

TWR Lighting, Inc.

Enlightened Technology^{S.M.}

4300 WINDFERN RD #100 HOUSTON TX 77041-8943

VOICE (713) 973-6905 FAX (713) 973-9352

web: www.twrlighting.com

IMPORTANT!!!

PLEASE TAKE THE TIME TO FILL OUT THIS FORM COMPLETELY. FILE IT 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 # AA0-XFERLED

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc.

Enlightened TechnologySM

AA0-XFERLED CONTROLLER

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AA0-XFERLED CONTROLLER

APPENDIX

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OL2VLED2 (L810 DOUBLE OBSTRUCTION LIGHT).....	100658 (REV. A)

TWR Lighting, Inc.

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AA0-XFERLED CONTROLLER

GENERAL INFORMATION

The TWR Lighting, Inc. (TWR) model AA0-XFERLED is for structures up to 150' above ground level (AGL). An OL-2 fixture should be placed at the top of the obstruction.

One (1) LED bulb within the OL-2 LED fixture will burn steady. When the main lamp extinguishes, the secondary lamp will light.

The photocell is the 3 blade, twist to lock type.

Power supplies to controller shall be 120V AC 50 / 60Hz.

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AA0-XFERLED CONTROLLER

INSTALLATION INSTRUCTIONS

1.0 MOUNTING THE CONTROLLER CABINET

(Refer to Drawing 1209-R)

1.1 The power supply control cabinet can be located at the base of the structure or on an equipment building. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

1.1.1 The photocell should be positioned so that it does not “see” ambient light, which would prevent it from switching to the nightmode.

1.2 The wiring from the service breaker and the OL-2 LED fixture should enter the control housing through the $\frac{3}{4}$ “entrances.” Inside the housing, the connections will be made on the terminal strip. These connections are made as follows:

2.0 POWER WIRING

(Refer to Drawing 1209-R)

2.1 Power wiring to the control cabinet should be in accordance with local methods and electrical codes.

2.2 Circuit breaker needs to be rated at 10 amps.

2.3 Connect 120V AC “HOT” to terminal block marked “L.”

2.4 Connect neutral to one (1) of the terminals marked “N.”

3.0 LED SIDELIGHT WIRING

(Refer to Drawing 1209-R)

3.1 Connect the wire from the main bulb to the terminal block marked “ML.”

3.2 Connect the wire from the secondary lamp to the terminal block marked “SL.”

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4.0 LED OBSTRUCTION LIGHTS ALARM WIRING

(Refer to Drawing 1209-R)

- 4.1 Connect to Module M1, terminal #28, for normally open (or) terminal #26, for normally closed monitoring.
- 4.2 Connect Common (C) to terminal #25.

THEORY OF OPERATION

120V AC enters the controller from the circuit breaker panel. Line sits at the 102FAA photocell waiting to be switched on. When the 102FAA photocell is activated, line (SSR) is energized. This can also be accomplished by covering the photocell.

Line (SSR) is sent to module M1 and through the toridal sensing coil to the (MB) output. M1 is the current sensor for the main LED lamp. If the main LED lamp burns out, the module M1 will transfer to the secondary LED lamp.

LED RED OBSTRUCTION LIGHTING

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

TOOLS REQUIRED: NONE

L-810 LED sidelight REPLACEMENT

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

CONTROLLER

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

PHOTOCELL

The photocell is a sealed unit. No maintenance is needed or required other than replacement as needed.

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MAJOR COMPONENTS PARTS LIST

<u>QTY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	102FAA	PHOTOCELL
.5	TERMBLK10	TERMINAL BLOCK
1	RM4JA31MW	LED CURRENT SENSOR (M1)

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SUGGESTED SPARE PARTS LIST

<u>QTY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	102FAA	PHOTOCELL
1	RM4JA31MW	LED CURRENT SENSOR (M1)

TWR Lighting, Inc.

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AA0-XFERLED CONTROLLER

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 70% of the minimum intensity requirements as defined in the FAA Advisory Circular 150/5345-43E dated 10/19/95. 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.

Field Service – Repairs are warranted for 90 days from the date of service, except where TWR has made recommendations that were not adhered to that may cause premature failure on previous repairs. Labor, Travel, and Tower Climb are not covered under warranty. Customer shall be obligated to pay for all incurred charges not related to warranty. All warranty repairs are performed by trained TWR personnel, or dispatched through an extensive network of certified and insured Service Representatives.

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Return Policy

Return 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
- 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., 4300 WINDFERN RD #100, HOUSTON TX 77041-8943, 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).

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 **\$60.00 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.

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Warranty & Return Policy (continued)

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 **\$60.00 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.

Return to Stock – Any order that is returned to TWR for part(s) ordered incorrectly by the customer, or unneeded upon receipt, the customer is required to pay a **20% restocking fee.** A credit will be issued once it is determined that the Return Terms are 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.

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.

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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: _____

TWR Lighting, Inc.

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AA0-XFERLED CONTROLLER

RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#: _____ **DATE:** _____

CUSTOMER: _____

CONTACT: _____ **PHONE NO.:** _____

ITEM DESCRIPTION (PART NO.): _____

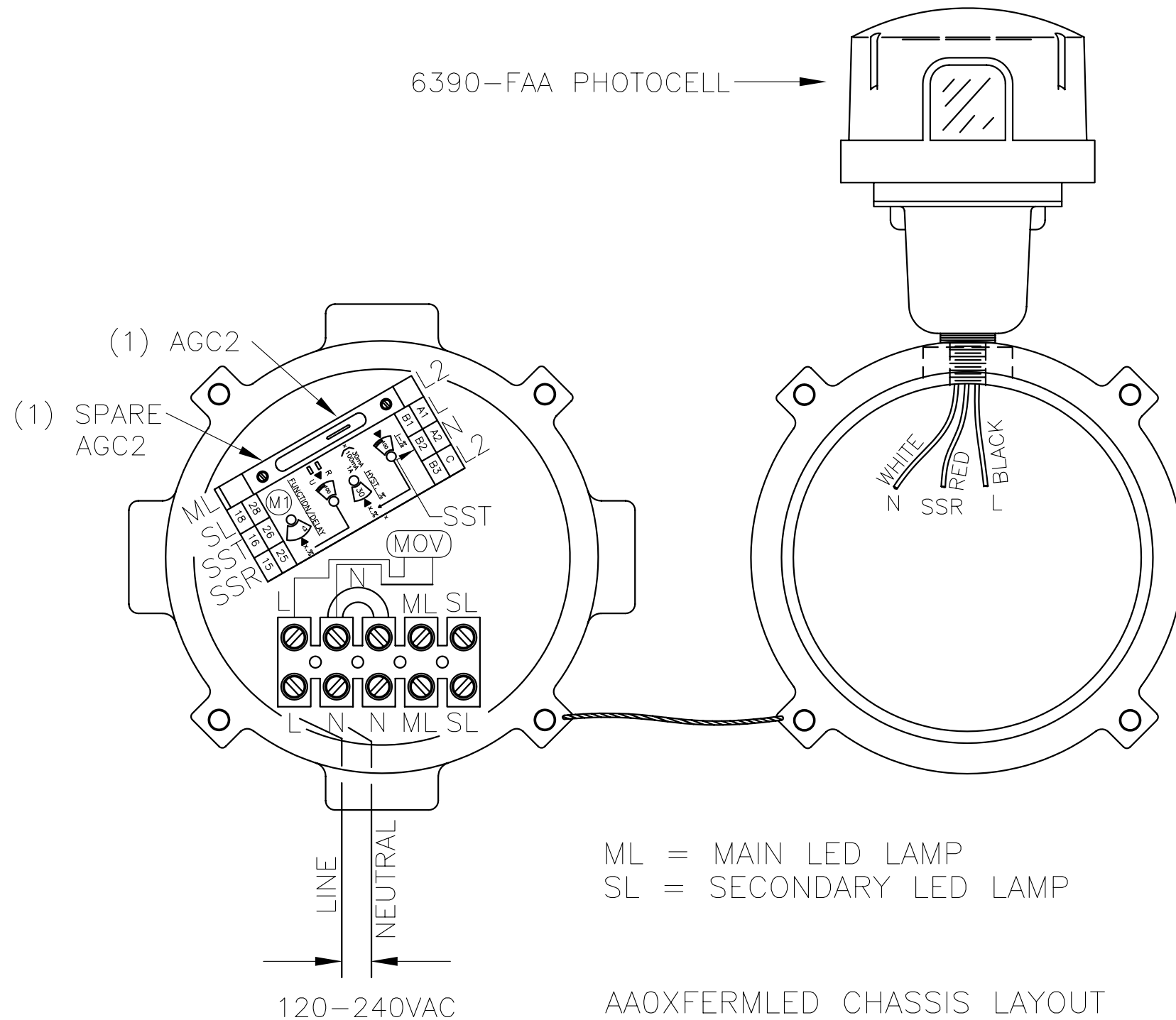
MODEL NO.: _____ **SERIAL NO.:** _____

ORIGINAL TWR INVOICE NO.: _____ **DATED:** _____

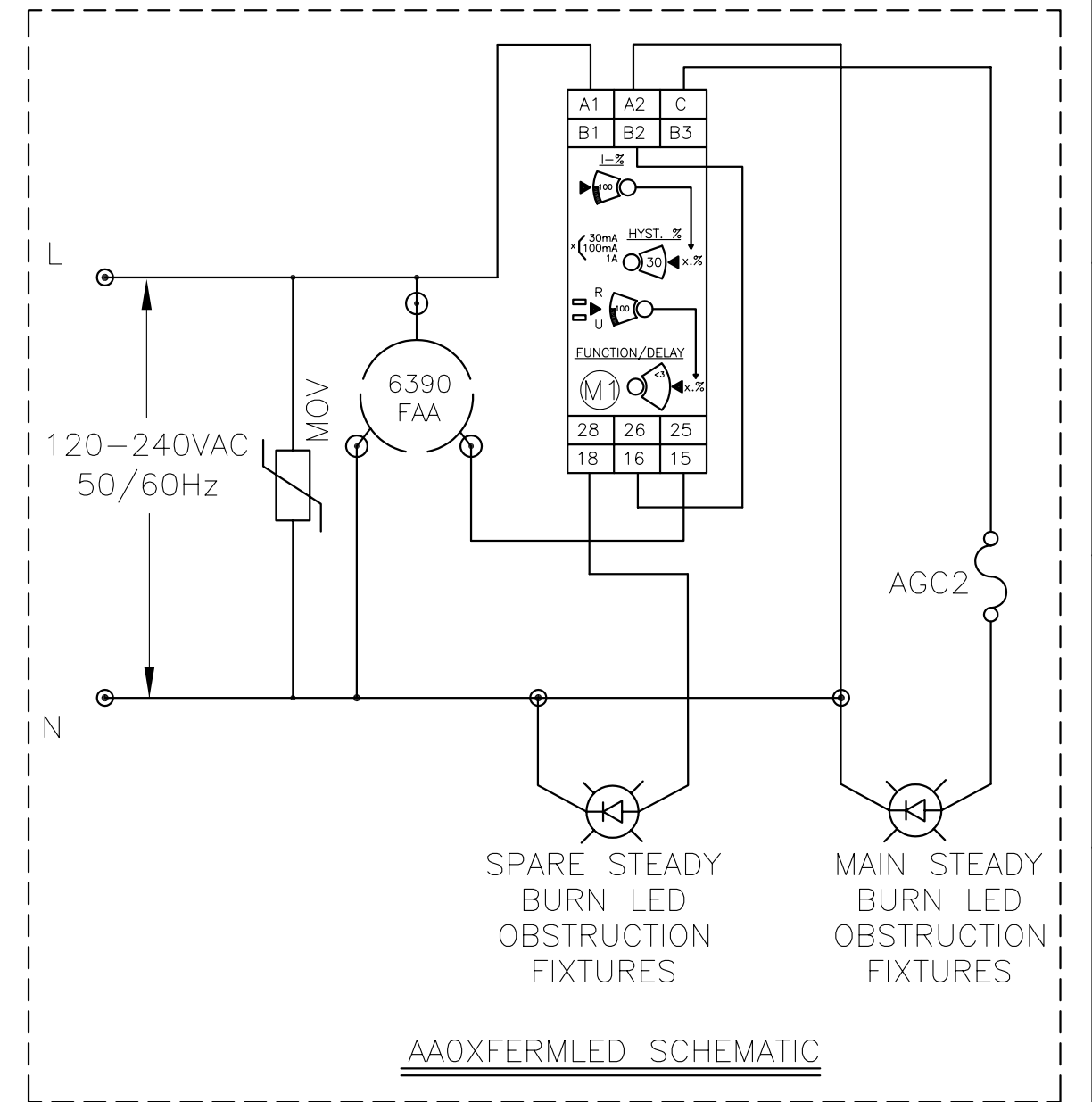
DESCRIPTION OF PROBLEM: _____

SIGNED: _____ **DATE NEEDED:** _____

RETURN ADDRESS: _____



AAOXFERMLED CHASSIS LAYOUT



NOTE:

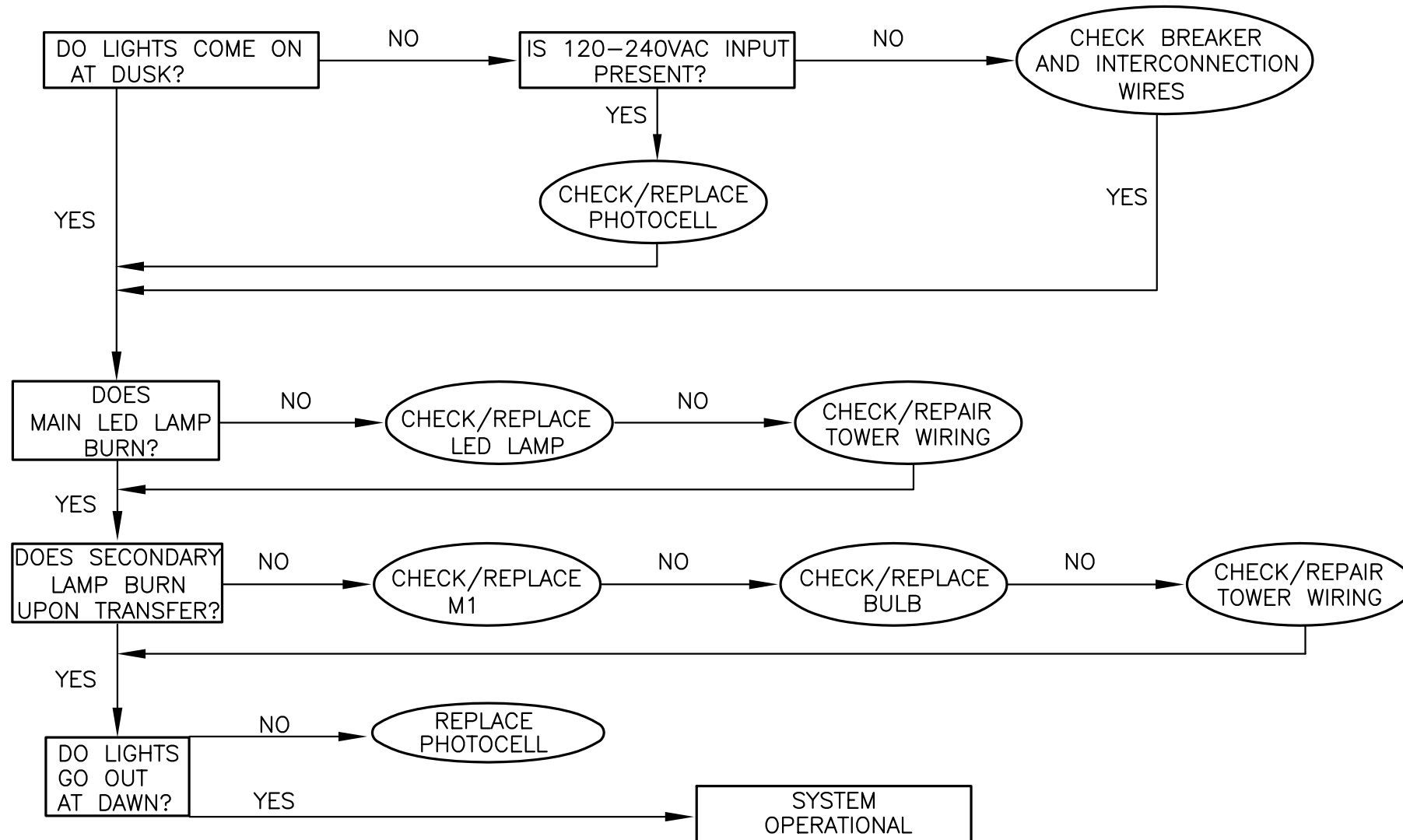
- 1) WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) L TO L.
- 2) XFER USED FOR LAMPS DRAWING BETWEEN 3MA AND 1AMP. TYPICAL USED FOR LED LIGHT FIXTURES.
- 3) WHEN MAIN LAMP FAILS, THE UNIT NEEDS TO BE RESET AFTER RELAMP.

AAOXFERMLED CONTROLLER

PROD DEPT	TWR Lighting, Inc. <i>Enlightened Technology</i>	SHEET SIZE	SHEET QTY.
SERV DEPT		B	1 OF 1
ENGINEER			
DRAWN BY	E.A.SALAZAR	SCALE	N.T.S.
DATE	11/19/04	DWG. NO.	1209-R

07/24/08	(B)	UPDATED PART NO.
DATE:	LTR.	REVISION

The use of non-stock 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.
NOTICE: The drawings and photographic images contained herein are the sole property of TWR Lighting, Inc. All information contained herein that is not generally known shall be considered confidential except to the extent the information has been previously established. The drawings and photographic images contained herein may not be reproduced, copied or used as the basis for manufacture or sale or promotion or any other purpose without the expressed written permission of TWR Lighting, Inc.



TROUBLESHOOTING FLOW CHART
AAOXFERMLED CONTROLLER

PROD DEPT _____
SERV DEPT _____
ENGINEER _____

TWR Lighting, Inc.
Enlightened Technology

DRAWN BY E.A.SALAZAR

SHEET SIZE B SHEET QTY. 1 OF 1

DATE 11/19/2004

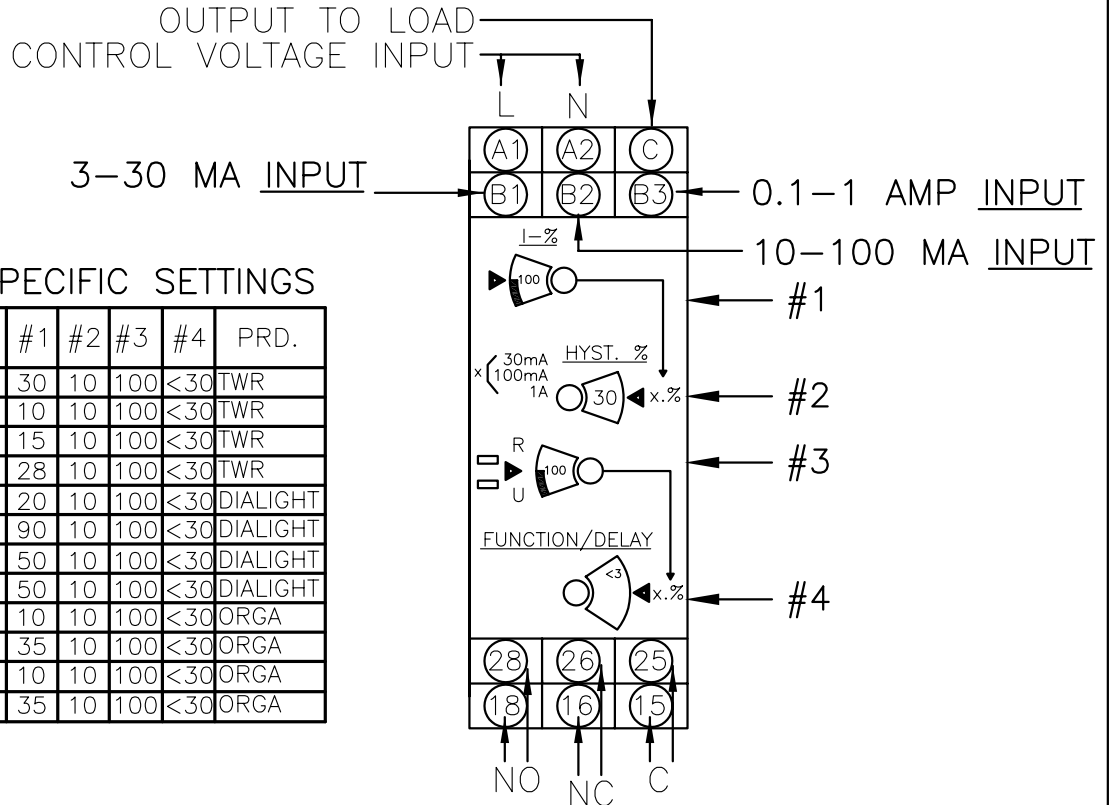
SCALE N.T.S.

DWG. NO. 1209-F

07/24/08	(A)	9.5	UPDATED VOLTAGE
DATE:	LTR.		REVISION

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AC UNITS CURRENT MEASUREMENT—RM4JA31M



120VAC PRODUCT SPECIFIC SETTINGS

QTY.	PART NO.	INPUT	#1	#2	#3	#4	PRD.
1	OL1_LED2	B2	30	10	100	<30	TWR
2	OL1_LED2	B3	10	10	100	<30	TWR
3	OL1_LED2	B3	15	10	100	<30	TWR
6	OL1_LED2	B3	28	10	100	<30	TWR
1	860-1R01-001	B2	20	10	100	<30	DIALIGHT
3	860-1R01-001	B3	90	10	100	<30	DIALIGHT
1	LED BEACON	B3	50	10	100	<30	DIALIGHT
1	STLDBEACON	B3	50	10	100	<30	DIALIGHT
1	LED BEACON2	B3	10	10	100	<30	ORGA
2	LED BEACON2	B3	35	10	100	<30	ORGA
1	STLDBEACON2	B3	10	10	100	<30	ORGA
2	STLDBEACON2	B3	35	10	100	<30	ORGA

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 undercurrent (<) 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	Overcurrent or Undercurrent Control ■	Measuring Range
Yes	Yes	3 MA - 1,000 MA

Detailed Positions for Switch 4

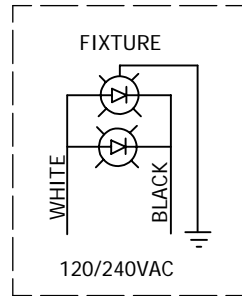
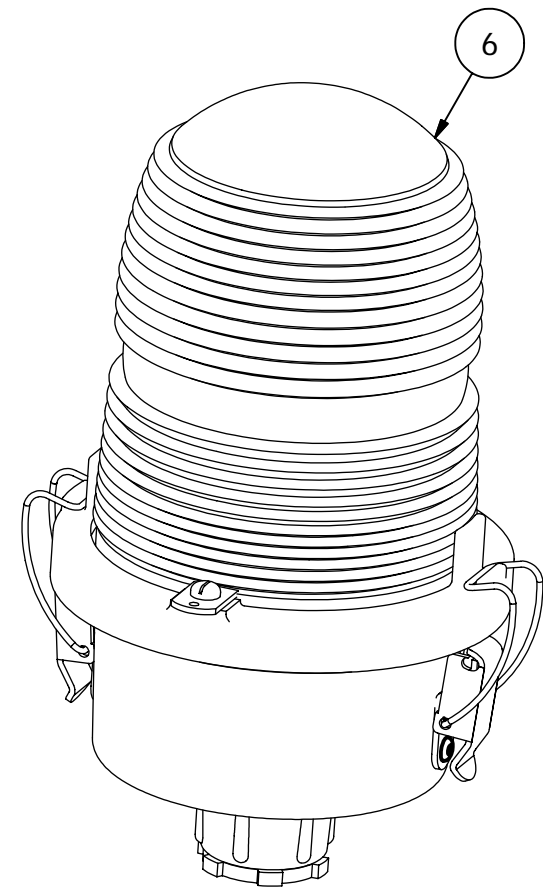
Switch Position	Function	Time Delay (t)
< 0	Undercurrent detection	No time delay
< 1	Undercurrent detection	0.05 to 1 s
< 3	Undercurrent detection	0.15 to 3 s
< 10	Undercurrent detection	0.5 to 10 s
< 30	Undercurrent detection	1.5 to 30 s
> 0	Overcurrent detection	No time delay
> 1	Overcurrent detection	0.05 to 1 s
> 3	Overcurrent detection	0.15 to 3 s
> 10	Overcurrent detection	0.5 to 10 s
> 30	Overcurrent detection	1.5 to 30 s

■ = Selection by switch on front face

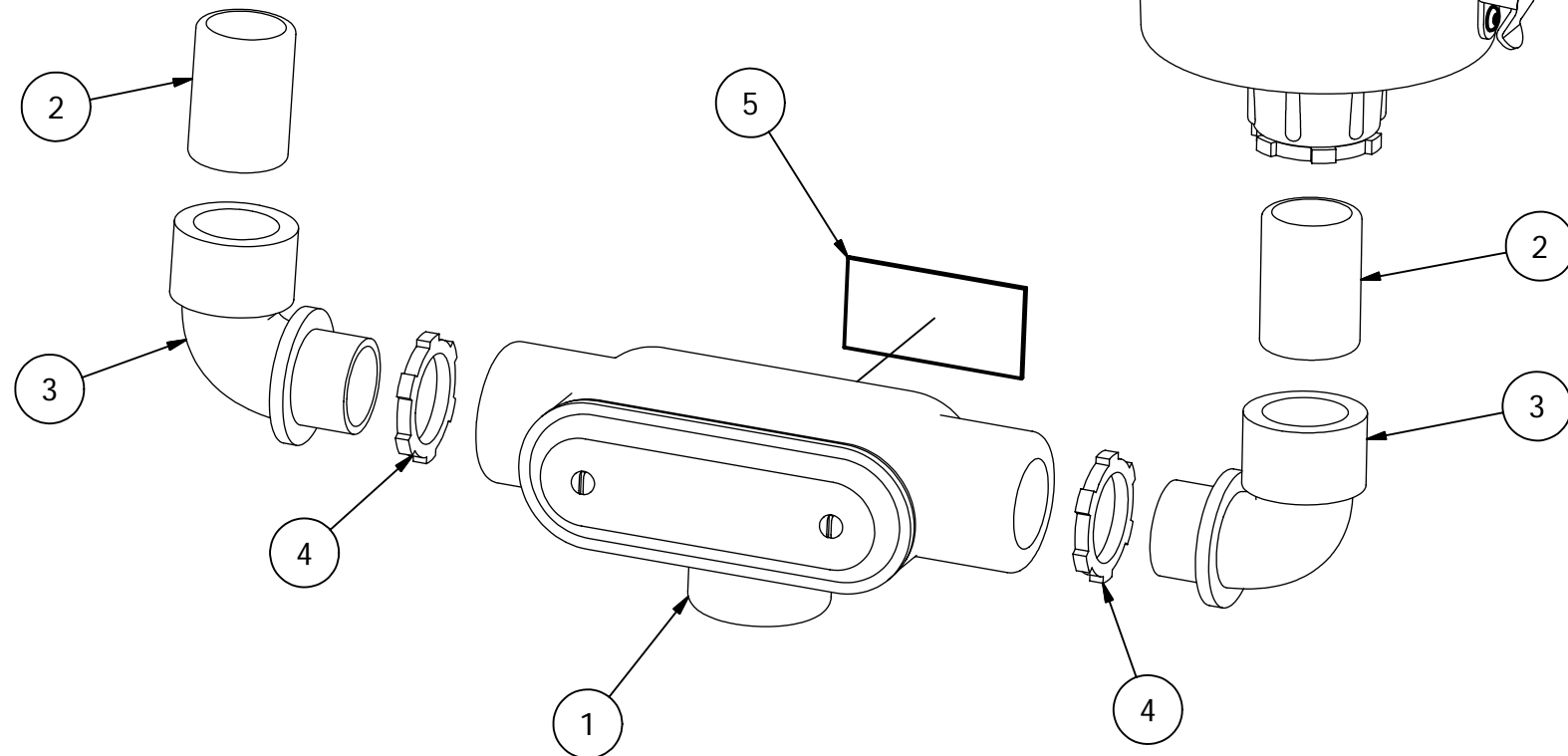
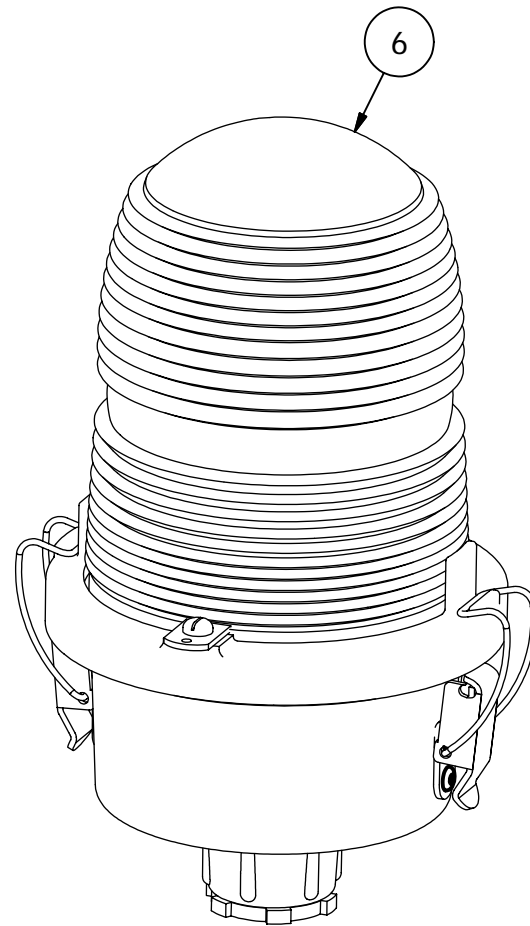
▲ = Value of current between energization and de-energization of the output relay (% of the current threshold to be measured).

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

Sign: _____



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



Parts List			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	1	T27CG	T27 CONDULET W/COVER & GSKT
2	2	34CLNP	3/4" GALV CLOSE NIPPLE
3	2	EL3490	3/4" 90 DEGREE SHORT ELBOW GALV
4	3	A314	3/4" CONDUIT LOCKNUT GALV.
5	1	100680	OL1/2 LED SERIAL # LABEL
6	2	OL1VBH34LED2	FAA OL16LED 120/240VAC VALOX LED BH SL 3/4
6.1	1	* 105RV	VALOX SINGLE SIDELIGHT BODY
6.2	1	* 106V	VALOX LENS HOLDER RING
6.3	2	* HC255SS	SIDELIGHT LATCH
6.4	1	* OLG2	OL1 6 LED GASKET
6.5	16	* 18PRSS	1/8 X .45 SS POP RIVET
6.6	.5	* 7X7SS	1/16 HOL 7X7 S.S. WIRE
6.7	2	* A1A	STAKON CRIMP
6.8	1	* A314	3/4" CONDUIT LOCKNUT GALV.
6.9	2	* 12V245	OL LENS CLIP
6.10	2	* 832X14PH	8-32 X 1/4" PH SS SLOT SCREW
6.11	1	* N400C	SIDELIGHT LENS CLEAR ACYRLIC
6.12	1	* PS90-260/24	POWER SUPPLY
6.13	6	* STE01-047	LED VERTICAL PCB
6.14	1	* 100588	OL 6LED BASE PLATE
6.15	1	* 100591	OL 6LED STAR DISK
6.16	6	* STD05006	LED EMITTER
6.17	1	* A10290	5/32" X 11/32" RUBBER GROMMET
6.18	3	* 632X14PHH	6-32 X 1/4" PH PH SCREW
6.19	.3	* 20RED	#20AWG RED BELDON WIRE
6.20	1	* 14GREEN	#14AWG GREEN BELDON WIRE
6.21	1	* 14RB6R	RING TERMINAL (GROUND WIRE)
6.22	3	* WIRENUTRED	RED WIRE NUT FOR #8 TO #12 WIRE

* = ITEMS NOT SHOWN

DRAWN gsebek	6/9/2005	TWR Lighting, Inc. <i>Enlightened Technology</i>	
CHECKED			
QA		TITLE	
MFG		OL2VLED2 FAA-OL16LED 120/240VAC DOUBLE VALOX LED SL (L810 LED DOUBLE OBSTRUCTION LIGHT)	
APPROVED		SIZE B	REV B
		SCALE	DWG NO 100658
			SHEET 1 OF 1