Transmitters

Series 340 BN/MB Btu Energy Transmitter

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
SERIES			
Btu Energy Transmitter w/ output	340 BN/MB		
OPTIONS			
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.

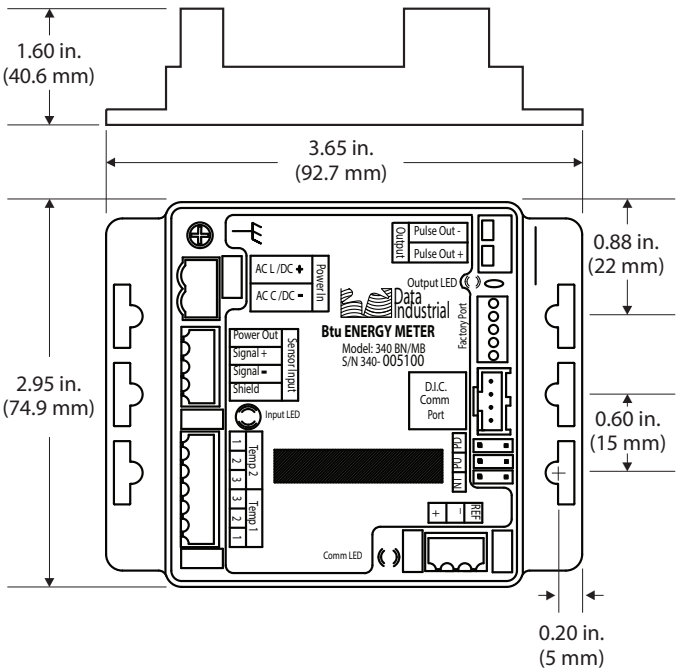

Figure 1: Overall dimensions

SPECIFICATIONS

Power	
Power supply	12…24V AC
	12…35V DC
Current draw:	115 mA max. at 12V DC
Flow Sensor Input	
Pulse Type Sensors:	
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
Sine Wave Sensors:	
Signal amplitude	30 mV p-p threshold
Signal limits	Vin < 12V (DC or AC peak)
Frequency	4…1000 Hz
Power Out Terminal	15V DC ± 1V DC @ 500 Ω source Impedance
Temperature Sensor (2 of same type required) Input	
• 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)
Communication Port	RS-485 with termination, pull-up and pull-down jumpers
Pulse Output	
• 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
Temperature	
Operating	0…70° C (32…158° F)
Storage	– 40…85° C (– 40…185° F)
Weight	4.8 oz with connector headers installed
Sensor Calibration	
Badger Meter	Use K and offset values provided in sensor manual
Other Sensors	Check with respected manufacturer of flow sensor and with factory
Units of Measure	
Flow Measurement:	
Rate	gpm, gph, l/sec, l/min, l/hr, ft^3/sec, ft^3/min, ft^3/hr, m^3/sec, m^3/min, m^3/hr
Total	Gallons, Gallons X 100, Gallons X 1000, Liters, Cubic Feet, Cubic Meters
Energy Measurement:	
Rate	kBtu/min, kBtu/hr, kW, MW, hp, tons
Total	Btu, kBtu, MBtu, kWh, MWh, kJ, MJ
Temperature Measurement	Fahrenheit, Centigrade
Programming	
• 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	

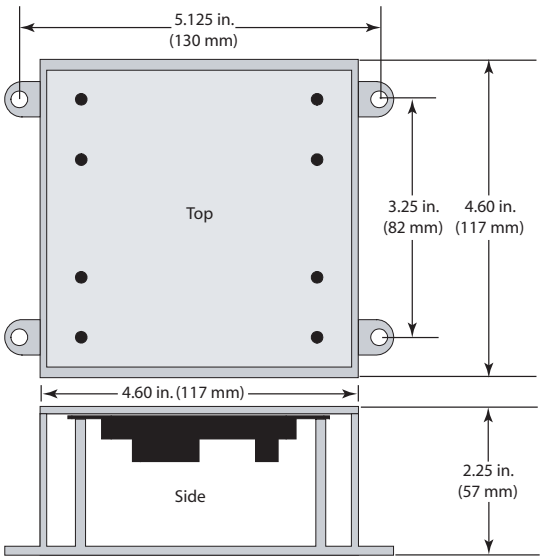

Figure 2: Plastic enclosure dimensions

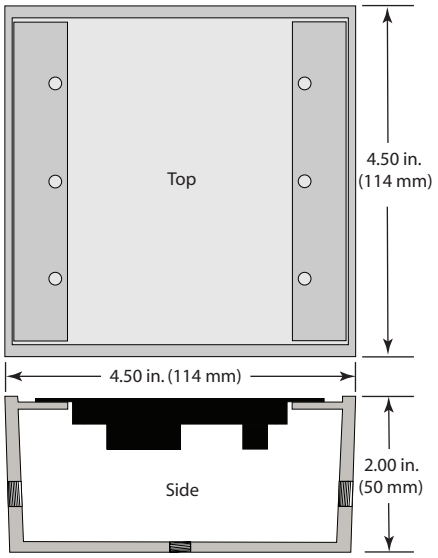

Figure 3: Metal enclosure dimensions

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Legacy Document Numbers: DTB-102