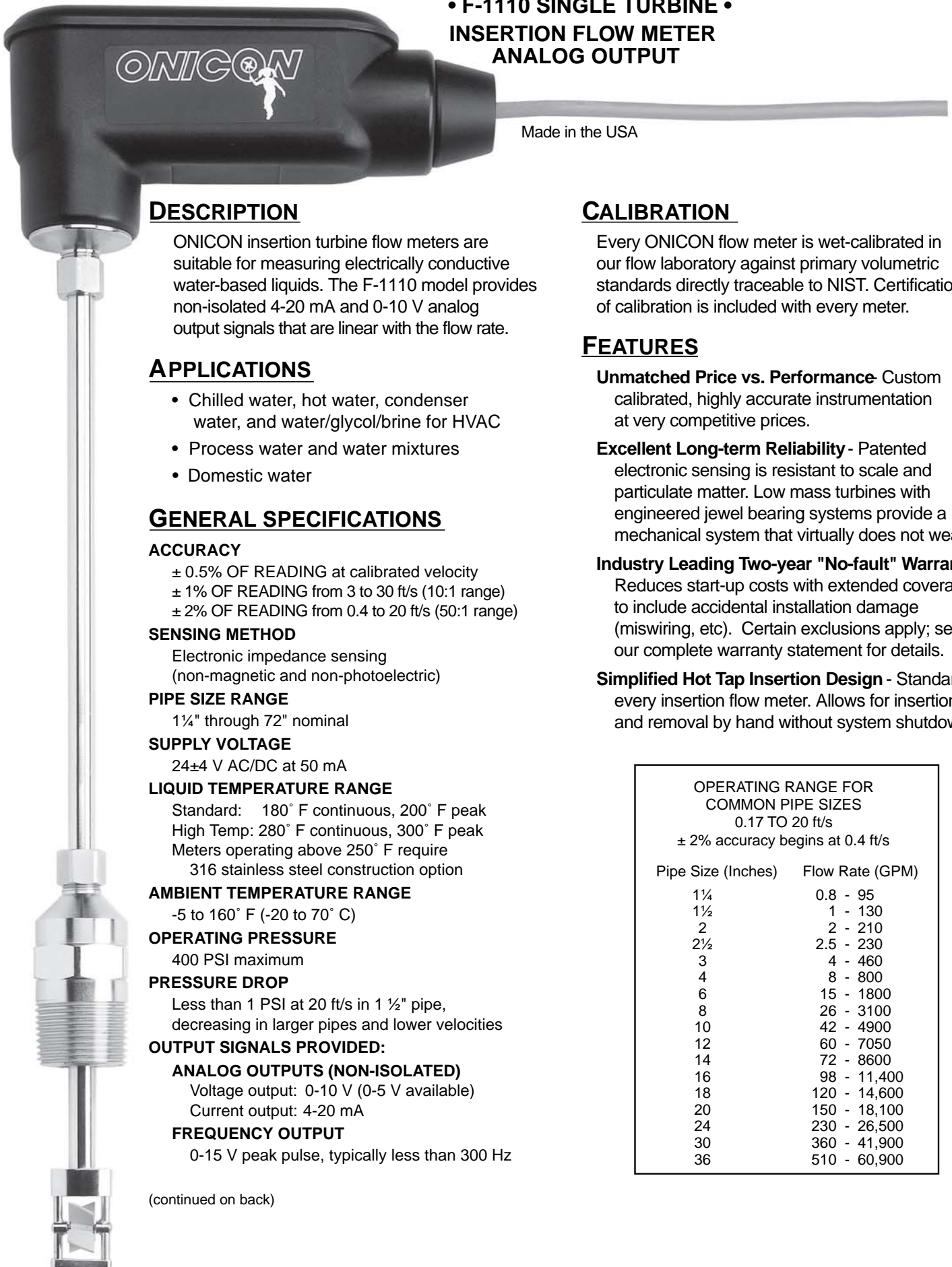


• F-1110 SINGLE TURBINE •  
**INSERTION FLOW METER**  
**ANALOG OUTPUT**

Made in the USA



**DESCRIPTION**

ONICON insertion turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1110 model provides non-isolated 4-20 mA and 0-10 V analog output signals that are linear with the flow rate.

**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**

1¼" through 72" nominal

**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  
 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 1 ½" pipe, decreasing in larger pipes and lower velocities

**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

(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.

**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)
1¼	0.8 - 95
1½	1 - 130
2	2 - 210
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-1110 SPECIFICATIONS cont.

## MATERIAL

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

## ELECTRONICS ENCLOSURE

- Standard: Weathertight aluminum enclosure
- Optional: Submersible enclosure

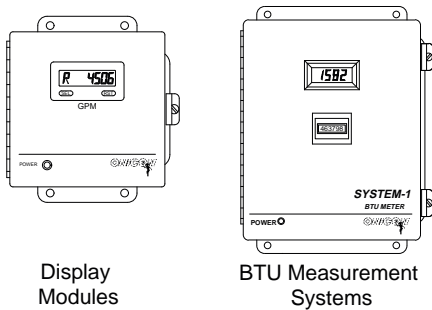
## ELECTRICAL CONNECTIONS

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

# F-1110 Wiring Information

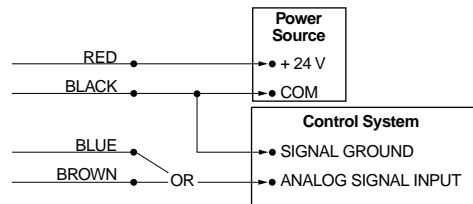
WIRE COLOR CODE	NOTES
RED	(+) 24 V AC/DC supply voltage, 50 mA Connect to power supply positive
BLACK	(-) Common ground (Common with pipe ground) Connect to power supply negative & analog input ground
GREEN	(+) Frequency output signal: 0-15 V peak pulse Required when meter is connected to local display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

## ALSO AVAILABLE



## F-1110 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

