

Transit-Time Insertion Ultrasonic Flowmeter

TF1100-EI transit-time Insertion ultrasonic flowmeter provides abundant capabilities for accurate liquid flow measurement from outside of a pipe. It utilizes state-of-the-art technologies on ultrasonic transmission /receiving, digital signal processing and transit-time measurement. The proprietary signal quality tracking and self-adapting technologies allow system to optimally adapt to different pipe materials automatically. Due to hot-tapped mounting of insertion transducers, there is no ultrasonic compound and coupling problem; Even though the transducers are inserted into pipe wall, they do not intrude into the flow, thus, do not generate disturbance or pressure drop to the flow. The insertion (wetted) type has the advantage of long-term stability and better accuracy.



Features:

1. Hot-tapped installation, no pipe line flow interrupted.
2. No moving parts, no pressure drop, no maintenance.
3. Spool-piece transducer for best accuracy and better long-term stability.
4. High temp. Insertion transducers are suitable for high temperature of -35°C~150°C.
5. Wide bi-directional Flow range of 0.03 to 36 m/s, and wide range of pipe sizes from DN65 to DN6000.
6. Data logger function.
7. The heat measurement function by configuring with paired temperature sensors.

Applications:

General

- **Service and maintenance**
- **Replacement of defective devices**
- **Support of commissioning process and installation**
- **Performance and efficiency measurement**
- **Evaluation and assessments**
- **Capacity measurement of pumps**
- **Monitoring of regulating valves**
- **Energy efficiency audits**

Water and waste water industry - hot water, cooling water, potable water, sea water etc.)

Petrochemical industry

Chemical industry -chlorine, alcohol, acids, thermal oils.etc

Refrigeration and air conditioning systems

Food , beverage and pharmaceutical industry

Power supply- nuclear power plants, thermal & hydropower plants), heat energy boiler feed water.etc

Metallurgy and mining applications

Mechanical engineering and plant engineering-pipeline leak detection, inspection, tracking and collection.

Specifications: Transmitter

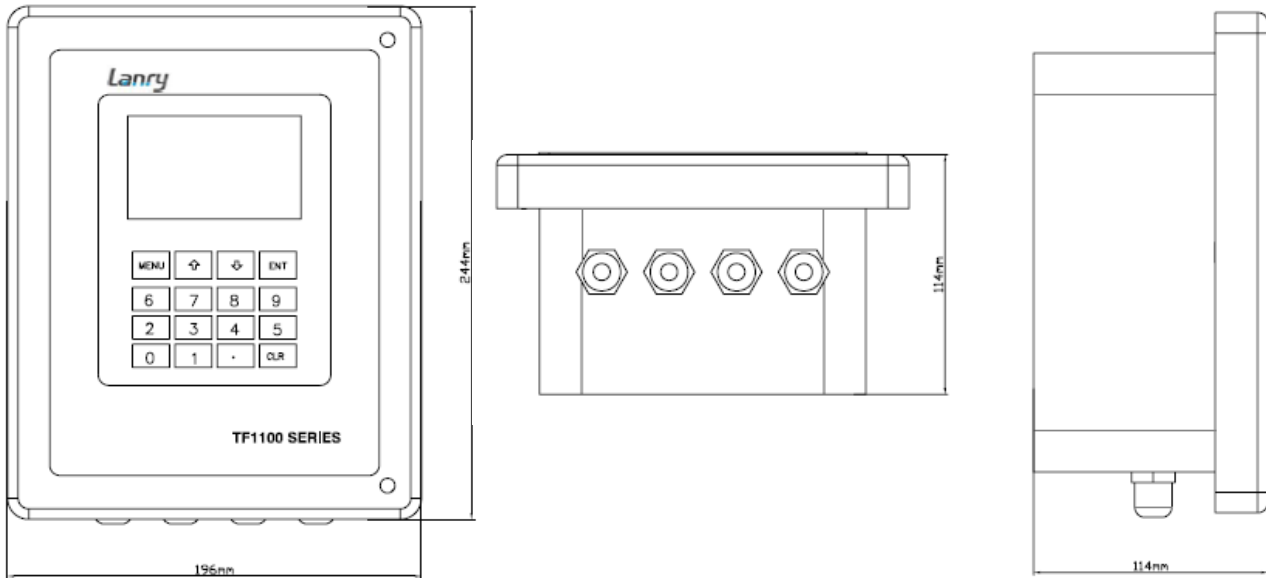
Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s);±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
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°C to +60°C
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),datalogger
Security	Keypad lockout, system lockout
Size	244*196*144mm
Weight	2.4kg

Specifications: Transducer

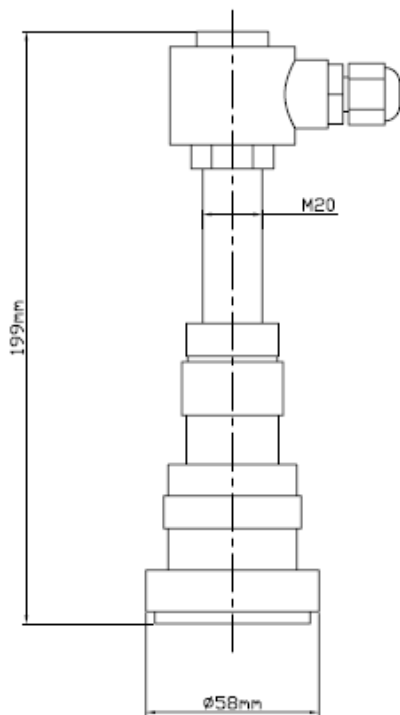
Degree of protection	IP67 or IP68 according to EN60529
Suited Liquid Temperature	Std. Temp.: -35°C~85°C High Temp.: -35°C~150°C
Pipe diameter range	DN65-6000
Transducer Size	Type S Φ58*199mm
Material of transducer	Stainless Steel
Cable Length	Std: 10m
Temperature Sensor	Pt1000, 0 to 200°C, Clamp-on and Insertion type Accuracy: ±0.1%

Dimensional Sketches

Transmitter:



Transducer:



Images:



Transmitter



Transducer



Drilling Rod and Drill Bit

Configuration Code:

TF1100-EI	Wall-mounted Transit Time Insertion 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 function
7	GPRS (GPRS Software needs extra \$1000)
	Output Selection 2
	Same as above
	Output Selection 3
	Transducer Type
S	Standard Insertion for pipe DN65-DN6000
	Transducer Temperature
S	-35 ~ 85°C
H	-35 ~ 150°C
	Temperature Input Sensor
N	None
T	PT1000
	Pipeline Diameter
DNXX	e.g.DN65—65mm, DN1400—1400mm
	Cable length
10m	10m (standard 10m)
Xm	Common cable Max 300m(standard 10m)
XmH	High temp. cable Max 300m

TF1100-EI -A - 1 - 2 - 3 /LTI- S - S - N -DN100- 10m (example configuration)