Wall-mounted Transit-Time Ultrasonic Flowmeter

TF1100-EC Wall-mounted Transit Time Ultrasonic Flowmeter works on the transit-time method. The clamp-on ultrasonic transducers (sensors) are mounted on the external surface of the pipe for non-invasive and non-intrusive flow measurement of liquid and liquefied gasses in fully filled pipe**.** Three pairs of transducers are sufficient to cover the most common pipe diameter ranges. In addition, its optional thermal energy measurement capability makes it possible to carry out a complete analysis of thermal energy usage in any facility. This flexible and easy to use flow meter is the ideal tool for the support of service and maintenance activities. It can also be used for the control or even for the temporary replacement of permanently installed meters.

Features:

1. Non-invasive transducers are easy to install, cost effective, and require no pipe cutting or processing interrupt.

2. Wide liquid temperature range: -35℃~200℃.

3. Data logger function.

4. Thermal energy measurement capability can be optional.

5. For commonly used pipe materials and diameters from 20mm to over 6.0m.

6. Wide bi-directional flow range of 0.01 m/s to 12 m/s.

Applications：

General	Water and waste water industry - hot water, cooling water, potable water, sea water etc.)
• **Service and maintenance**	**Petrochemical industry**
• **Replacement of defective devices**	**Chemical industry** -chlorine, alcohol, acids, .thermal oils.etc
• **Support of commissioning process and installation**	**Refrigeration and air conditioning systems**
• **Performance and efficiency measurement**	**Food , beverage and pharmaceutical industry**
- **Evaluation and assessments**	**Power supply-** nuclear power plants, thermal & hydropower plants), heat energy boiler feed water.etc
- **Capacity measurement of pumps**	**Metallurgy and mining applications**
- **Monitoring of regulating valves**	**Mechanical engineering and plant engineering-**pipeline leak detection, inspection, tracking and collection.
• **Energy efficiency audits**	

Specifications: Transmitter

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Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s;±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 24V/500mA
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-10℃ to +60℃
Housing material	Fiberglass
Display	4 line×16 English letters LCD graphic display, backlit
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	unit GJ，KWh can be optional
Communication	4~20mA(accuracy 0.1%),OCT, Relay, RS232, RS485 (Modbus),data logger
Security	Keypad lockout, system lockout
Size	244*196*114mm
Weight	2.4kg

Specifications: Transducer

Degree of protection	IP65 according to EN60529.(IP67 or IP68 Upon request)
Suited Liquid Temperature	Std. Temp.: -35℃~85℃ for short periods up to 120℃ High Temp.: -35℃~200℃ for short periods up to 250℃
Pipe diameter range	20-50mm for type S, 40-1000mm for type M, 1000-6000mm for type L
Transducer Size	Type S 48(h)*28(w)*28(d)mm Type M 60(h)*34(w)*32(d)mm Type L 80(h)*40(w)*42(d)mm
Material of transducer	Aluminum for standard temp. sensor, and peek for high temp. sensor
Cable Length	Std:10m
Temperature Sensor	Pt1000, 0 to 200℃, Clamp-on and Insertion type Accuracy: ±0.1%

Dimensional Sketches

Transmitter:
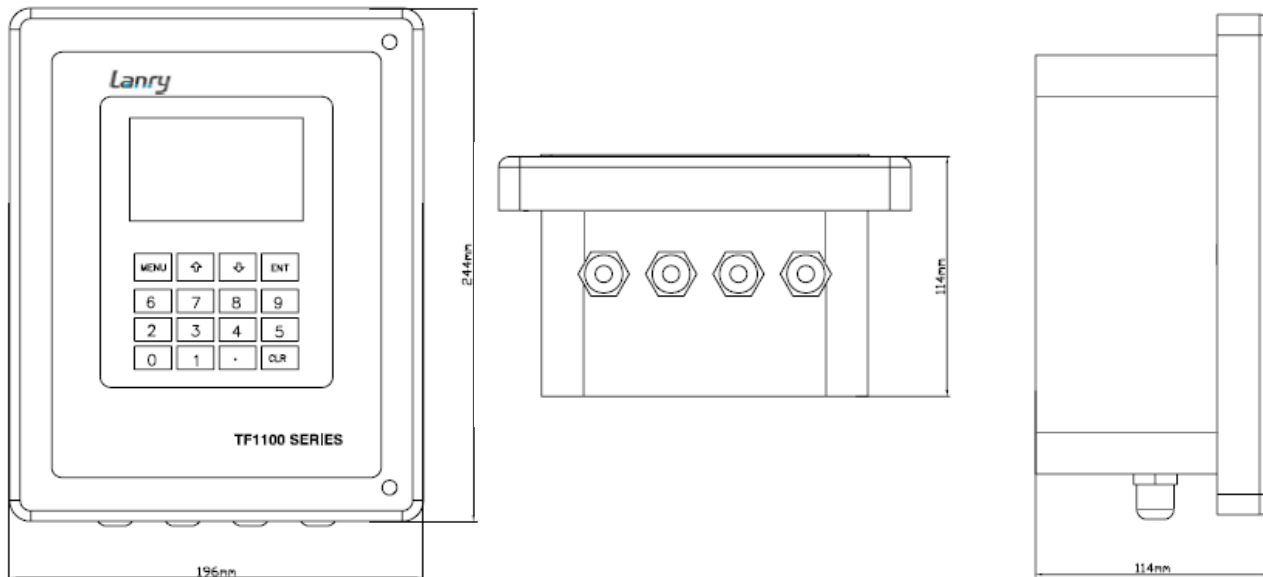
Transducer:
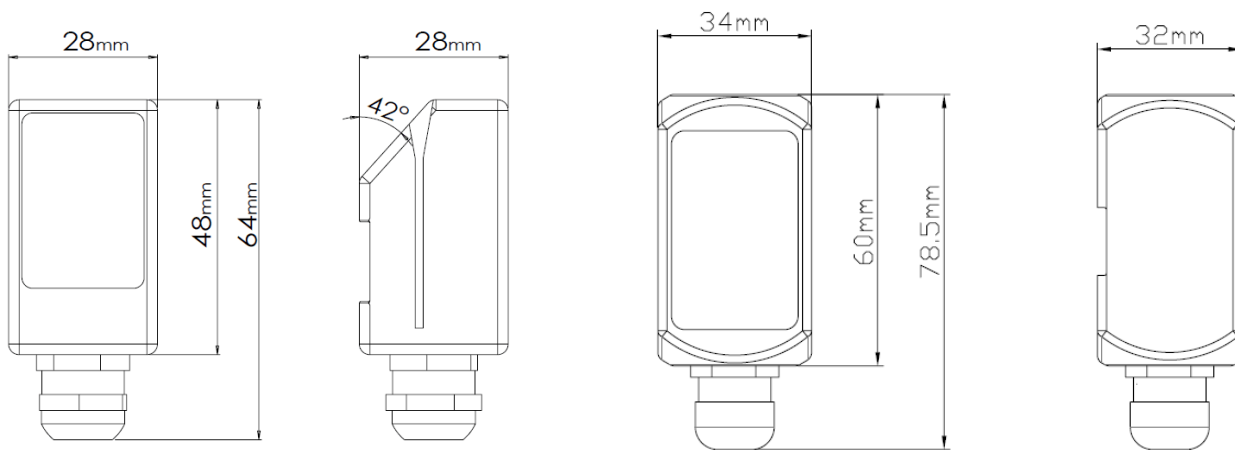
S type   M & L type

S   48(h)*28(w)*28(d)mm
M   60(h)*34(w)*32(d)mm
L   80(h)*40(w)*42(d)mm

Images:

Transmitter

Transducer

Mounting Frame

Couplant

S-S Belt

PT1000 clamp-on

PT1000 insertion

Configuration Code:

TF1100-EC	Wall-mounted Transit Time Clamp-on Series Flowmeters		
	Power supply		
	A	85-265VAC	
	D	24VDC	
	S	65W Solar supply (including solar board)	
	Output Selection 1		
	N	N/A	
	1	4-20mA (accuracy 0.1%)	
	2	OCT	
	3	Relay Output (Totalizer or Alarm)	
	4	RS232 Output	
	5	RS485 Output (ModBus-RTU Protocol)	
	6	Data storage fuction	
	7	GPRS (GPRS Software needs extra $1000)	
	Output Selection 2		
	Same as above		
	Output Selection 3		
	Transducer Type		
	S	DN20-50	
	M	DN40-1000	
	L	DN1000-6000	
	Transducer Rail		
	N	None	
	RS	DN20-50	
	RM	DN40-600 (For larger pipe size, pls contact us.)	
	Transducer Temperature		
	S	-35 ~ 85℃ (for short periods up to 120℃)	
	H	-35 ~ 200℃ (Only for S,M sensor.)	
	Temperature Input Sensor		
	N	None	
	T	Clamp-on PT1000(DN20-1000) (0 ~ 200℃)	
	Pipeline Diameter		
	DNX	e.g.DN20—20mm, DN6000—6000mm	
	Cable length		
	10m	10m (standard 10m)	
	Xm	Common cable Max 300m(standard 10m)	
	XmH	High temp. cable Max 300m	

TF1100-EC — A — 1 — 2 — 3 /LTC— M — N — S — N — DN100 — 10m (example configuration)