

BAL1400

FLUORESCENT EMERGENCY BALLAST

Specification-grade

One or two-lamp emergency illumination



APPLICATION

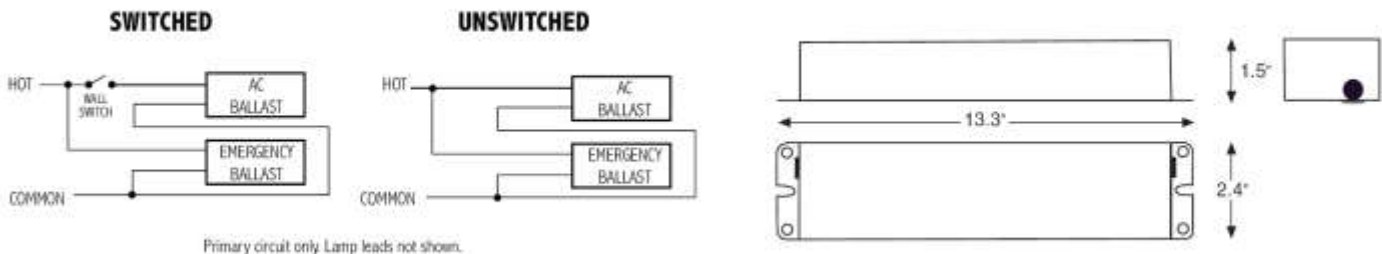
The BAL1400 fluorescent emergency ballast works in conjunction with the AC ballast to convert new or existing fluorescent fixtures into emergency lighting. The emergency ballast consists of a high-temperature nickel-cadmium battery, charger and electronic circuitry in one compact red case. This ballast can be used with most 17W through 215W (2' -8') T5, T8, T9, T10, or T12 fluorescent lamps without integral starters, including U-shaped, HO, VHO, circline, energy saving, and (4-pin) long compacts. One or two lamp operation may be selected. It is also compatible with most 1, 2, 3, and 4-lamp electronic, standard, energy saving, and dimming AC ballasts. If used in an emergency-only fixture, no AC ballast is necessary. The BAL1400 is suitable for use in indoor fixtures EXCEPT air handling heated air outlets, and wet or hazardous location fixtures. For information about specific lamp and ballast compatibility, please call the factory.

OPERATION

When AC power fails, the BAL1400 immediately switches to the emergency mode, keeping one or two lamps illuminated at a reduced lumen output for a minimum of 90 minutes. When AC power is restored, the ballast automatically returns to the charging mode.

INSTALLATION

The BAL 1400 does not affect normal fixture operation and may be used with either a switched or unswitched fixture. If a switched fixture is used, an unswitched hot lead must be connected to the emergency ballast. The emergency ballast must be fed from the same branch circuit as the AC ballast. The BAL1400 may be installed inside, on top of, or remote from the fixture. The emergency ballast may be remote-installed up to half the distance the AC ballast manufacturer recommends removing the AC ballast from the lamp, or up to 50 feet, whichever is less. Installation is not recommended with fixtures where the ambient temperature may fall below 0°C for extended periods.



UL AND CODE COMPLIANCE

The BAL1400 has been tested by Underwriters Laboratories in accordance with the standards set forth in UL924, "Emergency Lighting and Power Equipment," and is UL Listed for factory and field installation. Emergency illumination time exceeds the National Electrical Code (NEC), Life Safety Code (NFPA-LSC) and UL 90-minute requirements.

BATTERY

Since high temperatures exist in fluorescent fixtures, the BAL1400 uses a specifically constructed, high-temperature nickel cadmium battery. This battery requires no maintenance and has a life expectancy of 7 – 10 years.

EMERGENCY ILLUMINATION

Depending on the number (one or two), wattage and type of lamps selected, the BAL1400 produces 1100 – 1400 lumens initial emergency light output (contact factory for specific information on the lumen output for different lamps). If two-lamp operation is selected, light output is evenly divided between the lamps for better distribution of emergency illumination.

SPECIFICATION

Emergency lighting shall be provided by using a standard fluorescent fixture equipped with Howard BAL1400 emergency ballast. This emergency ballast shall consist of a high-temperature, maintenance-free nickel-cadmium battery, charger and electronic circuitry contained in one 13 3/8" x 2 3/8" x 1 1/2" white metal case. A solid-state charging indicator light to monitor the charger and battery, a single-pole test switch, and installation hardware shall be provided. The emergency ballast shall be capable of operating One or Two 17W – 215W Single Pin or Bi-Pin fluorescent lamps including Standard, Energy Saving, HO, VHO, Circline, U-Shaped and 4-pin rapid-start long compacts in the emergency mode for a minimum of 90 minutes. The BAL1400 shall have 4.0 Watts of input power, a 24.0 Watt-hour battery capacity, and exceed emergency standards set forth by the current NEC. The emergency ballast shall be UL Listed for installation inside, on top of, or remote from the fixture, warranted for a full five years from date of purchase.

WARRANTY

Model BAL1400 is warranted for five (5) full years from date of purchase. This warranty covers only properly installed Howard emergency ballasts used under normal conditions. For the warranty period Howard will, at its option, repair or replace without charge a defective emergency ballast, provided it is returned to the factory transportation prepaid, and our inspection determines it to be defective under terms of the warranty. Repair or replacement, as stated above, shall constitute the purchaser's exclusive warranty, which does not extend to transportation, installation, labor or any other charges; nor does it apply to any equipment of another manufacturer used in conjunction with the emergency ballast.

PRODUCT SUMMARY

UL LISTED Factory or Field Installation	DUAL VOLTAGE INPUT 120/277VAC 60 Hz	BATTERY High Temperature Maintenance-Free Nickel-Cadmium Battery 7-10 Year Life Expectancy	TEMPERATURE RATING (AMBIENT) 0°C TO 50°C (32°F TO 112°F)
ILLUMINATION 90 Minutes	AC INPUT CURRENT 280mA	BATTERY CHARGING CURRENT 280mA	DIMENSIONS 13.3" X 2.4" X 1.5" (339mm x 60mm x 38mm) Mounting center 12.8" (325mm)
INITIAL LIGHT OUTPUT 1100-1400 Lumens	AC INPUT POWER RATING 4.0 Watts	RECHARGE TIME 24 Hours	WEIGHT 3.4 lbs (1kg)
FULL WARRANTY 5 Years (NOT pro-rata)	TEST SWITCH Single pole	CHARGING INDICATOR LIGHT LED	



CAUTION :Contains nickel-cadmium rechargeable battery. Must be recycled or disposed of properly.



Installation Instructions

When using this lighting device the safety precautions should be followed at all times.

PLEASE READ CAREFULLY AND FOLLOW ALL INSTRUCTIONS FOR YOUR OWN SAFETY

1. This device is designed for indoor use. Do not use outdoors.
2. Prior to installation, battery connector must be open to prevent high voltage from being present on our put leads (red & yellow).
3. This device is designed for use with most 17W through 215W (2' -8') T5, T8, T9, T10, or T12 fluorescent lamps without integral starters, including U-shaped, HO, VHO, circline, energy saving, and (4-pin) long compacts.
4. Please ensure the electrical connections conform to the National Electrical Code and local regulations if applicable.
5. To avoid electric shock, please disconnect normal and emergency power supplies and battery connector of the emergency ballast before servicing.
6. This device is designed for factory or field installation in either the ballast channel or on top of the indoor fixtures. Do not install this device near gas or electric heaters.
7. AC power source of 120VAC or 277VAC is required.
8. The battery is sealed, non-maintenance, and is not replaceable in the field. Please contact manufacturer for information on service. Do not attempt to service the battery please.
9. Do not use accessory equipment that is not recommended by manufacturer. Failure to do so may cause unsafe conditions. Servicing should only be performed by qualified service personnel.
10. Do not use the product for other purpose that the product is NOT designed for.



CAUTION : Contains nickel-cadmium rechargeable battery. Must be recycled or disposed of properly.



HOWARD
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Specifications subject to change without notice
Page 3 of 6

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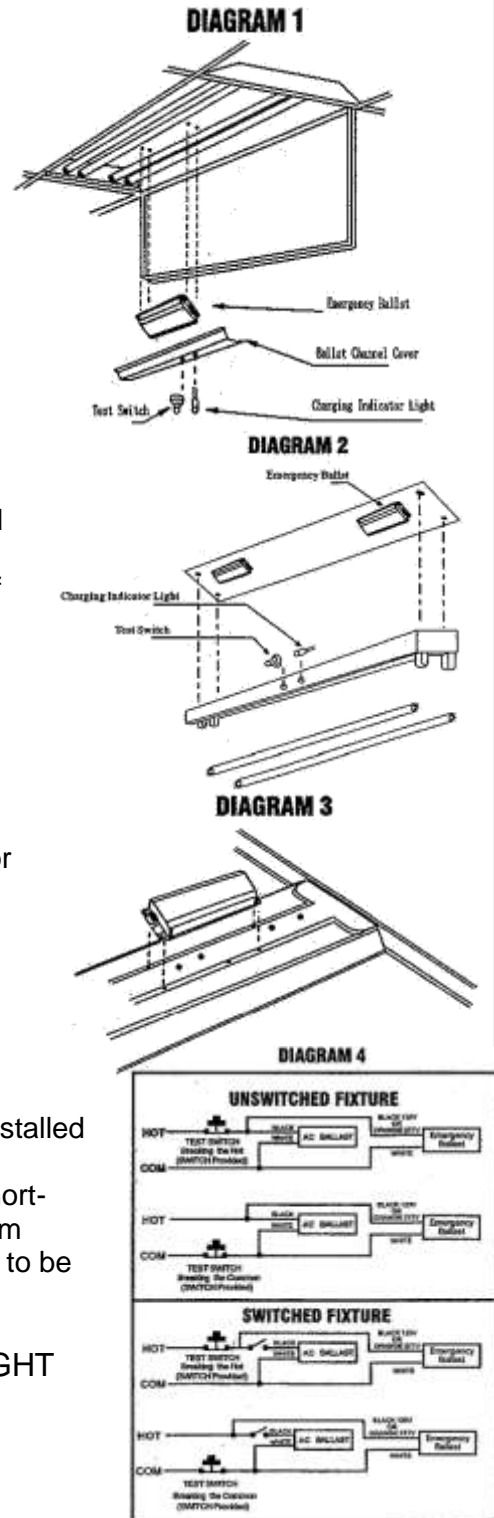
Installation Instructions

NOTE: All the branch circuit wiring has to be ready as well as an unswitched source of power before the fixture is installed. Confirm that the same branch circuit runs the emergency ballast and the AC ballast.

CAUTION: Battery connector has to be opened for preventing high voltage on output leads (red & yellow). Wait until all the installation process is completed and AC is supplying power to the emergency ballast then join the battery connector.

1. AC power has to be off before installation.
2. Choose the right wiring diagram to connect the emergency ballast to AC ballast and lamp.
3. Please ensure the electricity connections conform to the National Electrical Code and local regulations if applicable.
4. Follow diagram 1&2 to install the emergency ballast on the top of fixture or in the ballast channel.
5. To install the test switch, it would go through the side of a strip fixture or the ballast channel cover of a troffer. Follow diagram 1&2 to drill a 1/2" hole and install the test switch. In order to remove AC power from both the emergency ballast and the AC ballast, the test switch has to be connected properly (check diagram4).
6. Matching violet and brown leads to connect the charging indicator light to the emergency ballast (Check diagram 5). The charging indicator would be on after the fixture is installed properly.
7. Please search in readily visible location and stock the label with "CAUTION: This Unit Has More Than One Power Supply Connection Point. To Reduce The Risk Of Electric Shock, Disconnect Both The Branch Circuit-Breakers Or Fuses And Emergency Power Supplies Before Servicing."
8. Do not join the inverter connector until the fixture is completely installed and supply AC power to the emergency ballast.
9. The battery needs to be charged for one hour in order to have short-term testing on the emergency function. Before having a long-term emergency function testing, the battery in emergency ballast has to be charged for 24 hours.

NOTE: MARK AN APPROPRIATE LABEL ON INDICATOR LIGHT AND TEST SWITCH AFTER INSTALLATION



OPERATION:

THE CHARGING INDICATOR LIGHT WOULD BE ON TO INDICATE THE BATTERY IS BEING CHARGED WHEN AC POWER IS APPLIED.

THIS EMERGENCY BALLAST WOULD FUNCTION AND OPERATE ONE OR TWO LAMPS WHEN THE AC POWER IS FAILED.

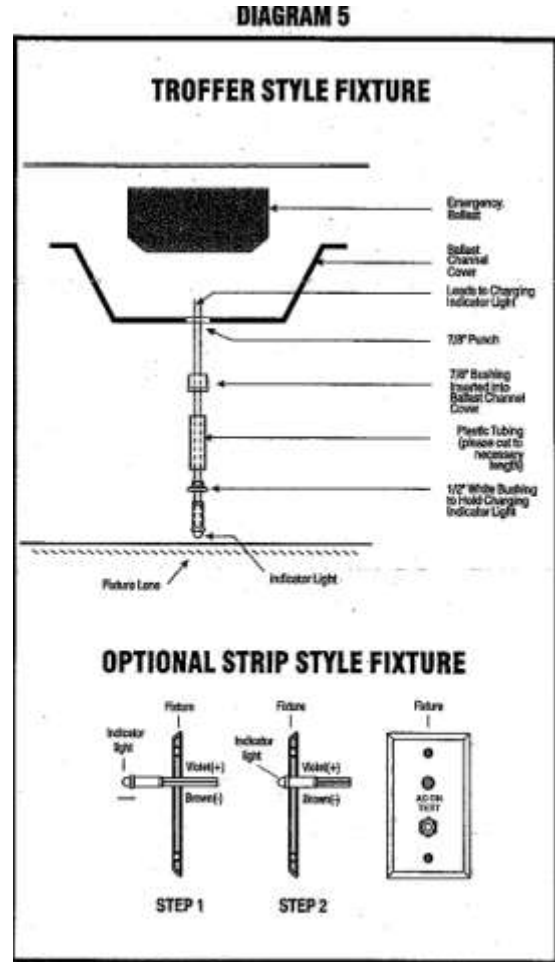
THE DEVICE OF THIS EMERGENCY BALLAST WILL OPERATE 17 WATT TO 215 WATT LAMPS AT LEAST 90 MINUTES.

MAINTENANCE:

NOTE: SERVICES SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL.

THE EMERGENCY BALLAST SHOULD BE CHECKED PERIODICALLY TO CONFIRM FUNCTIONING AND THE FOLLOWING SCHEDULE IS RECOMMENDED

- 1) TO INSPECT THE CHARGING INDICATOR EVERY MONTH AND CONFIRM THAT IS ILLUMINATED.
- 2) PUSH THE TEST SWITCH FOR 30 SECONDS TO ENSURE THE EMERGENCY BALLAST IS FUNCTIONING, RECOMMENDED TO PERFORM THIS TEST EVERY 30 DAYS.
- 3) PERFORMING A LONG-TERM (90 MINUTE BATTERY DISCHARGE) IN EVERY YEAR. ONE OR TWO LAMPS SHOULD BE OPERATED FOR NO LESS THAN 90 MINUTES.



NOTE: MARK AN APPROPRIATE LABEL ON INDICATOR LIGHT AND TEST SWITCH AFTER INSTALLATION.

TABLE 1 (FOR BROWN CONNECTOR)

Lamp Diameter	1", 1-1/4", 1-1/2" (T8, T10, T12)		1", 1-1/4", 1-1/2" (T8, T10, T12)			LONG COMPACT			COMPACT	
	SINGLE OR BIPIN		SINGLE OR BIPIN			4-PIN (2G11)			4-PIN (G24q, GX24q)	
Power (Length)	17-24W		32-40w (2'-4')		40-110w (5'-8')	18-39W		40-50W	18-42W	18-32W
Number of Lamps Emer.	1	2	1	2	1	1	2	1	1	2
Brown Connector	CLOSE	OPEN	CLOSE	OPEN	OPEN	CLOSE	OPEN	OPEN	CLOSE	OPEN

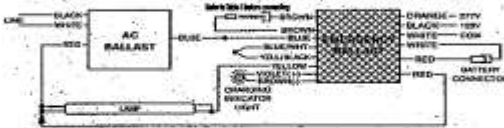
EMERGENCY BALLAST AND AC BALLAST MUST BE FED FROM THE SAME BRANCH CIRCUIT

TYPICAL SCHEMATICS ONLY. MAY BE USED WITH OTHER BALLASTS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAMS.

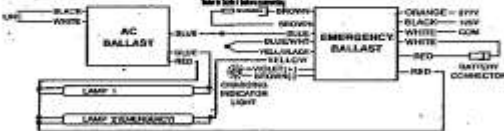
WIRING DIAGRAM

For One Lamp Emergency Operation

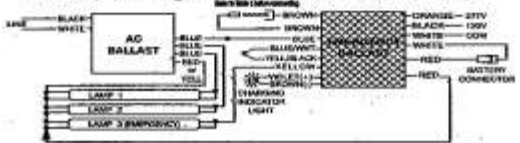
A. One (1) Lamp Instant Start AC Ballast



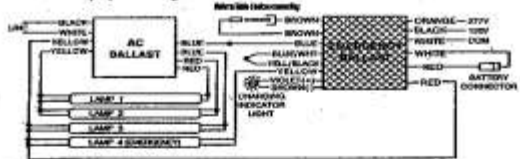
B. Two (2) Lamp Instant Start AC Ballast



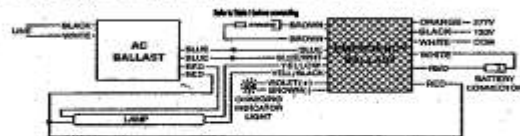
C. Three (3) Lamp Instant Start AC Ballast



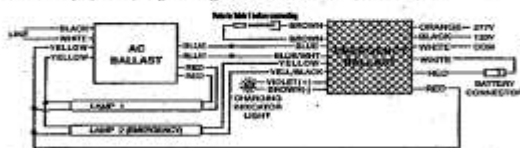
D. Four (4) Lamp Instant Start AC Ballast



E. One (1) Lamp Rapid Start AC Ballast

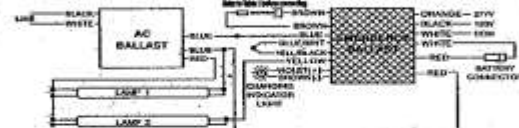


E. Two (2) Lamp Rapid Start AC Ballast

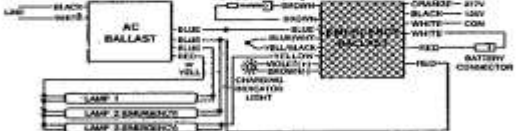


For Two Lamps Emergency Operation (17-40W)

A. Two (2) Lamp Instant Start AC Ballast



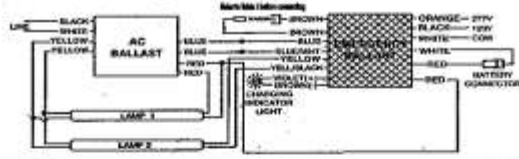
B. Three (3) Lamp Instant Start AC Ballast



C. Four (4) Lamp Instant Start AC Ballast

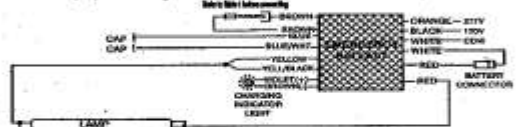


D. Two (2) Lamp Rapid Start AC Ballast

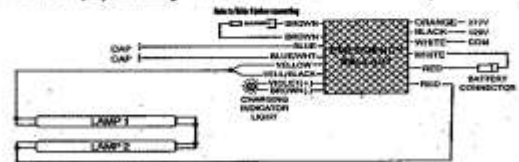


Emergency only Operation

A. One (1) Lamp Without AC Ballast (17-110W)



B. Two (2) Lamp Without AC Ballast (17-40W)



NOTE: Use the proper tap cap to unswitched AC lead