Hi Intensity Red/White Quick Start Manual
D266A57CTRAC D266A57270

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

- ***DO NOT let any supply cords touch hot surfaces higher than cord ratings.***
- ***DO NOT mount near gas or electric heaters***
- ***Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.***
- ***The use of accessory equipment not recommended by the manufacturer may cause unsafe conditions.***
- ***DO NOT use this equipment for other than intended use.***
- ***DO take pictures of the installation wiring, mounting and grounding for commissioning the system***

- ***The operation and maintenance must be carried out by authorized personnel.***
- ***Repairs and Installation must only be carried out by a qualified electrician.***
- ***Only genuine Dialight replacement parts must be used when unforeseen repairs are required.***
- ***Observe the national safety rules and regulations during installation!***
- ***Earth Grounding is required throughout the install process. Failure to do so could void all warranties!***
- ***No alterations should be done without the agreement from Dialight Corp. Alterations other than written in this manual will void all warranties.***

Introduction

This manual is for orientation, connecting the Base controller and a quick guide to the installation process and configuring the screens for installation.

Overview:

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

NOTE: 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.

Included in this manual:

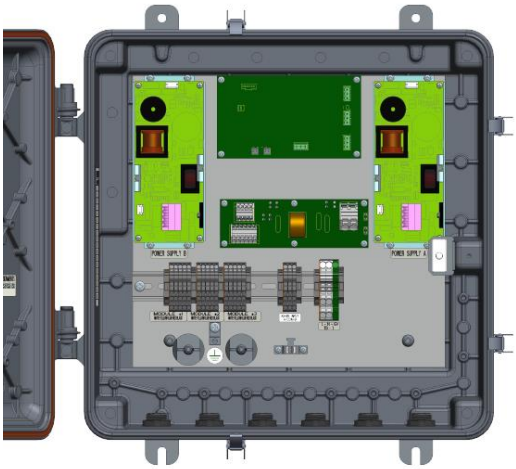
Base controller overview
Error/Event and Alarm views and meanings
Dry contacts
Power supply orientation and individual address setting
Flash Head orientation

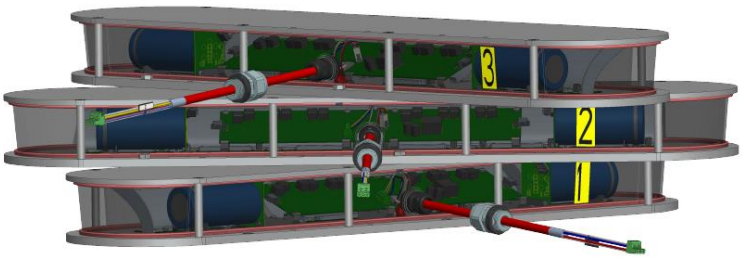
System Overview: Primary Parts

AC Side light Controller D266A57CTRAC



Power Supply and Flash Head D266A57270





Installation Cabling:
For the AC Mains cable, it is recommended that the electrician or installer calculate the wire requirements based on the amount of Flash heads being installed. It is recommended that no install utilizes less than 14 gauge wire with at least a 90°C temperature rating.
Refer to install manual and the structure wiring diagram for electrical parameters.

For RS485 cabling; 18 gauge wire, 3 cores braid and foil
Or 20 gauge wire, 2 twisted pair with bare drain and foil

For Photocell cabling; minimum of 18 gauge wire 3 cores routed through conduit is required.

For L810's (when used); a minimum of 14 gauge wire is required. Based on connection instructions and height of the structure, larger gauge wire may be required. Refer to structure connection diagrams and wiring and L810 specifications for current draw calculations BEFORE any cable is run.

NOTE: Supplier of the system is responsible to provide wiring diagrams and connections.

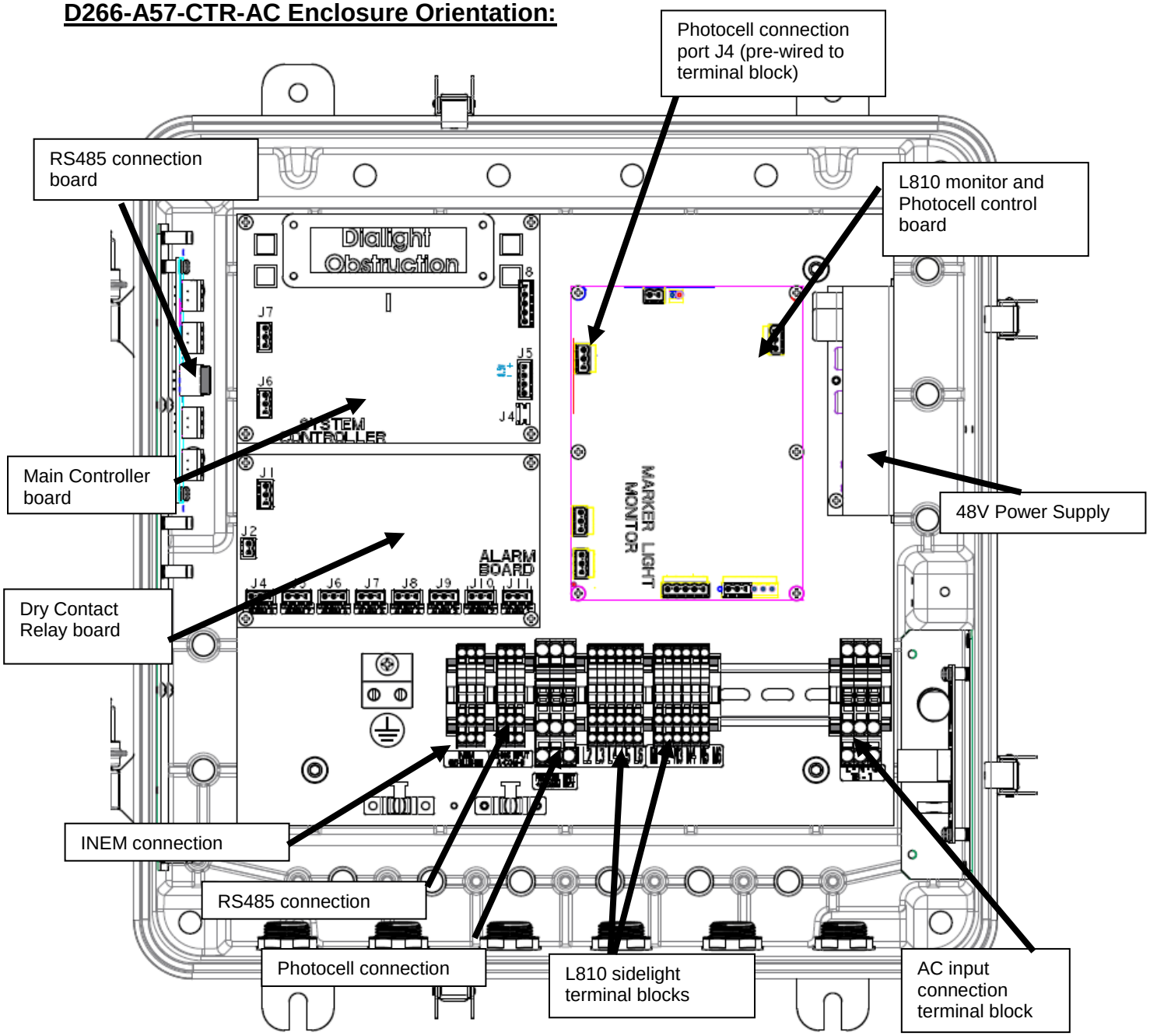
NOTE: When using Conduit, liquid tight or TECK cable; proper grounding inside the enclosures is still required.

NOTE: When applicable adequate drain ports must be used

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. See the install manual for more details or contact your systems supplier or www.dialight.com.

Base Controller:
Features / Requirements
NOTE: See the install manual for electrical specifications
Connection of Photocell
Connection of RS485
System Reset Button
Setting the Real time clock, see display screens
Configuration for External Sync option, see display screens
Configuration for addressing the AOL system, see display screens
Status LED'S on Main controller board
8 Dry Contact relays for remote monitoring and meanings

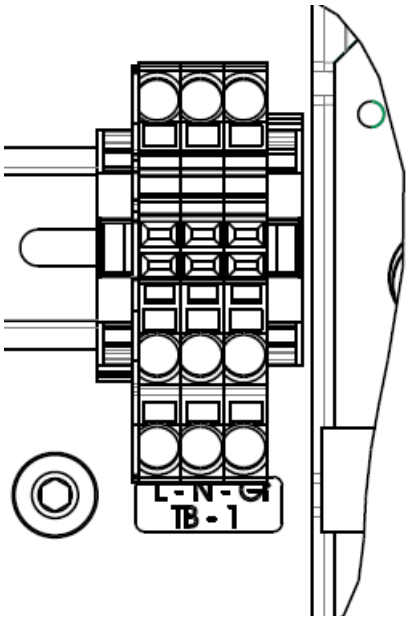
D266-A57-CTR-AC Enclosure Orientation:



NOTE: Multiple grounding points are provided in the enclosure for protective and functional Earth/Ground connections.

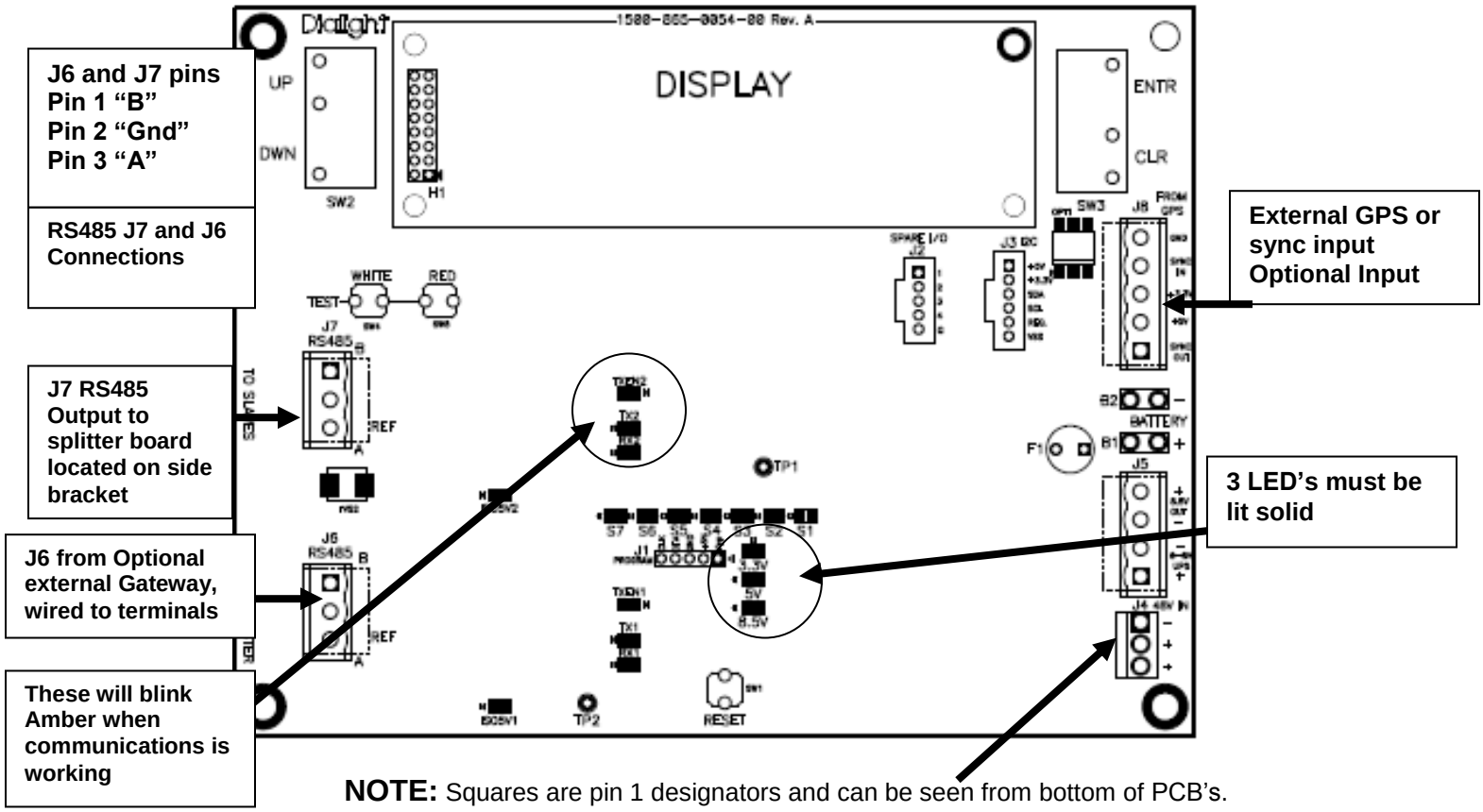
Connection of AC Mains Power and RS485 Communications:
The Base Controller comes supplied with 6 holes drilled to accommodate the cabling. Additional holes can be added as required.

The holes can be located in any convenient location for the user and installer. If installed outdoors water ingress must be considered and it is recommended that the additional holes be located on the bottom surface of the enclosure.



NOTE: If there are existing AC and RS485 communication in the vicinity of the installation location of the Base Controller then these cables can be used if they meet the recommendations in this guide and the wiring diagrams provided with the hardware. Visual inspection of the ends of the cable should be conducted and if corrosion is witnessed then the wires should be cut back to the point where clean copper is observed. Failure to do so will cause events and or alarms during installing.

Connection of RS485 Input:



NOTE: Squares are pin 1 designators and can be seen from bottom of PCB's.

The RS485 is the communications link between the Base controller and all the lights on the structure. Inadequate connections or loose cables could cause events or alarms to be displayed and make troubleshooting time consuming.

NOTE: Every RS485 communications connection MUST be checked while installing the system.
NOTE Each level of the structure can be tested before other fixtures are connected.

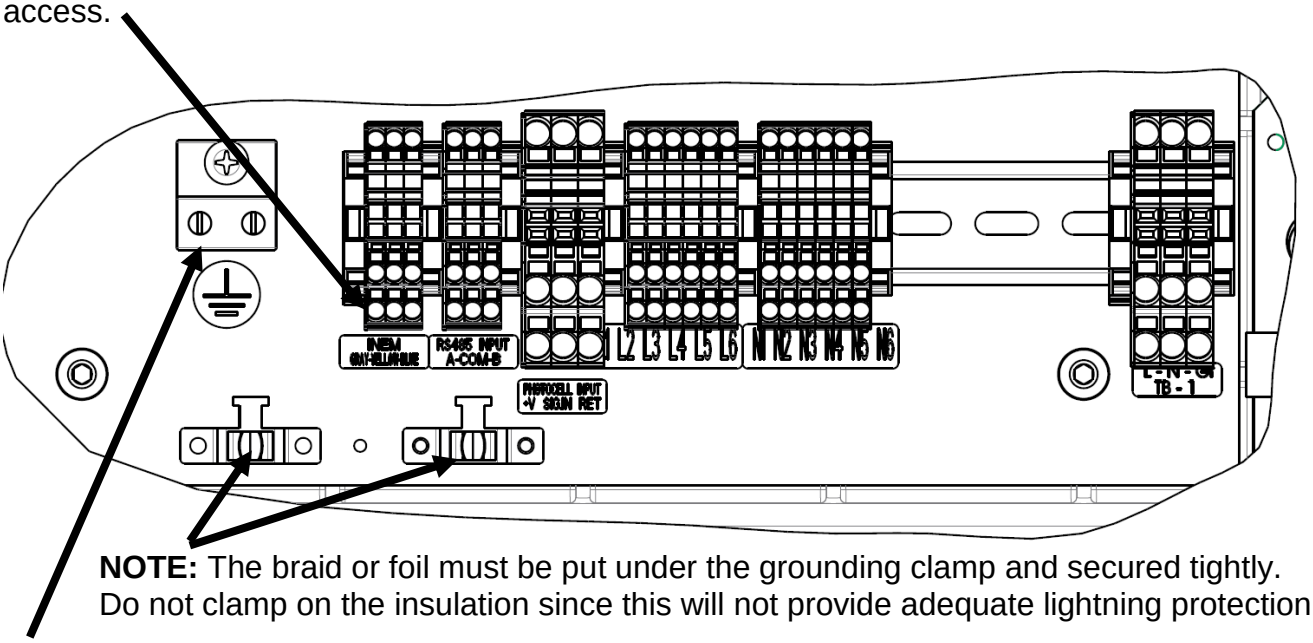
Connector J7 is the output connection point required for the communications signal to be transmitted to all boards in the enclosure and provides the output to the Power supplies and the AOL if installed. Pin assignment is shown in the above picture.

NOTE: The installer must make sure that the colored 3 conductor cable being used for the RS485 communications is recorded.

Connector J7	Factory installed Colors	Installers Cable
Pin 1 "B"	20 gauge "BLUE"	Color TBD
Pin 2 "Signal Gnd"	20 gauge "Yellow"	Color TBD
Pin 3 "A"	20 gauge "Gray"	Color TBD
Drain	Not used	Typically Bare wire
Shield	Not used	Braid or Foil

WARNING: The installer must make a note of the colors of the wire to ensure the correct colored wires go to the corresponding A, B or common. Failure to connect properly will cause Alarms to occur.

Connector J6 is only to be used when an external Gateway or other monitoring device that has been approved by Dialight is being added to monitor the system from a remote cloud or Network operations center (NOC). It is wired to the DIN rail terminal block for installer access.



NOTE: The braid or foil must be put under the grounding clamp and secured tightly. Do not clamp on the insulation since this will not provide adequate lightning protection.

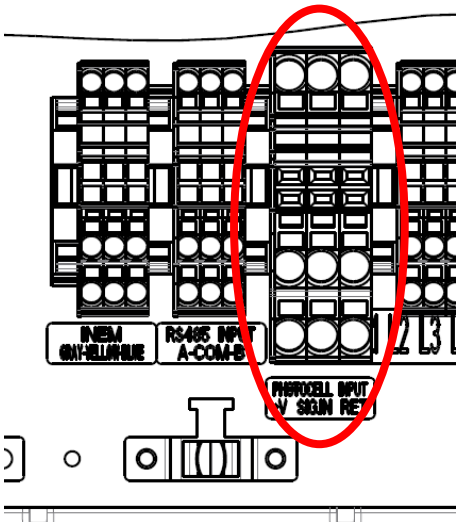
NOTE: Bare wire is to be connected to a ground terminal and secured tightly.

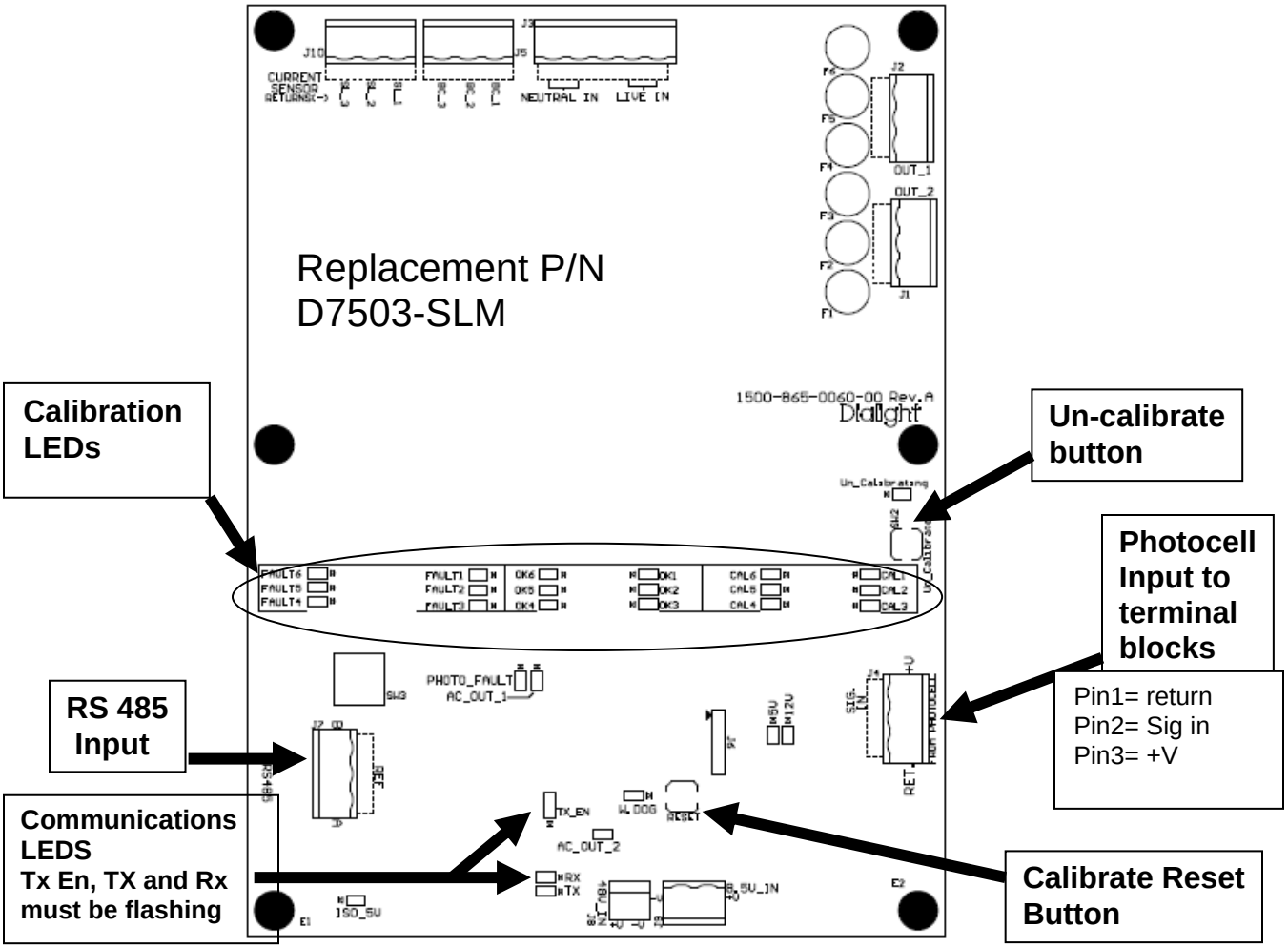
Monitor Board Connections and Calibration:

REFER to Structure Drawing and Install Manual for wiring detail.
Do not connect Sidelights directly to this board. Side lights are to be wired to terminal block

Only J4 will require the installer to make the connection to the board Photocell connection. It is wired to the DIN rail terminal block for installer access.

NOTE: The photocell must be connected to the monitor board that is set to Zero.





Photocell Connection:

Refer to the Photocell manual for connections and installation

There is no calibration required by the installer.

NOTE: Photocell must be connected for proper operation of the system.

WARNING: If the photocell is not connected, the system will default to DAY MODE per FAA requirements and causes an alarm.

Calibration and Connection of L810 Side lights:

If no side lights are being installed then the installer should still calibrate to zero out the calibration.

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.
NOTE: The Monitor board has Auto calibration function.
NOTE: Re-calibration is required whenever a Side light is added or when a Side light is replaced.

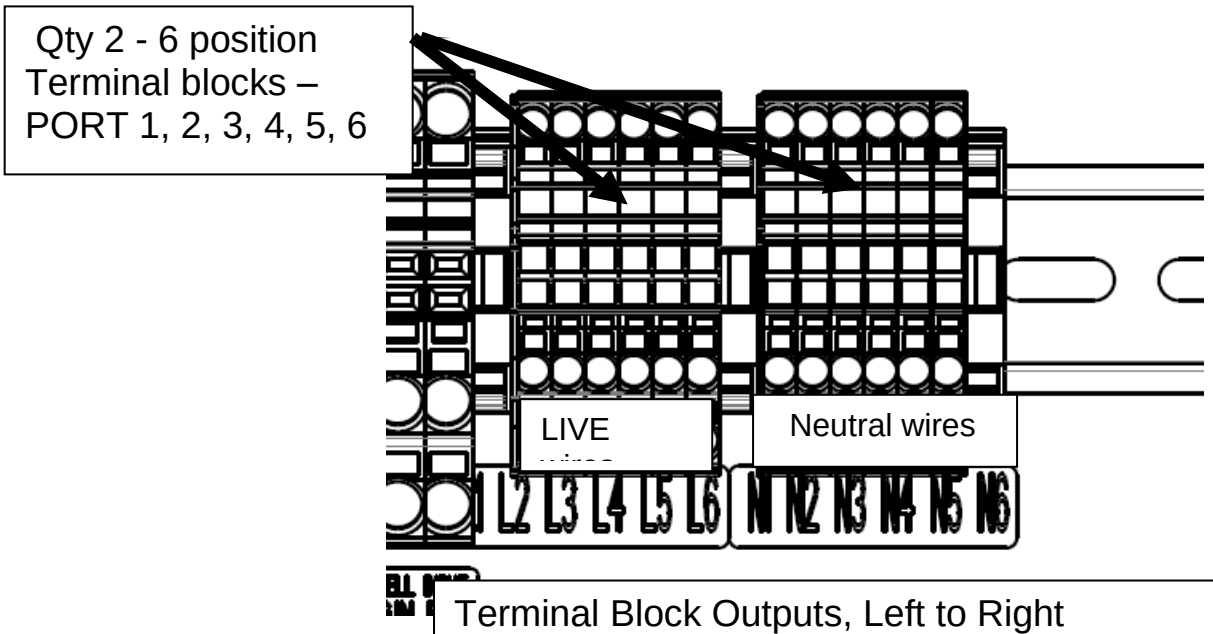
NOTE: To perform Calibration the side lights must be connected to the terminal block.

NOTE: For testing without calibrating set the forced mode to Night and the sidelights will light.

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 RTO-1R07-001

1. One tier of marker lights must be attached to Terminal Block Port 1, Additional tiers (if applicable) must be connected to the consecutive ports 2 and 3.



Terminal Block Outputs, Left to Right

Position	1	2	3	4	5	6
Designation	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6

2. Perform the Calibration scheme as follows:

   A) Un-calibrate the PCB by holding down the un-calibrate white button (SW-2) for approximately 3 seconds located on the side light monitor board.

      FAULT LEDs 1-6 will light up red.

   B) Next, press the white button labeled Reset (SW-2) on the same monitor board.

   C) 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.

   D) 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), press the reset button located on the main LCD board.

NOTE: Each calibration port has been designed to accurately power and monitor up to 4 L810's simultaneously;

NOTE: If no Side lights are connected or wired in-correctly all corresponding LED's will turn off.

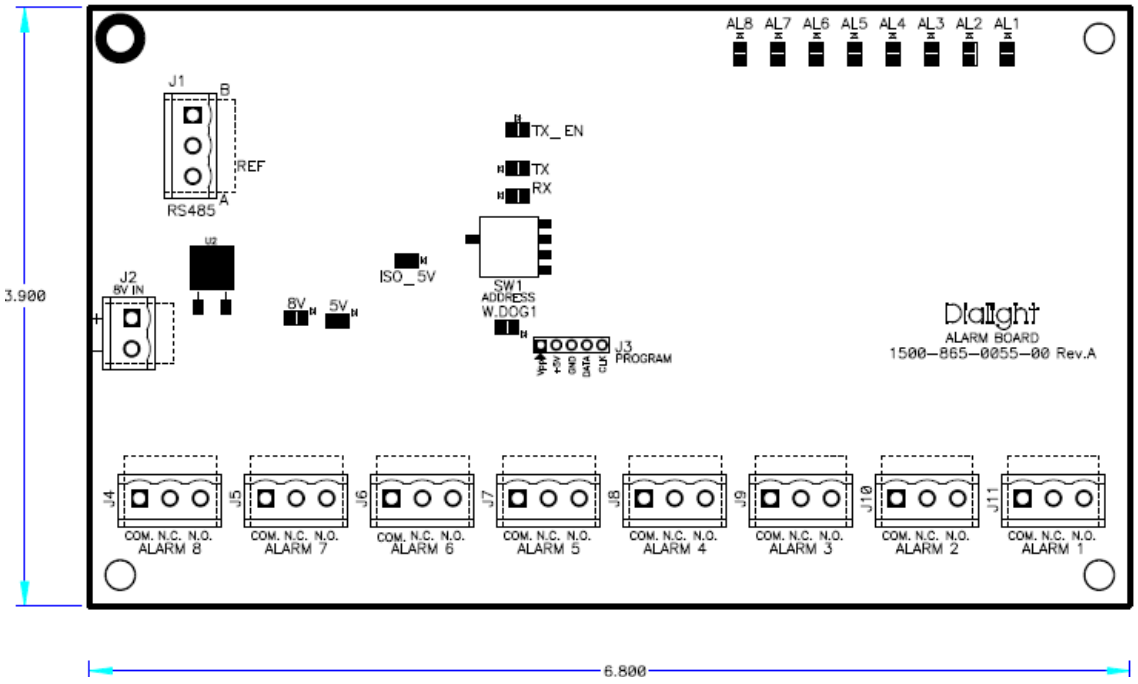
If for some un-foreseen reason additional L810's are required contact **www.Dialight.com,**

Relay Board connections:

The relay board has 8 dry contacts for local or remote system monitoring. The contacts can be wired as either normally closed or normally open.

NOTE: LEDs AL7- AL1 provides visual indication of an Active alarm.
NOTE: AL8 is Amber color and monitors the function of the photocell mode.

Day Mode: AL8 lights (Relay AL8 is connected from com to NC)
Twilight and Night modes: AL8 is off (Relay AL8 from com to NC is open)



Relay8	Relay 7	Relay 6	Relay 5	Relay 4	Relay 3	Relay 2	Relay 1
AL8	AL7	AL6	AL5	AL4	AL3	AL2	AL1
ACTIVE PHOTOCELL MODE	L810 Failure	AOL Comm	Day to Night Failure	Photocell Failure	25% Failure	Sync Failure	Communications RS485 Failure, Config errors

To Set Relays to latching or non-latching refer to setup screens.

Dry Contact monitoring Installation:

The 3 pin Phoenix connector requires 1/4inch of stripped wire to be inserted and securely tightened.

1: The relays can be wired individually or multiplexed for alarm monitoring.
2: The relays can be wired as normally open or normally closed.

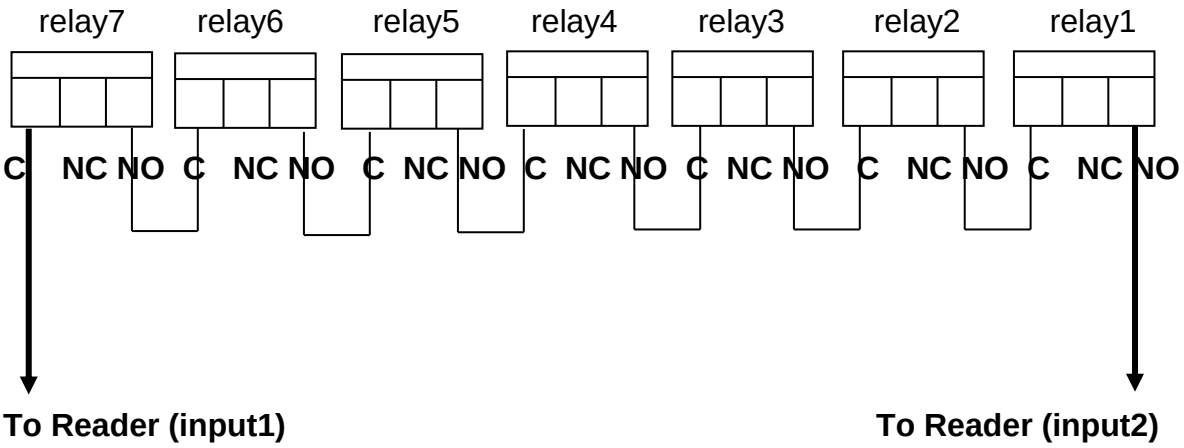
To monitor the dry contacts on the relay board, the dry contact readers will have to be wired in to the relay contacts marked (Com, NC, and NO).

WARNING: It is highly recommended that by using a multi-meter the dry contacts be measured for “open” or “closed” by using the OHM setting on the meter.
The relays can measured for open or closed with power applied to the base controller.

NOTE: If only one dry contact reader is present then the relays need to be multiplexed together to give one output as shown below:
NOTE: If less than 7 dry contact readers then 1 or more dry contacts can be multiplexed together.

NOTE: Dry contact Relay 8 is only for Day and night monitoring and not Alarm relay but indication of the mode the system is currently in.

Wiring for Multi-plexing a single dry contact reader.



LCD Display and Main Micro board:

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

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

Dialight HI Base **REV. x Build: xx**

The Initializing Screen:
This screen counts down from 15 as the system checks for connected fixtures.
.
NOTE: In some cases this screen will go back to Main screen if synchronization was faulty and the system will re boot until the issue is resolved.
WARNING: If the screen stays at 15 and does not countdown then no power supplies are being detected.
Check the RS485 communications cable for wiring, it is connected to the Base controller and connected in the first Jbox with the rs485 surge board.

Initial 15 Flashes **In Process**

Main Menu Screens:

Allows the user or maintenance personnel to view or access the displays by pressing the "Ent" button.

Display 1 : Configuration Display (MUST be Setup Properly)

BC= xx, AL=1, SL=1, EX=1 Press 'enter' to change

NOTE: There are 7 Displays within the "Config screen" Setup
NOTE: Pressing the "ENT" button begins the process

This screen requires the installer or site manager to "config" the system prior to completion of the install 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 in to the config setup.

Displays within the Configuration Display

Setup Display 1: Number of BC = xx

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

NOTE: If there are more Beacons on the structure than the selected number a "Config Event" will be shown in the event log screen. AL1 and S7 will illuminate RED if the Base Controller also sees more or less than the selected total Beacons.

Number of BC = 1 u/d =chg, enter=done

Setup Display 2: AOL Present = XX

The factory default is 0 and can only be changed to Yes or No.

The installer must select a number from 0-3 by using the up/down arrows till the amount of required AOL.
AOL= Antennae Obstruction Light

If the system does not have or require an AOL light then the user can use the up/down arrows to state “0”: and press “Entr” to move to the next option.
If during installation the AOL is not installed this selection can be set to “0” to avoid getting alarms for the AOL.

AOL present= 1 u/d =chg, enter=done

Setup Display 3: Number of SD BDS =1

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 1 side light monitoring board.
NOTE: For structures that don’t have side lights 1 still needs to be selected since the Photocell is connected to this board

Using the Up/Down arrows changes the # on the screen
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 how many side light boards are attached thus selecting more than amount connected will cause AL1 and S7 will illuminate.

Setup Display 4: External = YES/NO

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 be used for synchronization between 2 systems.
Press “Entr” to move to the next selection.

External = NO u/d =chg, enter=done

Setup Display 5: Transition Photocell Alarm = YES/NO

The factory default setting for the config screen is NO.

Selecting YES: the system will alarm after 18 hours and will switch to Day mode. To clear this 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 u/d=chg, enter=done	Trans PEC Alrm = NO u/d=chg, enter=done

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

Setup Display 5: DAY Flash = YES/NO

The factory default setting for the config screen is YES.

By using the Up/Down buttons the installer can select “YES” or “NO”, this will allow for an “A” system if needed (system will not Flash White in Day mode.

Press “Entr” to move to the next selection.

DAY Flash = YES u/d =chg, enter=done

Setup Display 6: Night Flash= Red or White

This screen allows the user to select between Red at Night or White at Night based on the requirements of the site.

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 u/d =chg, enter=done	Night flash = Red u/d =chg, enter=done

Setup Display 7: Number of Tiers:

Display allows for selecting the total number of Tiers that the structure has for Side lights.
NOTE: A 5 level High Intensity has 5 Tiers of side lights.

Number of Tiers = x u/d =chg, enter=done

NOTE: The maximum number of Tiers that can be entered is 6

Setup Display 8: Total Number of Side lights

Display allows for selecting the total number of Side lights that the structure has.

Total Num L810 = x u/d =chg, enter=done

NOTE: The maximum number 24 and the lowest is zero for white only structures
NOTE: RTO is an abbreviation for Dialight's RTO products that are used with this system

Setup Display 9: Status on the sidelights

Display allows for selecting the status of the sidelights (STEADY,FLASHING,DISABLE)

L810 MODE= Steady u/d =chg, enter=done

Setup Display 10: Status on the sidelights

Display allows for selecting the system flash rate in red night

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

Set up Display 11: Status on the sidelights

Display allows for recalibrate the sidelight board from the main controller

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

After the above is selected the system requires a reset by pushing the Reset button located in the center of the LCD board

Display 2: Relay selection

This screen allows the user to decide if the Dry contact relays are to be either latched or un-latched type.

Latched Relays means: 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.

Un-Latched Relay means: 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.

NOTE: Each of the relays can have its own setting, thus all 7 relay alarms can be either set to latching or none latching. Factory default setting is non-latching for the 7 selections

Relays: ENTER to Chg **N N N N N N N x**	**Relay 1 Non-Latching** **u/d =chg, enter=done**

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

Display 3: Status Screen of Alarms:

NOTE: If an Alarm occurs, the Status screen will change from "NORMAL" to "ALARM" to indicate there is an active Alarm.
By pressing "Ent" you will be able to view alarm logs. Time stamps are actual times that the alarm occurred. Refer to interpretation of the logs for further details.

Status: Normal **'Enter' to view Alrm**	**Status: Alarm** **'Enter' to view Alrm**

When pressing the "Ent" button and entering the logs the highest or last recorded alarm will be displayed first.
The last 127 alarms can be scrolled through by use of the up down buttons.
NOTE: Once the system is fully installed the Alarm logs MUST be cleared.

The following display is an example showing once the Entr button is pressed

A OCT 26, 13 "Time" **XXX Alarm Message ACT**	**A OCT 26, 13 "Time"** **XXX Alarm Message CLR**

ACT= Active Alarm
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 states “Clearing alarms, wait ….”

Display 4: Manual LIT (Lighting Inspection TEST:
Refer to LIT test section for information

NOTE: Pressing the CLR button escapes for the test, the system will reset after about 30 seconds with no input from the displays.

Manual LI TEST “enter” to test

Display 5: Event Logs:

This screen allows the user to enter in to the log screen that shows all the Events that have occurred at a given time stamp. When entering the screen the highest or last log will be shown first. By using the up or 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 “Ent” key to return to highest log.

NOTE: When in the log screens reviewing logs the display does not auto update. The up arrow must be pressed to see latest entry.

Press ‘Enter’ Key to view event log.

NOTE: The Event log MUST be cleared once the system is up and running with no Alarms.

The following display is shown once the Entr button is pressed

E OCT 26, 13 “Time” XXX Event Message ACT

E OCT 26, 13 “Time” XXX Event Message CLR

ACT: Active Alarm
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 ….

Display 6: Setting the Real Time Clock:

By selecting “Ent” 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.

WARNING: The real time clock does not have the ability to update during Daylight savings time so the site manager should update the clock as required.
NOTE: This may come pre-set from the factory for either East or West Coast time.
NOTE: After setting the time the Micro board has a battery backup, so if for some reason the Base Controller needs to be powered down or reset the time and date is kept.

MMM, DD,YY “Time” ‘Enter’ to set Clock	**MMM, DD, YY “Time” UD=Chg E=NEXT C=EXIT**

Display 7: Debug Screen:

This screen allows the user to enter into Debug mode for selecting individual installed fixtures.
By pressing the “Ent” button the user can select the individual Beacon he wants information on. 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 they are in 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 enter. Once completed press the “CLR” button and return to the Beacon screen and confirm all possible Beacons are on the list.

Press ‘Enter’ Key to debug BC	**BC number to debug U/D, 0 = None XX**

XX= Is selected power supply for debugging
Zero 0 = no power supplies are being debugged, also acts as soft re initializing for finding re connected or powered power supplies. Press the “ENTR” button with 0 selected.

Display 8: Tower type B, C,G, F or A

NOTE: The config screen must be used and setup properly to ensure detection of the installed system.
Only powered fixtures and fixtures connected to the RS485 will be detected. Additional power supplies, AOL or Red systems can be added at anytime without changes to the Base Controller.

Tower Style: X **Beacon, AOL, RED,**

Display 9: Mode of operation; Day, Twilight, Night

NOTE: These change according to the photocell operation. There are no options for preprogramming select times for transitions to occur.

Mode: Options are Day, Twilight or Night (based on the Photocell's mode)
Temperature: this displays the temperature inside the controller, there no events or alarms reported. Indication only
Active: Options are WHT or Red (This is based on the system configured and installed)

MODE: NIGHT T=+27c **ACTIVE: WHT**

MODE: NIGHT Forced **ACTIVE: WHT**

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 there state.

NOTE: This by-passes the photocell operation and can be used when the photocell is not connected
WARNING: There is no Timeout with this force mode, the user MUST press "CLR" to return to normal operation.
NOTE: S3 on the LCD board will begin to flash when forced is selected

Force Modes for Red/White Structures

Active mode	Pressing White	Pressing RED
Day Mode Active	Forces Twilight	Forces Red at night
Twilight Mode	Forces Night White	Forces RED at Night
Red Night Mode	Forces Day White	Stays RED

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

Display 10: Beacon Recognition Screen,

This screen shows all the Beacons currently being addressed by the Base Controller.
NOTE: 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 (I.E. 1-18). This will be helpful later when locating the power supplies.
Refer to the install manual for power supply address settings.

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

BC:1,2,3,4,5,6,7,8,9,10,11,12,
13,14,15,16,17,18,

NOTE: If during initial power up an address is blank, refer to the setting of the address switches in the install manual.

Possible Causes:

Power is off at the missing power supply; refer to power up the Power Supply
RS485 cable is NOT properly connected or mis-wired to the Power supply.
Power Supplies must have their own address number, no duplicate addresses
The Base Controller was powered up without the Structure.
The RS485 at the Base controller is not connected.
25% failure has occurred, check 150Vdc in power supplies

Base Controller MicroStatus LED's

NOTE: These are located in the center of the main micro PCB.
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
NOTE: All other leds are normal when NOT lit
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 Confirm in Configuration that EXT GPS was NOT set to YES Reset breaker to both the structure and base controller
S3	LED is ON	Check photocell connection on monitor board and in photocell
S4	LED is ON	Check photocell connection on the monitor board in the base controller and in photocell
S5	LED is ON	There has been a 25% failure on a beacon or AOL. 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. Configuration has not been properly set Review the Alarm log for location of fault

Mains AC Power Resetting:

Power On Resetting (i.e. switching power off then on again) is recommended when Alarm and Error/Event logs have been cleared and/or the Power supplies have either lost power, communications or have been shutdown during maintenance.

NOTES: In the event that the Base controller loses power and the structure has power; once power is restored to the base controller the system will re synchronize the tower lights and begin normal operation.
If the base controller looses power than the structure lights will flash in day mode.
If the lights loose power than the lights will be off.
Once power is restored to the lights the base controller will re-initialize to normal operation.

RESET Button: Located on the Main Micro Board

Push Button Reset:

The Reset Button is a firmware re-boot that causes the Base Controller to do a complete re start. This reset is most often used when power to Power supplies or Flash Heads is 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.

NOTE: After calibrating the side lights its required to reset the system.

NOTE: Active Alarms registered in the Alarm log will not be cleared thus clearing the Alarm and Event logs MUST be completed

NOTE: In some cases when an AOL alarm persists cycling the power to the AOL will be required.

Ext Sync Input: (Only used for Custom operation)

For use of an external Sync the Config screen must be setup properly
This is not required for standard operation

This connection will synchronize the System with either a remote 3rd party system or another local Base Controller. The Input connector located on the main Micro board looks for a pulsed signal with a period of 1,500 milliseconds, where the leading edge to falling edge of the pulse is greater than 100 milliseconds. This will trigger forty flashes per minute synchronized with the other system's output.
The System will not look for this input unless the "Config" screen is set to EXT Yes. The system default is set to NO and must not be changed unless an external sync has been connected.

OPERATION:

With an external sync present the system will allow that to control all flash rates. The external command device must be set to the desired flash rate (the normal operation of the system is 40fpm). If using a GPS type device and the signal is lost the base controller will continue to flash in the correct mode (twilight, night or day) and will still follow the flash rate but an EVENT will be recorded that the "Ext Lost" external sync is lost. Only if power is lost to the GPS device this will cause an "Alarm" (Sync Alarm) and the Base controller will revert back to full control of the flash rate of 40pfm and maintain modes of operation till the issue is resolved.

NOTE: The system will have "Config" events recorded in the event log if this is not set up properly.

Adding a AOL Antennae Obstruction Light:

Refer to the Manual of the Medium Intensity system for connections and additional information.

NOTE: An AOL can be added or disabled at anytime during the life of the system. The AOL must be an approved Dialight system.

For use of an AOL the config screen must be setup properly

AOL present= XX **u/d =chg, enter=done**

WARNING: For 1 AOL the translator Board rotary knob must be set to "0" zero to work properly

(Located in the Power Supply of the AOL)

Mains AC cable and RS485 are the only connections required in the Power supply of the AOL. , Flashhead
The RS485 communications cable must be connected to the translator PCB or the Base controller will not be able to communicate with the AOL light.

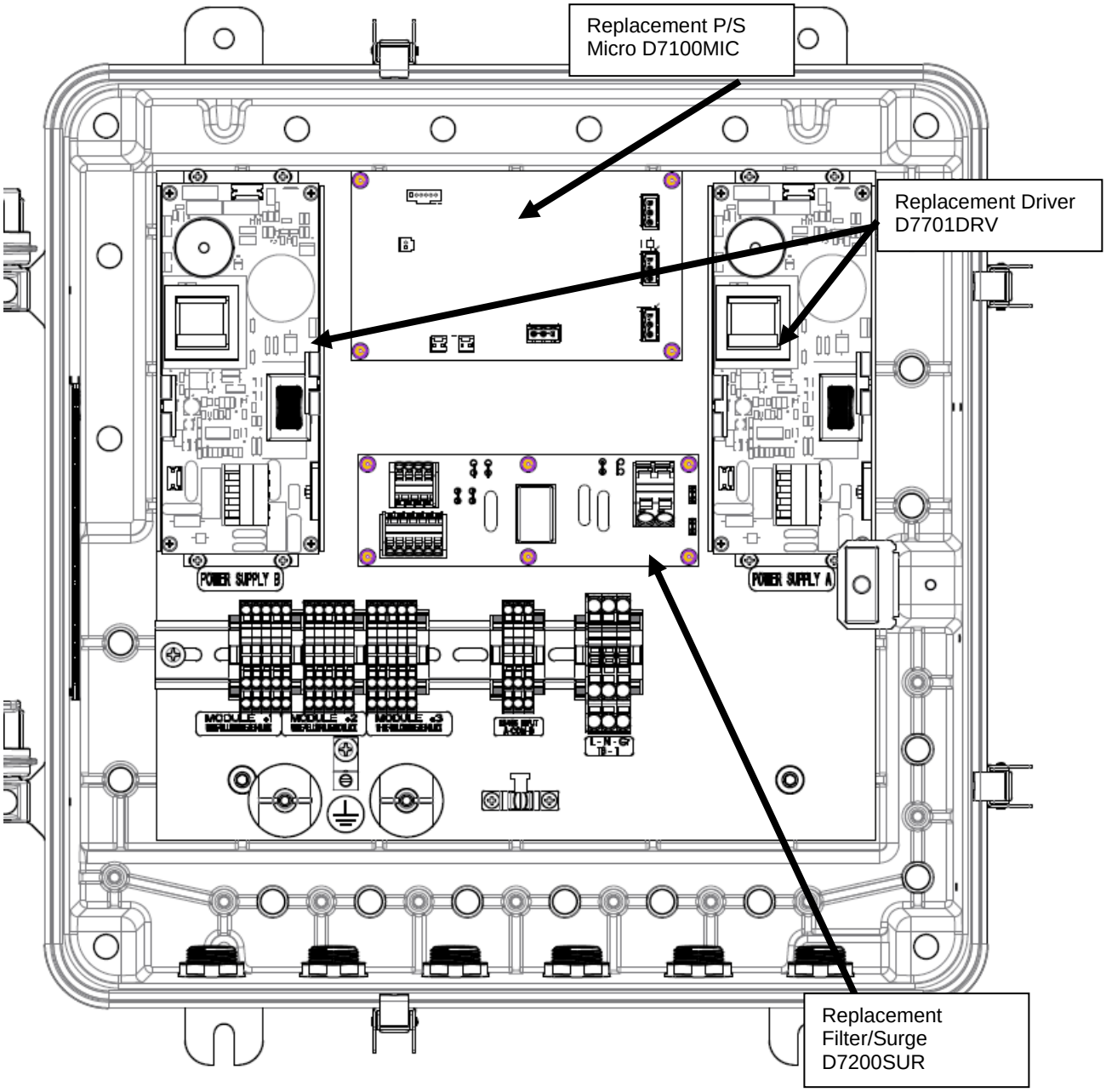
NOTE: AOL alarms or events generated are directly related to the connections and the wiring of the AOL.

The system can accommodate up to 3 AOLs. **The translator Board rotary knob must be set accordingly for the added AOLs.**

Power Supply Features / Requirements:

NOTE: For commissioning purposes pictures are required of the wiring and mounting of the Flashhead to the structure. **They MUST be reviewed and verified before de rigging.**

Power Supply D2669006



FLASH HEAD to POWER SUPPLY CONNECTIONS:

It is recommended that the installers get familiar with the required connections before installation.
Refer to the install manual and the wiring details for additional information

Check list:

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

2: The numbered cables on the individual Flash Modules are fed through the glands on the front of the Power supply corresponding to the numbers located on the back of the individual Flash Modules.
3: The Flash head RED cables are to be fed under each of the Grounding clamps and **secured tightly**. The BRAID of the cable must be in contact to both the housing and the grounding clamps and then secured under the clamp.

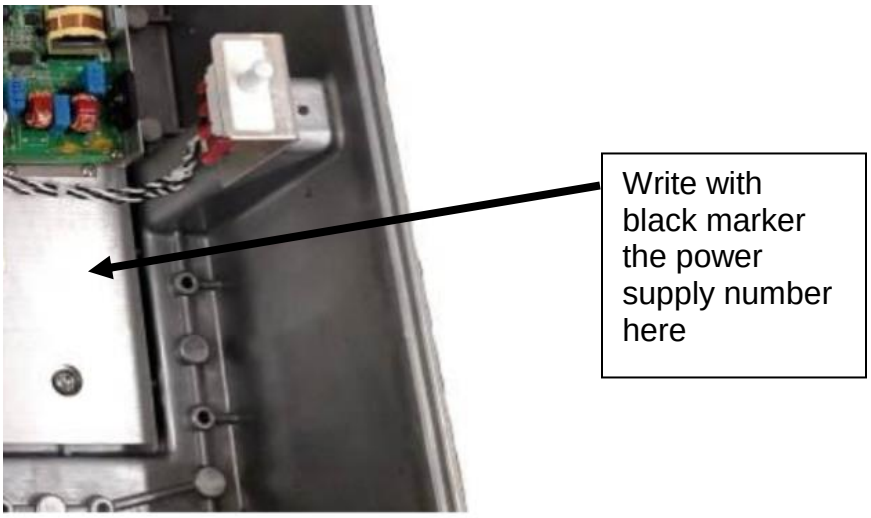
WARNING: Failure to do so could cause premature failures due to lightning strikes and could void all warranties.

NOTE: The insulation or jacket of the flash head cables are NOT intended to be under the clamps. The braid must be secured under the clamp.

4: Pictures must be supplied of each of the power supplies to verify connections

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

6: Upon validation of the working power supply the enclosure has to closed and tightened.



The Power Supply Enclosures have status LED's on their Micro Boards, similar to those on the Base Controller Micro Board. They are useful when troubleshooting the System.

STATUS LED ASSIGNMENTS

S7	S6	S5	S4	S3	S2	S1
Night Mode Solid on Yellow	Twilight Mode Solid on Yellow	Day Mode Solid on Yellow	P/S Temp Is Normal GREEN	P/S A Voltage Is Normal GREEN	P/S B Voltage Is Normal GREEN	Heartbeat Continuous flash GREEN

Power Supply Enclosure Status LED's

Flash Head Requirements:

WARNING: During cold weather installation the cable could be become stiff and proper care should be taken to not over bend the cable. The cable is rated for cold bends at 8 times the diameter of the cable. The bend needs to be greater than a 4 inch turn. Tighter bends could cause the cable to break.

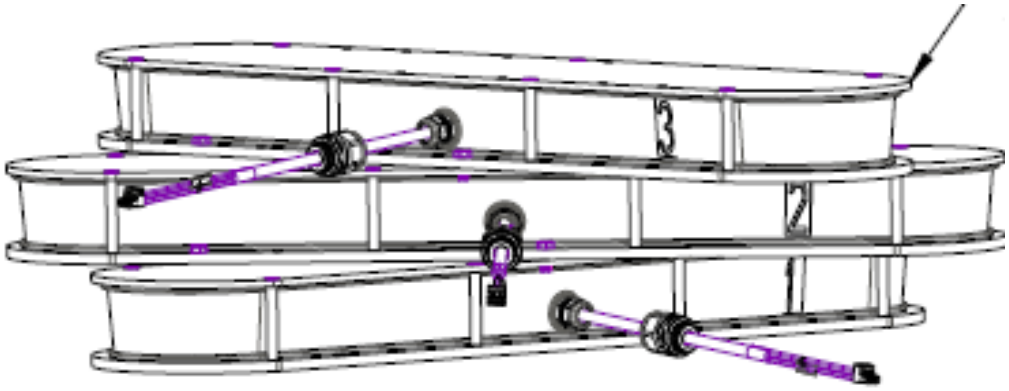
Refer to the install manual and the wiring details for additional information

There are no setups or requirements for the Flash Head from this manual. Once the Flashhead is connected to the Power supply communications is established.

NOTE: For commissioning purposes pictures are required of the wiring and mounting of the Flashhead to the structure. **They MUST be reviewed and verified before de rigging.**

WARNING: Contact www.dialight.com or the company that supplied the installation equipment when there are questions or concerns about the installation.

WARNING: Flashheads are not intended to be directly mounted in High RF areas and proper operation of the system could be compromised. All installations should be reviewed and approved via the Site manager, system seller and Dialight.
Failure to do so will VOID all warranties



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

Display and Events and Alarm descriptions:

Navigating the Display

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

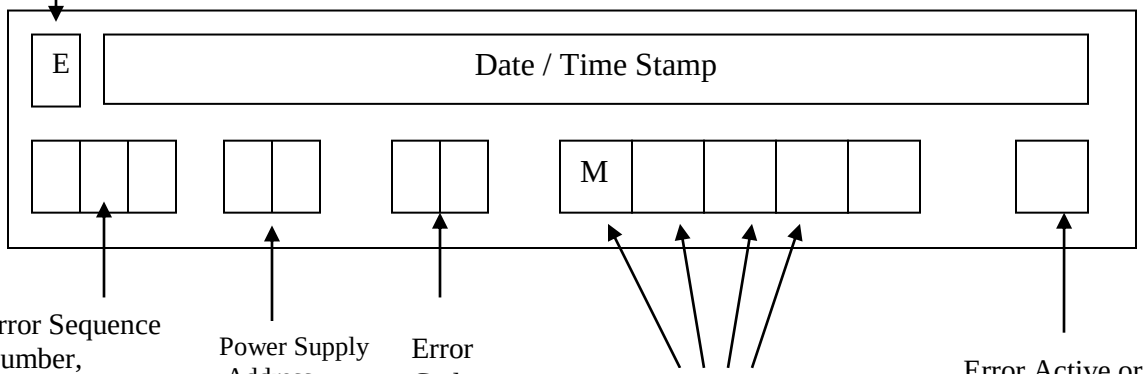
Enter: Selects a menu

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"

E= Event log

Interpreting Error/Event Logs



Error Sequence Number, Highest was last Error.

Power Supply Address 18 max

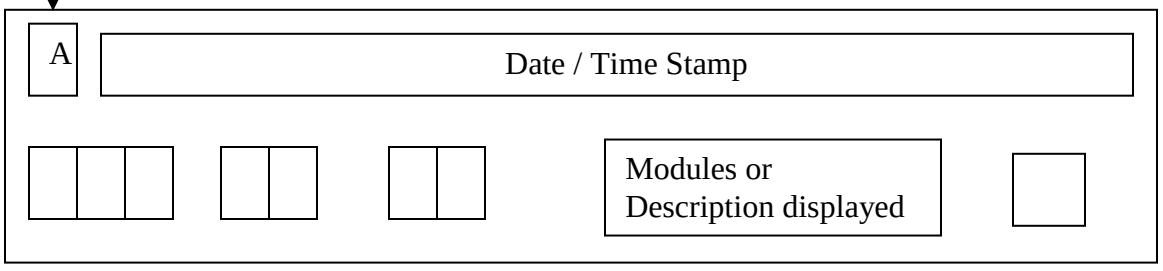
Error Code

Modules with Errors Displayed as 1,2,3,4

Error Active or Cleared Status
Act or Clr displayed

A= Alarm log

Interpreting ALARM Logs



Error Sequence Number, Highest was last Error.

Power Supply Address 18 max

Error Code

Modules are indicated M and 1,2or 3
BC are displayed as a number

Error Active or Cleared Status
Act or Clr displayed

NOTE: The above are separate screens shown on the LCD both logs are individually accessible

Events and Alarms:

Y = module number **X = power supply address setting**

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 or 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 or 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 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 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

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 light or white light on the high intensity Flash head is out. This power supply has been shut down.	Requires operation confirmation Causes: AC not being to supplied to power supply 150v power supply failure Faulty module	Alarm 3
22	Alarm	AOL Comm X	Comm Alarm	Visually check to see if the light is operating AC not being supplied to power supply RS485 not properly connected in the level Junction box RS485 not properly connected to translator board in AOL power supply	Alarm1
24	Alarm	AOL X Red	25% of the Red LED's on AOL are out	Disconnected J2 off of Red driver Faulty RED driver in AOL power supply 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 Or Disconnected J2 off of White driver 2 Faulty 1 or both white drivers in power supply Faulty 48Vdc driver in power supply	Alarm 3
31	Alarm	X COMM BC Y Or X COMM BC	Power supply or Micro did not respond to poll, or response was corrupted	Check J6 (RS485) cable in Power Supply Check J7 –J9 (RS485) Faulty module	Alarm 1
32	Alarm	X SYNC BC Y Or 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 Check J7 –J9 (RS485) 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 Flashhead	Individual Power supply was turned back on 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 May not begin to operate till next Day transition	N/A
38	Event	X V RED Y V= Voltage	Red Led voltage is out of range on the Flashhead	Red LED's are shorted or open Module has a fault at Night	Event -> 4 in a row will cause Alarm 3
39	Event	X V WHT Y V= Voltage	white Led voltage is out of range on the Flashhead	White LED's are shorted or open Module has a fault	Event -> 4 in a row will cause Alarm 3
40	Event	X CUR RED Y	Red Led current is out of range on the Flashhead	Red LED's are shorted or open 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 Flashhead	White LED's are shorted or open 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
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 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 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 Damaged photocell Bad connection in the photocell 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.

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

After pressing 'enter' the test will time out after 2 minutes if no user input is performed.
The test relies on the user input to complete the necessary checks.

Press "ENTR" to initiate LI test

Manual LI TEST 'enter' to Test

Press' TEST WHITE' button located under the 'Down' button on the LCD controller board to begin.
Pressing CLR escapes from the test

MLI 'CLR' to exit Push WHT BTN

Once the Test white is pressed the following screen will be displayed

Manual LI TEST IN PROCESS WHT

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 re display them.

After the Day test is finished the next menu will be displayed

MLI 'CLR' to exit push RED BTN

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

Press the 'TEST RED' button

Manual LI TEST IN PROCESS RED	**OR**	**Manual LI TEST IN PROCESS NWHT**

Manual LI TEST PASS :)	**OR**	**Manual LI TEST FAIL : (**

Manual LI TEST
LIT DONE

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

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

Manual LI TEST
LIT NOT DONE

Lighting Inspection Test Sequences for F and C structure types:

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 25% BC	ACT
11.	1 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	ACT
19.	AOL X Red	CLR
20.	1 SYNC M1	ACT
21.	1 SYNC M2	ACT
22.	1 SYNC M3	ACT
23.	1 COMM BC	ACT
24.	1 COMM BC	CLR
25.	1 SYNC M1	CLR
26.	1 SYNC M2	CLR
27.	1 SYNC M3	CLR
28.	1 25% BC	ACT
29.	1 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 25% BC	ACT
11.	1 25% BC	CLR
12.	photocell	ACT
13.	1 SDLite Comm	ACT
14.	Photocell	CLR
15.	1 SDLite Comm	CLR
16.	1 COMM BC	ACT
17.	1 COMM BC	CLR
18.	LIT log end	

Lighting Inspection Tests for A and B structure types:

For an “A” 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	ACT
15.	AOL X Red	CLR
16.	1 SYNC M1	ACT
17.	1 SYNC M2	ACT
18.	1 SYNC M3	ACT
19.	1 COMM BC	ACT
20.	1 COMM BC	CLR
21.	1 SYNC M1	CLR
22.	1 SYNC M2	CLR
23.	1 SYNC M3	CLR
24.	1 25% BC	ACT
25.	1 25% BC	CLR
26.	LIT log end	

For an “B” style system:

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

REVISION HISTORY

REV	ECO No.	DRN	CKD	APP	QA	CM	DATE
A	38371	CAG	SA	BAM	YS	JN	9/9/16