

Installation instructions for the Multifunction Float Switch

It is the installer's responsibility to read, understand and comply with these instructions.



Thank you for your purchase of a multipurpose float switch from RainHarvest Systems.

Your commitment to saving water through the use of harvested rainwater is commendable, and is a very important step towards increasing your personal water sustainability.

To match your commitment to saving water we have committed to ensuring that the float switches we offer are of the highest quality available. The multifunction float switch and its cord have been tested and certified ROHS compliant for your safety.

Parts Included:

Qty-1: Float switch with cable

Qty-1: Instruction manual

Overview:

The RainMaster float switch provides versatile multifunction control for pump protection, pump control, 3-way valve control and tank water level management. It provides direct control of pumps up to 1.5 horsepower at 115V or 2 horsepower at 230V and is also suitable for low voltage (12-24VAC/VDC) circuits, valves and controls.

Operating as a single-pole, double throw (SPDT) switch, it can be used to protect pumps from running dry, or to add water from an outside source such as a well when the water level reaches a minimum level, or it can be used to activate a pump or valve to drain the tank when the water level reaches a maximum (overflow) level, or it can be used to control a 3-way valve for a backup water supply.

The Normally Open (NO) and Normally Closed (NC) designations refer to the electrical contact state when the float is in the hanging position. The switch changes its state when it reaches approximately 45 degrees up or down.

Installation instructions:

An optional cord weight is available for installations where the float switch is not secured to a fixed object such as a pump pressure line at the desired water level. In installations where the float switch is lowered freely into the tank, the weight will be required. The pump weight is installed by attaching the supplied clip onto the desired location on the cord and then the weight is pulled down the cord, tapered end first, until the clip is tightly imbedded inside the plastic weight housing.

The float switch will operate in three modes:

- (1) Auto-fill mode:** The switch contacts will be closed when the float is in the hanging position. This is often called a “pump up” or “normally closed” application.

In this application, the float switch is used to activate a pump, relay or valve for the purpose of adding water to the tank from an auxiliary source. This application is used to assure water availability while keeping the tank empty enough to capture rainwater when it becomes available. The float switch cord is secured at the desired low water level threshold.

In auto-fill mode, the Black wire is connected to the AC neutral supply and the Blue wire is connected to the pump, relay or valve's neutral input. The Brown wire is unused.

- (2) **Pump protection and auto-drain mode:** The switch contacts will open when the float is in the hanging position. This is often called a “pump down” or “normally open” application.

Pump protection application: In this application, the float switch is used to disable power to the pump when the water level reaches a minimum threshold for the purpose of protecting the pump and/or to prevent extraction of the undesirable layer of water at the bottom of the tank.

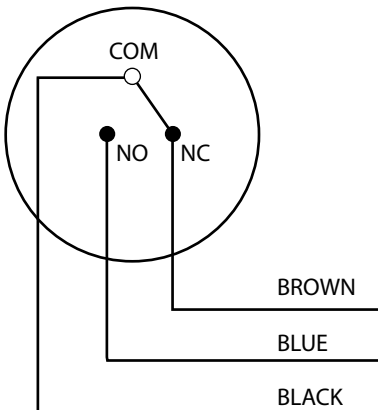
Auto-drain application: In this application, the float switch is used to activate a continuous-duty relay or valve for the purpose of draining a tank down to a desired water level. This application can be used to drain an auxiliary “first flush” tank which is installed in-line prior to the main storage tank. The float switch cord is secured at the desired low water level threshold.

In both of these applications, the Black wire is connected to the AC neutral supply and the Brown wire is connected to the pump, relay or valve neutral input. The Blue wire is unused.

- (3) **3-way valve control:** The multifunction capability of this float switch greatly simplifies the control of most electrically actuated 3-way valves. In this application, the float switch controls the valve; applying voltage to the valve's “rainwater” terminal in the “Up” position, and applying voltage to the “backup supply” terminal in the “Down” position when the tank is empty. Voltage is only applied to one terminal at a time.

In this application, the power supply's common wire is directly wired to the 3-way valve's “common” input. The power supply's other wire is connected to the float switch's Black wire; the float switch's Blue wire is connected to the valve's “rainwater” terminal and the Brown wire is connected to the valve's “backup supply” terminal. The float switch applies voltage to the Brown wire when the float is hanging (the tank is empty) and applies voltage to the Blue wire when the float is floating (the tank is full). Most 3-way valves have internal limit switches which cut the power once the valve reaches the intended position.

Wiring and switch schematic:



Cord weight installation detail:





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