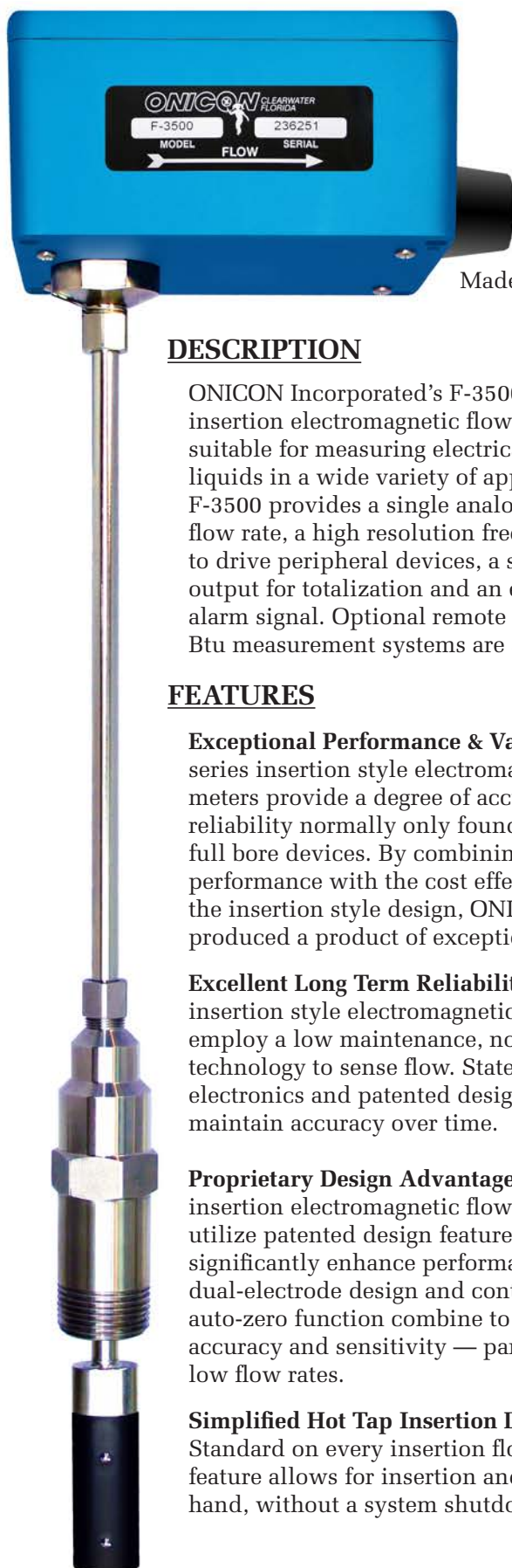


• **F-3500 SERIES •**  
**INSERTION ELECTROMAGNETIC**  
**FLOW METER**



Made in the USA

## 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. Optional remote displays and Btu measurement systems are also available.

## FEATURES

**Exceptional Performance & Value - F-3500** series insertion style electromagnetic flow meters provide a degree of accuracy and reliability normally only found in expensive full bore devices. By combining this level of performance with the cost effective nature of the insertion style design, ONICON has produced a product of exceptional value.

**Excellent Long Term Reliability - ONICON** insertion style electromagnetic flow meters employ a low maintenance, non-moving parts technology to sense flow. State-of-the-art electronics and patented design features help maintain accuracy over time.

**Proprietary Design Advantage - F-3500** insertion electromagnetic flow meters utilize patented design features that significantly enhance performance. The dual-electrode design and continuous auto-zero function combine to 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.

## APPLICATIONS

- Chilled water, hot water, condenser water & water/glycol solutions for HVAC
- Process water & water mixtures
- Domestic/municipal water

## 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.

## 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)

### **CONDUCTIVITY RANGE**

20 to 60,000 µSiemens/cm

### **PIPE SIZE RANGE**

3" through 72" nominal diameter

### **INPUT POWER**

- 20 – 28 VDC, 250mA @ 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**

Less than 0.1 psi at 12 ft/s velocity in 3" and larger pipes

### **OUTPUT SIGNALS PROVIDED**

#### **Analog Output (Isolated)**

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

#### **Frequency Output**

0 – 15 Volt peak pulse, 0 – 500Hz

#### **Scalable Pulse Output**

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

(continued on back)



*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.

## F-3500 SPECIFICATIONS (cont.)

### MATERIAL

Wetted metal components: 316 stainless steel  
Sensor head: Polystyrene

### 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)
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

## F-3500 WIRING DIAGRAM

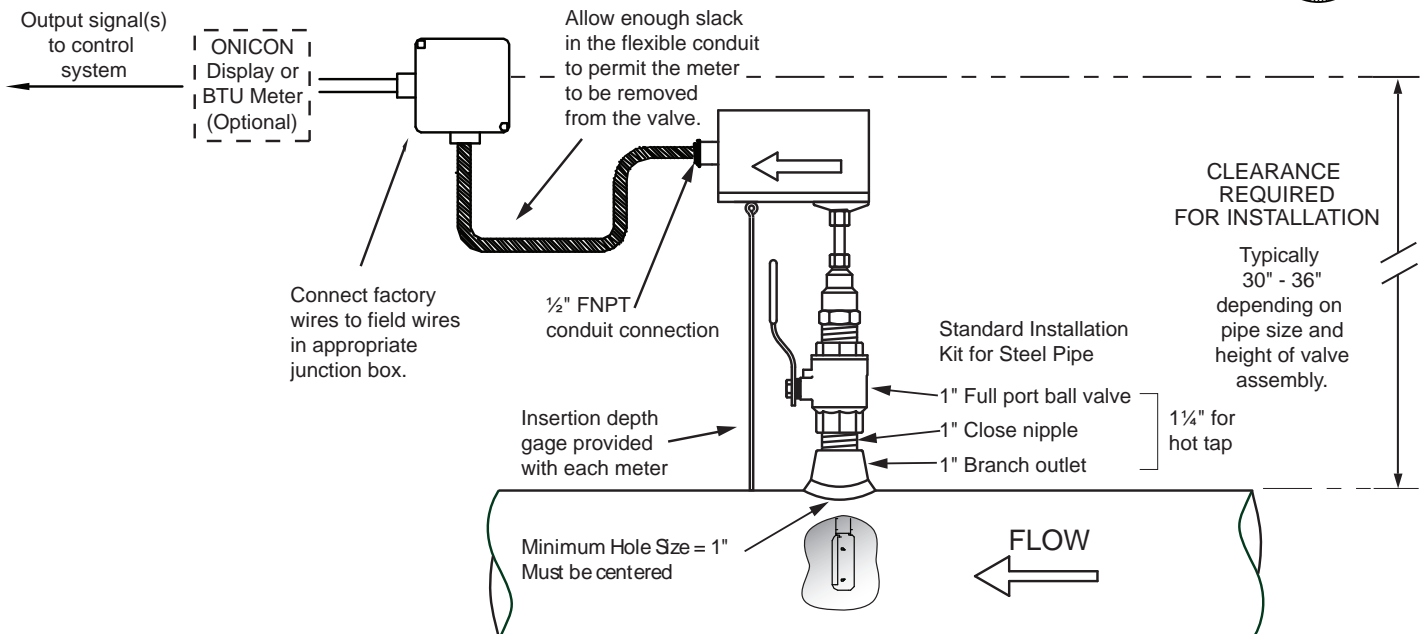
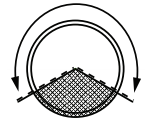
WIRE COLOR	DESCRIPTION	NOTES
RED	(+) Supply Voltage: 24 VDC, 250 mA or 24 VAC, 60 Hz, 6 VA	Connect to power supply (+): DC (+) or AC (line)
BLACK	(-) Isolated Supply Voltage Common	Connect to power supply (-): DC (-) or AC (neutral)
GREEN/YELLOW	Earth ground connection	Required to operate the meter
GREEN	(+) Isolated Frequency Output	Required when connecting to ONICON display or BTU meter
YELLOW	(-) Frequency Output Common	
BLUE	(+) Isolated Analog Output	Configurable as a 4-20 mA, 0-10 Volt or 0-5 Volt Output
BROWN	(-) Isolated Analog Output Common	
GRAY	Scaled Output Isolated Dry Contact	Scalable dry contact pulse output for totalization
VIOLET		
DIAGNOSTIC SIGNALS		
ORANGE	Master Alarm, Dry Contact	Dry contact closure signal indicating fault condition
WHITE		

NOTE: Specifications are subject to change without notice.

## 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 inch installation kit and drill hole using a 1 inch wet tap drill.

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

www.onicon.com • sales@onicon.com