



ALSONIC-EG

Ultrasonic Thermal Energy Meter

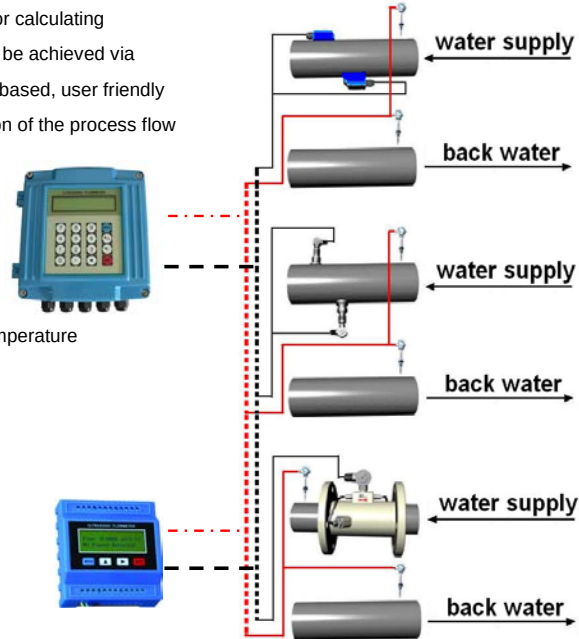
Model Alsonic-EG

GENERAL

Alsonic-Energy meters feature transit-time ultrasonic flow measurement with two PT 100 temperature sensors or customer-supplied RTD sensors for calculating total and instantaneous energy consumption. Flow measurement may be achieved via clamp-on, spool piece, or insertion-type sensors. Our microprocessor based, user friendly field programmable flow measurement technique creates no interruption of the process flow and has low installation costs.

FEATURES

- ❑ Measures energy consumption rate and total
- ❑ Compact or wall mount version
- ❑ Proven ultrasonic technology for flow measurement and PT 100 for temperature
- ❑ Clamp-on, spool piece or insertion mounting for flow measurement
- ❑ Wide range velocities - 0.03 ~ ± 105 feet/sec (0.01 ~ ± 32 m/s)
- ❑ Transducers for pipe sizes ranging from $\frac{1}{2}$ " ~ 240" (15 ~ 6000 mm)
- ❑ Excellent accuracy - $\pm 0.5\%$ of reading.
- ❑ RS485 and Modbus communication protocols available
- ❑ 4-20 mA and pulse outputs with available relays and alarms
- ❑ Data logger function - includes time & date, totalizer, diagnostics
- ❑ Response time less than 1 second
- ❑ NIST traceable calibration certificate



SPECIFICATION

- | | | | |
|-----------------------|---|---------------------|---|
| ● Flow measurement | : Transit time ultrasonic method | ● Display | : LCD with backlight, 2 x 20 characters
1-line, non-backlit 7 digit LCD (ILD version) |
| ● Transducer type | : clamp-on, spool piece, or insertion | ● Keypad | : 4 x 4 tactile-feedback membrane keypad
Displays energy rate, total consumption,
temperature, instantaneous flow rate
accumulated flow rate, velocity, time |
| ● Temperature measure | : Platinum 100 RTDs | ● Max. Cable Length | : 500' (150 m) |
| ● Pipe Size | : $\frac{1}{2}$ "-240" (25-6000mm) | ● Power | : $\leq 2W$ |
| ● Pipe Material | : Cast Iron, Stainless Steel, Ductile Iron
Copper, PVC, Aluminum, Asbestos
Fiberglass... etc. | ● Power Supply (AC) | : 90 ~ 260V _{AC} , 50/60 Hz |
| ● Liner Material | : Tar Epoxy, Rubber, Mortar, Polypropylene,
Polystyral, Polystyrene, Polyester, Ebonite,
Polyethylene, Teflon... etc. | ● Power Supply (DC) | : 9-30 V _{DC}
3.6V Li battery, 6 years of life (ILD version) |
| ● Fluid Velocity | : 0.03 ~ ± 105 feet/sec (0.01 ~ ± 32 m/s) | ● Data Storage | : Up to 64 days std, 36 mos. w/ ILD version
Time and corresponding flow rates of the
last 64 times power on/off events |
| ● Resolution | : 0.0003 feet/sec (0.0001 m/s) | ● Signal outputs | : 4-20 mA , Impedance 0-1k Ω , pulse, relays
Isolated OCT for alarms (on/off with buzzer) |
| ● Liquid temperature | : -40 ~ 120 °C | Signal inputs | : Two RTD channels, and additional inputs |
| ● Suspended solids | : <2%; particle size smaller than 75 μ m | ● Response Time | : < 1 second |
| ● Engineering units | : Metric or English (US) | ● Enclosure | : NEMA 4X (IP65) |
| ● Accuracy | : $\pm 1\% \pm 2\%$ of reading from 1.5 - 100 ft/sec
$\pm 0.5\%$ of reading (online calibration) | ● Sensor | : IP68(Submersible) |
| ● Repeatability | : $\pm 0.5\%$ of reading | ● Weight | : 4 lb. (2 kg) wall mount, 2 lb. (1 kg) integral |
| ● Communication | : Isolated RS 485, MODBUS, GPRS/GSM
M-bus, Bacnet, or any other protocol | | |
| ● Measurement period | : 0 to 99s | | |
| ● Ambient Temperature | : -4 ~ 122 °F (-20 ~ 50 °C) | | |
| ● Mounting | : wall mounting or integral | | |

➤ TRANSDUCER SPECIFICATION

• Standard Transducers

Fluid Temperature : -30 ~ +60 °C

Accuracy: 1.5%

Model	SCS (Small Size)	SCM (Medium Size)	SCL (Large Size)
Pipe Size	DN15-100mm	DN50-1000mm	DN300-6000mm

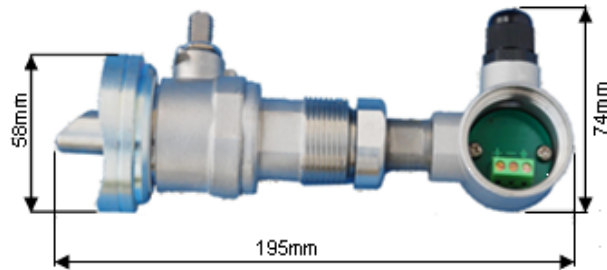


• Insertion Transducers

Fluid Temperature : -40 ~ +120 °C

Accuracy: 1%

Model	SIS (Standard)	SIL (Large Size)
Pipe Size	DN80-1000mm	DN300-6000mm



• High Temperature Transducers

Fluid Temperature : -40 ~ +120 °C

Accuracy: 1.5%

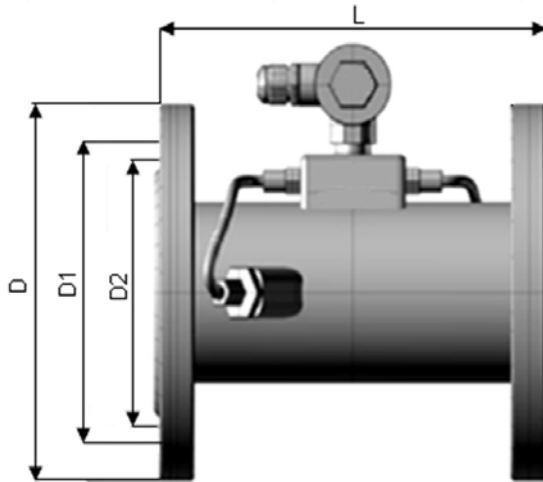
Model	STS (Small Size)	SHL (Medium Size)
Pipe Size	DN15-100mm	DN50-1000mm



• Inline Type

Fluid Temperature : -40 ~ +120 °C

Accuracy: 1%



DN	L	D	D1	D2
50	200	165	125	99
65	200	185	145	118
80	225	200	160	132
100	250	220	180	156
125	250	250	210	184
150	300	285	240	211
200	350	340	295	266
250	450	405	355	319
300	500	460	410	370
350	550	520	470	429
400	600	580	525	480
450	700	640	585	548
500	800	715	650	609
600	1000	840	770	720
700	1100	910	840	794
800	1200	1025	950	901
900	1300	1125	1050	1001
1000	1400	1255	1170	1112

Note: all dimensions are mm unless stated

➤ Energy Ultrasonic Flowmeter

• Wall Mount

Size: 180×170×56mm

Material: cast aluminum

Setting: flow unit, zero, clear total flow, K-factor, date, passwords, linearity factor, etc....

Input: 3 channel 4-20mA analog input, 2 channel resistance signal input

Output: Isolation RS232/RS485 output, MODBUS 2 channel isolation OCT output 1 channel isolation 4-20mA output (two-wire)

Protection: NEMA 4X (IP65)



• Remote Module

Display: 1. status
2. error time
3. temperature difference
4. temperature
5. energy flow
6. total flow
7. flow rate
8. positive total flow

Size: 87 x 93 x 32 mm

Input: 3 channel 4-20mA analog input, 2 channel resistance signal input

Output: Isolation RS232/RS485 output, 2 channel isolation OCT output 1 channel isolation 4-20mA output (two-wire), MODBUS

Protection: IP54



➤ ACCESSORIES



Modbus to Bacnet, M-Bus and other protocol convertors



PT1000 RTD's

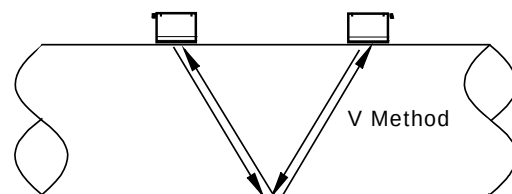
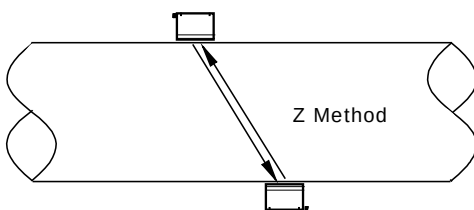


Cable

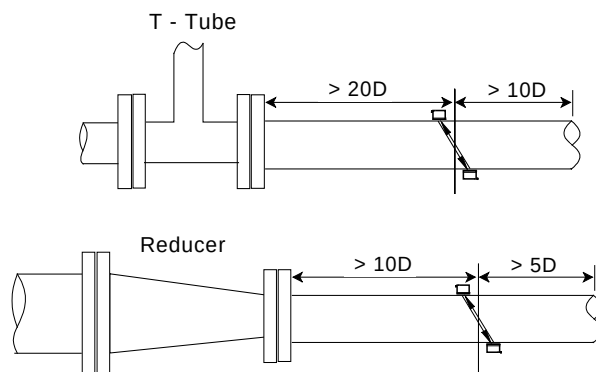
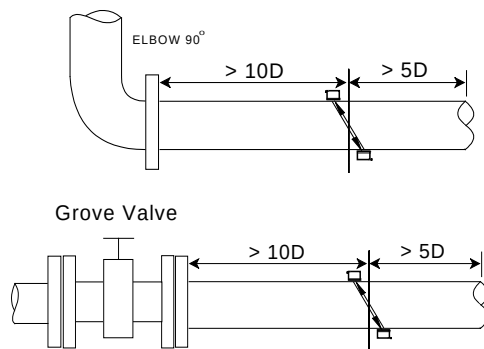


Thickness gauge

➤ INSTALLATION



➤ STRAIGHT RUN PIPING REQUIREMENT



**** Please contact your local Smartmeasurement™ application engineer**

You also need to provide the following information:

Type of Fluid	Please provide the name of your fluid, including operating density and viscosity
Line Size	Nominal pipe size and connection (insertion, flanged, clamp, etc..)
Process Pressure and Temperature	We will calibrate your flowmeter as close to your operating conditions as possible
Type of Electronics	Output and installation type (compact, wall mount, panel mounted..)
Pipe Material	Pipe material (Copper, PVC, black iron, etc.)

7 Model Selection Guide

Alsonic-Energy									
Example 1: Alsonic-EG-WLE-100-SMC-C1-ST-DL									
Alsonic-EG-		**	**	**	**	**			Description
Module-Energy, 4-20mA, RTD input, RS-485, OCT, 4-20mA output		MUE						Transmitter	
Wall mount with display, multichannel input/outputs, 4-20mA, RTD input, RS-485, OCT, 4-20mA output		WLE							
Insertion Pt100 RTDs - 2m cable			100						RTD
Clamped Pt100 RTDs - 2m cable			C100						
Small clamp sensor, ½" - 4" (15 - 100mm)				SCS				Transducers	
Medium clamp sensor, 2" - 40" (50 - 1000mm)				SCM					
Large clamp sensor, 12" ~ 240" (300 ~ 6000 mm)				SCL					
High Temp.clamp sensor; -22-320 °F, ½" - 4" (15 - 100 mm)				SHS					
High Temp. clamp sensor; -22-320 °F, 2" - 40" (50 - 1000 mm)				SHL					
Standard insertion sensor				SIS					
Long insertion sensor				SIL					
SS #304 inline sensor (-30-120 °C); specify pipe size ***				DN**					
5M x 2 Cables					C1				Signal Cable Length
10M x 2 Cables					C2				
15M x 2 Cables					C3				
thickness gauge					TT				Options
Extra single cable. 10m * 2					C10				
Mounting Belt. 6m * 2					ST				
Extra RTD cable **m,					RC**				
Data logger for wall mount displays					DL				
IP68 Protection for transducers					68				