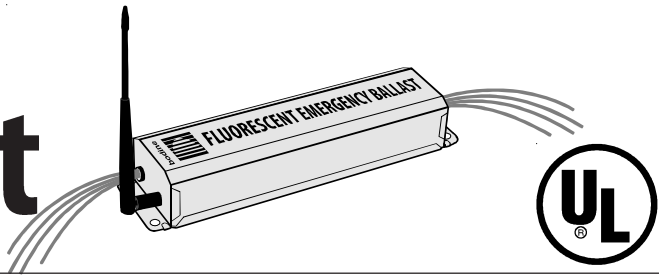
bodine®

B50FEBnet

NETWORKED EMERGENCY BALLAST



Installation Instructions

! IMPORTANT SAFEGUARDS !

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

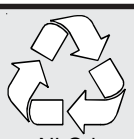
READ AND FOLLOW ALL SAFETY INSTRUCTIONS

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 17 W through 215 W single pin or bipin fluorescent lamps, including standard, energy saving, HO, VHO, circline, U-shaped, rapid-start long compact and 18 W through 42 W (4-pin) compact lamps without integral starters.
3. Make sure all connections are in accordance with the National 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 or on top of the fixture.
6. This product is for use in indoor fixtures except air handling heated air outlets, and wet, damp, or hazardous locations.
7. An unswitched AC power source is required (120 or 277 VAC, 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.

FCC COMPLIANCE STATEMENT

1. **WARNING:** The antenna used for this device must be installed to provide a separation distance of at least 20cm (8 inches) from all persons, and must not be co-located or operating in conjunction with any other antenna or transmitter other than those contained within this device.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
3. This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
   - Reorient or relocate the receiving antenna
   - Increase the separation between the equipment or devices
   - Connect the equipment to an outlet other than the receiver's
   - Consult a dealer or an experienced radio/TV technician for assistance

SAVE THESE INSTRUCTIONS



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

05/18/05

236 Mt. Pleasant Rd. • Collierville, TN USA 38017-2752 • Tech Support 888-263-4638 • Fax 901-854-1630 • www.bodine.com
75000022

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 ISCOMPLETE AND AC POWER IS SUPPLIED TO THE EMERGENCY BALLAST.

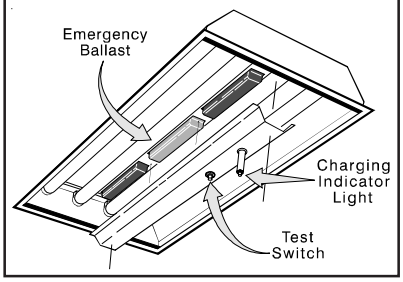
NOTE: Make sure that the necessary branch circuit wiring is available. An unswitched source of power is required. The emergency ballast must be fed from the same branch circuit as the AC ballast.

STEP #1 ▶ INSTALLING THE EMERGENCY BALLAST

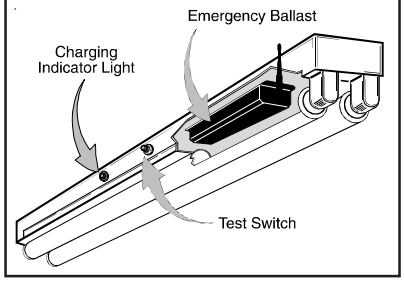
> Disconnect AC power from the fixture. Remove the ballast channel cover and install the emergency ballast either in the ballast channel or on top of the fixture.*

> Depending on the type of fixture in use install emergency ballast using one of the methods illustrated below.

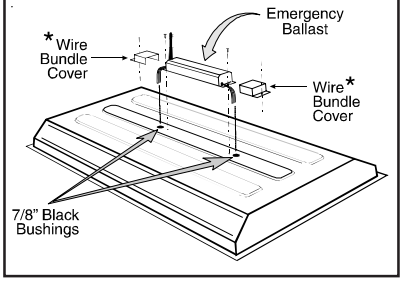
Inside Ballast Channel



Inside Strip Fixture

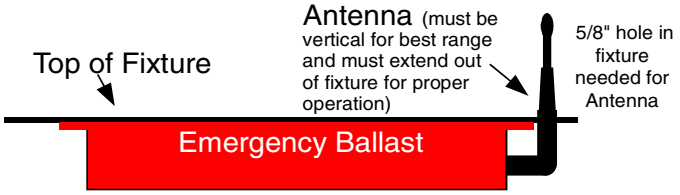


On Top of Fixture



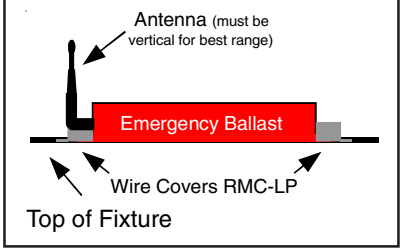
* For installation on top of the fixture, wire bundle covers (RMC-LP) may be required by state or local codes. These covers are available from the manufacturer as an accessory kit and must be ordered separately. Call your local distributor or the factory for complete information.

Antenna Orientation Inside Ballast Channel or Strip Fixture



Note: Please use template label to cut 5/8" hole for Antenna

Antenna Orientation On Top of Fixture



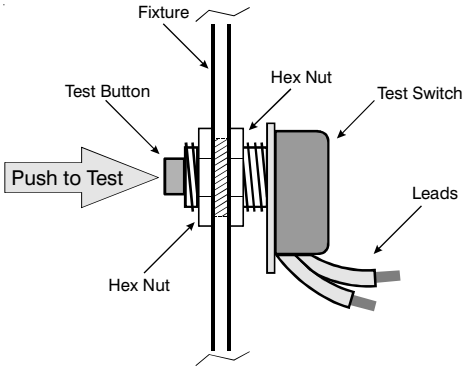
Note: Antenna is not removable

STEP #2 ▶ INSTALLING THE TEST SWITCH

> Refer to the illustrations above and install the test switch through the ballast channel cover of a troffer or through the side of a strip fixture.

> Drill a 1/2" hole and install the switch as shown.

> Wire the test switch so that it removes AC power from both the emergency ballast (see wiring diagrams).

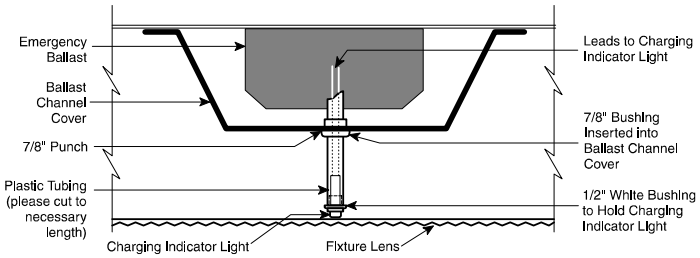


STEP #3 ▶ INSTALLING THE CHARGING INDICATOR LIGHT

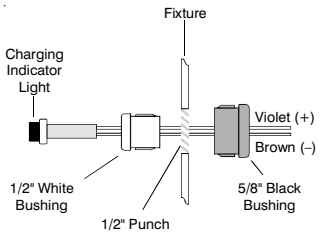
> Install the CHARGING INDICATOR LIGHT as shown in the illustration on the following page so that it will be visible after the fixture is installed.

CHARGING INDICATOR LIGHT INSTALLATION

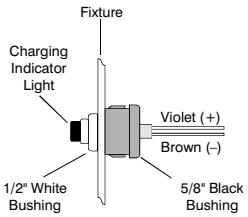
TROFFER STYLE FIXTURE



STRIP STYLE FIXTURE



STEP 1



STEP 2

STEP #4 ▶ **WIRING THE EMERGENCY BALLAST**

> Determine the type of AC ballast installed in the fixture.
> Select the appropriate wiring diagram on back to connect the emergency ballast to the AC ballast and lamp(s). Make sure all connections are in accordance with the National Electrical Code and any local regulations.
> To disable audible alarm, refer to FEBnet user's manual provided with FEBnet system software.
> 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.
> 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

During normal operation, AC power is applied and the networked emergency ballast charges the battery. Connecting the red and white inverter connector wires enables the emergency circuit, and supplies power to the control/monitor communication circuit and charging indicator light. The networked emergency ballast continually monitors the charging current and battery voltage, comparing them to preset limits. Should the unit detect an unusual current or voltage condition, the indicator light will flash, the internal audible alarm will sound, and this information will be passed to the hub of the network. When AC power fails, the networked emergency ballast automatically switches to emergency mode, keeping either one or two lamps illuminated at a reduced lumen output for a minimum of 90 minutes. When AC power is restored, the networked emergency ballast returns to charging mode.

SELF-TESTING OPERATION

This unit contains a control/monitor communication circuit that, with prompting from the hub and node, automatically performs a 30-second discharge test every 30 days, and a full 90-minute discharge test once a year. During routine testing, the networked 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, and discharge current for the test duration. If the emergency system functions properly, the unit will return to normal mode. Should the unit detect any problems, the indicator light will flash continually and the audible alarm will sound 4 times every 30 seconds until the condition has been corrected or the unit passes the next test. The networked emergency ballast test results will be present at the hub within 24 hours.

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.

MAINTENANCE

This networked emergency ballast automatically performs required routine testing. Results are reported to maintenance personnel via the indicator light and audible alarm. The results are also reported to the hub and this test data can be viewed at a designated PC (software provided separately).

Note: If optional audible alarm is disabled, maintenance personnel should periodically check the indicator light. If the indicator light is flashing, go through all steps of ***Troubleshooting Guide.***

TROUBLESHOOTING GUIDE

STATUS INDICATORS		PROBLEM	CORRECTION
INDICATOR LIGHT	AUDIBLE ALARM		
Light on steady, not flashing	No beeping	None	Unit is Operating Correctly.
Flashing 1/2 Second Intervals	Beeping 1/2 Second Intervals	Line voltage; incorrect installation	Check line voltage. For 120 VAC use black as hot; for 277 VAC use orange as hot wire lead.
Flashing 1/2 Second Intervals	Beeping 4 times every 30 seconds.	Battery voltage is outside limits.	Let battery charge. If after an hour failure is still indicated, see action below.
		Failed scheduled self-test	1. Check to make sure lamps are good (operational and specified for self-testing emergency ballast) and in place. 2. Check to see if brown connector is properly used. (See Table 1.) 3. Check that fixture wiring is in accordance with proper wiring diagram. 4. Allow unit to charge for 24 hours. Perform manual test. If flashing/beeping continue, emergency ballast should be replaced.
Flashing 2 times every 6 seconds.	Beeping 2 times every 6 seconds.	None The unit is running it's user indicated location scheme	Either: • Wait 30 minutes for indicators to stop, or • Use FEBnet network PC (see user's manual provided with FEBnet system software)
Any other erroneous status indications		Corrupted chip memory	Open inverter connector (red and white wires) and push manual test switch for 15 seconds minimum, then reconnect inverter connector.

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, or
- A user-generated test via FEBnet network PC (see user's manual provided with FEBnet system software).

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.

B50FEBnet WIRING DIAGRAMS

The following diagrams are typical schematics only. May be used with other ballasts.
Consult the factory for other wiring diagrams.
Emergency Ballast and AC Ballast must be fed from the SAME BRANCH CIRCUIT.

IMPORTANT TEXT: REFER TO TABLE 1 REGARDING BROWN CONNECTOR

TABLE 1

LAMP (DIAMETER)	BASE TYPE	WATTAGE (LENGTH)	NO. OF LAMPS (EMERGENCY MODE)	BROWN CONNECTOR
T8, T9, T10, T12 (1", 1-1/4", 1-1/2")	SINGLE OR BIPIN	17 - 40 W (2' - 4')	1	CLOSED
			2	OPEN
		40 - 215 W (5' - 8')	1	OPEN
LONG COMPACT	4-PIN (2G11)	18 - 39 W	1	CLOSED
			2	OPEN
		40 - 55 W	1	CLOSED
TWIN/QUAD/ TRIPLE TWIN/ QUADRUPLE TWIN-TUBE COMPACT	4-PIN (G24q, GX24q)	18 - 32 W	1	CLOSED
			2	OPEN
		42 W	1	CLOSED
2D	4-PIN (GR10q)	16 - 38 W	1	CLOSED
			2	OPEN
		55 W	1	OPEN

WIRING DIAGRAMS FOR 1-LAMP EMERGENCY OPERATION

RAPID START AC BALLASTS

FIG 99. ONE (1) LAMP RAPID START BALLAST

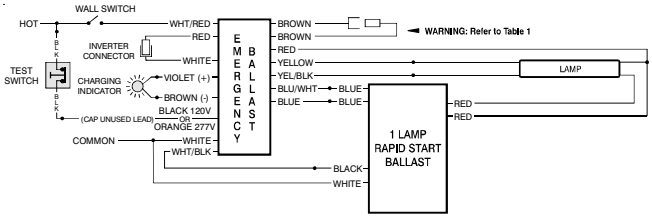


FIG 133. TWO (2) LAMP RAPID START BALLAST

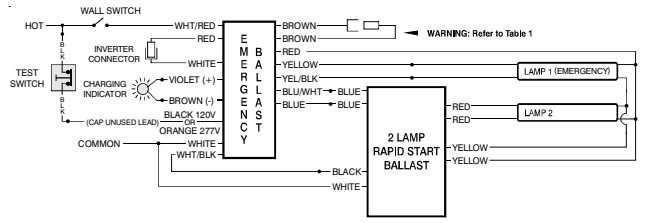


FIG 105. THREE (3) LAMP RAPID START BALLAST

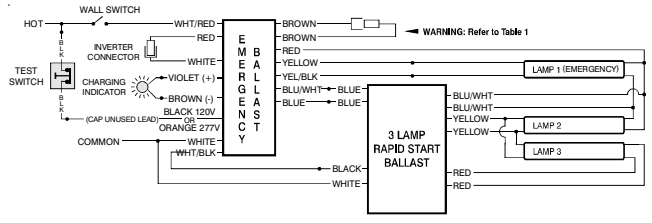
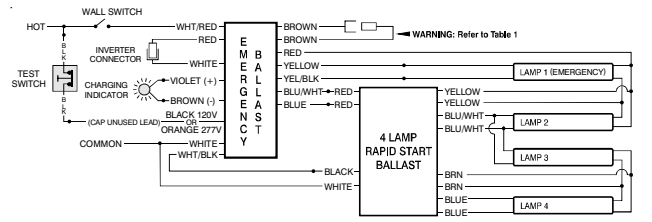


FIG 120. FOUR (4) LAMP RAPID START BALLAST



INSTANT START AC BALLASTS

FIG 119. ONE (1) LAMP INSTANT START BALLAST

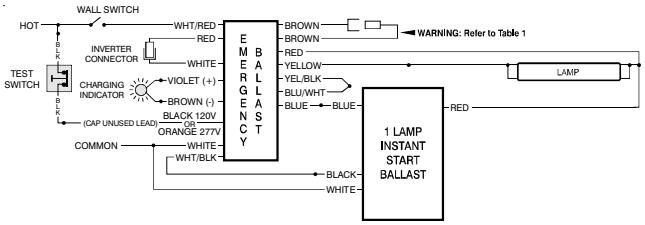


FIG 104. TWO (2) LAMP INSTANT START BALLAST

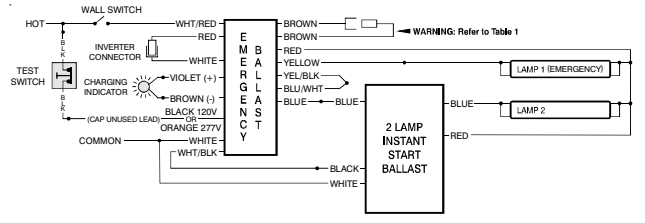


FIG 106. THREE (3) LAMP INSTANT START BALLAST

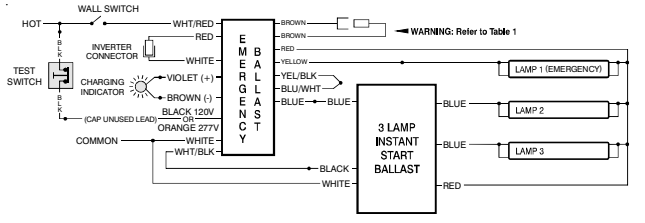
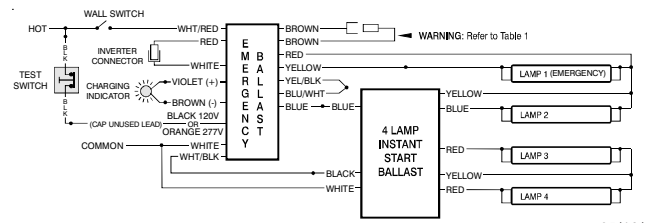


FIG 121. FOUR (4) LAMP INSTANT START BALLAST



05/18/05
70450022

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 DIAGRAMS FOR 1-LAMP EMERGENCY OPERATION

FIG 134. ONE (1) LAMP COMPACT RAPID START BALLAST

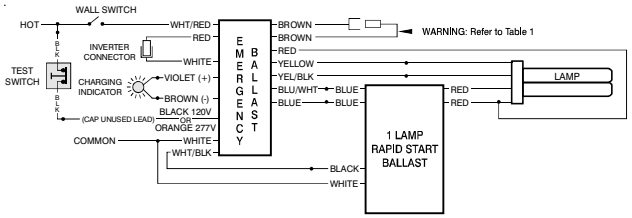
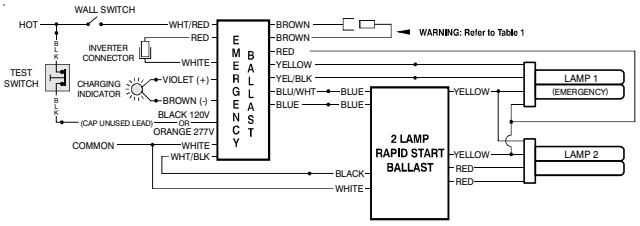


FIG 135. TWO (2) LAMP COMPACT RAPID START BALLAST



WIRING DIAGRAMS for 2-LAMP EMERGENCY OPERATION (2´-4´, 17-40W lamps only)

Two-lamp emergency operation is not possible with all ballasts.
Consult the factory for any ballast other than those shown.

FIG 140. TWO (2) LAMP RAPID START BALLAST

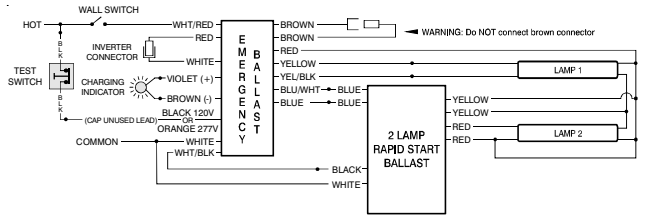


FIG 125. TWO (2) LAMP INSTANT START BALLAST

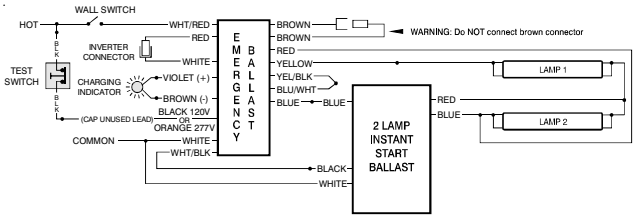


FIG 126. THREE (3) LAMP RAPID START BALLAST

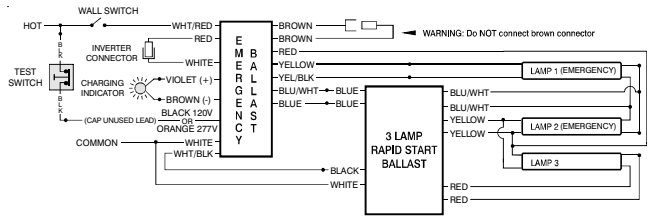


FIG 127. THREE (3) LAMP INSTANT START BALLAST

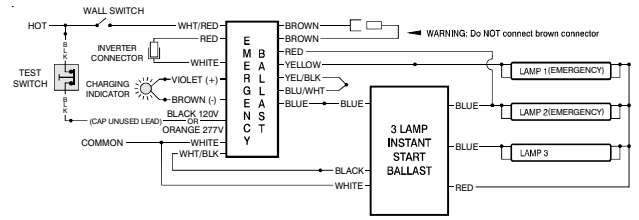


FIG 128. FOUR (4) LAMP RAPID START BALLAST

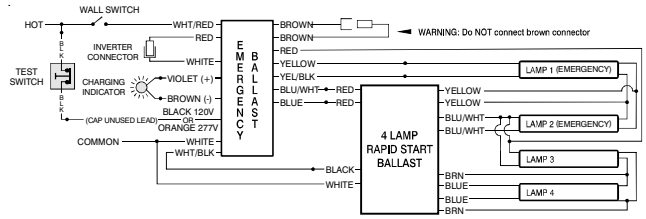


FIG 129. FOUR (4) LAMP INSTANT START BALLAST

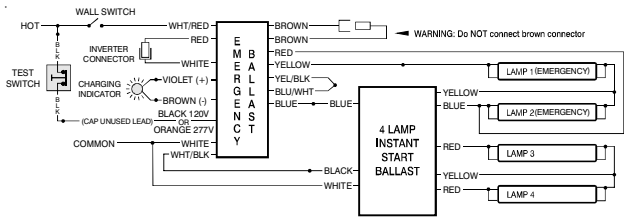
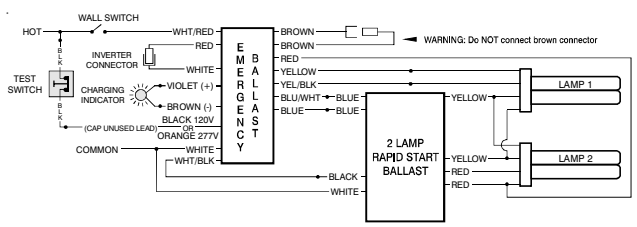


FIG 107. TWO (2) COMPACT LAMP RAPID START BALLAST



WIRING DIAGRAMS for EMERGENCY-ONLY FIXTURES

FIG 137. ONE (1) LAMP WITHOUT AC BALLAST (16W-215W)

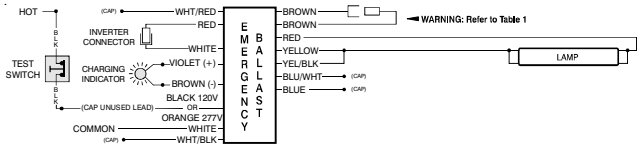


FIG 136. TWO (2) LAMPS WITHOUT AC BALLAST (17W-40W)

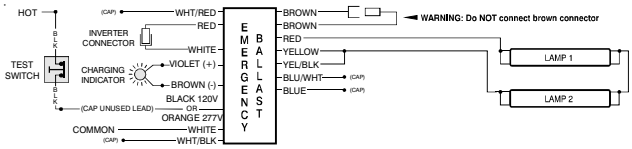


FIG 138. ONE (1) 4-PIN COMPACT LAMP WITHOUT AC BALLAST (16W-55W)

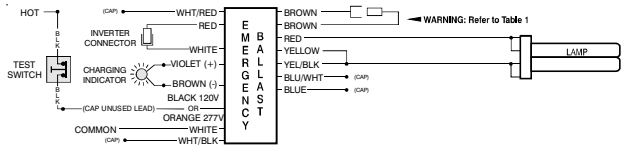
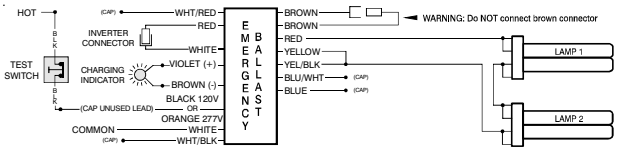


FIG 139. TWO (2) 4-PIN COMPACT LAMPS WITHOUT AC BALLAST (16W-39W)



NOTE: Installation of this networked fluorescent emergency ballast is different from standard models. The emergency ballast must interrupt the switched or unswitched hot lead feeding the AC ballast. Before beginning installation, consult these wiring diagrams.