

Selection and Ordering data		Order No.	Order code
SITRANS FUE1010 (Energy)		7ME350	- 0
Sensor for channel 2			
(includes pipe mounting kit and spacer bar for indicated max. OD listed)			
See "Sensor selection charts" for specifications.			
no sensor			
A2 universal	Trackmount and straps provided up to 75 mm (3")		A
B3 universal	Trackmount and straps provided up to 125 mm (5")		B
C3 universal	Mounting frame and straps provided up to 300 mm (13")		C
D3 universal	Mounting frame and straps provided up to 600 mm (24")		D
E2 universal	Mounting frame and straps provided up to 1200 mm (48") ¹⁾⁴⁾		E
C1H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ⁴⁾		F
C2H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ⁴⁾		M
D1H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ⁴⁾		N
D4H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ⁴⁾		P
Doppler	to 12" with strap kit (not for IP65 (NEMA7))		R
D1H	High temperature range 104 °C/220 °F HP ²⁾		S
Approvals			Z
UL/Portable			Q1P
FM, CSA, CE, Dedicated			0
			1

- 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-OMS40 (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-OMS40 (1012BN-4)
- 3) Requires two R** cables per one RTD pair
- 4) 600 mm (24") for portable systems only

Standard MLFB product offering represents 4 to 6 weeks delivery time

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

Selection and Ordering data		Order No.	Ord. code			
SITRANS FUE1010 (Energy)						
- Dedicated IP65 (NEMA 4X) wall mount - Portable IP40 (NEMA 1) Battery powered	7ME3500-					
	7ME3502-					
Number of channels/ultrasonic paths						
Dedicated meter						
<u>Dedicated meter</u>						
Single channel		1				
Dual channel/Dual path		2				
<u>Portables</u>						
Dual channel/Dual path		4				
Flowmeter functions and I/O configurations						
- Portable Standard I/O - Reflexor capability - Graphic display - 2 x 0 ... 10 V - 2 x 4 ... 20 mA - 2 x pulse output - 4 x status logic - Energy efficiency COP/EER output - 2 x 4 ... 20 mA analog input	C					
	F					
- Dedicated Standard I/O - Reflexor capability - Graphic display - 2 x 0 ... 10 V - 2 x 4 ... 20 mA - 2 x pulse output - 4 x relay C type - Energy efficiency COP/EER output - 2 x 4 ... 20 mA analog input	F					
Extended output adder plus standard inputs (4 additional 4 ... 20 mA outputs) and form C relay	Z		J 1 B			
Meter power options						
90 ... 240 V AC (Dedicated only)		A				
9 ... 36 V DC (Dedicated only)		B				
Charger Type A for Europe (CEE7/7)		C				
Charger Type C for Australia (AS3112)		D				
Charger Type D for U.K. (BS1363)		E				
Charger Type J for Japan (JIS8303)		F				
Charger Type K for U.S. (NEMA 5-15P)		G				
Charger Type L for Switzerland (SEV1011)		H				
No Charger		J				
External 4 hours battery with US plug for Portable		Z		K 1 A		
External 4 hours battery with European plug for Portable		Z		K 1 B		
Communication options						
RS 232 (standard)		0				
Standard MODBUS configurations include Baudrate: 9600, Parity: None, Stop Bits: 1, Data bits: 8, MODBUS data: 16 bit, Data format: word normal, Mode: RTU, and MODBUS format: Gould. For other configurations please select option 9 and L1Y and state requirements in plain text						
MODBUS Single and Dual Channel		1				
MODBUS Dual Path		2				
Other Version, MODBUS, N2, Other Baud Rate, Other Parity, State in Plain Text		9				
Selection and Ordering data		Order No.	Ord. code			
SITRANS FUE1010 (Energy)						
- Dedicated IP65 (NEMA 4X) wall mount - Portable IP40 (NEMA 1) Battery powered	7ME3500-					
	7ME3502-					
RTD temperature sensor						
(includes mounting hardware for pipes above 1.5" outer diameter)						
No RTDs (Note: temperature input is required for energy system)		0				
1 x pair standard clamp-on RTD (NEMA 4X only) ²⁾		1				
2 x pair standard clamp-on RTD (for dual channel NEMA 4X only) ²⁾		2				
1 x pair standard clamp-on RTD (NEMA 1 Portable) ²⁾		3				
2 x pair standard clamp-on RTD (for dual channel NEMA 1 Portable) ²⁾		4				
1 x Insertion style RTD with thermowell and lagging ²⁾		9			M 1 A	
2 x Insertion style RTD with thermowell and lagging ²⁾		9			M 1 B	
Sensor for channel 1						
Including pipe mounting tracks for sizes A & B sensors indented for pipe with a OD less than 125 mm (5") and mounting frame/spacer bars for sizes C, D & E sensors. Straps provided are for the indicated maximum OD listed below. Strap kits are available to accommodate larger pipes (refer to spare part list). Refer to "Sensor Selection Charts" for the sensor suitability of pipe size and wall thickness.						
No sensor					A	
A2 universal	Trackmount and straps provided up to 75 mm (3")				B	
B3 universal	Trackmount and straps provided up to 125 mm (5")				C	
C3 universal	Mounting frame and straps provided up to 300 mm (13")				D	
D3 universal	Mounting frame and straps provided up to 600 mm (24")				E	
E2 universal	Mounting frame and straps provided up to 1200 mm (48") ¹⁾³⁾				F	
For the following A1H to D4H sensors, temperature range is -40 °C ... 65 °C (-41 °F ... 150 °F), nominal 21 °C (70 °F):						
For other temperature ranges please see spare parts list.						
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	

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-OMS40 (1012BN-4).

²⁾ Requires two R** cables per one RTD pair

³⁾ 600 mm (24") for portable systems only

Selection and Ordering data		Order No.	Ord. code
SITRANS FUE1010 (Energy)			
• Dedicated IP65 (NEMA 4X) wall mount		7ME3500-	
• Portable IP40 (NEMA 1) Battery powered		7ME3502-	
		 - 0	
Sensor for channel 1 (continued)			
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") ³⁾		M
C2H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ³⁾		N
D1H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ²⁾³⁾		P
D2H (high precision)	Trackmount and straps provided up to 1200 mm (48") ²⁾³⁾		Q
D4H (high precision)	Trackmount and straps provided up to 1200 mm (48") ²⁾³⁾		R
Doppler	to 12" with strap kit		S
High temperature sensor size 2 for up to 230 °C (446 °F) (30 ... 200 mm diam. (1.18 ... 7.67 inch diam.))		Z	P 1 A
High temperature sensor size 3 for up to 230 °C (446 °F) (150 ... 610 mm diam. (5.90 ... 24 inch diam.))		Z	P 1 B
High temperature sensor size 4 for up to 230 °C (446 °F) (400 ... 1200 mm diam. (15.75 ... 47.25 inch diam.))		Z	P 1 C
For the following B1H to D4H sensors, temperature range is -1 °C up to 104 °C (30 °F up to 220 °F), nominal 65 °C (150 °F):			
B1H (high temperature range HP)		Z	P 1 K
B2H (high temperature range HP)		Z	P 1 L
C1H (high temperature range HP)		Z	P 1 M
C2H (high temperature range HP)		Z	P 1 N
D1H (high temperature range HP) ²⁾		Z	P 1 P
D2H (high temperature range HP) ²⁾		Z	P 1 Q
D4H (high temperature range HP) ²⁾		Z	P 1 R
Sensor for channel 2 (includes pipe mounting kit 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 1200 mm (48") ¹⁾³⁾		F

Selection and Ordering data		Order No.	Ord. code
SITRANS FUE1010 (Energy)			
• Dedicated IP65 (NEMA 4X) wall mount		7ME3500-	
• Portable IP40 (NEMA 1) Battery powered		7ME3502-	
			- 0
Sensor for channel 2 (continued)			
For the following A1H to D4H sensors, temperature range is -40 °C ... 65 °C (-41 °F ... 150 °F), nominal 21 °C (70 °F):			
A2H (high precision)	Trackmount and straps provided up to 75 mm (3")	H	
A3H (high precision)	Trackmount and straps provided up to 75 mm (3")	J	
B1H (high precision)	Trackmount and straps provided up to 125 mm (5")	K	
B2H (high precision)	Trackmount and straps provided up to 125 mm (5")	L	
C1H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ³⁾	M	
C2H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ³⁾	N	
D1H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ²⁾³⁾	P	
D2H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ²⁾³⁾	Q	
D4H (high precision)	Mounting frame and straps provided up to 1200 mm (48") ²⁾³⁾	R	
Doppler	to 12" with strap kit	S	
High temperature sensor size 2 for up to 230 °C (446 °F) (30 ... 200 mm diam. (1.18 ... 7.67 inch diam.))		Z	Q1 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	Q1 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	Q1 C
For the following B1H to D4H sensors, temperature range is -1 °C up to 104 °C (30 °F up ... 220 °F), nominal 65 °C (150 °F):			
B1H (high temperature range HP)		Z	Q1 K
B2H (high temperature range HP)		Z	Q1 L
C1H (high temperature range HP)		Z	Q1 M
C2H (high temperature range HP)		Z	Q1 N
D1H (high temperature range HP) ²⁾		Z	Q1 P
D2H (high temperature range HP) ²⁾		Z	Q1 Q
D4H (high temperature range HP) ²⁾		Z	Q1 R
Approvals			
FM/CSA/CE Dedicated			1
UL/ULC/CE Portable			0
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-OMS40 (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-OMS40 (1012BN-4).			

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-OMS40 (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-OMS40 (1012BN-4).

3) 600 mm (24") for portable systems only

Selection and Ordering data	Order code
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Further designs

Please add "-Z" to Order No. and specify Order code(s).	
Cable assembly for sensors (add for # of channels) See "Sensor cable selection chart"	K..
Cable assembly for RTDs (add for # of RTDs) See "RTD cable selection chart"	R..
Cable termination kit (for one cable pair) dedicated only	
• 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
Wet flow transfer calibration (priced on request)	
6 point calibration 2/water (Price per channel)	
• 2SS40 pipe	D01
• 3CS40 pipe	D02
• 4CS40 pipe	D03
• 4SS40 pipe	D04
• 6CS40 pipe	D05
• 6SS40 pipe	D06
• 6CS120 pipe	D07
• 8CS40 pipe	D08
• 8SS40 pipe	D09
• 8CS120 pipe	D10
• 10CS Standard pipe	D11
• 10CS40 pipe	D12
• 10SS40 pipe	D13
• 12CS Standard pipe	D14
• 12CS40 pipe	D15
• 14CS30 pipe	D16
• 14CS40 pipe	D17
• 16CS Standard pipe	D18
• 16CS40 pipe	D19
• 18CS Standard pipe	D20
• 20CS20 pipe	D21
• 20CS30 pipe	D22
• 24CS Standard pipe	D23
• 24CS20 pipe	D24
• 24CS30 pipe	D25
• 30CS Standard pipe	D26
• 36CS Standard pipe	D27
• Other pipe, other liquid, additional points, witness	Y28
Tag name plate	
• Stainless steel tag with 3.2 mm (0.13 inch) character size (68 characters max.)	Y19

MLFB example

Application example

A dedicated clamp-on energy meter is required for two separate return lines. Both will use clamp-on RTDs for the supply and re- turn lines. AC power is available and data access will be via MODBUS communication.

Pipe 1 is a DN150 (6") schedule 40 carbon steel line

Pipe 2 is a DN 300 (12") ductile iron line

MLFB Order No.: **7ME3500-2DA10-2NE0-Z**
K03 + K05 + R03 + R05 + R02 + R03

Selection and Ordering data	Order No.	Ord. code
SITRANS FUE1010 meter family	7 ME 3 5 0 - 0 - - - - -	
IP65 (NEMA 4X) enclosure	0	
Dual channel	2	
Dedicated Type 1 I/O option	D	
90 ... 230 V AC power option	A	
MODBUS option	1	
2 pairs of clamp-on RTDs	2	
Sensor code for 6" pipe	N	
Sensor code for 12" pipe	E	
No approval required	1	
30 m (100 ft) sensor cable for channel 1		K 0 3
61 m (200 ft) sensor cable for channel 1		K 0 5
30 m (100 ft) cable for RTD 1		R 0 3
61 m (200 ft) cable for RTD 2		R 0 5
15 m (50 ft) cable for RTD 3		R 0 2
30 m (100 ft) cable for RTD 4		R 0 3

Selection and Ordering data	Order code
Operating Instructions for SITRANS FUE1010	
English NEMA 4X Wall mount	A5E03086491
German NEMA 4X Wall mount	A5E03086492
English IP40 NEMA 1 Battery powered	A5E02951524
German IP40 NEMA 1 Battery powered	A5E02951536

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/flowdocumentation>

Universal sensor selection chart IP68

RTD cable (single) selection chart

Based on pipe size (pipes other than steel)					
Pipe size	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	6096	10	249

High precision sensor selection chart IP68

Based on pipe wall thickness (steel pipes only)					
Pipe Wall	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 (single pair) selection chart

Sensor cable codes for length and type options				
Cable length m (ft)	Standard (PVC jacket)	Submersible ¹⁾ (polyethylene jacket)	Plenum Rated (teflon jacket)	Armored ¹⁾
	-40...+80 °C (-40...+176 °F)	-40...+80 °C (-40...+176 °F)	-40...+200 °C (-40...+392 °F)	-40...+80 °C (-40...+176 °F)
Order code				
6 (20)	K01 ²⁾	K11	K21	K31
15 (50)	K02	K12 ²⁾	K22	K32 ²⁾
30 (100)	K03 ²⁾	K13 ²⁾	K23	K33
46 (150)	K04 ²⁾	K14	K24	K34
61 (200)	K05	K15	K25	K35
91 (300)	K06 ²⁾	K16	K26	K36

¹⁾ Submersible and armored sensor cable is not available for portable versions.

²⁾ Standard MLFB for quick delivery

RTD cable codes for length and type		
Cable length m (ft)	Standard (teflon wrapped)	Insert ¹⁾
	-40 ... +200 °C (-40 ... +392 °F)	-40 ... +200 °C (-40 ... +392 °F)
Order code		
6 (20)	R01 ²⁾	R21
15 (50)	R02 ²⁾	R22
30 (100)	R03 ²⁾	R23
46 (150)	R04	R24
61 (200)	R05	R25
91 (300)	R06	R26

¹⁾ Submersible RTD cable is not available for portable versions.

²⁾ Standard MLFB for quick delivery