

# WALL MOUNT ULTRASONIC FLOWMETER

## For Clean Liquids

FDT-21W



- ✓ Accuracy 1%
- ✓ Repeatability 0.2%
- ✓ Positive, Negative and Net Totalizer
- ✓ 4-Line LCD Display
- ✓ Clamp On Transducers
- ✓ RS232 Output

FDT-21W ultrasonic flowmeter is designed to measure the fluid velocity of liquid in a full/closed pipe. It is a measurement system which is both easy to install and use. The FDT-21W operates according to the difference in the transit time of flight measured, and determines the flow velocity by measuring the travel time of a pulse from one transducer to the next. Flow in the same direction takes less time to travel to the second transducer than does flow in the opposite direction. Electroacoustic transducers receive and emit brief ultrasonic pulses through the liquid of the pipe. Transducers are vertically placed at both sides of the measured pipe. Sensors are placed on the pipe and fastened by means of a clamp. The display will quickly show the flow velocity. The FDT-21W can be used for metallic, plastic and rubber tubes.



FDT-21W shown smaller than actual size.



FDT-21W inside view.

### SPECIFICATIONS

**Accuracy:**  $\pm 1\%$  of reading  $> (0.2 \text{ m/s})$   
0.6 ft/s

**Repeatability:** 0.2%

**Linearity:** 0.5%

**Response Time:** 0 to 999 seconds  
(user configured)

**Velocity:**  $(\pm 0.01 \text{ to } 30 \text{ m/s}) \pm 0.03$  to  
105 ft/s bi-directional

**Temperature Range:**  
**Standard:** 0 to 70°C (32 to 158°F)

**With High Temp Transducers:**  
0 to 160°C (32 to 320°F)

**Pipe Size:** DN 20 to 100 mm (0.75 to 4") standard [up to DN 6000 mm (236") with optional transducers]

**Transducer Frequency:** 1 MHz

**Rate Units (User Configured):**  
Meter, feet, cubic meter, cubic feet, USA gallon, oil barrel, USA liquid barrel, imperial liquid barrel, million USA gallons

**Totalizer:** 7-digit 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

**Suspension Concentration:**  
 $\leq 20,000$  ppm (may contain very small amounts of air bubbles)

**Pipe Material:** All metals, most plastics and fiberglass

**Security:** Programmable lock-out code

**Display:** 4 x 16 english letters

**Power:** 85 to 264 Vac

**Communications:** RS232C (baud rate from 75 to 115,200 bps)

**Transducer Cable Length:** 5 m (15')

**Data Logger:** Built-in, stores over 2000 lines of data

**Totalizer/Calibration:**

7-digit press-to-go for calibration

**Housing:** ABS plastic with aluminum alloy protective carrying case

**Case:** NEMA 4 (IP65)

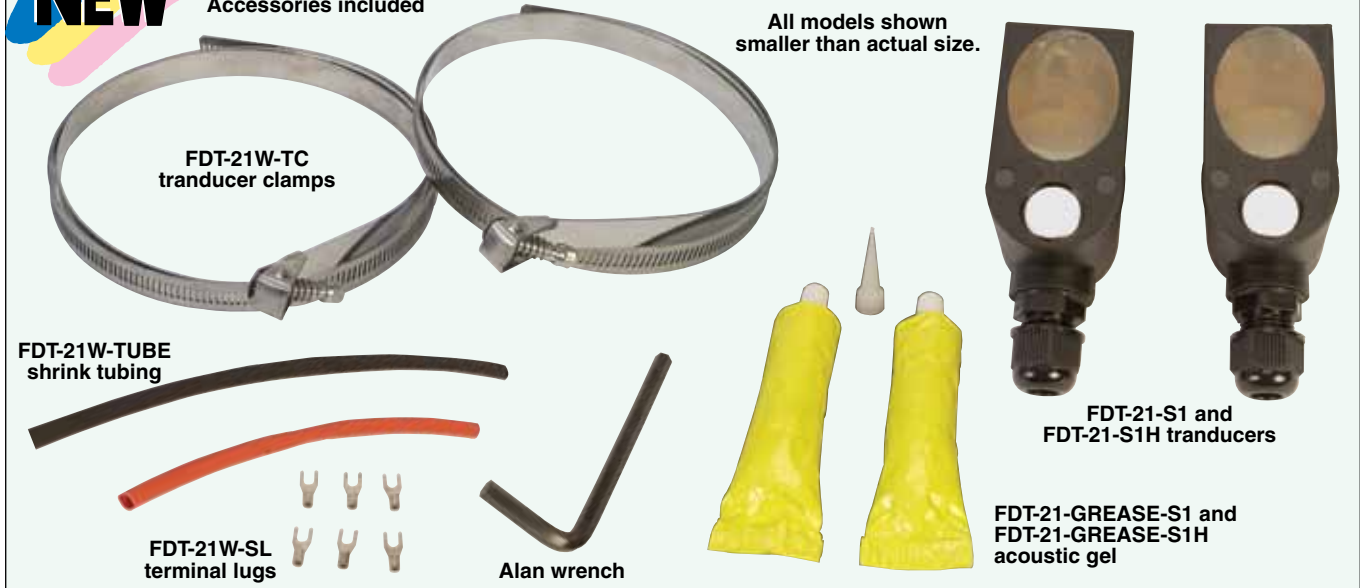
**Dimensions:** 100 H x 66 W x 20 mm D (3.9 x 2.6 x 0.8")

**Weight:** 514 g (1.2 lb)



Accessories included

All models shown smaller than actual size.



Parameters	HS-Type	HM-Type	S1-Type	M1-Type	L1-Type	S1H-Type	M1H-Type
Pipe Size (mm)	20 to 100DN	50 to 100DN	20 to 100DN	50 to 700DN	300 to 6000DN	20 to 100DN	50 to 700DN
Pipe Size (inch)	¾ to 4	2 to 28	¾ to 4	2 to 28	12 to 240	¾ to 4	2 to 28
Material	Aluminum alloy		ABS			Special high-temperature materials	
Frequency	1 MHz						
Calibration	Calibrate with the main unit						
Magnetism	Magnetic				Non-magnetic		
Temperature	0 to 70°C (32 to 158°F)					0 to 160°C (32 to 320°F)	
Protection Class	NEMA 4 (IP65)						
Dimensions (mm)	200 x 25 x 25	280 x 40 x 40	45 x 30 x 30	60 x 45 x 45	80 x 70 x 55	90 x 85 x 24	90 x 82 x 29
Weight g (oz)	250 (8.8)	1080 (38)	75 (2.6)	250 (8.8)	650 (23)	94 (3.3)	150 (5.3)
Liquid Types	Fresh water, salt water, chemical liquids, oil, crude oil, alcohol, beer, etc.						
Suspension Concentration	≤20,000 ppm, may contain very small amount of air bubbles						
Pipe Material	All metals, most plastics, fiberglass, etc.						
Dedicated Shielded Transducer Cable	Standard length 5 meter x 2, can be extended to 10 meter x 2 or 15 meter x 2						

**To Order Visit [omega.com/fdt21w](http://omega.com/fdt21w) for Pricing and Details**

Model No.	Description
<b>FDT-21W</b>	Wall mount transit-time ultrasonic flowmeter (includes S1 and S1H transducers)

Comes complete with small pipe standard and high temperature transducers (S1 and S1H), acoustic gel, tape measure, RS232 cable, transducer cable, transducer clamps, alan wrench, terminal lugs, shrink tubing and operator's manual.

**Accessories**

Model No.	Description	Weight g (oz)	Pipe Size mm (inch)
<b>FDT-21-S1</b>	Replacement small pipe standard transducer	75 (2.6)	20 to 100 (0.75 to 4)
<b>FDT-21-S1H</b>	Replacement small pipe high temperature transducer	94 (3.3)	20 to 100 (0.75 to 4)
<b>FDT-21-HS</b>	Small pipe aluminum transducer	250 (8.8)	20 to 100 (0.75 to 4)
<b>FDT-21-HM</b>	Medium pipe aluminum transducer	1080 (38)	50 to 700 (2 to 28)
<b>FDT-21-M1</b>	Medium pipe standard transducer	250 (8.8)	50 to 700 (2 to 28)
<b>FDT-21-M1H</b>	Medium pipe high temperature transducer	150 (5.3)	50 to 700 (2 to 28)
<b>FDT-21-L1</b>	Large pipe standard transducer	650 (23)	300 to 6000 (12 to 236)
<b>FDT-21-GREASE-S1</b>	Replacement acoustic gel for standard transducers		
<b>FDT-21-GREASE-S1H</b>	Replacement acoustic gel for high-temperature transducers		

Ordering Example: **FDT-21W**, wall mount transit-time ultrasonic flowmeter.