

OPERATION
DISPLAY PANEL COMPONENTS

continued...

Lamp Sensing Adjustment

ESS-I and ESS-I-2

These models are supplied without remote fixture capability. The lamp sensing circuit is factory set at time of shipment. No further adjustment required.

All Other Self-testing Lite² Series Models

These models provide sufficient battery power to operate the unit's integral lamp(s) plus one or more remote lighting fixtures. In order for the self-testing electronics module to detect a lamp failure in any of the connected fixtures, the lamp sensing circuit must be adjusted.

Procedure:

1. With a small screwdriver, turn the Lamp Sense Adjust potentiometer fully **counterclockwise**. Refer to Fig. 3.
2. Press the unit test switch *twice*. The emergency lamps will illuminate and a 5 minute self-test will begin. Verify that all connected lamps are illuminated.
3. The green "Operating Status" LED on the unit's self-testing control panel will also begin to flash. The "Lamp Fail" LED located on the charger board (See Fig. 3) should not be illuminated at this time.
4. Slowly turn the "Lamp Sense Adjust" potentiometer **clockwise** until the "Lamp Fail" LED on the charger board (See Fig. 3) illuminates. Then turn the adjustment pot **counterclockwise** just slightly beyond the point where the "Lamp Fail" LED turns off to avoid false failure indications. At this point, the red "Service Alert" LED on the unit's self-testing control panel will begin a repetitive cycle of flashing 5 times followed by a pause ("Lamp Fail" service alert).
5. While the self-test is still in progress, disconnect one of the emergency lamp wires from the charger board. The "Lamp Fail" LED on the charger board (See Fig. 3) should turn on. Reconnect the lamp wire and observe that the "Lamp Fail" LED goes out. If "Lamp Fail" LED remains illuminated, turn the "Lamp Sense Adjust" potentiometer fully **counterclockwise** and repeat step 4.
6. Allow the 5 minute self-test to end (or press the test switch again to cancel self-test cycle).
7. Press the test switch again. Verify that the "Lamp Fail" LED and the "Service Alert" LED are not illuminated. Press the test switch again to cancel the remainder of the self-test.

SERVICE

Taking A Unit Out Of Service

If a unit is to be deliberately taken out of service for an extended period, the positive battery lead should be disconnected from the charger/transfer module and insulated so that the battery will go into storage in a fully charged condition.

Replacing The Charger Module Assembly

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| <ol style="list-style-type: none"> 1. De-energize the AC power. 2. Remove the lens diffuser and the reflector. See "Preparation For Mounting" section. 3. Disconnect the yellow (—) battery lead. See Fig. 3. Insulate the end with tape. = 4. Remove screw securing the printed circuit board. 5. Cut the transformer leads (white, black | <ol style="list-style-type: none"> and red) and disconnect the remaining leads. 6. Install the new P. C. board assembly and reassemble unit by reversing the previous steps. See Fig. 3 to help with the wiring. 7. Follow instructions sent with the new module. |
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Replacing A Battery

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| <ol style="list-style-type: none"> 1. Follow steps 1, 2 and 3 above. 2. Remove the battery bracket screws and remove the battery(s). 3. Replace with a new battery (see unit model label for correct part number). 4. If the unit has two batteries, cut the connectors off the new batteries and use mechanical wire connectors to make the | <p>proper connections. See Fig. 3 to help with the wiring.</p> <p>Note: All red leads are connected together; all yellow leads are connected together. When connecting the battery leads, double check for correct polarity. Reassemble and test the unit. See "Operations" section.</p> |
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Replacement Parts List

Description	Part Number
Charger Assembly	See part number label on charger P. C. B. assembly
Battery	See unit model label
Emergency Lamp	See unit model label
Fuse	0140111
Fuse holder	0150059
Semi-recess kit, F-SRM	F-SRM



EDS SERIES
SELF-TESTING SELF-DIAGNOSTIC
EMERGENCY LIGHTING UNIT

Instructions for
INSTALLATION • OPERATION • SERVICE

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. Do not use outdoors.
2. Do not let power supply cords touch hot surfaces.
3. Do not mount near gas or electric heaters.
4. Use caution when servicing batteries. Battery acid can cause burns to skin and eyes. If acid is spilled on skin or eyes, flush effected area with fresh water and contact a physician immediately.
5. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
6. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
7. Do not use this equipment for other than intended use.
8. Servicing of this equipment should be performed by qualified service personnel.

SAVE THESE INSTRUCTIONS

SPECIFICATIONS

AC Supply Voltage:	120/277VAC, 60 Hz., ± 10%
Power Consumption:	15 watts maximum
Battery Type:	Sealed maintenance free battery
Recharge Duty Cycle:	Within acceptable UL time standards
Charger Type:	Current limited, constant voltage, temperature compensated
Transfer Means:	Transfer circuit automatically energizes lamps on loss of AC power or brownout. Circuitry incorporates a low voltage disconnect to prevent deep battery discharge and an automatic 15-minute time-delay on re-transfer.
Test Means:	Electronics are programmed to automatically initiate periodic diagnostic/discharge test cycles designed to check transfer function, battery capacity and emergency lamp operation. Cycling includes a 1-minute test every 28 days, ± 3.5 hours, and a 30-minute test every 6 months ± 1 day. A manual test switch allows a user-programmable 1, 5, 30 or 60-minute diagnostic/discharge test at any time. During all automatic and user initiated self-tests, the unit's green "Operating Status" LED will blink to indicate a diagnostic cycle is in process.
Status Indication:	Green and Red LEDs indicate AC power and charging status, and diagnostic reporting of transfer, battery, charger or emergency lamp malfunction.

Note: Unit shipped with battery leads disconnected.



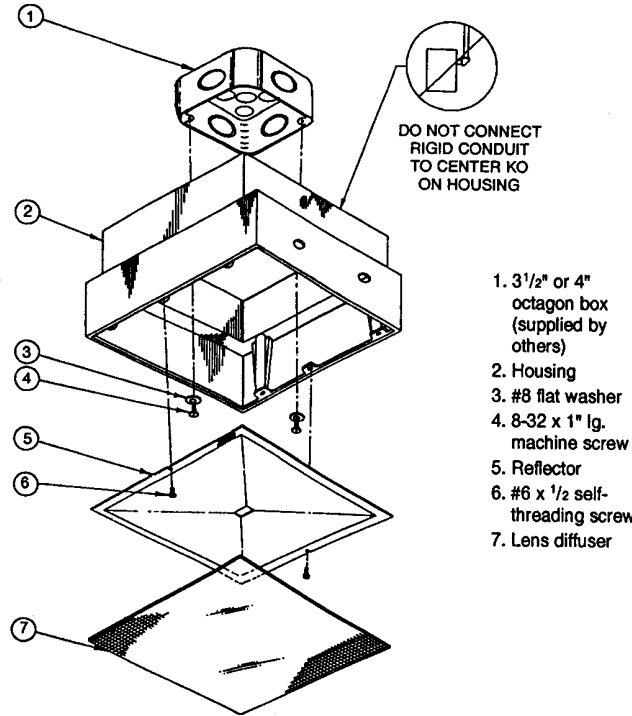
Hubbell Lighting, Inc.



General Instructions

This unit is designed for surface mounting on a wall or ceiling. Mount unit high enough to maximize lighting area under anticipated conditions of use. It may be semi-recessed with accessory kit #F-SRM. Do not mount unit where it will be exposed to direct sunlight, radiators, or other heat sources. Prolonged exposure to temperatures exceeding 95° F may reduce battery life and void warranty. Provide each unit with a single unswitched supply from a 120VAC or 277VAC branch circuit used for normal lighting in the area to be protected. The wiring should be a permanent installation using metal enclosed wire. The unit housing will accept 3½" or 4" octagon outlet boxes direct. A universal mounting ring, which is supplied with each unit, may be used to rotate the fixture 360°.

Fig. 1



1. 3½" or 4" octagon box (supplied by others)
2. Housing
3. #8 flat washer
4. 8-32 x 1" lg. machine screw
5. Reflector
6. #6 x ½" self-threading screw
7. Lens diffuser

Installing The Unit: Surface Mounting

1. Be sure branch circuit is deenergized.
2. Connect mounting ring, if used, to octagon box. See Fig. 1.
3. Fasten housing to octagon box with (two) #8 flat washers and #8-32 x 1" machine screws. See Fig. 1.
4. Connect remote lamps (if used) at this time. See Table 1. Refer to Fig. 3 to help with the wiring. After energizing the branch circuit (Step 7), follow steps outlined under *Operation, Lamp Sensing Adjustment Procedure*.
5. Refer to "Preparation For Mounting". Make up AC power input connections using mechanical wire connectors. Select either: black and white for 120VAC, or red and white for 277VAC operation. **Note: insulate the unused lead with tape.**
6. Install reflector and lens diffuser.
7. Energize the branch circuit.
8. Refer to Operation section.

Table 1

Maximum cable/conduit lengths, battery unit to remote fixture

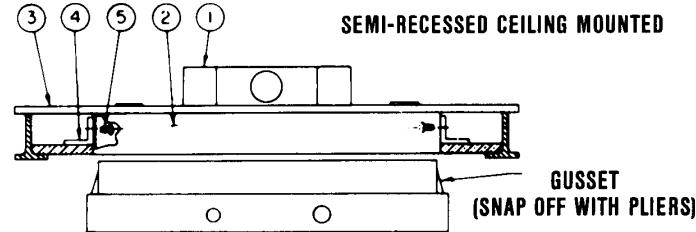
Wire Size	12	10	8	6
Max. Distance (in feet)	63	100	160	253

Preparation For Mounting

If the unit is shipped with lens diffuser and reflector mounted, remove lens by sliding the tip of a screwdriver into the slot where the words "Pry Out" appear, then pry out the lens. Take out the reflector by removing the two #6 screws. See Fig. 1.

Note: When replacing the reflector, position it so that its edges are equally spaced from the sides of the housing, before tightening the #6 x ½" screws. See Fig. 1. To replace the lens diffuser, simply "bow in" the center and slide the lens diffuser in where housing is marked "Slip In". The smooth side of the lens diffuser faces the inside of the unit.

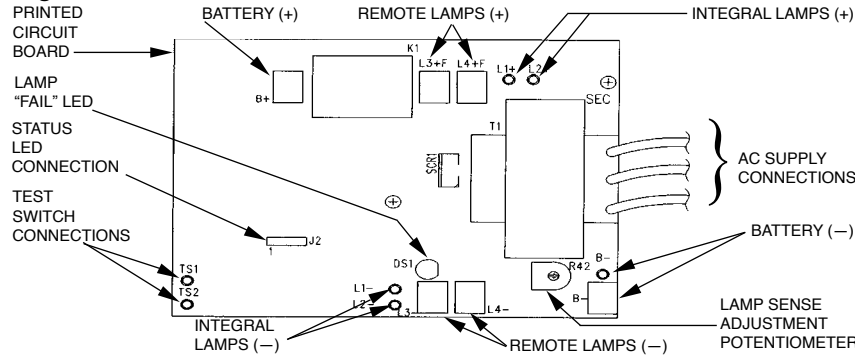
Fig. 2



1. 3" or 4" box (supplied by others)
2. Metal back box
3. Suspension bars (supplied by others)
4. Mounting ears
5. #8 self-threading screw ½" long

REFER TO INSTRUCTIONS SUPPLIED WITH ACCESSORY KIT

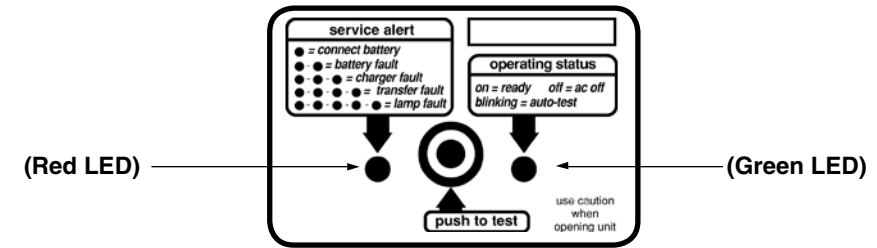
Fig. 3



Installing The Unit: Semi-recessed Mounting (Requires accessory F-SRM, semi-recessed mounting kit)

1. Be sure branch circuit is deenergized.
2. Cut an 8⅜" square opening in the wall or the ceiling.
3. If back box support clips are to be used, remove keyed slots on the side of the back box.
4. If the unit is to be suspended-ceiling mounted, use suspension bars as shown in Fig. 2.
5. In order to insert the Lite² housing into the back box, it will be necessary to remove the eight housing gussets with a pair of pliers.
6. Connect remote lamps (if used) at this time. See Table 1. Refer to Fig. 3 to help with the wiring. After energizing the branch circuit (Step 10), follow steps outlined under *Operation, Lamp Sensing Adjustment Procedure*.
7. Refer to "Preparation For Mounting". Make up AC power input connections using mechanical wire connectors. Select either: black and white for 120VAC, or red and white for 277VAC operation. **Note: insulate the unused lead with tape.**
8. Connect yellow (-) wire to charger printed circuit board. *Caution:* Damage to battery may occur if battery is left connected for a long period of time without AC power.
9. Replace reflector and lens diffuser.
10. Energize the branch circuit
11. Refer to Operation section.

DISPLAY PANEL COMPONENTS



LED Indicators

Two status indicators, one green and one red, are provided on the control panel of all models equipped with the self-testing option.

Green Operating Status LED

The green Operating Status LED serves as both an AC power and a self-test indicator. During normal operation, the Operating Status LED will be illuminated, indicating the presence of AC power. During all automatic or manual self-test cycles, the Operating Status LED will blink at a 1 Hz. rate.

operating status
on = ready
off = ac off
blinking = test in process

Red Service Alert LED

Under normal operating conditions, the Service Alert LED indicator will remain off. In the event the self-testing Controller detects a malfunction, the Service Alert LED will blink at a 1 Hz. rate, based on the following table:

Red Status LED Code	Description
One blink ON/pause	Battery not connected
Two blinks ON/pause	Battery fault
Three blinks ON/pause	Charger fault
Four blinks ON/pause	Transfer circuit fault
Five blinks ON/pause	Emergency Lamp fault

Manual Tests

Using the unit test switch, users can initiate different duration test cycles based on the following table:

Initiating Action	Test Cycle
Press test switch once	1 minute
Press test switch twice	5 minutes
Press test switch 3 times	30 minutes
Press test switch 4 times	60 minutes

Note: Pressing test switch at any time after a test cycle has begun cancels remainder of test and returns unit to normal operation.

Automatic Tests

The unit will automatically initiate a self-test/self-diagnostic cycle based on the following table:

Testing Period	Duration of Test
Once a month	1 minute
Once every 6 months	30 minutes

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