

## Handheld Transit-Time Ultrasonic Flowmeter

**TF1100-EH Handheld Ultrasonic Flow Meter** 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.

User can use hand to hold as well as to operate the flow meter main unit. 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. 14 hours battery (rechargeable), back-lit 4 lines display.
2. Data logger function.
3. Can be used for mobile measurement, flow rate calibration, data comparing, meters running status checking.
4. Non-invasive transducers.
5. Wide bi-directional flow range of 0.01 m/s to 12 m/s. Wide liquid temperature range: -35°C~200°C.
6. Works reliably in both clean and somewhat dirty liquids with turbidity<10000ppm.
7. Lightweight and easily transportable in box.

### Applications:

<p><b>General</b></p> <ul style="list-style-type: none"> <li>• <b>Service and maintenance</b></li> <li>• <b>Replacement of defective devices</b></li> <li>• <b>Support of commissioning process and installation</b></li> <li>• <b>Performance and efficiency measurement</b></li> <li>- <b>Evaluation and assessments</b></li> <li>- <b>Capacity measurement of pumps</b></li> <li>- <b>Monitoring of regulating valves</b></li> <li>• <b>Energy efficiency audits</b></li> </ul>	<p><b>Water and waste water industry</b> - hot water, cooling water, potable water, sea water etc.)</p> <p><b>Petrochemical industry</b></p> <p><b>Chemical industry</b> -chlorine, alcohol, acids, .thermal oils.etc</p> <p><b>Refrigeration and air conditioning systems</b></p> <p><b>Food , beverage and pharmaceutical industry</b></p> <p><b>Power supply</b>- nuclear power plants, thermal &amp; hydropower plants), heat energy boiler feed water.etc</p> <p><b>Metallurgy and mining applications</b></p> <p><b>Mechanical engineering and plant engineering</b>-pipeline leak detection, inspection, tracking and collection.</p>
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**Specifications: Transmitter**

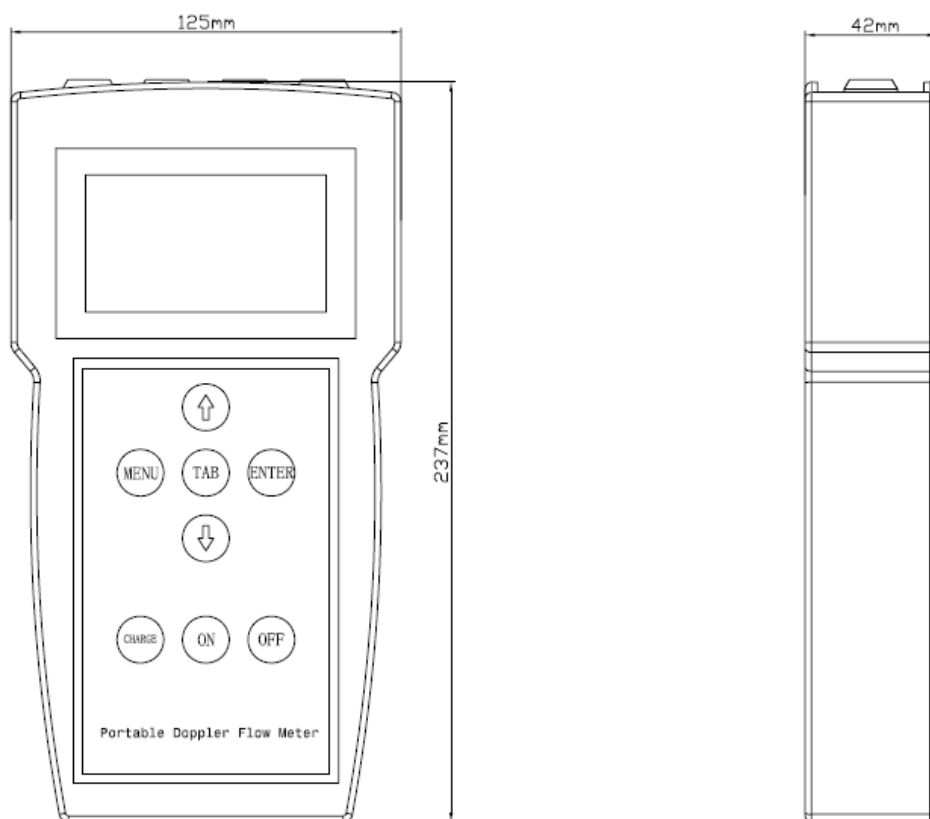
Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s);±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
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 Up to 14 h with fully charged internal batteries
Enclosure type	Handheld
Degree of protection	IP65 according to EN60529
Operating temperature	-20°C to +60°C
Housing material	ABS( UL 94HB)
Display	4 linex16 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
Communication	OCT, RS232,Logged data
Security	Keypad lockout, system lockout
Size	237*125*42mm
Weight	0.5kg

**Specifications: Transducer**

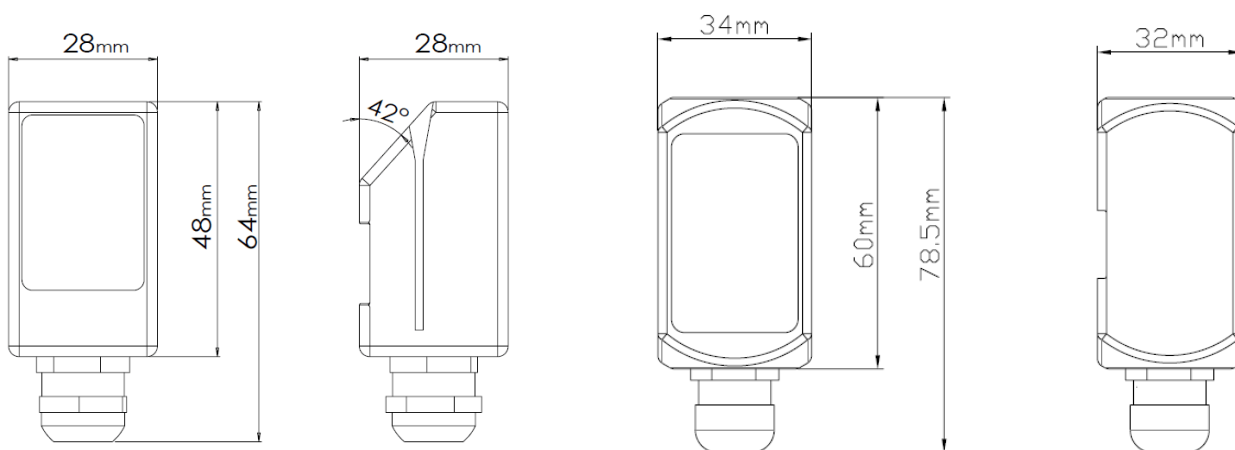
Degree of protection	IP65 according to EN60529.(IP67 or IP68 Upon request)
Suited Liquid Temperature	Std. Temp.: -35°C~85°C for short periods up to 120°C High Temp.: -35°C~200°C for short periods up to 250°C
Pipe diameter range	20-50mm for type S, 40-1000mm for type M, 1000-6000mm for type L
Transducer Size	Type S 48(h)*28(w)*28(d)mm
	Type M 60(h)*34(w)*33(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: 5m

### 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



Sensor rail



Couplant



S-S Belt



Portable case

### Configuration Code:

TF1100-EH	Handheld Series Flowmeters Clamp-on Series
	Power supply
A	85-265VAC
	Output Selection 1
N	N/A
1	OCT
2	RS232 Output
3	Data storage function
	Output Selection 2
	Same as above
	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°C (for short periods up to 120°C)
H	-35 ~ 200°C ( Only for S,M sensor. )
	Pipeline Diameter
DNX	e.g.DN50—50mm, DN4500—4500mm
	Cable length
5m	5m (standard 5m)
Xm	Common cable Max 300m(standard 5m)
XmH	High temp. cable Max 300m

TF1100-EH -A - 1 - 2 / LTH- M - N - S - DN100- 5m (example configuration)



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