SITRANS FUE1010 (Energy) Check metering kit

Overview

The SITRANS FUE1010 dual channel clamp-on check metering kit is an all inclusive HVAC chilled water kit developed especially for verifying the accuracy and performance of any brand or type of flowmeter. The meter's portability makes it capable of verifying the performance of meters based on any existing flow measurement principle: electromagnetic, vortex, insertion turbine, or ultrasonic. Perfect for areas where no metering exists. Ideal for balancing building performance. It accurately computes flow over an extremely wide range and measures practically all conductive or non-conductive clean or moderately aerated liquids or liquids with suspended solids. Dual channel models can measure two separate applications at the same time.

Benefits

- Performance check or verification of any type or brand of flowmeter
- Measures energy rate and total consumption with highest accuracy available
- Accurately measures at both low flow rates and low differential temperatures
- Field use is facilitated by meter portability charge for 4 hours of normal operation
- 1 MByte datalogger capability downloadable to PC via included RS232 cable
- Performs fast, easy and cost-efficient on-site measurement of any convoluted pipe from 25.4 mm to 9.14 m (1.0" to 360")
- Delivered as an all inclusive kit with all the equipment needed to conduct performance and verification tests (cables, multiple sensors, flow transmitter etc.)
- Comes in a sturdy rolling case with a telescope handle that holds all the equipment needed to conduct performance and verification tests.

Application

The SITRANS FUE1010 Check Metering Kit is a highly accurate clamp-on non-intrusive ultrasonic flow display transmitter or revenue grade thermal energy sub-metering and energy efficiency distribution monitoring, with a real time coefficient of performance (COP) for HVAC systems. This kit is ideal for applications which include:

- Chilled water sub-metering
- Condenser water
- Potable water
- Ammonia and glycol
- River and lake water
- Lake source cooling

Design

- IP40 (NEMA 1) Impact resistant enclosure, constructed of flame retardant ABS with polycarbonate display and polyester keypad
- 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
- 4-wire 1000 Ω platinum RTD's for supply and return temperature measurements are precision matched to within 0.01 °C (0.02 °F)
- Chiller efficiency analysis: accepts an independent analog input representing kW usage for calculation of the following functions which can be selected for data logging or output purposes:
  - Cooling load (kW/ton)
  - Coefficient of performance (COP)
  - Energy efficiency ratio (EER)
- Temperature is factory calibrated with built-in field calibrator
- Built-in energy/BTU mode
- Detection of aeration and cavitation caused by worn or damaged impellers, misaligned shafts, etc.
- 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

Technical specifications

Pipe sizes	25.4 mm to 9.14 m (1 ... 360“)
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	IP40 (NEMA 1) impact resistant

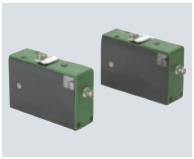
See page 4/327 for complete technical specifications

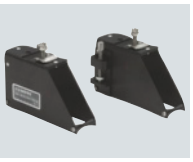
Cerificates and approvals	
Portable enclosures	
Unclassified locations	UL ULc
Classified locations	
CE	EMC Directive 2004/108/EC ATEX Directive 94/9/EC

Selection and Ordering data		Order No.
Energy check metering kit	D)	**CQO:FUEHVACKIT**
Content of delivery		
1	Dual channel portable submersible flow transmitter	
1 pair	Universal sensors C3	
1 pair	Doppler sensors	
1 pair	High precision sensors C2	
1 pair	High precision sensors D1	
2 pairs	RTDs	
2 pairs	Mounting Ezclamp (4 mounting Ezclamp chains)	
1	Battery charger	
2 pairs	6 m (20 ft) sensor cables	
1	RS232 cable	
4	RTD cable 6 m (20 ft)	
4	Mountings for RTDs	
1	Spacer bar (Portable)	
2	F connector to BNC	
1	Flow case	
1	Flow meter manual	
1	Laminated card set	
1	Certificate of intrinsic calibration	

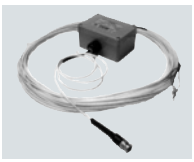
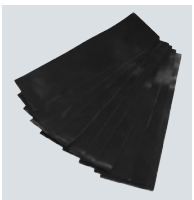
D) Subject to export regulations AL: N, ECCN: EAR99H.

Accessories/Spare parts for clamp-on ultrasonic flowmeters

Description		Order No.	
Universal Portable Sensors Selected generally for portable systems where a wide variety of pipes are to be measured. Since they are selected based on diameter only, a wide range of pipe sizes and materials can be covered with a minimum number of sensors. These can also be selected as a cost savings on applications where standard accuracy is sufficient.	D)	**7ME3951-...**	
High Precision Sensors Selected generally for dedicated meters since the need to cover a range of pipes is not a requirement. They provide the highest accuracy achievable by the meters and therefore should be selected whenever higher accuracy/repeatability is required. They are only applicable to steel pipes but no other metals, and are selected solely by wall thickness.	D)	**7ME3950-...**	
High Temperature Sensors Are selected whenever pipe temperature will exceed 250 °F (120 °C) up to a maximum of 450 °F (232 °C). They are universal type and can therefore be used on any pipe material and are selected by pipe diameter.	D)	**7ME3950-...**	
Weld Seal Mount These provide the most secure and strongest mounting of the flow sensors. They are generally selected for "High End" meter types where maximum performance criteria applies. They accommodate high precision sensors designed to mount inside these enclosures. May be welded to the pipe if so desired by the customer. They come in 2-piece or 1-piece configurations depending upon the application pipe size and type (Liquid/Gas).	D)	**7ME3960-...**	
Mounting tracks Typically used on smaller pipes for easier and more stable mounting for dedicated universal style sensor size A or B, also available for dedicated high precision sensor size A or B.	D)	**7ME3960-...**	

Description		Order No.	
Mounting Frames These items are useful in simplifying sensor installation. They are strapped to the pipe first then the sensors are installed, making the installation less cumbersome and more precise. They also enable easy repeated mounting of the sensors assuring conformation to the original sensor positioning. They may be left in place at each measurement location where periodic flow surveys are conducted to simplify subsequent installations and ensure repeatable results.	D)	**7ME3960-...**	
Spacer Bars Sensors are required to be mounted at a set distance from each other as determined by pipe size and medium being measured. The spacer bar simplifies this requirement by eliminating the need to undertake a precise dimensional measurement. The flowmeter will specify a specific spacing index which is easily accommodated with the marked indices on the bar.	D)	**7ME3960-...**	
Clamp-On RTD's 1000 Ω platinum RTD's for use where temperature is required. Used with Energy Meters to record supply/return temperature. For this purpose precision matched pairs (to 0.02 °C) are supplied. Single RTD's are also used with SITRANS FUH and SITRANS FUG meters to enable live calculations of "Liquident" and Standard Volume Correction.	D)	**7ME3950-...**	
Insert RTD's Are identical to clamp-on RTD's as described above except that they are inserted into the pipe (In a Thermowell). They provide more precise and quicker responding temperature measurement. They are selected when precise temperature measurement of the actual liquid or gas is required as opposed to pipe "skin temperature". Since they project into the pipe they cannot be used in pipeline that undergo periodic "pigging".	D)	**7ME3950-...**	
Standard Cable (Flow Sensor or RTD) Selected for general purpose installations where no special application requirements exist.	D)	**7ME3960-...**	
Submersible Cable (Flow Sensor) Polyethylene jacketed, for locations that experience periodical or continual submersion of the flow sensors.	D)	**7ME3960-...**	

Accessories/Spare parts

Description		Order No.	
Plenum Cable (Flow Sensor or RTD) For temperatures above 180 °F. Teflon jacketed to withstand high temperatures, is used when high temp sensors are specified.	D)	**7ME3960-...**	
Armored Cable (Flow Sensor) Double shielded cable, selected when cable will not be installed in conduit between meter and sensors.	D)	**7ME3960-...**	
Temperature sensor cable Cable to connect field installed RTD to flow meter, available in Teflon wrapped, plenum or submersible grade. Typically used for SITRANS FUE, FUH and FUG series meters where a temperature sensor is employed.	D)	**7ME3960-...**	
Straps Used to fasten sensors or mounting frames to pipe for dedicated meter installations. Stainless steel construction for corrosion resistance.	D)	**7ME3960-...**	
Chains (EZ clamps) Used to fasten portable sensors or mounting frames to pipe. Thumbscrews eliminate need for hand tools when mounting sensors, and allow for easy on/off operations.	D)	**7ME3960-...**	
Ultrasonic Couplant Fills any voids between sensor emitting surface and pipe wall to allow maximum energy transfer between sensor and pipe. Several different types of couplants are employed as determined by the application conditions and type of installation (Temporary or permanent).	D)	**7ME3960-...**	
Dry Couplant The dry coupling pad is intended for use in any liquid, clamp-on transit time or Doppler applications that require a more durable coupling material. Installation is easy by simply placing one strip of material between sensor and pipe. Not intended for clamp-on gas where damping material is used. The temperature range is -34 to +200 °C (-30 to +392 °F).	D)	**7ME3960-...**	
Damping Material Used with gas meters, and required as part of their sensor installation. This material absorbs excess ultrasonic energy from the pipe wall to enable the meter to detect and operate with low amplitude sensor signals normally associated with Clamp-on Gas applications.	D)	**7ME3960-...**	

Description		Order No.	
Test Block Used for checking operation of a meter and sensors prior to a field installation, or as a troubleshooting tool. Selected by sensor size, each block accommodates 2 sensor sizes. Available only for universal sensors.	D)	**7ME3960-...**	
Termination Kit (Flow Sensor or RTD) Provides the connectors, labels and shrink tubing or other associated hardware to complete the termination of a specific cable type. These can be provided in cases where users will be purchasing bulk cable directly and cutting to length at their site, or when existing cable length is to be altered. Selected by cable type.	D)	**7ME3960-...**	

Selection and Ordering data		Order No.
Spare parts (System)		
SITRANS F US clamp-on		**7ME3940-** ■■■■■
Power supplies, batteries and chargers		
Power supply 90 ... 240 V AC		
• for IP65 (NEMA 4X) wall mount or IP66 (NEMA 7) wall mount explosionproof	D)	**0PA00**
• for IP65 (NEMA 7) compact explosionproof	D)	**2PA00**
Power supply 9 ... 36 V DC		
• for IP65 (NEMA 4X) wall mount or IP66 (NEMA7) wall mount explosionproof	K)	**0PB00**
• negative ground for NEMA 7 compact explosionproof	D)	**2PJ00**
• positive ground for NEMA 7 compact explosionproof	D)	**2PK00**
Portable meter batteries and accessories		
• Internal battery (Portable meters only)	D)	**3PP00**
IP67 Portable meter charger		
• Type A for Europe (CEE7/7)	D)	**3PC00**
• Type C for Australia (AS3112)	D)	**3PD00**
• Type D for UK (BS1363)	D)	**3PE00**
• Type J for Japan (JIS8303)	D)	**3PF00**
• Type K for US (NEMA 5-15P)	D)	**3PG00**
• Type L for Switzerland (SEV1011)	D)	**3PH00**
IP40 Portable meter charger		
• Type A for Europe (CEE7/7)	D)	**4PC00**
• Type C for Australia (AS3112)	D)	**4PD00**
• Type D for UK (BS1363)	D)	**4PE00**
• Type J for Japan (JIS8303)	D)	**4PF00**
• Type K for US (NEMA 5-15P)	D)	**4PG00**
• Type L for Switzerland (SEV1011)	D)	**4PH00**
MODBUS system computer modules		
MODBUS converter module	D)	**CQO-1015N-5M**
Mounting kit (type 1) for MODBUS converter module	D)	**CQO-1015N-5M-MK1**
Mounting kit (type 2) for MODBUS converter module	D)	**CQO-1015N-5M-MK2**
Mounting kit (type 3) for MODBUS converter module	D)	**CQO-1015N-5M-MK3**
Field configuration kit with manual, for MODBUS converter module	D)	**CQO-1015N-5M-FK1**
Pipe mounting brackets		
2 inch pipe mounting bracket for IP65 (NEMA 7) compact explosionproof	D)	**CQO-1012XMB-1**
2 inch pipe mounting bracket for IP65 (NEMA 4X) wall mount	D)	**CQO-1012NMB-1**

D) Subject to export regulations AL: N, ECCN: EAR99H.

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

Accessories/Spare parts

Selection and Ordering data		Order No.
Spare parts (Sensors)		
SITRANS F US clamp-on		
Meter type		
Dedicated (SITRANS FUS1010, FUG1010, FUH1010, FUE1010)	D)	7ME3950- ■■■■■
Portable (SITRANS FUP1010 or FUE1010)	D)	7ME3951-0■■■■
Approvals		
UL, ULc, CE (Portable only)		0
FM/CSA hazardous (classified) locations		1
ATEX Ex II 1G Ex ia IIC T5 (not for RTDs)		2
INMETRO (not for (RTDs)		3
Spare sensor code		
For liquid flow sensors pipe ranges please refer to sensor selection chart in the SITRANS FUS1010 section		
Liquid flow sensors for use with mounting frames or tracks (including portable)		
A2 universal		LB00
B3 universal		LC00
C3 universal		LD00
D3 universal		LE00
E2 universal		LF00
A1H (high precision)		LG00
A2H (high precision)		LH00
A3H (high precision)		LJ00
B1H (high precision)		LK00
B2H (high precision)		LL00
B3H (high precision)		LT00
C1H (high precision)		LM00
C2H (high precision)		LN00
D1H (high precision)		LP00
D2H (high precision)		LQ00
D3H (high precision)		LU00
D4H (high precision)		LR00
Doppler		LS00
High precision liquid sensor for weld seal enclosures		
C1H (high precision, weld seal)		SM00
C2H (high precision, weld seal)		SN00
D1H (high precision, weld seal)		SP00
D2H (high precision, weld seal)		SQ00
D3H (high precision, weld seal)		SU00
D4H (high precision, weld seal)		SR00

Selection and Ordering data		Order No.
Spare parts (Sensors)		
SITRANS F US clamp-on		
Meter type		
Dedicated (SITRANS FUS1010, FUG1010, FUH1010, FUE1010)	D)	7ME3950- ■■■■■
Portable (SITRANS FUP1010 or FUE1010)	D)	7ME3951-0■■■■
High temperature universal liquid sensors		
Note: not available with INMETRO approval		
High temp. sensor size 1 for up to 230 °C (12.7 to 100 mm diam.)		LA10
High temp. sensor size 2 for up to 230 °C (30 to 200 mm diam.)		LA20
High temp. sensor size 3 for up to 230 °C (150 to 600 diam.)		LA30
High temp. sensor size 4 for up to 230 °C (400 to 1200 diam.)		LA40
For gas flow sensors pipe ranges please refer to sensor selection chart in the SITRANS FUG1010 section		
High precision gas flow sensors for use with mounting frames or tracks		
B1H (high precision)		GK00
B2H (high precision)		GL00
B3H (high precision)		GT00
C1H (high precision)		GM00
C2H (high precision)		GN00
D1H (high precision)		GP00
D2H (high precision)		GQ00
D3H (high precision)		GU00
D4H (high precision)		GR00
High precision gas sensor for weld seal enclosures		
C1H (high precision, weld seal)		HM00
C2H (high precision, weld seal)		HN00
D1H (high precision, weld seal)		HP00
D2H (high precision, weld seal)		HQ00
D3H (high precision, weld seal)		HU00
D4H (high precision, weld seal)		HR00

D) Subject to export regulations AL: N, ECCN: EAR99H

Selection and Ordering data		Order No.
Spare parts (Sensors)		
SITRANS F US clamp-on		
Meter type		
Dedicated (SITRANS FUS1010, FUG1010, FUH1010, FUE1010)	D)	**7ME3950-**■■■■■
Portable (SITRANS FUP1010 or FUE1010)	D)	**7ME3951-0**■■■■
Standard RTD sensors (not for energy systems)		
Standard clamp-on RTD		**1TA00**
Submersible clamp-on RTD (not for Portable)		**1TB00**
Insertion style RTD pair (size 1), 140 mm (5.5 inch)		**1TJ00**
Insertion style RTD pair (size 2), 216 mm (8.5 inch)		**1TJ01**
Insertion style RTD pair (size 3), 292 mm (11.5 inch)		**1TJ02**
Insertion style RTD pair (size 4), 368 mm (14.5 inch)		**1TJ03**
Standard for energy system (matched pair)		
Standard clamp-on RTD		**1TA10**
Insertion style RTD pair (size 1) for SITRANS FUE1010, 140 mm (5.5 inch)		**1TJ10**
Insertion style RTD pair (size 2) for SITRANS FUE1010, 216 mm (8.5 inch)		**1TJ11**
Insertion style RTD pair (size 3) for SITRANS FUE1010, 292 mm (11.5 inch)		**1TJ12**
Insertion style RTD pair (size 4) for SITRANS FUE1010, 368 mm (14.5 inch)		**1TJ13**

[1] 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 (1012-BN-4)

D) Subject to export regulations AL: N, ECCN: EAR99H.

Selection and Ordering data		Order No.
Spare parts (Miscellaneous)		
SITRANS F US clamp-on	D)	**7ME3960-**■■■■■
Meter design		
IP65 (NEMA 4X) wall mount or IP66 (NEMA 7) wall mount explosionproof		**0**
IP65 (NEMA 7) compact		**2**
IP67 weatherproof portable		**3**
IP40 (NEMA 1) Portable		**4**
Dedicated sensor mounting hardware		
Sensor mounting tracks (aluminium with mounting straps) for pipes < 125 mm (5 inch)		
• Universal sensor size A or B		**0MA00**
• High precision sensor size A or B		**0MB00**
Sensor mounting frames for		
• Universal sensor size B (for pipes >125 mm (5 inch)	D)	**CQO-1012FN-PB**
• Universal sensor size C		**0MC00**
• Universal sensor size D		**0MC01**
• Universal sensor size E		**0MC02**
• High precision sensor size B (for pipes >125 mm (5 inch)	D)	**CQO-1012FNH-PB**
• High precision sensor size C		**0MD00**
• High precision sensor size D		**0MD01**
Mounting straps for mounting frames (slotted stainless steel)		
• For pipes from DN 50 to DN 150		**0SM00**
• For pipes from DN 50 to DN 300		**0SM10**
• For pipes from DN 300 to DN 600		**0SM20**
• For pipes from DN 600 to DN 1200		**0SM30**
• For pipes from DN 1200 to DN 1500		**0SM40**
• For pipes from DN 1500 to DN 2100		**0SM50**
• For pipes from DN 2100 to DN 3000		**0SM60**
Spacer bars (for indexing sensors on pipe)		
• Spacer bars for pipes to 200 mm/8 inch (liquid), 600 mm / 24 inch (gas)		**0MS10**
• Spacer bars for pipes to 500 mm/20 inch (liquid), DN 1200 / 48 inch (gas)		**0MS20**
• Spacer bars for pipes to 800 mm/32 inch (liquid)		**0MS30**
• Spacer bars for pipes to 1200 mm/48 inch (liquid) Only use in conjunction with 7ME3960-0MS30		**0MS40**
Weld seal mounting enclosures for liquid and gas sensors		
• Single enclosure for size C high precision		**0WS20**
• Single enclosure for size D high precision		**0WS30**
• Single enclosure for size E universal		**0WS40**
• Dual enclosure for size C high precision		**0WD20**
• Dual enclosure for size D high precision		**0WD30**
• Dual enclosure for size E universal		**0WD40**

Accessories/Spare parts

Selection and Ordering data		Order No.
Spare parts (Miscellaneous)		
SITRANS F US clamp-on	D)	**7ME3960-** ■■■■■
Stainless steel straps for weld seal enclosure mounting		
• Mounting strap for pipe diameter to 300 mm (13 inch)		**0SM01**
• Mounting strap for pipe diameter to 600 mm (24 inch)		**0SM11**
• Mounting strap for pipe diameter to 1200 mm (48 inch)		**0SM21**
• Mounting strap for pipe diameter to 1500 mm (60 inch)		**0SM31**
• Mounting strap for pipe diameter to 2130 mm (84 inch)		**0SM41**
• Mounting strap for pipe diameter to 3050 mm (120 inch)		**0SM51**
Stainless mounting tracks for high temp 991 sensors		
• Size 1 high temp sensor pair	D)	**CQO-992MTNHMSH-1**
• Size 2 high temp sensor pair	D)	**CQO-992MTNHMSH-2**
• Size 3 high temp sensor pair	D)	**CQO-992MTNHMSH-3**
• Size 4 high temp sensor pair	D)	**CQO-992MTNHMSH-4**
Clamp-on RTD mounting hardware for dedicated systems		
• RTD mounting hardware for dedicated system: 152 to 610 mm (6 to 24 inch)		**0MR00**
• RTD mounting hardware for dedicated system: 12.7 to 50.8 mm (0.5 to 2 inch)		**0MR01**
• RTD mounting hardware for dedicated system: 31.8 to 203.2 mm (1.25 to 8 inch)		**0MR02**
• RTD mounting hardware for dedicated system: 508 to 1219 mm (20 to 48 inch)		**0MR04**
• Junction box for clamp on RTD's	D)	**CQO-992ECJ**
Portable sensor mounting hardware		
Sensor mounting tracks for portable sensors (aluminum with mounting chains) for pipes < 125 mm (5 inch) for		
• Universal sensor size A or B		**3MA00**
• High precision sensor size A or B		**3MB00**
Sensor mounting frames		
• Universal sensor size B (for pipes >125 mm (5 inch)	D)	**CQO-1012FP-PB**
• Universal sensor size C		**3MC00**
• Universal sensor size D		**3MC01**
• Universal sensor size E		**3MC02**
• High precision sensor size B (for pipes > 125 mm (5 inch)	D)	**CQO-1012FPH-PB**
• High precision sensor size C		**3MD00**
• High precision sensor size D		**3MD01**
Spacer bar (for indexing portable sensors		**3MS00**
Mounting chain and EZ clamp hardware		
• EZ clamp hardware set for DN 25 to DN 600 (1 to 24 inch); handles all transducers except "D" size HP and "E" size univ.	D)	**CQO-1012Z-1**
• EZ clamp hardware set for DN 25 to DN 600 (1 to 24 inch) for "D" size HP and "E" size universal	D)	**CQO-1012Z-2**
• Mounting chain for portable sensors: 4 x 760 mm lengths		**3CM10**
• Mounting chain for portable sensors: 2 x 760 mm and 2 x 1500 mm lengths		**3CM20**

Selection and Ordering data		Order No.
Spare parts (Miscellaneous)		
SITRANS F US clamp-on	D)	**7ME3960-** ■■■■■
RTD mounting hardware for portable system		**3MR00**
Sensor connector adaptors		
• "F" connector to BNC adapter (order 2 per sensor set)	D)	**CQO-1012NFPA**
SITRANS FST020 Sensor trackmounts		
• Single enclosure mounting track for "A" size Xdcr pair, Reflect	D)	**CQO-1022A1R**
• Single enclosure mounting track for "B" size Xdcr pair, Reflect	D)	**CQO-1022B1R**
• Dual enclosure mounting track for "B" size Xdcr pair, Reflect/Direct	D)	**CQO-1022B2R**
• Single enclosure mounting track for "C" size Xdcr pair, Reflect	D)	**CQO-1022C1R**
• Dual enclosure mounting track for "C" size Xdcr pair, Reflect/Direct	D)	**CQO-1022C2R**
• Dual enclosure mounting track for "D" size Xdcr pair, Reflect/Direct	D)	**CQO-1022D2R**

D) Subject to export regulations AL: N, ECCN: EAR99H.

Selection and Ordering data		Order No.
Spare parts (Miscellaneous)		
SITRANS F US clamp-on	D)	**7ME3960-** ■■■■■
Insert RTD Thermowells		
• Thermowell std. duty uninsulated pipe 140 mm (5.5 inch)	D)	**CQO-1012TW-1**
• Thermowell std. duty uninsulated pipe 216 mm (8.5 inch)	D)	**CQO-1012TW-2**
• Thermowell std. duty uninsulated pipe 292 mm (11.5 inch)	D)	**CQO-1012TW-3**
• Thermowell std. duty with lagging 140 mm (5.5 inch)	D)	**CQO-1012TW-1L**
• Thermowell std. duty with lagging 216 mm (8.5 inch)	D)	**CQO-1012TW-2L**
• Thermowell std. duty with lagging 292 mm (11.5 inch)	D)	**CQO-1012TW-3L**
Sensor cables for (Use "Sensor cable selection chart" to complete Order No. with ##)		
• IP65 (NEMA 4X) wall mount or IP 66 (NEMA 7) wall mount explosionproof		**0CK##**
• IP65 (NEMA 7) compact explosionproof		**2CK##**
• IP67 Weatherproof portable		**3CK##**
• IP40 (NEMA 1) Portable		**4CK##**
RTD cables for (Use "Sensor cable selection chart" to complete Order No. with ##)		
• All dedicated systems		**0CR##**
• IP67 Weatherproof portable		**3CR##**
• IP40 (NEMA 1) Portable		**4CR##**
Dedicated cable termination kits		
• Standard, plenum and armored sensor cable (NEMA 4X wall mount and NEMA 7 wall mount explosionproof)		**0CT01**
• Submersible sensor cable (NEMA 4X wall mount and NEMA 7 wall mount explosionproof)		**0CT11**
• Standard and plenum sensor cable (SITRANS FST020)		**1CT01**
• Standard, plenum and armored sensor cable (NEMA 7 compact explosionproof)		**2CT01**
• Submersible sensor cable (NEMA 7 compact explosionproof)		**2CT11**
• Clamp-on RTD cable termination kit for standard RTD		**0CT21**
• Clamp-on RTD cable termination kit for submersible RTD		**0CT31**
• Insert RTD cable termination kit		**0CT41**

Selection and Ordering data		Order No.
Spare parts (Miscellaneous)		
SITRANS F US clamp-on	D)	**7ME3960-** ■■■■■
Ultrasonic couplants		
• Temporary water based for portable systems: 350 ml (12 oz): -34 ... +38 °C (-30 ... +100 °F)		**0UC10**
• Permanent synthetic polymer based: 90 ml (3 oz) -40 ... +190 °C (-40 ... +375 °F)		**0UC20**
• Permanent high temp fluoroether: 12 ml (0.4 oz): -40 ... +230 °C (-40 ... +450 °F)		**0UC30**
• Permanent high temp fluoroether: 163 ml (5.5 oz): -40 ... +230 °C (-40 ... +450 °F)		**0UC50**
• Permanent vulcanizing silicone rubber couplant: 90 ml (3 oz): -40 …+120 °C (-40 …+250 °F)	D)	**CQO-CC112**
• Permanent high temp silicone grease: 12 ml (0.4 oz): -40 ... +230 °C (-40 ... +450 °F)	D)	**CQO-CC117**
• Permanent high temp silicone grease: 150 ml (5 oz): -40 ... +230 °C (-40 ... +450 °F)	D)	**CQO-CC117A**
• Couplant for submersible sensor applications	D)	**CQO-CC120**
• Dry coupling pads (qty of 10): -34 to +200 °C (-30 to +392 °F)		**0UC40**
Pipe damping films for SITRANS FUG gas systems		
• B1, B2, B3, C1 and C2 sensors		**0DM10**
• D1 and D3 sensors		**0DM20**
• D2 sensor		**0DM30**
• D4 sensor		**0DM40**
Serial RS232 Cables and I/O Adapters		
• RS232 Cable for all dedicated meters		**0CS00**
• RS232 Cable for IP66 weatherproof portable meter		**3CS00**
• RS232 Cable for IP40 Portable meter		**4CS00**
• I/O adapter for IP66 Weatherproof portable meter		**3AD00**
Universal Sensor Test Blocks		
• Test block for size A and B universal sensors		**0TB10**
• Test block for size C and D universal sensors		**0TB20**
Field Manuals		
• CD with documentation for SITRANS F US Clamp-on ultrasonic flowmeters (English)	D)	**A5E02830664-03**

D) Subject to export regulations AL: N, ECCN: EAR99H.

4

Accessories/Spare parts

Sensor cable selection chart (Dedicated, pair)

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

Sensor cable selection chart (SITRANS FUP1010, FUE1010 Portable, pair)

Sensor cable codes for length and type options		
Cable length m (ft)	Standard -40 ... + 80 °C (-40 ... +176 °F)	Plenum -40 ... + 200 °C (-40 ... +392 °F)
	Order Code	
6 (20)	**K01**	**K21**
15 (50)	**K02**	**K22**
30 (100)	**K03**	**K23**

RTD cable selection chart (Dedicated, each)

RTD cable codes for length and type				
Cable length m (ft)	Standard -40 … +200 °C (-40 … +392 °F)	Submersible -40 … +200 °C (-40 … +392 °F)	for insert RTD -40 ... +200 °C (-40 ... 392 °F)	for submersible insert RTD -40 ... +200 °C (-40 ... 392 °F)
	Order code			
6 (20)	**R01**	**R11**	**R21**	**R31**
15 (50)	**R02**	**R12**	**R22**	**R32**
30 (100)	**R03**	**R13**	**R23**	**R33**
46 (150)	**R04**	**R14**	**R24**	**R34**
61 (200)	**R05**	**R15**	**R25**	**R35**
91 (300)	**R06**	**R16**	**R26**	**R36**

RTD cable selection chart (SITRANS FUP1010, FUE1010 Portable, each)

RTD cable codes for length and type options	
Cable length m (ft)	IP67 -40 ... + 200 °C (-40 ... +392 °F)
	Order Code
6 (20)	**R11**
15 (50)	**R12**
30 (100)	**R13**

Accessories - Standard MLFB offering

Description		Order No.
Insert RTD size 1	D)	**7ME3950-1TJ10**
Thermowell size 1 w/lagging	D)	**CQO:1012TW-1L**
EZ Clamp 1 ... 24 inch	D)	**CQO:1012Z-1**
Junction Box for Clamp RTD	D)	**CQO:992ECJ**
Term kit standard, Plenum, Armored sensor cable	D)	**7ME3960-0CT01**
Term kit Submersible sensor cable	D)	**7ME3960-0CT11**
C1 Weld seal	D)	**7ME3960-0WS20**
D1 Weld Seal	D)	**7ME3960-0WS30**
C2 Weld Seal	D)	**7ME3960-0WD20**
D2 Weld Seal	D)	**7ME3960-0WD30**
Straps size 2	D)	**7ME3960-0SM11**
Straps size 3	D)	**7ME3960-0SM21**
Straps size 4	D)	**7ME3960-0SM31**
Weld seal sensors C2 FM	D)	**7ME3950-1SN00**
Weld seal sensors D1 FM	D)	**7ME3950-1SP00**
Weld seal sensors D2 FM	D)	**7ME3950-1SQ00**
Weld seal sensors D4 FM	D)	**7ME3950-1SR00**
Weld seal sensors C2 ATEX	D)	**7ME3950-2SN00**
Weld seal sensors D1 ATEX	D)	**7ME3950-2SP00**
Weld seal sensors D2 ATEX	D)	**7ME3950-2SQ00**
Weld seal sensors D4 ATEX	D)	**7ME3950-2SR00**
Weld seal sensors Gas C2 FM	D)	**7ME3950-1HN00**
Weld seal sensors Gas D1 FM	D)	**7ME3950-1HP00**
Weld seal sensors Gas D2 FM	D)	**7ME3950-1HQ00**
Weld seal sensors Gas D4 FM	D)	**7ME3950-1HR00**
Weld seal sensors Gas C2 ATEX	D)	**7ME3950-2HN00**
Weld seal sensors Gas D1 ATEX	D)	**7ME3950-2HP00**
Weld seal sensors Gas D2 ATEX	D)	**7ME3950-2HQ00**
Weld seal sensors Gas D4 ATEX	D)	**7ME3950-2HR00**

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

D) Subject to export regulations AL: N, ECCN: EAR99H.