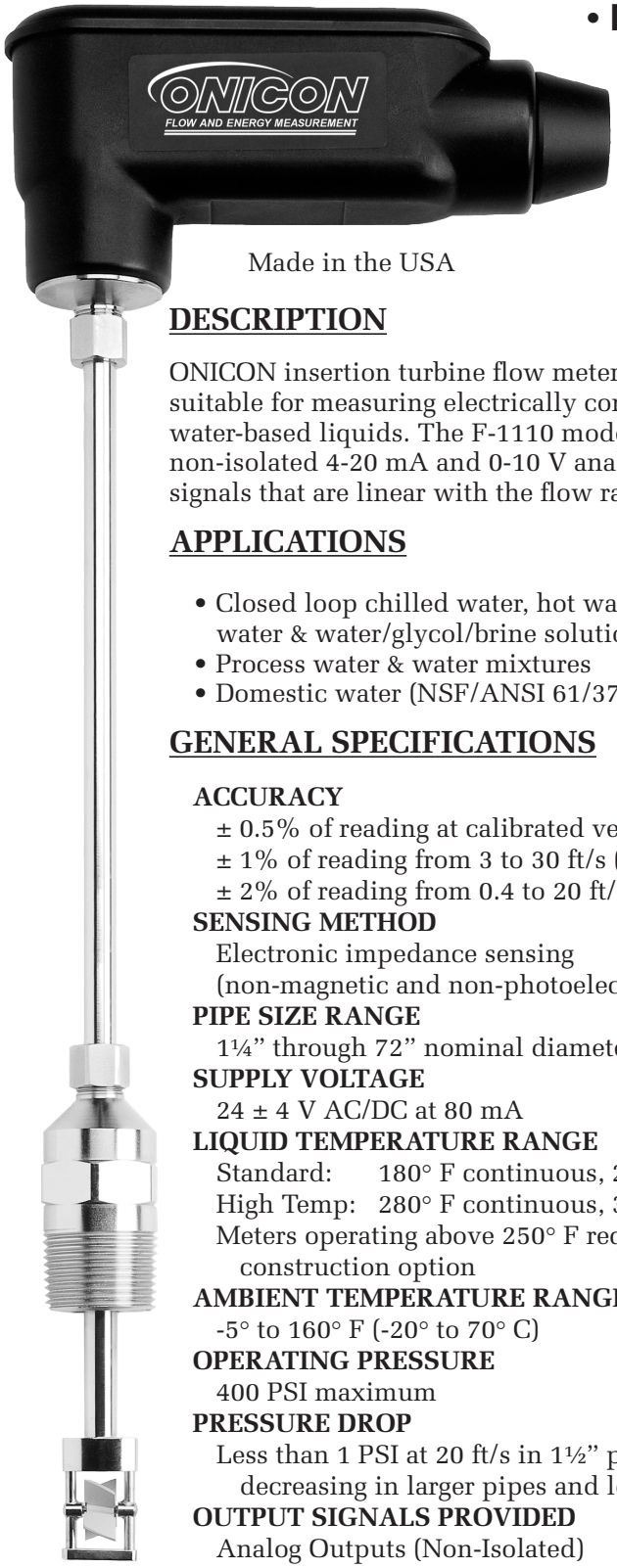

• F-1110 SINGLE TURBINE •
INSERTION FLOW METER
ANALOG OUTPUT

ONICON
FLOW AND ENERGY MEASUREMENT

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

- Closed loop chilled water, hot water, condenser water & water/glycol/brine solutions for HVAC
- Process water & water mixtures
- Domestic water (NSF/ANSI 61/372 version*)

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 diameter

SUPPLY VOLTAGE
24 ± 4 V AC/DC at 80 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 SS 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 1½" pipe, decreasing in larger pipes and lower velocities

OUTPUT SIGNALS PROVIDED
Analog Outputs (Non-Isolated)
Jumper selectable: 4-20 mA / 0-10V / 0-5V
Frequency Output
0 – 15 V peak pulse

(continued on back)

CALIBRATION

Every ONICON flow meter is wet calibrated in a flow laboratory against primary volumetric standards that are directly traceable to N.I.S.T. A certificate of calibration accompanies 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)
1 ¼	0.8 - 95
1 ½	1 - 130
2	2 - 210
2½	2.5 - 230
3	4 - 460
4	8 - 800
6	15 - 1,800
8	26 - 3,100
10	42 - 4,900
12	60 - 7,050
14	72 - 8,600
16	98 - 11,400
18	120 - 14,600
20	150 - 18,100
24	230 - 26,500
30	360 - 41,900
36	510 - 60,900

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www.onicon.com • sales@onicon.com

F-1110 SPECIFICATIONS (cont.)

MATERIAL

Wetted metal components:
- Standard: Electroless nickel plated brass
- Optional: 316 stainless steel
- Optional: NSF/ANSI 61/372 version*

ELECTRONICS ENCLOSURE
- Standard: Weathertight aluminum enclosure
- Optional: Submersible enclosure

ELECTRICAL CONNECTIONS

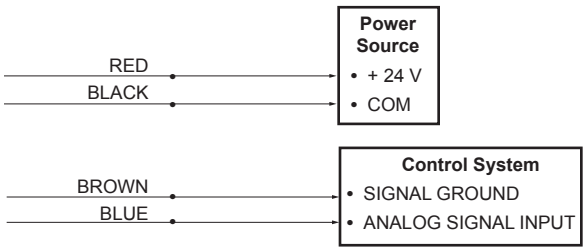
4-wire recommended for analog
- Standard: 10' of cable with ½" NPT conduit connection
- Optional: Indoor DIN connector with 10' of plenum rated cable

F-1110 WIRING INFORMATION

WIRE COLOR	DESCRIPTION	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	Jumper selectable: 4-20 mA / 0-10V / 0-5V
BROWN	(-) Analog signal	

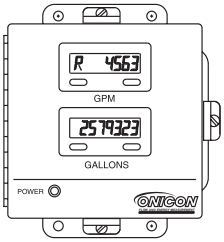
F-1110 WIRING DIAGRAM

Flow meter into control system (no display or Btu meter)

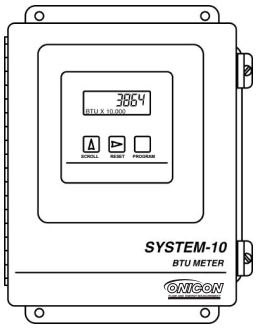


NOTE:
1. ***Black wire is common with the pipe ground (typically earth ground).***
2. ***Frequency output required for ONICON display module or Btu meter, refer to wiring diagram for peripheral device.***

ALSO AVAILABLE



Display Modules



Btu Measurement Systems

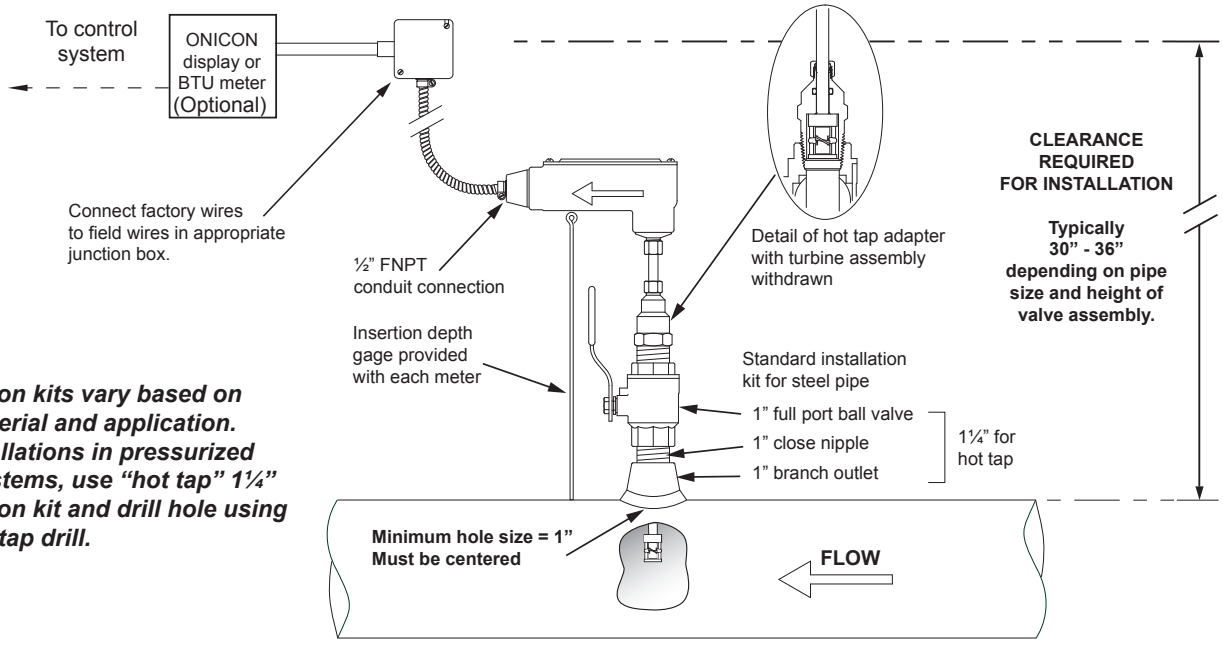
* CLASSIFIED C UL US WATER QUALITY

TURBINE INSERTION FLOW METER NSF/ANSI 61 <MH60590> ALSO CLASSIFIED IN ACCORDANCE WITH NSF/ANSI 372

TYPICAL METER INSTALLATION

(New construction or scheduled shutdown)

- Acceptable to install in vertical pipe
- Position meter anywhere in upper 240° for horizontal pipe



NOTE:
Installation kits vary based on pipe material and application. For installations in pressurized (live) systems, use "hot tap" 1¼" installation kit and drill hole using a 1" wet tap drill.

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