Badger Meter

Flow Monitor
Model 3000

GENERAL

The Badger Meter Model 3000 Flow Monitor is an economical full featured compact unit designed for flow measurement applications, and general hydronic thermal transfer systems.

Outputs include one mechanical relay and one solid-state pulse output, both featuring unit/pulse and set-point control independently based on flow or total readings. Also driven by the same variables, an optional Analog 4-20mA or 0-20mA 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" high backlit LCD display is configured by the user to display flow rate, flow total. In addition to many pre-programmed units of measure, many custom units can be created during field set-up.

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.

PROGRAMMING

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

OPTIONS

NEMA4x panel mount conforms to DIN standard 96 mm x 96 mm for meter size and cutouts. NEMA4x wall mount is available as an option.

Advanced features include the following:

- Infinite Impulse Response Filter (IIRF) smoothes the flow rate, temperature, and energy rate calculations. This proprietary smoothing software provides accurate calculations by compensating for a wide variety of flow signal variables.
- Password restricted access to programming, reset total, or both.
- Non-volatile memory of totals and field configuration, without need for battery backup.
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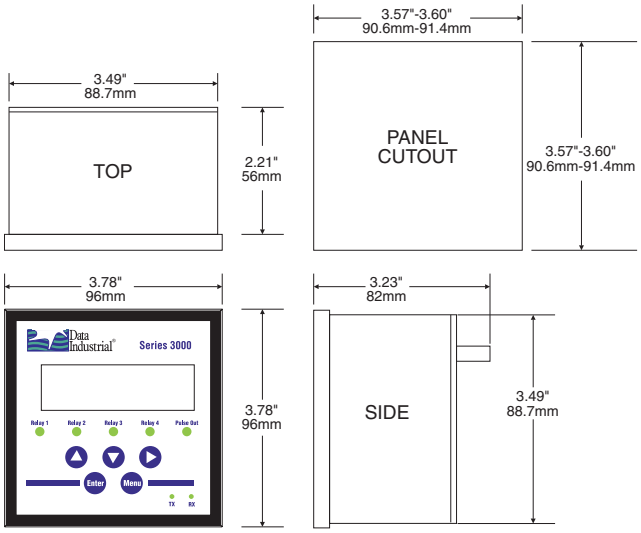
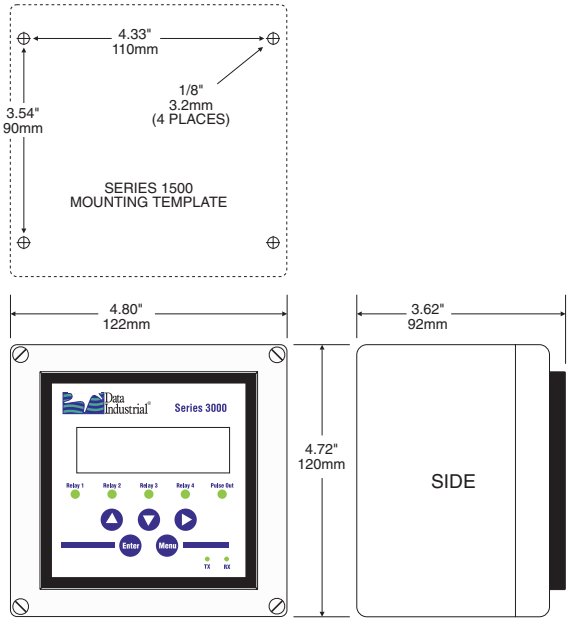
- Efficient switching power supply permits 12-24VAC/DC operations.





Technical Brief

Flow Sensor Inputs

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

Rate Units of Measure: GPM; gal/sec; gal/hr; Mgal/day; LPS; LPM; LPH; ft3/Sec; ft3/min; ft3/hr;m3/sec; m3/min; m3/hr; acre-ft/sec; acre-ft/min; acre-ft/hr; bbl/sec; bbl/min; bbl/hr; and field programmed custom units 0.00 to 999999999

Total Units: gallons; Mgal; liters; ft3; m3; acre-ft; bbl; and field programmed custom units 0.00 to 999999999

SPECIFICATIONS

Voltage

12-24 VDC / VAC
(Limit: 8-35VDC)
(Limit: 8 – 28VAC)

DC current draw (~280mA)
AC power rating (~5 VA)

Display

16 character by two line alphanumeric dot matrix 7.95mm high backlit LCD

Operating Temperature

-20°C to +70°C

Storage Temperature

-30°C to +80°C

DIMENSIONS

Panel Mount:

3.78"W x 3.78"H x 3.23"D
(96mm x 96mm x 63mm)

Wall Mount:

4.80"W x 4.72"H x 3.63"D
(120mm x 120mm x 92mm)

Weight

Panel mount, 12 oz.

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Pulse and Relays
Both pulse and relay are fully functional as either totalizing, or set-point outputs.

Pulse Electrical
1 Amp @ 35VDC/ 30VAC
Closed: 0.5Ω @ 1 AMP Open: >108Ω

Relay Electrical
Resistive load: 5Amp@120VAC/30VDC
Inductive load: 1Amp@120VAC/30VDC

Pulse/Unit Volume (Totalizer)
Driving Source: flow total; Btu total
Units: any predefined or custom unit
Rate: 1 Pulse per 1.0000000 to 99999999 units
Contact Time: 1 to 9999 mS

Set-Point (Alarm)
Driving Source: flow rate; Btu rate; temperature 1; temperature 2, delta T
Units: Any predefined or custom unit
Set-Point: 1.0000000 to 999999999
Delay to Set: 1 to 9999 Seconds
Release-Point: 1.0000000 to 999999999
Delay to Release: 1 to 9999 seconds

Optional Analog Output
Driving Source: flow rate; Btu rate; temperature 1; temperature 2, delta T, PID control
Range: 4-20mA; 0-20mA (isolated current sinking or sourcing)
Sinking: 30VDC @ 0mA maximum; 3 volts @20mA minimum
Sourcing: 600 W maximum load

USB Communication
Provides complete access to all programming and operation features.
Requirements:
USB 2.0 A to Mini-B 5-Pin Cable (example: SYSONIC model UAM56 GWT/B)

RS-485 Communication
Supports: Modbus and BACnet/MSTP

Accessories
Programming kit
Wall mount kit

	Example:	3000	- x	x
Series				
	Flow Monitor	3000		
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

Model 3000 Ordering Matrix

Data Industrial®

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

Badger Meter | P.O. Box 245036, Milwaukee, Wisconsin 53224-9536
800-876-3837 | infocentral@badgermeter.com | www.badgermeter.com