

• **INLINE FLOW METER •**  
**MODEL F-1310 TURBINE**  
**ANALOG OUTPUT**



Made in the USA

## **DESCRIPTION**

ONICON inline turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1310 model provides non-isolated 4-20 mA and 0-10 V analog output signals that are linear with the flow rate.

## **CALIBRATION**

Every ONICON flow meter is wet-calibrated in our flow laboratory against primary volumetric standards directly traceable to NIST. Certification of calibration is included with every meter.

## **FEATURES**

**Unmatched Price vs. Performance** - Custom calibrated, highly accurate instrumentation at very competitive prices.

**Excellent Long-term Reliability** - Patented electronic sensing is resistant to scale and particulate matter. Low mass turbines with engineered jewel bearing systems provide a mechanical system that virtually does not wear.

**Industry Leading Two-year "No-fault" Warranty** - Reduces start-up costs with extended coverage to include accidental installation damage (miswiring, etc.). Certain exclusions apply; see our complete warranty statement for details.

## **APPLICATIONS**

- Chilled water, hot water, condenser water, and water/glycol/brine for HVAC
- Process water and water mixtures
- Domestic water

## **GENERAL SPECIFICATIONS**

### **ACCURACY**

- ± 0.5% OF READING at calibrated velocity
- ± 2% OF READING from 0.8 to 38 GPM (50:1 range)

### **SENSING METHOD**

Electronic impedance sensing  
(non-magnetic and non-photoelectric)

### **PROCESS CONNECTIONS**

Threaded or sweat union fittings  
3/4" or 1"

### **SUPPLY VOLTAGE**

24±4 V AC/DC at 50 mA

### **LIQUID TEMPERATURE RANGE**

Standard: 180° F continuous, 200° F peak  
High Temp: 280° F continuous, 300° F peak

### **AMBIENT TEMPERATURE RANGE**

-5 to 160° F (-20 to 70° C)

### **OPERATING PRESSURE**

400 PSI maximum

### **PRESSURE DROP**

3 PSI at maximum flow rate

### **OUTPUT SIGNALS PROVIDED:**

#### **ANALOG OUTPUTS (NON-ISOLATED)**

Voltage output: 0-10 V (0-5 V available)  
Current output: 4-20 mA

#### **FREQUENCY OUTPUT**

0-15 V peak pulse, typically less than 300 Hz

### **MATERIAL**

Brass housing and stem  
Sapphire bearings and tungsten carbide shaft

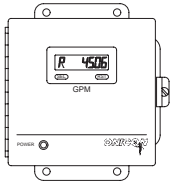
### **ELECTRONICS ENCLOSURE**

Weather-tight aluminum enclosure

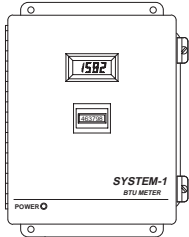
### **ELECTRICAL CONNECTIONS**

3-wire minimum for 4-20mA or 0-10V output  
Standard: 10' of cable with 1/2" NPT conduit connection  
Optional: Indoor DIN connector with 10' of plenum rated cable

## Also Available



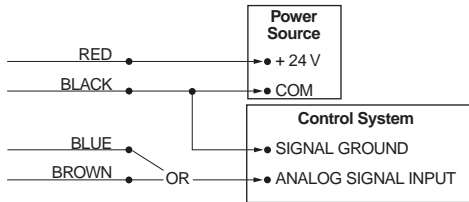
Display Modules



BTU Measurement Systems

## F-1310 Wiring Diagram

Flow Meter into Control System (No Display or BTU Meter)

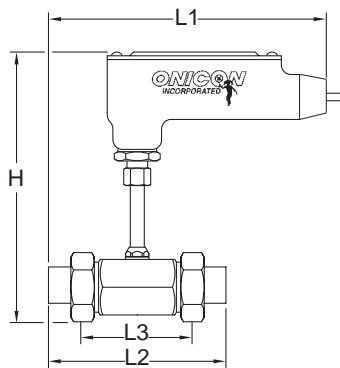


- NOTE: 1. Black wire is common with the pipe ground (typically earth ground).  
 2. Frequency output required for ONICON display module or BTU meter, refer to wiring diagram for peripheral device.

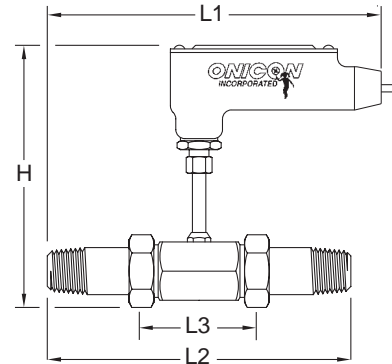
## F-1310 Wiring Information

WIRE COLOR CODE		NOTES
RED	(+) 24 V AC/DC supply voltage, 50 mA	Connect to power supply positive
BLACK	(-) Common ground (Common with pipe ground)	Connect to power supply negative & analog input ground
GREEN	(+) Frequency output signal: 0-15 V peak pulse	Required when meter is connected to local display or BTU meter
BLUE	(+) Analog signal: 4-20 mA (Non-isolated)	Both signals may be used independently
BROWN	(+) Analog signal: 0-10 V (Non-isolated)	

## Inline Flow Meter Dimensions

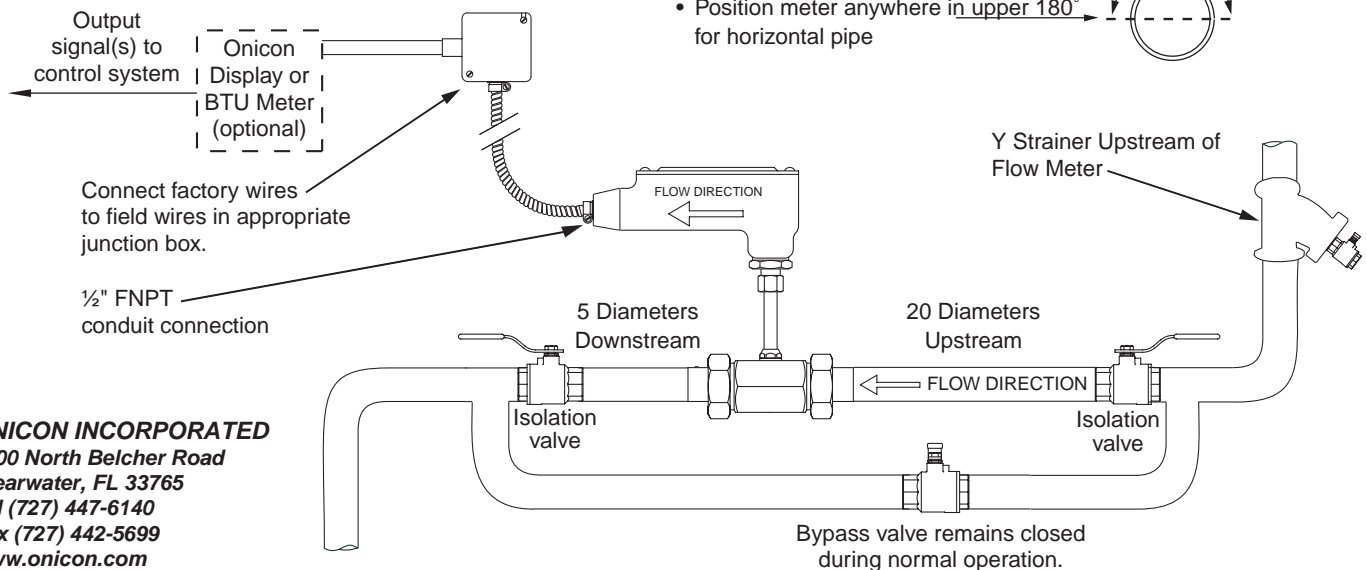


Sweat		Threaded
9"	L1	10 1/4"
5 3/8"	L2	8 5/8"
3 1/4"	L3	3 1/4"
8"	H	8"
2"	MAX WIDTH	2"



## Typical Meter Installation

(New construction or scheduled shutdown)



- Flush piping system thoroughly before installing meter
- Acceptable to install in vertical pipe
- Position meter anywhere in upper 180° for horizontal pipe

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