

• F-1230 DUAL TURBINE •
INSERTION FLOW METER
SCALED OUTPUT



Made in the USA

DESCRIPTION

ONICON insertion turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1230 model provides a scaled binary (digital) dry contact output signal where each pulse equals a specific unit volume - an ideal choice for totalized flow applications.

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
- ± 1% OF READING from 3 to 30 ft/s (10:1 range)
- ± 2% OF READING from 0.4 to 20 ft/s (50:1 range)

SENSING METHOD

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

PIPE SIZE RANGE

2½" through 72" nominal

SUPPLY VOLTAGE

24±4 V AC/DC at 30 mA

LIQUID TEMPERATURE RANGE

Standard: 180° F continuous, 200° F peak
 High Temp: 280° F continuous, 300° F peak
 Meters operating above 250° F require
 316 stainless steel construction option

AMBIENT TEMPERATURE RANGE

-5 to 160° F (-20 to 70° C)

OPERATING PRESSURE

400 PSI maximum

PRESSURE DROP

Less than 1 PSI at 20 ft/s in 2½" pipe,
 decreasing in larger pipes and lower velocities

OUTPUT SIGNALS PROVIDED:

SCALED CONTACT OUTPUT

Isolated solid state dry contact
 Contact rating: 100 mA, 50V
 Contact duration:
 50 ms or 300 ms, jumper selectable

FREQUENCY OUTPUT

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

(continued on back)

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.

Installation Flexibility - Patented dual turbine models deliver outstanding accuracy in short pipe runs.

Simplified Hot Tap Insertion Design - Standard on every insertion flow meter. Allows for insertion and removal by hand without system shutdown.

| OPERATING RANGE FOR COMMON PIPE SIZES 0.17 TO 20 ft/s ± 2% accuracy begins at 0.4 ft/s | |
|---|-----------------|
| Pipe Size (Inches) | Flow Rate (GPM) |
| 2½ | 2.5 - 230 |
| 3 | 4 - 460 |
| 4 | 8 - 800 |
| 6 | 15 - 1800 |
| 8 | 26 - 3100 |
| 10 | 42 - 4900 |
| 12 | 60 - 7050 |
| 14 | 72 - 8600 |
| 16 | 98 - 11,400 |
| 18 | 120 - 14,600 |
| 20 | 150 - 18,100 |
| 24 | 230 - 26,500 |
| 30 | 360 - 41,900 |
| 36 | 510 - 60,900 |

F-1230 SPECIFICATIONS cont.

MATERIAL

Wetted metal components
 Standard: Electroless nickel plated brass
 Optional: 316 stainless steel

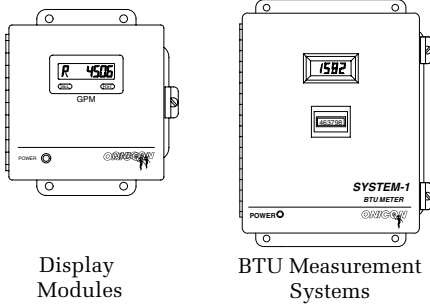
ELECTRONICS ENCLOSURE

Standard: Weathertight aluminum enclosure
 Optional: Submersible enclosure

ELECTRICAL CONNECTIONS

4-wire minimum for scaled switch output
 Frequency output requires an additional wire
 Standard: 10' of cable with 1/2" NPT conduit connection
 Optional: Indoor DIN connector with 10' of plenum rated cable

ALSO AVAILABLE

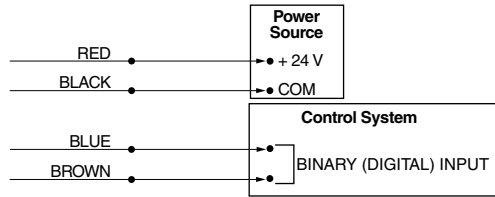


F-1230 Wiring Information

| WIRE COLOR CODE | | NOTES |
|--------------------|--|---|
| RED | (+) 24 V AC/DC supply voltage, 140 mA | Connect to power supply positive |
| BLACK | (-) Common ground (Common with pipe ground) | Connect to power supply negative |
| GREEN | (+) Frequency output signal: 0-15 V peak pulse | Required when meter is connected to local display or BTU meter |
| BLUE | Dry contact switch output | Scaled to provide one pulse per desired unit volume |
| BROWN | | |
| DIAGNOSTIC SIGNALS | | |
| ORANGE | Bottom turbine frequency | These signals are for diagnostic purposes - connect to local display or BTU Meter |
| WHITE | Top turbine frequency | |

F-1230 Wiring Diagram

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

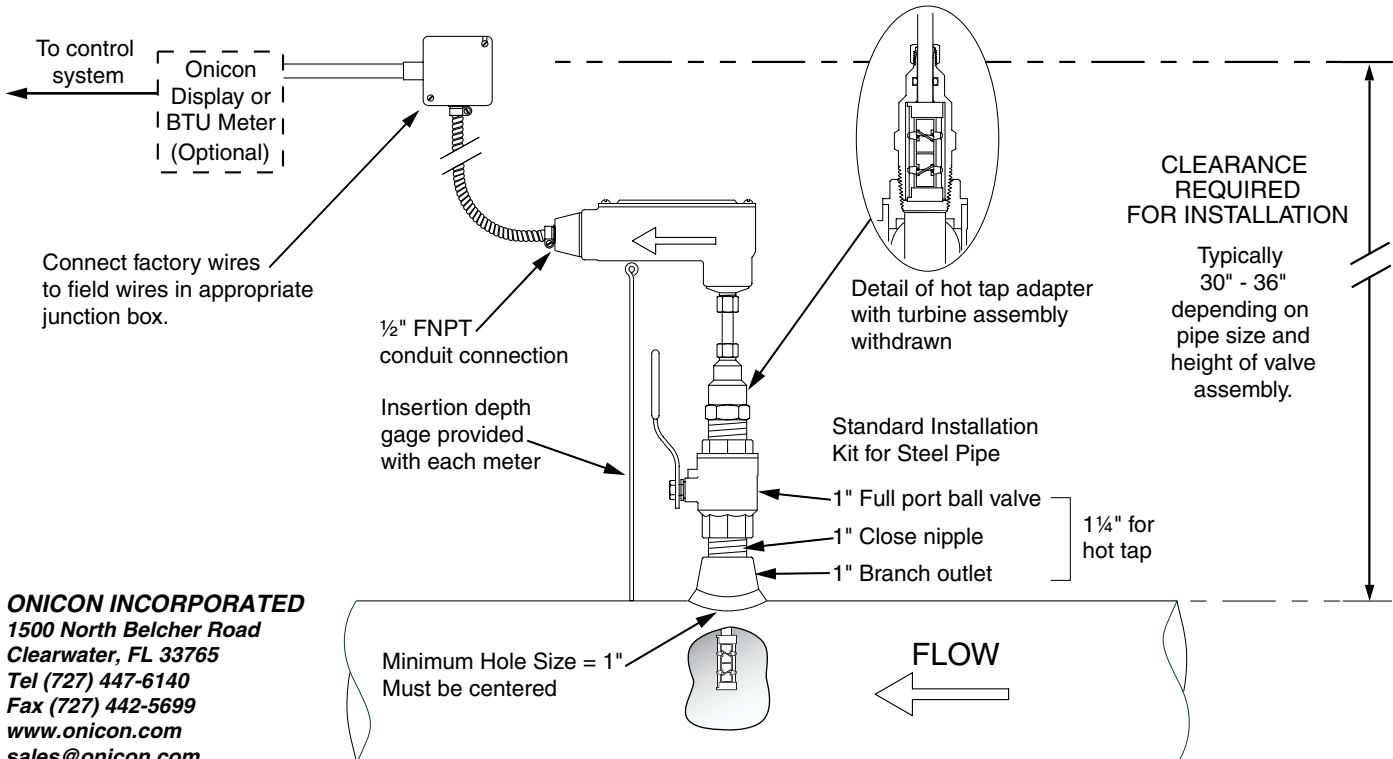


- NOTE: 1. Black wire is common with the pipe ground (typically earth ground).
 2. Frequency output required for ONICON display module or BTU meter, refer to wiring diagram for peripheral device.

Typical Meter Installation

(New construction or scheduled shutdown)

- Acceptable to install in vertical pipe
- Position meter anywhere in upper 180° for horizontal pipe



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Note: Installation kits vary based on pipe material and application. For installations in pressurized (live) systems, use "Hot tap" 1 1/4 inch installation kit and drill hole using a 1 inch wet tap drill.