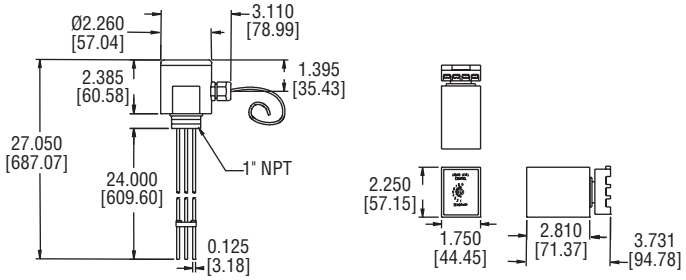
Model DPL Dual Point Level Switch

Specifications– Installation and Operating Instructions



DESCRIPTION

Maintain liquid level high and low limits with the Model DPL Dual Point Level Switch. Units can be used for single or dual point level control in semi-solid liquids, industrial slurries or heavy-bodied liquids like wastewater. Standar 24 inch electrodes can be cut by the end-user to a shorter length or lengthened by adding up to two 24 inch extensions (sold separately) to reach the maximum recommended length of 72 inches. Model DPL contains no moving parts to get stuck or wear out. Controller features adjustable sensitivity and DIN rail-mountable socket mount.

INSTALLATION

Conductivity Probes

1. Probes can be cut to length. Remove probes from sensor head by carefully unthreading them from inserts. **Do not** overtighten when re-installing.
2. Cut two (2) probes to the same length, these will be the common and lower level probes. See figure 1.
3. Cut one (1) probe to the desired length for the upper level of the tank. See figure 1.
4. Spacer should be located approximately 1 inch (25.4 mm) from bottom of shortest probe.
5. If build up occurs on probes a short circuit could occur. If this happens apply shrink tubing to the probes leaving the last 1/2 inch (12.7 mm) bare.

Wiring (from sensor head to controller)

1. Install cable into sensor head through the compression fitting supplied.
2. Attach the black lead between the common probe terminal and terminal five (5) on the socket mount. See figure 2.

PHYSICAL DATA

Electrodes: 1/8″ dia, 24″ length, standard.
Wetted Parts: 316 Stainless Steel, polypropylene. All food grade materials.
Mounting, Sensor Head: 1″ NPT.
Maximum Pressure: 30 psig (2.06 bar).
Maximum Operating Temperature: 212˚F (100˚C) .
Connecting Cable, Probe to Controller: 10 ft (3.0 m).
Sensing Voltage: 12 VAC.
Probe Sensitivity: Adjustable to 100,000 Ohms
Power Supply: 120 VAC 50/60 Hz.
Output: SPDT, 5 Amps @ 240 VAC.
Probe Enclosure: IP68 (NEMA 6).
Maximum Probe Length: 72″ (1.8 m) with optional extensions.
Mounting, Controller: Standard octal socket or 35mm DIN rail.
Electrical Connections: Screw terminals located on socket mount.
Weight, Probe Assembly: 1.5 lbs (0.68 kg).
Weight, Controller: 1.0 lb (0.45 kg).

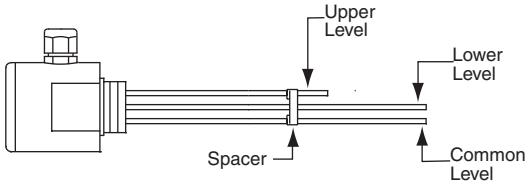


Figure 1

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3. Attach the white lead between the lower level probe terminal and terminal six (6) on the socket mount.
4. Attach the red lead between the upper level probe terminal and terminal eight (8) on the socket mount.
5. Tighten compression fitting until cable cannot be pushed into sensor head.

Warnings
Install controller according to applicable electrical codes. Do not connect directly to line voltage. Not for use in hazardous (explosive) environments. Do not exceed pressure and temperature ratings.

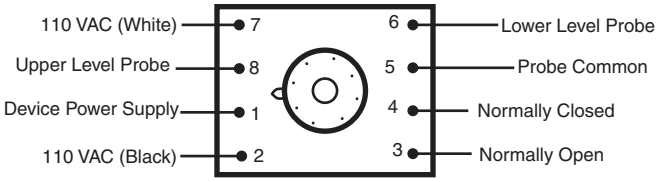

Figure 2

Pump-Up Operation
Pump-Up Operation is designed to keep tank levels at the high electrode position. The controller output switches from normally open to normally closed when the liquid level falls below the lower level electrode. When the switch is normally closed, the load to a pump or solenoid valve is turned on and the tank begins to refill. The pump or solenoid valve remains on until the liquid level reaches the high level electrode.

1. Connect sensor head to controller as discussed above.
2. Connect the device power supply to terminal 1. (The device power supply is the voltage that is required by the device (pump, valve, etc.) being turned on or off. This voltage can be either AC or DC Volts and up to 220 VAC max.) See figures 2 and 3.
3. Connect one end of the pump/valve to terminal 4 and the other end to the device power supply.
4. Connect 110 VAC power to terminal 2 and 7.
5. Snap the controller onto the socket.

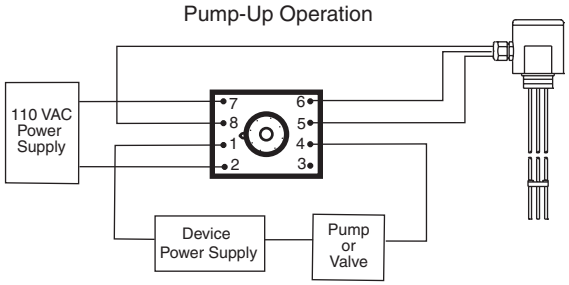

Figure 3

Pump-Down Operation
Pump-Down Operation is designed to keep tank levels at the low electrode position. The pump or solenoid valve will start when the liquid level reaches the high level electrode and remain on until the level reaches the lower level electrode.

1. Connect sensor head to controller as discussed above.
2. Connect the device power supply to terminal 1. (The device power supply) is the voltage that is required by the device (pump, valve, etc.) being turned on or off. This voltage can be either AC or DC Volts and up to 220 VAC max.) See figure 2 and 4.
3. Connect one end of the pump/valve to terminal 3 and the other end to the switched voltage return.
4. Connect 110 VAC power to terminal 2 and 7.
5. Snap the controller onto the socket.

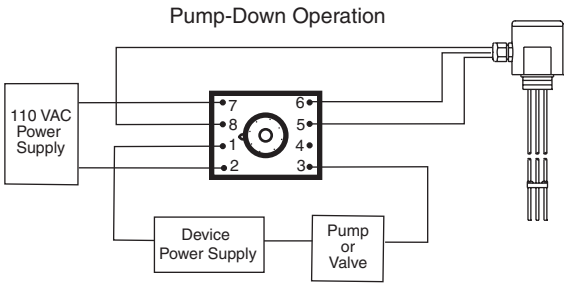

Figure 4

Probe Sensitivity Adjustment
Because conductivity varies widely among liquids, the controller is adjustable for sensitivity in different liquids. An adjusting screw is located on the front face of the controller. 1 is the least sensitive setting for highly conductive fluids. 9 is the most sensitive setting for least conductive fluids. Typically, the sensitivity should be set at 5.

Maintenance/Repair
After final installation of the Model DPL Dual Point Level Switch, no routine maintenance is required. A periodic check of system calibration is recommended. These devices are not field repairable and should be returned to the factory if recalibration or other service is required. After first obtaining a Returned Goods Authorization (RGA) number, send the material, freight prepaid, to the following address. Please include a clear description of the problem plus any application information available.

Dwyer Instruments, Inc.
Attn: Repair Department
102 Highway 212
Michigan City, IN 46360

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