Motor and Pump Protection Relays
232-INSIDER

Single-Phase Pump Monitor



Description

The single-phase 232-Insider PumpSaver® fits inside ⅓, ½, ¾, and 1 hp, 230 V Grundfos control boxes. The PumpSaver 232-Insider is designed to protect single-phase pumps from dry-well, dead-head, jammed impellers, overvoltage, and undervoltage conditions. Typical applications include residential water wells, commercial water wells, irrigation wells, and golf course systems.

A calibration adjustment allows the 232-Insider to be calibrated to your specific pumping application, 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 232-Insider deactivates its output relay and directly disconnects the pump motor. The 232-Insider then begins its user-selectable restart delay (dry-well recovery) timer. When the timer counts to zero or power is removed and reapplied, the 232-Insider reactivates its output relay and turns the pump back on. By leaving the restart delay knob in the reset position, the 232-Insider will operate in manual reset mode. An infrared LED communicates directly with a hand-held diagnostic tool called the Informer*.

Note: The use of flow restrictors or unusually high head pressures at the time of calibration may interfere with the detection of dead-head conditions.
*The Informer: a hand-held diagnostic tool that uses an infrared receiver to access information that can be helpful for troubleshooting the system (sold separately).

Features & Benefits

FEATURES	BENEFITS
Proprietary microcontroller-based circuitry	Constant monitoring of voltage and current status for maximum protection
Adjustable restart delay	Allows user to select well recovery time delay after a dry-well condition n occurs, or to select manual reset
Built-in IR communications link	Used with the Informer, allows user to see stored faults, run time, and troubleshoot while the pump is running
LED indication	Provides status and diagnostics for troubleshooting

Applications

- Residential and commercial water wells
- Irrigation wells
- Golf course systems

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Specifications

Functional Characteristics

1 Phase Line Voltage (±10 %)	230 V ac
Load Range	⅓–1 hp
Frequency	50*/60 Hz

Operating Points

Overload	125 % of Cal. Point
Underload (dry well)	80 % or 87 % of calibrated run power
High Voltage Reset Point	265
Low Voltage Reset Point	190
Trip Delay Time (Overload)	5 sec.
Trip Delay Time (Dry well)	4 sec.

Restart Delay Time

Overvoltage/Undervoltage Delay	2 sec.
All other faults (dry-well rec. timer)	Manual, 2–225 min.
Output Contact Rating (SPST)	1 hp @ 240 V ac (17 amps max.)
Weight	10 oz.
Power Consumption	5 Watts (max.)

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

Certification & Compliance

cULus	UL 508

Accessories

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

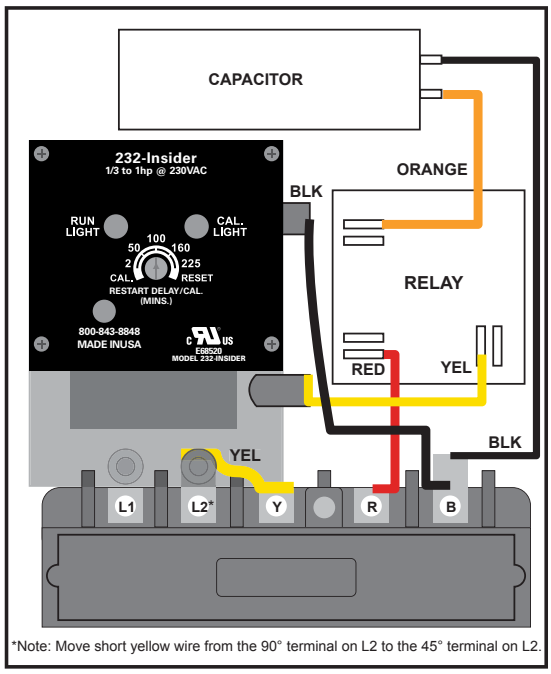
Ordering Information

MODEL	VOLTAGE	DESCRIPTION	MOUNTING METHOD
232-Insider	230 V ac	1/3–1 hp	Inside a Grundfos® control box

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Simplified Wiring Diagram

232-INSIDER CONNECTIONS IN GRUNDFOS* CONTROL BOX



*Note: Move short yellow wire from the 90° terminal on L2 to the 45° terminal on L2.

For installation instructions see the Fresh Water Pumping Catalog.

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