

### DESCRIPTION

The 340 BN/MB Btu Energy Transmitter from Badger Meter® is an economical, compact device for sub-metering applications using 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.

### 340 BN/MB Ordering Matrix

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

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 × 2.95 inches (93 × 75 mm) and can be easily mounted on panels, DIN rails or enclosures.

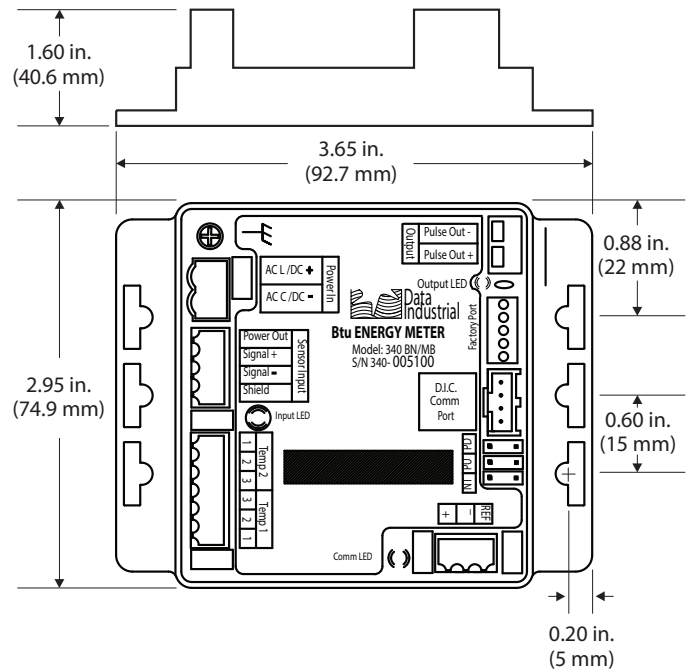


Figure 1: Overall dimensions

## 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...1000 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...1000 Hz
<b>Power Out Terminal</b>	15V DC ± 1V DC @ 500 Ω source Impedance
<b>Temperature Sensor (2 of same type required) Input</b>	
• 10k Ω thermistor, 2 wire, type II, 10k Ω @ 25° C (77° F)	
• 100 Ω platinum RTD, DIN calibration curve, conforms to IEC-751 Standard	
• 1000 Ω platinum RTD, DIN calibration curve, conforms to IEC-751 Standard	
Calibration range of measurement	0...150° C (32...302° F)
<b>Communication Port</b>	RS-485 with termination, pull-up and pull-down jumpers
<b>Pulse Output</b>	
• Isolated solid-state switch in any standard or custom total units	
• Adjustable 50 ms to 1.0 second pulse output width in 50 ms increments	
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>	
• Requires PC or laptop running Windows 2000, XP, Vista or Windows 7	
• Data Industrial 340BN/MB Programming Kit A-301-20 containing software and Data Industrial Series programming cable is required for programming and setup	

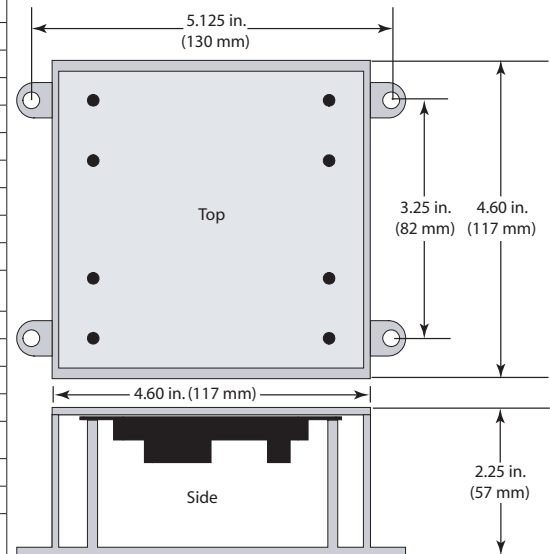


Figure 2: Plastic enclosure dimensions

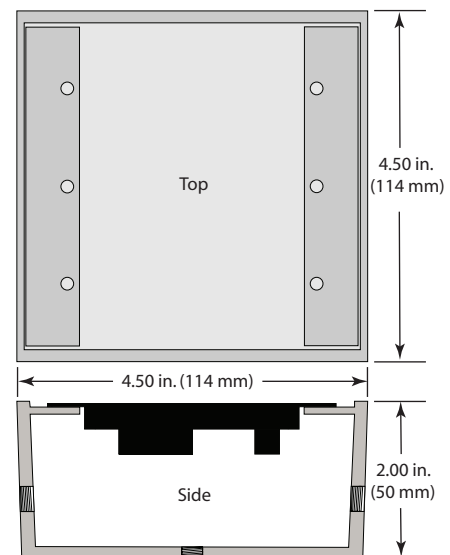


Figure 3: Metal enclosure dimensions

## Control. Manage. Optimize.

Data Industrial is a registered trademark of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2018 Badger Meter, Inc. All rights reserved.

[www.badgermeter.com](http://www.badgermeter.com)

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400  
 México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882  
 Europe, Eastern Europe Branch Office (for Poland, Latvia, Lithuania, Estonia, Ukraine, Belarus) | Badger Meter Europe | ul. Korfantego 6 | 44-193 Knurów | Poland | +48-32-236-8787  
 Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0  
 Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503  
 Slovakia | Badger Meter Slovakia s.r.o. | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01  
 Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836  
 China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412  
 Switzerland | Badger Meter Swiss AG | Mittelholzerstrasse 8 | 3006 Bern | Switzerland | +41-31-932 01 11