

TWR Lighting, Inc. HARK[®]

Enlightened Technology[®]

10810 W. LITTLE YORK RD. #130 - HOUSTON, TX 77041-4051
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 # OL2TRLED2

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc. HARK[®]

Enlightened Technology[®]

OL2TRLED2 CONTROLLER

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TWR Lighting, Inc. HARK[®]

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OL2TRLED2 CONTROLLER

1.0 GENERAL INFORMATION

The TWR Lighting[®], Inc. Model OL2TRLED2 Controller is for A0 lighting of towers up to 150' above ground level (AGL).

One (1) LED obstruction light within the fixture will burn steady. When the main LED obstruction light extinguishes, the secondary LED obstruction light will turn on.

Wiring connections for service power and tower wiring can be found on drawing 1262-R, which is included in this manual.

OL2TRLED2 CONTROLLER

2.0 SUGGESTED SPARE PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	RM22JA31MR	LED CURRENT SENSOR
1	UK63HESI	FUSE HOLDER
2	AGC2	2 amp, 250V FUSE
1	MOV524V15	INPUT MOV, MOV150LA20A VARISITOR

TWR Lighting, Inc. **HARK**[®]

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OL2TRLED2 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 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:

- x Improper Installation or Operation
- x Misuse
- x Abuse
- x Unauthorized or Improper Repair or Alteration
- x Accident or Negligence in Use, Storage, Transportation, or Handling
- x Any Acts of God or Nature
- x **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.

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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:

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

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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.

- x Product(s) that is deemed defective and/or unrepairable and covered under warranty - a credit will be issued to the customer's account.
- x 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.
- x 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.

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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.

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OL2TRLED2 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: 10810 W. LITTLE YORK RD. #130 HOUSTON, TX 77041-4051

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RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#: _____ **DATE:** _____

CUSTOMER: _____

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

ITEM DESCRIPTION (PART NO.): _____

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

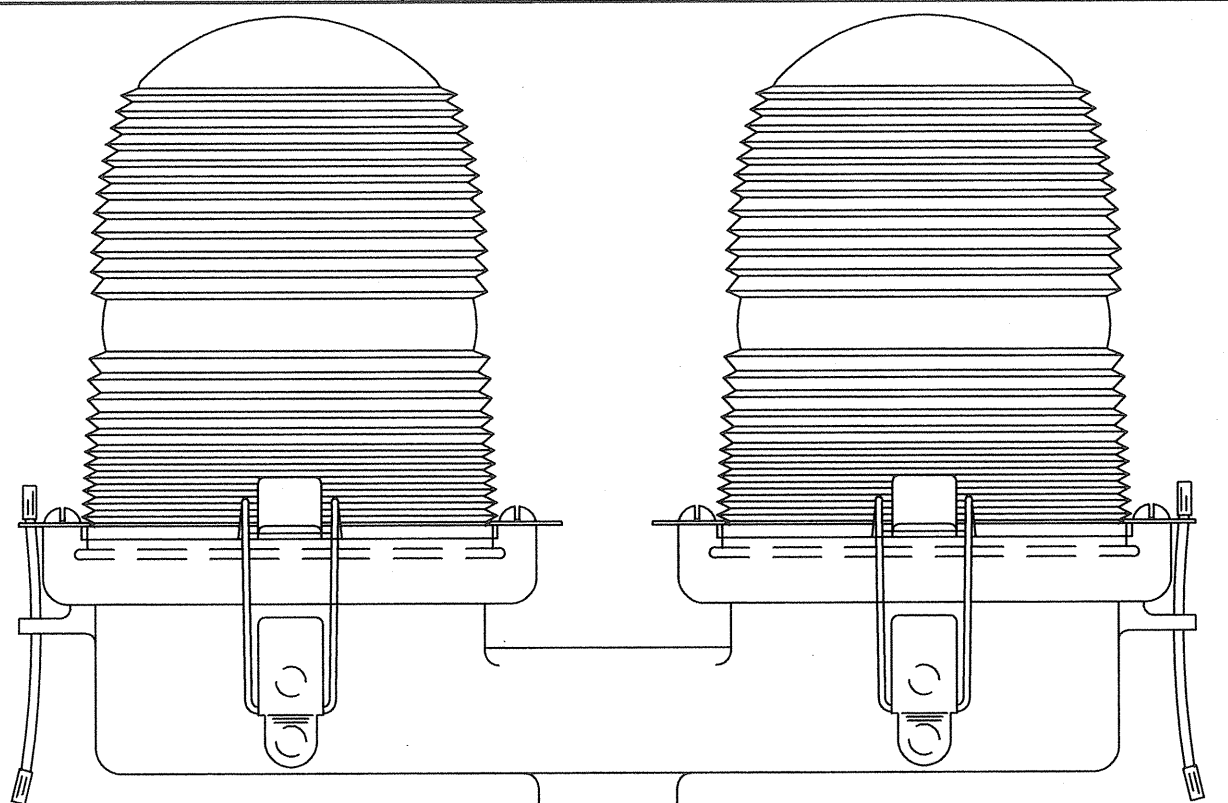
ORIGINAL TWR INVOICE NO.: _____ **DATED:** _____

DESCRIPTION OF PROBLEM: _____

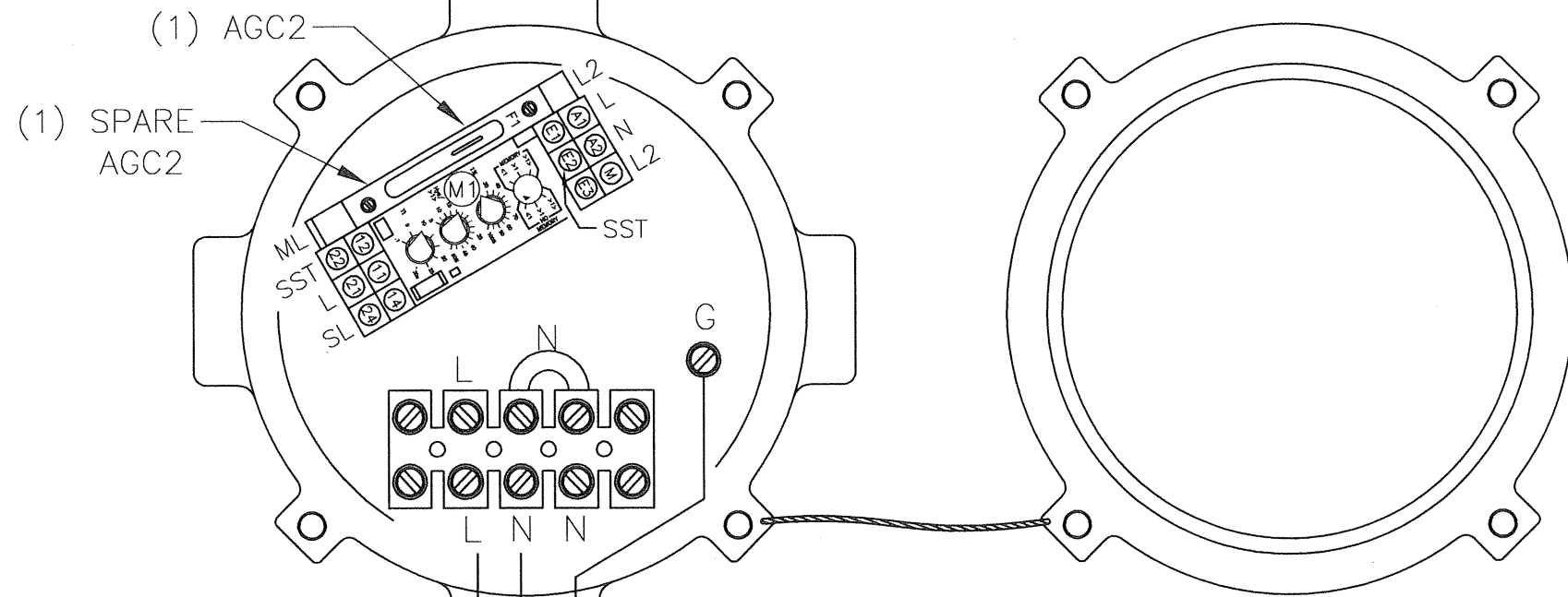
SIGNED: _____ **DATE NEEDED:** _____

RETURN ADDRESS: _____

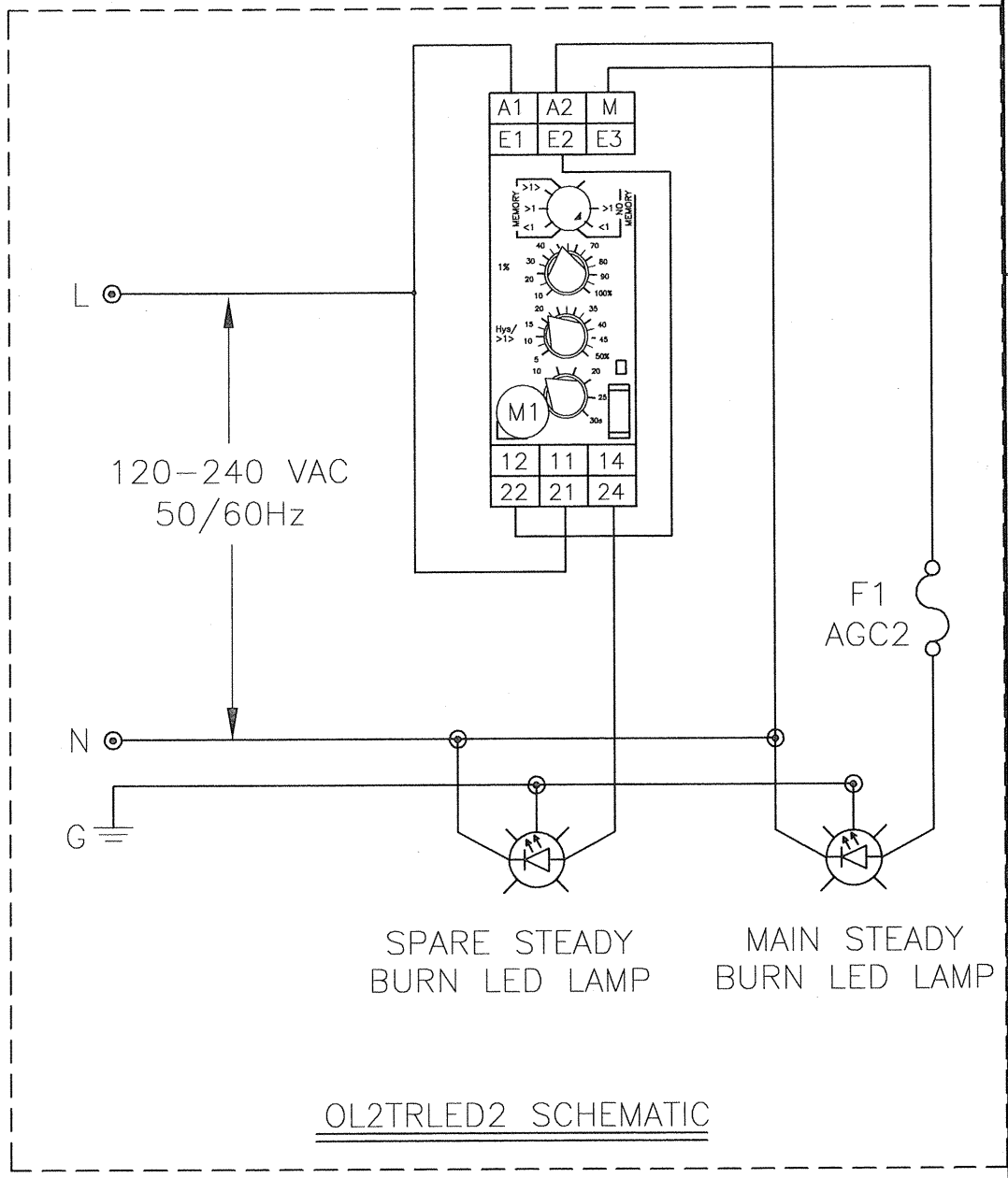
PLEASE RETURN PRODUCT TO: 10810 W. LITTLE YORK RD. #130 HOUSTON, TX 77041-4051



4" NIPPLE
2-3/4" CONDUIT NUT



(1) AGC2
(1) SPARE AGC2
ML = MAIN LED LAMP
SL = SECONDARY LED LAMP
120-240 VAC
50/60Hz
LINE
NEUTRAL
GROUND
OL2TRLED2 CHASSIS LAYOUT



OL2TRLED2 SCHEMATIC

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.

OL2TRLED2 CONTROLLER			
PROD DEPT	TWR Lighting, Inc. <i>Enlightened Technology</i> WARK		
SERV DEPT			
ENGINEER			
DRAWN BY E.A.SALAZAR	SHEET SIZE B	SHEET QTY. 1 OF 1	
DATE 09/17/10	SCALE N.T.S.	DWG. NO. 1262-R	

03/09/17 (B) CURRENT SENSOR

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AC UNITS CURRENT MEASUREMENT RM22JA31MR

120VAC PRODUCT SPECIFIC SETTINGS

QTY.	PART NO.	INPUT	#1	#2	#3	#4	#5	PRD.
1	OL1_LED2	E2	*<1	30	20	30	OFF	TWR
2	OL1_LED2	E2	*<1	50	20	30	OFF	TWR
3	OL1_LED2	E3	*<1	20	20	30	OFF	TWR
4	OL1_LED2	E3	*<1	25	20	30	OFF	TWR
6	OL1_LED2	E3	*<1	35	20	30	OFF	TWR
8	OL1_LED2	E3	*<1	45	15	30	OFF	TWR
10	OL1_LED2	E3	*<1	60	10	30	OFF	TWR
1	LEDBEAON2	E3	*<1	25	20	30	OFF	ORGA
1	LEDBEAON2A	E3	*<1	20	20	30	OFF	ORGA
1	LEDBEAON2(T)	E3	*<1	30	20	30	OFF	ORGA
1	STLDBEAON2	E3	*<1	25	20	30	OFF	ORGA
1	STLDBEAON2A	E3	*<1	20	20	30	OFF	ORGA

*NO MEMORY

FUNCTIONS

- 1) Configuration: Selection of operation mode (<1 / >1 / >1<) with or without memory.
- 2) Adjustment of current threshold as % of setting range.
- 3) Hysteresis adjustment from 5% to 50%.
- 4) Time Delay adjustment from 0.1 to 30sec.
- 5) Diagnostic button.
- 6) Yellow indicator light (**See conditions below**)
- 7) Dial Pointer (Green) LED
 - Steady green LED indicates that supply to the RM22 is present
 - Flashing green LED indicates a setting has been changed that requires a power cycle.

YELLOW LED CONDITIONS

- ➔ Steady Burn Fixtures
 - Yellow light on : Normal condition (no alarm)
 - Yellow light flashing : Undercurrent condition detected and time delay initiated
 - Yellow light off : Alarm condition
- ➔ Flashing Fixtures
 - Yellow light flashing inconsistent : Normal condition (no alarm)
 - Yellow light flashing consistent : Under current condition detected and time delay initiated

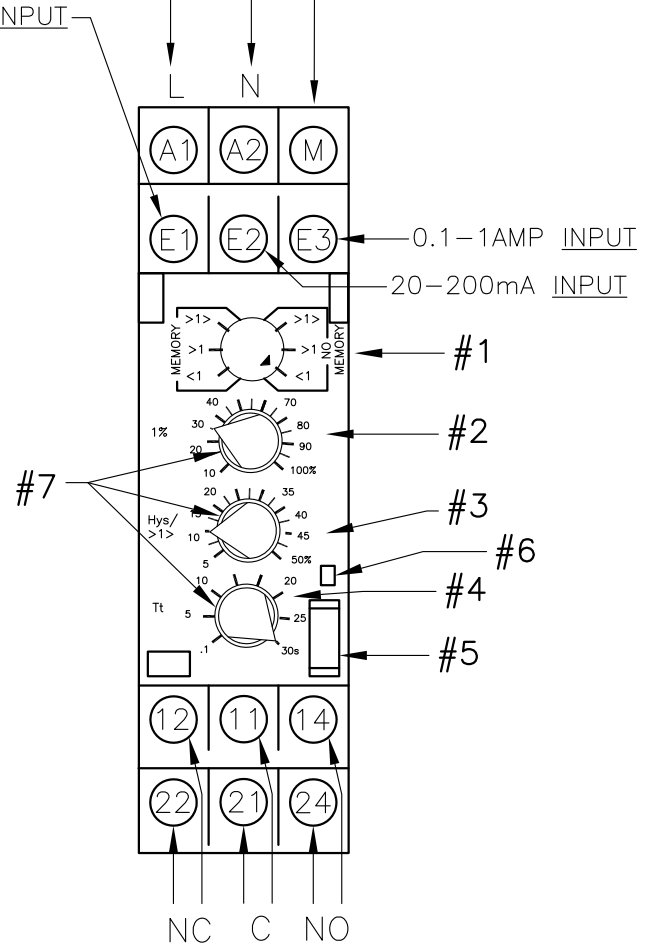
NOTE : To help troubleshoot or to set the sense current, turn the time delay to 0sec. Adjusting the current setting should only be done if it is known that all the lights are functioning. For Steady Burn adjust the current until the yellow LED comes on, and the relay is not dropping in and out. For Flashing Fixtures adjust the current setting until the yellow light starts to flash. This is the normal condition setting. Return the time delay back to 30sec.

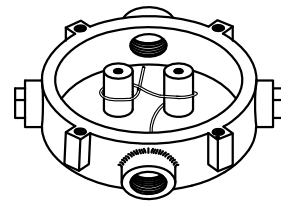
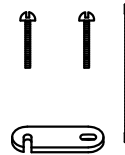
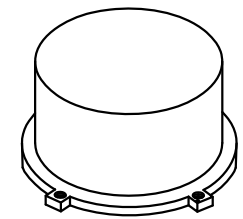
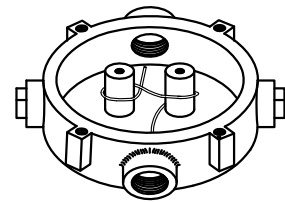
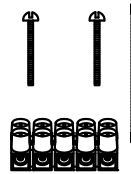
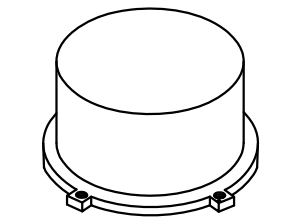
- Yellow light off : Alarm condition

Due to current draw tolerances slight adjustments to setting #2 may be needed for proper alarming.

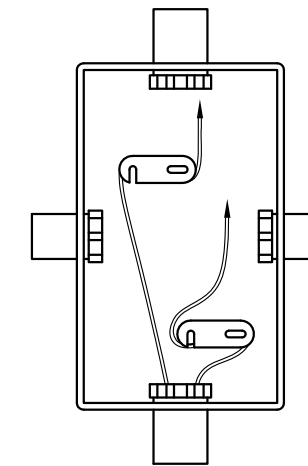
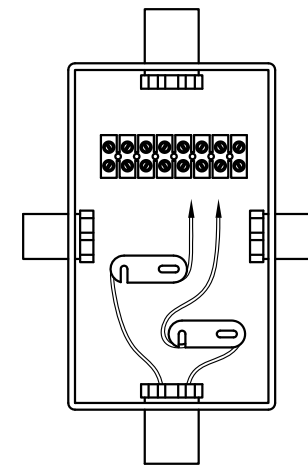
CONTROL VOLTAGE INPUT

4-40mA INPUT





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-B3 REQUIRES CONDUCTORS IN A VERTICAL CONDUIT 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.

USING THIS JUNCTION BOX METHOD SPACING IS 100 FEET MAXIMUM.

AWG WIRE SIZE	MAX. NUMBER WIRES IN 3/4" CONDUIT	MAX. NUMBER WIRES IN 1" CONDUIT	WIRE AREA SQ. INCHES	WEIGHT PER 100 FEET
12 THHN	16	26	0.0117	2.50
10 THHN	10	17	0.0184	4.10
8 THHN	6	9	0.0373	6.70
6 THHN	4	7	0.0519	10.30
4 THHN	2	4	0.0845	16.20

<u>JUNCTION AND STRAIN RELIEF BOXES</u>					
PROD DEPT	TWR Lighting, Inc. <i>Enlightened Technology®</i>				
SERV DEPT					
ENGINEER					
DRAWN BY	G.D. SEBEK	SHEET SIZE	B	SHEET QTY.	1 OF 1
DATE	07/26/93	SCALE	N.T.S.	DWG. NO.	100089

9/29/00	(A)	UPDATED NOTES
DATE:	LTR.	REVISION

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.
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