



Impeller
Data Industrial®

BTU Monitor

Series 3050

DESCRIPTION

The Badger Meter® Series 3050 BTU monitor is an economical, full-featured, compact unit designed for HVAC sub-metering applications, and general hydronic thermal transfer systems.

Outputs include one mechanical relay and one solid-state pulse output, both featuring unit/pulse and setpoint control independently based on flow or energy rate/total, supply return, or delta temperature readings. Also driven by the same variables, an optional analog 4...20 mA or 0...20 mA output is provided. Additionally, the optional USB, RS-485 Modbus, and BACnet/MSTP provide high-level communication.

A two-line by 16-character 3/8 in. (9.5 mm) high backlit LCD display is configured by the user to display flow rate, flow total, energy rate, energy total, supply and return temperatures or delta T. In addition to many pre-programmed units of measure, many custom units can be created during field setup.

The two required temperature inputs can be standard Badger Meter two wire 10k thermistors, or three wire 100 Ω platinum RTDs. A unique programming feature permits custom RTD or thermistors to be accommodated.

The flow sensor input features flexible scaling options and signal type selections that permit the use of most Badger Meter sensors, or other frequency sine/pulse or linear analog devices.

OPTIONS

NEMA 4X panel mount conforms to DIN standard 96 mm x 96 mm for meter size and cutouts. NEMA 4X wall mount is available as an option.

Advanced features include:

- Infinite Impulse Response Filter (IIRF) smooths the flow rate, temperature, and energy rate calculations. This proprietary smoothing software provides accurate energy calculations by compensating for a wide variety of flow and temperature signal variables.
- Temperature sensor zeroing effectively makes any two similar sensors a matched pair at the actual operating temperature.
- Password restricted access to programming, reset total, or both.
- Non-volatile memory of totals and field configuration, without need for battery backup.
- Efficient switching power supply permits 12...24V AC/DC operations.

PROGRAMMING

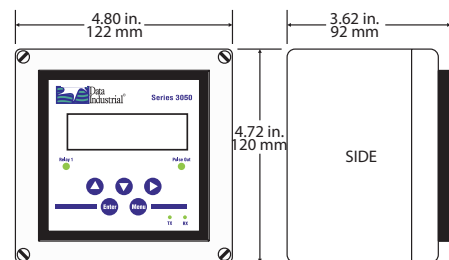
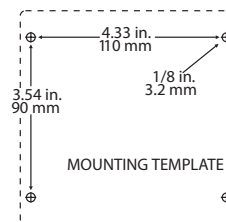
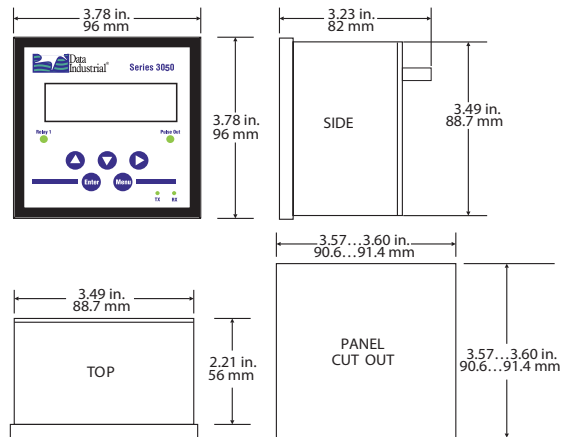
Programming is very easy and can be done using the five front panel push buttons, or optionally by using Windows® based software via a USB port.



PART NUMBER CONFIGURATION

		Example:	3050	-	x	x
Series	Flow Monitor		3050			
Option - Analog Output, RS485 (BACnet / Modbus), and USB	No Option				0	
	Analog Output, RS485 with BACnet and Modbus, and USB				1	
Option - Mounting	Panel Mount				0	
	Wall Mount				1	

DIMENSIONS



Badger Meter

DSY-DS-01684-EN-05 (February 2016)

Product Data Sheet

FLOW SENSOR INPUTS

Type	Threshold	Signal Input	Frequency	Pull-up	Impedance	Aux. Power	Calibration
Pulse-DI	2.5V DC	30V DC	0.4 Hz...10 kHz	1K...12V DC	—	12V DC @30mA	K + Offset
Pulse K-factor	2.5V DC	30V DC	0.4 Hz...10 kHz	—	—	12V DC @30mA	Pulse/Gal
Pull-up K-factor	2.5V DC	30V DC	0.4 Hz...10 kHz	1K...12V DC	—	12V DC @30mA	Pulse/Gal
Analog 4...20mA	10mVPP	50 mA Fused	—	—	100 Ω	12V DC @30mA	Linear
Analog 0...20mA	—	50 mA Fused	—	—	100 Ω	12V DC @30mA	Linear
Analog 0...1V DC	—	30V DC	—	—	100 Ω	12V DC @30mA	Linear
Analog 0...5V DC	—	30V DC	—	—	100 Ω	12V DC @30mA	Linear
Analog 0...10V DC	—	30V DC	—	—	100 Ω	12V DC @30mA	Linear

SPECIFICATIONS

Voltage	12...24V DC/AC (limit: 8...35V DC); (limit: 8...28V AC)		DC current draw (~ 280 mA) AC Power rating (~5 VA)
Operating Temperature	-4...158° F (-20...70° C)		
Storage Temperature	-22...176° F (-30...80° C)		
Weight	Panel Mount: 12 oz		
Pulse and Relays	Both pulse and relay are fully functional as either totalizing or setpoint outputs		
Pulse Electrical	1 Amp at 35V DC/30V AC	Closed: 0.5 Ω at 1 Amp; Open: >10 ⁸ Ω	
Relay Electrical	Resistive Load: 5A @ 120V AC/30V DC	Inductive Load: 1A @ 120V AC/30V DC	
Pulse/Unit Volume (Totalizer)	Driving Source: flow total, Btu total	Rate: 1 pulse per 1.000000...99999999 units	Contact Time: 1...9999 mS
Setpoint (Alarm)	Driving Source: flow rate, Btu rate, temperature 1, temperature 2, delta T	Units: Any predefined or custom unit	Setpoint: 1.000000...99999999
	Delay to Set: 1...9999 sec	Release Point: 1.000000...99999999	Delay to Release: 1...9999 sec
Optional Analog Output	Driving Source: flow rate, Btu rate, temperature 1, temperature 2, delta T, PID control	Range: 4...20 mA; 0...20 mA (isolated current sinking or sourcing)	Sinking: 30V DC @ 0 mA max.; 3V @ 20 mA min. Sourcing: 600 W max load
USB Communication	Provides complete access to all programming and operation features		Requirements: USB 2.0 A to Mini-B, five-pin cable
RS-485 Communication	Supports Modbus and BACnet/MSTP		
Accessories	Programming kit; wall mount kit		
Temperature Inputs	Two of 2-wire 10k type II thermistor; 25...170° F (-3.9...76.7° C) or custom field-defined		
	3-wire platinum 100Ω RTD; 25...250° F (-3.9...121.1° C) or custom field-defined		
	Units of Measure: °F and °C	Energy Rate Units: kBtu/hr; Btu/min; kW; Tons; J/Sec; and field programmed custom units	Operating Mode: T1 < T2; T1 > T2; absolute; Defines how reverse energy flows are handled (T1 should be installed in the same pipe as the flow sensor)
	Zeroing: Compensate for variances between temperature elements by adjusting T2 reading to match T1 reading.	Constant: Single point correction for variances in specific heat of transfer liquid.	Energy Total units: kBtu; Mbtu; kWh; MWh; kJ; and field programmed custom units
Units of Measure	Rate	US gpm; US gal/sec; gal/hr; US mgal/day; lps; lpm; lph; ft ³ /Sec; ft ³ /min; ft ³ /hr; m ³ /sec; m ³ /min; m ³ /hr; acre-ft/sec; acre-ft/min; acre-ft/hr; bbl/sec; bbl/min; bbl/hr; and field programmed custom units 0.00...999999999	
	Total	US mgal; liters; ft ³ ; m ³ ; acre-ft; bbl; and field programmed custom units 0.00...999999999	

Control. Manage. Optimize.

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