ULTRASONIC FLOWMETER WITH TOTALIZATION

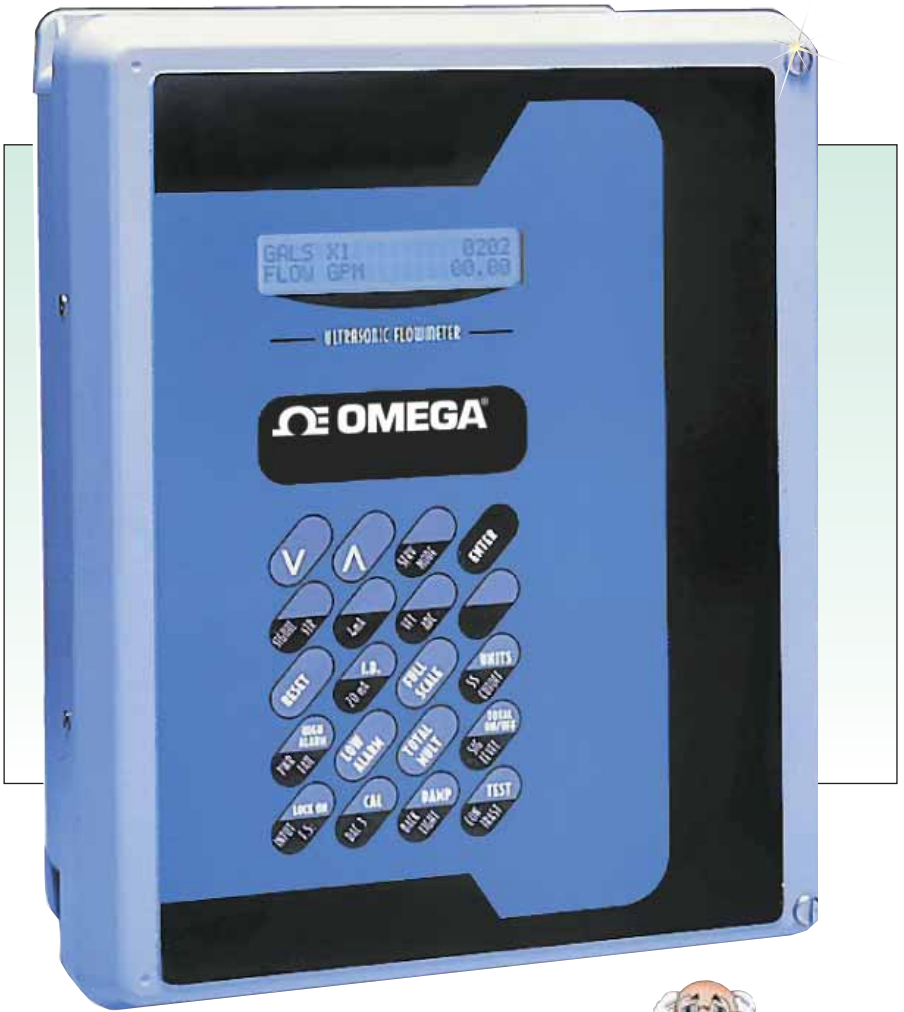
FD6001

$2430

Basic Unit

1 YEAR WARRANTY | MADE IN USA | NIST

- **100 ppm of 100 Microns in Size of Suspended Particulars or Bubbles Required**
- **Non-Invasive, Clamp-On Transducer**
- **User-Friendly, Field Programmable**
- **Pipe Sizes from 6 to 3050 mm (0.25 to 120")**
- **Flow Range 0.03 to 9.1 mps (0.1 to 30 FPS)**
- **NEMA 4X Enclosure**
- **Standard 4 to 20 mA, Relay and 12 V pulse Outputs**
- **NIST Standard**



FD6001 flowmeter, $2430, shown smaller than actual size.

The FD6001 Series ultrasonic Doppler flowmeter measures flow of solids-bearing or aerated liquids in metal or plastic pipes. The FD6000 is designed to measure the flow of liquids and slurries in full-pipe closed systems unidirectionally (concrete, clay or copper pipes are not recommended). The application of a single clamp-on, non-invasive transducer permits the instrument to be installed without interrupting system pressure or flow. In addition, no pressure head-loss is created, therefore system pump horsepower requirements are reduced. A variety of liquid applications can be accommodated; sewage, sludges, concrete, mining slurries, dredging, etc.

The FD6001 Series transmitter has a full keypad designed for simple field setup and application versatility. The two-line, backlit, alphanumeric display shows instantaneous flow rate and totalized flows in a variety of user selectable engineering units.

The basic principle of operation is the measurement of the frequency shift “Doppler” of a reflected ultrasonic signal from discontinuity in the flowing liquid. In theory, these discontinuities can be virtually any amount of suspended bubbles, solids, or interfaces caused by turbulent flow. In practice the degree to which this can be reliably accomplished is a function of the sensitivity and frequency of the transducer and associated transmitter. The FD6000 Series requires 100 PPM of suspended solids or bubbles over 100 microns in size. The transducer which generates and receives the ultrasonic signal supplies the data to the transmitter.

SPECIFICATIONS

System Accuracy: ±2% of FS
Repeatability: ±0.2% of FS
Velocity Range: 0.03 to 9.1 MPS (0.1 to 30 feet/second)
Display: 2 line x 20 character alphanumeric LCD (backlit). Digit height 5 mm (0.2"): 6 digit rate, 8 digit totalizer (resettable)
Security: Keypad lockout, access code enable
Measuring Units: MPS, LPM, M3/HR, LPD (FPS, GPM, GPH, CFM, MGD, BPM. BPH, BPD)
Totalizer Measuring Units: gallons, barrels, liters and cubic meters
Response Time: 5 to 50 seconds, user configured, to 90% of value, step change flow
Outputs: 4 to 20 mA into 1000 ohms max., isolated; 12 V pulse, 100 uS duration, 10 Hz max, pules with totalizer increments. Two relays, 5A @ 250 Resistive, SPDT
Power Requirements: 115 Vac or 230 Vac ±10%, 50/60 Hz, 6 VA max. (standard); 12 to 24 Vdc (optional)
Power Consumption: Less than 12 VA
Liquid Requirements: Full-pipe; liquid must contain a minimum of 100 PPM of suspended solids or bubbles that are at least 100 microns in size
Transmitter/Indicator Operating:
Temperature: -30 to 70°C (-22 to 158°F)
Relative Humidity: 0 to 95%, non-condensing
Enclosure: NEMA-4X, (IP65) fiberglass with SS hardware
Enclosure Dimensions: 280 H x 235 W x 140 mm D (11 x 9.25 x 5.5")
Sensor Operating Temperature:
FD-5000 and FD-5 Sensor: -40 to 121°C (-40 to 250°F)
FD-5000-HTA and FD-5-HTA: -40 to 148°C (-40 to 300°F)

Clamp-on Sensor
Max. Temp. = 121°C (250°F)
Min. Temp. = -40°C (-40°F)

FD-5 sensor (for ¼ to 1" pipes), $900, shown smaller than actual size.

FD-5000 sensor, $660, shown smaller than actual size.

Clamp-on Sensor
Max. Temp. = 121°C (250°F)
Min. Temp. = -40°C (-40°F)

Sensor Housing Material: Aluminum, polyetherimide and SS with epoxy encapsulation
Sensor Dimensions:
FD-5000: 98.5 L x 3.5 W x 36.8 mm D (3.88 x 1.38 x 1.45")
FD-5: 72.4 L x 72.4 mm W (2.85 x 2.85")
Sensor: NEMA 6 (IP68)
Sensor Cable Length: 6 m (20') standard, Max length up to 90 m (300')
Minimum Straight Pipe Diameters: 10 upstream and 3 downstream
Sensor Installation: Requires a silicone grease or comparable couplant to avoid air between transducer face and pipe

MOST POPULAR MODELS HIGHLIGHTED!

To Order *(Specify Model Number)*

Model No.	Price	Description
FD6001	**$2430**	Ultrasonic flow transmitter, 115 Vac powered
FD6002	**2430**	Ultrasonic flow transmitter, 230 Vac powered
FD6003	**2430**	Ultrasonic flow transmitter, 12 to 24 Vdc powered
Required Sensors		
FD-5000	**$660**	1 to 20" pipes, 6 m (20') cable, 121°C (250°F) max.
FD-5000-50FT	**789**	1 to 20" pipes, 9 m (50') cable, 121°C (250°F) max.
FD-5000-HTA	**925**	1 to 20" pipes, 6 m (20') cable, 148°C (300°F) max.
FD-5	**900**	Pipes ¼ to 1", 6 m (20') cable, 121°C (250°F) max.
FD-5-50FT	**1020**	Pipes ¼ to 1", 9 m (50') cable, 121°C (250°F) max.
FD-5-HTA	**1215**	Pipes ¼ to 1", 6 m (20') cable, 148°C (300°F) max.
Accessory		
CM-4442	**$115**	Reference Book: Ultrasonic Techniques for Fluid Characterization

Unit comes with complete operator's manual, couplant, and NIST certificate.
Ordering Example: FD-5000**, clamp-on sensor, **FD6001**, electronics, $660 + 2430 = **$3090.

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