7 Compact	**CQ0:1010XFM-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

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

Selection and Ordering data	Order No.	Ord. code
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**	
RS232 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**

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Flow Measurement
SITRANS F US Clamp-on

SITRANS FUS1010 Standard clamp-on

Sensor selection charts

Universal sensors for any pipe material

Sensor Size code	Order Code	Outer diameter range (mm)		Outer diameter range (inches)	
		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 sensors for steel pipe with outer diameter/wall thickness ratio >10

Sensor Size code	Order Code	Pipe wall (mm)		Pipe wall (inches)	
		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 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 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

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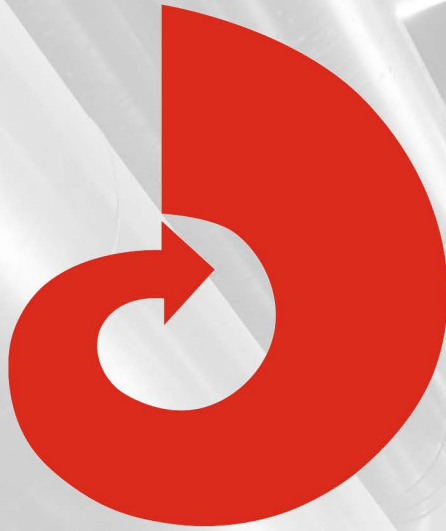
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We offer a full range of valve & instrumentation products & services, with our product rangerepresenting leading technologies & brands:

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Temperature: Temperature Probes & Thermowells, Temperature ransmitters,Temperature Regulators & Temperature Displays

Level: Level Transmitters & Switches

Pressure: Pressure Gauges &Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

Precision Pneumatics: Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

Valves: Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

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