



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.

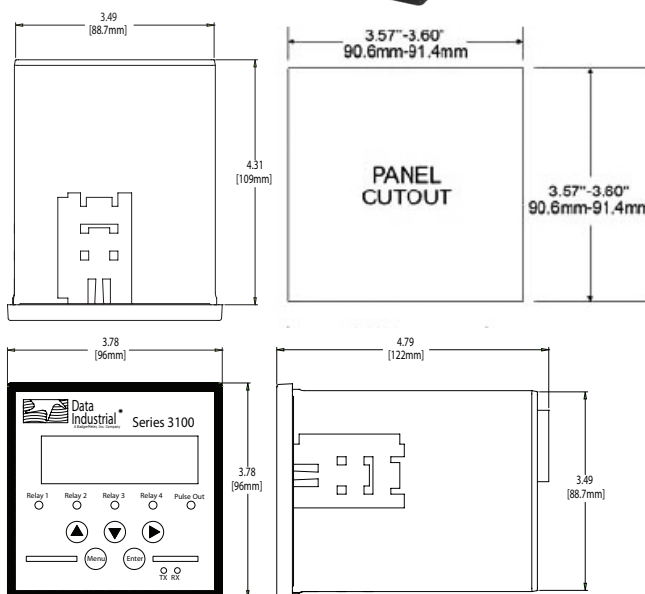
Programming is simple and can be done using the five front panel push buttons, or by using Windows® based software via a USB port.

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 Ω	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	-	-	100K Ω	12V DC@30 mA	Linear
Analog - 0-5V DC	-	30V DC	-	-	100K Ω	12V DC@30 mA	Linear
Analog - 0-10V DC	-	30V DC	-	-	100K Ω	12V DC@30 mA	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**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 Ω @ 1 AMP, Open: >10⁸ Ω

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 0.00000001...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: 0.00000001...999999999
 Delay to Set: 1...9999 Seconds
 Release-Point: 0.00000001...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 Ω 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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