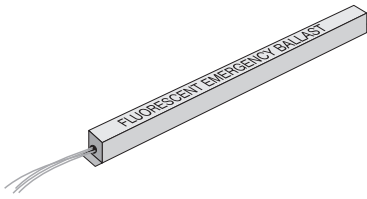


# LP600STU



# bodine

## Installation Instructions

UNIVERSAL INPUT, SELF-TESTING EMERGENCY LIGHTING EQUIPMENT



### **! IMPORTANT SAFEGUARDS !**

**WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:**

## **READ AND FOLLOW ALL SAFETY INSTRUCTIONS**

1. To prevent high voltage from being present on red & yellow output leads prior to installation, inverter connector must be open. Do not join inverter connector until installation is complete and AC power is supplied to the emergency ballast.
2. This product is for use with most 14 W through 54 W (2' - 4') T5 bipin, 22 W through 55 W T5 circular, 36 W through 55 W (4-pin) long compact, and 17 W through 40 W (2' - 5') T8 bipin fluorescent lamps. Also operates 14.5W through 16.5W Philips LED T8 InstantFit lamp: 9290002840, 9290002841, 9290002842, 9290002862, 9290002880, 9290002881, 9290002882, 9290002883.
3. Make sure all connections are in accordance with the National Electrical Code, Canadian Electrical Code and any local regulations.
4. To reduce the risk of electric shock, disconnect both normal and emergency power supplies and inverter connector of the emergency ballast before servicing.
5. This emergency ballast is for factory or field installation in either the ballast channel, on top of, or remote from the fixture.
6. This product is suitable for damp locations where the ambient temperature is 0°C minimum, +50°C maximum. Product is also suitable for installation in sealed and gasketed fixtures. Product is not suitable for heated air outlets and wet or hazardous locations.
7. An unswitched AC power source is required. (120 through 277 VAC, 50/60Hz)
8. Do not install near gas or electric heaters.
9. Do not attempt to service the battery. A sealed, no-maintenance battery is used that is not field replaceable. Contact the manufacturer for information on service.
10. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
11. Do not use this product for other than intended use.
12. Servicing should be performed by qualified service personnel.

**CAUTION:** Verify that all replacement lamp types marked on the installed luminaire are also identified as suitable for use with this inverter/charger pack.

## **SAVE THESE INSTRUCTIONS**



Ni - Cd

**THIS PRODUCT CONTAINS A RECHARGEABLE NICKEL-CADMIUM BATTERY.  
THE BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.**

02/22/19

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443529060942

# INSTALLATION



**WARNING: TO PREVENT HIGH VOLTAGE FROM BEING PRESENT ON RED & YELLOW OUTPUT LEADS PRIOR TO INSTALLATION, INVERTER CONNECTOR MUST BE OPEN. DO NOT JOIN INVERTER CONNECTOR UNTIL INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED TO THE EMERGENCY BALLAST.**

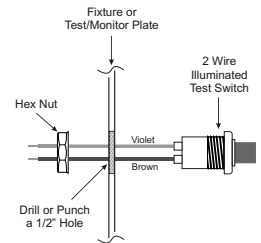
**NOTE:** Make sure that the necessary branch circuit wiring is available. An unswitched source of power is required. The emergency ballast must be fed from the same branch circuit as the AC ballast.

## STEP #1 ▶ INSTALLING THE EMERGENCY BALLAST

- > Disconnect AC power from the fixture.  
Remove the ballast channel cover and install the emergency ballast in the ballast channel (see Illustration 1).
- > **Remote mounting distance must be less than half the maximum remote mounting distance for the AC ballast. Consult AC ballast manufacturer before remote installation.**
- > **Mounting Height:** This product meets or exceeds the NFPA minimum light requirements with all loads, down to the smallest rated lamp load, at heights up to 7.17ft (2.2m). Many factors influence emergency illumination levels, such as the lamp load selected, luminaire design, and environmental factors therefore end use verification is necessary. For field installations, when the attached luminaire is mounted at heights greater than 7.17ft (2.2m), the level of illumination must be measured in the end application to ensure the requirements of NFPA 101 and local codes are satisfied.

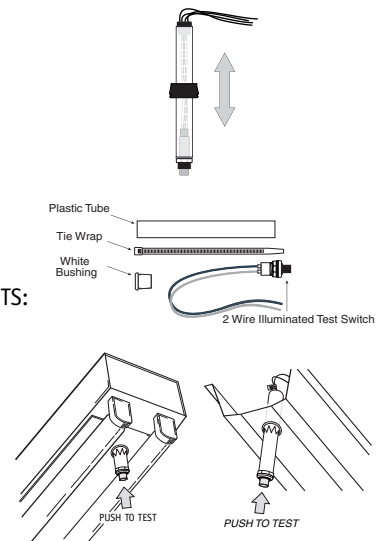
## STEP #2A ▶ INSTALLING THE 2W-ITS ON FIXTURE SURFACE

- > Drill a 1/2" hole and install the switch as shown.
- > Wire the test switch per wiring diagrams provided on these instructions.
- > If wired correctly, the 2W-ITS indicator light should be ON when AC power is supplied to the fixture, indicating that the emergency ballast battery is charging. After installing, mark with the "PUSH TO TEST" and "CHARGING INDICATOR LIGHT" labels.



## STEP #2B ▶ INSTALLING THE 2W-ITS ON THE BALLAST CHANNEL COVER

- > Drill or punch a 7/8 inch hole in ballast channel cover and insert bushing.
- > Slide the 2W-ITS tube up or down to adjust the height and visibility of the charging indicator light.
- > If the tube is too long, cut the plastic tubing to necessary length.
- > After cutting the tube to the proper length, assemble the 2W-ITS. To assemble the 2W-ITS:
  - > Feed the switch leads through the plastic tubing.
  - > Insert the white bushing in the opposite end of tube from the switch body.
  - > Pull switch leads and use provided tie wrap to secure leads snug against white bushing.
  - > Unscrew hex nut to apply tension to leads.



**NOTE:** After installing the test switch, mark each with the appropriate label.

## STEP #3 ► WIRING THE EMERGENCY BALLAST

- > Determine the type of AC ballast installed in the fixture.
- > Select the appropriate wiring diagram and connect the emergency ballast to the AC ballast and lamp(s). Make electrical connections in accordance with the National Electrical Code, Canadian Electrical Code and any local regulations.
- > After installation is complete, supply AC power to the emergency ballast and join the inverter connector.

It is normal for the indicator light to remain off for a few minutes on initial start-up, as the battery voltage rises to normal range. Refer to Troubleshooting Guide if this condition persists. The inverter connector **MUST** be joined for the AC ballast to operate normally.
- > At this point, power should be connected to both the AC ballast and the emergency ballast, and the Charging Indicator Light should illuminate indicating the battery is charging.
- > A short-term discharge test may be conducted after the emergency ballast has been charging for one hour. Charge for 24 hours before conducting a long-term discharge test. Refer to OPERATION.
- > In a readily visible location, attach the label "CAUTION - This Unit Has More Than One Power Connection Point. To Reduce The Risk Of Electric Shock, Disconnect Both The Branch Circuit-Breakers Or Fuses And Emergency Power Supplies Before Servicing."

## OPERATION

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During normal operation, AC power is applied and the self-testing emergency ballast charges the battery. Connecting the (red and white) battery connector wires enables the emergency circuit, and supplies power to the control/monitor circuit and charging indicator light. The self-testing emergency ballast continually monitors the battery voltage, comparing it to a preset limit. Should the unit detect an unusual voltage condition, the indicator light will flash.

When AC power fails, the self-testing emergency ballast automatically switches to emergency mode, keeping one lamp illuminated at a reduced lumen output for a minimum of 90 minutes. When AC power is restored, the self-testing emergency ballast returns to charging mode and delays AC ballast operation for approximately 3 seconds to prevent false-tripping of AC ballast (end of lamp life) shutdown circuits.

## SELF-TESTING OPERATION

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This unit contains a control/monitor circuit that automatically performs a 30-second discharge test every 28 days, and a full 90-minute discharge test once a year. During routine testing, the self-testing emergency ballast simulates an AC power failure causing the unit to automatically switch to emergency mode. The unit will monitor the operation of the lamps, battery voltage, discharge current, and emergency duration. If the emergency system functions properly, then the unit will return to normal mode. Should the unit detect any problems, the indicator light will flash continually until the condition has been corrected and the unit passes the next test.

To reset a failure indication, push and hold the test switch for a minimum of 15 seconds. If the condition has not been corrected by the next scheduled test, the unit will once again detect the failure and signal the failure indicator.

To cancel a test, turn the wall switch ON (or OFF if switch is already on), wait 5 seconds, then turn it OFF (ON).

## MAINTENANCE

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This self-testing emergency ballast automatically performs required routine testing. Results are reported to maintenance personnel via the indicator light.

**Note:** Maintenance personnel should periodically check the indicator light. If the indicator light is flashing, go through all steps of *Troubleshooting Guide*.

## TROUBLESHOOTING GUIDE

| STATUS INDICATOR   | PROBLEM  | CORRECTIVE ACTION   |
|--|--|---|
| INDICATOR LIGHT  |  |   |
| Light on steady, not flashing  | None   | None, Unit is Operating Correctly.  |
| Light off with Line voltage (120Vac or 277Vac) and not in self-test mode | Line voltage; incorrect installation                     | Check if inverter connector is connected well. If Light is still off, emergency ballast should be replaced.   |
| Flashing 2 times every 10 seconds  | Battery voltage is outside limits.                       | Let battery charge. If after an hour failure is still indicated, see action below.  |
| Flashing 3 times every 10 seconds  | Battery charging current is outside limits               | Check that fixture wiring is in accordance with proper wiring diagram.  |
| Flashing 4 times every 10 seconds  | Battery discharge is too low during scheduled self test  | <ol style="list-style-type: none"> <li>1. Check to make sure lamps are good (operational and specified for self-testing emergency ballast) and in place.</li> <li>2. Check that fixture wiring is in accordance with proper wiring diagram.</li> <li>3. Allow unit to charge for 24 hours. Perform manual test. If flashing continues, emergency ballast should be replaced.</li> </ol> |
| Continuous fast flashing   | Battery discharge is too high during scheduled self test |   |

### Failure Status will be reset when the unit passes:

- The next automatic test, or
- A manual test exceeding 15 seconds, or
- An actual power failure exceeding 15 seconds.

**NOTE:** It is normal for the indicator light to remain off for a few minutes on initial start-up or after a very long power outage (discharge), as the battery voltage rises to normal range. Refer to the Troubleshooting Guide if this condition persists.

**NOTE:** The inverter connector (red and white wires) must be connected for the AC ballast to operate normally.

**EMERGENCY BALLAST AND AC BALLAST MUST BE FED FROM THE SAME BRANCH CIRCUIT**  
 TYPICAL SCHEMATICS ONLY. MAY BE USED WITH OTHER BALLASTS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAMS.

# WIRING DIAGRAM for 1-LAMP emergency operation

## RAPID START AC BALLASTS

FIG A ONE (1) LAMP RAPID START BALLAST

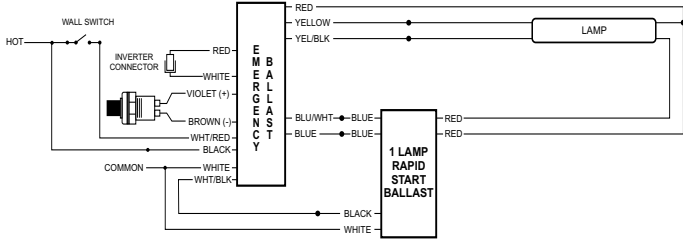


FIG C TWO (2) LAMP RAPID START BALLAST

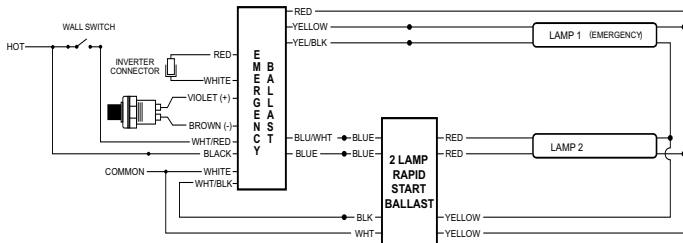


FIG E THREE (3) LAMP RAPID START BALLAST

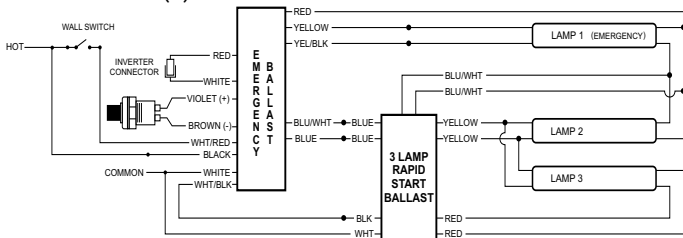


FIG G FOUR (4) LAMP RAPID START BALLAST

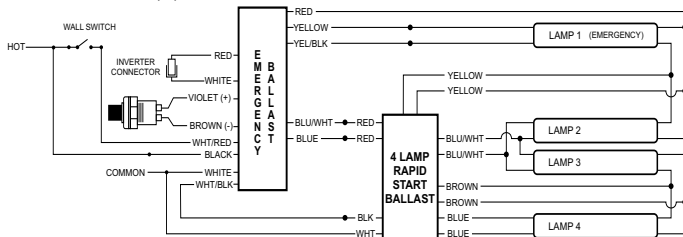


FIG I ONE (1) LAMP COMPACT RAPID START BALLAST

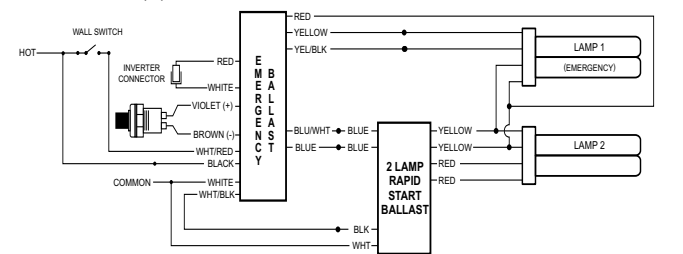
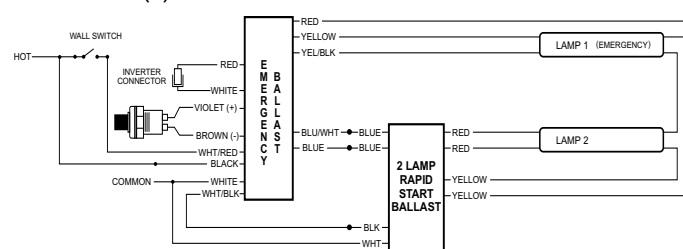


FIG K TWO (2) LAMP RAPID START BALLAST-SERIES YELLOW



## INSTANT START AC BALLASTS

FIG B ONE (1) LAMP INSTANT START BALLAST

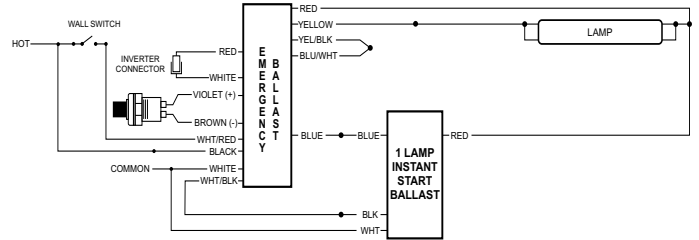


FIG D TWO (2) LAMP INSTANT START BALLAST

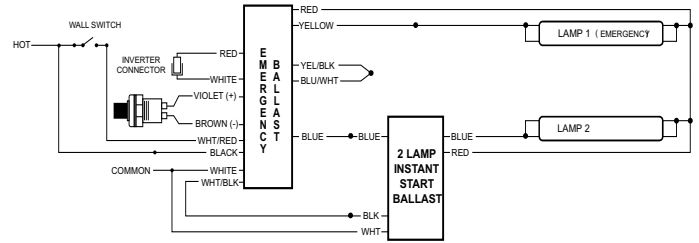


FIG F THREE (3) LAMP INSTANT START BALLAST

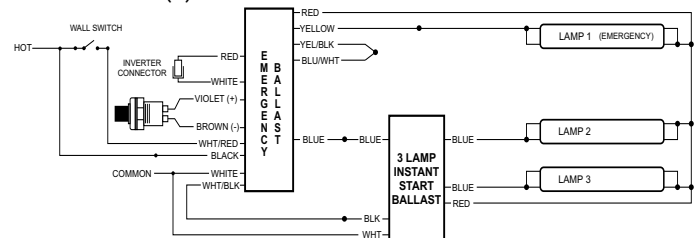


FIG H FOUR (4) LAMP INSTANT START BALLAST

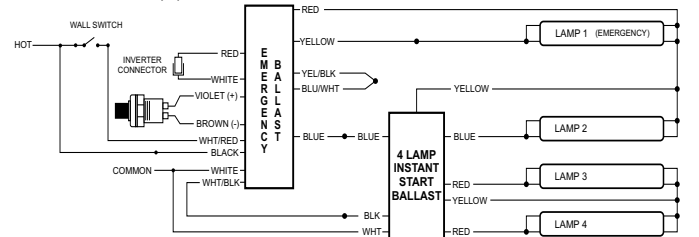


FIG J TWO (2) LAMP COMPACT INSTANT START BALLAST

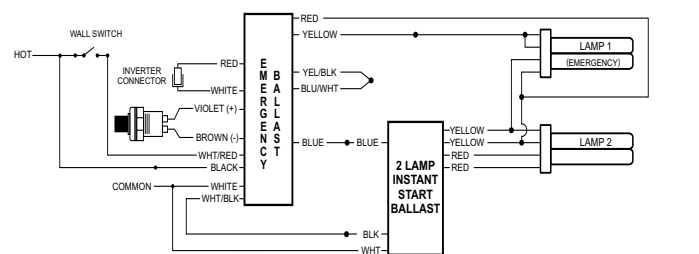
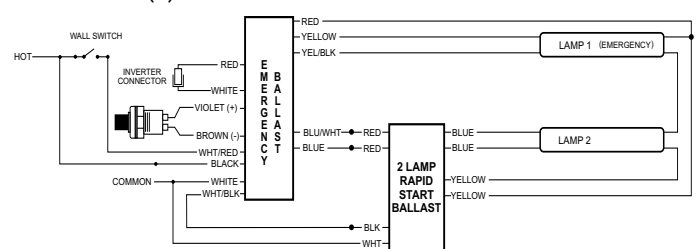


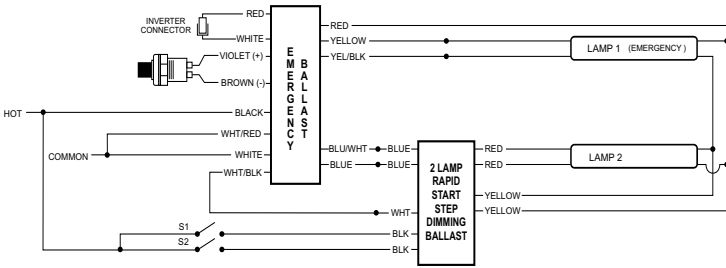
FIG L TWO (2) LAMP PROGRAM RAPID START OSRAM BALLAST



**EMERGENCY BALLAST AND AC BALLAST MUST BE FED FROM THE SAME BRANCH CIRCUIT**  
 TYPICAL SCHEMATICS ONLY. MAY BE USED WITH OTHER BALLASTS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAMS.

**WIRING DIAGRAM for 1-LAMP emergency operation**

FIG M TWO (2) LAMP RAPID START STEP DIMMING BALLAST



THE WHITE/BLACK LEAD MUST CONNECT TO THE WHITE LEAD OF THE STEP-DIMMING BALLAST ASSOCIATED WITH THE EMERGENCY BALLAST ONLY. CONNECTIONS TO OTHER BALLASTS OR FIXTURES COULD RESULT IN ABNORMAL OPERATION AND CAUSE PRODUCT DAMAGE.

**WIRING DIAGRAMS for Emergency-Only fixtures**

FIG N ONE (1) 36W-55W LAMPS WITHOUT AC BALLAST

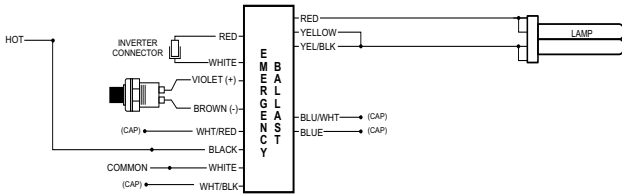


FIG O ONE (1) 14W-55W LAMP WITHOUT AC BALLAST

