

Maintenance

This emergency lighting unit should be tested and maintained in accordance with National Electrical Code and NFPA 101 Life Safety Code requirements. It is recommended that emergency light fixtures be tested for 60 seconds once a month and for 90 minutes once a year.

Taking A Unit Out Of Service

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

Replacing The Battery

1. De-energize the AC power.
2. Disengage the housing cover from the backplate.
3. Disconnect the battery leads from the charger circuit board.
4. Remove the battery bracket holding battery in place.
5. Replace with a new battery (see unit model label for correct part number). Install the battery bracket and reconnect leads.
6. Reassemble cover to backplate.

Replacing LED Lamps

The LED lamps inside the unit are not replaceable or field serviceable. Please see dual-lite.com for further assistance. access to the instruction sheet found in each allowable lighting load for the ELSS System. Please refer to these instruction sheets.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-005 (B) / NMB-005 (B)



RECYCLING INFORMATION

All steel, aluminum and thermoplastic parts are recyclable.
 NOTICE: Emergency units contain rechargeable batteries which must be recycled or disposed of properly.

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ELSS Power Supply

*Emergency Lighting Unit
 Installation, Operation and Maintenance Instructions*



93139263

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. Equipment should be mounted in locations and at heights where it will not readily be subject to tampering by unauthorized personnel.
5. The use of accessory equipment not authorized by the manufacturer may cause an unsafe condition.
6. Do not use this equipment for other than its intended purpose.
7. Servicing of this equipment should be performed by qualified service personnel.
8. Test cycling: the Life Safety Code (NFPA 101) requires testing of emergency lighting units once a month for a minimum of 60 seconds, and once a year for a minimum of 90 minutes.

INSTALLER:

- SEE UNIT LABEL FOR ADDITIONAL MODEL SPECIFICATIONS
- SAVE THESE INSTRUCTIONS FOR USE BY OWNER/OCCUPANT

WARNING – This product contains chemicals known to the State of California to cause cancer, birth defects and/or other reproductive harm. Thoroughly wash hands after installing, handling, cleaning, or otherwise touching this product.

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Troubleshooting

One blink fault code is present

- * Battery is disconnected from main board. Check connection is proper. Connector is keyed.
- * Connection to board is proper and still have single blink code. Check terminal wires to battery are tight and secure.

Two blink fault code is present

- * Batteries are shipped partially charged and disconnected. Connect battery leads and charge for 24 hours.
- * Two blink fault code remains after battery has fully charged past 24 hrs. If this occurs first press test button for one minute test. If fault is still present then battery requires replacement.

Three blink fault code is present

- * A three blink code indicates that the charger circuit has failed. Please contact technical services.

Four blink fault code is present

- * This is a transfer fault. Potential blown F4 Fuse located just below the remote emergency fixture termination block. Check and replace with same type and rating.
- * This is a possible relay fault on the board that is not serviceable. Please contact technical services.

Five blink fault code is present

- * This is an indication that you have exceeded the wattage rating of the ELSS System. Confirm you have no shorted emergency loads.
- * Confirm your wattage load calculations and either remove fixtures or change to a lesser load.
- * If you recently added another fixture; You will have to perform a new load learn by pressing the test button for > 6 seconds. You will witness a red / green alternate flashing light ending with steady green. You may have to clear the fault after load learn with a single press of the test button to initiate a one minute test. If status led shows steady green you have solve the problem.

Ten blink fault code is present

- * The ten blink fault code indicates that an automatic load learn of forced load learn (test button test > 6 sec) was not successful.
- * Load learn fault can be due to having an excessive load greater than the rating of the ELSS fixture. Check connections are correct to all lighting loads.
- * Recalculate your lighting loads and either remove and resize loads with different selected fixtures.

Installation considerations and best practices to reduce need for Troubleshooting.

- 1) If it is not possible to be on site for a fully charged battery that takes 24hrs. Be certain to check connected loads by performing a one minute forced test by pressing the test button once.

The one minute test will confirm you have not exceeded a system rated maximum load if test ends with a steady green status indication. If you witness a five blink rate, you have exceeded your load.

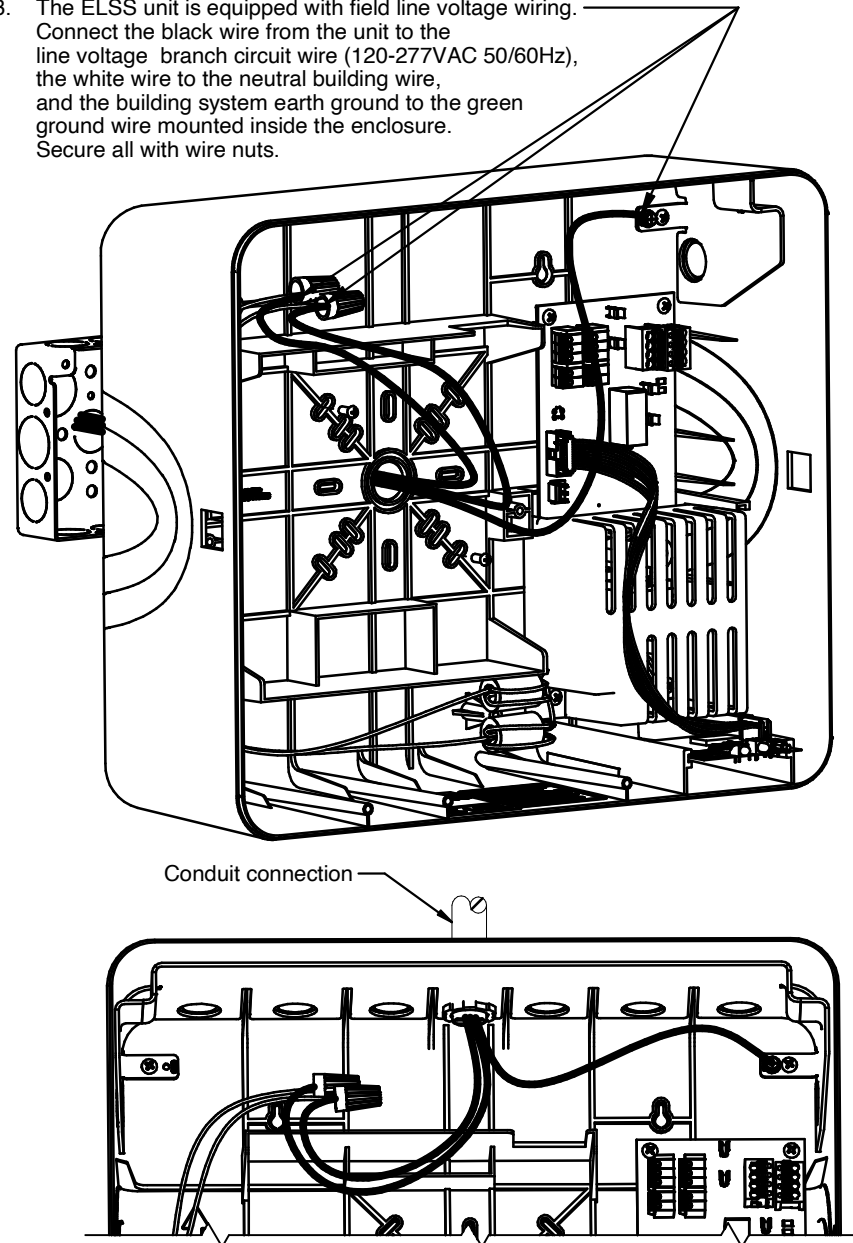
If you witness a two blink fault code after a one minute test, your battery is not fully charged. A fully charge battery will measure between 14.6 ~ 13.8Vdc. The system will pass a one minute test if voltage of battery is within a nominal range of 12.8V ~ 11.2V.

- 2) It is highly recommended that you confirm your exit and remote emergency lighting loads before considering your installation is complete. Press the test button twice to initiate a 90 minute test to allow you to walk to every fixture to confirm proper lumen operation. Once you have confirmed all lighting is operational, you can end the 90 minute test with a single press of the test button. Now; Perform a one minute test with a single press of the test button and wait for the test to conclude. You should witness a steady state green status indicator light. If you witness any fault please see the trouble shooting section.

- 3) If you continue to have trouble with excessive lighting loads or improper lighting. Consider the length of your remote loads from the ELSS Main Fixture. It is important to use large gage wire for long run lengths. It is important to initiate a manual load learn if you add additional remote lighting loads to an existing installed system (requires a complete charge of battery or battery measuring 14.6 ~ 13.8Vdc at battery terminals. Provided within this instruction sheet are budget wattage values for each type of Exit and Remote Emergency Lighting Fixture. Refer to this section of the instruction sheet for wattage clarity. You may at times need access to the instruction sheet found in each allowable lighting load for the ELSS System. Please refer to these instruction sheets.

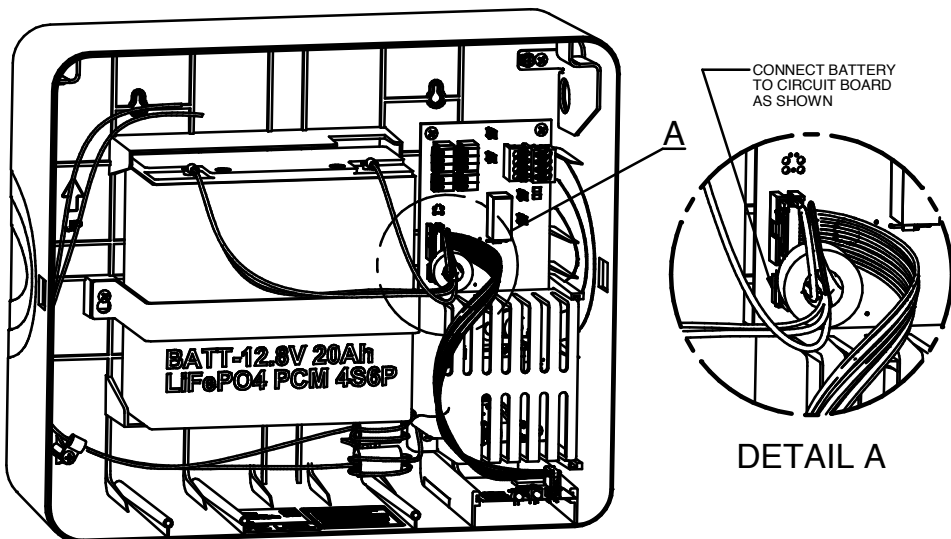
Step 1 - Mounting Instructions:

1. Remove appropriate knock-outs (K.O's) in backplate to mount backplate to junction box or wall. Do not rely on only the junction box to support the load of ELSS system. Installer must use the provided upper left and right mounting holes above junction box mounting features.
2. Remove center K.O. from backplate and feed wires through (J-Box install) or, remove the breakout on top of the housing, secure conduit to backplate and feed wires through (Conduit install).
3. The ELSS unit is equipped with field line voltage wiring. Connect the black wire from the unit to the line voltage branch circuit wire (120-277VAC 50/60Hz), the white wire to the neutral building wire, and the building system earth ground to the green ground wire mounted inside the enclosure. Secure all with wire nuts.

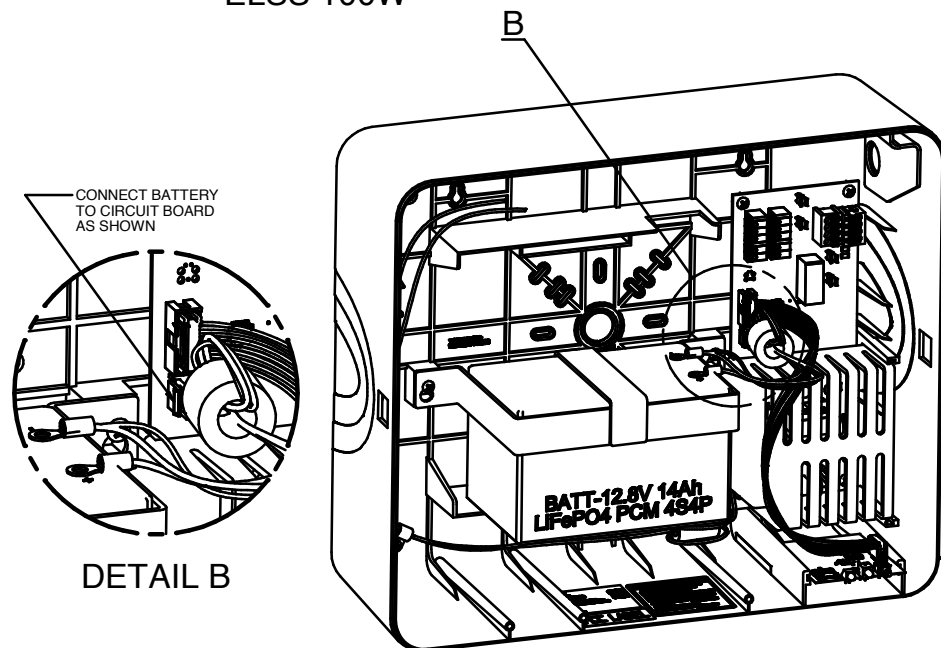


Step 2

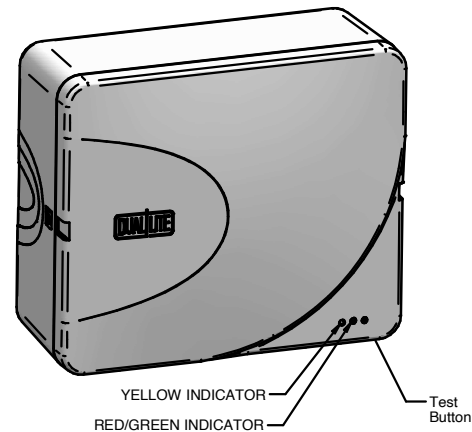
Install battery and its metal retainer with screws. Connect battery wire harness to circuit board.



ELSS 100W



ELSS 75W and 50W



GREEN LED Indicator is illuminated when AC power is present.

YELLOW LED Indicator is illuminated when in Emergency Mode.

NOTE: All models are supplied with an AC Lockout circuit, which prevents the emergency lights from illuminating when the battery is connected and no AC power is present.

NOTE: All models are supplied with a Low Voltage Disconnect circuit, which prevents damage to the battery from deep discharge during prolonged emergency operation.

NOTE: Batteries are often shipped in a discharged state – this is normal. The battery will require charging. Allow 24 hours of charging before testing the unit.

Models with SPECTRON® Self-Testing/Self-Diagnostic Circuitry

Models equipped with the Spectron® self-testing/self-diagnostic electronics system provide:

Visual indication of AC power status Visual indication of self-diagnostic test status and results

– Visual indication of any unit malfunctions include –

Battery Disconnected Battery Fault Charger Fault Transfer Fault Load Fault

Spectron equipped units also include:

Brownout protection: unit will automatically transfer to emergency operation upon detection of low AC power (approximately 80% of nominal line).

Time Delay Retransfer: upon return of normal AC power, unit will remain in emergency mode for an additional 15 minutes to allow AC power to stabilize.

Fault Indication Red Blink Pattern Description: See Troubleshooting Section for common solutions to faults detected.

- | | |
|--|---|
| ○ One Blink = Battery Disconnected. | Confirm Battery is connected. |
| ○ Two Blink = Battery Capacity / Bad Battery | Battery is not fully charged allow 24Hrs. |
| ○ Three Blink = Charger Fault | Charger Circuit has failed.. |
| ○ Four Blink = Transfer Fault | Potential Transfer Relay failure or blown output fuse |
| ○ Five Blink = Load Fault | Potential excessive load. |
| ○ Ten Blink = Load Learn Fault | Load excessive when automatic load learn took place. |

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 | Alternating: 30 minutes or 90 minutes |

Manual Tests

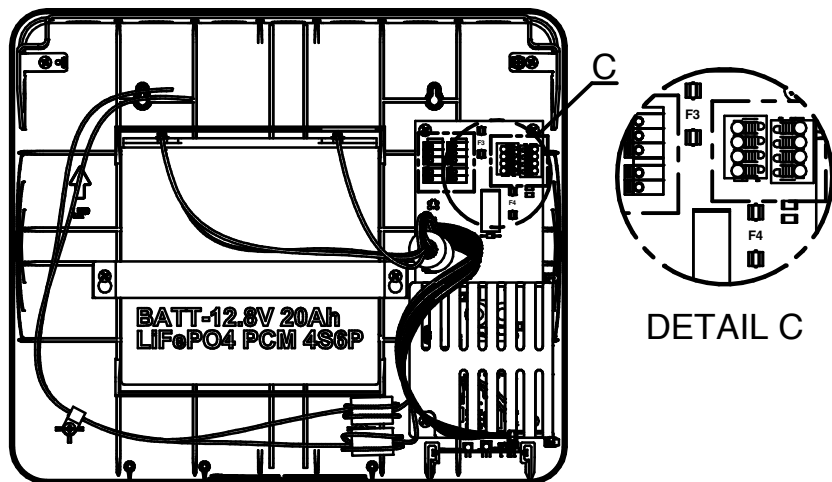
Using the unit test switch, users can initiate different duration test cycles based on the following table:

| Initiating Action | Test Cycle |
|-------------------------|------------|
| Press test switch once | 1 minute |
| Press test switch twice | 90 minutes |

Pressing the test switch any time after a 90 min. test cycle has begun cancels the remainder of the 90 min. test and returns the unit to normal operation.

Fuses:

- Fuse F4 is a replacement 5x20mm 8A fuse for ELSS Remote fixtures
- Fuse F3 is a replacement 5x20mm 2A fuse for ELSS Exit Signs



Load Learn Procedure:

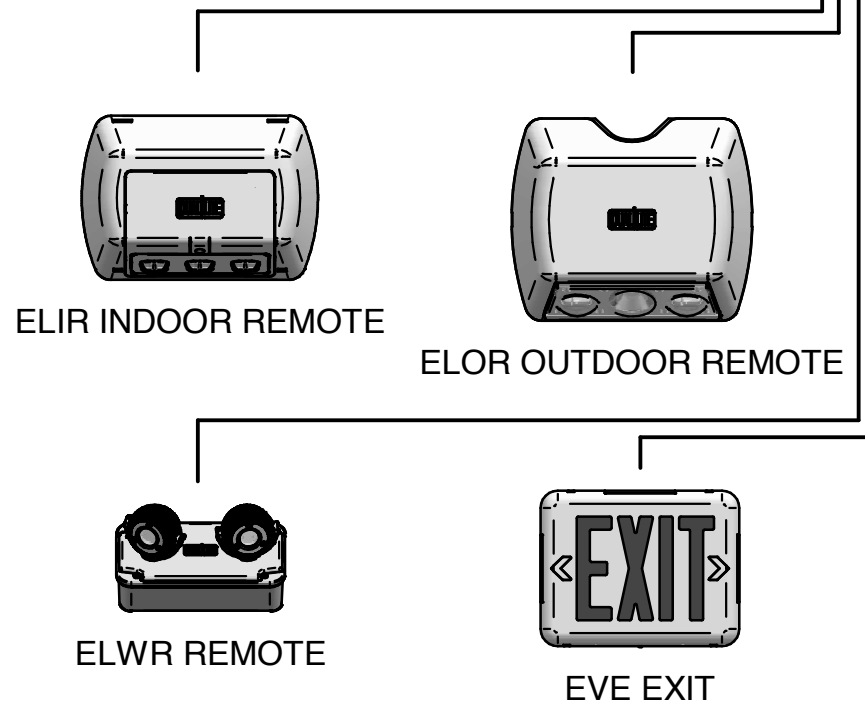
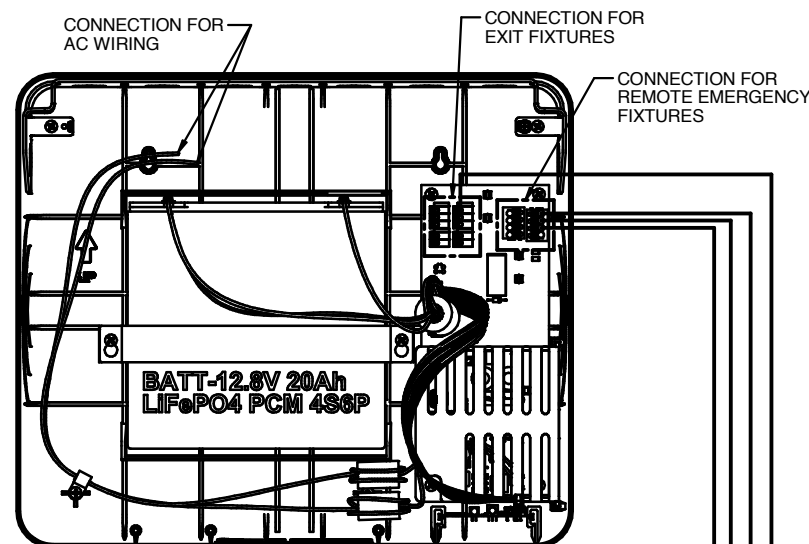
The ELSS system has an automatic load learn routine that will be performed once the battery has fully charged.

Installation of loads can be confirmed by the installer by performing a forced one minute test by depression of the test button. If the connected fixture loads exceed rated wattage you will be informed by a five blink red fault code indicating load fault. Correction a load fault with the removal of selected or resized loads. Refer to page 6 for load ratings of allowed remote lighting fixtures. Installation will require the installer to confirm each load is operation & connected. There are two method to allow the installer enough time to perform load connection confirmations. The installer can press the test button twice to perform a 90 minute test while allowing enough time to visually confirm operation of loads. The installer can also interrupt AC power to the system to enter emergency mode.

Step 3

Wiring Diagram General

NOTE: Wiring used shall be 12-18AWG for all ELSS remote fixtures, 14-18AWG for ELSS Exit Signs. The NEC allows up to 5% voltage drop across the fixture wire run length or maximum wire length run of 175 feet with 12AWG wire to your farthest installed fixture. Note: Remote lighting fixtures have the capability of being parallel connected daisy chained from field terminals.

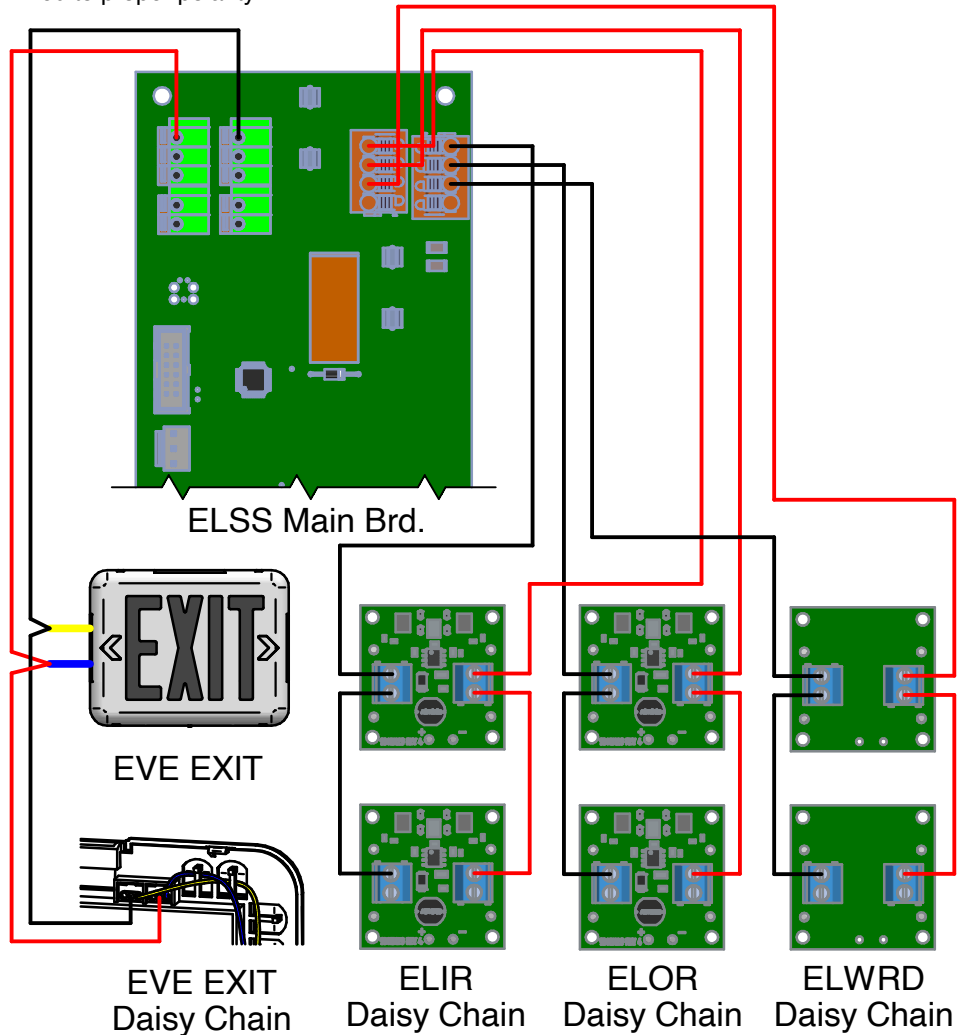


Step 3 Continued

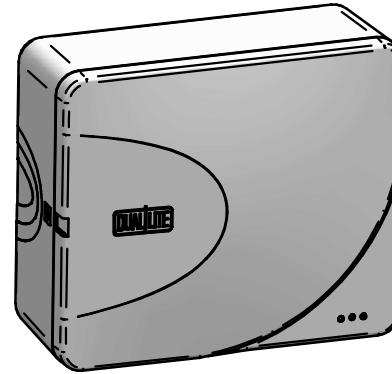
Wiring Diagram Detailed

See detailed view of Exit Fixture and Remote Emergency Fixture Push Terminals on the ELSS board. Each Exit or Remote Fixture push wire terminal requires a pair of wires for distribution to each fixture connected. Located within each Exit Fixture you will find input wire termination connection. See Exit Fixture installation instruction sheet for details. Each Remote Emergency Fixture has a screw terminal block for input terminations. Screw terminals are marked for polarity for wiring consistency even though the Remote Emergency Fixtures are not polarity sensitive. Each Remote Emergency Fixture provides a convenient daisy chain parallel connection to the next Remote Fixture. The limit to the number of daisy chain remotes is limited to the last Remote Fixture not exceeding 175 ft from the ELSS Main Unit. It is recommended to use the largest gage wire for long length single or daisy chained parallel connected runs. Never connect remote fixtures as serial daisy chain. Daisy chain connections are always a parallel bus connection.

IMPORTANT!: Exit Fixtures are polarity sensitive. You will damage Exit Fixtures if not wired to proper polarity.



Configuring the ELSS system requires calculation of total wattage capacity for both the ELSS remote circuit and ELSS exit sign circuit.

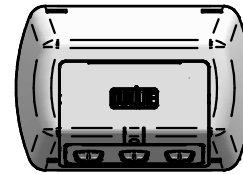


ELSS capacity: Remotes

- ELSS 100W = 100W total remote load
- ELSS 75W = 75W total remote load
- ELSS 50W = 50W total remote load

ELSS capacity: Exit Signs

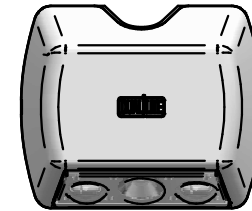
- ELSS 100W = 15W total exit sign load
- ELSS 75W = 10W total exit sign load
- ELSS 50W = 7.5W total exit sign load



ELIR INDOOR REMOTE

ELIR wattage for calculation:

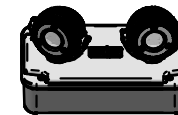
- ELIR3 = 8W
- ELIR3B = 8W
- ELIR2 = 3W
- ELIR2B = 3W
- ELIR2HP = 6W
- ELIR2HPB = 6W



ELOR OUTDOOR REMOTE

ELOR wattage for calculation:

- ELORW = 8W
- ELORB = 8W
- ELORDB = 8W



ELWRD REMOTE

ELWR wattage for calculation:

- ELWRD = 10W
- ELWRDHP = 16W



EVE EXIT

EVE Exit wattage for calculation:

- EVEURW-DC ELSS = 1W
- EVEUGW-DC ELSS = 1W