• F-1130 SINGLE TURBINE •
INSERTION FLOW METER
SCALED OUTPUT

ONICON INCORPORATED

Made in the USA

DESCRIPTION

ONICON insertion turbine flow meters are suitable for measuring electrically conductive water-based liquids. The F-1130 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

- Closed loop chilled water, hot water, condenser water & water/glycol/brine solutions for HVAC
- Process water & 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 diameter

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 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
Scaled Contact Ouput
Isolated solid state dry contact
Contact rating: 100 mA, 50 V
Contact duration: 50 ms or 300 ms, jumper selectable
Frequency Output
0 – 15 V peak pulse, typically less than 300 Hz

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
2 ½	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

F-1130 SPECIFICATIONS cont.

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

ELECTRONICS ENCLOSURE
Standard: Weathertight aluminum enclosure
Optional: Submersible enclosure
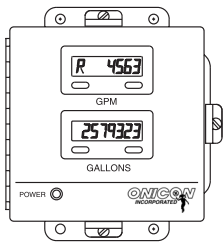
ELECTRICAL CONNECTIONS
4-wire minimum for divided output
Frequency output requires additional wires
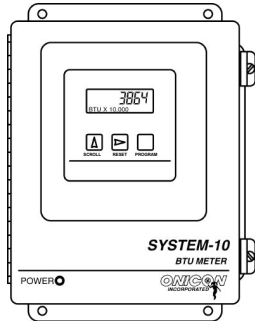Standard: 10' of cable with ½" NPT
                conduit connection
Optional: Indoor DIN connector with 10'
                of plenum rated cable

ALSO AVAILABLE

Display Modules

Btu Measurement Systems

F-1130 Wiring Information

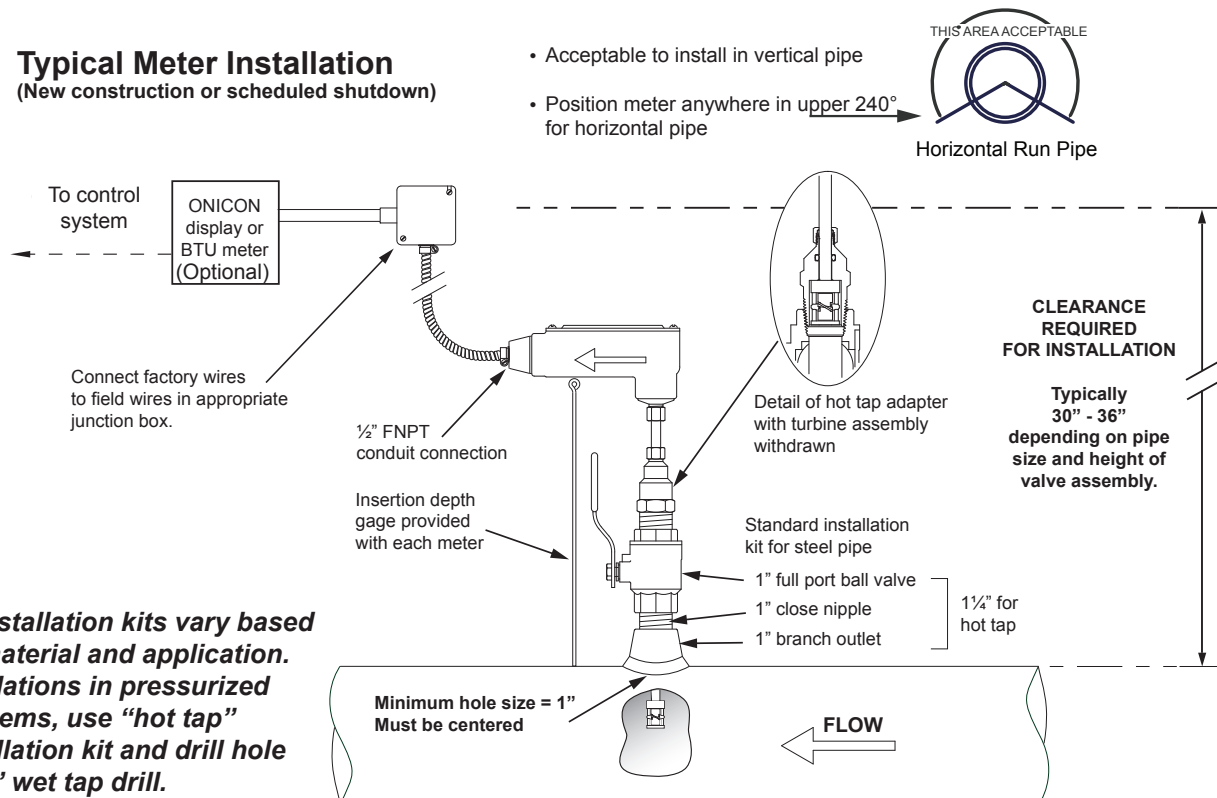| WIRE COLOR	DESCRIPTION	NOTES
RED	(+) 24 V AC/DC supply voltage, 30 mA	Connect to power supply positive
BLACK	(-) Common ground (Common with pipe ground)	Connect to power supply negative
GREEN	(+) Frequency output signal: 0-15 V peak pulse	Required when meter is connected to local display or Btu meter
BLUE	Dry contact switch output	Scaled to provide one pulse per desired unit volume
BROWN		

F-1130 Wiring Diagram

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

RED   **Power Source**
BLACK   • + 24 V
            • COM

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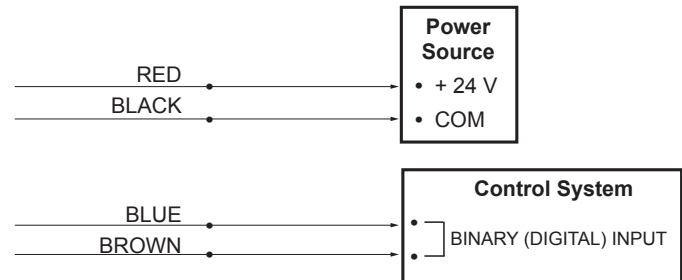
NOTE: *1. Black wire is common with the pipe ground (typically earth ground).*
               2. Frequency output required for ONICON display module or Btu meter, refer to wiring diagram for peripheral device.

Typical Meter Installation
(New construction or scheduled shutdown)

• Acceptable to install in vertical pipe

• Position meter anywhere in upper 240° for horizontal pipe

THIS AREA ACCEPTABLE

Horizontal Run Pipe

To control system

ONICON display or BTU meter (Optional)

Connect factory wires to field wires in appropriate junction box.

½" FNPT conduit connection

Insertion depth gage provided with each meter

Detail of hot tap adapter with turbine assembly withdrawn

CLEARANCE REQUIRED FOR INSTALLATION

Typically 30" - 36" depending on pipe size and height of valve assembly.

Standard installation kit for steel pipe

1" full port ball valve
1" close nipple
1" branch outlet

1¼" for hot tap

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.

Minimum hole size = 1"
Must be centered

FLOW

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