



• **F-4300 SERIES** •  
**CLAMP-ON ULTRASONIC  
 FLOW METER**



*ONICON F-4000 Series Ultrasonic Flow Meters utilize the differential transit time method to measure the velocity of relatively clean liquids in full pipes. By measuring the difference between transit times of ultrasonic sound waves traveling between two transducers, the flow velocity and direction are accurately determined.*

**DESCRIPTION**

ONICON F-4300 Clamp-on Ultrasonic Flow Meters offer an ideal solution for liquid flow measurement in existing systems when it is impractical to install traditional inline or insertion style flow meters. The innovative design incorporates matched precision clamp-on transducers and signal processing circuitry to accurately measure the flow of most liquids over a wide velocity range. Each F-4300 is provided with transducers and easy-to-use mounting hardware, factory supplied transducer cabling, and a wall mount enclosure with an LCD and user interface keypad.

Output signals include a single analog output and two pulse outputs. The F-4300 is also provided with an isolated RS485 output capable of communicating over BACnet® MS/TP or MODBUS® RTU networks. Optional Btu measurement systems are also available.

**GENERAL SPECIFICATIONS**

**ACCURACY**

- ± 1.0% of reading from 1 to 20 ft/sec
- ± 0.01 ft/s for velocities below 1 ft/sec

**OVERALL FLOW RANGE**

0.1 to 20 ft/sec

**SENSING METHOD**

Clamp-on ultrasonic, differential transit time method in direct or reflect mode

**PIPE SIZE RANGE**

2" through 24" nominal diameter

**POWER SUPPLY OPTIONS**

- Standard: 18-30 VDC/VAC, 10 VA Maximum
- Optional: 100-240 VAC 50-60 Hz, 10 VA Maximum

**FLUID TEMPERATURE RANGE**

Standard: -40° F to 250° F

**APPLICATIONS**

- Chilled water, hot water, condenser water & water/glycol solutions for HVAC
- Steam condensate
- Domestic/municipal water
- Process water & other clean liquids

**FEATURES**

**Ideal Solution for Retrofits and Baseline Monitoring -**

Clamp-on transducers allow for quick and easy installation with no system shutdown and no pressure drop. Each meter is provided with a built-in 128 megabyte data logger, making it an ideal solution for baseline monitoring.

**Simple to Install and Commission -**

Every ONICON F-4300 is individually configured and programmed using customer specific application data. Complex field programming is not required.

**High Confidence and Reliability -**

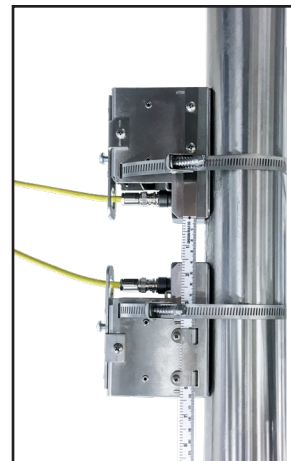
ONICON provides transducers that are optimized for specific pipe conditions, providing a strong, stable signal with an outstanding signal-to-noise ratio.

**Native BACnet® and MODBUS® Communications -**

The F-4300 is provided with a single RS485 output that can be configured to operate on BACnet® MS/TP or MODBUS® RTU networks.

**CALIBRATION**

Each F-4300 is calibrated using N.I.S.T<sup>1</sup> traceable standards. A certificate of calibration is provided with each meter.



*Typical Installation on Steel Pipe*

<sup>1</sup>National Institute of Standards and Technology

## GENERAL SPECIFICATIONS (cont.)

### AMBIENT TEMPERATURE RANGE

-5° F to 140° F

### OUTPUT SIGNALS PROVIDED

Analog output: Isolated 4-20 mA/0-5 VDC  
(Internally powered, 1000Ω max impedance field, selectable)

Two programmable pulse outputs:

Optically isolated dry contacts

Contact rating: 30 VDC, 10 mA maximum

Pulse duration: 50 ms

Programmable for scaled pulse, flow direction, or flow alarm

Serial communications: BACnet® MS/TP or MODBUS® RTU

### ELECTRONICS ENCLOSURE

Wall mount, NEMA 4X polycarbonate with clear, shatterproof enclosure

### DISPLAY

White, backlit alphanumeric display shows: 5-digit flow rate with floating decimal, 14-digit totalizer, pulse output status, operating status, and provides field configuration.

### ELECTRICAL CONNECTIONS

Enclosed terminal blocks, cable access through standard ½" conduit openings

### APPROVALS

CE

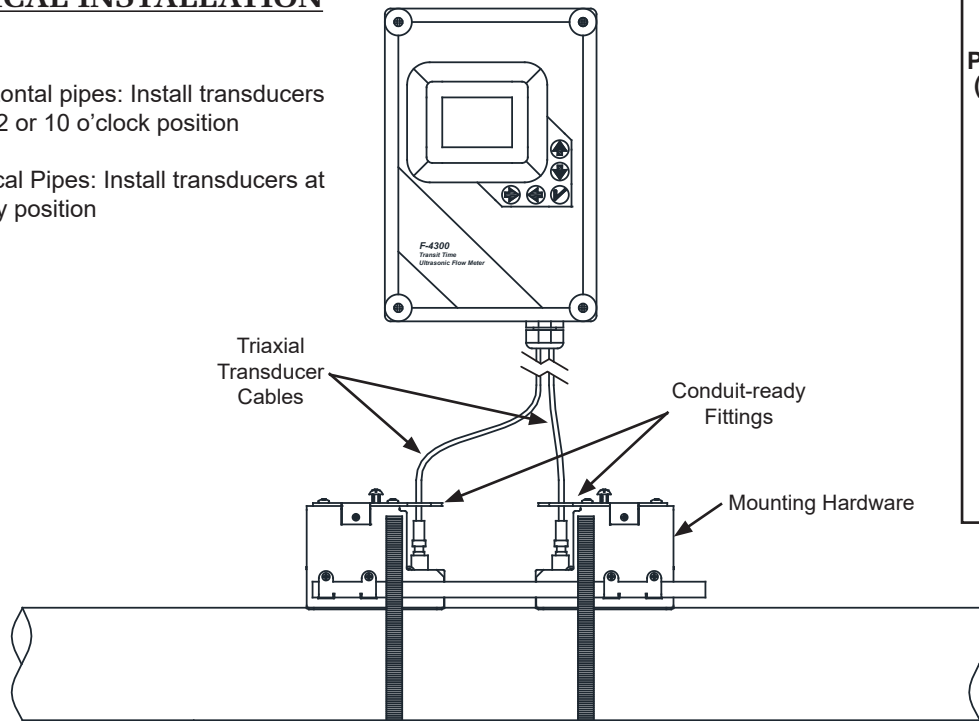
UL 61010-1 Certification Pending

NOTE: Specifications are subject to change without notice.

## TYPICAL INSTALLATION

Horizontal pipes: Install transducers at 2 or 10 o'clock position

Vertical Pipes: Install transducers at any position



### OPERATING RANGE

Pipe Size (Inches)	Flow Rate (GPM) (0.1 ft/sec - 20 ft/sec)
2	1.0 - 200
2½	1.5 - 230
3	2.3 - 460
4	4.0 - 800
5	6.2 - 1,200
6	9.0 - 1,800
8	16 - 3,100
10	25 - 4,900
12	35 - 7,050
14	43 - 8,600
16	57 - 11,400
18	73 - 14,600
20	91 - 18,100
24	132 - 26,500

## ORDERING INFORMATION

### F-4300 CLAMP-ON ULTRASONIC MODEL # CODIFICATION F-4300-ABCD-EEFF

F-4300 = Clamp-on Ultrasonic Flow Meter with Integral Display

#### A = Electronics Enclosure

1 = NEMA 4X Polycarbonate

#### B = Input Power

1 = 24 VDC/24 VAC

2 = 110-240 VAC

#### C = Serial Communications

1 = BACnet MS/TP or MODBUS RTU

(Field selectable. Default = BACnet)

#### D = Transducer Cable Length

1 = 25 feet (Default)

2 = 50 feet

3 = 100 feet

#### EE = Transducer Series

2\* = 20 series transducer, for 2 to 24" nominal pipe diameter.

Note: Actual transducer selected, 21 through 24, is factory selected at time of order.

#### FF = Installation Hardware

21 = 2 to 6" Nominal Pipe Diameter, Stainless Steel Mounting Bracket

22 = 8 to 24" Nominal Pipe Diameter, Stainless Steel Mounting Bracket

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