



• **F-4300 SERIES MODBUS TCP/IP •**
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 (2) pulse outputs. The F-4300 will also provide 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, 10 Watts 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 & 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 -

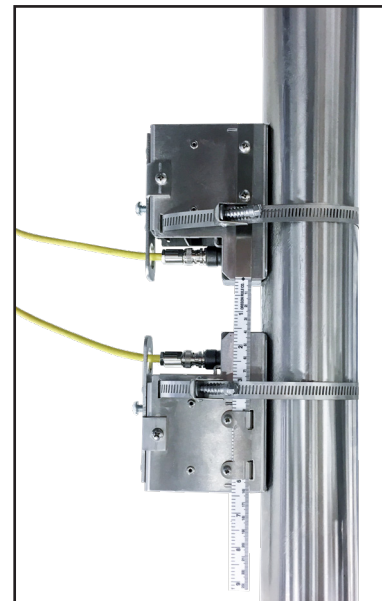
Every ONICON F-4300 is individually configured and programmed using customer specific application data. Complex field programming is not required.

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 & 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. MODBUS® TCP/IP network version can be provided in lieu of RS485 connection.



Typical Installation on Steel Pipe

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

*Optional: MODBUS® TCP/IP

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

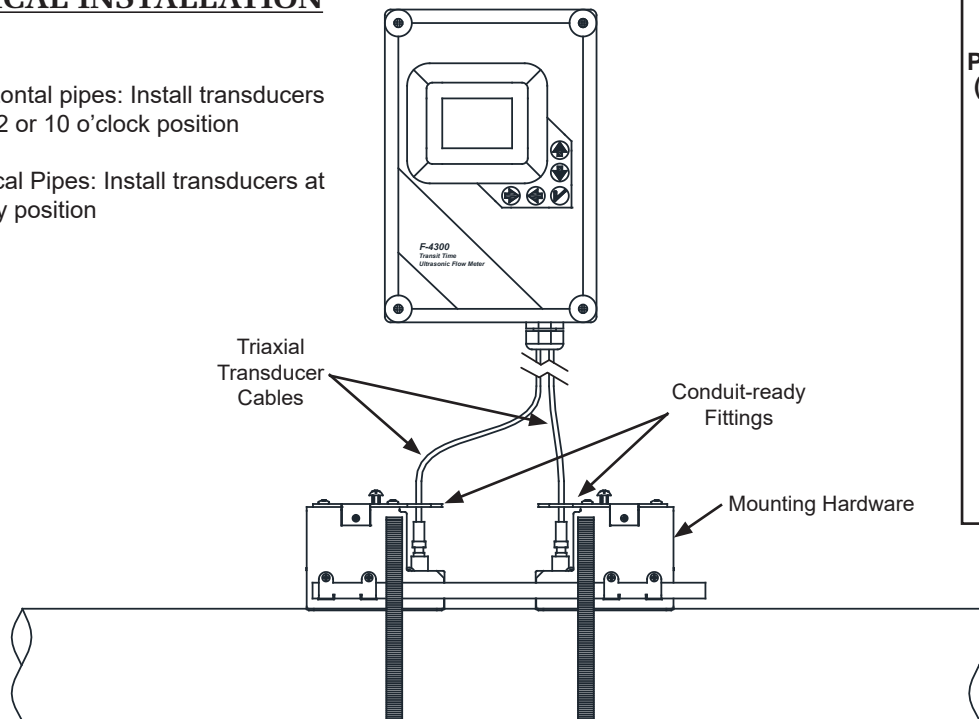
UL 61010-1 Certification Pending

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)

*2 = MODBUS TCP/IP

*Requires 24 VDC Power Supply

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