

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 # AA4M120VW/IND

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc.

Enlightened Technology®



AA4M120VW/IND CONTROLLER

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TWR Lighting, Inc.

Enlightened Technology®



**AA4M120VW/IND CONTROLLER
APPENDIX**

CHASSIS LAYOUT.....	1285-R V17465
CHASSIS SCHEMATIC	1285-S V17465
PHOTOCELL HOUSING DETAIL.....	100239 (REV D)
L-864 FM300 MM BEACON	FM100017 (REV B)
L-864 FM300 MM BEACON DETAIL	275-B (REV E)
L-864 FM300 MM WIRING DETAIL.....	273-B
JUNCTION BOX DETAIL	100089 (REV A)
AA 1/4 TOWER DRAWING	T1520 V17465
WARRANTY & RETURN POLICY	
RETURN MERCHANDISE AUTHORIZATION (RMA) FORMS	

AA4M120VW/IND CONTROLLER

1.0 GENERAL INFORMATION

The TWR Lighting®, Inc. Model AA4M120VW/IND Controller is for applications of four (4) L-864, 300 MM, 120V beacons.

The flash rate of the beacons is 30 per minute.

A by-pass switch (SW1) allows the controller to be turned on during daylight hours without covering the photocell. PL1 indicator will also illuminate.

This is particularly helpful since the controller can be mounted indoors while the photocell is outdoors. SW1 can be operated by turning “on” the toggle switch mounted on the panel of the controller.

Each beacon requires two (2) 620 watt, 120V bulbs. The use of any other bulb may give a false beacon lamp burnout alarm. TWR® recommends that you use only these bulbs (620PS40P).

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

Power supplied to the controller shall be 120V 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 120V AC to the controller. Alarms in the event of power failure, or tripped circuit breaker at the service panel.

LIGHTS “ON” Gives an indication whenever the controller is activated. PL1 indicator will also illuminate.

BEACON Will give an alarm in the event of one (1) or both bulbs fail within any beacon.

AA4M120VW/IND CONTROLLER**2.0 INSTALLATION INSTRUCTIONS****2.1 MOUNTING THE CONTROLLER CABINET**

(Refer to drawing 1285-R V17465)

- 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 showing on drawing 1285-R V17465. 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 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 "COM," the black wire is connected to the socket terminal marked "B," and the red wire is connected to the socket terminal marked "R." 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 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 2.1.2.
- 2.1.4 The wiring from the photocell, the service breaker, and the beacons should enter the control cabinet through the water-tight connectors in the bottom of the cabinet. Inside the cabinet, the connections will be made on the terminal strip and circuit breakers located at the bottom of the chassis. These connections are made as follows:

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2.2 EXTERNAL PHOTOCELL WIRING

(Refer to drawing 1285-R V17465)

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) 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 1285-R V17465)

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

2.3.2 Circuit breaker needs to be rated at 50 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 ground lug located to the left of TB2.

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2.4 BEACON WIRING

(Refer to drawing 1285-R V17465)

- 2.4.1 Connect the **BLACK** wire from Beacon #1 to the circuit breaker marked "B1."
- 2.4.2 Connect the **NEUTRAL** wire from Beacon #1 to one of the terminal blocks on "TB1" marked "N."
- 2.4.3 Connect the **BLACK** wire from Beacon #2 to the circuit breaker marked "B2."
- 2.4.4 Connect the **NEUTRAL** wire from Beacon #2 to one of the terminal blocks on "TB1" marked "N."
- 2.4.5 Connect the **BLACK** wire from Beacon #3 to the circuit breaker marked "B3."
- 2.4.6 Connect the **NEUTRAL** wire from Beacon #3 to one of the terminal blocks on "TB1" marked "N."
- 2.4.7 Connect the **BLACK** wire from Beacon #4 to the circuit breaker marked "B4."
- 2.4.8 Connect the **NEUTRAL** wire from Beacon #4 to one of the terminal blocks on "TB1" marked "N."

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2.5 BEACON ALARM WIRING

(Refer to drawings 1285-R V17465 and 1285-S V17465)

2.5.1 Alarm relays K1, K2, and alarm module M2, M4, M6, and M8, are provided for independent contact closures for: Power Failure, Lights “ON,” and Beacon 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 the alarm device. Connect customer alarm commons to terminal block TB5. The remaining wires from each pair will terminate as follows:

2.5.2.1 POWER FAILURE ALARM: Connect alarm wire to terminal block TB4, terminal #1, for normally open, or terminal #2, for normally closed monitoring.

2.5.2.2 LIGHTS “ON” ALARM: Connect alarm wire to terminal block TB4, terminal #3, for normally open, or terminal #4, for normally closed monitoring.

2.5.2.3 BEACON #1 LAMP BURNOUT ALARM: Connect alarm wire to terminal block TB4, terminal #5, for normally open, or terminal #6, for normally closed monitoring.

2.5.2.4 BEACON #2 LAMP BURNOUT ALARM: Connect alarm wire to terminal block TB4, terminal #7, for normally open, or terminal #8, for normally closed monitoring.

2.5.2.5 BEACON #3 LAMP BURNOUT ALARM: Connect alarm wire to terminal block TB4, terminal #9, for normally open, or terminal #10, for normally closed monitoring.

2.5.2.6 BEACON #4 LAMP BURNOUT ALARM: Connect alarm wire to terminal block TB4, terminal #11, for normally open, or terminal #12, for normally closed monitoring.

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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.

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

BEACON: Pull circuit breakers on the controller panel.

3.0 THEORY OF OPERATION

3.1 POWER SUPPLY

120V AC enters the controller from the service breaker panel. Line sits at the PRD waiting to be energized, and also keeps the power failure relay K1 energized. When the 6390-FAA photocell is activated, line energizes the coil of the PRD, and K2 Lights “ON” Relay. This can also be accomplished by using the photocell by-pass switch (SW1). PL1 indicator will also illuminate.

3.2 BEACONS

LD1 – LD4 are sent to modules M1 – M8. M1 is the primary flasher for Beacon #1, which provides control voltage to modules M3, M5, and M7, which are auxiliary flashers for Beacons #2 - #4. The output of these modules is sent through the current sensing modules M2, M4, M6, and M8, then to the circuit breaker outputs B1 – B4. If any of these current sensing modules detect a lamp burnout, then that particular module would provide a contact closure along with a visual indication on PL2, PL3, PL4, or PL5 indicators for that lamp circuit.

*** Once the cause of the failure has been corrected, the unit will need to be reset by shutting off the service breaker to the unit.**

4.0 MAINTAINANCE GUIDE

4.1 RED OBSTRUCTION LIGHTING

The only required maintenance needed to be performed is replacement of the lamps in the L-864 fixture. Lamps should be replaced after being operated for not more than 75 percent of the rated life, or immediately upon failure, as per Advisory Circular 70/7460-1K. By following these instructions, maximum safety and performance can be achieved.

TOOLS REQUIRED: NONE

4.2 L-864 LAMP REPLACEMENT

4.2.1 Loosen the one (1) wing nut on the latch pin so that it can recline.

4.2.2 Open the lens and tilt it backward.

4.2.3 To remove each lamp, depress down while rotating the lamp counter-clockwise 90°.

4.2.4 Install the new lamps by depressing down while rotating the lamp clockwise 90°.

4.2.5 Close the lens and allow the latch pin to drop in the recessed slot.

4.2.6 Tighten the wing nut snug, then ¼ turn more.

4.3 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 nor required, other than replacement as needed.

AA4M120VW/IND CONTROLLER**5.0 MAJOR COMPONENTS PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V AC PHOTOCELL
1	VJ1816HWPL2	ENCLOSURE
8	8WA1204	TERMINAL BLOCK (TB1 & TB2)
4	S261-D20	20 amp CIRCUIT BREAKER (B1 – B4)
2	8WA1808	END STOP
1	STJ01002	PHOTOCELL BYPASS SWITCH (SW1)
2	MOV524V15	METAL OXIDE VARISTOR (MOV 1, MOV 2)
6	KRPA5AG120V	SPDT 120V AC RELAY (K1 – K6)
4	CM-250	BEACON ALARM MODULES (M2, M4, M6, AND M8)
1	CR360L304	POWER RELAY (PRD)
1	Q8PIBXXW110E	WHITE LED INDICATOR FOR POWER ON (PL1)
4	Q8P1BXXY110E	AMBER LED INDICATOR FOR BEACON LAMP BURNOUT (PL2 – PL5)
1	TERMBLK141-12	12 PART TERMINAL BLOCK (TB4)
6	PB27E122	OCTAL RELAY SOCKETS
1	SSPIGTAIL	SUN SWITCH PIGTAIL
2	TERMBLK141-7	7 PART TERMINAL BLOCK (TB3, TB5)
1	PF-250	SOLID STATE FLASHER (M1)
3	SF-250	SOLID STATE LOAD CONTACTOR (M3, M5, AND M7)

AA4M120VW/IND CONTROLLER**6.0 SUGGESTED SPARE PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V AC PHOTOCELL
1	CM-250	BEACON ALARM MODULES (M2, M4, M6, AND M8)
1	KRPA5AG120V	SPDT 120V AC RELAY (K1 – K6)
1	PF-250	SOLID STATE FLASHER (M1)
1	SF-250	SOLID STATE LOAD CONTACTOR (M3, M5, AND M7)

TWR Lighting, Inc.

Enlightened Technology®

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AA4M120VW/IND 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 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.

TWR Lighting, Inc.

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AA4M120VW/IND CONTROLLER

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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AA4M120VW/IND 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

TWR Lighting, Inc.

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AA4M120VW/IND 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