



**Badger Meter**

# Data Industrial Series 3100 Dual Channel Monitor/Controller/Transmitter

## General

The Badger Meter Dual Channel Series 3100 is a compact, economical, full-featured, monitor designed for flow and other measurement applications with powerful control and re-transmission features.

## Operation

Inputs accept any combination of two Pulse, Sine, or Analog signals.

Programming permits addition and/or subtraction of input channels for added capability.

Displays include a two line by 16-character 3/8" high backlit LCD, five LEDs representing relay and pulse output status, and two LEDs representing USB and RS-485 Tx and Rx activity.

The LCD display can be configured to display any combination of two rate and/or totals from either input channel. A powerful feature permits addition or subtraction of the channels. Pre-programmed units of measure and independent custom units of rate and/or total, created during field set-up, can be selected.

Outputs include four mechanical relays, one solid-state pulse output, two Analog, one USB, and one RS-485 with Modbus, and BACnet/MSTP for high-level communication.

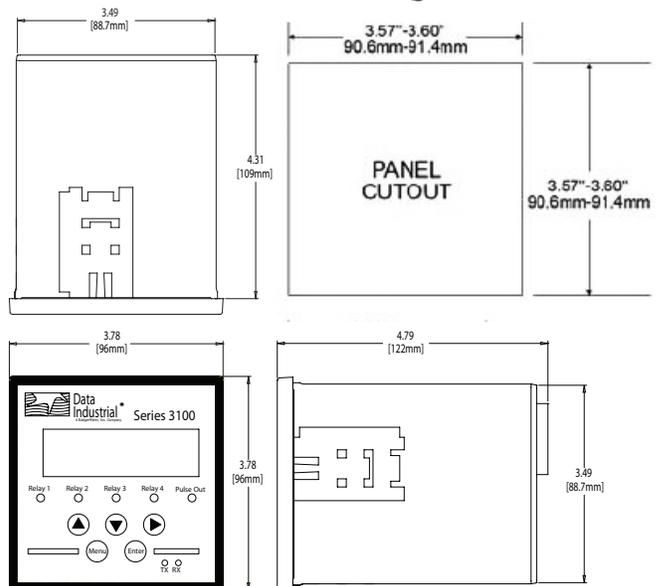
Programming is simple and can be done using the five front panel push buttons, or by using Windows® based software via a USB port.

## Application

The Series 3100 is intended for monitoring and control applications the smaller Series 3000 can't handle. The Series 3100's dual channel input and outputs, combined with three extra relays, and channel addition and subtraction make this a very powerful controller. Versatile inputs from a wide range of devices, combined with custom units of measure add to its power.

Applications include:

- Pump Control based on flow and pressure.
- Pump Control based on level and pressure.
- Water Feature control based on Wind Speed and Flow rate.
- Irrigation based on Moisture and Wind Speed
- Pump control based on independent flows in two different pipes.
- Resultant flow volume and direction of a reversing flow, such as occurs when two communities both pump into, and draw from, a common pipe system.



3100 Series Ordering Matrix						
		Example:	3100	-	x	x
Series						
	Flow Monitor		3100	-		
Power Supply	Low Voltage				0	
	12-24V AC/VDC					
	High Voltage				1	
	120/240V AC					
Mounting	Panel Mount					0

**Flow Sensor Inputs (Any two of the four inputs can be used at any time - See "Operations" section for details)**

Type	Threshold	Signal Limit	Frequency	Pull-up	Impedance	Aux. Power	Calibration
Pulse-Di	2.5V DC	30V DC	0.4 Hz to 10 kHz	1K to 12V DC	-	12V DC@30 mA	K + Offset
Pulse-K Factor	2.5V DC	30V DC	0.4 Hz to 10 kHz	-	-	12V DC@30 mA	Pulse/Gal
Pull-up K Factor	2.5V DC	30V DC	0.4 Hz to 10 kHz	1K to 12V DC	-	12V DC@30 mA	Pulse/Gal
Sine-K Factor	-	30V DC	0.4 Hz to 10 kHz	-	10K $\Omega$	12V DC@30 mA	Pulse/Gal
Analog - 4-20 mA	-	50 mA Fused	-	-	100 $\Omega$	12V DC@30 mA	Linear
Analog - 0-20 mA	-	50 mA Fused	-	-	100 $\Omega$	12V DC@30 mA	Linear
Analog - 0-1V DC	-	30V DC	-	-	100K $\Omega$	12V DC@30 mA	Linear
Analog - 0-5V DC	-	30V DC	-	-	100K $\Omega$	12V DC@30 mA	Linear
Analog - 0-10V DC	-	30V DC	-	-	100K $\Omega$	12V DC@30 mA	Linear

Rate Units of Measure: GPM; gal/sec; gal/hr; Mgal/day; LPS; LPM; LPH; 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; 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; ft<sup>3</sup>; m<sup>3</sup>; acre-ft; bbl; and field programmed custom units 0.00 to 999999999

**Specifications**

**Low Voltage Option**

12-24V DC /AC (Limit: 8-35V DC);  
 (Limit: 8-28V AC)  
 DC current draw (~280 mA)  
 AC power rating (~5 VA)

**High Voltage Option**

120/240 VAC 50-60 Hz (~5 VA)  
 Connection: Accepts a standard EL-712 (NEMA 5-15R) plug

**Display**

16 character by two line alphanumeric  
 Dot matrix 3/8" (7.95mm) high backlit LCD

**Operating Temperature**

-20° C...70° C

**Storage Temperature**

-30° C...80° C

**Dimensions**

Panel Mount:  
 3.78"W x 3.78"H x 4.79"D (96mm x 96mm x 122mm)

**Weight**

Panel mount =18 oz.

**Pulse and Relays**

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

**Pulse Electrical**

1 Amp @ 35V DC/30V AC  
 Closed: 0.5  $\Omega$  @ 1 AMP, Open: >10<sup>8</sup>  $\Omega$

**Relay Electrical**

Resistive load: 5 A @120V AC/30V DC  
 Inductive load: 1A @120V AC/30V DC

**Pulse/Unit Volume (Totalizer)**

Pulse/Unit Volume Driving Source: Channel #1 Total; Channel #2 Total; Channel #1+2 Total; and Channel # 1-2 Total  
 Rate: 1 Pulse per 0.0000001...99999999 units  
 Contact Time: 1...9999 mS

**Set-Point (Alarm)**

Set-Point Driving Source: Channel #1 Rate; Channel #2 Rate; Channel#1+2 Rate; and Channel #1-2 Rate  
 Units: Any predefined or custom unit  
 Set-Point: 0.0000001...999999999  
 Delay to Set: 1...9999 Seconds  
 Release-Point: 0.0000001...999999999  
 Delay to Release: 1...9999 seconds

**Analog Output**

Analog Out Driving Source: Channel #1 Rate; Channel #2 Rate; Channel #1+2 Rate; and Channel # 1-2 Rate  
 Range: 4-20 mA; 0-20 mA (isolated current sinking or sourcing)  
 Sinking: 30V DC @ 0 mA maximum; 3 volts @ 20 mA minimum  
 Sourcing: 600 $\Omega$  maximum load

**USB Communication**

Provides complete access to all programming and operation features.  
 Requirements:  
 USB 2.0 A to Mini-B, five-pin cable  
 Example: SYSONIC model UAM56 GWT/B)

**RS-485 Communication**

Supports: Modbus and BACnet/MSTP

**Accessories**

Programming kit



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