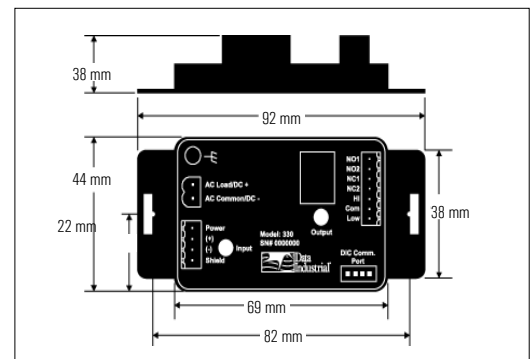# Model 330

Relay control

Features

- Relay output
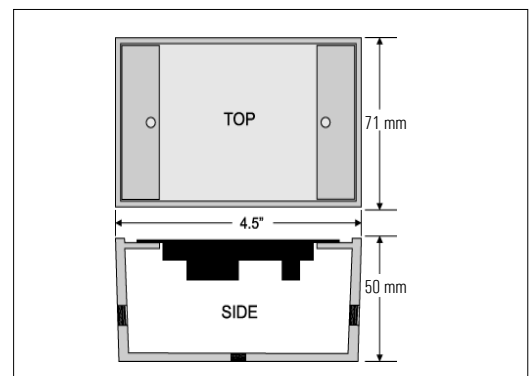- Parametering vial PC/Laptop

Description

The model 330 is a compact, programmable relay control capable of converting the signal from flow sensors into a flow switch. With an onboard microcontroller and digital circuitry, the model 330 is programmed from 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 square wave signal, the model 330 can accept other pulse and sine wave inputs. The compact cast epoxy body measures 44 mm (1.75") x 70 mm (2.75") x 38 mm (1.5") 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, competitive priced relay control.

Applications

Combined with a flow sensor, the model 330 may 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

*Data Industrial is a Badger Meter, Inc. company.

Dimensions

Optional enclosure (330-02 and 330-03)

Technical data

Power	
Power supply options	12-24 VDC
	12-24 VAC
Power supply options	12-24 VDC
	12-24 VAC
Flow sensor input	
All sensors	Excitation voltage 3 wire sensors: 9.1 VDC 500 Ω source impedance
Pulse type sensors	
Signal amplitude	2.5 VDC threshold
Signal limits	Vin < 35 V (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 < 35 V (DV or AC peak)
Frequency	0-10 kHz
Relay	1 Form A 1 Form B
Contact ratings	5 A @ 30 VDC
	5 A @ 125 VAC
	5 A @ 250 VAC
Time delay	1-9999 second delay between flow point and relay actuation
Transient suppression	Designed to withstand a 5000 Volt ½ microsecond, 100 kHz ring wave
Sensor calibration	
Data Industrial	Use "K" and "offset" 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 PC or laptop running Windows® 9x, ME, NT, 2000, XP
Operating temperature	-25°C to +70°C (-20°F to +158°F)
Storage temperature	-40°C to +85°C (-40°F to +185°F)
Weight	136 g with headers installed
Accessories	A-330 programming kit containing software and 3' A301 cable
	A-330-20 programming kit containing software and 20' A-301-20 cable (longer cable may be required for field programming)

Model 330 ordering matrix

	Example:	330	---	xx
Series				
Programmable local relay control		330		
Options				
Transmitter only				00
W/ NEMA 4X enclosure				01
W/ metal enclosure				02
W/ plastic enclosure				03
W/ DIN rail mounting clips				04

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 may be programmed as a high flow alarm where the relays are energized when the flow rate exceeds the set point 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 even when the alarm condition has been satisfied, until manually reset.

Remote reset
This allows all the control parameters of the model 330 to be reset by an external signal