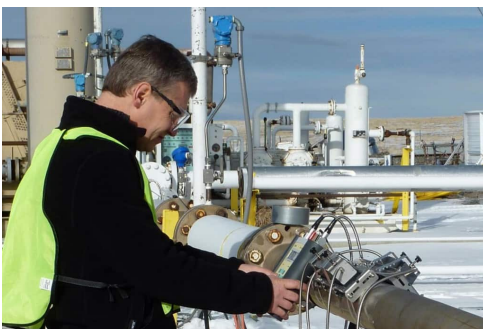


BTU ENERGY ULTRASONIC FLOW METER

FDT-28



Features

- FDT-28 ultrasonic flow meter is designed to measure the fluid velocity of liquid in a full/closed pipe
- Temperature and heat can also be measured by connecting clamp on temperature transducer
- Widely be used in air conditioning, water supply, heat supply, chemical industry, machinery and energy resources
- There are energy and power unit in **GJ, Kc, KWh and BTU**
- Able to choose the sensor set to suit the job site and customer convenience.
- The FDT-28 can be used for metallic, plastic and rubber tubes.
- Portable type can be moved to measure on site

Technical Data

Measuring principle : Ultrasonic flow meter

Measuring range (Velocity) : ± 0.01 to ± 12 m/s (bi-directional)

Temperature range : $-40 \dots +130^\circ\text{C}$ (Pt1000)

Flow rate range (Flow Rate) : see table on page 2

Accuracy : $\pm 1\%$ of measured value (flow rate), $\pm 0.1^\circ\text{C}$

Repeatability: 0.2%

Operating Temperature (Sensors) : $-40 \dots +130^\circ\text{C}$

Operating Temperature (Device) : $-40 \dots +60^\circ\text{C}$

Operating Humidity : 0...99 %RH (non-condensing)

Pipe Size : DN 25 to 1200 mm (1" to 48")

Units : m^3 , L, USA Gallons, Imperial Gallons, Million Gallons, cf, USA Barrels, Imperial Barrels, Oil Barrels (user configured)

Energy unit : GJ, Kilocalorie, MBtu, KJ, Btu, KWh, MWh (user configured)

Flow Rate Units : All units /s, /min, /hr, /Day (user configured)

Totalizer : totals for positive, negative and net flow

Liquid Types : Most liquids including clean water, sea water, waste water, chemical liquids, oil, crude oil, alcohol, beer, and more

Particle Concentration : Clean liquids that have less than 3% by volume of particulate content

Pipe Material : PVC, Carbon steel, Stainless steel, Cast iron, Ductile iron, Copper, Aluminium, Asbestos cement, Fiberglass

Signal output : 4-20mA, RS485 (Modbus)

Display: 240 x 128 back lit LCD

Sensors cable length : 5 m

Temperature sensor cable length : 9 m

Power supply : Lithium battery, 3000mAh (Rechargeble)

Operating time : fully charged lasts over 16 hours

Interval time : 1...99,999 sec

Memory capacity : SD card 16 GB

Exporting : text file

Housing material : ABS

Protection : IP54 (device), IP68 (sensor),

Device dimensions : 220 x 139 x 53 mm (WxHxD)

Sensor dimensions : 40 x 29 x 34 mm (WxHxD)

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BTU ENERGY ULTRASONIC FLOW METER FDT-28

Flow rate table

Nominal diameter		Flow range (m ³ /hr)
DN	inch.	
25	1"	0 - 21.21
32	1" 1/4	0 - 34.74
40	1" 1/2	0 - 54.29
50	2"	0 - 84.82
65	2" 1/2	0 - 143.35
80	3"	0 - 217.15
100	4"	0 - 339.29
125	5"	0 - 530.14
150	6"	0 - 763.41
200	8"	0 - 1357.17
250	10"	0 - 2120.58
300	12"	0 - 3053.63
350	14"	0 - 4156.33
400	16"	0 - 5428.67
450	18"	0 - 6870.66
500	20"	0 - 8482.30
600	24"	0 - 12214.51
700	28"	0 - 16625.31
800	34"	0 - 21714.69
900	36"	0 - 27482.65
1000	40"	0 - 33929.20
1200	48"	0 - 48858.05

note : The flow rate is base on velocity of water @ temperature 25°C and pipe size

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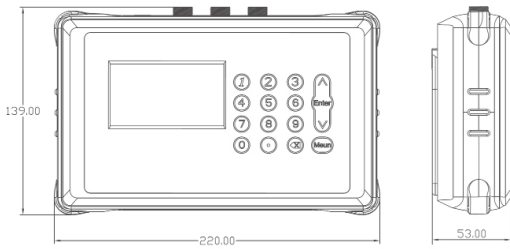
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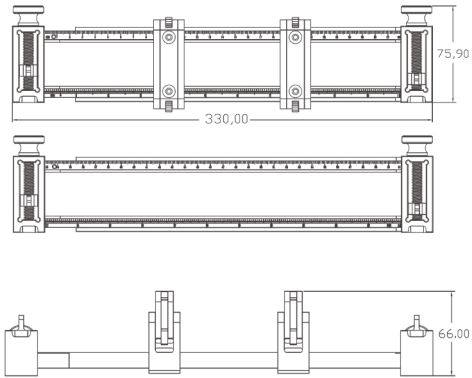
BTU ENERGY ULTRASONIC FLOW METER FDT-28

Drawing Dimension

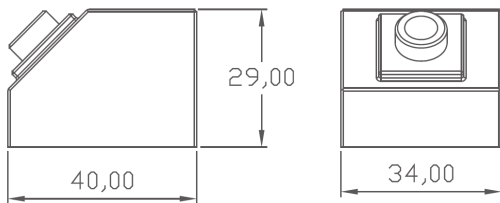
Handheld device



Mounting track



Flow sensor



Tube types & Installation

- Tube types**

The types of pipes that can be used with a portable flow meter are as follows:



Carbon steel tube



Stainless steel tube



Cast iron tube



Copper tube



Aluminium tube



PVC tube



Asbestos tube



Fiber glass tube

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BTU ENERGY ULTRASONIC FLOW METER FDT-28

Ultrasonic Thickness Gauge meter : UTG-100 (Option)

Features

- Small and compact, Easy to use
- Used for measuring thickness and corrosion of pressure vessels, chemical equipment, boilers, oil storage tanks, etc. in industries of petroleum, shipbuilding, power station, and machine manufacturing.
- Compatible with the ultrasonic flow meter FDT-21, FDT-22, FDT-31

Application

- Applicable to measure the thickness of many materials
- e.g. Steel, Cast iron, Aluminum, Red copper, Brass, Zinc, Quartz glass, Polyethylene, PVC, Gray cast iron, Nodular cast iron



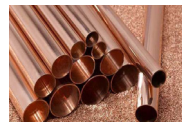
Carbon steel tube



Stainless steel tube



Cast iron tube



Copper tube



Aluminium tube



PVC tube



Asbestos tube



Fiber glass tube



Zinc tube



Brass tube

Technical Data

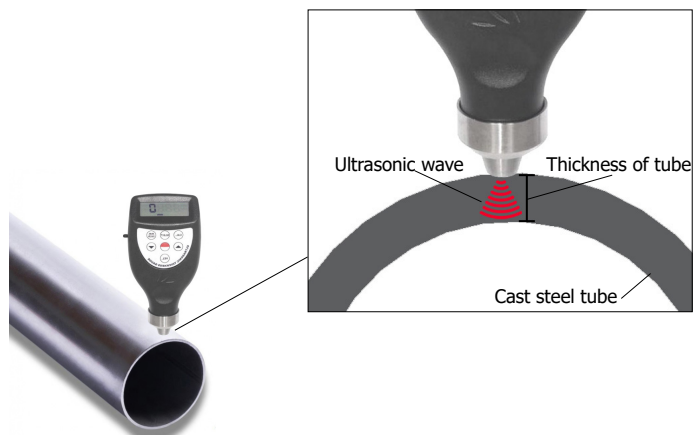


- Measuring range :** 1.0 - 200.0 mm
- Sensor type :** Ultrasonic
- Resolution :** 0.1 mm
- Accuracy :** $\pm 0.5\%$ of reading + 0.1
- Display :** LCD display 4 digits
- Power supply :** x4 Battery AAA 1.5V
- Ambient temperature :** 0 - 40 °C
- Ambient humidity :** 30 - 85 %RH
- Dimensions :** 135 x 65 x 27 mm
- Weight :** 120 g (not including battery)



Packaging

Measuring a thickness of tube



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Transducer Type	PT1000 (TEMP SENSOR) 	DT1U (FLOW SENSOR) 
Pipe size (mm)	DN25 to 1200	
Pipe size (inch)	1" to 48"	
Temperature resistance	-40...+180 °C	
Protection Class	IP68	
Liquid Types	Most liquids including clean water, sea water, waste water, chemical liquids, oil, crude oil, alcohol, beer, and more	
Suspension Concentration	Clean liquids that have less than 3% by volume of particulate content	
Pipe Material	PVC, Carbon steel, Stainless steel, Cast iron, Ductile iron, Copper, Aluminium, Asbestos cement, Fiberglass	
Dedicated Shielded Transducer Cable	9 meters	5 meters (Standard) <i>*Able to expand maximum 30 meters</i>

Option

UTG-100 : Ultrasonic Thickness Gauge Meter

CAL-FDT-9001 : Calibration certificate according with ISO 9001/9002

CAL-FDT-17025 : Calibration certificate according with ISO17025

B-FDT31 : Battery for Ultrasonic flow meter

G-FDT21 : Grease for Ultrasonic flow meter

Delivery scope :

- 1 x Carrying case
- 1 x Handheld device
- 2 x Flow sensor
- 2 x Mounting track
- 2 x Temperature sensor
- 4 x Pipe straps
- 1 x Coupling compound (Grease)
- 1 x Battery charge
- 1 x Output cable
- 1 x Tape measure



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