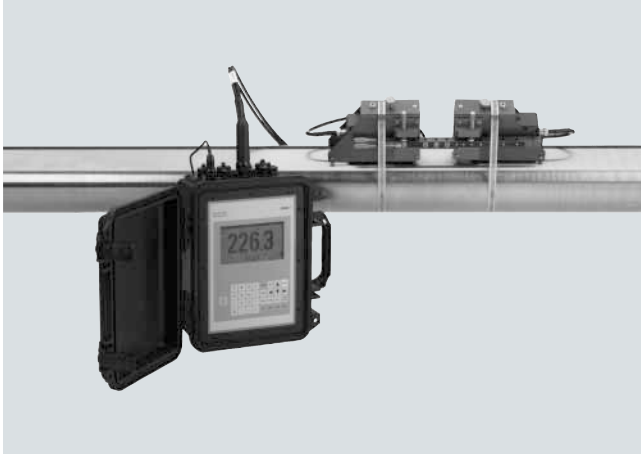


### Overview



SITRANS FUP1010 clamp-on non-intrusive ultrasonic flow transmitter offers maximum versatility plus battery power for portable field use. It can operate in either WideBeam transit time or reflexor (Doppler) mode, making it suitable for virtually any liquid, even those with high aeration or suspended solids.

SITRANS FUP1010 is available in single and dual channel or dual path configurations, with IP67 weatherproof enclosure.

### Benefits

- Battery power facilitates field use; the meter is easily transported from one installation to another – saving time for surveys, monitoring and temporary installations
- Weatherproof enclosure can be used outdoors and left in place without concern for rain damage
- Rugged plastic case enables it to withstand rough treatment that would destroy most other meters
- 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 wear or foul
- No pressure drop or energy loss
- Wide turn-down ratio
- Choice of single or dual channel models minimizes total cost
- ZeroMatic Path automatically sets zero without stopping flow and reduces zero drift, even at low flow
- Note that the FUP1010 flow transmitter is not available with hazardous area approvals

### Application

FUP1010 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
  - Thermal energy rate and total
- Power industry
  - Nuclear
  - Fossil
  - Hydroelectric
- Processing industry
  - Process control
  - Batching
  - Rate indication
  - Volumetric and mass measurement

### Design

- IP67 Weatherproof / Impact resistant enclosure constructed of mineral reinforced copolymer polypropylene
  - Single channel
  - Dual channel / dual path

### Function

- Integral 33 button keypad and large (128 x 240 pixel) graphic display visible up to 12 m (40 ft) away
- Current, voltage, 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
- Bi-directional flow operation
- 1 MByte data logger with both site and data logger storage
- English, spanish, german, italian and french language options

# Flow Measurement

## SITRANS F US Clamp-on

### SITRANS FUP1010 (portable)

#### Technical specifications

<b>Input</b>	
Flow range	$\pm 12$ m/s ( $\pm 40$ ft/s), bidirectional
Pipe size	6.4 mm ... 9.14 m (0.25" ... 360")
Inputs, single channel	<ul style="list-style-type: none"> <li>• Current: 2 x 4 ... 20 mA DC</li> <li>• Voltage: 2 x 0 ... 10 V DC</li> <li>• Temperature: 2 x 4 wire 1 k<math>\Omega</math> RTD</li> </ul>
<b>Output</b>	
Outputs	<ul style="list-style-type: none"> <li>• Current: 2 x 4 ... 20 mA DC (1 k<math>\Omega</math> at 30 V DC)</li> <li>• Voltage: 2 x 0 ... 10 V DC (5 k<math>\Omega</math> minimum)</li> <li>• Status Alarm: 4 x SPDT Relays</li> <li>• Frequency: 2 x 0 ... 5000 Hz</li> <li>• RS232</li> </ul>
<b>Accuracy</b>	
Accuracy	$\pm 0.5\%$ ... 2% of flow, for velocities greater than 0.3 m/s (1 ft/s) $\pm 0.0015$ ... 0.006 m/s ( $\pm 0.005$ ... 0.02 ft/s), for velocities less than 0.3 m/s (1 ft/s)
Batch repeatability	$\pm 0.15\%$ of flow, for velocities greater than 0.3 m/s (1 ft/s) $\pm 0.0005$ m/s ( $\pm 0.0015$ ft/s), for velocities less than 0.3 m/s (1 ft/s)
<b>Rated operation conditions</b>	
Degree of protection	<ul style="list-style-type: none"> <li>• Weatherproof/impact resistant</li> <li>• IP67</li> </ul>
Liquid temperature	<ul style="list-style-type: none"> <li>• Standard</li> <li>• Optional</li> </ul>
Ambient temperature	<ul style="list-style-type: none"> <li>• Standard: -40 ... +120 °C (-40 ... +250 °F)</li> <li>• Optional: -40 ... +230 °C (-40 ... +450 °F)</li> <li>• Ambient: -18 ... +60 °C (0 ... 140 °F)</li> </ul>
<b>Design</b>	
Dimensions	see SITRANS F US Clamp-on "System info and selection guide"
Weight	see diagrams
<b>Power supply</b>	
Power	Internal rechargeable battery
Battery operation	7 hours
<b>Indication and operation</b>	
Data logger memory	1 MByte
Site storage memory	50 sites minimum
Display	128 x 240 pixel LCD with back-light
Keypad	33 keypad buttons with tactile feedback
Language options	English, spanish, german, italian, french
<b>Certificates and approvals</b>	
Unclassified locations	UL ULc
Classified locations	
CE	EMC Directive 2004/108/EC LVD Directive 2006/95/EG

# Flow Measurement

## SITRANS F US Clamp-on

SITRANS FUP1010 (portable)

Standard MLFB for quick delivery on SITRANS FUP1010 Portables (excluding energy)

Selection and Ordering data	Order No.	Order Code	Selection and Ordering data	Order No.	Order Code
<b>SITRANS FUP1010 Portable clamp-on</b>			<b>SITRANS FUP1010 Portable clamp-on</b>		
<ul style="list-style-type: none"> <li>IP67 Weather proof battery powered</li> </ul>	L)	<b>7ME3510-</b>	<ul style="list-style-type: none"> <li>IP67 Weather proof battery powered</li> </ul>	L)	<b>7ME3510-</b>
<b>Number of channels/ultrasonic paths</b>			<b>Sensor for channel 2</b>		
Single channel	1		(includes pipe mounting kit and spacer bar for indicated max. outer diameter listed)		
Dual channel/Dual path	2		See „Sensor selection charts“ for specifications.		
<b>Standard flowmeter types and I/O configurations</b>			no sensor		<b>A</b>
<ul style="list-style-type: none"> <li>Standard I/O</li> <li>- 2 x 4 ... 20 mA analog in</li> <li>- 2 x RTD input</li> </ul>		<b>C</b>	A2 universal	Trackmount and straps provided up to 75 mm (3")	<b>B</b>
<b>Sensor cables</b>			B3 universal	Trackmount and straps provided up to 125 mm (5")	<b>C</b>
No sensor cable		<b>A</b>	C3 universal	Mounting frame and straps provided up to 300 mm (13")	<b>D</b>
1 x PVC Jacket cable, length 6 m/20 ft		<b>B</b>	D3 universal	Mounting frame and straps provided up to 600 mm (24")	<b>E</b>
2 x PVC Jacket cable, length 6 m/20 ft		<b>C</b>	E2 universal	Mounting frame and straps provided up to 600 mm (24")	<b>F</b>
1 x PVC Jacket cable, length 15 m/50 ft		<b>D</b>	C1H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>M</b>
2 x PVC Jacket cable, length 15 m/50 ft		<b>E</b>	C2H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>N</b>
<b>RTD temperature Sensor</b>			D1H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>P</b>
(Mounting hardware & cable included)			D2H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>Q</b>
No RTDs		<b>0</b>	Doppler	to 12" with strap kit (not for IP65 (NEMA 7))	<b>S</b>
1 x standard clamp-on RTD, 6 m/20 ft cable		<b>5</b>	D1H	High temperature range 104 °C / 220 °F HP <sup>2)</sup>	<b>Z</b>
2 x standard clamp-on RTD with 6 m/20 ft cable		<b>6</b>			<b>Q 1 P</b>
1 x standard clamp-on RTD with 15 m/50 ft cable		<b>7</b>			
2 x standard clamp-on RTD with 15 m/50 ft cable		<b>8</b>			
<b>Battery charger options</b>					
No battery charger		<b>0</b>			
Charger Type A for Europe (CEE7/7)		<b>1</b>			
Charger Type G for U.S. (NEMA 5-15P)		<b>5</b>			
<b>Sensor for channel 1</b>					
(includes pipe mounting kit and spacer bar for indicated max. outer diameter listed)					
See „Sensor selection charts“ for specifications.					
no sensor		<b>A</b>			
A2 universal	Trackmount and straps provided up to 75 mm (3")	<b>B</b>			
B3 universal	Trackmount and straps provided up to 125 mm (5")	<b>C</b>			
C3 universal	Mounting frame and straps provided up to 300 mm (13")	<b>D</b>			
D3 universal	Mounting frame and straps provided up to 600 mm (24")	<b>E</b>			
E2 universal	Mounting frame and straps provided up to 600 mm (24")	<b>F</b>			
C1H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>M</b>			
C2H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>N</b>			
D1H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>P</b>			
D4H (high precision)	Mounting frame and straps provided up to 600 mm (24")	<b>R</b>			
Doppler	to 12" with strap kit (not for IP65 (NEMA 7))	<b>S</b>			
D1H	High temperature range 104 °C/ 220 °F HP <sup>2)</sup>	<b>Z</b>			<b>P 1 P</b>

**Approvals:** No options (UL, ULc, CE by default)

Standard MLFB product offering represents 4 to 6 weeks delivery time

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

# Flow Measurement

## SITRANS F US Clamp-on

### SITRANS FUP1010 (portable)

#### Selection and Ordering data

Order No. Ord. code

#### SITRANS FUP1010 Portable clamp-on

- IP67 weather proof battery powered

L) 7ME3510-

- 0 0

#### Number of channels/ultrasonic paths

Single channel

1

Dual channel/Dual path

2

#### Standard flowmeter types and I/O configurations

- Standard I/O
  - Reflexor capable
  - Graphic display
  - 2 x 0 ... 10 V
  - 2 x 4 ... 20 mA
  - 2 x pulse outputs
  - 4 x status logic
  - 2 x 4 ... 20 mA analog in
  - 1 x RTD per channel

C

#### Sensor cables

(select proper quantity of active channels)  
No sensor cable

A

#### IP67 (weather proof) only

1 x PVC-jacket, length 6 m (20 ft)  
(for IP67 NEMA 6)<sup>2)</sup>

B

2 x PVC-jacket, length 6 m (20 ft)  
(for IP67 NEMA 6)<sup>2)</sup>

C

1 x PVC-jacket, length 15 m (50 ft)  
(for IP67 NEMA 6)<sup>2)</sup>

D

2 x PVC-jacket, length 15 m (50 ft)  
(for IP67 NEMA 6)<sup>2)</sup>

E

#### RTD temperature sensor

(for type 3 meter only, mounting hardware and cable included)

No RTDs

0

#### IP67 (weather proof) only

1 x standard clamp-on RTD (NEMA 6) with  
6 m (20 ft) cable<sup>1)</sup>

5

2 x standard clamp-on RTD (NEMA 6) with  
6 m (20 ft) cable<sup>1)</sup>

6

1 x standard clamp-on RTD (NEMA 6) with  
15 m (50 ft) cable<sup>1)</sup>

7

2 x standard clamp-on RTD (NEMA 6) with  
15 m (50 ft) cable<sup>1)</sup>

8

#### Battery charger options

no battery charger

0

Charger Type A for Europe (CEE7/7)

1

Charger Type C for Australia (AS3112)

2

Charger Type D for U.K. (BS1363)

3

Charger Type J for Japan (JIS8303)

4

Charger Type G for U.S. (NEMA 5-15P)

5

Charger Type L for Switzerland (SEV1011)

6

#### Selection and Ordering data

Order No. Ord. code

#### SITRANS FUP1010 Portable clamp-on

- IP67 weather proof battery powered

L) 7ME3510-

- 0 0

#### Sensor for channel 1

Including pipe mounting tracks for sizes A &amp; B sensors indented for pipe with a OD less than 125 mm (5") and mounting frame/spacer bars for sizes C, D &amp; 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 600 mm (24")

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 600 mm (24")

M

C2H (high precision) Mounting frame and straps provided up to 600 mm (24")

N

D1H (high precision) Mounting frame and straps provided up to 600 mm (24")

P

D2H (high precision) Mounting frame and straps provided up to 600 mm (24")

Q

D4H (high precision) Mounting frame and straps provided up to 600 mm (24")

R

Doppler to 12" with chain kit

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

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

# Flow Measurement

## SITRANS F US Clamp-on

### SITRANS FUP1010 (portable)

Selection and Ordering data	Order No.	Ord. code
<b>SITRANS FUP1010 Portable clamp-on</b>		
• IP67 weather proof battery powered	L) 7ME3510-	
	■ ■ ■ ■ ■ - 0 ■ ■ ■ ■ ■	
<b>Sensor for channel 1 (continued)</b>		
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)	Z	P 1 P
D2H (high temperature range HP)	Z	P 1 Q
D4H (high temperature range HP)	Z	P 1 R
<b>Sensor for channel 2</b>		
(includes pipe mounting kit and spacer bar for indicated max. outer diameter 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 600 mm (24")		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 600 mm (24")		M
C2H (high precision) Mounting frame and straps provided up to 600 mm (24")		N
D1H (high precision) Mounting frame and straps provided up to 600 mm (24")		P
D2H (high precision) Mounting frame and straps provided up to 600 mm (24")		Q
D4H (high precision) Mounting frame and straps provided up to 600 mm (24")		R
Doppler to 12" with chain kit		S

Selection and Ordering data	Order No.	Ord. code
<b>SITRANS FUP1010 Portable clamp-on</b>		
• IP67 weather proof battery powered	L) 7ME3510-	
	■ ■ ■ ■ ■ - 0 ■ ■ ■ ■ ■	
<b>Sensor for channel 2 (continued)</b>		
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)		Z Q 1 P
D2H (high temperature range HP)		Z Q 1 Q
D4H (high temperature range HP)		Z Q 1 R
<b>Approvals:</b> No options (UL, ULc, CE by default)		
<sup>1)</sup> -40 ... +200 °C (-40 ... +392 °F)		
<sup>2)</sup> -40 ... +80 °C (-40 ... +176 °F)		
L) Subject to export regulations AL: N, ECCN: 3A991X.		

Selection and Ordering data	Order No.
<b>Operating Instructions for FUP1010</b>	
English IP67	A5E02951522A
German IP67	A5E02951534A
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: <a href="http://www.siemens.com/flowdocumentation">http://www.siemens.com/flowdocumentation</a>	



# FINE CONTROLS (UK) LTD



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