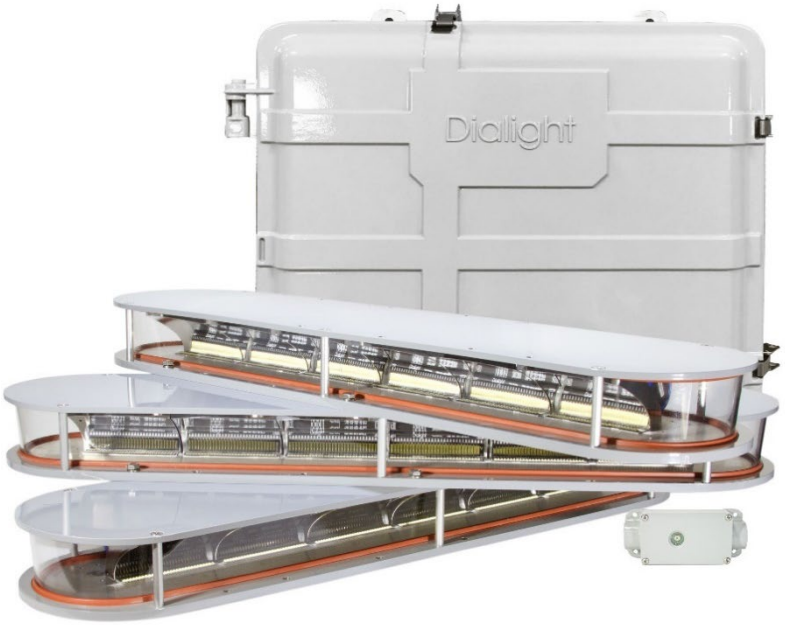
# QUICK START-UP GUIDE FOR

# L-856 / L-864 High Intensity Strobe

# With Infrared (IR)

# D366A57CTRAC - Base Controller

# D366A57270 - Power Supply & Flashhead

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## Contents

## Introduction

This manual is for the calibration of the sidelight levels, configuration of the system and manual lighting inspection.

## Overview

The system has been designed to allow a single system to be used on FAA Type B, Type C, Type F or Type G structures. The system gives the installer or site manager the ability to configure their system by way of the base controller.

During the install, the minimum required setup is to set the total number of Beacons being addressed. Failure to configure the system properly will result in “Config Errors” seen in the Alarm Log and S1 LED will be illuminated.

**NOTE: Supplier of the system is responsible for providing wiring diagrams and connections.**

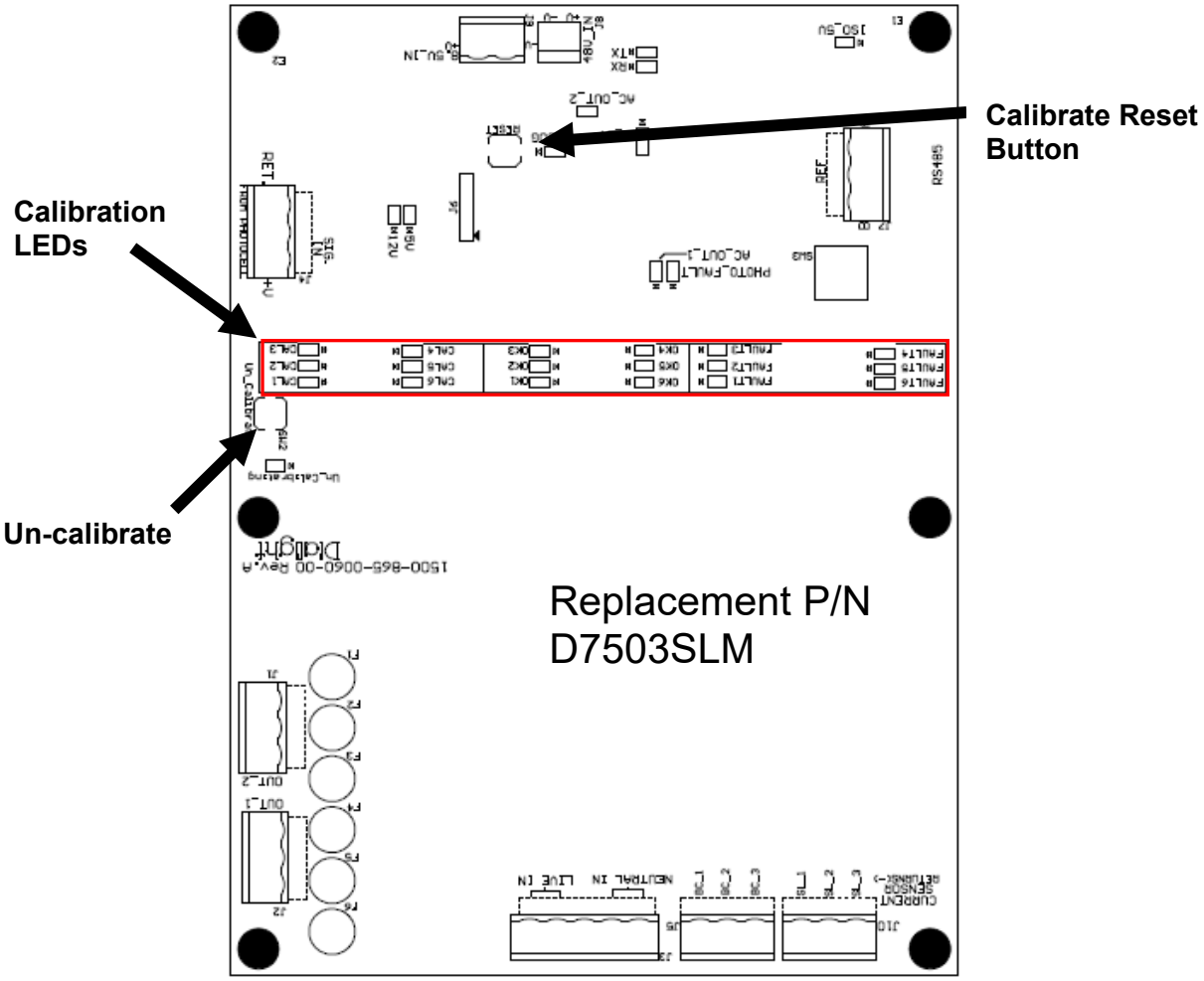
**During installing proper grounding techniques MUST be utilized. The system has built in Lightning and RF immunity at each section, but for it to be effective proper ground connection techniques must be used.**

## Warranty

Please visit www.dialight.com/resources/warranties for the latest warranty policy.

**Monitor Board Connections and Calibration**

Refer to the installer supplied system drawings for proper wire size and terminations.
FAA Type L-810 Side light levels will be connected to TB2 inside the Base Controller.




If no side lights are being installed then the installer should still calibrate to zero out the calibration. Re-calibration is required whenever a Side light is added or when a Side light is replaced.

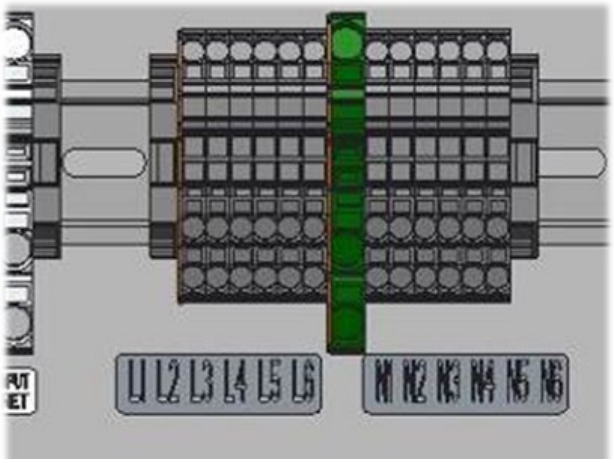
**WARNING:** The use of other Side lights CANNOT be used with this system. If existing side lights are not being replaced contact www.Dialight.com for compatibility.

**NOTE:** Calibration can be done once all lights are connected or done as levels are installed.
**NOTE:** Only calibrated side lights will be monitored.

Connection of the AC Marker Lights (L810's) to the Side Light Board

**WARNING: AC Voltage L810's are to be used for connecting to this system.**
**NOTE: Dialight Part number is RTOCR2700x**

1. Two tier of marker lights must be attached to TB2-L1 and L2 at a minimum for a standard FAA Type F-2 system. Additional tiers may be connected to the consecutive ports L2, L3, L4, L5 and L6 (as required).




2. Perform the Calibration scheme as follows:

A) Ensure Base Controller is ON and Home Screen is shown on LCD.
B) Un-calibrate the PCB by holding down the SW2 Un-calibrate button for approximately 3 seconds located on the side light monitor board.

**FAULT LEDs 1-6 will light up RED**

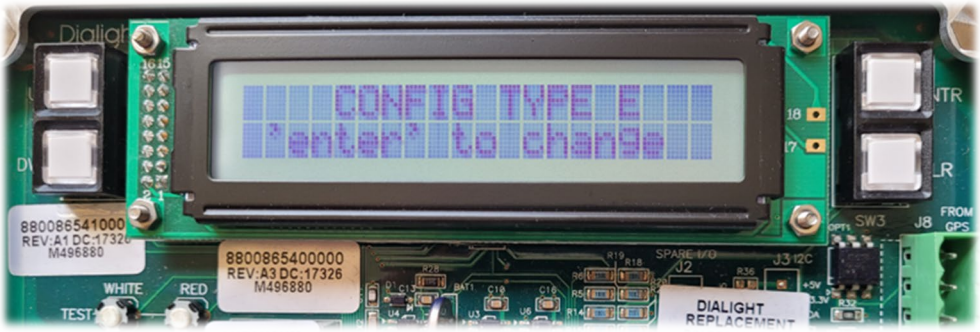
C) Press the SW1 Reset button on the same monitor board.
D) During the 4 second wait, the CAL LED's for each port (yellow) will light up, and if a marker, or marker tier, is connected to one or more ports, each port being utilized will have its OK LED (green) turn on, indicating a proper connection. If no marker or tier is connected, all corresponding LED's will turn off.
E) Once the calibrated ports respective OK LED's turn green and AC_OUT_1 LED (green) turns on (or if no markers are connected, all calibration lights turn off and AC_OUT_1 LED (GREEN) turns on).
F) Press the Reset button located on the main LCD board.

Each calibration port has been designed to accurately power and monitor up to 4 L810's simultaneously. If no Side lights are connected or wired in-correctly all corresponding LED's will turn off. If for some un-foreseen reason additional L810's are required contact **www.Dialight.com**.

**System Configuration Screens**

After all wiring connections are completed checked for accuracy. Provide Input Voltage first to the High Intensity Flashheads and Power Supplies, then power the Base Controller.

The Main LCD needs to be properly setup to ensure proper operation of the system. See pages 7 through 13 for setup procedure.




*Home Screen displayed may be different – for reference purposes only*

On the left side of the display will be the “UP” and “DWN” buttons.
On the right side of the display will be the “ENTR” and “CLR” buttons.

The Startup Screen Displays

The next 2 displays occur whenever the system is powered up or the reset button is pressed.

The Site manager and Installer should take a note of this screen if any troubleshooting is required.

| Dialight HI Base<br>REV. x Build: xx |
|---|

The screen will soon change to show the initialization of the system with a countdown of 15 flashes as the system checks for connected fixtures.

In some cases, this screen will go back to the Main screen if synchronization was faulty and the system will continue reboot until the issue is resolved.

If the screen stays at 15 and does not countdown, then no flashhead power supplies are being detected. Check the RS485 communications cable for proper wiring. Verify connection at the Base Controller, junction boxes, surge boards, and power supplies.

| Initial 15 Flashes<br>In Process |
|---|

Main Configuration Screens

The following screens allow the user or maintenance personnel to view and alter system configuration by pressing the “ENTR” button. The configuration consists of thirteen screens that set up the number of High Intensity Flashheads, enable AOL, number of sidelight levels and other system features.

Display 1: Configuration Display

This screen requires the installer or site manager to “config” the system prior to completion of the installation process. Each option displayed requires a selection of yes or no or a number to be entered based on the structure requirements. By pressing the “ENTR” button the user enters into the config setup.

Screen indicates the overall system configuration:

BC = Number of High Intensity Flashheads
AL = Number of Enabled AOL(s)
SL = Number of Sidelight Levels
EX = Enable External GPS for SYNC

**BC= xx, AL=x, SL=x, EX=N**
**‘enter’ to change**

Display 2: Setup number of High Intensity Flashheads

The installer must select a number from 1-18 by using the up/down arrows till the correct number of Beacons is shown. Once the correct number is displayed by pressing the “ENTR” button the user will enter the next screen.

If more Beacons are installed on the structure than the selected number, a “Config Event” will be shown in the event log screen. AL1 and S7 will illuminate RED indicating the Base Controller recorded more/less than the selected total Beacons.

**Number of BC = 9**
**u/d =chg, enter=done**

Setup Display 3: Enable AOL

**The factory default is 0 and can only be changed to 1, 2, or 3.**

If the system does not require an AOL light, then the user can press “ENTR” to move to the next option. An AOL can be added or disabled at any time during the operation of the system. The AOL must be approved by Dialight if added after initial system installation for compatibility. The Base Controller can accommodate up to three AOL units.

**AOL present = 1**
**U/D =chg, enter=done**

**WARNING: For 1 AOL the translator Board rotary knob must be set to “0” zero to work properly. For second AOL, set to “1”. For third AOL, set to “2”.**

The translator Board rotary knob must be set accordingly for the added AOLs. See D1CW AOL User Manual for additional details on translator board settings.

Setup Display 4: Number of Sidelight Monitor Boards (SD BDS)

**The factory default for this is 1 and can only be changed to 2 or 3.**

This is for the total number of Monitoring boards in the Base controller. The standard system comes with one sidelight monitoring board.

For structures that don’t have sidelights, the SD BDS needs to remain at 1 since the Photocell is connected to this board.

Once the selected number of monitoring boards is selected, press “ENTR” to move to the next option.

**Number of SD BDS = 1**
**u/d =chg, enter=done**

**NOTE:** The system recognizes the number of sidelight boards attached thus selecting more than amount connected will cause AL1 and S7 to illuminate.

Setup Display 5: External GPS

**The factory default setting for the config screen is NO.**

By using the Up/Down buttons the installer can select “YES” or “NO” when an external sync pulse (such as a GPS) is connected to the Base Controller, or another base controller is used for synchronization between 2 systems.

Press “ENTR” to move to the next selection.

| **External = NO**<br>**u/d =chg, enter=done** |
|---|

Setup Display 6: Transition Photocell Alarm

**The factory default setting for the config screen is NO.**

**Selecting YES:** The Base Controller will generate an alarm if the Photocell mode does not change after 18 hours. The Base Controller will switch the system to Day mode. To clear the alarm, the system requires a local reset or a forced operation change locally or remotely.

**Selecting NO:** After 18 hours of not transitioning the system will log an event in the log but the system will continue to operate normally based on light conditions. No alarm via dry contact or mod bus will be generated.

| **Trans PEC Alrm = YES**<br>**u/d=chg, enter=done** |
|---|

| **Trans PEC Alrm = NO**<br>**u/d=chg, enter=done** |
|---|

Use “UP” and “DWN” buttons to change from “NO” to “YES”, and then press “ENTR.”

Setup Display 7: DAY Flash

**The factory default setting for the config screen is ON.**

This sets up the operation of the High Intensity flashheads for Day operation. Setting to ON, has the system operate in White Day, White Twilight, and Red Night modes. Setting to OFF, the system will operate only in Night mode (FAA Type A, Red Only).

Press “ENTR” to move to the next selection.

| DAY Flash = ON<br>u/d =chg, enter=done |
|---|

Setup Display 8: Night Flash Color

**The factory default setting for the config screen is RED.**

This screen allows the user to select the flashhead color at Night between Red or White. Some sites do not require the use of Red at Night, so the system can operate White for Day, Twilight, and Night. Check the FAA Determination for the site for proper Night color.

By pressing the “ENTR” button the user will enter the option screen that by using the up/down arrows the desired flash at night can be selected. Once selected pressing the “ENTR” button the user will return to the main screen and the selected flash will be saved.

| Night flash = White<br>u/d =chg, enter=done |
|---|

| Night flash = Red<br>u/d =chg, enter=done |
|---|

Setup Display 9: Status on the sidelights

**The factory default setting for the config screen is STEADY.**

Depending on the FAA Determination, the sidelights will either be steady-state or flashing. When set to flashing, the sidelight levels will flash in sync with the high intensity flashheads. If no sidelights are installed within the system, the value will be set to Disable.

| L810 MODE= Steady<br>u/d =chg, enter=done |
|---|

Setup Display 10: Number of Sidelight Tiers

**The factory default setting for the config screen is 0.**

Display allows for selecting the total number of Sidelight Tiers (levels) that are installed on the structure. This will be set to 0 when no sidelights are installed. The maximum number allowed will be six.

Use “UP” and “DWN” buttons to change the number of sidelight tiers. Press “ENTR” to move to the next screen.

**Number of TIERS = x**
**u/d =chg, enter=done**

Setup Display 11: Total Number of Side lights

This will be the total number of sidelight fixtures installed. For systems without sidelights, set to zero. If the system has four sidelight tiers with three fixtures at each tier, set the number to 12.

**Total NUM L810 = x**
**u/d =chg, enter=done**

The maximum number allowed is 24 (6 tiers with 4 fixtures per tier).

Setup Display 12: Sidelight Flash Rate

**The factory default setting for the config screen is 30.**

This screen allows the setup of the flash rate of the sidelights. This will be set to 30 to match the flash rate of the high intensity flashheads during Night mode.

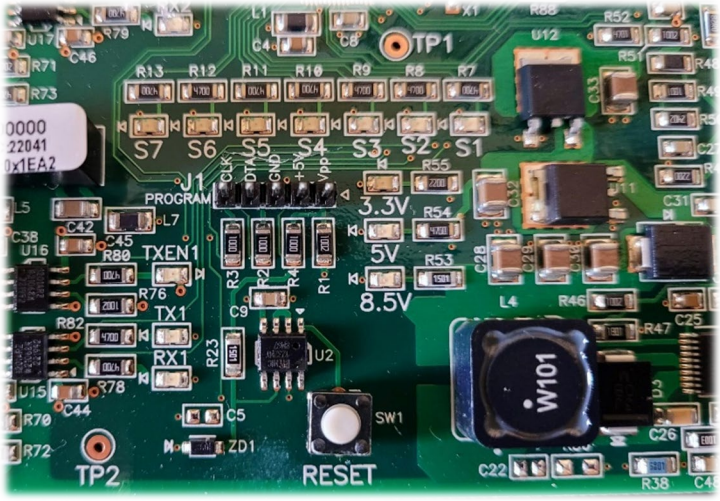
**Flash per min= 30**
**u/d =chg, enter=done**

Setup Display 13: Sidelight Calibration

This screen will allow for the automatic calibration of the installed sidelights. A manual calibration can be done as noted in section “Monitor Board Calibration”. The typical setting will be zero. Manual calibration is the preferred method.

**RECAL L810 = NO**
**u/d =chg,  enter=done**

After the configuration screens have been set to match the structure, the Base Controller requires a reset by pushing the RESET button located in the center of the LCD board.




After the reset, the Base Controller LCD will reboot and initialize with the new settings. Once completed, the Home Screen will appear.

**BC= 12, AL=1, SL=4, EX=N**
**‘enter’ to change**

*Example Home Screen*

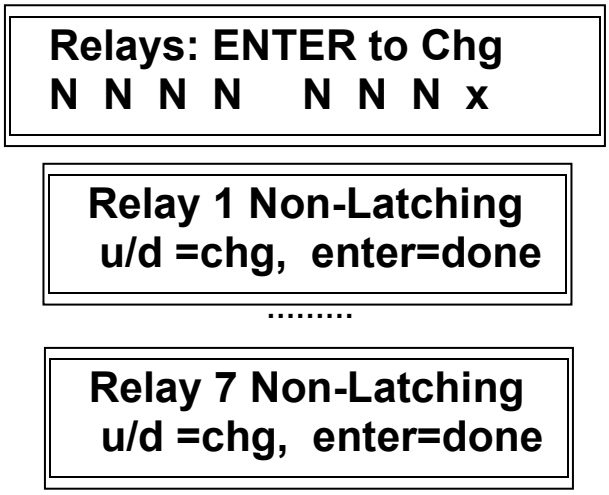
**Relay Latch Selection**

This screen allows the user to decide if the Dry contact relays are to be either latched or non-latched type. At the HOME DISPLAY screen, press the DWN button to navigate to the Relay Latch screen.

**Latched Relays:** The relay will stay in its selected state upon an “Alarm” but will not clear till the Alarm is resolved. Resetting the system by use of the RESET button on the main Micro is required.

**Non-Latched Relay:** The relay will clear the alarm based on if the system returns to normal operation. It is possible to get numerous Alarm notices if there is an intermittent condition.

Each relay can have its own setting; thus all 7 relay alarms can be either set to latch or non-latch. Factory default setting is non-latching for the 7 selections.




**NOTE:** AL8 (marked x) is the Photocell mode thus latching is not permissible.

**Status Screen of Alarms**

If an Alarm occurs, the Status screen will change from “NORMAL” to “ALARM” to indicate there is an active Alarm.

From the HOME DISPLAY, press “ENTR” twice to get to the Alarm Status screen. Time stamps are actual times that the alarm occurred. Refer to interpretation of the logs on page 25 of this guide for further details.

| Status: Normal<br>‘Enter’ to view Alrm | Status: Alarm<br>‘Enter’ to view Alrm |
|---|---|

When pressing the “ENTR” button, the last recorded alarm will be displayed first.

**NOTE:** Once the system is fully installed the Alarm logs MUST be cleared. It is recommended to clear any alarms that may have been generated during the installation and setup of the system.

To clear the logs, press and hold the “CLR” button until the display states “Clearing alarms, wait…”. Once completed, the alarm logs will be cleared.

**The following display is an example showing once the ENTR button is pressed.**

| A OCT 26, 13 “Time”<br>XXX Alarm Message ACT | A OCT 26, 13 “Time”<br>XXX Alarm Message CLR |
|---|---|
| ACT= Active Alarm | CLR= Cleared Alarm |

To return to main displays press the “CLR” button.

**Manual Light Inspection Test (LIT)**

The user can perform a manual lighting inspection to ensure proper operation of the system in its entirety. Full details of the LIT can be found starting on page 28 of this guide.

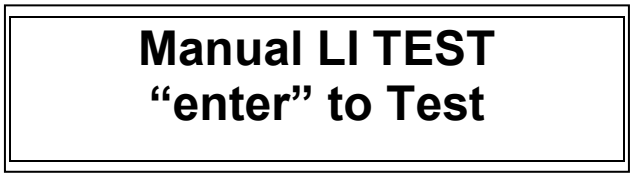
**NOTE**: Discrete and Modbus alarms will be generated during this test, if NOC is actively monitoring at the time of test, they will receive the generated alarms. Inform the NOC prior to starting the manual lighting inspection (MLI). See section “Manual Lighting Inspection Test” for more information and procedure to conduct the test.

Test will time out after 2 minutes of no user input during the manual test. The test relies on user input to complete the necessary checks.

**NOTE:** A lighting inspection can be done remotely but the Auto Lighting Inspection is required. The auto does not require covering of the photocell or pressing the selected mode during the auto test.

System must be in Day mode with the photocell before starting the test.

Press “ENTR” to initiate Lighting Inspection.



**Event Logs**

This screen allows the user to view all the Events that have occurred at a given time stamp. The highest or last log will be shown first. By using the up/down keys the user can scroll back 127 entries before the screen rolls back to the latest entry.

**NOTE:** If for some reason the highest entry cannot be found, press the “Clr” button to exit the log and then press the “ENTR” key to return to highest log.

| Press ‘enter’ key<br>to view event log. |
|---|

The following display is shown once the ENTR button is pressed

| E OCT 26, 22 “Time”<br>XXX Event Message ACT |
|---|

ACT: Active Alarm

| E OCT 26, 22 “Time”<br>XXX Event Message CLR |
|---|

CLR: Cleared Alarm

To return to main displays press the “CLR” button

To clear the logs, press and hold the “CLR” button for about 5 seconds or till the display “Clear alarms, wait ….”.

**Setting the Real Time Clock**

By selecting “ENTR” the user can set the actual time and date of the Base Controller. This is very important for troubleshooting or reviewing the Event and Alarm files. The micro board has a battery backup, so any loss of power to the Base Controller will not affect the date/time stamp. The time will not change automatically for Daylight Savings.

| MMM, DD,YY “Time”<br>‘Enter’ to set Clock |
|---|

| MMM, DD, YY “Time”<br>UD=Chg E=NEXT C=EXIT |
|---|

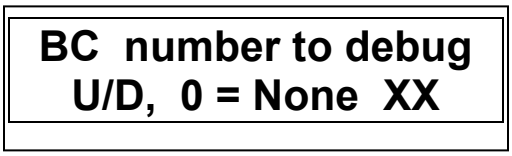
**Debug Screen**

This screen allows the user to enter into Debug mode for selecting an individually installed fixture.

By pressing the “ENTR” button the user can select the individual Beacon he wants to interrogate. Using the up/down buttons the installer selects the beacon number they want to receive events and alarms from. Once the number is selected, press the “CLR” button to go back to the main screens. Scroll to the BC (Beacon list) screen and check that only the desired number is showing. Once confirmed all the screens will act as normal but the event and alarm screen will only show results from the Beacon selected.

**NOTE:** Once an individual Beacon is selected all the remaining powered Beacons will continue to flash in their current mode but no events or alarms will be recorded.

**WARNING:** To go back to normal operation the user must go back in to the “Debug” screen and select none and press “ENTR”. Once completed press the “CLR” button and return to the Beacon screen and confirm all possible Beacons are on the list.


XX= is selected power supply/flashhead for debugging

Zero 0 = no power supply/flashhead is being debugged.

**Tower Type A, B, C, G, or F**

Only powered fixtures and fixtures connected to the RS485 will be detected. Additional power supplies, AOL or Red / IR systems can be added at any time without changes to the Base Controller, but the LCD must be programmed for additional AOL(s).


FAA Type G System with No Sidelights or AOL

**Mode of Operation; Day, Twilight, Night**

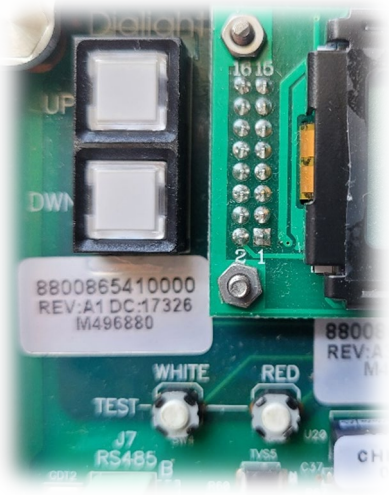
This screen allows the user to manually change the mode of the system. System will normally change modes based off the ambient conditions seen by the photocell. There are no options to preprogram selected times for Day, Twilight and Night.

**Temperature (T):** This displays the temperature inside the controller, there no events or alarms reported for temperature.

**Active:** Options are WHT or Red (This is based on the system configured and installed)

| MODE: NIGHT T=+27c<br>ACTIVE: RED | Tower flashing DAY<br>'enter' to restore |
|---|---|

**This screen is also used to force mode changes.**




Using the TEST buttons on the Main micro marked WHITE and RED will force the system to change modes. This allows for visual indication that all the lights are changing modes.

This by-passes the photocell operation and can be used when the photocell is not connected. Once the system is forced, it will remain in that set mode until reset. User must press "CLR" to return system to normal operation.

**NOTE:** S3 and S4 on the LCD board will begin to flash when forced is selected.

**Force Modes for Red/White with IR Structures**

| Active mode | Pressing White | Pressing RED |
|---|---|---|
| Day Mode Active | Forces Twilight | Forces Red/IR at night |
| Twilight Mode | Forces Day White | Forces RED/IR at Night |
| Red Night/IR Mode | Forces Day White | Stays RED/IR |

**Force Modes for White Only Structures**

| Active mode | Pressing White | Pressing RED |
|---|---|---|
| Day Mode Active | Forces Twilight | Forces White at night |
| Twilight Mode | Forces Night White | Forces White at Night |
| White Night Mode | Forces Day White | Stays RED/IR |

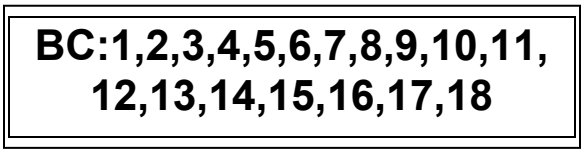
**Beacon Recognition Screen**

This screen shows all the Beacons currently being addressed by the Base Controller.

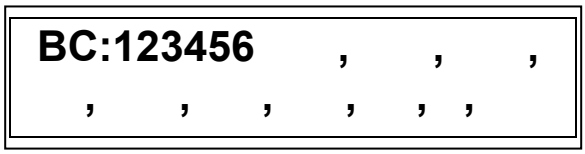
Each power supply must have its own unique address set for the Base Controller to recognize it. The minimum number is 1 and the maximum is 18. It is required that sequential numbering is used. This will be helpful later when locating the power supplies.

**Refer to the installation manual for power supply address settings.**

**NOTE:** It is suggested that level 1 (bottom of tower) be 1-3 and level 2 is 4-6 and so on up the tower.




Example System with six L-865/864 Flashheads




If during initial power up an address is blank, the base controller does not recognize any power supplies/flashheads. Check all RS485 connections and power supply addresses.

**Base Controller Micro Status LED's**

**NOTE:** These are located in the center of the main LCD Micro Board.
Colors shown below may not be actual colors of LED's.

**STATUS LED ASSIGNMENTS**

| S7 | S6 | S5 | S4 | S3 | S2 | S1 |
|---|---|---|---|---|---|---|
| Comm Failure | Sync Failure | 25% LED Failure | Twi to Night Failure | Day to Night Failure TWI | External Sync Failure | Heartbeat Flashes |

**NOTE:** S1 must always be blinking
**WARNING:** When forced operation is used S3 and S4 will blink to indicate forced operation

**Possible causes for Status LED's to light or turn on:**

| | | |
|---|---|---|
| **S1** | Not flashing | No power, verify fuses, wire connections and output of +48Vdc driver |
| **S2** | LED is ON | Check external connections to GPS or other external sync device<br>Confirm in Configuration that EXT GPS was NOT set to YES<br>Reset breaker to both the structure and base controller |
| **S3** | LED is ON | Check photocell connection at TB3<br>Check photocell connection within photocell |
| **S4** | LED is ON | Check photocell connection at TB3<br>Check photocell connection within photocell |
| **S5** | LED is ON | There has been a 25% failure on a beacon or AOL.<br>Review alarm log screen for information on cause. |
| **S6** | LED is ON | Lights when a Power supply has lost power or attaching the RS485 to a beacon. Review the alarm log for location of the fault |
| **S7** | LED is ON | Lights when communications thru the RS485 has been lost.<br>Configuration has not been properly set<br>Review the Alarm log for location of fault |

RESET Button: Located on the Main LCD Micro Board

The Reset Button is a firmware re-boot that causes the Base Controller to do a complete restart. This reset is most often used when power to Power Supplies or Flashheads was either lost or required to be shut down for a period of time. This reset will go through the full warm up and the initial 15 flash countdown menu.

**Flashhead to Power Supply Connections**

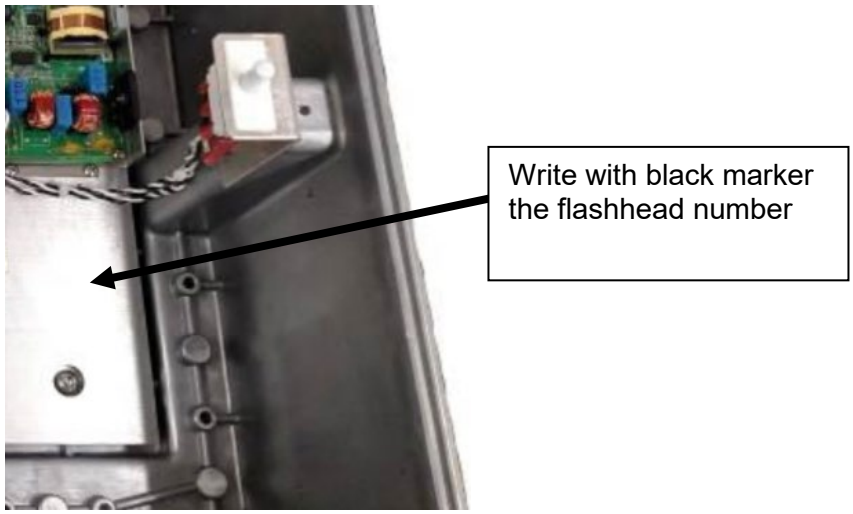
It is recommended that the installers read the supplied user manual prior to making connections between the flashhead and power supply before installation.

**Check list:**

1. All the power supplies installed have had the addresses set to unique numbers starting with number 1. The factory default for all flashheads is 1.

2. The numbered cables on the individual Flash Modules are fed through the glands on the bottom of the Power Supply to the corresponding number.

3. Hand write the flashhead number on the inside of the power supply in the lower right corner of the back plate.




4. The Flashhead RED cables braiding must be fed under each of the Grounding clamps and **secured tightly**. The BRAID of the cable must be in contact with both the panel and the grounding clamps and then secured under the clamp.

   **WARNING:** Failure to do so could cause premature failures due to lightning strikes and could void all warranties.

   **NOTE:** The insulation or jacket are NOT intended to be under the clamps.

5. Pictures must be supplied of each of the power supplies to verify connections.

6. All external cord grips and conduit connected to the enclosure are tightened to prevent water egress.

7. Upon validation of the working power supply the enclosure has to closed and four clamps closed.

**Display and Events and Alarm Descriptions**

Events and Alarms for the Flashhead are indicated by the Module numbers 1, 2 or 3 or from the Power Supply address.

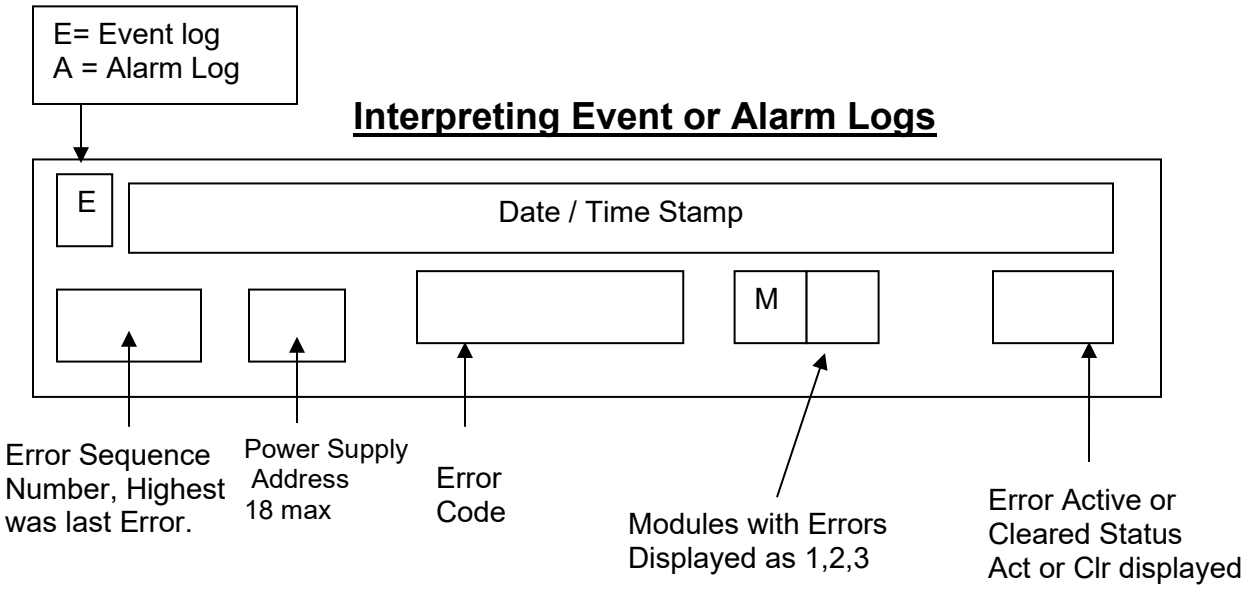
Navigating the Display

Up/Down: Buttons scroll through menu options, or Log ENTRies

Enter: Selects a menu

Clear: Exits a menu and returns to previous screen
Also Clears error and alarm registers

Holding the Clear button for 5 seconds when in the Event or Alarm log clears the given Log data. The first recording will be displayed as “Logs Cleared”.



## Events and Alarms:

**Y = Module number** **X = Flashhead Power Supply Address**

| Code | Event/Alarm | LCD Alarm display | Description | How to generate it | Corresponding Dry Contact |
|---|---|---|---|---|---|
| 0 | | Logs Cleared | Logs are cleared | Clear alarm or event log by pushing Clear button when in the menu for 5 seconds | N/A (Event) |
| 7 | Event | X SYNC Module Y | Power supply or individual module is not responding | Remove J7 –J9 (RS485) cable from Power Supply to Micro<br>or<br>Remove J10 on Micro Flash head (8800-856-0041-00) | N/A |
| 8 | Event | X COMM Module Y | Power supply or individual module is not responding | Remove J7 –J9 (RS485) cable from Power Supply(8800-856-0046-00) to Micro<br>or<br>Remove J10 on Micro Flash head (8800-856-0041-00) | N/A |
| 9 | Event | X SYNC BC | Power supply is not in Sync | Check J6 (RS485) cable in Power Supply<br>Check level junction box wiring | N/A |
| 10 | Event | X COMM BC | Main controller has lost communication to the Power supply | Check J6 (RS485) cable in Power Supply<br>Check level junction box wiring | N/A |
| 18 | Alarm | Day to Twi | There was an issue with the transition from Day to twilight | The system has been in Day mode for more than 18 hours | Alarm 5 |

| Code | Event/Alarm | LCD Alarm display | Description | How to generate it | Corresponding Dry Contact |
|---|---|---|---|---|---|
| 19 | Alarm | Twi to Nite | There was an issue with the transition from twilight Mode to night Mode | The system has been in night mode for more than 18 hours | Alarm 6 |
| 21 | Alarm | X 25% BC | 25% of red/IR light or white light on the high intensity Flash head is out. This power supply has been shut down. | Requires operation confirmation<br>Causes:<br>AC not being to supplied to power supply<br>150v power supply failure<br>Faulty module | Alarm 3 |
| 22 | Alarm | AOL Comm X | Comm Alarm | Visually check to see if the light is operating<br>AC not being supplied to power supply<br>RS485 not properly connected in the level Junction box<br>RS485 not properly connected to translator board in AOL power supply | Alarm1 |
| 24 | Alarm | AOL X Red | 25% of the Red/IR LED's on AOL are out | Disconnected J2 off of Red driver<br>Faulty RED driver in AOL power supply<br>Faulty 48Vdc driver in power supply | Alarm 3 |
| 25 | Alarm | AOL X White | 25% of the white LED's on AOL are out | Disconnected J2 off of White driver 1<br>Or<br>Disconnected J2 off of White driver 2<br>Faulty 1 or both white drivers in power supply<br>Faulty 48Vdc driver in power supply | Alarm 3 |
| 31 | Alarm | X COMM BC Y<br>Or<br>X COMM BC | Power supply or Micro did not respond to poll, or response was corrupted | Check J6 (RS485) cable in Power Supply<br>Check J7 –J9 (RS485)<br>Faulty module | Alarm 1 |

| Code | Event/Alarm | LCD Alarm display | Description | How to generate it | Corresponding Dry Contact |
|---|---|---|---|---|---|
| 32 | Alarm | X SYNC BC Y<br>Or<br>X SYNC BC | Power supply or Micro are out of sync and not responding to Flash broad cast | Check J6 (RS485) cable in Power Supply<br>Check J7 –J9 (RS485)<br>Faulty module | Alarm 2 |
| 34 | Event | Power On | Re-powering the base controller | Base controller lost power due to outage or powered down | N/A |
| 35 | Event | X BEACON PWR ON | Re-powering the power supply that controls the individual Flash head | Individual Power supply was turned back on<br>May not begin to operate till next Day transition | N/A |
| 36 | Event | AOL Power X | Antenna light not in Sync or not flashing in any mode | Antenna light was turned on or had power restored<br>May not begin to operate till next Day transition | N/A |
| 38 | Event | X V RED Y<br>V= Voltage | Red/IR Led voltage is out of range on the Flash head | Red LED's are shorted or open<br>Module has a fault at Night | Event -> 4 in a row will cause Alarm 3 |
| 39 | Event | X V WHT Y<br>V= Voltage | white Led voltage is out of range on the Flash head | White LED's are shorted or open<br>Module has a fault | Event -> 4 in a row will cause Alarm 3 |
| 40 | Event | X CUR RED Y | Red/IR Led current is out of range on the Flash head | Red/IR LED's are shorted or open<br>Module has a fault at Night | Event -> 4 in a row will cause Alarm 3 |
| 41 | Event | X CUR WHT Y | White Led current is out of range on the Flash head | White LED's are shorted or open<br>Module has a fault | Event -> 4 in a row will cause Alarm 3 |
| 45 | Event | No Ext Sync | External sync pulse from external device lost | External sync pulse from external device (eg: GPS) has been lost | Event -> 4 in a row will cause Alarm 2 |

| Code | Event/Alarm | LCD Alarm display | Description | How to generate it | Corresponding Dry Contact |
|---|---|---|---|---|---|
| 46 | Event | Config error | Set up configuration doesn't match the installed fixtures | System configuration in EEPROM does not match installed quantity of fixtures | N/A |
| 47 | Alarm | SDLite Com 1 | Check RS485 Rx, TX and TX-EN are flashing | Check J2 RS485 connection on Monitor board<br>Check address is set to zero | Alarm 1 |
| 48 | Alarm | SDL Cur 1X | All Side Lights on one Tier are out | Check wiring in side light terminal block<br>Check wiring on the structure junction box at alarm level indicated | Alarm 7 |
| 52 | Alarm | Photocell | Photocell not detected | Check J4 wiring on the monitor board<br>Damaged photocell<br>Bad connection in the photocell<br>Check RS485 J2 connections | Alarm 4 |
| 56 | Alarm | AOL RS232 X | AOL translator board connection to the micro-board in missing | Check J4 RS232 Cable on the Translator board In the AOL power supply | Alarm 1+ Alarm 6 |
| 57 | Alarm | Relay Comm | missing communication to Relay board | Check (RS485) on the Relay board | All dry contacts will be all be tripped |
| 58 | Alarm | AOL SYNC X | AOL sync input pulse is missing | Check J5 on the Translator board in AOL power supply | Alarm2 |
| 59 | Event | SW to Day | Changed mode to Day | Photocell changed to Day mode | N/A |
| 60 | Event | SW to TWILIGHT | Changed mode to Twilight | Photocell changed to Twilight mode | N/A |
| 61 | Event | SW to NITE | Changed mode to night | Photocell changed to night mode | N/A |

**Lighting Inspection Test**

The user can perform a manual lighting inspection during this test to ensure proper operation of the system in its entirety.

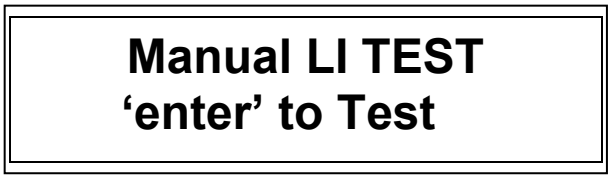
**NOTE**: Discreet and Modbus alarms will be generated during this test, if a NOC is actively monitoring at the time of test, they will see the generated alarms.

System Setup Requirements:

1. System needs to be in Day mode before test is started.
2. Confirm that AL8 is lit on the dry contact board.
3. Wait at least 10 flashes or 30 seconds before starting TEST.
4. Additional Technician at Photocell location to cover photocell.

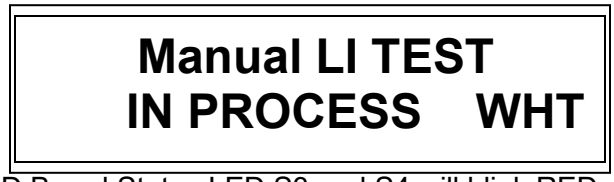
The test relies on the user input to complete the necessary checks. It will timeout after 2 minutes if no user input is performed.

Press “ENTR” to initiate LI test.




Press “TEST WHITE” button located under the ‘Down’ button on the LCD controller board to begin. To quit the test procedure, press “CLR” button on right side of LCD.


Once the Test White is pressed the following screen will be displayed.




LCD Board Status LED S3 and S4 will blink RED during test.

During the test the user will see ACTIVE alarms being generated on the Dry contact board.

NOTE: If the system had active alarms before the test then these alarms will remain on the dry contacts but the alarm log will not display them again.

After the Day test has completed, the next menu will be displayed as:

| COVER PHOTOCELL<br>PLEASE WAIT…. |
|---|

After covering the photocell, wait 90 seconds and press Test RED button:

| MLI 'CLR' to exit<br>push RED BTN |
|---|

| Manual LI TEST<br>IN PROCESS RED |
|---|

OR

| Manual LI TEST<br>IN PROCESS NWHT |
|---|

LCD Board Status indicators will change during test.

| Manual LI TEST<br>PASS : ) |
|---|

OR

| Manual LI TEST<br>FAIL : ( |
|---|

| Manual LI TEST<br>LIT DONE |
|---|

System will return to main configuration screen when test is completed.
System will reset within 5 minutes of test completion.

**NOTE:** If the QLI manual test is not completed due to prompts not being followed, tests will time out after 5 minutes and display:

| Manual LI TEST<br>LIT NOT DONE |
|---|

Lighting Inspection Test for F and C structure types

This is a list of items that will be tested. They may or may not show up in this order depending on what is being used to read QLI Results

For an "F" style system

| | | |
|---|---|---|
| 1. | LIT log start | |
| 2. | AOLSYNC X | ACT |
| 3. | AOL RS232 X | ACT |
| 4. | AOL Comm X | ACT |
| 5. | AOL Comm X | CLR |
| 6. | AOL RS232 X | CLR |
| 7. | AOL SYNC X | CLR |
| 8. | AOL X WhiteB | ACT |
| 9. | AOL X WhiteB | CLR |
| 10. | 1-9 25% BC | ACT |
| 11. | 1-9 25% BC | CLR |
| 12. | 1 SDL cur X | ACT |
| 13. | Photocell | ACT |
| 14. | 1 SDLite Comm | ACT |
| 15. | 1 SDLite Comm | CLR |
| 16. | Photocell | CLR |
| 17. | 1 SDL cur X | CLR |
| 18. | AOL X Red/IR | ACT |
| 19. | AOL X Red/IR | CLR |
| 20. | 1-9 SYNC M1 | ACT |
| 21. | 1-9 SYNC M2 | ACT |
| 22. | 1-9 SYNC M3 | ACT |
| 23. | 1-9 COMM BC | ACT |
| 24. | 1-9 COMM BC | CLR |
| 25. | 1-9 SYNC M1 | CLR |
| 26. | 1-9 SYNC M2 | CLR |
| 27. | 1-9 SYNC M3 | CLR |
| 28. | 1-9 25% BC | ACT |
| 29. | 1-9 25% BC | CLR |
| 30. | LIT log end | |

For an "C" style system

| | | |
|---|---|---|
| 1. | LIT log start | |
| 2. | AOL SYNC X | ACT |
| 3. | AOL RS232 X | ACT |
| 4. | AOL Comm X | ACT |
| 5. | AOL Comm X | CLR |
| 6. | AOL RS232 X | CLR |
| 7. | AOL SYNC X | CLR |
| 8. | AOL X WhiteB | ACT |
| 9. | AOL X WhiteB | CLR |
| 10. | 1-9 25% BC | ACT |
| 11. | 1-9 25% BC | CLR |
| 12. | photocell | ACT |
| 13. | 1 SDLite Comm | ACT |
| 14. | Photocell | CLR |
| 15. | 1 SDLite Comm | CLR |
| 16. | 1-9 COMM BC | ACT |
| 17. | 1-9 COMM BC | CLR |
| 18. | LIT log end | |

Lighting Inspection Tests for G and B structure types

This is a list of items that will be tested. They may or may not show up in this order depending on what is being used to read QLI Results.

For an "G" style system:

| | | |
|---|---|---|
| 1. | LIT log start | |
| 2. | AOLSYNC X | ACT |
| 3. | AOL RS232 X | ACT |
| 4. | AOL Comm X | ACT |
| 5. | AOL Comm X | CLR |
| 6. | AOL RS232 X | CLR |
| 7. | AOL SYNC X | CLR |
| 8. | 1 SDL cur X | ACT |
| 9. | Photocell | ACT |
| 10. | 1 SDLite Comm | ACT |
| 11. | 1 SDLite Comm | CLR |
| 12. | Photocell | CLR |
| 13. | 1 SDL cur X | CLR |
| 14. | AOL X Red/IR | ACT |
| 15. | AOL X Red/IR | CLR |
| 16. | 1-9 SYNC M1 | ACT |
| 17. | 1-9 SYNC M2 | ACT |
| 18. | 1-9 SYNC M3 | ACT |
| 19. | 1-9 COMM BC | ACT |
| 20. | 1-9 COMM BC | CLR |
| 21. | 1-9 SYNC M1 | CLR |
| 22. | 1-9 SYNC M2 | CLR |
| 23. | 1-9 SYNC M3 | CLR |
| 24. | 1-9 25% BC | ACT |
| 25. | 1-9 25% BC | CLR |
| 26. | LIT log end | |

For an "B" style system:

| | | |
|---|---|---|
| 1. | LIT log start | |
| 2. | 1-9 25% BC | ACT |
| 3. | 1-9 25% BC | CLR |
| 4. | photocell | ACT |
| 5. | 1 SDLite Comm | ACT |
| 6. | Photocell | CLR |
| 7. | 1 SDLite Comm | CLR |
| 8. | 1-9 COMM BC | ACT |
| 9. | 1-9 COMM BC | CLR |
| 10. | LIT log end | |

**Revision History**

| REV | ECO No. | DRN | CKD | APP | QA | CM | DATE |
|---|---|---|---|---|---|---|---|
| A | 67178 | NS | AV | AR | YS | JN | 2/27/20 |
| B | 68491 | TLD | AV | AR | YS | JN | 4/24/20 |
| C | 106115 | JAJ | DW | AR | YS | MB | 6/20/23 |