Impeller
Data Industrial®

Industrial Flow Monitor

Series 3000

DESCRIPTION

The Badger Meter® Series 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 setpoint control independently based on flow or total readings. Also driven by the same variables, an optional analog 4…20 mA or 0…20 mA 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 in. (9.5 mm) 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 setup.

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.

OPTIONS

NEMA 4X panel mount conforms to DIN standard 96 mm x 96 mm for meter size and cutouts. NEMA 4X wall mount is available as an option.

FEATURES

- Infinite Impulse Response Filter (IIRF) smooths the flow 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.
- Efficient switching power supply permits 12…24V AC/DC operations.

PROGRAMMING

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

PART NUMBER CONFIGURATION

	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

DIMENSIONS

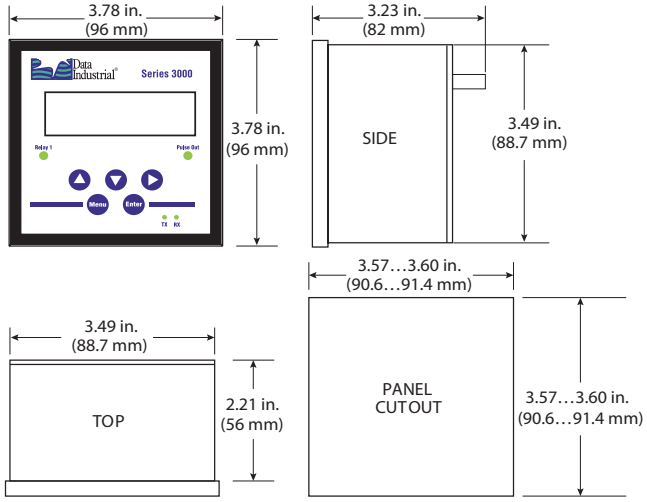

Figure 1: Panel mount template

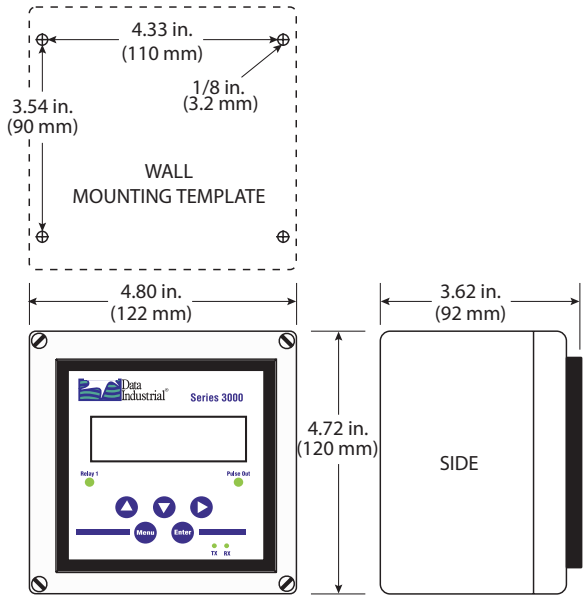

Figure 2: Wall mount template

Badger Meter

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Product Data Sheet

FLOW SENSOR INPUTS

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

SPECIFICATIONS

Voltage	12…24V DC/AC (limit: 8…35V DC); (limit: 8…28V AC)		DC current draw (~ 280 mA) AC power rating (~5 VA)
Operating Temperature	–4…158° F (–20…70° C)		
Storage Temperature	–22…176° F (–30…80° C)		
Weight	Panel Mount: 12 oz		
Pulse and Relays	Both pulse and relay are fully functional as either totalizing or setpoint outputs		
Pulse Electrical	1 Amp at 35V DC/30V AC	**Closed**: 0.5 Ω at 1 Amp; **Open**: $>10^8$ Ω	
Relay Electrical	**Resistive Load**: 5A @ 120V AC/30V DC	**Inductive Load**: 1A @ 120V AC/30V DC	
Pulse/Unit Volume (Totalizer)	**Driving Source:** flow total,	**Rate:** 1 pulse per 1.0000000…99999999 units	**Contact Time:** 1…9999 mS
Setpoint (Alarm)	**Driving Source:** flow rate	**Units**: Any predefined or custom unit	**Setpoint**: 1.0000000…999999999
	Delay to Set: 1…9999 sec	**Release Point**: 1.0000000…999999999	**Delay to Release**: 1…9999 sec
Optional Analog Output	**Driving Source**: flow rate	**Range**: 4…20 mA; 0…20 mA (isolated current sinking or sourcing)	**Sinking**: 30V DC @ 0 mA max; 3V @ 20 mA min. **Sourcing**: 600 Ω max load
USB Communication	Provides complete access to all programming and operation features		**Requirements**: USB 2.0 A to Mini-B, five-pin cable
RS-485 Communication	Supports Modbus and BACnet/MSTP		
Accessories	Programming kit; wall mount kit		
Units of Measure	Rate	US gpm; US gal/sec; US gal/hr; US mgal/day; lps; lpm; lph; ft^3/Sec; ft^3/min; ft^3/hr; m^3/sec; m^3/min; m^3/hr; acre-ft/sec; acre-ft/min; acre-ft/hr; bbl/sec; bbl/min; bbl/hr; and field programmed custom units 0.00…999999999	
	Total	US gallon; US mgal; liters; ft^3; m^3; acre-ft; bbl; and field programmed custom units 0.00…999999999	

Control. Manage. Optimize.

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