Motor and Pump Protection Relays
111-INSIDER-P

Single-Phase Pump Monitor



Description

The single-phase 111-Insider-P monitor fits inside ⅓ and ½ hp, 115 V control boxes. It is designed to protect single-phase, submersible pumps from dry-well, dead-head, jammed impellers, rapid-cycle, overvoltage, and undervoltage conditions. A calibration adjustment allows the Insider 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 product deactivates its output relay and directly disconnects the pump motor. The relay then begins its user-selectable restart delay (dry-well recovery) timer. When the timer counts to zero or power is removed and reapplied, the relay reactivates its output relay and turns the pump back on. By leaving the restart delay knob in the reset position, the relay will operate in manual reset mode.

The Insider 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. An IR Kit-12 (12" fiber optic kit) is included with each Insider, allowing the Informer to access these parameters even when the Insider is enclosed in a control box. This is valuable for troubleshooting the pump while it is running.

NOTE: The 111-Insider-P model has 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/dead-head 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

Applications

- Made for submersible pump systems

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Specifications

Functional Specifications

Adjustments/Settings	
Overcurrent	125 % of calibration point
Underload (dry-well)	Adjustable (70 to 90 % of calibrated run power)
Overvoltage	132.5 V ac
Undervoltage	95 V ac
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, 2–25 minutes

Input Characteristics

Supply Voltage	115 V ac
Load Range	⅓–½ hp
Frequency	50/60 Hz *(Note: 50 Hz will increase all delay timers by 20 %)*

Output Characteristics

Output Contact Rating-SPST	½ hp @ 120 V ac (17 A max.)

General Characteristics

Operating Temperature	-40 °C to 55 °C (-40 °F to 131 °F)
Maximum Input Power	5 W
Weight	10 oz.
Mounting Methods	Inside a Pentek*, Franklin*, CentriPro*, Grundfos* (mfg after mid-2014), Flowise Pro,* and Flint and Walling* control box

Certification & Compliance

cURus**	UL 508, C22.2 No. 14

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

Ordering Information

MODEL	VOLTAGE	DESCRIPTION
111-Insider-P 115 V ac ⅓–½ hp, includes IR Kit-12	230 V ac	⅓–1 hp, includes IR Kit-12

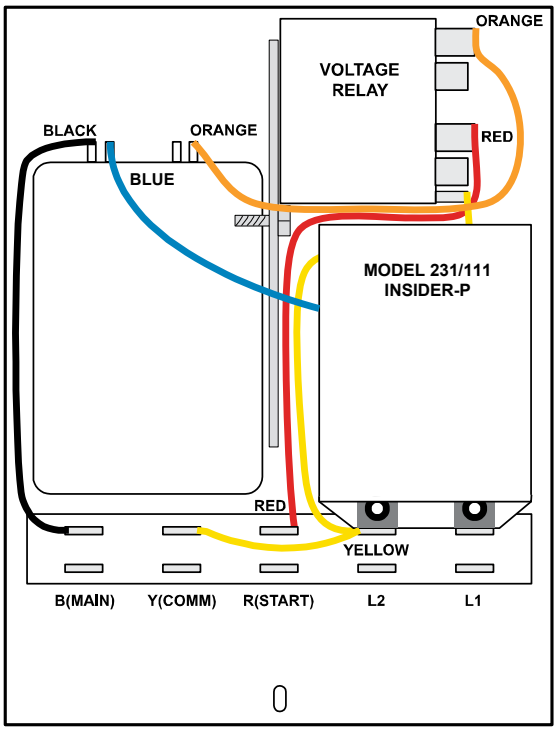
*Pentek, Franklin, Grundfos, Flowise Pro, and Flint and Walling are trademarks of their respective owners.

**The 111-Insider-P is an agency approved type 3R control box when installed as described in the installation instructions. The 111-Insider-P is not intended to provide overload protection, and should be used with thermally or impedance protected motors only.

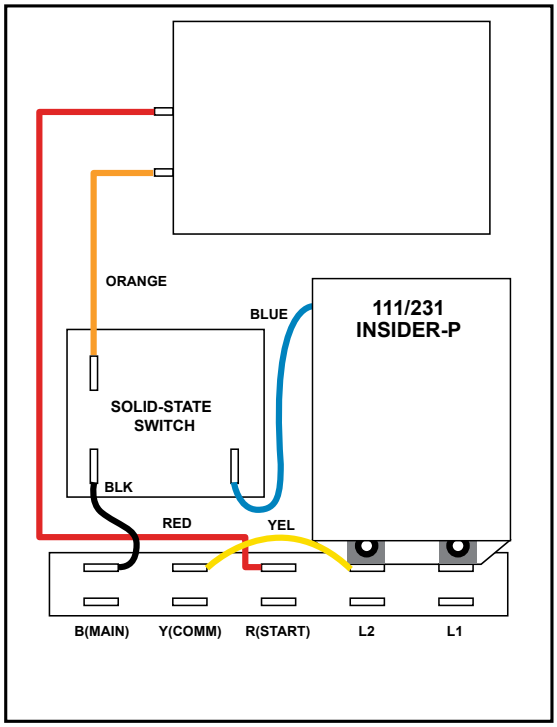
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Wiring Diagrams

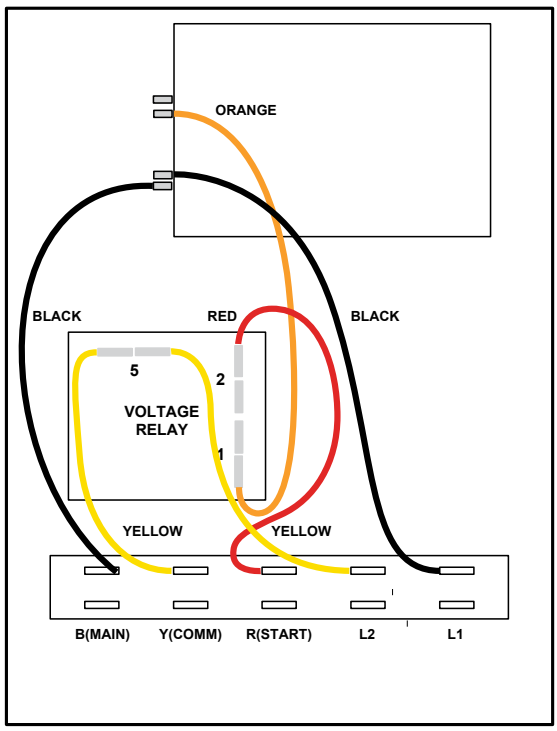
PENTEK* CONTROL BOX WIRING DIAGRAM



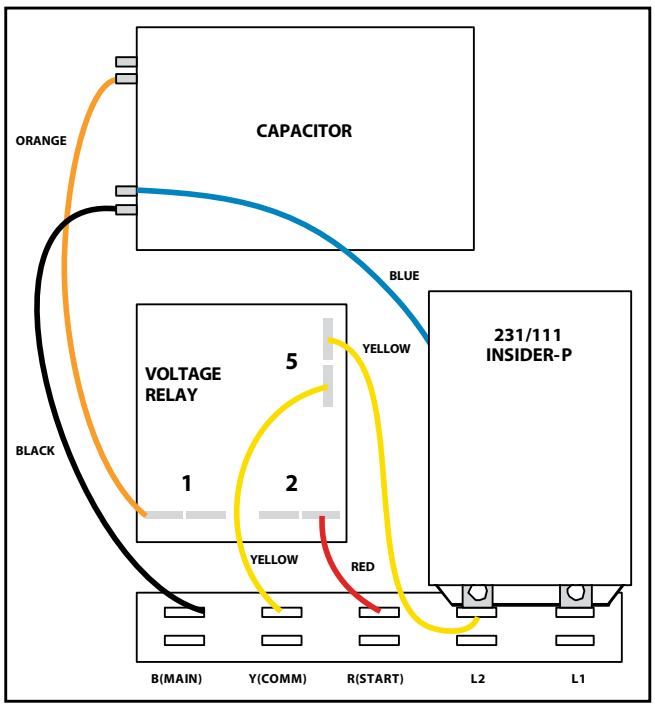
FRANKLIN* CONTROL BOX WIRING DIAGRAM



CENTRIPRO* CONTROL BOX WIRING DIAGRAM



FLINT AND WALLING* CONTROL BOX WIRING DIAGRAM

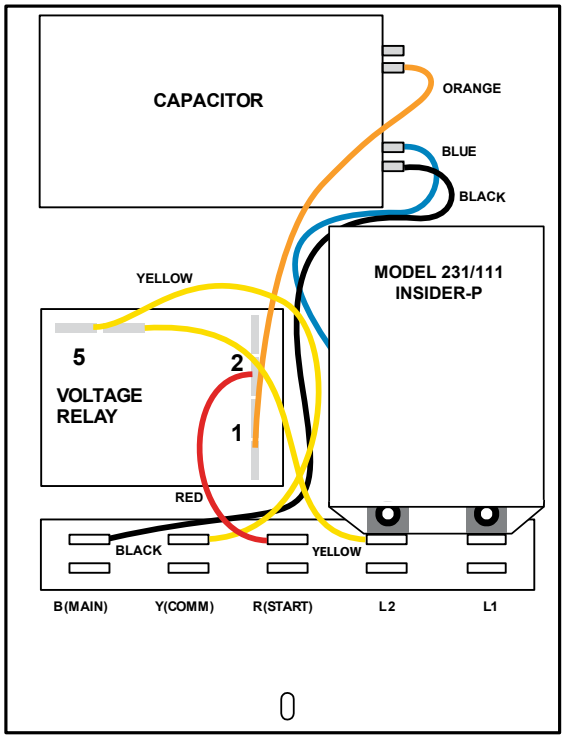


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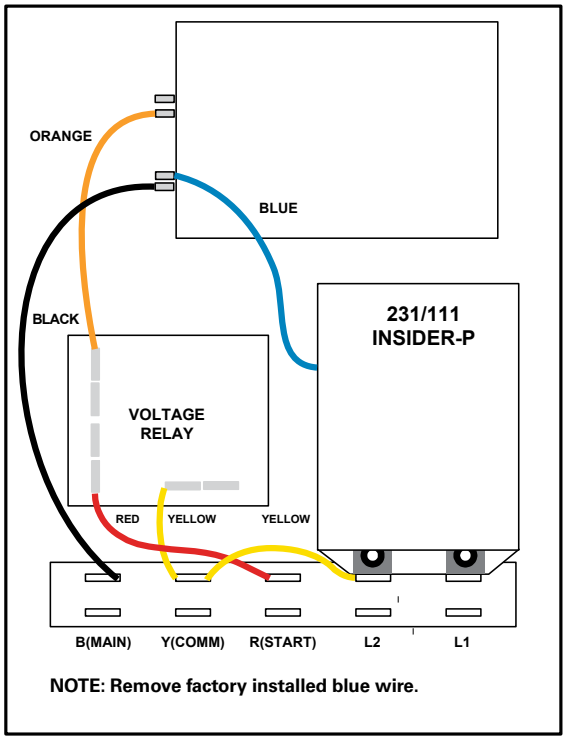
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Wiring Diagrams

GRUNDFOS** CONTROL BOX WIRING DIAGRAM



FLOWISE PRO* CONTROL BOX WIRING DIAGRAM



***For boxes manufactured in mid 2014 or later.*
See 232-INSIDER for boxes manufactured prior to mid 2014.

For installation instructions see the Fresh Water Pumping Catalog.

*Pentek, Franklin, Grundfos, Flowise Pro, and Flint and Walling are trademarks of their respective owners.

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