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# Installation and Maintenance

## R2-120 - Conductivity and Float Switch Controller for 120Vac

### Pump-Up or Pump-Down, Conductivity and Float Switch Control

The R2-120 solid state controller provides do-it-yourself automatic liquid level control, when combined with float switches or conductivity probes. It is easily configured for Two Level Differential, Single Point Protection or Alarm operations, and can be set for Pump-Up (Fill) or Pump-Down (Drain) automatic dual level control. For conductive liquids, the controller can be set for High - Low liquid level control with three conductivity probes. The conductive liquid is sensed between each probe and ground (common). The controller is also equipped with a sensitivity adjustment to eliminate false actuations in some liquids or foams, and can be adjusted to sense between 1K - 100K Ohms. An easy view on-board LED, on top of the controller, indicates the on-off state to output contacts and controller status.



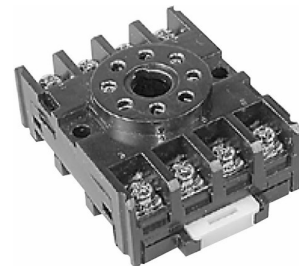
R2-120 (Shown w/ Octal Socket)

#### Applications

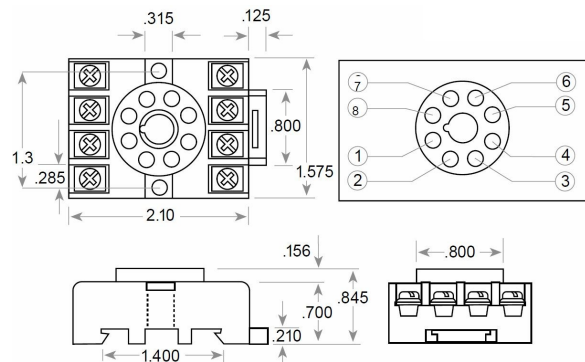
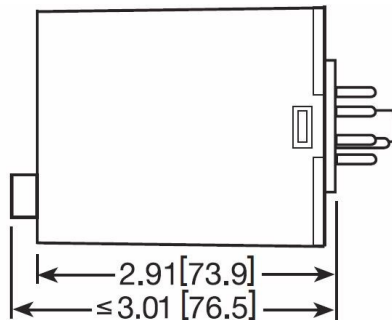
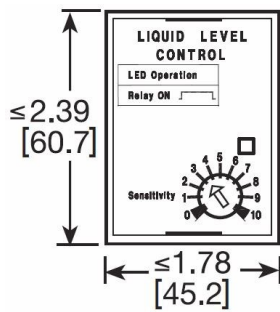
- Dual Probe Liquid Control for Conductive Liquids
- Pump-Up (Fill) or Pump-Down (Drain) Operation
- Sensing and Controlling of Conductive Liquids
- Boiler Liquid Level Control
- Low or High Level Switch Indication

**Note:** This unit is also available in a 12VDC or 240VAC model.

Specifications	
<b>R2-120</b>	120 VAC Conductivity and Liquid Level Control
<b>Input Voltage</b>	120 VAC
<b>Switches Contacts</b>	Form C - SPDT (Single Pole - Double Throw)
<b>Contact Ratings</b>	10 Amp @ 120 VAC (1/5 HP max.), 10 Amp @ 30VDC
<b>Temperature (Operating)</b>	-4° to 140°F (-20° to 60°C)
<b>Dimension</b>	2.39 H x 1.78 W x 3.01 D (60.7 x 45.2 x 76.5 mm)
<b>Mounting Type</b>	8-Pin Octal Socket (Included)



8-Pin Octal Socket

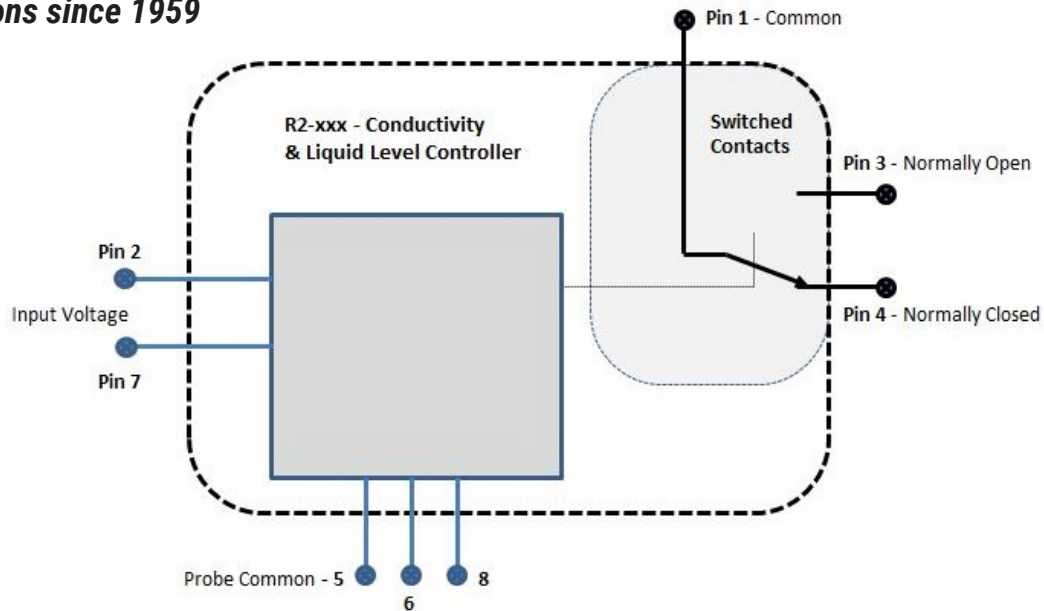


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### Dual Level Conductivity Sensor Configuration

- Wire the “Common Probe” to pin 5 (Common probe should be at least as long as the Lower Probe)
- Wire the “Lower Probe” to pin 6
- Wire the “Upper Probe” to pin 8
- Connect (Plug in) the input power to pins 2 and 7.

Connect isolated switched contacts pins 1-3 or 1-4 to switch power to control a valve or pump.

**Note:** For Single Level Conductivity control, use only pin 5 (Ground) and pin 8 (Probe).

### Float Switch Pump-Up (Fill) Mode Configuration

With both the Upper and Lower float switches set Normally Closed, when powered, the R2 relay contacts 1 and 3 will “Close” when fluid level falls below the lower float switch, and “Open” after the liquid level reaches the upper float level.

- Connect the Upper float switch to pins 5 and 6, and the Lower float switch to pins 5 and 8.
- Jumper the supply voltage from pin 2 to pin 1.
- Connect pin 3 to the pump or valve, and return the pump or valve to pin 7.
- Connect (Plug In) the input voltage across pins 2 and 7.

### Float Switch Pump-Down (Drain) Mode Configuration

With both the Upper and Lower float switches set Normally Opened, when powered, the R2 relay contacts 1 and 3 will “Close” when fluid level reaches the upper float switch, and will “Open” after the liquid level reaches the lower float level.

- Connect the Upper float switch to pins 5 and 8, and the Lower float switch to pins 5 and 6.
- Jumper the supply voltage from pin 2 to pin 1.
- Connect pin 3 to the pump or valve, and return the pump or valve to pin 7.
- Connect (Plug In) the input voltage across pins 2 and 7.