



# Data Industrial® 340 BN/MB

## BTU Energy Transmitter

### OVERVIEW

The Data Industrial 340 BN/MB Btu Energy Transmitter from Badger Meter is an economical, compact device for sub-metering applications utilizing the BACnet™ or Modbus® communications protocol.

The 340 BN/MB Btu Energy Transmitter calculates thermal energy using the signal from a flow sensor installed in a hydronic heating or chilled water system, and the signals from two 10 kΩ temperature thermistors, 100 Ω RTDs or 1000 Ω RTDs installed in the system's inlet and outlet points. The flow input may be provided by any Data Industrial sensor and many other pulse or sine wave signal flow sensors.

The on-board microcontroller and circuitry make precise measurements and produce accurate, drift-free outputs. The 340 BN/MB Btu Energy Transmitter is programmed using Badger Meter Windows® based software. Calibration information for the flow sensor type and pipe size may be preselected or entered by the user in the field. While the unit is connected to a PC or laptop computer, real-time flow rate, flow total, temperatures, energy rate and energy total are available.

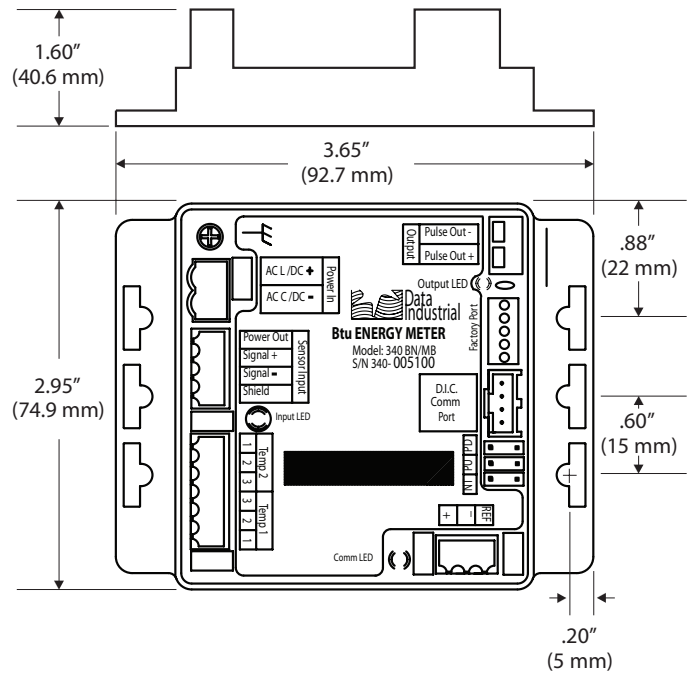
EXAMPLE:	340 BN/MB	—	xx
<b>SERIES</b>			
Btu Energy Transmitter w/ output	340 BN/MB		
<b>OPTIONS</b>			
Transmitter Only			00
With Metal Enclosure			02
With Plastic Enclosure			03
With DIN Rail Mounting Clips			04

**340 BN/MB Ordering Matrix**

The 340 BN/MB Btu Energy Transmitter features three indicator LEDs to verify the sensor input signal, network link and pulse output.

The 340 BN/MB Btu Energy Transmitter communicates via RS485.

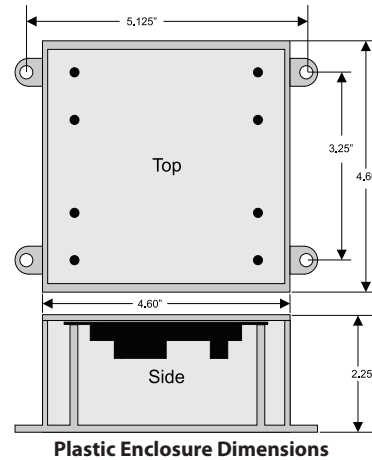
The compact cast body measures 3.65 x 2.95 inches (93 x 75 mm) and can be easily mounted on panels, DIN rails or enclosures.



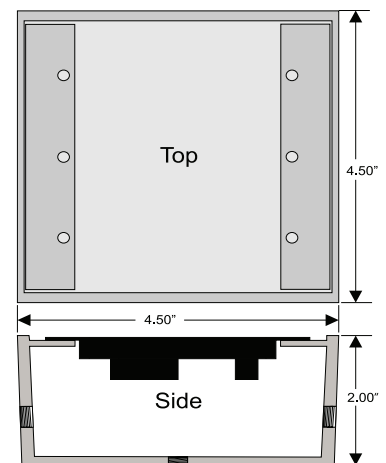
## SPECIFICATIONS

<b>Power</b>	
Power supply	12...24V AC 12...35V DC
Current draw:	115 mA max. at 12V DC
<b>Flow Sensor Input</b>	
<b>Pulse Type Sensors:</b>	
Signal amplitude	2.5V DC threshold
Signal limits	Vin < 12V (DC or AC peak)
Frequency range	4...10000 Hz
Pull-up:	15V DC @ 2k Ω source Impedance
<b>Sine Wave Sensors:</b>	
Signal amplitude	30 mV p-p threshold
Signal limits	Vin < 12V (DC or AC peak)
Frequency	4...10000 Hz
<b>Power Out Terminal</b>	15V DC ± 1V DC @ 500 Ω source Impedance
<b>Temperature Sensor (2 of same type required) Input</b>	
<ul style="list-style-type: none"> <li>10k Ω thermistor, 2 wire, type II, 10k Ω @ 25°C</li> <li>100 Ω platinum RTD, DIN calibration curve, conforms to IEC-751 Standard</li> <li>1000 Ω platinum RTD, DIN calibration curve, conforms to IEC-751 Standard</li> </ul>	
Calibration range of measurement	0...150° C
<b>Communication Port</b>	RS-485 with termination, pull up and pull down jumpers
<b>Pulse Output</b>	
<ul style="list-style-type: none"> <li>Isolated solid-state switch in any standard or custom total units</li> <li>Adjustable 50 ms to 1.0 second pulse output width in 50 ms increments</li> </ul>	
Maximum sinking current:	100 mA @ 36V DC
<b>Temperature</b>	
Operating	0...70° C (32...158° F)
Storage	- 40...85° C (- 40...185° F)
<b>Weight</b>	4.8 oz with connector headers installed
<b>Sensor Calibration</b>	
Badger Meter	Use K and offset values provided in sensor manual
Other Sensors	Check with respected manufacturer of flow sensor and with factory

<b>Units of Measure</b>	
<b>Flow Measurement:</b>	
Rate	gpm, gph, l/sec, l/min, l/hr, ft <sup>3</sup> /sec, ft <sup>3</sup> /min, ft <sup>3</sup> /hr, m <sup>3</sup> /sec, m <sup>3</sup> /min, m <sup>3</sup> /hr
Total	Gallons, Gallons X 100, Gallons X 1000, Liters, Cubic Feet, Cubic Meters
<b>Energy Measurement:</b>	
Rate	kBtu/min, kBtu/hr, kW, MW, hp, tons
Total	Btu, kBtu, MBtu, kWh, MWh, kJ, MJ
<b>Temperature Measurement</b>	Fahrenheit, Centigrade
<b>Programming</b>	
<ul style="list-style-type: none"> <li>Requires PC or laptop running Windows 2000, XP, Vista or Windows 7</li> <li>Data Industrial 340BN/MB Programming Kit A-301-20 containing software and Data Industrial Series programming cable is required for programming and setup</li> </ul>	



Plastic Enclosure Dimensions



Metal Enclosure Dimensions

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