## Flow Measurement SITRANS F US Clamp-on

#### **SITRANS FUP1010 (Portable)**

### 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 SITRANS FUP1010 flow transmitter is not available with hazardous area approvals

#### Application

SITRANS 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 RS 232 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
- VT100 RS 232 communications

SITRANS F US Clamp-on

## SITRANS FUP1010 (Portable)

Technical specifications	
Input	
Flow range	$\pm$ 12 m/s ( $\pm$ 40 ft/s), bidirectional
Flow sensitivity	0.0003 m/s ( 0.001 ft/s), flow rate independent
Pipe size	6.4 mm 9.14 m (0.25" 360")
Inputs, single channel	<ul> <li>Current: 20 mA DC</li> <li>Temperature: 4 wire 1 kΩ RTD</li> </ul>
Output	Temperature. 1 Wile 1 Ng21112
Outputs	<ul> <li>Current: 20 mA DC (1 kΩ at 30 V DC)</li> <li>Voltage: 10 V DC (5 kΩ minimum)</li> <li>Status Alarm: SPDT Relays</li> <li>Pulse rate: 5 kHz</li> <li>VT100 RS 232</li> </ul>
Accuracy	
Accuracy	$\pm0.5~\%$ 2 % of flow, for velocities greater than 0.3 m/s (1 ft/s) $\pm0.0015$ 0.006 m/s ( $\pm0.005$ 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)
Rated operation conditions	
Degree of protection	
<ul> <li>Weatherproof/impact resistant</li> </ul>	IP67
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	
Power	Internal rechargeable battery
Battery operation	7 hours
Indication and operation	
Data logger memory	1 MByte
Site storage memory	50 sites minimum
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	
Unclassified locations	UL ULc
Classified locations	
CE	EMC Directive 2014/30/EU ATEX Directive 2014/34/EU

## **Flow Measurement** SITRANS F US Clamp-on

## SITRANS FUP1010 (Portable)

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

Selection and Or	dering data	Δ	rtic	e N	lo.	Or	der	Cc	de
SITRANS FUP101	,				_				
<ul> <li>IP67 weatherpro</li> </ul>	of battery powered	7 7	ME				_		-
	ticle No. for the online confi- PIA Life Cycle Portal.	ľ			- 0		U	Ī	Ī
	nels/ultrasonic paths	T	П						Ī
Single channel Dual channel/Dual	l nath	1 2							
Standard flowme	<u> </u>								
configurations	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
<ul><li>Standard I/O</li><li>2 x 4 20 mA</li></ul>	analog in		С						
- 2 x RTD input	analog in								
Sensor cables									
No sensor cable	able, length 6 m/20 ft <sup>2)</sup>		A B						
2 x PVC Jacket ca	able, length 6 m/20 ft <sup>2)</sup>		C						
1 x PVC Jacket ca	able, length 15 m/50 ft <sup>2)</sup>		D						
	able, length 15 m/50 ft <sup>2)</sup>	_	Ε						
RTD temperature (Mounting hardwa	e <b>Sensor</b> rre & cable included)								
No RTDs	1)			0					
	o-on RTD, 6 m/20 ft cable <sup>1)</sup> o-on RTD with 6 m/20 ft			5 6					
cable <sup>1)</sup>									
1 x standard clamp cable 1)	o-on RTD with 15 m/50 ft			7					
2 x standard clamp	o-on RTD with 15 m/50 ft			8					
cable <sup>1)</sup>	andia na	_							
Battery charger of No battery charge	-			0					
	71			v					
Charger Type A fo	or Europe (CEE7/7)			1					
Charger Type A fo Charger Type G fo	or Europe (CEE7/7) or U.S. (NEMA 5-15P)								
Charger Type A fo Charger Type G fo Sensor for chann (includes pipe mo for indicated max. See "Sensor selec	or Europe (CEE7/7) or U.S. (NEMA 5-15P)	_		1					
Charger Type A fo Charger Type G fo Sensor for chann (includes pipe mo for indicated max. See "Sensor selections.	or Europe (CEE7/7) or U.S. (NEMA 5-15P) nel 1 unting kit and spacer bar outer diameter listed)			1					
Charger Type A fo Charger Type G fo Sensor for chann (includes pipe mo for indicated max. See "Sensor selections. no sensor	or Europe (CEE7/7) or U.S. (NEMA 5-15P) nel 1 untling kit and spacer bar outer diameter listed) tion charts" for specifica-			1		A			
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Charger Type A fo Charger Type G fo Sensor for chann (includes pipe mo for indicated max. See "Sensor selections. no sensor	or Europe (CEE7/7) or U.S. (NEMA 5-15P)  nel 1  nunting kit and spacer bar outer diameter listed) tion charts" for specifica-  Trackmount and straps provided up to 75 mm (3") Trackmount and straps provided up to 125 mm (5")			1					
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Charger Type A for Charger Type G for Charger Type G for Sensor for chann (includes pipe mo for indicated max. See "Sensor selections.  no sensor A2 universal  B3 universal  C3 universal  D3 universal  E2 universal  C1H (high precisions)	or Europe (CEE7/7) or U.S. (NEMA 5-15P)  Tel 1  Funnting kit and spacer bar outer diameter listed)  Ition charts' for specifica-  Trackmount and straps provided up to 75 mm (3")  Trackmount and straps provided up to 125 mm (5")  Mounting frame and straps provided up to 300 mm (13")  Mounting frame and straps provided up to 600 mm (24")  Mounting frame and straps provided up to 600 mm (24")  Mounting frame and straps provided up to 600 mm (24")  on) Mounting frame and straps provided up to 600 mm (24")  on) Mounting frame and straps provided up to 600 mm (24")  on) Mounting frame and straps provided up to 600 mm (24")  on) Mounting frame and straps provided up to 600 mm (24")  on) Mounting frame and straps provided up to 600 mm (24")  on) Mounting frame and straps provided up to 600 mm (24")			1		B C D E			
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Charger Type A for Charger Type G for Charger Type G for Sensor for chann (includes pipe mo for indicated max. See "Sensor selections.  no sensor A2 universal  B3 universal  C3 universal  E2 universal  C1H (high precision  D1H (high precision  D4H (high precision  D4H (high precision	or Europe (CEE7/7) or U.S. (NEMA 5-15P)  Tel 1  Funting kit and spacer bar outer diameter listed)  Ition charts" for specifica-  Trackmount and straps provided up to 75 mm (3")  Trackmount and straps provided up to 125 mm (5")  Mounting frame and straps provided up to 300 mm (13")  Mounting frame and straps provided up to 600 mm (24")  Mounting frame and straps provided up to 600 mm (24")  on)  On)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")			1		B C D E F M			
Charger Type A for Charger Type G for Sensor for chann (includes pipe mo for indicated max. See "Sensor selections.  no sensor A2 universal  B3 universal  C3 universal  E2 universal  C1H (high precision C2H (high precision C1H	or Europe (CEE7/7) or U.S. (NEMA 5-15P)  Tel 1  runting kit and spacer bar outer diameter listed) tition charts" for specifica-  Trackmount and straps provided up to 75 mm (3")  Trackmount and straps provided up to 125 mm (5")  Mounting frame and straps provided up to 300 mm (13")  Mounting frame and straps provided up to 600 mm (24")  Mounting frame and straps provided up to 600 mm (24")  on)  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)  Mounting frame and straps provided up to 600 mm (24")  on)			1		B C D E F M N P		P 1	

Selection and Orderi	ng data	Article No.	Orde	r Code
SITRANS FUP1010 (F	Portable)			
• IP67 weatherproof b	attery powered	7ME3510-		
		- 0	<b>=</b> 0	
Sensor for channel 2 (includes pipe mountifor indicated max. out See "Sensor selection tions.	ng kit and spacer bar er diameter listed)			
no sensor			Α	
A2 universal	Trackmount and straps provided up to 75 mm (3")		В	
B3 universal	Trackmount and straps provided up to 125 mm (5")		С	
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	
C1H (high precision) <sup>3</sup>	Mounting frame and straps provided up to 600 mm (24")		M	
C2H (high precision) <sup>3</sup>	straps provided up to 600 mm (24")		N	
D1H (high precision) <sup>3</sup>	Mounting frame and straps provided up to 600 mm (24")		P	
D2H (high precision) <sup>3</sup>	Mounting frame and straps provided up to 600 mm (24")		Q	
Doppler	to 12" with strap kit (not for IP65 (NEMA 7))		S	
D1H <sup>3)</sup>	High temperature range 104 °C/220 °F		Z	Q 1 P

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

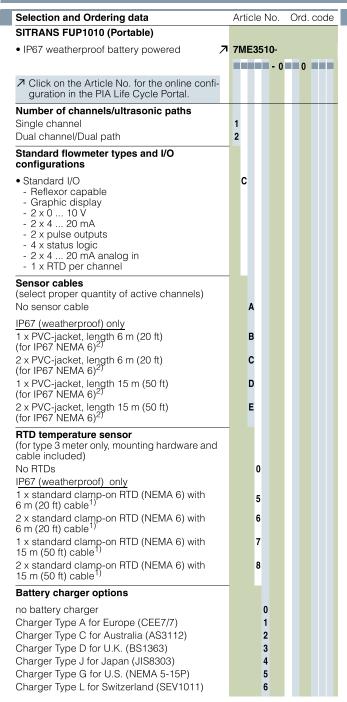
Standard MLFB product offering represents 4 to 6 weeks delivery time

<sup>1) -40 ... +200 °</sup>C (-40 ... +392 °F) 2) -40 ... +80 °C (-40 ... +176 °F)

<sup>3)</sup> Made of stainless steel constructions.

SITRANS F US Clamp-on

### **SITRANS FUP1010 (Portable)**



Selection and Order	Article No.	Ord	. code	
SITRANS FUP1010 (				
<ul> <li>IP67 weatherproof I</li> </ul>	pattery powered	7ME3510-		
		- 0	- 0	
Including pipe mounti sensors indented for p 125 mm (5") and mour for sizes C, D & E sen- for the indicated maxi Strap kits are available pipes (refer to spare p Selection Charts" for the	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			Α	
A2 universal	Trackmount and straps provided up to 75 mm (3")		В	
B3 universal	Trackmount and straps provided up to 125 mm (5")		С	
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 High temperature range is (-40 °F to +248 °F), n	-40 °C to +120 °C			
A2H (high precision)	Trackmount and straps provided up to 75 mm (3")		Н	
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")		М	
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)	3) 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 High temperature ser up to 230 °C (446 °F)	to 12" with chain kit nsor size 2 for (30 to 200 mm diam.		S Z	P 1 A
(1.18 to 7.67 inch dia High temperature ser	.m.))		z	P 1 B
(5.90 to 24 inch diam High temperature ser	n.)) Insor size 4 for		z	P 1 C
up to 230 °C (446 °F) (15.75 to 47.25 inch	(400 to 1200 mm diam. diam.))			

## **Flow Measurement** SITRANS F US Clamp-on

### SITRANS FUP1010 (Portable)

Selection and Order	ing data	Article No.	Ord	code
SITRANS FUP1010 (	7 11 11 01 0 1 1 0 :	010.	. 0000	
<ul> <li>IP67 weatherproof b</li> </ul>	pattery powered	7ME3510-		
		- 0	0	
Sensor for channel	1 (continued)			
, , , , , , , , , , , , , , , , , , , ,	-40 °C to +120 °C ominal 65 °C (150 °F):			
B1H (high temperatur B2H (high temperatur	•			P1K P1L
C1H (high temperatur	• ,		7	P1M
C2H (high temperatu	· ,		<u>z</u>	P 1 N
D1H (high temperatu	9 ,		-	P1P
D2H (high temperatur D4H (high temperatur			Ž	P1Q P1R
Sensor for channel 2				
(includes pipe mounting indicated max. outer o	ng kit and spacer bar for liameter listed) n charts" for specifica-			
no sensor			Α	
A2 universal	Trackmount and straps provided up to 75 mm (3")		В	
B3 universal	Trackmount and straps provided up to 125 mm (5")		С	
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 High temperature range is (-40 °F to +248 °F), no	-40 °C to +120 °C			
A2H (high precision)	Trackmount and straps provided up to 75 mm (3")		Н	
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) <sup>©</sup>	Mounting frame and straps provided up to 600 mm (24")		M	
C2H (high precision) <sup>©</sup>	Mounting frame and straps provided up to 600 mm (24")		N	
D1H (high precision) <sup>©</sup>			P	
D2H (high precision) <sup>6</sup>	Mounting frame and straps provided up to 600 mm (24")		Q	
D4H (high precision) <sup>6</sup>			R	
Doppler	to 12" with chain kit		s	

	•			
Selection and Ordering data	Article No.	Ord	. code	е
SITRANS FUP1010 (Portable)				
<ul> <li>IP67 weatherproof battery powered</li> </ul>	7ME3510-			
	- 0	0		1
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	λ.
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 E	3
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 0	3
For the following High Precision sensors, temperature range is -40 °C to +120 °C (-40 °F to +248 °F), nominal 65 °C (150 °F):				
B1H (high temperature range HP)		Z Z	Q1E Q1E	
B2H (high temperature range HP) C1H (high temperature range HP)		z	Q1N	
C2H (high temperature range HP)		z	QIN	
D1H (high temperature range HP)		z	Q1F	5
D2H (high temperature range HP)		Z	Q 1 0	3
D4H (high temperature range HP)		Z	Q 1 F	2

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

<sup>2) -40 ... +80 °</sup>C (-40 ... +176 °F) 3) Made of stainless steel constructions.

Selection and Ordering data	Article No.
Operating Instructions for SITRANS FUP1010	
English IP67 Weatherproof	A5E02951522
German IP67 Weatherproof	A5E02951534

This device is shipped with a Quick Start Guide and a CD containing further SITRANS  ${\sf F}$  literature.

All literature is available to download for free, in a range of languages, at www.siemens.com/processinstrumentation/documentation

<sup>1) -40 ... +200 °</sup>C (-40 ... +392 °F)

SITRANS F US Clamp-on

### **SITRANS FUP1010 (Portable)**

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Article No. and specify Order code(s).	
Languages (Meter and Documentation), English (default). All languages now come standard in all flowmeters	
Wet flow transfer calibration (priced on request)	
6 point calibration 2/water (Price per channel)	
<ul> <li>2SS40 pipe</li> <li>3CS40 pipe</li> <li>4CS40 pipe</li> <li>4SS40 pipe</li> <li>6CS40 pipe</li> <li>6SS40 pipe</li> <li>6CS120 pipe</li> <li>8CS40 pipe</li> <li>8CS40 pipe</li> <li>8SS40 pipe</li> <li>8SS40 pipe</li> <li>8CS120 pipe</li> </ul>	D01 D02 D03 D04 D05 D06 D07 D08 D09 D10
• 10CS Standard pipe • 10CS40 pipe	D11 D12
<ul><li>10SS40 pipe</li><li>12CS Standard pipe</li><li>12CS40 pipe</li><li>14CS30 pipe</li></ul>	D13 D14 D15 D16
<ul><li>14CS40 pipe</li><li>16CS Standard pipe</li><li>16CS40 pipe</li><li>18CS Standard pipe</li></ul>	D17 D18 D19 D20
<ul><li>20CS20 pipe</li><li>20CS30 pipe</li><li>24CS Standard pipe</li><li>24CS20 pipe</li></ul>	D21 D22 D23 D24
<ul> <li>24CS30 pipe</li> <li>30CS Standard pipe</li> <li>36CS Standard pipe</li> <li>Other pipe, other liquid, additional points, witness</li> </ul>	D25 D26 D27 Y28
1x Insertion RTD with thermowell and lagging 2x Insertion RTD with thermowell and lagging	M1A M1B
Tag name plate  • Stainless steel tag with 3.2 mm (0.13 inch) character size (68 characters max.)	Y19

### MLFB example

### Application example

A general survey portable flowmeter is required for pipes sizes ranging from 76 ... 500 mm (3" ... 20") with both cast iron and steel material. Doppler may be required as liquid may be moderately aerated.

Requires language support for German.

MLFB Article No.: **7ME3510-2CB01-0DE0-Z** 

B10

Selection and Ordering data	Article No. Ord. code
SITRANS FUP1010 meter family	7 ME 3 5 1 0 - 0
IP67 weatherproof	0
Dual channel	2
Portable I/O with Doppler capable, temperature	С
1 x PVC-Jacket, length 6 m (20 ft)	В
No RTDs required	0
Charger Type A for Europe (CEE7/7)	1
Sensor for DN 50 DN 300 (2" 12") pipes	D
Sensor for DN 200 DN 600 (8" 24") pipes	E

#### Universal sensor selection chart IP68

Based on pipe size (all pipe materials)													
Pipe size	Order Code	Outer diameter range (mm)										Outer dia range (in	
		min.	max.	min.	max.								
A2	В	12.7	50.8	0.5	2								
B3	С	19	127	0.75	5								
C3	D	51	305	2	12								
D3	E	203	610	8	24								
E2	F	254	6096	10	249								

### High precision sensor selection chart IP68

Based on pipe wall thickness (steel pipes only)						
Pipe Wall	Order	Pipe Wa	all [mm]	Pipe Wa	all [inch]	
	Code	min.	max.	min.	max.	
A1H	G	0.64	1.02	0.025	0.04	
A2H	Н	1.02	1.52	0.04	0.06	
АЗН	J	1.52	2.03	0.06	0.08	
B1H	K	2.03	3.05	0.08	0.12	
В2Н	L	3.05	4.06	0.12	0.16	
C1H <sup>1)</sup>	М	4.06	5.84	0.16	0.23	
C2H <sup>1)</sup>	N	5.84	8.13	0.23	0.32	
D1H <sup>1)</sup>	P	8.13	11.18	0.32	0.44	
D2H <sup>1)</sup>	Q	11.18	15.75	0.44	0.62	
D4H <sup>1)</sup>	R	15.75	31.75	0.62	1.25	

<sup>1)</sup> Made of stainless steel constructions.

SITRANS F US Clamp-on

### SITRANS FUP1010 Water and Liquid check metering kits

### Overview



There are two check kits available: SITRANS FUP1010 Water check metering kit for water and wastewater applications, and SITRANS FUP1010 Liquid check metering kit for liquid applications other than water. The kits have been developed especially for verifying the accuracy and performance of any brand or type of flowmeter. They can be used to verify the performance of meters based on any existing flow measurement principle: orifice, electromagnetic, ultrasonic, rotary piston, coriolis, etc. In addition, they measure practically all conductive or non-conductive clean or moderately aerated liquids or liquids with suspended solids.

### Benefits

- Performance check or verification of any type or brand of flowmeter
- Field use is facilitated by meter portability and 7 hours or normal battery operation.
- Weatherproof enclosure withstands even severe weather conditions
- 1 MByte datalogger capability downloadable to PC via included RS 232 cable
- Fast, easy and cost-efficient on-site measurement of any convoluted pipe from 20 to 1200 mm (0.75 to 48")
- Delivered as an all inclusive kit in a sturdy rolling case that holds all the equipment needed to conduct performance and verification tests (cables, multiple sensors, flow transmitter etc.)

#### Application

The SITRANS FUP1010 Water and Liquid Check Metering Kits measure practically all conductive or non-conductive clean or moderately aerated liquids or liquids with suspended solids. This basic feature enables the performance check and verification of existing meters used in various water and wastewater applications such as:

Raw Water and sewage

- Potable water
- Chemicals
- Effluent and sludges
- Process control
- Batching
- Rate indication
- Hot and cold water systems

#### Design

- IP67 weatherproof/impact resistant enclosure, constructed of mineral reinforced copolymer polypropylene
- Single channel

#### 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 RS 232 outputs (see Technical 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

#### Technical specifications

Pipe sizes	
<ul> <li>Water Check Metering Kit</li> </ul>	50 1050 mm (2 42")
<ul> <li>Liquid Check Metering Kit</li> </ul>	20 1200 mm (0.75 48")
Accuracy	±0.5 % ±2.0 % of flow rate
Flow range	12 m/s (40 ft/s) bidirectional
Media temperature	-40 +104 °C (-40 220 °F)
Enclosure ratings	IP67 (Weatherproof)

See page 3/344 for complete technical specifications

Cerificates	and	appr	ovals

Unclassified locations

ULC

Classified locations

CE

EMV Directive 2014/30/EU ATEX Directive 2014/34/EU

SITRANS F US Clamp-on

# SITRANS FUP1010 Water and Liquid check metering kits

Select	ion and Ordering data	Article No.
SITRA	NS FUP1010 Water Check Metering Kit	CQO:FUPW-WWKIT
Conte	nt of delivery	
1	Single channel portable submersible flow transmitter	
	Universal sensor C3 <sup>1)</sup>	
1 pair	Universal sensor E2 <sup>1)</sup>	
1 pair	Doppler sensors	
1 pair	Mounting Ezclamp (2 mounting Ezclamp chains)	
1	Ladder chain	
1	Battery charger	
1 pair	20 ft sensor cable	
1	Cable - 1010WP/WDP to PC	
1	PinStop spacer bar (universal)	
1	Flow case	
1	Flowmeter manual	
1	Laminated card set	
1	Certificate of intrinsic calibration	

Select	ion and Ordering data	Article No.
SITRA	NS FUP1010 Liquid Check Metering Kit	CQO:FUS-LIQKIT
Conter	nt of delivery	
1	Single channel portable submersible transmitter	
1 pair	Universal sensor B3	
	Universal sensor C3 <sup>1)</sup>	
1 pair	Universal sensor D3 <sup>1)</sup>	
1 pair	Universal sensor E2 <sup>1)</sup>	
1 pair	Doppler sensors	
1 pair	Sensor cables 6m (20 ft)	
1 pair	Mounting track	
1 pair	Mounting Ezclamp	
1	Spacer bar (portable)	
1	Ladder chain	
1	Battery charger	
1	RS 232 cable for PC connection	
1	Flow case	
1	Clamp-on flowmeter manual CD	
1	Flowmeter manual	
1	Laminated card set	
1	Certificate of intrinsic calibration	

<sup>1)</sup> Made of stainless steel constructions.