Badger Meter

Series 380 Impeller
380CS/HS

OVERVIEW

The Badger Meter Series 380 Btu Systems provide a low cost system for metering cold or hot systems. The 380CS/HS can accurately measure flow and temperature differential to compute energy. Utilizing either BACnet or Modbus RS-485 communications protocols or a scaled pulse output, the Btu Meter can interface with many existing control systems.

The rugged design incorporates an impeller flow sensor and two temperature probes. One temperature probe is conveniently mounted directly in the flow sensor tee. The second temperature probe is placed on either the supply or the return line depending on ease of installation for the application. These minimal connections help simplify installation and save time.

The main advantage of the Series 380 Btu meters is the cost savings over other systems offered on the market today. The integration of flow and temperature sensors provide a single solution for metering. With this system it will be possible to meter energy where it hasn't been cost effective before.

Commissioning of this meter can be completed in the field via a computer connection. Setup includes energy measurement units, measurement method, communication protocol, pulse output control, fluid density, and specific heat parameters.

RS-485 Configuration

All Series 380 Btu meters are equipped with BACnet and Modbus protocols as a standard feature. The protocol of choice can be selected and setup in the field at the users discretion. These common protocols allow for quick and easy commissioning while gaining valuable application data beyond energy total. Information such as Flow Rate, Flow Total, Energy Rate, Energy Total, Temp 1, Temp 2, and Delta T can all be transmitted on the RS-485 connection.

Scaled Pulse Output

If the RS-485 is not required for the application, a simple scaled pulse output is available. This output would represent energy total and can be set in various units of measure. This output is an open drain scaled pulse output that is compatible with a variety of PLCs, counters and also the Badger Meter 350 wireless system. This ensures the unit is easily compatible with most inputs.

MECHANICAL

Mass — Less than 13 lbs.

ELECTRICAL

Inputs

Power — 12-35 VDC, 12-28 VAC

Communication — Modbus RTU, BACnet MSTP

Output

Scaled Pulse — Open drain, 0.01 Hz min. to 100 Hz max.

MATERIALS

Housing	Polycarbonate
Flow Sensor	PEEK
Potting Material	Polyurethane
Tee Material	Brass

SENSOR BODY SIZES

Tee Sizes 3/4", 1", 1 1/4", 1 1/2", and 2"

ENVIRONMENTAL

Fluid Temp.	-4°F to 140°F (-20°C to 60°C) - chilled 40°F to 260°F (4°C to 125°C) - hot
Ambient Temp.	-4°F to 149°F (-20°C to 65°C)

ACCURACY

± 2% of flow rate within flow range
± 0.5% repeatability
RTD meets IEC751 Class B

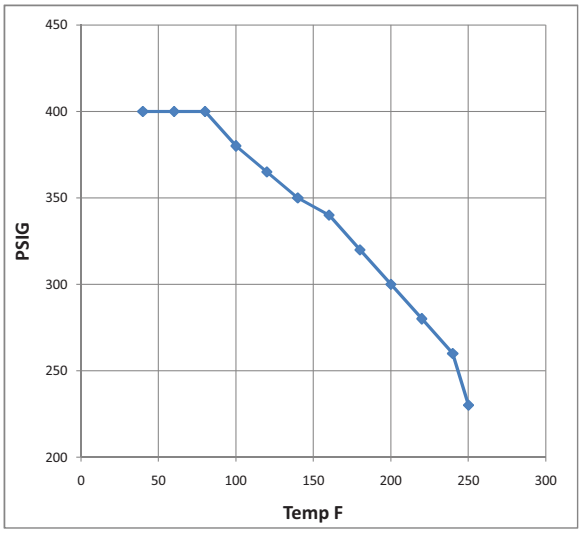
FLOW RANGE

1 - 15ft./sec

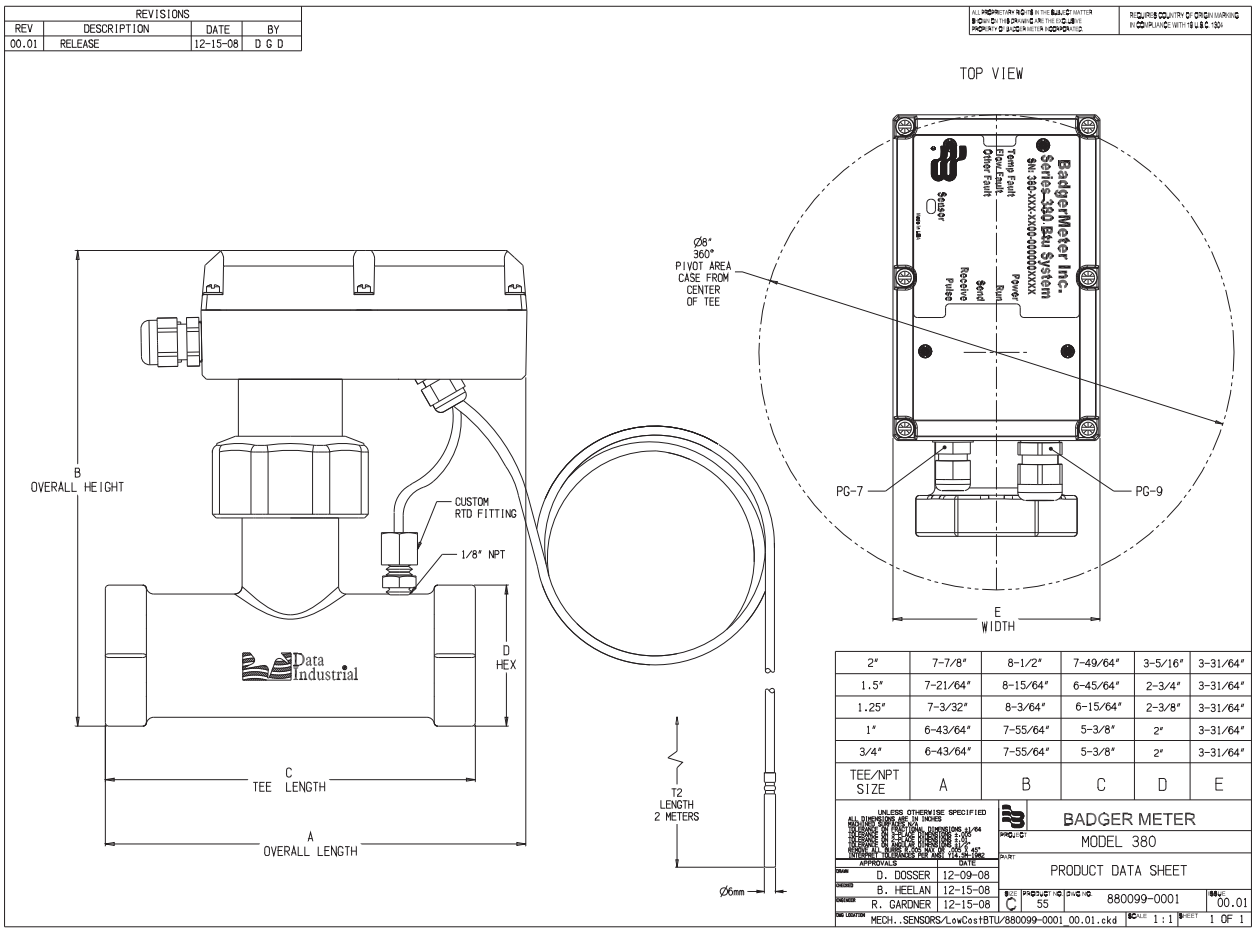
Diameter (Inches)	380 Btu Meter Flow Range (GPM)		
0.75	1.65	to	24.69
1	2.70	to	40.48
1.25	4.66	to	69.93
1.5	6.35	to	95.18
2	10.49	to	157.34
This chart is based on ASME/ANSI B36.10 Welded and Seamless Wrought Steel Pipe and ASME/ANSI B36.19 Stainless Steel Pipe			

Badger® Series 380 BTU System Ordering Matrix

	380	0	7	0	0	0	-	1	2	0	0
Type											
CS - Cold Service		0									
HS - Hot Service		1									
Size											
0.75"			07								
1"			10								
1.25"			12								
1.5"			15								
2"			20								
Electronic Housing											
Polycarbonate				0							
Output											
Scaled Pulse and RS-485 (Modbus and BACnet)					0						
Display											
N/A						0					
O-Ring											
EPDM (CS - Cold Service)								1			
Aflas® (HS - Hot Service)								2			
Shaft											
Tungsten Carbide [Standard]									2		
Impeller											
Stainless Steel										0	
Bearing											
Torlon® (CS - Cold Service)											0
Ketron® (HS - Hot Service)											2



*Max. Temp. 250ºF 230 PSIG
Unit can be used to -20ºF @ 400 PSIG



Please see our website at www.badgermeter.com for specific contacts.

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.

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