Transmitters

Model 330 Programmable Relay Control

OVERVIEW

The Model 330 is a compact, programmable relay control transmitter capable of converting the signal from a Badger Meter flow sensor into a flow switch.

With an onboard microcontroller and digital circuitry, the Model 330 is programmed using a Windows® based computer program. This eliminates the need to set dip switches or potentiometers and produces precise, accurate and drift free control of the relay outputs. In addition to accepting the Badger Meter square wave signal, the Model 330 can accept other pulse and sine wave inputs.

The compact cast epoxy body measures 1.75 in. (44 mm) x 2.75 in. (70mm) x 1.5 in. (38mm) and can easily be mounted to panels, DIN rails or enclosures. With multiple inputs, ease of use and a variety of enclosures, the Model 330 is a powerful, competitively priced relay control device.

APPLICATIONS

Combined with a flow sensor the Model 330 can be used in a variety of "Flow Switch" applications.

- Flow/no flow indicator
- High flow/low flow alarm monitor
- Booster pump control
- Multiple pump staging
- Leak control

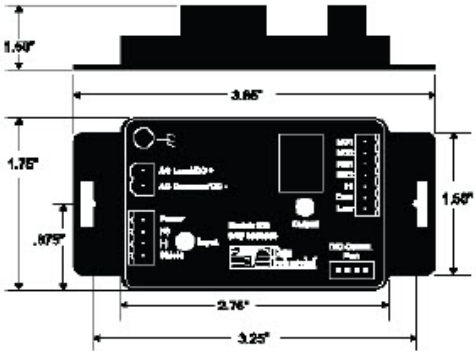

Figure 1: Model 330 dimensions

FEATURES

Relay Output	The Model 330 output is a pair of single pole relays, one normally open and one normally closed. Both relays act in unison to the programmed parameters.
Selectable Alarm Type	The Model 330 can be programmed as a high flow alarm where the relays are energized when the flow rate exceeds the set point, and/or as a low flow alarm where the reverse is true and the relays energize when the flow rate falls below the set point.
Programmable Set & Release Points	The set point—the flow rate where the relays are energized—is programmed independently from the release point— the flow rate where they are de-energized. This adjustable deadband prevents relay chatter and control cycling.
Programmable Time Delays	This feature provides a time delay between crossing the set or release point and energizing or de-energizing the relay. This feature allows surges in the flow to dampen out before the control circuit reacts.
Latch Feature	The latch maintains the relays in the energized state until manually reset, even when the alarm condition has been satisfied.
Remote Reset	Remote reset allows all the control parameters of the Model 330 to be reset by an external signal.
Alarm Status	Using the Windows software, the actual flow rate status of relays and time delay counters can be observed, providing great diagnostic tools.

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Product Data Sheet

SPECIFICATIONS

Power			
Power Supply Options	12…28V AC RMS, 200mA max	12…40V DC, 100mA max	
Flow Sensor Input			
All Sensors	Excitation voltage 3 wire sensors: 9.1 V DC 500 Ω source impedance		
Pulse Type Sensors			
Signal Amplitude	2.5V DC threshold		
Signal Limits	Vin < 35V (DC or AC peak)		
Frequency	0…10 kHz		
Pull-up	2 kΩ		
Sine Wave Sensors			
Signal Amplitude	10 mV p-p threshold		
Signal Limits	Vin < 35V (DC or AC peak)		
Frequency	0…10 kHz		
Relay	1 form A, 1 form B		
Contact Ratings	5A @ 30V DC	5A @ 125V AC	5A @ 250V AC
Time Delay	1…9999 second delay between flow point and relay actuation		
Transient Suppression	Designed to withstand a 5000 volt, 1/2 microsecond, 100 kHz ring wave		
Sensor Calibration			
Badger Meter Sensors	Use K and Offset values provided in sensor owner's manual		
Other Sensors	Check with factory		
Units of Measure			
Flow Measurement Rate	gpm, gph, l/sec, l/min, l/hr, ft3/sec, ft3/min, ft3/hr, m3/sec, m3/min, m3/hr		
Programming	Requires computer running Windows 7, XP or Vista		
Operating Temperature	–25…70°C	–20…158°F	
Storage Temperature	–40…85°C	–40…185°F	
Weight	4.8 oz with headers installed		
Accessories	840134-0002 programming kit with cable and software		

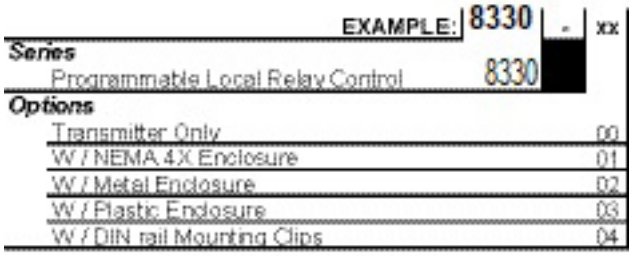

Figure 2: Model 330 ordering matrix

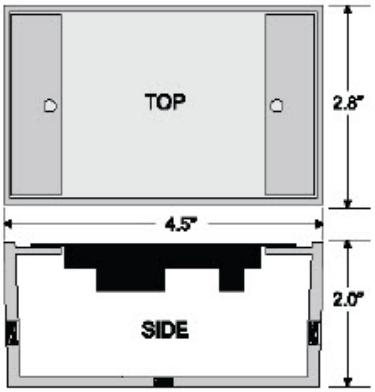

Figure 3: Optional enclosure (330-02 and 330-03)

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