

Selection and Ordering data	Order-No.	Ord. code	Selection and Ordering data	Order-No.	Ord. code
SITRANS FUE1010 Energy clamp-on			SITRANS FUE1010 Energy clamp-on		
• Dedicated IP65 (NEMA 4X)	F) ◆	7ME3500-	• Dedicated IP65 (NEMA 4X)	F) ◆	7ME3500-
• Portables IP40 (NEMA 1) battery powered	F) ◆	7ME3502-	• Portables IP40 (NEMA 1) battery powered	F) ◆	7ME3502-
	■ ■ ■ ■ ■	- 0 ■ ■ ■ ■ ■		■ ■ ■ ■ ■	- 0 ■ ■ ■ ■ ■
Number of channels/ultrasonic beams			Communication options		
Dedicated meter			RS232 (standard)	◆	0
<u>Dedicated meter</u>			MODBUS (dedicated only)		1
Single channel	◆	1	Ethernet (dedicated only)		2
Dual channel / Dual beam		2	Other versions (Dial up Modem (dedicated only)), max. 9600 Baud Dial up Modem		9
<u>Portables</u>			Add Order code and plain text.		
Single channel	◆	3	RTD temperature sensor		
Dual channel / Dual beam		4	(includes mounting hardware for pipes above 1.5" outer diameter)		
Flowmeter functions and I/O configurations			No RTDs (Note: temperature input is required for energy system)		0
• Portable Type 1 Standard	◆	A	1x pair standard clamp-on RTD (NEMA 4X only)	◆	1
- Reflexor capability			2x pair standard clamp-on RTD (for dual channel NEMA 4X only)		2
- Graphic display			1x pair standard clamp-on RTD (NEMA 12 portable)		3
- 2x 0 ... 10 V			2x pair standard clamp-on RTD (for dual channel NEMA 12 portable)		4
- 2x 4 ... 20 mA			1x pair submersible clamp-on RTD (NEMA 4X only)		5
- 2x pulse output			2x pair submersible clamp-on RTD (for dual channel NEMA 4X only)		6
- 4x status logic			Special (for insert style RTDs), dedicated only		9
• Portable Type 3 option adder		C	1x Insertion style RTD with thermowell and lagging		9
- Energy efficiency COP/EER output			2x Insertion style RTD with thermowell and lagging		9
- 2x 4 ... 20 mA analog input			Transducer for channel 1		
• Dedicated Type 1 Standard		D	(includes pipe mounting kit and spacer bar for indicated max. outer diameter listed)		
- Reflexor capability			See „Transducer selection charts“ for specifications.		
- Graphic display			no transducer		A
- 2x 0 ... 10 V			A2 universal	to 3"/track mount	B
- 2x 4 ... 20 mA			B3 universal	to 5"/track mount	C
- 2x pulse output			C3 universal	to 13"/mounting frame	D
- 4x relay C type			D3 universal	to 24"/mounting frame	E
• Dedicated Type 3 option adder		F	E2 universal	to 48"/mounting frame	F
- Reflexor capability			A1H (high precision)	to 3"/track mount	G
- Energy efficiency COP/EER output			A2H (high precision)	to 3"/track mount	H
- 2x 4 ... 20 mA analog input			A3H (high precision)	to 3"/track mount	J
• Specials (Expanded I/O and or Mercury wetted relays for dedicated only)		Z	B1H (high precision)	to 5"/track mount	K
Add Order code and plain text.			B2H (high precision)	to 5"/track mount	L
• Type 3 with Mercury wetted relays		Z	C1H (high precision)	to 24"/mounting frame	M
• Type 3 with expanded I/Os (4 additional 4 ... 20 mA outputs) and form C relay		Z	C2H (high precision)	to 24"/mounting frame	N
• Type 3 with expanded I/Os and Mercury wetted relays		Z	D1H (high precision)	to 48"/mounting frame	P
			D2H (high precision)	to 48"/mounting frame	Q
			D4H (high precision)	to 48"/mounting frame	R
			Doppler	to 12" with chain or strap kit	S
Meter power options			Other versions (different size, mount, type or pipe larger than DN 1200 (48"), or corrosion resistant), add Order code and plain text.	Z	P 1 Y
90 ... 230 V AC (Dedicated only)	◆	A	High temperature transducer 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
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			
Other versions (External battery for extended service with portable meter)		Z			
Add Order code and plain text.					
External 4 hours battery with US plug for Portable		Z			
External 4 hours battery with European plug for Portable		Z			

◆ Mainstream products (delivery time 4 to 6 weeks)

F) Subject to export regulations AL: 9I999, ECCN: N.

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• Portables IP40 (NEMA 1) battery powered	F) ◆	7ME3502-	
		■ ■ ■ ■ ■ - 0 ■ ■ ■ ■ ■	
Transducer for channel 1 (continued)			
High temperature transducer 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 transducer 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
High temperature range HP transducer size B1H for temperatures up to 104 °C (220 °F)		Z	P 1 K
High temperature range HP transducer size B2H for temperatures up to 104 °C (220 °F)		Z	P 1 L
High temperature range HP transducer size C1H for temperatures up to 104 °C (220 °F)		Z	P 1 M
High temperature range HP transducer size C2H for temperatures up to 104 °C (220 °F)		Z	P 1 N
High temperature range HP transducer size D1H for temperatures up to 104 °C (220 °F)		Z	P 1 P
High temperature range HP transducer size D2H for temperatures up to 104 °C (220 °F)		Z	P 1 Q
High temperature range HP transducer size D4H for temperatures up to 104 °C (220 °F)		Z	P 1 R
Transducer for channel 2			
(includes pipe mounting kit for indicated max. outer diameter listed) See „Transducer selection charts“ for specifications.			
no transducer			A
A2 universal to 3"/track mount			B
B3 universal to 5"/track mount ◆			C
C3 universal to 13"/mounting frame ◆			D
D3 universal to 24"/mounting frame ◆			E
E2 universal to 48"/mounting frame ◆			F
A1H (high precision) to 3"/track mount			G
A2H (high precision) to 3"/track mount			H
A3H (high precision) to 3"/track mount			J
B1H (high precision) to 5"/track mount			K
B2H (high precision) to 5"/track mount ◆			L
C1H (high precision) to 24"/mounting frame			M
C2H (high precision) to 24"/mounting frame ◆			N
D1H (high precision) to 48"/mounting frame ◆			P
D2H (high precision) to 48"/mounting frame			Q
D4H (high precision) to 48"/mounting frame			R
Doppler to 12" with chain or strap kit			S
Other versions (different size, mount, type or pipe larger than DN 1200 (48"), or corrosion resistant), add Order code and plain text.		Z	Q 1 Y
High temperature transducer 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 transducer 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 transducer 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
High temperature range HP transducer size B1H for temperatures up to 104 °C (220 °F)		Z	Q 1 K
High temperature range HP transducer size B2H for temperatures up to 104 °C (220 °F)		Z	Q 1 L
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SITRANS FUE1010 Energy clamp-on			
• Dedicated IP65 (NEMA 4X)	F) ◆	7ME3500-	
• Portables IP40 (NEMA 1) battery powered	F) ◆	7ME3502-	
		■ ■ ■ ■ ■ - 0 ■ ■ ■ ■ ■	
Transducer for channel 2 (continued)			
High temperature range HP transducer size C1H for temperatures up to 104 °C (220 °F)		Z	Q 1 M
High temperature range HP transducer size C2H for temperatures up to 104 °C (220 °F)		Z	Q 1 N
High temperature range HP transducer size D1H for temperatures up to 104 °C (220 °F)		Z	Q 1 P
High temperature range HP transducer size D2H for temperatures up to 104 °C (220 °F)		Z	Q 1 Q
High temperature range HP transducer size D4H for temperatures up to 104 °C (220 °F)		Z	Q 1 R
Approvals			
FM/CSA/CE Dedicated			1
UL/ULc/CE Portable			2
◆ Mainstream products (delivery time 4 to 6 weeks)			

Selection and Ordering data	Order code
Further designs	
Please add „Z“ to Order No. and specify Order code(s).	
Cable assembly for transducers (add for # of channels) See „Transducer 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 transducer cable	T01
• Termination for submersible transducer 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, Labels and Documentation), English (default)	
• German	B10
• French	B12
• Spanish	B13
• Italian	B14
Wet flow transfer calibration (priced for 1 pipe calibration)	
• 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 (26 characters max.)	Y17
• 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 returns lines. Both will use clamp-on RTDs for the supply and return 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
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	
Transducer code for 6" pipe	N	
Transducer code for 12" pipe	E	
No approval required	0	
30 m (100 ft) transducer cable for channel 1		K 0 3
61 m (200 ft) transducer 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

Transducer selection charts

Universal transducers for any pipe material

Transducer	Order code	Outer diameter range (mm)		Outer diameter range (inches)	
Size code		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	240

High precision transducers for steel pipe with outer diameter/wall thickness ratio > 10

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

Transducer cable selection chart

Transducer cable codes for length and type options

Cable length m (ft)	Standard (PVC jacket) -40...+80 °C (-40...+176 °F)	Submersible ¹⁾ (polyethylene jacket) -40...+80 °C (-40...+176 °F)	Plenum Rated (teflon jacket) -40...+200 °C (-40...+392 °F)	Armored ¹⁾ -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

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

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 ¹⁾ (extruded jacket) -40 ... +200 °C (-40 ... +392 °F)
	Order code	
6 (20)	R01	R11
15 (50)	R02	R12
30 (100)	R03	R13
46 (150)	R04	R14
61 (200)	R05	R15
91 (300)	R06	R16

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