

TWR Lighting, Inc.

Enlightened TechnologySM

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 # A0M-TSSLED 48VDCW/F

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

TABLE OF CONTENTS

1.0	GENERAL INFORMATION	1
2.0	INSTALLATION	2
2.1	MOUNTING THE CONTROL CABINET	2
2.2	EXTERNAL PHOTCELL WIRING	3
2.3	POWER WIRING.....	3
2.4	LED OBSTRUCTION FIXTURE WIRING	3
2.5	LED OBSTRUCTION FIXTURE ALARM WIRING.....	4
3.0	THEORY OF OPERATION	6
3.1	POWER SUPPLY	6
3.2	LED OBSTRUCTION FIXTURE	6
4.0	MAINTENANCE GUIDE	7
4.1	RED OBSTRUCTION FIXTURE	7
4.2	CONTROLLER.....	7
4.3	PHOTOCCELL.....	7
5.0	MAJOR COMPONENTS PARTS LIST	8
6.0	SUGGESTED SPARE PARTS LIST	9

WARRANTY & RETURN POLICY

RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

APPENDIX

CHASSIS COMPONENT LAYOUT.....	1225-R
SCHEMATIC LAYOUT	1225-S

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

1.0 GENERAL INFORMATION

(Refer to Drawing 1225-R)

The TWR Lighting, Inc. Model A0M-TSSLED 48VDCW/F Controller is for the application of one (1) to four (4) LED obstruction fixtures.

One (1) LED double obstruction light will flash at 30 Fpm. Two (2) LED obstruction lights 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 closing the blade switch that is mounted on the panel of the controller.

NORMAL OPERATING POSITION OF SW1 IS IN THE OPEN POSITION.

Power supplied to the controller shall be 48VDC.

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

POWER FAILURE Monitors 48VDC to the controller. Alarms in the event of power failure, or tripped circuit breaker.

LIGHTS "ON" Gives an indication whenever the controller is activated.

LED OBSTRUCTION LIGHTS

FLASHING Will give an alarm when one (1) LED within the double obstruction fixture fails.

STEADY BURN Will give an alarm when one (1) LED obstruction fixture fails.

TWR Lighting, Inc.

Enlightened Technology^{S.M.}

AA0M-TSSLED 48VDCW/F CONTROLLER

2.0 INSTALLATION

2.1 MOUNTING THE CONTROL CABINET

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 1225-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. The photocell should be positioned so that it does not "see" ambient light, which will prevent it from switching to 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. 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 wiring from the photocell, the battery, and the 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 fuse holders located at the bottom of the chassis. These connections are made as follows:

TWR Lighting, Inc.

Enlightened Technology^{S.M.}

AA0M-TSSLED 48VDCW/F CONTROLLER

2.2 EXTERNAL PHOTOCELL WIRING

(Refer to Drawing 1225-R)

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

2.2.2 Connect the **BLUE** wire from the photocell to terminal block TB2 marked “SSR.”

2.2.3 Connect the **RED** wire from the photocell to terminal block TB2 marked “+.”

2.3 POWER WIRING

(Refer to Drawing 1225-R)

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

2.3.2 Connect the positive 48VDC to terminal block TB1 marked “+.”

2.3.3 Connect the negative wire to one (1) of the terminal blocks on TB1 marked “-.”

2.3.4 Connect the ground to the aluminum mounting plate.

2.4 LED OBSTRUCTION FIXTURE WIRING

(Refer to Drawing 1225-R)

2.4.1 Connect the **RED** from the double LED obstruction light to the circuit breaker marked “F1.”

2.4.2 Connect the **BLACK** wire to the terminal block TB1 marked “-.”

2.4.3 Connect the **RED** from the two (2) single LED obstruction lights to the circuit breaker marked “F2.”

2.4.4 Connect the **BLACK** wire to the terminal block TB1 marked “-.”

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

2.5 LED OBSTRUCTION FIXTURE ALARM WIRING

(Refer to Drawings 1225-R and 1225-S)

2.5.1 Alarm relays K1, K2, and Module M1 and M2 are provided for independent contact closures for: Power Failure, Lights “ON,” and flashing LED Obstruction Fixture Burnout, and steady burn LED Obstruction Fixture Burnout.

2.5.2 Alarm wiring: To utilize all of the alarms, the customer will need four (4) pair of wires to interface with the alarm device.

LED Obstruction Fixture Burnout:

Flashing

Connect first wire from the first pair to Module M1, terminal #18, for normally open, (or) terminal #16, for normally closed monitoring.

Connect second wire from the first pair to Module M1, terminal 15, for alarm common.

Steady Burn

Connect first wire from the first pair to Module M2, terminal #18, for normally open, (or) terminal #16, for normally closed monitoring.

Connect second wire from the first pair to Module M2, terminal 15, for alarm common.

Power Failure Alarm: Connect first wire from the second pair to relay K1, terminal #3, for normally closed, (or) terminal #4, for normally open monitoring.

Connect second wire from the second pair to relay K1, terminal #1.

TWR Lighting, Inc.

Enlightened Technology^{S.M.}

AA0M-TSSLED 48VDCW/F CONTROLLER

Lights “ON” Alarm: Connect first wire from the third pair to relay K2, terminal #3, for normally closed, (or) terminal #6, for normally open monitoring.

Connect second wire from the third pair to relay K2, terminal #1.

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

Power Failure Open 48VDC circuit.

Lights “ON” Close photocell by-pass switch (SW1) or cover the photocell. After testing, open SW1.

LED Obstruction Fixture

Flashing Open fuse holder F1 on the controller panel.

Steady Burn Open fuse holder F2 on the controller panel.

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

3.0 THEORY OF OPERATION

3.1 Power Supply

48VDC enters the controller from the battery. Line sits at the photocell waiting to be switched, and also keeps the power failure relay K1 energized. When the photocell is activated, SSR energizes K2 “Lights On” relay. This can also be accomplished by using the photocell by-pass switch (SW1).

3.2 LED Obstruction Lights

SSR is sent to current sensing Modules M1 and M2. Module M1 output is then fed to flasher Module M3, and then to fuse F1.

Module M2 output is sent to fuse F2. If Module M1, or M2 detects an LED obstruction fixture failure, then either M1, or M2 will send a contact alarm on pin 16, or pin 18.

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

4.0 MAINTENANCE GUIDE

4.1 LED OBSTRUCTION FIXTURE

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

4.2 CONTROLLER

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

4.3 PHOTOCELL

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

TWR Lighting, Inc.

Enlightened Technology^{S.M.}

AA0M-TSSLED 48VDCW/F CONTROLLER

5.0 MAJOR COMPONENTS PARTS LIST

QUANTITY	PART NUMBER	DESCRIPTION
1	7051-48VDC	Photocell 48VDC
1	Q202013PCI	Enclosure
2	2275H	Sockets (K1 & K2)
6	0115116.07	Terminal Blocks (TB1 & TB2)
2	0115657.25	Fuse Holder (F1 & F2)
2	0206351.16	End Stop
1	LY248	DPDT Relay (K1 & K2)
1	0115686.13	10 amp Switch (SW1)
2	RM4JA31MW	Current Sensor (M1 & M2)
1	HLW12A1Z	5 ohm 12W Resistor (R1)
2	GDC2	2 amp Fuse (F1)
1	24-120F30DF	Flasher (M3)

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

6.0 SUGGESTED SPARE PARTS LIST

QUANTITY	PART NUMBER	DESCRIPTION
1	7051-48VDC	Photocell 48VDC
1	GDC2	2 amp Fuse (F1)

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M-TSSLED 48VDCW/F CONTROLLER

USE GENERIC WARRANTY & RETURN POLICY

TWR Lighting, Inc.

Enlightened TechnologySM

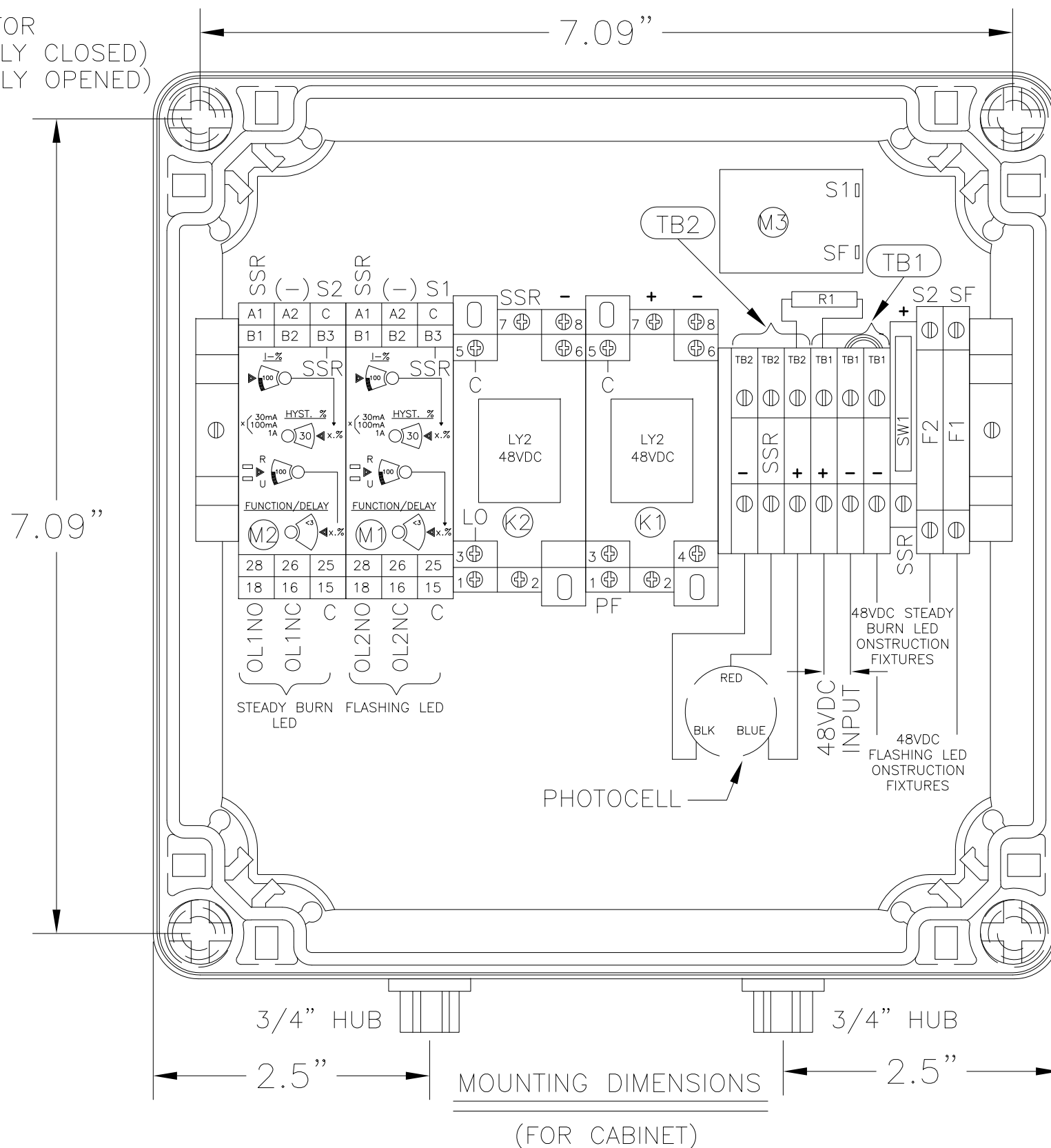
AA0M-TSSLED 48VDCW/F CONTROLLER

USE GENERIC RMA FORM

CUSTOMER ALARM POINTS

- OL1NC = OBSTRUCTION LIGHT ALARM (NORMALLY CLOSED)
- OL1NO = OBSTRUCTION LIGHT ALARM (NORMALLY OPEN)
- OL2NC = OBSTRUCTION LIGHT ALARM (NORMALLY CLOSED)
- OL2NO = OBSTRUCTION LIGHT ALARM (NORMALLY OPEN)
- C = ALARM COMMON
- LO = LIGHTS "ON" INDICATOR
- PFNC = POWERFAIL (NORMALLY CLOSED)
- PFNO = POWERFAIL (NORMALLY OPENED)

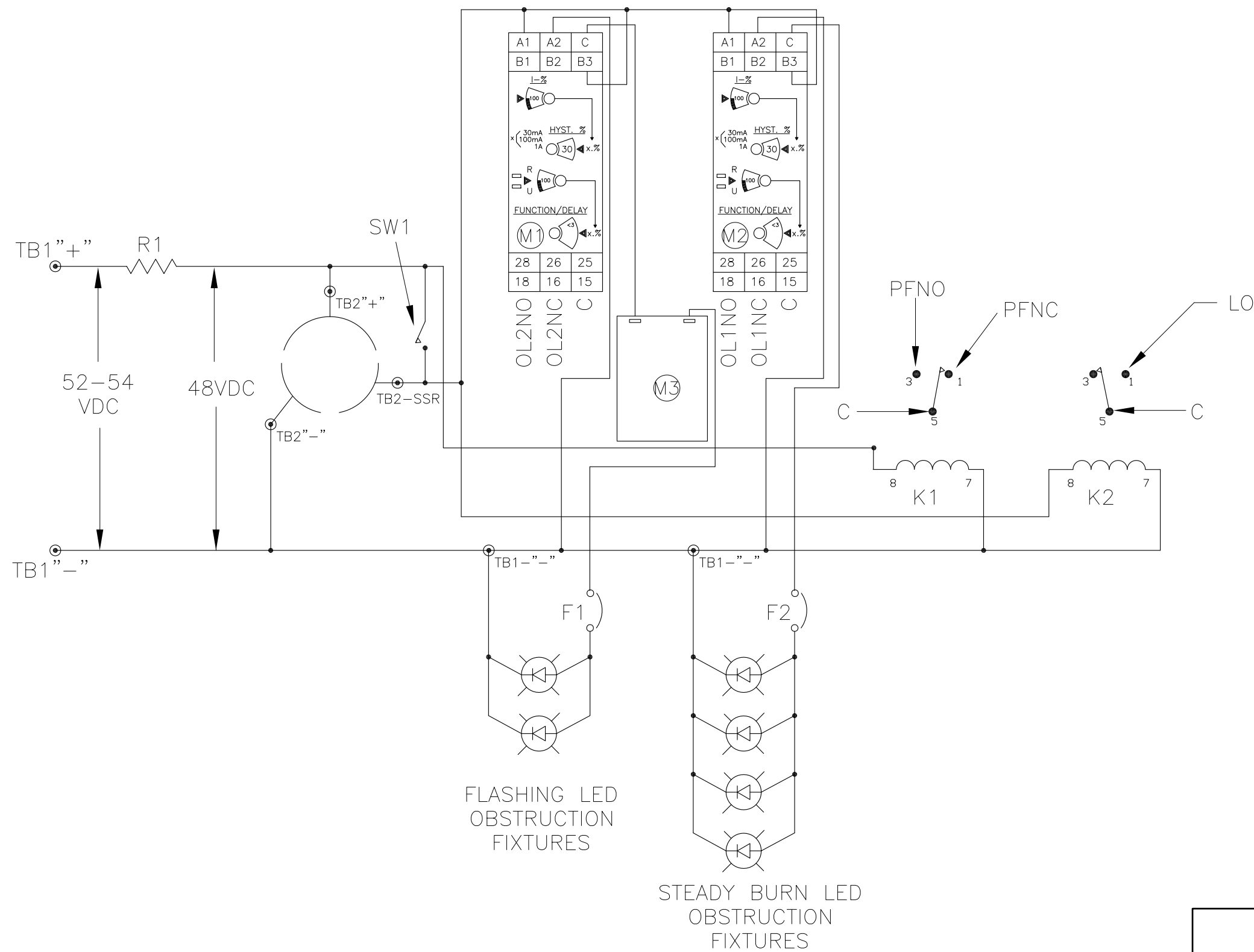
!!WARNING!!
VERIFY POLARITY CONNECTIONS ON THE INPUT AND OUTPUT.
NEGLIGENCE WILL RESULT IN FAILURE OF THE PHOTOCELL
AND/OR LED SIDELIGHT. THIS WILL VOID YOUR WARRANTY.



NOTES:

1. NORMAL OPERATING POSITION OF SWITCH SW1 IS IN THE OPEN POSITION.

<u>A0MTSSLED48VDCW/F</u>			
<u>CHASSIS LAYOUT</u>			
APP'D	TWR Lighting, Inc. <i>Enlightened Technology</i>		
CHK'D BY			
ENGINEER			
DRAWN BY E.A.SALAZAR	SCALE N.T.S.	SHEET SIZE B	SHEET QTY. 1 OF 1
DATE 03/09/06	DWG. NO. 1225-R		
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. 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.			



FLASHING LED
OBSTRUCTION
FIXTURES

STEADY BURN LED
OBSTRUCTION
FIXTURES

<u>A0MTSSLED48VDCW/F</u> <u>SCHEMATIC LAYOUT</u>			
PROD DEPT	TWR Lighting, Inc. <i>Enlightened Technology®</i>		
SERV DEPT			
ENGINEER			
DRAWN BY E.A.SALAZAR	SHEET SIZE B	SHEET QTY. 1 OF 1	
DATE 03/10/06	SCALE N.T.S.	DWG. NO. 1225-S	
<small>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. 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.</small>			