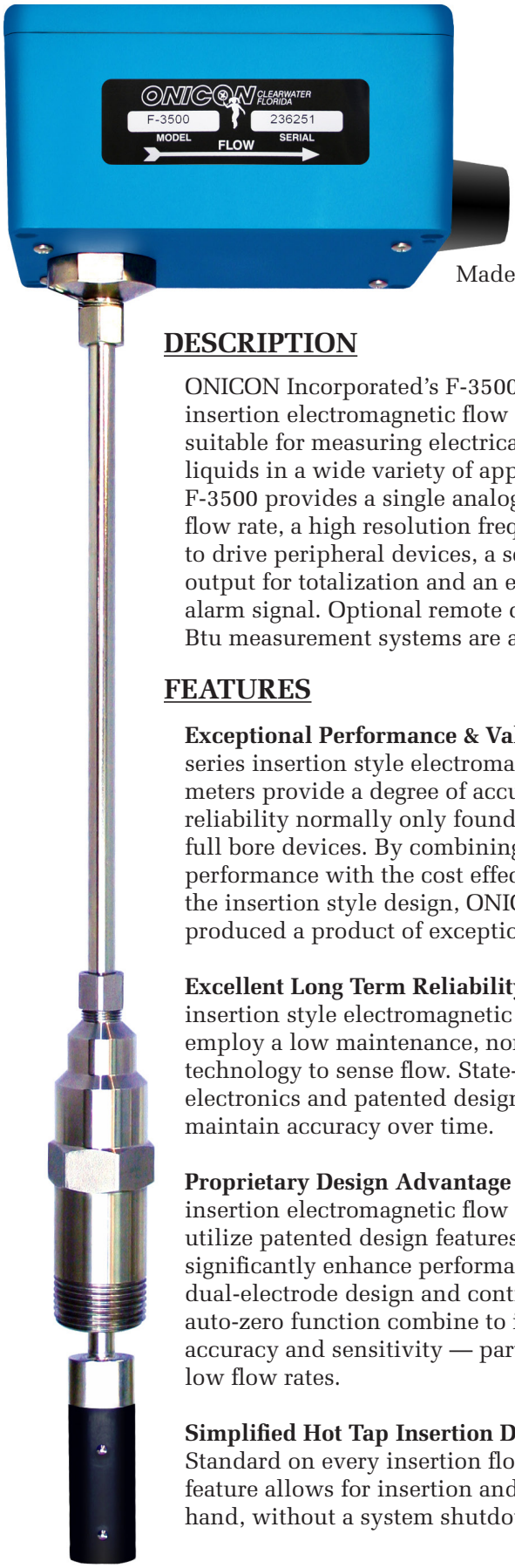
• F-3500 SERIES •
INSERTION ELECTROMAGNETIC FLOW METER



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.

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

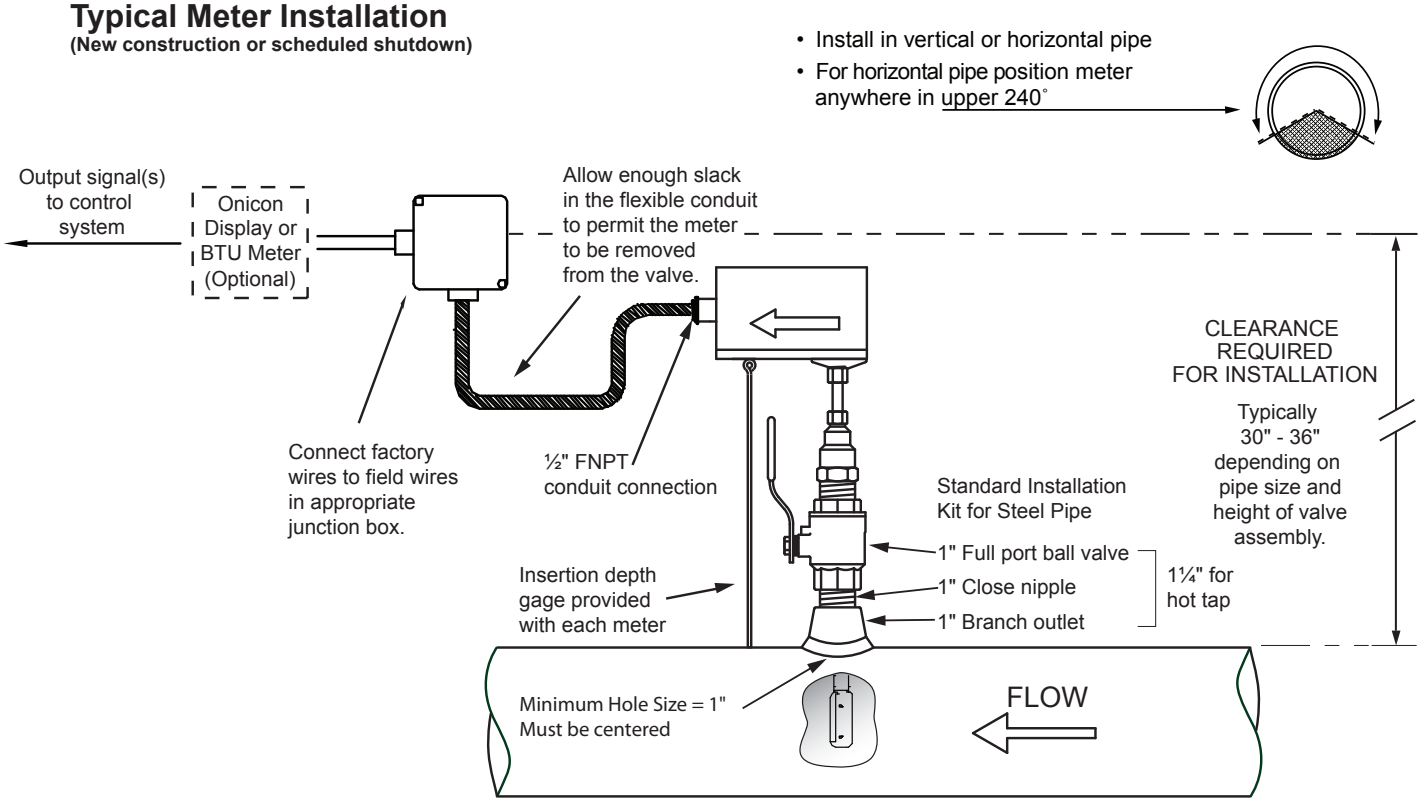
F-3500 Wiring Diagram

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)



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.