



# M53131 BTU Meters & Flow Sensors

## Line Powered

### Overview

The H2O Degree M53131 BTU meter is a BTU meter and flow sensor that monitors and records two temperatures, the temperature difference and the flow rate in order to determine BTU consumption.

### Applications

- New or Retrofit Installation
- Fan Coils-Water Type Hot, Chilled or both
- Hydronic base board fin tube heating

### Features

- The H2O Degree M53131 is an economical wireless BTU meter and flow sensor that is highly accurate.
- The M53131 provides a radio interface to remotely collect BTU consumption by measuring inlet temperature, outlet temperature and flow rate. A BTU is defined as the amount of energy used to raise the temperature of one pound of water by one degree Fahrenheit.
- Both the inlet temperature and outlet temperature is measured using a PT1000 thermistor. The difference between the two values is created in the hardware and then read using a microprocessor.
- Water flow is measured using a vortex flow sensor with no moving parts.
- Radio is compatible with the H2O Degree secure wireless 2.4 GHz mesh network.
- By using a magnet, the installer can force a radio transmission and receive LED sequenced feedback on radio connectivity in real-time.
- Type of packet data reported:
  - Consumption Packet (60 minute interval default)
  - Health Packet (120 minute interval default)
- Non-volatile memory maintains last reading in the event of a power failure.
- Two year warranty.



## Ordering Information

Model	Description
M53131	1/2" BTU Meter, flow sensor and radio (requires 120 VAC to 24 VAC power supply)
M53132	1" BTU Meter (For Use with V1001 1" sensor)
RTD1003	1/4" NPT Temperature Probe with 24" cable, no strain relief
PS-1005	120 VAC to 24 VAC power supply
V1000	1/2" Vortex flow sensor 8-30 Volt
V1001	1" Vortex flow sensor 8-30 Volt
CA1015	Vortex cable with RJ-45 Connector
CA1015-TS	Vortex cable with bare wires

9/2015

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## Technical Specifications

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#### Electrical

Voltage input 24 volt AC

Current input 45 milli-amps typical, 250 milli-amp max

#### Regulatory approvals

US Complies with FCC CFR Part 15

European RADIO EN 300 328:v1.7.1

European EMC EN 301 489-17:V2.1.1

European SAFETY EN 60950-1:2005 (Ed. 2.0)

#### Radio

20 dBm output power

High sensitivity -106 dBm

16 channels (802.15.4 Channel 11 to 26)

Data rate 250 kilo bytes per second

2.4 GHz ISM band

#### Environmental

Operating temperature 0 to 30 degree C

Storage temperature -25 to 50 degrees C

#### Flow and inlet temperature sensor

2,000 pulses per gallon, Flow 0.5 – 10 gpm

Accuracy +/- 2 percent of range, Reproducibility +/- 0.2 % of range

Process connection 1/2 inch NPT

Inner diameter one half inch

Nominal pressure 145 psi

Flow sensor max temperature 194 degrees F

Flow sensor temperature sensor PT1000

#### Outlet Temperature Sensor

Temperature sensor at the outlet PT1000

#### Installation Indicators

Hall cell used with magnet to test successful radio connection

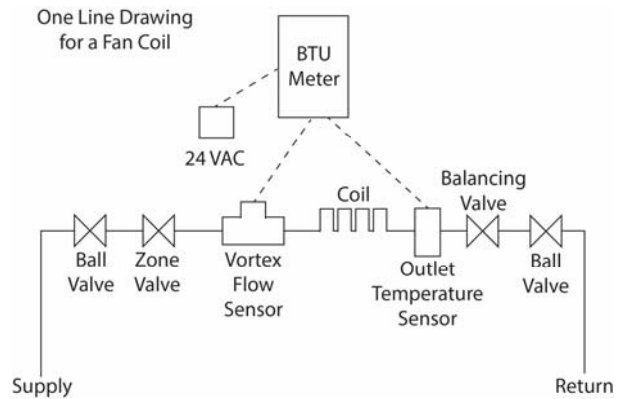
Two LEDs (green and red) to indicate successful radio connection

#### Physical

(H x W x D) 1.5 x3.2 x 5.3 inch, Color black

Weight / shipping weight < 10 oz. / 1 lbs.. Shipping restrictions

### Typical Wiring & Installation Information



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### **Model**

M53131  
M53132  
RTD1003  
PS-1005  
V1000  
V1001  
CA1015

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120 VAC to 24 VAC power supply  
1/2" Vortex flow sensor 8-30 Volt  
1" Vortex flow sensor 8-30 Volt  
Vortex cable with RJ-45 Connector

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