

TWR Lighting, Inc.

Enlightened Technology^{S.M}

4300 WINDFERN RD STE 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 # A1/3MLEDAFP

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc.

Enlightened TechnologySM

A1/3MLEDAFP CONTROLLER

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WARRANTY & RETURN POLICY

RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

TWR Lighting, Inc.

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A1/3MLEDAFP CONTROLLER

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PHOTOCELL HOUSING DETAIL	100239 (REV D)
LED SIDELIGHT/BEACON CURRENT SENSOR RELAY	100694 (REV D)
OL1VLED2 (L810 SINGLE OBSTRUCTION LIGHT)	100656 (REV A)

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A1/3MLEDAFP CONTROLLER

1.0 GENERAL INFORMATION

The TWR Lighting, Inc. (TWR) Model A1/3MLEDAFP Controller is for A2 lighting of towers 351' to 700' above ground level (AGL) in accordance with the FAA Advisory Circular 70/7460-1K. All three (3) LED beacons should be placed at the top. Obstruction lights should be placed at mid-level with respect to overall tower height.

The flash rate of the LED beacons is 30 per minute. The LED beacons flash synchronized to one another. The LED sidelights burn steady.

A by-pass switch (SW1) allows the controller to be turned on during daylight hours without covering the photocell. This is particularly helpful since the controller can be mounted indoors while the photocell is outdoors. SW1 can be operated by turning the switch to the "On" position. SW1 is located on the door.

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

Power supplied to the controller shall be 230V AC.

The controller housing is rated at NEMA 4X. It is suitable for indoor or outdoor mounting.

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

POWER FAILURE Monitors 230V AC to the controller, via the step-down transformer, from 230V AC to 120V AC. Alarms in the event of power failure or tripped circuit breaker.

LED BEACONS Will give an alarm in the event any of the LED beacons fail, along with visual indicator for that circuit. Also, the PL1 indicator, which is located on the door, will light up.

FLASHER FAILURE Will give an alarm in the event of failure of flasher.

OBSTRUCTION LIGHTS Will give an alarm when one (1) of three (3) LED sidelights fails. Also, the PL2 indicator, which is located on the door, will light up.

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2.0 INSTALLATION INSTRUCTIONS

2.1 MOUNTING THE CONTROL CABINET

(Refer to Drawing 1268-R)

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 1268-R. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

2.1.1 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 “B,” and the red wire is connected to the socket terminal marked “R.” Care must be taken to assure that the photocell does not “see” any ambient light that would prevent it from switching into the nightmode.

2.1.2 If the control cabinet is mounted outside an equipment building, the photocell should be mounted vertically on ½” conduit so the photocell is above the control cabinet. As above, the photocell should be positioned so that it does not “see” ambient light, which would prevent it from switching to the nightmode. The photocell wiring is the same as in 2.1.1.

2.1.3 The wiring from the photocell, the service breaker, the red LED beacons, 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 EXTERNAL PHOTOCCELL WIRING

(Refer to Drawing 1268-R)

2.2.1 Connect the BLACK wire from the photocell to terminal block TB2, marked “L1.”

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2.2.2 Connect the RED wire from the photocell to terminal block TB2, marked "SSR."

2.2.3 Connect the WHITE wire from the photocell to terminal block TB2, marked "N."

2.3 POWER WIRING

(Refer to Drawing 1268-R)

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

2.3.2 Circuit breaker needs to be a one (1) pole common trip rated at 10 amps.

2.3.3 Connect incoming 230V AC "Hot" to terminal block TB1, marked "L."

2.3.4 Connect the neutral wire(s) to one (1) of the terminal blocks on TB1, marked "N."

2.3.5 Connect the AC ground to the grounding lug located to the left of TB2.

2.4 LED BEACONS AND LED SIDELIGHTS WIRING

(Refer to Drawing 1268-R)

2.4.1 Connect the FIRST BLACK wire from LED Beacon #1, to the circuit breaker marked "B1."

2.4.2 Connect the SECOND BLACK wire from LED Beacon #2, to the circuit breaker marked "B2."

2.4.3 Connect the THIRD BLACK wire from LED Beacon #3, to the circuit breaker marked "B3."

2.4.4 Connect the RED wire from LED sidelights to the circuit breaker marked "S."

2.4.4 Connect the WHITE neutral wire(s) to one (1) or more of the terminals marked "N."

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2.5 LED BEACONS AND LED SIDELIGHTS ALARM WIRING

(Refer to Drawings 1268-R and 1268-S)

2.5.1 Alarm relays K1-K6, are provided for independent contact closures for: Power Failure, Flasher Failure, B1-B3 Burnout, and S Lamp Burnout.

2.5.2 Alarm Wiring: To utilize all of the red light alarms, the customer will need six (6) pairs of wires to interface with his alarm device. One (1) wire from each of the six (6) pairs will terminate at terminal block TB4, for common (C). The remaining wire from each pair will terminate as follows:

Power Failure Alarm: Connect to terminal block TB5, terminal #2, for normally open, (OR) terminal #1, for normally closed monitoring.

Flasher Failure: Connect to terminal block TB5, terminal #4, for normally open, (OR) terminal #3, for normally closed monitoring.

B1 Burnout: Connect to terminal block TB5, terminal #8, for normally open, (OR) terminal #7, for normally closed monitoring.

B2 Burnout: Connect to terminal block TB5, terminal #10, for normally open, (OR) terminal #9, for normally closed monitoring.

B3 Burnout: Connect to terminal block TB5, terminal #12, for normally open, (OR) terminal #11, for normally closed monitoring.

S Lamp Burnout: Connect to terminal block TB5, terminal #6, for normally open, (OR) terminal #5, for normally closed monitoring.

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2.5.3 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.

LED Beacons and LED Sidelights:
Trip breakers on the controller panel.

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3.0 THEORY OF OPERATION

3.1 POWER SUPPLY

230V AC enters the controller from the circuit breaker panel, and into the step-down transformer, which lowers the input voltage from 230V AC down to 120V AC. Line “L1” 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 “SSR” energizes the coil of the PRD. This also can be accomplished by using the photocell by-pass switch (SW1) located on the door.

3.2 LED SIDELIGHTS

Line LDS is sent to Module M2, which is a current sensing module for LED sidelights. The RM4JA31MW monitors one (1) level of LED sidelights, and will provide a contact closure along with a visual indication if one (1) or more lamps fails, and PL2, which is located on the door, will light up.

3.3 LED BEACONS

Line LDB is sent to Modules M1, M4, M5, and M6. M1 is the primary flasher for all of the LED beacons. The output of this module is sent through the current sensing Modules M4, M5, and M6, then to relays K3, K4, and K5, then to circuit breaker outputs B1, B2, and B3. If Modules M4, M5, or M6 will light up, or detect an LED beacon burnout, then that particular module would provide a contact closure along with a visual indication for that circuit, and PL1, which is located on the door, will light up.

Relay K2 is a flasher failure relay for all the LED beacons. If Relay K2 detects a flasher failure, it would then provide a contact closure for the flasher circuit.

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4.0 MAINTENANCE

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-864 CONTROLLER

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

4.4 PHOTOCELL

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

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5.0 MAJOR COMPONENTS PARTS LIST

QUANTITY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V Photocell
1	PF-250	Solid State Flasher (M1)
1	PRD7AG0	Mechanical Load Contactor (PRD)
6	PB27E122	Octal Sockets
1	KRPA5AG120V	SPDT Relay (K1 & K2)
1	SPEC 224	Time Delay Relay (K3)
1	ZB2BD2	Switch (SW1)
1	VJ1412HWPL2X004	Enclosure
8	8WA1204	Terminal Block (TB1 & TB2)
3	8WA1802	Rail Link
2	8WA1808	Terminal Block End Stop
4	S261-D1	1 amp Circuit Breaker (B1-B3, S)
4	RM4JA31MW	LED Sidelight Current Sensors, and LED Beacon Current Sensors (M2, M3, M4, and M5)
1	CURBLK	3 Part Terminal Block (TB4)
1	TERMBLK 141-12	12 Part Terminal Block (TB5)
1	TERMBLK 141-7	7 Part Terminal Block (TB3)
1	MOV1V250	230V Varistor
1	PH1000MQMJ-FK	Step-down Transformer (T)
1	Q8P1BXXG110E	Green LED Indicator (PL1)
1	Q8P1BXXY110E	Yellow LED Indicator (PL3)
1	Q8P1BXXR110E	Red LED Indicator (PL2)

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6.0 SUGGESTED SPARE PARTS LIST

QUANTITY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V Photocell
1	PF-250	Solid State Flasher (M1)
1	KRPA5AG120V	SPDT Relay (K1 & K2)
1	SPEC 224	Time Delay Relay (K3)
1	RM4JA31MW	LED Sidelight Current Sensors, and LED Beacon Current Sensors (M2, M3, M4, and M5)
1	PRD7AG0	120v Contactor

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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 un-repairable 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 un-repairable, 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: _____

PLEASE RETURN PRODUCT TO: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

TWR Lighting, Inc.

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A1/3MLEDAFP 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: _____

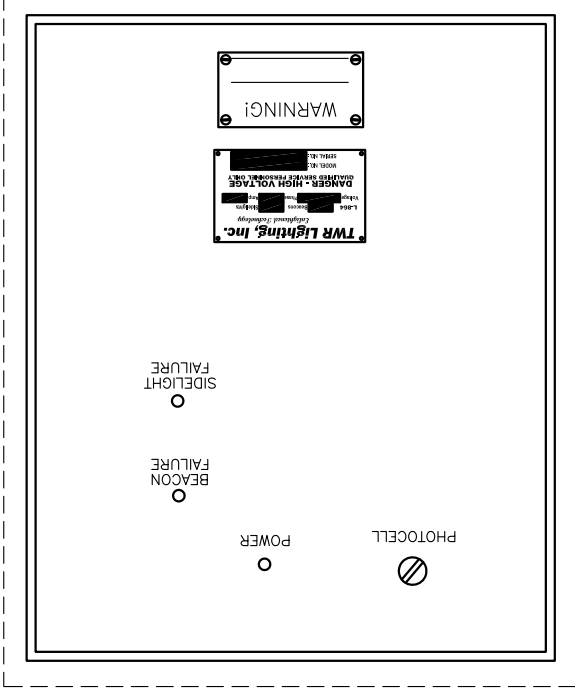
SIGNED _____ **DATE NEEDED** _____

RETURN ADDRESS: _____

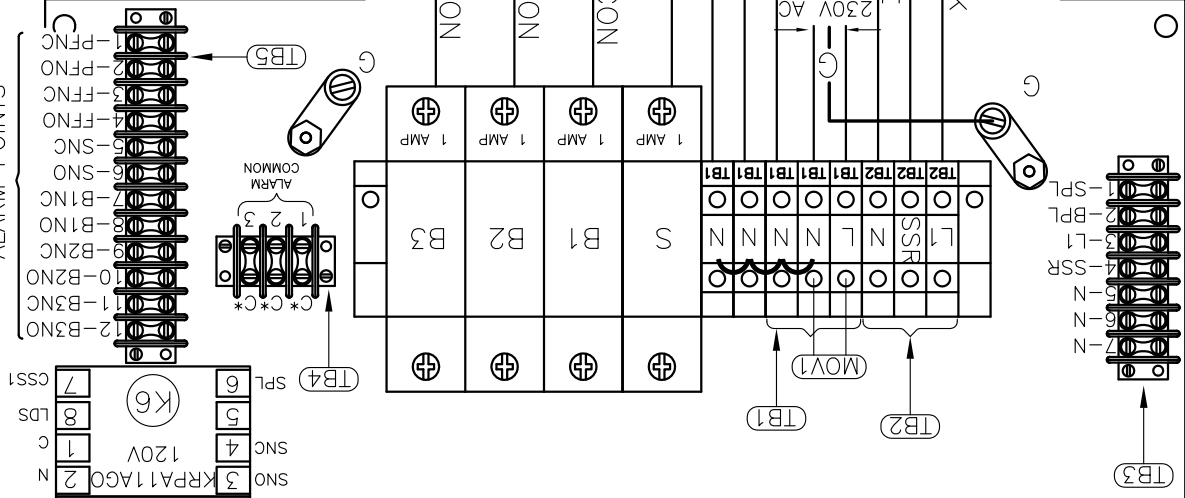
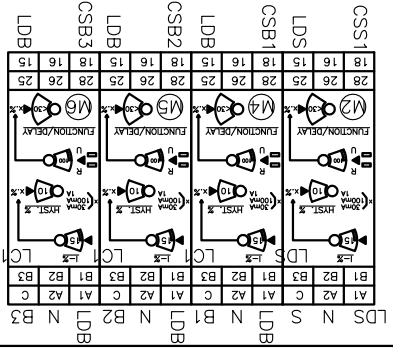
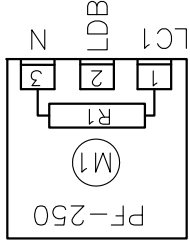
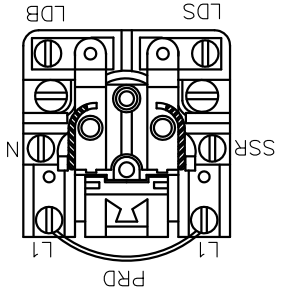
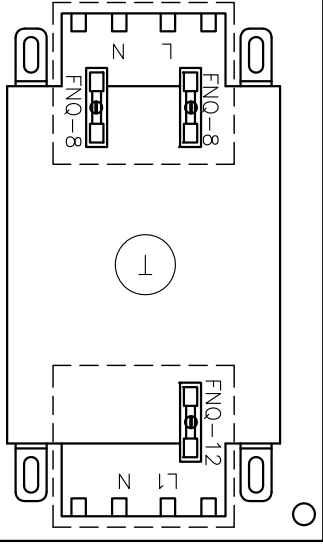
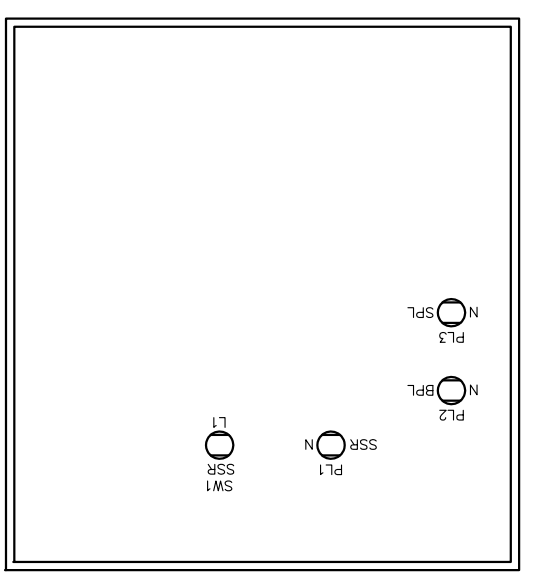
PLEASE RETURN PRODUCT TO: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

***CUSTOMER ALARM POINTS**

- C = ALARM COMMON
- PFNO/PFNC = POWER FAILURE
- FFNO/FFNC = FLASHER FAILURE
- SNO/SNC = LED SIDELIGHT BURNOUT #1
- B1NO/B1NC = LED BEACON BURNOUT #1
- B2NO/B2NC = LED BEACON BURNOUT #2
- B3NO/B3NC = LED BEACON BURNOUT #3
- * ALARM OUTPUTS ARE FORM C.

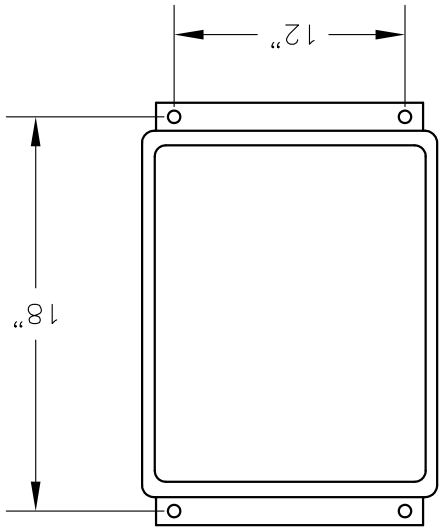


SCHEMATIC TAG	DESCRIPTION
PL1	240V POWER LED INDICATOR
PL2, PL3	FAILURE INDICATOR LEDS
SW1	PHOTOCELL BYPASS SWITCH



- NOTES:
1. WHEN REPLACING METAL BASE MODULES USE HEAT SINK COMPOUND BETWEEN MODULE AND ALUMINUM PLATE.
 2. PLUG 6390-FAA PHOTOCELL INTO 43109 TWIST LOCK RECEPTACLE AND TWIST TO LOCK.

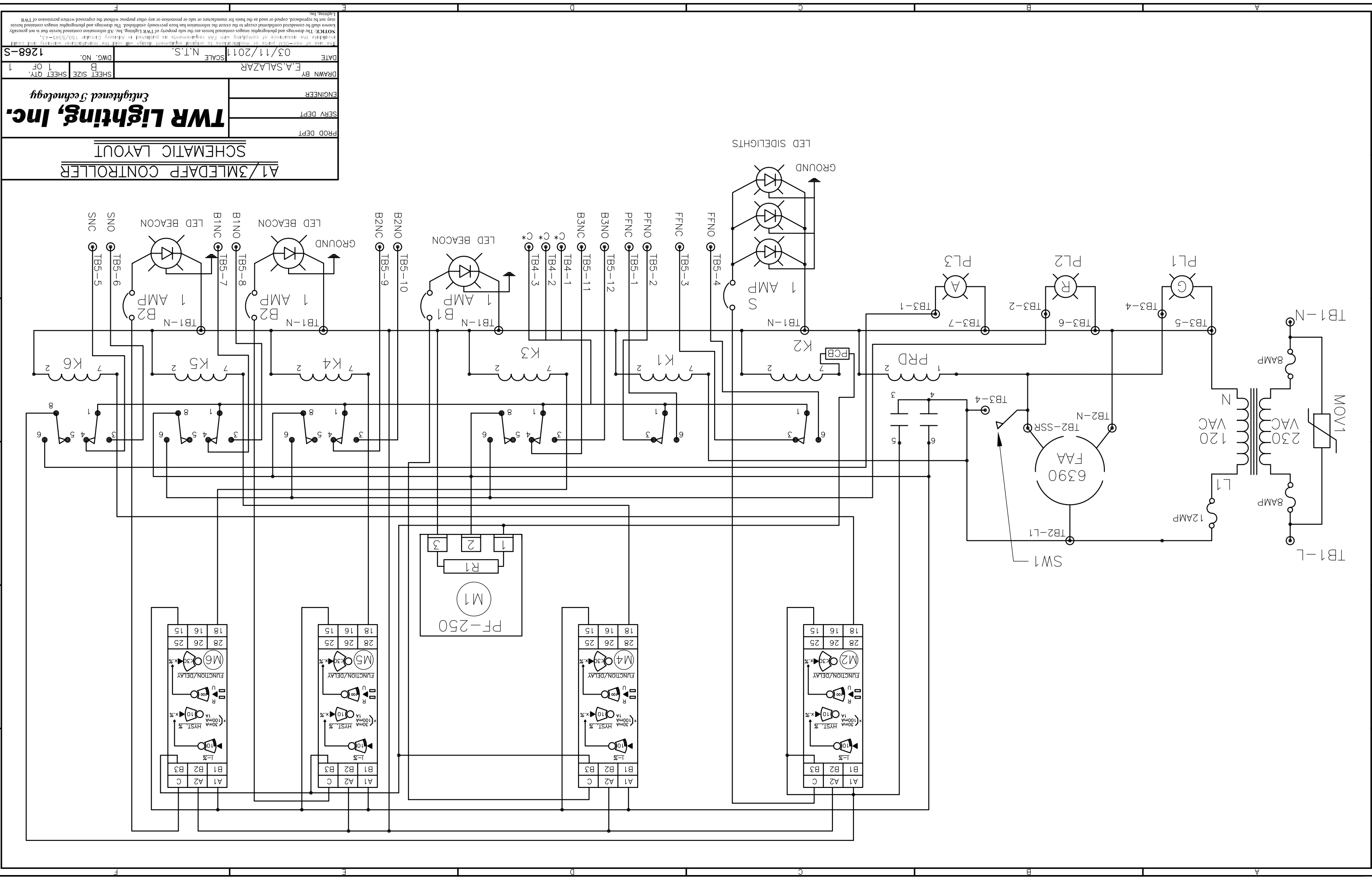
MOUNTING DIMENSIONS (FOR CABINET)



TWR Lighting, Inc.
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PROD DEPT _____
 SERV DEPT _____
 ENGINEER _____
 DRAWN BY E.A.SALAZAR
 SHEET SIZE B
 SHEET QTY 1 OF 1
 DWG. NO. _____
 DATE 03/08/2011
 SCALE N.T.S.
 1268-R

the use of non-white parts or materials to original equipment designs will void the manufacturer warranty and could invalidate the assurance of compliance with FAA requirements as outlined in Advisory Circular 150/5345-43.
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A1/3MEDAFP CONTROLLER
SCHEMATIC LAYOUT

PROD DEPT _____
 SERV DEPT _____
 ENGINEER _____

DRAWN BY **E.A.SALAZAR**
 SHEET SIZE **B** SHEET QTY. **1** OF **1**

DATE **03/11/2011** SCALE **N.T.S.** DWG. NO. **1268-S**

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BILL OF MATERIALS

ITEM NO.	QTY.	TWR PART NO.	DESCRIPTION
1		013640	LED BEACON
2		0L1LED	LED SIDELIGHT 3/4"
3		CGB295SA	3/4" CORD CONNECTOR 0.50 - 0.625
4		JBS/7	3/4" JUNCTION BOX
5		JBO	3/4" STRAIN RELIEF BOX
6		UNY205	3/4" UNION
7		T27CG	3/4" CONDULET W/COVER AND GASKET
8		EL3490	3/4" 90° SHORT ELBOW
9		EL3430	3/4" 30° ELBOW
10		5012902	3/4" BREATHER
11		SS10012	WRAPLOCK
12		PIPDP	4 oz. PIPE DOPE
13		A314	3/4" CONDUIT LOCKNUTS
14		HC402	3/4" NO THREAD CONNECTOR
15		N34T3	3/4" x 3" NIPPLE
16		SLP1G1AL25G	25' SIDELIGHT PIGTAIL WITH GROUND
17		CONDUIT34	30' CONDUIT (FOR OL)
18		A1/3MLEDAFP	A1/3MLEDAFP CONTROLLER

* = ITEMS NOT SHOWN

19	-	CONDUIT34	3/4" CONDUIT (TOWER HT. + 30'/9M)
20	-	12THHNWHT	#12 THHN WHT. WIRE (TOWER HT.+40'/12M)
21	-	12THHNBLK	#12 THHN BLK. WIRE (TOWER HT.+40'/12M)
22	-	12THHNRED	#12 THHN RED WIRE (1/2 TWR HT.+40'/12M)

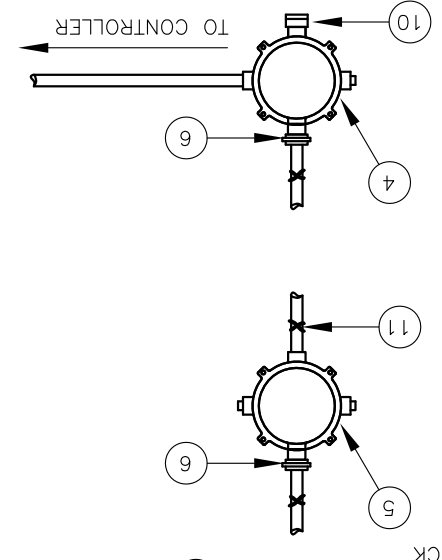
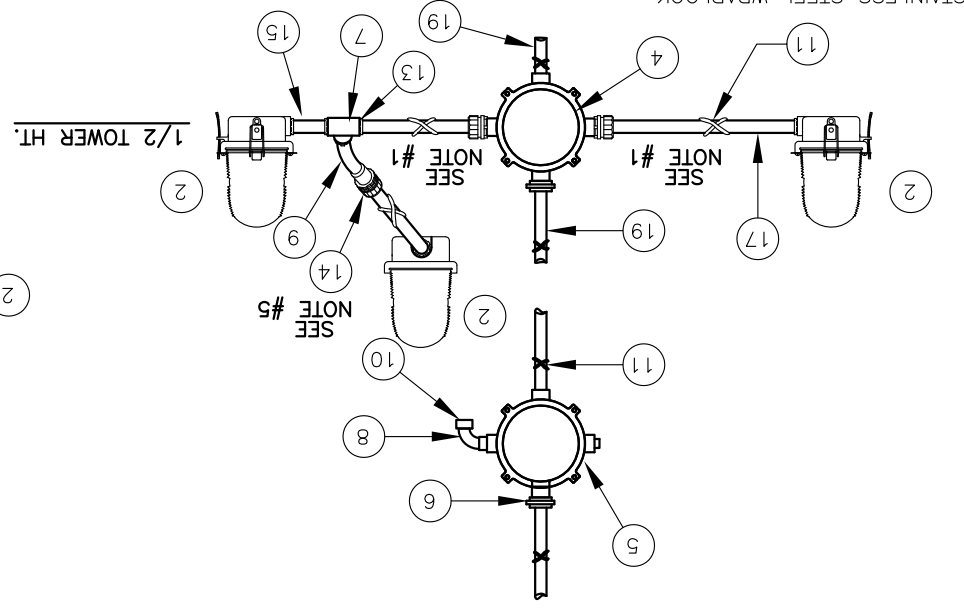
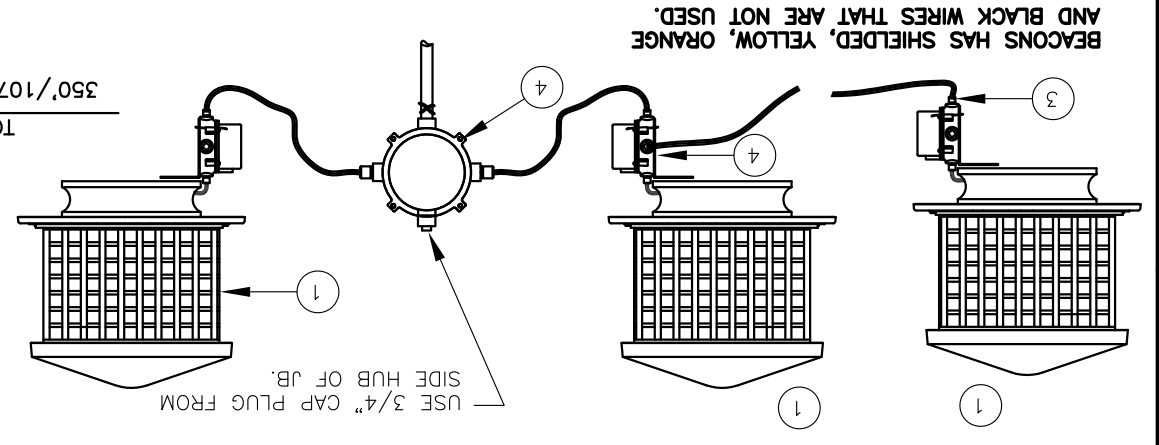
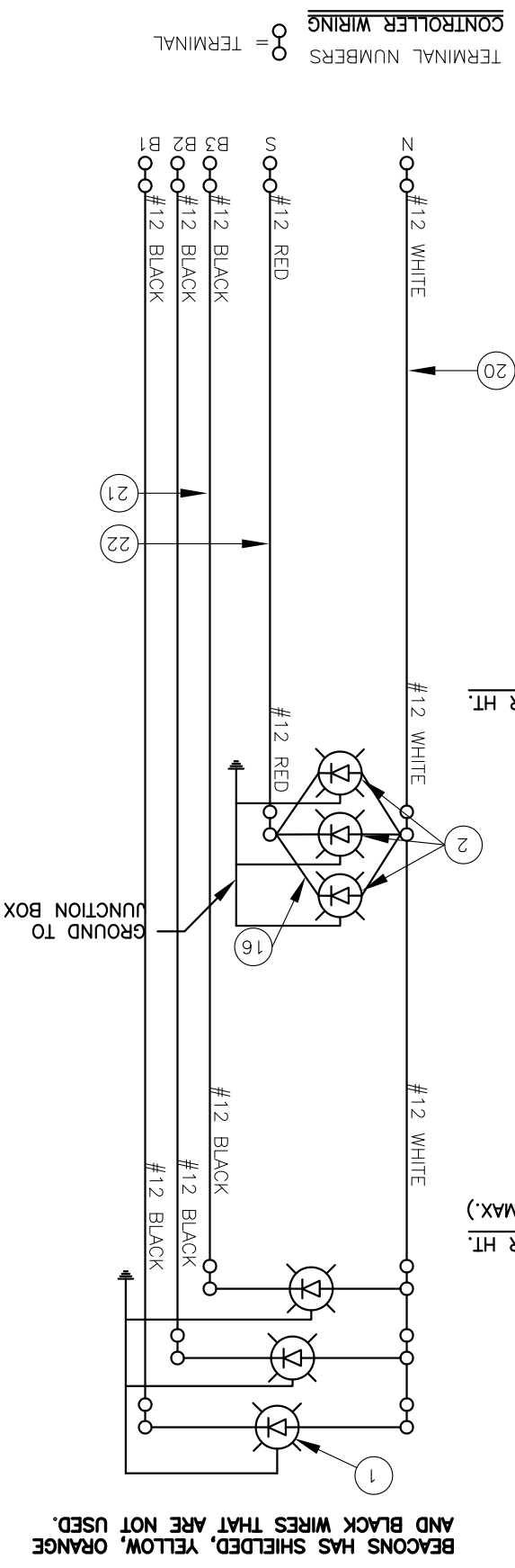
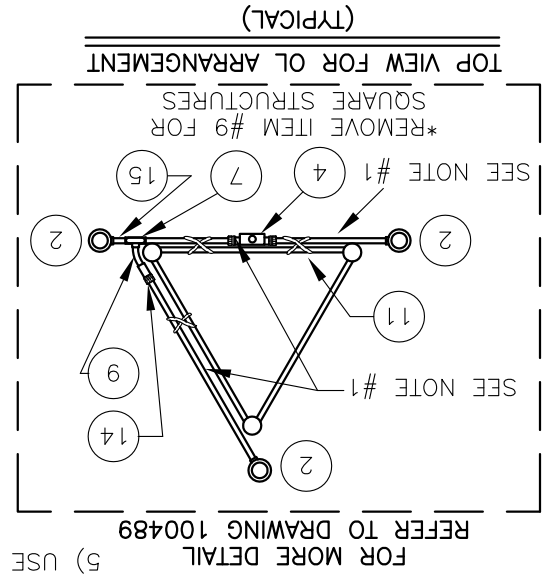
ITEM NUMBERS #19-#22 ARE NOT INCLUDED IN THE KIT BUT ARE AVAILABLE UPON REQUEST, AND REQUIRED FOR INSTALLATION.

NOTES:
 (1) ITEM CONDUIT34 CUT TO LENGTH FOR PROPER EXTENSION OF OL
 (6"-12") FROM STRUCTURE. ATTACH ITEM HC402 TO UNTHREADED CONDUIT TO COMPLETE ASSEMBLY.
 (2) MOUNT BEACON HINGE SO LENS WILL OPEN UNOBSTRUCTED BY STRUCTURE.
 (3) ON AM TOWER APPLICATIONS, KEEP GROUND LUG FROM BEING CONNECTED TO EARTH GROUND. GROUND TO THE TOWER ONLY.
 (4) THIS DRAWING IS PROVIDED AS A GENERAL REFERENCE. TWR LIGHTING, INC. DOCUMENTATION SUPERSEDES THIS DRAWING & SHOULD BE REVIEWED PRIOR TO INSTALLATION OF THIS SYSTEM.
 (5) USE COUPLING THAT IS PROVIDED WITH ITEM CONDUIT34.

A1/3LED TOWER LIGHTING KIT CONDUIT RUN
 (TOWERS 151'/46M TO 350'/107M/10' FACE WIDTH MAX)

PROD DEPT _____
 SERV DEPT _____
 ENGINEER _____
 DRAWN BY E.A.SALAZAR
 SHEET SIZE B
 SHEET QTY. 1 OF 1
 DWG. NO. _____
 DATE 06/10/2011
 SCALE N.T.S.

T1482
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 The use of non-TWR parts or modifications to original equipment designs will void the manufacturer's warranty and could invalidate the assurance of compliance with FAA requirements as published in Advisory Circular 150/5345-43.



BEACONS HAS SHIELDED, YELLOW, ORANGE AND BLACK WIRES THAT ARE NOT USED.

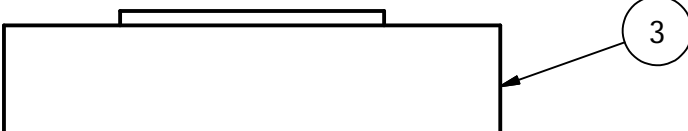
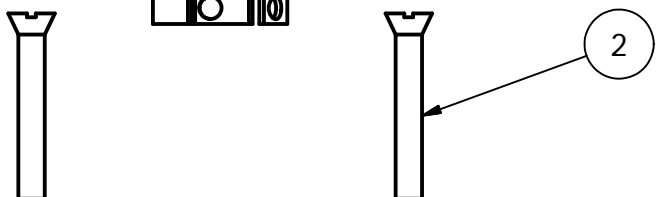
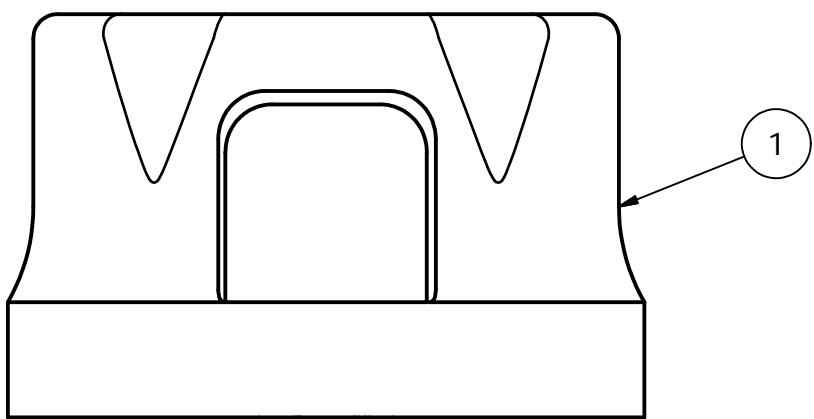
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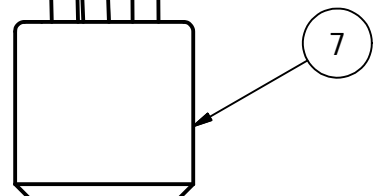
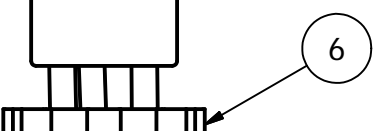
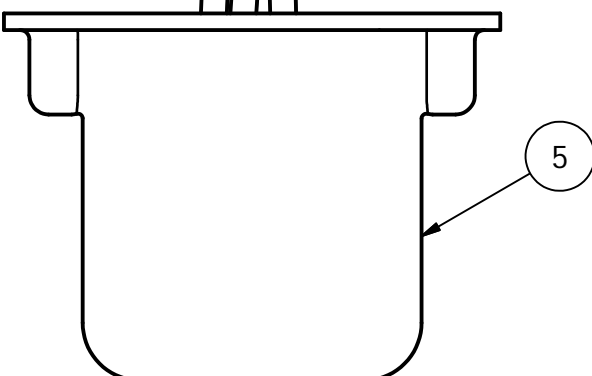
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PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	PHOTOCELL
2	2	6-32 x 1/2" SCREW
3	1	RECEPTACLE SOCKET
4	1	RECEPTACLE GASKET
5	1	RECEPTACLE HOUSING
6	1	1/2" CONDUIT LOCKNUT
7	1	3/4" TO 1/2" REDUCER

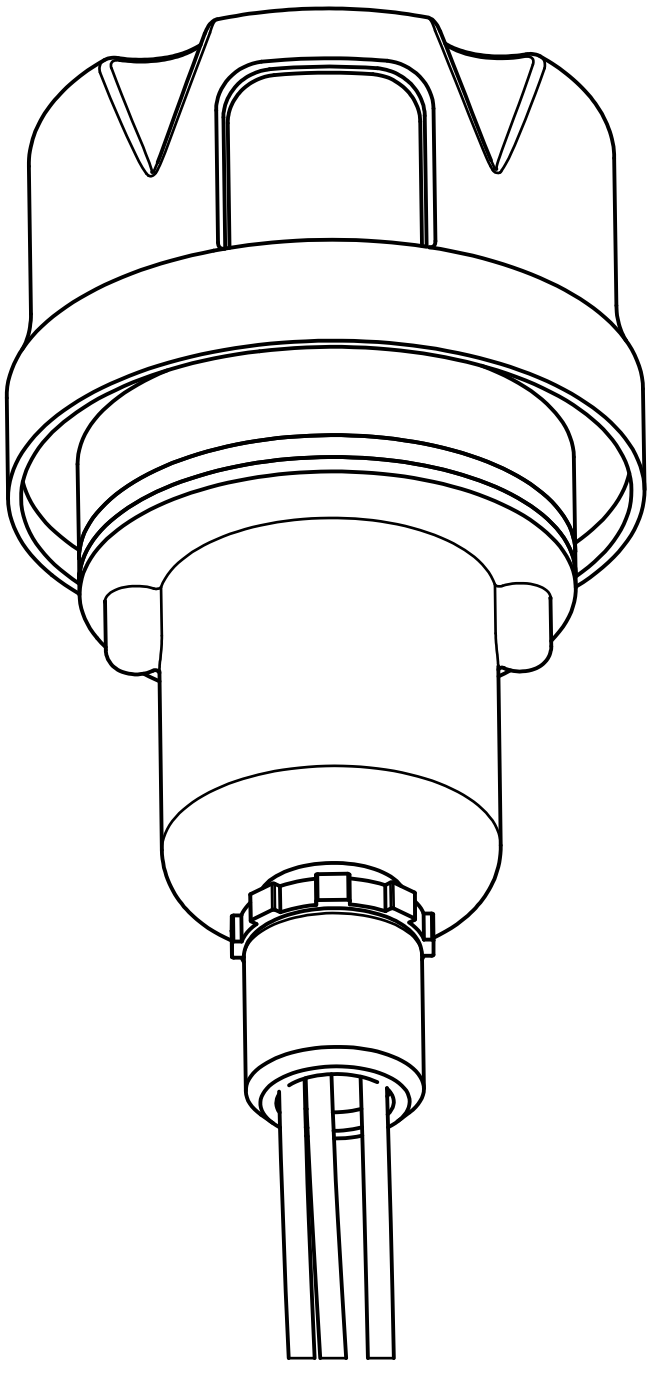


COM/N
R/LO
B/L



BLACK/L
WHITE/COM
RED/LO

EXPLODED VIEW



ASSEMBLY

- 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
 3. WIRE CONNECTIONS ARE TO BE TINNED AT ITEM 3.

DRAWN	vhernandez	10/18/1995
CHECKED		
QA		
MFG		
APPROVED		

<i>TWR Lighting, Inc.</i> <i>Enlightened Technology®</i>		
TITLE PHOTOCELL HOUSING DETAIL		
SIZE B	DWG NO 100239	REV E
SCALE 1/1	SHEET 1 OF 1	

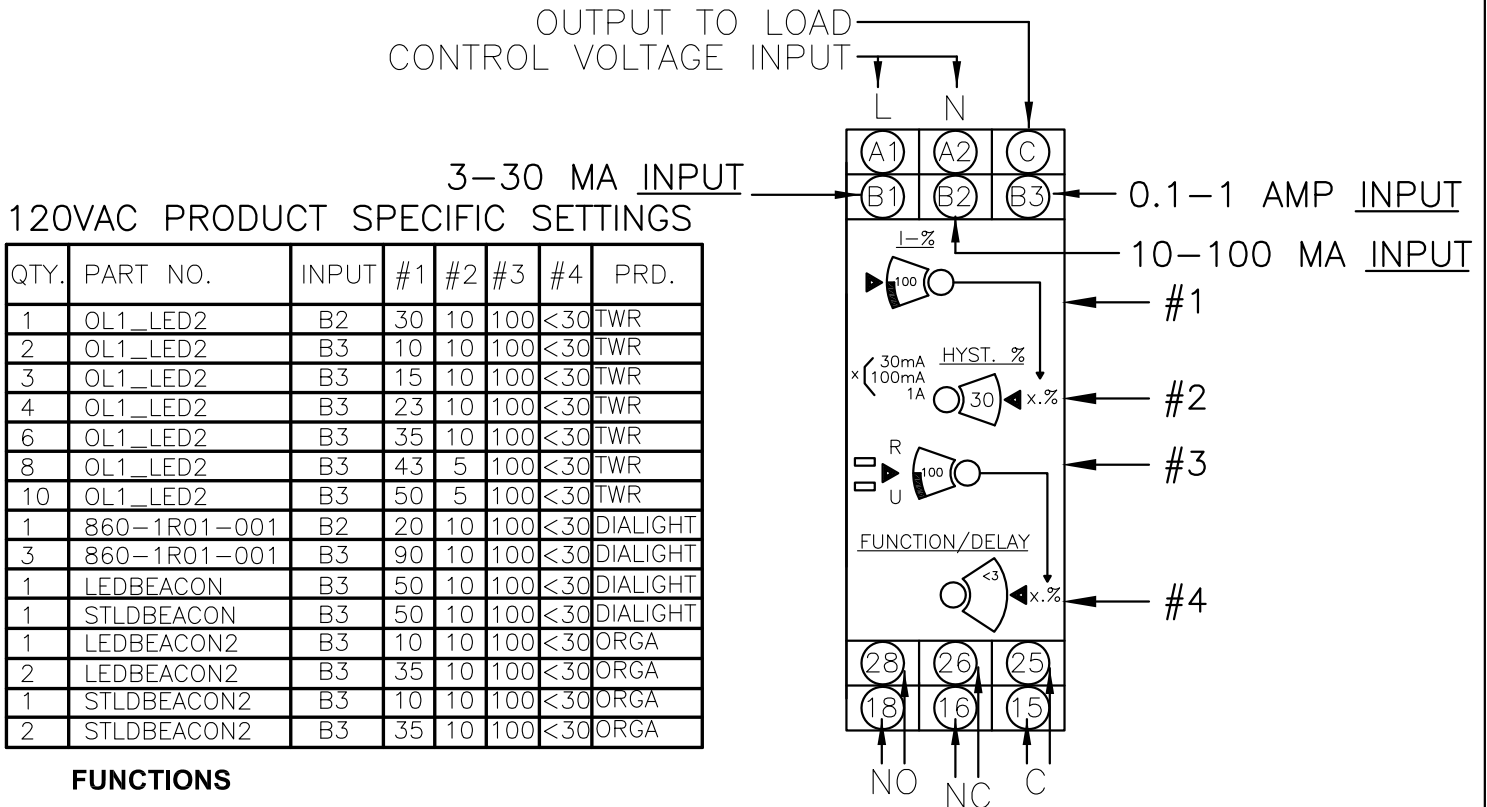
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AC UNITS CURRENT MEASUREMENT—RM4JA31M



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
4	OL1_LED2	B3	23	10	100	<30	TWR
6	OL1_LED2	B3	35	10	100	<30	TWR
8	OL1_LED2	B3	43	5	100	<30	TWR
10	OL1_LED2	B3	50	5	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: _____

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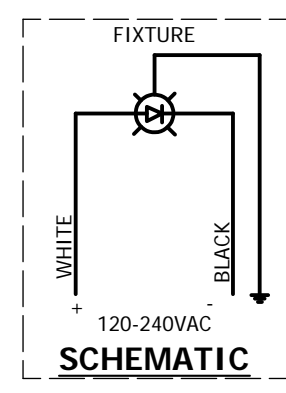
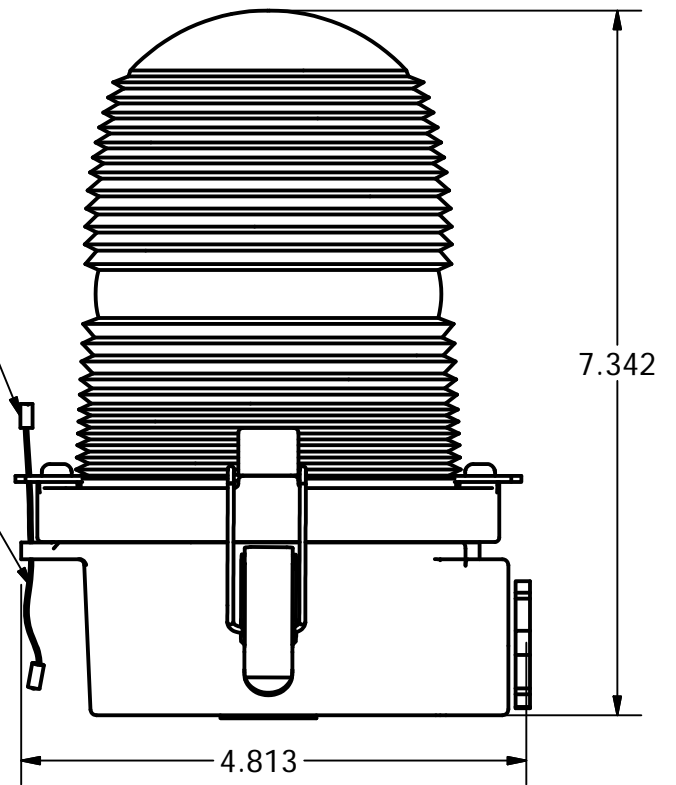
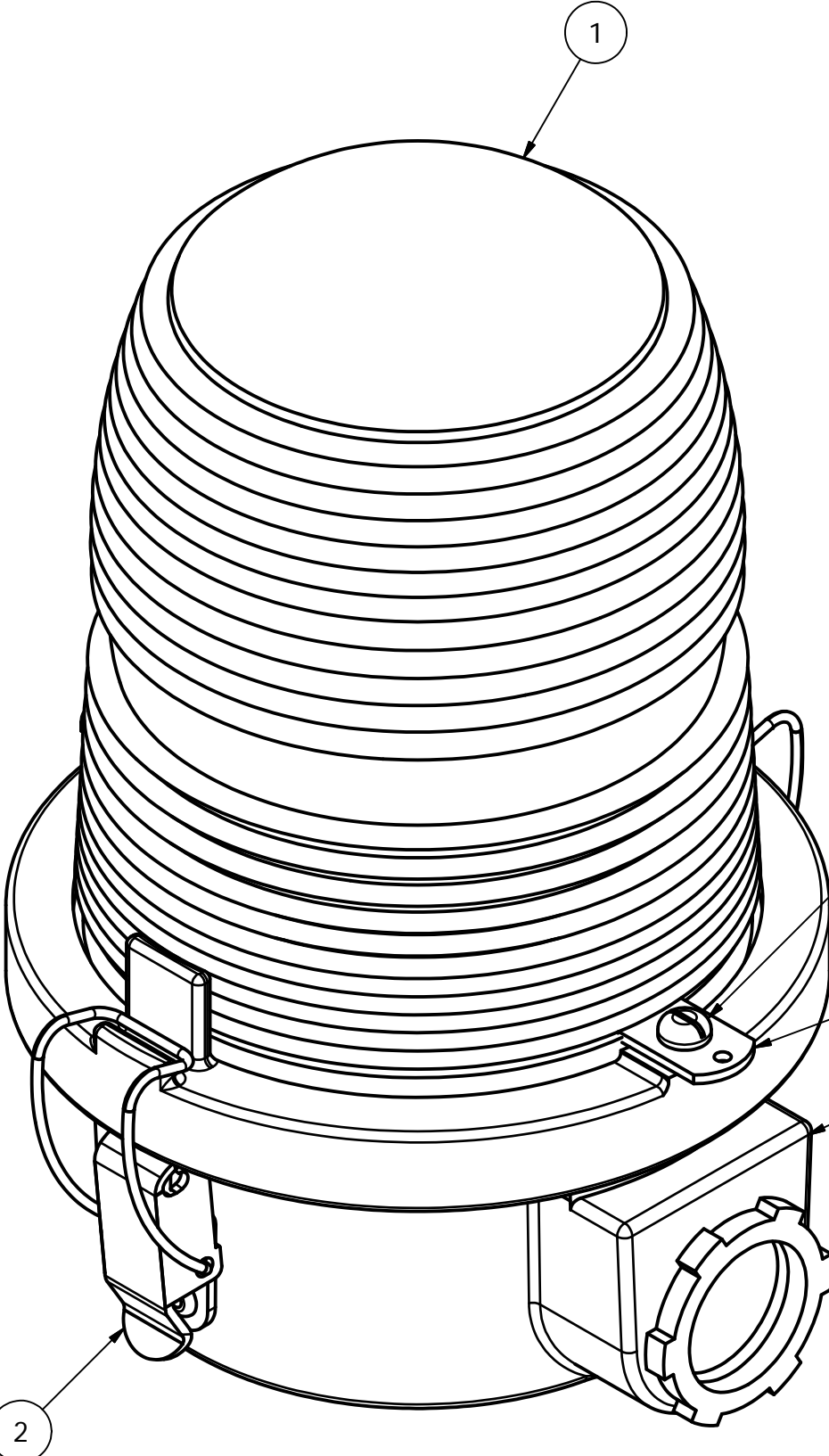
Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	OL1VLED2	L810 OBSTRUCTION LIGHT
* 1.1	1	100588_RE	OL 6LED BASE PLATE
* 1.2	1	100591	OL 6LED STAR DISK
* 1.3	1	100680	OL1/2 SERIAL # LABEL
* 1.4	1	A10290	5/32" ID RUBBER GROMMET
* 1.5	6	STD05008	LED LAMP
* 1.6	1	OLG	OL GASKET
* 1.7	1	AP100846	SIDELIGHT LENS CLEAR ACYRLIC
* 1.8	1	106V	LENS HOLDER RING
* 1.9	6	STE01-047	LED VERTICAL PCB
* 1.10	16	18PRSS	1/8 X .45 SS POP RIVET
* 1.11	1	PS90-260/24	POWER SUPPLY
* 1.12	1	20RED	#20AWG RED BELDON WIRE
* 1.13	2	WIRENUTBLU	BLUE WIRE NUT
2	2	HC255SS	SIDELIGHT LATCH
3	1	7X7SS	1/16 HOL 7X7 S.S. WIRE
4	2	12V245	OL LENS CLIP
5	1	105V	SINGLE SIDELIGHT BODY
6	2	832X14PH	8-32 X 1/4 PH SS SLOT SCREW
7	2	A1A	STAKON CRIMP
8	1	A314	3/4" CONDUIT LOCKNUT GALV.

* = ITEMS NOT SHOWN

B

B



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

A

A

DRAWN gsebek	8/18/2004	TWR Lighting, Inc. <i>Enlightened Technology®</i>	
CHECKED			
QA		TITLE	
MFG		OL1VLED2 120-240VAC FAA-OL16LED (L810 OBSTRUCTION LIGHT)	
APPROVED		SIZE B	DWG NO 100656i_RC
		SCALE	REV C
			SHEET 1 OF 1

4

3

2

1

