Motor and Pump Protection Relays 234-P Series

Single-Phase Pump Monitor



Description

The PumpSaver® Plus Model 234-P protects single-phase pumps from dry-well, dead-head, rapid-cycle, jammed impellers, and over/undervoltage conditions. Typical applications include residential waterwells, commercial waterwells, irrigation wells, golf courses, and other sprinkler systems. The Model 234-P is designed to be mounted inside a Grundfos* control box** to protect ½-3 hp, 2- or 3-wire, 230 V pumps. An infrared LED communicates directly with a hand-held diagnostic tool called the Informer (sold separately).

A calibration adjustment allows the 234-P to be calibrated to your specific pumping applications, 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 234-P deactivates its output relay and directly disconnects the pump motor. The 234-P then begins its user-selectable restart delay (dry-well recovery) timer. When the timer counts to zero or power is removed and reapplied, the 234-P reactivates its output relay and turns the pump back on. By leaving the restart delay knob in the reset position, the 234-P will operate in manual reset mode.

The Informer displays parameters including calibration points, trip points, run time and last faults. An IR Kit-12 (12" fiber optic kit) allows the Informer to access these parameters even when the 234-P is enclosed in a control box. This is valuable for troubleshooting the pump while it is running.

NOTE: The PumpSaver® 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, increase the sensitivity closer to the 90 % mark, or if you have a very heavy producing well, decrease the sensitivity around the 70 % mark.

Features & Benefits

FEATURES	BENEFITS	
Proprietary microcontroller-based circuitry	Constant monitoring of voltage and current protects pumps from fault conditions	
Onboard sensitivity adjustment	Allows user to adjust the current sensitivity for the dry-well/deadhead trip point from 70 %—90 % of the full load	
Adjustable restart delay	Allows user to select well recovery time delay after a dry-well condition occurs, or to select manual reset	
Built-in IR communications link	Used with the Informer, allows user to see stored faults, run time, and also troubleshoot the pump while it's running	
LED indication	Provides status and diagnostics for troubleshooting	



^{*} Grundfos is a trademark of its respective owner.

^{**}The Model 234-P is not recommended for use with the Grundfos Deluxe Control Box.

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Applications

- Residential waterwells
- · Commercial waterwells
- Irrigation wells
- Golf courses

Specifications

Functional Specifications

Adjustments/Settings:

Overcurrent 125 % of calibration point

Underload (dry-well) Adjustable (70–90 % of calibrated run power)

Overvoltage 265 V ac **Undervoltage** 190 V ac

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

Trip Delay Times:

Overcurrent5 secondsDry-well4 seconds

Restart Delay Times:

Over/undervoltage 2 seconds

All other faults (dry-well

recovery timer) Manual, 2–225 Minutes

Input Characteristics

Supply Voltage230 V acLoad Range⅓-3 hp

Frequency 50/60 Hz (Note: 50 Hz will increase all delay timers by 20 %)

Output Characteristics

Output Contact Rating-SPST 3 hp @ 240 V ac (17 Amps max.)

General Characteristics

Operating Temperature -40 °C to 70 °C (-40 °F to 158 °F)

Maximum Input Power 5 W (max.)

Dimensions Fitted to Grundfos* Control Box

Weight 14 oz.

Mounting Methods Grundfos* Control Box

Standards Passed

Electrostatic Discharge (ESD) IEC 61000-4-2, Level 2, 4 kV contact, 6 kV air

Accessories

Informer

A hand-held diagnostic tool that uses an infrared receiver to access information which can be helpful for troubleshooting the system. Includes the Informer IR Kit-12

Informer IR Kit-12

12" infrared adapter cable attaches to the face of the unit to provide remote diagnostics without opening the panel. Included with the Informer



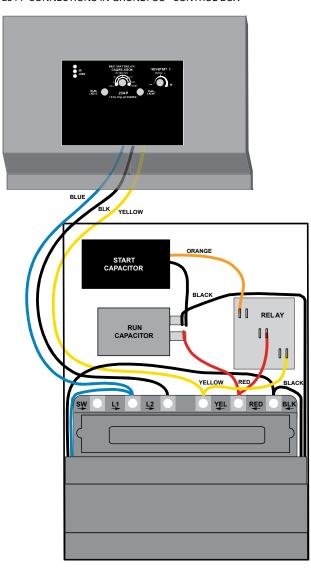
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Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
234-P	230 V ac	Load range: 1/3 to 3 hp

Wiring Diagram

234-P CONNECTIONS IN GRUNDFOS* CONTROL BOX



For installation instructions see the Fresh Water Pumping Catalog.

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