

# 111P / 233P / 233P-1.5 SERIES

## Single-Phase PumpSaver®



### Description

The Littelfuse Models 111P (115 volt, 1/3 to 1hp); 233P-1.5 (230 volt, 1/3 to 1.5hp); and 233P (230 volt, 1/3 to 3hp) protect pumps from dry-well, dead-head, jammed impeller, overvoltage/undervoltage conditions and now rapid-cycle protection whether the pressure switch is mounted before or after our unit.

A calibration adjustment allows the unit to be calibrated to your specific pumping applications, thereby reducing the possibility of false or nuisance tripping. A unique microcontroller-based voltage and current-sensing circuit constantly monitors the incoming power for fluctuations, overcurrent, and undercurrent. When an abnormality, such as loss of suction is detected, the unit deactivates its output relay and directly disconnects the pump motor. The unit then begins its user-selectable restart delay (dry-well recovery) timer. When the timer counts to zero or power is removed and reapplied, the unit reactivates its output relay and turns the pump back on.

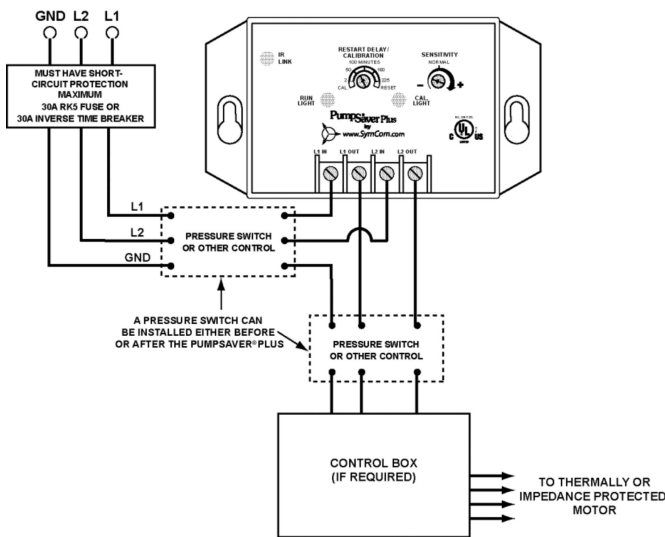
The infrared LED communicates with a hand-held diagnostics tool called the Informer (sold separately). The Informer displays parameters including calibration points, trip points, run time and last faults.

**Special considerations for pump cables larger than #10 AWG:** In some cases where larger motors are installed with deep set pumps, pump cables are used that exceed the relay's terminal size. In these conditions, a short splice of #10 AWG or #12 AWG may be a solution at the control box. **Note:** All local, state and national electric codes should be followed when applying this solution.

**NOTE:** The 111P/233P/233P-1.5 models have a sensitivity adjustment for the dry-well trip point. After calibration is done, you can adjust the sensitivity for the dry-well/dead-head trip point from 70-90% of the full load. This makes the unit even more adaptable to varying pumping applications. If you have a very low producing well, you increase the sensitivity closer to the 90% mark, or if you have a very heavy producing well, you would decrease the sensitivity around the 70% mark.

### Wiring Diagram

MOTOR & PUMP PROTECTION



For dimensional drawing see: Appendix page 511, Figure 15.

### Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
111P	115VAC	Load Range: 1/3 - 1hp
111P-ENCL	115VAC	111P with NEMA3R enclosure
233P	230VAC	Load Range: 1/3 - 3hp
233P-ENCL	230VAC	233P with NEMA3R enclosure
233P-1.5	230VAC	Load Range: 1/3 - 1.5hp
233P-1.5-ENCL	230VAC	233P-1.5 with NEMA3R enclosure

### Features & Benefits

FEATURES	BENEFITS
<b>Proprietary microcontroller based circuitry</b>	Constant monitoring of voltage, power factor, current for reliable pump protection
<b>Onboard calibration process</b>	Calibrates unit to your specific individual pumping application and reduces nuisance tripping
<b>Onboard sensitivity adjustment</b>	User adjustable sensitivity knob makes the unit more adaptable to varying pumping applications

### Accessories



#### Informer

A hand-held diagnostic tool that uses an infrared receiver to access information which can be helpful for troubleshooting the system.

## 111P / 233P / 233P-1.5 SERIES

### Specifications

#### Functional Specifications

##### Adjustments/Settings

**Overcurrent** 125% of calibration point  
**Underload (dry-well)** Adjustable (70 to 90% of calibrated run power)

**Overvoltage**  
**111P** 132.5VAC  
**233P, 233P-1.5** 265VAC

**Undervoltage**  
**111P** 95VAC  
**233P, 233P-1.5** 190VAC

**Number of restarts allowed in a 60-sec. period (rapid-cycling)** 4

**Trip Delay Times**  
**Overcurrent** 5 seconds  
**Dry-well** 4 seconds

**Restart Delay Times**  
**Over/undervoltage** 2 seconds  
**All other faults** Manual, 2-225 Minutes

#### Input Characteristics

**Supply Voltage**  
**111P** 115VAC  
**233P-1.5, 233P** 230VAC

**Load Range:**  
**111P** 1/3 – 1 hp  
**233P-1.5** 1/3 – 1.5 hp  
**233P** 1/3 – 3 hp  
**Frequency** 50\*/60Hz

#### Output Characteristics

##### Output Contact Rating-SPST

**111P** 1hp@120VAC (16 amps max.)  
**233P-1.5** 1.5hp@240VAC (10 amps max.)  
**233P** 3hp@240VAC (17 amps max.)

#### General Characteristics

**Operating Temperature** -40° to 60° C (-40° to 140° F)  
**Maximum Input Power** 5 W  
**Wire Gauge** Solid or Stranded 10 - 22AWG  
**Terminal Torque** 13 in.-lbs.

**Safety Marks**  
**cUL Listed** UL508, C22.2 No. 14

**Dimensions**  
**H** 73.66 mm (2.9"); **W** 133.35 mm (5.25");  
**D** 73.99 mm (2.913")

**Weight** 14 oz.  
**Mounting Methods** #8 screws

\*Note: 50Hz will increase all delay timers by 20%