IMPORTANT !!!

PLEASE TAKE THE TIME TO FILL OUT FORM COMPLETELY. FILE IN A SAFE PLACE. IN THE EVENT YOU EXPERIENCE PROBLEMS WITH OR HAVE QUESTIONS CONCERNING YOUR CONTROLLER, THE FOLLOWING INFORMATION IS NECESSARY TO OBTAIN PROPER SERVICE AND PARTS.

MODEL #

AA3/5MLED

SERIAL #

PURCHASE DATE

PURCHASED FROM
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1.0 GENERAL INFORMATION

The TWR Lighting®, Inc. (TWR®) Model AA3/5M-LED Controller is made for A3 lighting of towers 701' to 1,050' above ground level (AGL), in accordance with the FAA A/C 70/7460-1K. One (1) LED Beacon should be placed at the top of the structure, two (2) LED Beacons at the 2/3 interval, and two (2) LED Beacons at the 1/3 interval with respect to overall tower height. Obstruction LED Sidelights should be placed at the 5/6, ½, and 1/6 intervals.

The flash rate of the LED Beacons is thirty (30) per minute. The LED Beacons flash synchronized to one another. The LED Sidelights steady burn.

Power supplied to the controller shall be 120V AC single phase.

Controller functions that are monitored by remote alarms in the form of dry contact closures are as follows:

**POWER FAILURE** Monitors 120V AC to the controller. Relay K1 alarms in the event of power failure or tripped circuit breaker.

"LIGHTS ON" K2 relay will give an indication whenever the controller is activated.

**LED BEACONS** Will give an alarm in the event one (1) LED BEACON fails on any level.

**FLASHER FAILURE** K3 relay will give an alarm in the event of flasher failure.

**OBSTRUCTION LIGHTS** Will give an alarm when one (1) of three (3) sidelights fails.
2.0 INSTALLATION INSTRUCTIONS

WARNING DANGER !!!!

THIS SYSTEM OPERATES AT HIGH VOLTAGE LEVELS THAT COULD BE LETHAL TO SERVICE PERSONNEL. ALL INSTALLATION AND MAINTENANCE WORK SHOULD BE DONE BY QUALIFIED SERVICE PERSONNEL ONLY. WHEN PERSONNEL IS INSTALLING SYSTEM OR PERFORMING MAINTENANCE ON THIS SYSTEM, MAKE SURE THE POWER IS TURNED OFF AT THE SERVICE BREAK PANEL!!

READ AND UNDERSTAND THE THEORY OF OPERATION AND ITS SAFETY MESSAGES BEFORE ATTEMPTING INSTALLATION/MAINTENANCE OF THIS SYSTEM.

2.1 POWER SUPPLY CONTROL CABINET MOUNTING
(Refer to Drawing 1199-R)

2.1.1 The power supply control cabinet can be located at the base of the structure or in an equipment building. Mounting footprints are shown on drawing 1199-R. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

2.1.2 If the control cabinet is mounted inside an equipment building, the photocell should be mounted vertically on ½" conduit outside the building above the eaves facing north. Wiring from the photocell socket to the control cabinet should consist of one (1) each, red, black and white wires. The white wire is connected to the socket terminal marked “N,” the black wire is connected to the socket terminal marked “L,” and the red wire is connected to the socket terminal marked “LO.” As above, the photocell should be positioned so that it does not “see” ambient light, which would prevent it from switching to the nightmode.
2.1.3 If the control cabinet is mounted outside an equipment building, the photocell should be mounted vertically on 1/2” conduit so the photocell is above the control cabinet. Care must be taken to assure that the photocell does not “see” any ambient light that would prevent it from switching into the nightmode. The photocell wiring is the same as in 2.1.1.

2.1.4 The wiring from the photocell, the service breaker, the LED beacon, and the LED sidelights should enter the control cabinet through the watertight connectors in the bottom of the cabinet. Inside the cabinet, the connections will be made on the terminal strips and circuit breakers located at the bottom of the chassis. These connections are made as follows:

2.2 PHOTOCELL WIRING
(Refer to Drawing 1199-R)

2.2.1 Connect the **BLACK** wire from the photocell to terminal block TB2 marked “L.”

2.2.2 Connect the **RED** wire from the photocell to terminal block TB2 market “SSR.”

2.2.3 Connect the **WHITE** wire from the photocell to terminal block TB2 market “N.”

2.3 POWER WIRING
(Refer to Drawing 1199-R)

2.3.1 Power wiring to the control cabinet should be in accordance with local methods and NEC.

2.3.2 Circuit breaker needs to be a one (1) pole rated at 15 amps.

2.3.3 Connect incoming 120V AC “Hot” to terminal block TB1 marked “L.”

2.3.4 Connect neutral to one (1) of the terminal blocks TB1 marked “N.”

2.3.5 Connect the AC ground to the aluminum mounting lug bolts on the panel.
2.4 LED BEACON AND SIDE Lecture WIRING
(Refer to Drawings 1199-R, 802-01 or 802-02)

Install wiring between the controller and the LED Beacons utilizing either strobe cable or conduit method. Refer to drawings 1199-R, 802-01 or 802-02 for installation of light kits. Following these requirements, installing light kits will require lifting of the cable by the supplied cable grip or conduit to affix to the tower. Always work safely and adhere to all OSHA Safety Guidelines when lifting wiring or working on the structure or tower itself. It is the installer’s responsibility to install the lighting kit in a safe manner. Installers can request from OSHA their requirements 29CFT 1926.21, and 20CFR 1926.105, to ensure compliance to regulations.

NOTE: On occasion, a set of custom lighting kit drawings may be specifically requested by a customer and installed in this manual. In cases such as these, the drawings will precede the manual if a conflict occurs.

2.4.1 Connect the **BLACK** wire from LED Beacon #1 to circuit breaker marked “BL1.”

2.4.2 Connect the **BLUE** wire from LED Beacon #2 and LED Beacon #3 to circuit breaker marked “BL2.”

2.4.3 Connect the **BROWN** wire from LED Beacon #4 and LED Beacon #5 to circuit breaker marked “BL3.”

2.4.4 Connect the **RED** wire from LED Sidelight group #1 to circuit breaker marked “SL1.”

2.4.5 Connect the **YELLOW** wire from LED Sidelight group #2 to circuit breaker marked “SL2.”

2.4.6 Connect the **PURPLE** wire from LED Sidelight group #3 to circuit breaker marked “SL3.”

2.4.7 Connect the **WHITE** neutral wire(s) to one (1) or more of the terminal blocks on TBI marked “N.”
2.5 LED BEACON AND LED SIDELIGHT ALARM WIRING
(Refer to Drawings 1199-R and 1199-S)

2.5.1 Alarm relays K1 – K3, and alarm modules M2 – M7 are provided for independent contact closures for: Power Failure, Lights “ON,” Flasher Failure, LED Beacon Burnout, and LED Sidelight Burnout.

2.5.2 Alarm Wiring – To utilize all of the red light alarms, the customer will need nine (9) pairs of wires to interface with the alarm device. One (1) wire from each of the nine (9) pairs will terminate at the points marked common. The remaining wire from each pair will terminate as follows.

2.5.3 Power Failure Alarm – Connect to Relay K1, terminal #3, for normally open, or terminal #6, for normally closed monitoring.

2.5.4 Tower Lights "ON" – Connect to Relay K2, terminal #3, for normally open, or terminal #6, for normally closed monitoring.

2.5.5 Flasher Failure – Connect to Relay K3, terminal #6, for normally open, or terminal #3, for normally closed monitoring.

2.5.6 SL1 level Burnout – Connect to Module M5, terminal #18, for normally open, or terminal #16, for normally closed monitoring.

2.5.7 SL2 level Burnout – Connect to Module M6, terminal #18, for normally open, or terminal #16, for normally closed monitoring.

2.5.8 SL3 level Burnout – Connect to Module M7, terminal #18, for normally open, or terminal #16, for normally closed monitoring.

2.5.9 BL1 level Burnout – Connect to Module M2, terminal #18, for normally open, or terminal #16, for normally closed monitoring.

2.5.10 BL2 level Burnout – Connect to Module M3, terminal #18, for normally open, or terminal #16, for normally closed monitoring.

2.5.11 BL3 level Burnout – Connect to Module M4, terminal #18, for normally open, or terminal #16, for normally closed monitoring.
2.6 ALARM TESTING

To test alarms, follow the procedures using an “ohm” meter between alarm common and alarm points.

POWER FAILURE
Pull circuit breaker at electrical panel.

TOWER LIGHTS “ON”
Operate photocell by-pass switch (SW1) or cover the photocell.

LED BEACONS and LED SIDELIGHTS
Pull circuit breakers on controller panel.
3.0 THEORY OF OPERATION

3.1 POWER SUPPLY

120V AC enters the controller from the circuit breaker panel. Line (L) sits at the PRD waiting to be switched and also keeps the power failure Relay K1 energized. When the 6390-FAA photocell is activated, line (L) energizes the coil of the PRD and K2 "Lights On" Relay. This also can be accomplished by using the photocell by-pass switch (SW1).

3.2 LED SIDELIGHTS

Line LDS is sent to Modules M5, M6, and M7, which are current sensing modules for the LED Sidelights. Each RM4JA31MW monitors one (1) level of LED Sidelights, and will provide a contact closure along a visual indication if one (1) or more fails.

3.3 LED BEACONS

Line LDB is sent to Modules M1, M2, M3, and M4. Module M1 is the primary flasher for the LED beacons. The output of Module M1 is sent through the current sensing Modules M2, M3, and M4, then to the circuit breaker outputs BL1, BL2, and BL3. If Modules M2, M3, or M4 detect a lamp burnout, then the module would provide a contact closure along with a visual indication for that lamp circuit.

Relay K3 is a Flasher Failure Relay for the LED Beacons. If Relay K3 detects a Flasher Failure, it would then provide a contact closure for the flasher circuit.
4.0 MAINTENANCE GUIDE

4.1 RED OBSTRUCTION LIGHTING

No scheduled maintenance is required. Perform on an as needed basis only.

TOOLS REQUIRED: NONE

4.2 L-864 LED BEACON REPLACEMENT

No scheduled maintenance is required. Perform on an as needed basis only.

4.3 L-810 LED SIDE LIGHT REPLACEMENT

No scheduled maintenance is required. Perform on an as needed basis only.

4.4 L-864 CONTROLLER

No scheduled maintenance is required. Perform on an as needed basis only.

4.5 PHOTOCELL

The photocell is a sealed unit. No maintenance is needed nor required other than replacement as necessary.
## 5.0 MAJOR COMPONENTS PARTS LIST

<table>
<thead>
<tr>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| 1   | PF-250      | SOLID STATE FLASHER (M1)  
(This replaces the FS155-30T Module) |
| 1   | PRD 7AGO    | 120V AC LOAD CONTACTOR (PRD) |
| 2   | KRPA5AG120V | S.P.S.T. RELAY (K1 & K2) |
| 1   | 6390-FAA    | 120 - 240V PHOTOCELL  
(This replaces the 102FAA Photocell) |
| 2   | MOV524V15   | MOV1, MOV2 VARISTOR |
| 1   | SPEC 224    | TIME DELAY RELAY (K3) |
| 1   | STJ01002    | SWITCH (SW1) |
| 2   | S261D1.5    | 1.5 amp CIRCUIT BREAKERS  
(BL2 and BL3) |
| 8   | 8WA1204     | TERMINAL BLOCK (TB1 & TB2) |
| 2   | 8WA1808     | TERMINAL BLOCK END STOP |
| 6   | RM4JA31MW   | LED BEACONS and LED SIDE LIGHTS  
CURRENT SENSORS (M2 – M7) |
| 4   | S261D1      | 1 amp CIRCUIT BREAKERS  
(BL1, SL1-SL3) |
| 1   | STA40007    | 1200 ohm 20W RESISTOR |
6.0 **SUGGESTED SPARE PARTS LIST**

<table>
<thead>
<tr>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6390-FAA</td>
<td>120 - 240V PHOTOCELL</td>
</tr>
<tr>
<td></td>
<td>(This replaces the 102FAA Photocell)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>PF-250</td>
<td>SOLID STATE FLASHER (M1)</td>
</tr>
<tr>
<td></td>
<td>(This replaces the FS155-30T Module)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SPEC 224</td>
<td>TIME DELAY RELAY (K3)</td>
</tr>
<tr>
<td>1</td>
<td>KRPA5AG120V</td>
<td>SPST RELAY (K1 or K2)</td>
</tr>
<tr>
<td>2</td>
<td>RM4JA31MW</td>
<td>LED BEACONS and LED SIDELIGHTS CURRENT SENSORS (M2 – M7)</td>
</tr>
</tbody>
</table>
Warranty & Return Policy

TWR Lighting®, Inc. (“TWR®”) warrants its products (other than “LED Product”) against defects in design, material (excluding incandescent bulbs) and workmanship for a period ending on the earlier of two (2) years from the date of shipment or one (1) year from the date of installation.

TWR Lighting®, Inc. (“TWR®”) warrants its “LED Product” against defects in design, material and workmanship for a period of five (5) years from the date of shipment. TWR®, at its sole option, will, itself, or through others, repair, replace or refund the purchase price paid for “LED Product” that TWR® verifies as being inoperable due to original design, material, or workmanship. All warranty replacement “LED Product” is warranted only for the remainder of the original warranty of the “LED Product” replaced. Replacement “LED Product” will be equivalent in function, but not necessarily identical, to the replaced “LED Product.”

TWR Lighting®, Inc. (“TWR®”) warrants its “LED Product” against light degradation for a period of five (5) years from the date of installation. TWR®, at its sole option, will, itself, or through others, repair, replace, or refund the purchase price paid for “LED Product” that TWR® verifies as failing to meet 75% of the minimum intensity requirements as defined in the FAA Advisory Circular 150/5345-43G dated 09/26/12. All warranty replacement “LED Product” is warranted only for the remainder of the original warranty of the “LED Product” replaced. Replacement “LED Product” will be equivalent in function, but not necessarily identical, to the replaced “LED Product.”

Replacement parts (other than “LED Product”) are warranted for 90 days from the date of shipment.

Conditions not covered by this Warranty, or which might void this Warranty are as follows:

- Improper Installation or Operation
- Misuse
- Abuse
- Unauthorized or Improper Repair or Alteration
- Accident or Negligence in Use, Storage, Transportation, or Handling
- Any Acts of God or Nature
- Non-OEM Parts
  The use of Non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.
Warranty & Return Policy  
(continued)

Field Service – Labor, Travel, and Tower Climb are not covered under warranty. Customer shall be obligated to pay for all incurred charges. An extensive network of certified and insured Service Representatives is available if requested.

Repair, Replacement or Product Return RMA Terms – You must first contact our Customer Service Department at 713-973-6905 to acquire a Return Merchandise Authorization (RMA) number in order to return the product(s). Please have the following information available when requesting an RMA number:

- The contact name and phone number of the tower owner or
- The contact name and phone number of the contractor
- The site name and number
- The part number(s)
- The serial number(s) (if any)
- A description of the problem
- The billing information
- The Ship To address

This RMA number must be clearly visible on the outside of the box. If the RMA number is not clearly labeled on the outside of the box, your shipment will be refused. Please ensure the material you are returning is packaged carefully. The warranty is null and void if the product(s) are damaged in the return shipment.

All RMAs must be received by TWR LIGHTING®, INC., 10810 W. LITTLE YORK RD., #130, HOUSTON, TX 77041-4051, within 30 days of issuance.

Upon full compliance with the Return Terms, TWR® will replace, repair and return, or credit product(s) returned by the customer. It is TWR®’s sole discretion to determine the disposition of the returned item(s).
**Warranty & Return Policy**

(continued)

**RMA Replacements** – Replacement part(s) will be shipped and billed to the customer for product(s) considered as Warranty, pending return of defective product(s). When available, a certified reconditioned part is shipped as warranty replacement with a Return Merchandise Authorization (RMA) number attached. Upon receipt of returned product(s), inspection, testing, and evaluation will be performed to determine the cause of defect. The customer is then notified of the determination of the testing.

- Product(s) that is deemed defective and/or unrepairable and covered under warranty - a credit will be issued to the customer’s account.
- Product(s) found to have no defect will be subject to a $75.00 per hour testing charge (1 hour minimum), which will be invoiced to the customer. At this time the customer may decide to have the tested part(s) returned and is responsible for the return charges.
- Product(s) under warranty, which the customer does not wish returned, the customer will be issued a credit against the replacement invoice.

**RMA Repair & Return** – A Return Merchandise Authorization (RMA) will be issued for all part(s) returned to TWR® for repair. Upon receipt of returned product(s), inspection, testing, and evaluation will be performed to determine the cause of defect. The customer is then notified of the determination of the testing. If the returned part(s) is deemed unrepairable, or the returned part(s) is found to have no defect, the customer will be subject to a $75.00 per hour testing charge (1 hour minimum), which will be invoiced to the customer. Should the returned parts be determined to be repairable, a written estimated cost of repair will be sent to the customer for their written approval prior to any work being performed. In order to have the tested part(s) repaired and/or returned, the customer must issue a purchase order and is responsible for the return shipping charges.

**RMA Return to Stock** – Any product order that is returned to TWR® for part(s) ordered incorrectly or found to be unneeded upon receipt by the customer, the customer may be required to pay a minimum 20% restocking fee. Product returned for credit must be returned within 60-days of original purchase, be in new and resalable condition, and in original packaging. Once the product is received by TWR it’s condition will be evaluated and a credit will be issued only once it is determined that the RMA Return Terms have been met.

**Credits** – Credits are issued once it is determined that all of the Warranty and Return Terms are met. All credits are processed on Fridays. In the event a Friday falls on a Holiday, the credit will be issued on the following Friday.
Warranty & Return Policy
(continued)

**Freight** – All warranty replacement part(s) will be shipped via ground delivery and paid for by TWR®. Delivery other than ground is the responsibility of the customer.

REMEDIES UNDER THIS WARRANTY ARE LIMITED TO PROVISIONS OF REPLACEMENT PARTS AND REPAIRS AS SPECIFICALLY PROVIDED. IN NO EVENT SHALL TWR® BE LIABLE FOR ANY OTHER LOSSES, DAMAGES, COSTS, OR EXPENSES INCURRED BY THE CUSTOMER, INCLUDING, BUT NOT LIMITED TO, LOSS FROM FAILURE OF THE PRODUCT(S) TO OPERATE FOR ANY TIME, AND ALL OTHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING ALL PERSONAL INJURY OR PROPERTY DAMAGE DUE TO ALLEGED NEGLIGENCE, OR ANY OTHER LEGAL THEORY WHATSOEVER. THIS WARRANTY IS MADE BY TWR® EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED. WITHOUT LIMITING THE GENERALITY OF THE FORGOING, TWR® MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS OF THE PRODUCT(S) FOR ANY PARTICULAR PURPOSE. TWR® EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES.
RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#: __________________________________ DATE: ____________________________

CUSTOMER: _______________________________________________________________

________________________________________________________________________

CONTACT: ___________________ PHONE NO.: _________________________________

ITEM DESCRIPTION (PART NO.): ____________________________________________

________________________________________________________________________

MODEL NO.: ___________________ SERIAL NO.: _____________________________

ORIGINAL TWR INVOICE NO.: _______ DATED: _____________________________

DESCRIPTION OF PROBLEM: ____________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

SIGNED: ________________________ DATE NEEDED: __________________________

RETURN ADDRESS:

PLEASE RETURN PRODUCT TO: 10810 W. LITTLE YORK RD., #130 HOUSTON, TX 77041-4051
RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#: __________________________ DATE: __________________________

CUSTOMER: ______________________________________________________

____________________________________________________________________

CONTACT: ______________________ PHONE NO.: ______________________

ITEM DESCRIPTION (PART NO.): ______________________________________

____________________________________________________________________

MODEL NO.: ______________________ SERIAL NO.: ______________________

ORIGINAL TWR INVOICE NO.: _________ DATED: ______________________

DESCRIPTION OF PROBLEM: _________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

SIGNED: ______________________ DATE NEEDED: ______________________

RETURN ADDRESS:

PLEASE RETURN PRODUCT TO: 10810 W. LITTLE YORK RD., #130 HOUSTON, TX 77041-4051
*CUSTOMER ALARM POINTS

C = ALARM COMMON
NC = NORMALLY CLOSED
NO = NORMALLY OPEN
PINC/PINC = POWER FAILURE
LONG/SHORT = LIGHTS "TON"
BLIND/BLIND = LED BEACON LEVEL #1 FAILURE
BEACON/BEACON = LED BEACON LEVEL #2 FAILURE
SLING/SLING = LED SIDELIGHT LEVEL #1 FAILURE
SLING/SLING = LED SIDELIGHT LEVEL #2 FAILURE
* ALARM OUTPUTS ARE FORM C.

NOTES:
1. WHEN REPLACING METAL BASE MODULES USE HEAT SINK COMPOUND BETWEEN MODULE AND ALUMINUM PLATE.
2. WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) LDB TO LDB TO LDB.

AA3/5 LED CONTROLLER
CHASSIS LAYOUT

02/20/2005 (F) NEW M1 RESISTOR
DATE: LTR. REVISION
NOTES:
1. ITEM #7 CAN BE USED TO REDUCE 3/4" CONDUIT TO 1/2" CONDUIT AT THE HOUSING OR AT THE CONTROLLER ITSELF.
2. IF ADDITIONAL WIRE IS REQUIRED OVER THE FACTORY 20', USE THE FOLLOWING CHART.
   21' TO 300' - 16 AWG TFFN
   301' TO 500' - 14 AWG TFFN
AC UNITS CURRENT MEASUREMENT—RM4JA31M

OUTPUT TO LOAD
CONTROL VOLTAGE INPUT

3–30 MA INPUT

120VAC PRODUCT SPECIFIC SETTINGS

<table>
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<th>Qty.</th>
<th>Part No.</th>
<th>Input</th>
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<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>PRD.</th>
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<td>OL1LED2</td>
<td>B2</td>
<td>30</td>
<td>10</td>
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<td>TWR</td>
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<td>12</td>
<td>LEDBEACON2(T)</td>
<td>B3</td>
<td>10</td>
<td>10</td>
<td>100</td>
<td>&lt;30</td>
<td>ORGA</td>
</tr>
<tr>
<td>13</td>
<td>LEDBEACON2(T)</td>
<td>B3</td>
<td>35</td>
<td>10</td>
<td>100</td>
<td>&lt;30</td>
<td>ORGA</td>
</tr>
<tr>
<td>14</td>
<td>STLEDACON2</td>
<td>B3</td>
<td>35</td>
<td>10</td>
<td>100</td>
<td>&lt;30</td>
<td>ORGA</td>
</tr>
<tr>
<td>15</td>
<td>STLEDACON2</td>
<td>B3</td>
<td>35</td>
<td>10</td>
<td>100</td>
<td>&lt;30</td>
<td>ORGA</td>
</tr>
</tbody>
</table>

FUNCTIONS

1. Adjustment of current threshold as % of setting range ±5%.
2. Hysteresis adjustment from 5 to 30% ▲.
3. Fine adjustment of time delay as % of setting range max. value.
4. 10-position switch combining
   -- selection of the timing range: 1 s, 3 s, 10 s, 30 s, no time delay.
   -- selection of overcurrent (>) or undervoltage (<) detection. See table below.
R Yellow LED: indicates relay state (Off for de-energized relay, On for energized).
U Green LED: indicates that supply to the RM4 is present.

Overcurrent Control
Overcurrentor Undercurrent Control ■
Yes
Yes
Measuring Range
3 MA - 1,000 MA

Detailed Positions for Switch 4

<table>
<thead>
<tr>
<th>Switch Position</th>
<th>Function</th>
<th>Time Delay (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0</td>
<td>Undercurrent detection</td>
<td>No time delay</td>
</tr>
<tr>
<td>&lt; 1</td>
<td>Undercurrent detection</td>
<td>0.05 to 1 s</td>
</tr>
<tr>
<td>&lt; 3</td>
<td>Undercurrent detection</td>
<td>0.15 to 3 s</td>
</tr>
<tr>
<td>&lt; 10</td>
<td>Undercurrent detection</td>
<td>0.5 to 10 s</td>
</tr>
<tr>
<td>&lt; 30</td>
<td>Undercurrent detection</td>
<td>1.5 to 30 s</td>
</tr>
<tr>
<td>&gt; 0</td>
<td>Overcurrent detection</td>
<td>No time delay</td>
</tr>
<tr>
<td>&gt; 1</td>
<td>Overcurrent detection</td>
<td>0.05 to 1 s</td>
</tr>
<tr>
<td>&gt; 3</td>
<td>Overcurrent detection</td>
<td>0.15 to 3 s</td>
</tr>
<tr>
<td>&gt; 10</td>
<td>Overcurrent detection</td>
<td>0.5 to 10 s</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>Overcurrent detection</td>
<td>1.5 to 30 s</td>
</tr>
</tbody>
</table>

■ = Selection by switch on front face
▲ = Value of current between energization and de-energization of the output relay (% of the current threshold to be measured).

*Due to current draw tolerances slight adjustments to setting #1 may be needed for proper alarming.*
**Parts List**

<table>
<thead>
<tr>
<th>ITE</th>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>LEDLITEENG</td>
<td>120 VAC L-864 LED LIGHT ENG</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>LEDFRAMKIT</td>
<td>LEDBEA KIT / BASE, LID &amp; CAP</td>
</tr>
<tr>
<td>2.1</td>
<td>1</td>
<td>(100672-01)</td>
<td>LEDBEACON BASE PLATE</td>
</tr>
<tr>
<td>2.2</td>
<td>1</td>
<td>(100344)</td>
<td>CAP DUAL BEACON</td>
</tr>
<tr>
<td>2.3</td>
<td>1</td>
<td>(100673)</td>
<td>LEDBEACON LID PLATE</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>STLDBCTUBE</td>
<td>CLEAR ACRYLIC TUBE 14&quot;</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>STBEAGSK2</td>
<td>GASKET 3/16 X 15 1/4</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>1420X81316AT</td>
<td>14-20 X 8-13/16 S/S</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>1420SSNUTN</td>
<td>1/4-20 S/S NUT W/ NYLON</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>1420NUT</td>
<td>1/4-20 S/S NUT</td>
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<tr>
<td>8</td>
<td>1</td>
<td>EL190S</td>
<td>1&quot; 90 SHORT ELBOW GALV</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>A315</td>
<td>1&quot; CONDUIT LOCKNUT GALV</td>
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<tr>
<td>10</td>
<td>1</td>
<td>CC-MPT-1-G</td>
<td>1&quot; CORD CONNECTOR</td>
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<td>1</td>
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<td>PRODUCT LABEL</td>
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<td>10</td>
<td>CS014/3</td>
<td>3 - #14 SO CORD</td>
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<td>13</td>
<td>4</td>
<td>100606M</td>
<td>RETAINING WASHER</td>
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<td>14</td>
<td>6</td>
<td>18PRSS</td>
<td>1/8 X .45 SS POP RIVET</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
<td>58X234</td>
<td>A325 5/8 X 1-1/2 W/LNUT</td>
</tr>
<tr>
<td>*16</td>
<td>3</td>
<td>*14RB-2577</td>
<td>FEM DISC 16-14 GA</td>
</tr>
</tbody>
</table>

* = ITEMS NOT SHOWN

**Dimensions:**
- 15.45 in [392.54]
- .812" HOLES SPACED
- 90° ON 13.25" BOLT CIRCLE

**Weight:** 46 LBS. (20.9 KG)
**Parts List**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>OL1VLED2</td>
<td>L810 OBSTRUCTION LIGHT</td>
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<tr>
<td>*</td>
<td>1</td>
<td>100588_RE</td>
<td>OL 6LED BASE PLATE</td>
</tr>
<tr>
<td>1.2</td>
<td>1</td>
<td>100591</td>
<td>OL 6LED STAR DISK</td>
</tr>
<tr>
<td>1.3</td>
<td>1</td>
<td>100680</td>
<td>OL 1/2 SERIAL # LABEL</td>
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<td>1.4</td>
<td>1</td>
<td>A10290</td>
<td>5/32&quot; ID RUBBER GROMMET</td>
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<tr>
<td>1.5</td>
<td>6</td>
<td>STD05008</td>
<td>LED EMITTER</td>
</tr>
<tr>
<td>1.6</td>
<td>1</td>
<td>OLG</td>
<td>OIL GASKET</td>
</tr>
<tr>
<td>1.7</td>
<td>1</td>
<td>AP100846</td>
<td>SIDE LiGHT LENS CLEAR ACRYLIC</td>
</tr>
<tr>
<td>1.8</td>
<td>1</td>
<td>106V</td>
<td>LENS HOLDER RING</td>
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<td>6</td>
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<td>POWER SUPPLY</td>
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<td>20RED</td>
<td>#20AWG RED BELDON WIRE</td>
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<tr>
<td>*</td>
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<td>WIRE/NUTBLU</td>
<td>BLUE WIRE NUT</td>
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<tr>
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<td>2</td>
<td>HC255SS</td>
<td>SIDE LiGHT LATCH</td>
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<td>1/16 HOL 7X7 S.S. WIRE</td>
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<td>OL LENS CLIP</td>
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<tr>
<td>8</td>
<td>1</td>
<td>A314</td>
<td>3/4&quot; CONDUIT LOCKNUT GALV.</td>
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* = ITEMS NOT SHOWN

*GROUND WIRE MUST BE CONNECTED TO PROPERLY PROTECT POWER SUPPLY. FAILURE TO GROUND WILL VOID ALL WARRANTIES.*
### Parts List

<table>
<thead>
<tr>
<th>ITEM</th>
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<td>34CLNP</td>
<td>3/4&quot; GALV CLOSE NIPPLE</td>
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<td>3/4&quot; 90 DEGREE SHORT ELBOW GALV</td>
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<td>5</td>
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<td>3/4&quot; CONDUIT LOCKNUT GALV.</td>
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<td>SIDELIGHT LATCH</td>
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<td>16</td>
<td>18PRSS</td>
<td>1/8 X .45 SS POP RIVET</td>
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<td>.5</td>
<td>7X7SS</td>
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<td>6.7</td>
<td>2</td>
<td>A1A</td>
<td>STAKON CRIMP</td>
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<td>1</td>
<td>A314</td>
<td>3/4&quot; CONDUIT LOCKNUT GALV.</td>
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<tr>
<td>6.9</td>
<td>3</td>
<td>12V245</td>
<td>OL LENS CLIP</td>
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<td>3</td>
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<td>LED VERTICAL PCB</td>
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<td>OL 6LED BASE PLATE</td>
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<td>6</td>
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<td>WIRENUTRED</td>
<td>RED WIRE NUT FOR #8 TO #12 WIRE</td>
</tr>
</tbody>
</table>

* = ITEMS NOT SHOWN

* GROUND WIRE MUST BE CONNECTED TO PROPERLY PROTECT POWER SUPPLY. FAILURE TO GROUND WILL VOID ALL WARRANTIES.

---

**TWR Lighting, Inc.**

**Enlightened Technology**

**HARK**

**OL2VLED2 FAA-OL16LED 120-240VAC DOUBLE VALOX LED SL (L810 LED DOUBLE OBSTRUCTION LIGHT)**

**Title:** OL2VLED2 FAA-OL16LED 120-240VAC DOUBLE VALOX LED SL (L810 LED DOUBLE OBSTRUCTION LIGHT)

**Size:** B

**Drawing NO:** 100658

**Rev:** F

**Prepared:** ZAMORANO

**Scale:** 1/4" = 1'-0"

**Date:** 11/07/14

**Sheet:** 1 of 1
JB-5 AND JB-0
3/4" JUNCTION BOX

JB-8 AND JB-8SR
1" JUNCTION BOX

NOTES:

1) DRAWING ILLUSTRATES METHOD OF STRAIN RELIEVING WIRE. USE THIS METHOD ON ALL JUNCTION BOXES.

2) THE NATIONAL ELECTRICAL CODE—ARTICLE 300-19-83 REQUIRES CONDUCTORS IN A VERTICAL CONDUIT TO BE SUPPORTED TO RELIEVE STRAIN ON TERMINAL BLOCK CONNECTIONS.

3) SKETCH ILLUSTRATES METHOD OF STRAIN RELIEVING A SINGLE CONDUCTOR. SEVERAL CONDUCTORS MAY BE GROUPED TOGETHER.

4) CONDUCTORS MAY BE MIXED BUT SHOULD NOT TAKE UP MORE THAN 40% OF CONDUIT'S INSIDE AREA.

<table>
<thead>
<tr>
<th>AWG WIRE SIZE</th>
<th>MAX. NUMBER WIRES IN 3/4&quot; CONDUIT</th>
<th>MAX. NUMBER WIRES IN 1&quot; CONDUIT</th>
<th>WIRE AREA SQ. INCHES</th>
<th>WEIGHT PER 100 FEET</th>
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</thead>
<tbody>
<tr>
<td>12 THHN</td>
<td>16</td>
<td>26</td>
<td>0.0117</td>
<td>2.50</td>
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<tr>
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<td>17</td>
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<td>0.0519</td>
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</tr>
<tr>
<td>4 THHN</td>
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<td>4</td>
<td>0.0845</td>
<td>16.20</td>
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</table>
DIRECTIONS FOR USING WrapLock

1. PASS ONE END THROUGH YOKE AND BEND BACK ABOUT 1 1/2" AND FLATTEN DOWN.
2. PASS BAND AROUND WORK AND THROUGH YOKE.
3. REPEAT AND PASS END THROUGH A SECOND TIME, DRAW UP FREE END SNUGLY WITH PLIERS.
4. INSERT FREE END IN SLOT OF RATCHET.
5. TURN DOWN UNTIL CLAMP IS TIGHT.
6. BACK OFF SLIGHTLY TO REMOVE RATCHET. CLAMP IS NOW SECURELY LOCKED.

TO REMOVE WrapLock
UNCOIL END WITH RATCHET. PRESS DOWN AT POINT WHERE BAND METAL HAS BEEN FORCED THROUGH CURVED PART OF YOKE.

WRAPLOCK FASTENING DETAIL