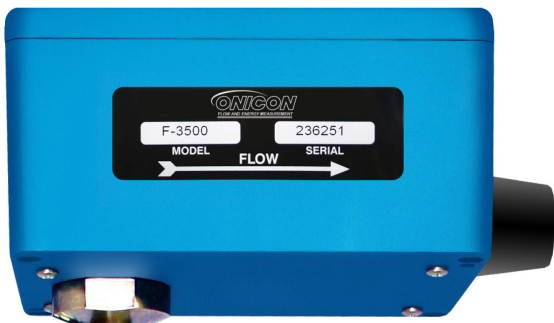


• F-3500 SERIES •  
INSERTION ELECTROMAGNETIC  
FLOW METER



Made in the USA

**FEATURES**

- **Exceptional Performance & Value** - Accuracy and reliability normally only found in expensive full bore devices in a cost-effective insertion style design.
- **Excellent Long Term Reliability** - Low maintenance, no-moving-parts flow sensing technology works well in difficult flow measurement applications such as open loop condenser water flow.
- **Highly Accurate Over a Wide Flow Range** - Highly efficient sensor design a continuous auto-zero function improve accuracy and sensitivity, particularly at low flow rates.
- **Simplified Hot-Tap Insertion Design** - Standard on every insertion flow meter, this feature allows for insertion and removal by hand, without a system shutdown.
- **Ideal Solution for Retrofits** - The innovative hot-tap adapter design allows for wet tapping pipes without a interrupting flow.

**DESCRIPTION**

ONICON Incorporated's F-3500 series insertion electromagnetic flow meters are suitable for measuring electrically conductive liquids in a wide variety of applications. Each F-3500 provides a single analog output for flow rate, a high resolution frequency output to drive peripheral devices, a scalable pulse output for totalization, and an empty pipe alarm signal.

Two versions of the F-3500 are now available. The standard configuration F-3500 is suitable for pipe sizes ranging from 3" to 72" in diameter. The new small pipe configuration F-3500 is suitable for pipes ranging in size from 1/4" - 2 1/2" in diameter.

Optional remote displays and Btu measurement systems are also available for both versions.

**APPLICATIONS**

- Accurate, reliable flow measurement for HVAC applications
- Ideal for monitoring open loop condenser water flow
- Hot-tap design simplifies domestic water retrofit installations
- Cost-effective way to monitor flow in larger pipe sizes
- Suitable for use in water and water/glycol systems

**CALIBRATION**

Every ONICON flow meter is wet calibrated in a flow laboratory against standards that are directly traceable to N.I.S.T. A certificate of calibration accompanies every meter.



Standard Configuration



Small Pipe Configuration



ONICON's F-3500 Series Insertion Electromagnetic Flow Meter combined with the System-10 BTU Meter form an energy measurement system with unsurpassed accuracy and reliability.

This product is covered by one or more of the following patents: 6,431,011 and 6,463,807.

11451 Belcher Road South, Largo, FL 33773 • USA • Tel +1 (727) 447-6140 • Fax +1 (727) 442-5699

www.onicon.com • sales@onicon.com

## GENERAL SPECIFICATIONS

### ACCURACY

- ± 1.0% of reading from 2 to 20 ft/sec
- ± 0.02 ft/sec below 2 ft/sec

### FLOW RANGE

0.1 ft/s to 20 ft/s (200:1 turndown)

### SENSING METHOD

Electromagnetic sensing (no moving parts)

### PIPE SIZE RANGE

- Standard Configuration: 3" - 72" nominal diameter
- Small Pipe Configuration: 1¼" - 2½" nominal diameter

### INPUT POWER

- 20 - 28 VDC, 250 mA @ 24 VDC
- 20 - 28 VAC 60 Hz, 6 VA

### LIQUID TEMPERATURE RANGE

15° to 250° F

### AMBIENT TEMPERATURE RANGE

-20° to 150° F

### OPERATING PRESSURE

400 PSI maximum

### PRESSURE DROP

- Standard Configuration: 0.1 psi at 12 ft/s velocity in 3" pipe, decreasing as line size increases
- Small Pipe Configuration: 0.33 psi at 8 ft/s in 1.25" pipe, decreasing as the line size increases

### OUTPUT SIGNALS PROVIDED

#### Analog Output (Isolated)

Selectable: 4-20 mA, 0-10 V or 0-5 V

#### Frequency Output

0 - 15 V peak pulse, 0 - 500 Hz

#### Scalable Pulse Output

- Isolated solid state dry contact
- Contact rating: 50 VDC, 100 mA maximum
- Pulse Duration: 0.5, 1, 2 or 6 seconds

### MATERIAL

- Wetted metal components: 316 stainless steel
- Sensor head: Xarec
- Optional: NSF/ANSI 61/372 version\*

## ELECTRONICS ENCLOSURE

Weathertight NEMA 4 aluminum enclosure

## ELECTRICAL CONNECTIONS

- 10' of PVC jacketed cable with ½" NPT conduit connection
- Dedicated earth wire required
- 4-wire minimum for power and analog output
- Additional wires required for pulse, frequency and alarm outputs

### OPERATING RANGE FOR COMMON PIPE SIZES 0.1 to 20 ft/sec

Pipe Size (inches)	Flow Rate (GPM)
1 ¼	0.4 - 95
1 ½	0.6 - 130
2	1.0 - 200
2 ½	1.1 - 230
3	2.4 - 460
4	4 - 800
6	9 - 1,800
8	16 - 3,100
10	24 - 4,900
12	35 - 7,050
14	42 - 8,600
16	55 - 11,400
18	70 - 14,600
20	86 - 18,100
24	125 - 26,500
30	223 - 41,900
36	304 - 60,900

NOTE: Specifications are subject to change without notice.

\*



ELECTROMAGNETIC INSERTION FLOW METER  
NSF/ANSI 61 <MH60590>  
ALSO CLASSIFIED  
IN ACCORDANCE WITH  
NSF/ANSI 372

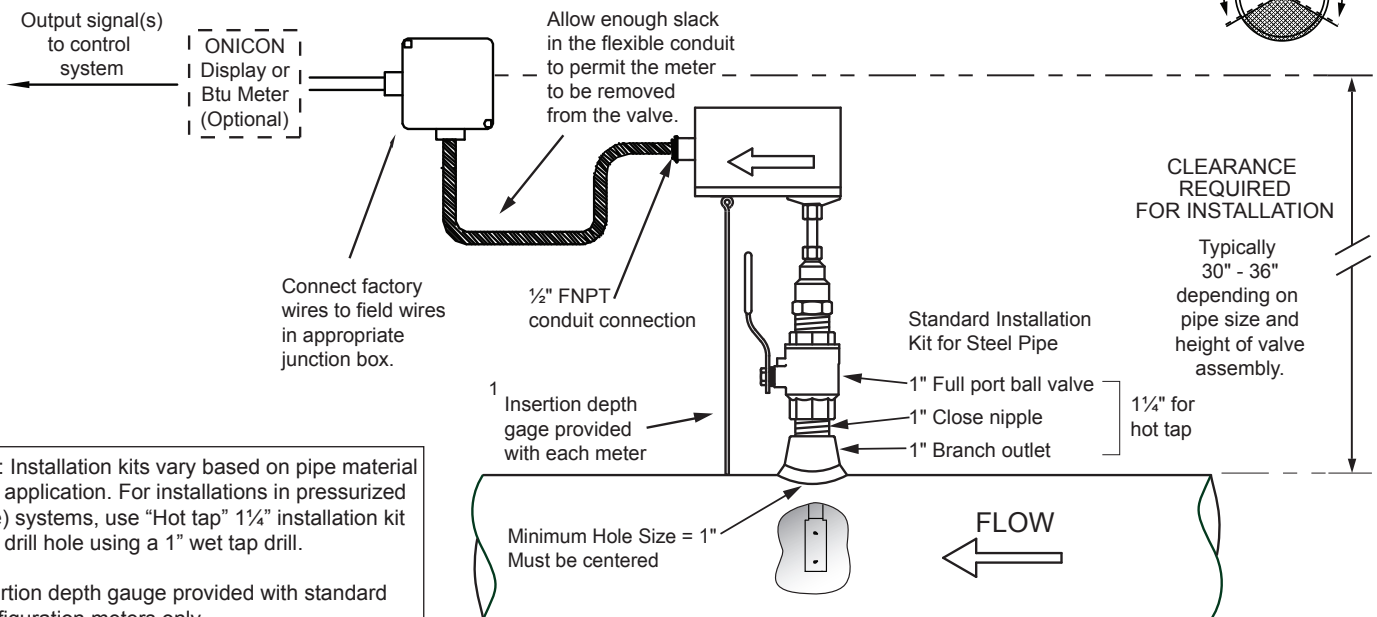
\*

Standard configuration meters certified NSF/ANSI 61 & 372 through UL  
Small pipe configuration meters conform to NSF/ANSI 61 & 372  
(certification pending)

## TYPICAL METER INSTALLATION

(New construction or scheduled shutdown)

- Install in vertical or horizontal pipe
- For horizontal pipe position meter anywhere in upper 240°



NOTE: Installation kits vary based on pipe material and application. For installations in pressurized (live) systems, use "Hot tap" 1¼" installation kit and drill hole using a 1" wet tap drill.

<sup>1</sup> Insertion depth gage provided with standard configuration meters only.