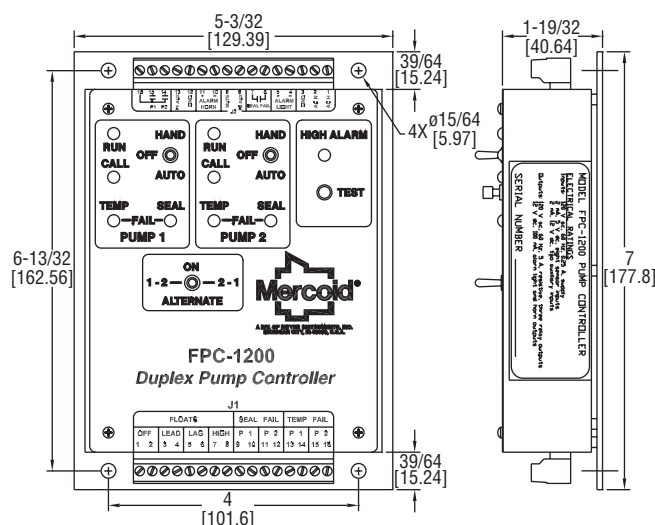
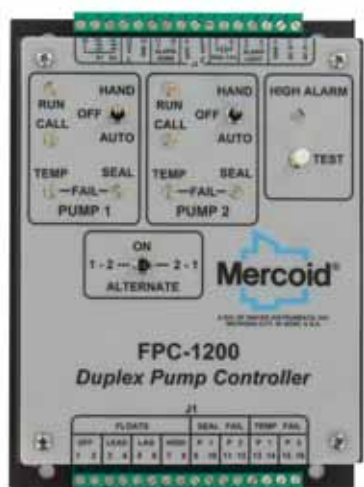




Model FPC-1200 Duplex Pump Controller

Specifications - Installation and Operating Instructions



Duplex Pump Controller Model FPC-1200 is a float switch based duplex pump controller intended primarily for wastewater lift stations and other pump down applications. It includes inputs for the seal fail and temperature fail sensors on most submersible pumps. It connects to four float switches to measure the tank level and has relay outputs to control two pumps and a high alarm. It has built-in HOA (hand-off-automatic) switches and pump run lights. A lead pump selector switch permits either pump to be selected as lead pump or alternation can be selected causing the pumps to alternate as lead. The FPC-1200 uses removable terminal strips to make replacement in the field quick and easy. With the addition of an enclosure, circuit breakers, and motor starters, the FPC-1200 makes a complete low cost lift station controller.

OPERATION

The FPC-1200 uses four normally open floats as well as level sensing inputs so when the tank is empty all of the floats are open. On rising water the Off float closes first which causes the controller to take no action. The Lead float will close next as the water rises. The controller will then turn on the lead pump. If this pump causes the water level to fall the lead pump will be turned off when both the Lead and Off float are out of the water and open. If the Lead pump is not sufficient to control the water level then the Lag pump will be started when the Lag float closes. The two pumps will not be turned off until the Lag, Lead, and Off floats are out of the water and open, at which time, all pumps will be turned off. The controller has delays built into the software, which will insure that whenever a pump is turned on, the second pump cannot come on for at least 8 seconds. Another delay insures that when a pump is turned off the other one cannot turn off for 4 seconds. These delays help insure smooth pump operation and prevent excessive current draws.

SPECIFICATIONS

Inputs:

Floats:

- Open circuit voltage: 5 VDC;
- Short circuit current: 2 mA maximum.

Auxiliary motor starter contacts:

- Open circuit voltage: 12 VDC;
- Short circuit current: 2 mA maximum.

Temperature and seal failure:

- Open circuit voltage: 5 VDC;
- Short circuit current: 2 mA maximum.

Mute:

- Open circuit voltage: 5 VDC;
- Short circuit current: 2 mA maximum.

Output Type: (2) Form A SPST contacts for pump output, (1) Form A SPST contact for seal-fail alarm, (2) 12 VDC driver outputs for High Alarm horn and light.

Output Ratings:

- Form A SPST: 5 A @ 120 VAC;
- 12 VDC driver: 100 mA @ 12 VDC.

Control Type: On/off pump out (down).

Power Requirements: 120 VAC \pm 15%, 50 to 70 Hz.

Power Consumption: .25 A @ 120 VAC.

Temperature Limits: -4 to 140°F (-20 to 60°C).

Seal Failure (Moisture Sensor): Trip point: 50,000 Ohms.

Weight: 1 lb 4 oz. (454 g).

Agency Approvals: UL pending.

The last float input is for the High float. Whenever the High float is under water (closed) then the high alarm condition is set. When a high alarm condition is set the High Alarm indicator will flash on and off, and the High Alarm light and horn outputs will be activated. The horn can be silenced using an external mute button connected to pin J2-9 to ground. Both the alarm light and horn will turn off when the High float input opens. The FPC-1200 has an alarm test button on the front panel which can be used to test the alarm horn and light.

The pump controller has two inputs for pump seal fail (leak) sensors (one for each pump). These inputs measure the resistance between the input and ground. If the resistance is less than 50,000 ohms then the seal fail indicator for that pump will be turned on. This action does not disable the pump; however it does demote the pump to the lag position in the alternate order. In the event of a seal failure, the Seal Fail indicator and the Seal Fail output relay are energized, and the corresponding pump is demoted to lag position.

The pump controller has two inputs for pump temperature sensors. If the controller detects a short between these inputs and ground then a temperature failure condition does not exist. If the short to ground is removed then a temperature failure condition exists and the pump associated with that input will be disabled and the corresponding Temp Fail indicator illuminated. This condition will return to normal when the short to ground is reestablished.

All of the float and sensor inputs are transient protected and filtered to prevent electrical interference from causing improper operation.

The controller has two switches that select what mode the two pumps are in.

These HOA switches have the following function:

- H: When in HAND the pump will be constantly called to run.
- O: When in OFF the pump will be off.
- A: When in AUTOMATIC the pumps will be called by the pump controller.

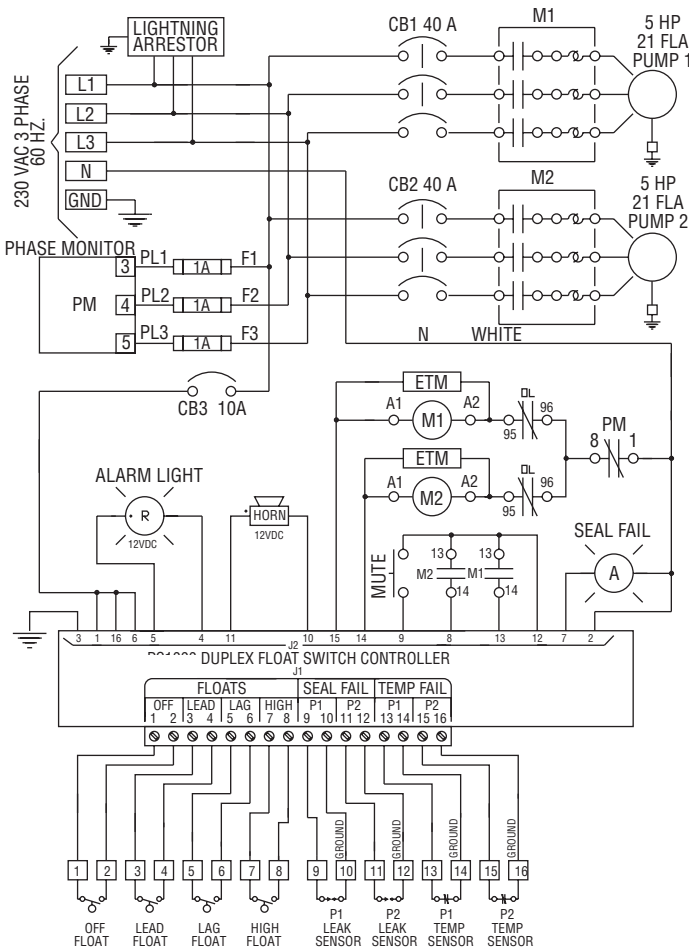
The Hand and Off functions of these switches will operate even if the controller is off or has failed.

The controller has a switch that is used to select the lead pump. When this switch is in the center position (ON) then the two pumps will alternate as lead pump each pump cycle. When in the 1-2 position then pump one is the lead and when in the 2-1 position, pump two is the lead.

The controller has two inputs, which should be connected to the auxiliary switches on the two motor starters. These inputs, when shorted, cause the pump running indicators to be illuminated. Using these inputs may eliminate the need for panel-mounted pump running lamps.

MAINTENANCE

The Model FPC-1200 Duplex Pump Controller is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.



WIRING DIAGRAM