



ADB 
Airfield Solutions

Instruction Manual

LED Windsock Tower Conversion Kit

for Internally Illuminated ADB or P. Wedge Windsock
Towers

96A0478, Rev. A, 12/8/15

DISCLAIMER / WARRANTY

A.0 Disclaimer / Standard Warranty

A.1 CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The directives that have been taken into consideration in the design are available on written request to ADB.

A.2 ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and FAA Airfield regulations. The directives that have been taken into consideration in the design are available on written request to ADB.

A.3 LED Product Guarantee

Where applicable, per FAA EB67 (applicable edition), ADB L858(L) Airfield Guidance Signs are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years. ADB LED light fixtures (with the exception of obstruction lighting) are warranted against mechanical and physical defects in design or manufacture for a period of 12 months from date of installation; and are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years per FAA EB67 (applicable edition).

NOTE: See your sales order contract for a complete warranty description. In some specific cases, deviations are (to be) accepted in the contract, which will supersede the standard warranty.

A.4 Standard Product Guarantee

Products of ADB manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of one year from the date of installation or 2 years from date of shipment and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made. ADB L858 Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation per FAA AC 150/5345-44 (applicable edition).

NOTE: See your sales order contract for a complete warranty description.

A.5 All Products

LED Products of ADB, manufactured and sold by ADB or its licensed representatives, meets the corresponding requirements of FAA, ICAO and IEC.

ADB will correct by repair or replacement per the applicable guarantee above, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB Airfield Solutions written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

ADB reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB Airfield Solutions further reserves the right to require the return of such goods to establish any claim.

ADB's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

ADB's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB Airfield Solutions, warranty is limited to that extended by the original manufacturer.

This is ADB's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

A.6 Liability



WARNING

Use of the equipment in ways other than described in the catalogue leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

ADB cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB equipment.
- Allowing unskilled personnel to perform any task on or with the equipment.

DISCLAIMER / WARRANTY

A.7 © ADB BVBA

This manual or parts thereof may not be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, nor otherwise, without ADB BVBA's prior written consent.

This manual could contain technical inaccuracies or typographical errors. ADB BVBA reserves the right to revise this manual from time to time in the contents thereof without obligation of ADB BVBA to notify any person of such revision or change. Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and ADB BVBA disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

TABLE OF CONTENTS

A.0	Disclaimer / Standard Warranty	ii
A.1	CE certification	ii
A.2	ETL certification	ii
A.3	LED Product Guarantee	ii
A.4	Standard Product Guarantee	ii
A.5	All Products	ii
A.6	Liability	iii
A.7	© ADB BVBA	iv
1.0	Safety	1
1.1	HAZARD Icons used in the manual	1
1.1.1	Qualified Personnel	1
1.2	To use this equipment safely:	2
1.2.1	Additional Reference Materials:	2
1.2.2	Intended Use	2
1.2.3	Fasteners	2
1.2.4	Operation	3
1.2.5	Storage	3
1.2.6	Material Handling Precautions	3
1.2.7	Action in the Event of a System or Component Malfunction	4
1.2.8	Maintenance	4
1.2.9	Maintenance and Repair	4
2.0	Windsock Tower - Internally Illuminated - LED and Quartz	5
2.1	About this manual	5
2.1.1	Introduction	5
2.1.2	How to work with the manual	5
2.1.3	Record of changes	5
2.2	Product Introduction	6
2.2.1	Equipment Description	6
2.2.2	Compliance with Standards	6
2.2.3	Uses	6
2.2.4	Electrical Supply	6
2.2.5	Operating Conditions	6
2.2.6	Equipment Specification Data	6
2.2.7	Equipment and Accessories Supplied	6
2.2.8	Equipment Required But Not Supplied	6
2.3	Installation	7
2.3.1	Introduction	7
2.3.2	Unpacking and Material Inspection	7
2.3.3	Installation Procedures	7
2.3.3.1	For Series Current Powered Version (-LC):	7
2.3.3.2	For Parallel Voltage Powered Version (-LV):	7
2.3.4	LED Current Power Supply Adjustment	8
2.3.5	LED Voltage Fixture Adjustment	8
2.4	Operation	9
2.4.1	LED Current Power Supply	9
2.5	Maintenance	10
2.5.1	Periodic Maintenance Schedule	10
2.5.2	Swivel Maintenance	10
2.6	Troubleshooting	11
2.7	Wiring Diagrams	12
2.7.1	General Wiring	12
2.7.2	Current Powered LED Version (-LC)	13

TOC

2.7.3 Voltage Powered LED Version (-LV)	14
3.0 Parts	15
3.1 Order Codes	15
3.2 Parts Diagram	16

1.0 Safety

This section contains general safety instructions for installing and using ADB Airfield Solutions equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

1.1 HAZARD Icons used in the manual

For all HAZARD symbols in use, see the Safety section. All symbols must comply with ISO and ANSI standards.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbol shown below.

	WARNING
<ul style="list-style-type: none"> • Failure to observe a warning may result in personal injury, death or equipment damage. 	
	DANGER - RISK OF ELECTRICAL SHOCK OR ARC FLASH
<ul style="list-style-type: none"> • Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death. 	
	WARNING - WEAR PERSONAL PROTECTIVE EQUIPMENT
<ul style="list-style-type: none"> • Failure to observe may result in serious injury. 	
	WARNING - DO NOT TOUCH
<ul style="list-style-type: none"> • Failure to observe this warning may result in personal injury, death, or equipment damage. 	
	CAUTION
<ul style="list-style-type: none"> • Failure to observe a caution may result in equipment damage. 	

1.1.1 Qualified Personnel

	IMPORTANT INFORMATION
<p>The term qualified personnel is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.</p>	
<p>Always use required personal protective equipment (PPE) and follow safe electrical work practices.</p>	

To use this equipment safely:

1.2 To use this equipment safely:



WARNING

Read installation instructions in their entirety before starting installation.

- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

Failure to follow these warnings may result in serious injury or equipment damage.

1.2.1 Additional Reference Materials:



IMPORTANT INFORMATION

- IEC - International Standards and Conformity Assessment for all electrical, electronic and related technologies
- IEC 60364 - Electrical Installations in Buildings
- FAA Advisory: AC 150_5340_26 (current edition) Maintenance of Airport Visual Aid Facilities
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

1.2.2 Intended Use



WARNING

IMPROPER USE

Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

THESE WARNINGS MAY RESULT IN SERIOUS INJURY OR EQUIPMENT DAMAGE.

1.2.3 Fasteners



WARNING

FOREIGN OBJECT DAMAGE - FOD

- Only use fasteners of the same type as the one originally supplied with the equipment.
- Always tighten the fasteners to the recommended torque. Use a calibrated torque wrench and apply the recommended adhesive type.
- Obey the instructions of the adhesives necessary for the fasteners.

Failure to follow these warnings may cause the fasteners to loosen, damage the equipment, potentially to loosen the equipment. This can lead to a highly dangerous situation of FOD, with potential lethal consequences.

1.2.4 Operation



CAUTION

IMPROPER OPERATION

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

Failure to follow this instruction can result in equipment damage.

1.2.5 Storage



CAUTION

IMPROPER STORAGE

If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

Failure to follow this instruction can result in equipment damage.

1.2.6 Material Handling Precautions



CAUTION

ELECTROSTATIC SENSITIVE DEVICES

This equipment may contain electrostatic sensitive devices.



- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you should bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

Failure to follow this instruction can result in equipment damage.



WARNING

UNSTABLE LOAD



- Use extreme care when moving heavy equipment.
- Verify that the moving equipment is rated to handle the weight.
- When removing equipment from a shipping pallet, carefully balance and secure it using a safety strap.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

To use this equipment safely:

1.2.7 Action in the Event of a System or Component Malfunction



DANGER

ARC FLASH AND ELECTRIC SHOCK HAZARD

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- An open airfield current circuit is capable of generating >5000 Vac and may appear OFF to a meter.
- Never unplug a device from a constant current circuit while it is operating. Arc flash may result.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

Failure to follow these warnings will result in death or equipment damage.

1.2.8 Maintenance



WARNING

ELECTRIC SHOCK HAZARD

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

Failure to follow these warnings will result in death or equipment damage.

1.2.9 Maintenance and Repair



DANGER

ARC FLASH AND ELECTRIC SHOCK HAZARD

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Only persons who are properly trained and familiar with ADB Airfield Solutions equipment are permitted to service this equipment.
- An open airfield current circuit is capable of generating >5000 Vac and may appear OFF to a meter.
- Never unplug a device from a constant current circuit while it is operating. Arc flash may result.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check the interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with airfield electrical equipment.

Failure to follow these warnings will result in death or equipment damage.

2.0 Windsock Tower - Internally Illuminated - LED and Quartz

Description: Windsock towers are used at airports to provide pilots with a visual indication of wind direction and velocity at ground level.

2.1 About this manual

2.1.1 Introduction

The manual shows the information necessary to:

- Install
- Carry Out Maintenance
- Carry Out Troubleshooting on the Wind Direction Indicator.

2.1.2 How to work with the manual

1. Become familiar with the structure and content.
2. Carry out the actions completely and in the given sequence.

2.1.3 Record of changes

Page	Rev	Description	Date
All	B	Released Manual	12/08/15

Product Introduction

2.2 Product Introduction

2.2.1 Equipment Description

The LED Windsock Tower Conversion Kit can be used with most Transport Canada style ADB, Siemens or P. Wedge Windsock Towers to convert from either the 120VAC PAR38 lamp or the 100W Quartz PK30d 6.6A lamp to a current or voltage powered LED fixture.

The 120VAC version requires replacement of only the PAR38 fixture and lamp.

The 2.8-6.6A current version requires replacement of the fixture and lamp as well as the constant brightness power supply with a series current LED power supply.

2.2.2 Compliance with Standards

T/C: K305, TP 312

ICAO: Annex 14, Vol. 1 Para. 5.1.1

2.2.3 Uses

Used to convert most Transport Canada style Windsock Towers from incandescent to LED internal lighting.

Two version of the kits are available, one for 120VAC voltage powered units and one for 2.8-6.6A current powered units.

2.2.4 Electrical Supply

C23-030000-LC - LED Internally Illuminated, 2.8-6.6A Series Powered from a 200W Isolating Transformer.

C23-030000-LV - LED Internally Illuminated, 120-277VAC Voltage Powered from a Line voltage input or a Series to voltage Power Adapter.

2.2.5 Operating Conditions

Temperature: -55°C to +55°C

Humidity: 0 to 100% (including conditions where condensation takes place in the form of water or frost)

Altitude: 0 to 10,000 ft (3,000 m)

Wind: Velocities up to 75 knots (140 km/hr)

Exposure: Withstands windblown rain, sand, dust particles, and a salt-laden atmosphere

2.2.6 Equipment Specification Data

LED Conversion Kit

Shipping Dimensions:

24" x 24" x 18" - 25lbs (61cm x 61cm x 45cm - 11kg)

2.2.7 Equipment and Accessories Supplied

The LED Windsock Tower Conversion Kit consists of:

- LED Fixture
- LED current power supply (-LC version only).

2.2.8 Equipment Required But Not Supplied

- a. Medium size blade screwdriver
- b. Wire stripper/crimper
- c. Screwdriver Set
- d. Electric Drill c/w set of bits
- e. Wire nuts
- f. Incoming Power wiring
- g. Source of 120VAC,60Hz or 200W Isolating Transformer.
- h. True RMS Ammeter and Voltmeters for 6.6A Series circuit model
- i. 1/4"-20 Tap
- j. 6 - 1/4"-20 x 1" S.S. Screws

2.3 Installation

2.3.1 Introduction

This section provides the detailed procedures required to safely and correctly install, integrate, calibrate, align, and confirm (i.e. checkout) performance of the product.

2.3.2 Unpacking and Material Inspection

Unpack all cartons upon receipt and check for contents and condition. Note any exterior carton damage that would indicate equipment damage. Be sure to check number of cartons received against the bill of lading. If damage to any equipment is noted, a claim form should be filed with the carrier immediately. Inspection of equipment by the carrier at time of delivery should be required.

2.3.3 Installation Procedures

2.3.3.1 For Series Current Powered Version (-LC):

1. For series powered version with the LED current power supply, locate the power supply enclosure in a suitable location on the windsock tower base section. Mark, drill and tap suitable 1/4"-20 mounting holes for the enclosure and fasten to base section.
2. If there is an existing toggle switch or circuit breaker located between the power supply enclosure, it must be removed or bypassed. The ON/OFF switching is done from the enclosure mounted switch on the power supply. There must be no interruptions in the circuit between the power supply and the LED fixture.
3. Verify the condition and polarity of the conductors running up the pole and through the swivel. Ensure that the swivel brushes and slip-rings are in good condition - replace or repair as necessary.
4. Refer to Figure 5 and mark existing conductors with colored electrical tape to denote correct polarity.
5. Remove the existing fixture/swivel lamp mounting casting from the swivel (4 Allen screws) and install the fixture in place of the existing fixture. Orient so that the 1/2" NPT hole on the casting is at the bottom when installed on the swivel. Connect the fixture to swivel leads, again ensuring correct polarity.
6. Re-install the fixture/casting on the swivel and ensure fixture is fully tightened and correctly oriented. Tighten two locking screws in knuckle of fixture. Apply Loctite 262 thread locking compound to all threaded joints (refer to Figure 4) isolating transformer.
7. Make connections at LED Power Supply enclosure, again ensuring correct polarity..



CAUTION

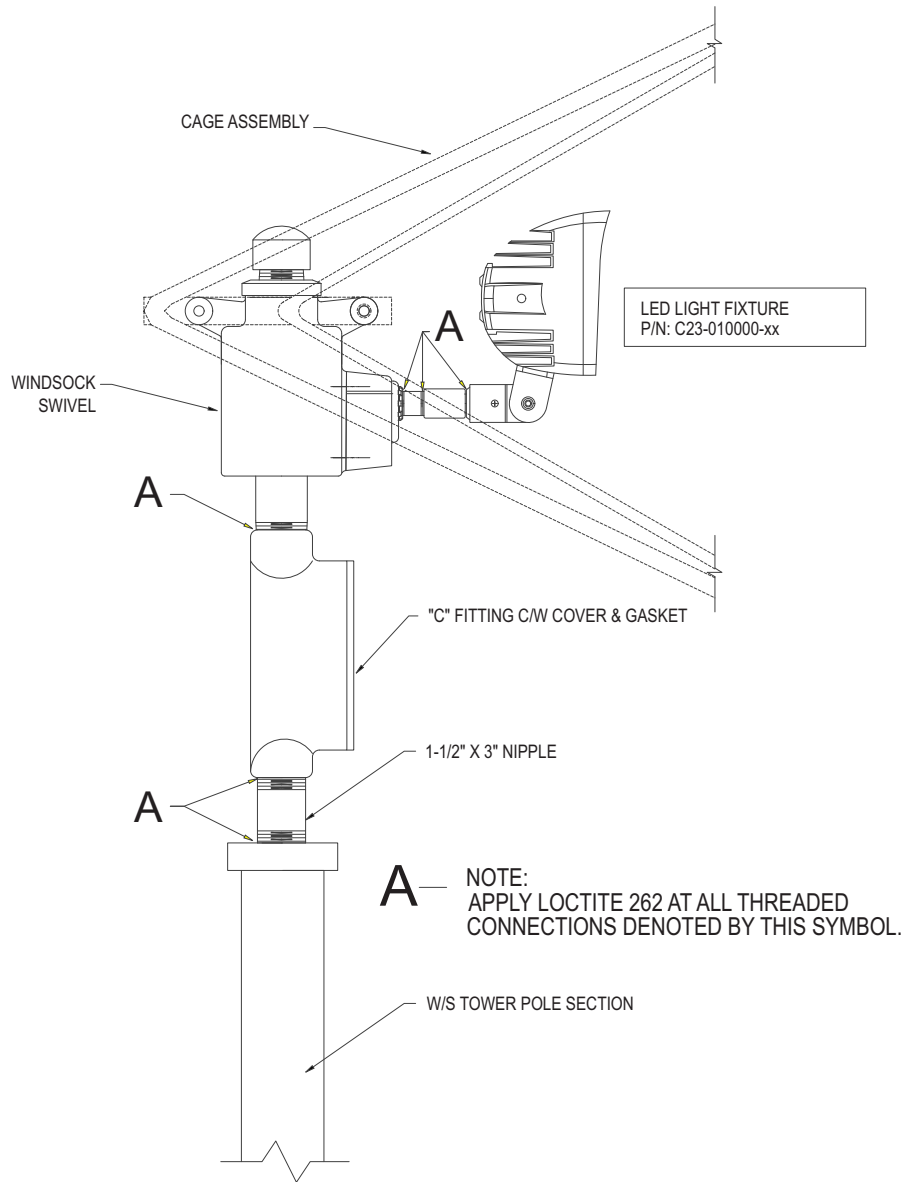
The LED Current Powered Option (-LC) wiring is +/- polarity sensitive. Reversing the polarity may cause damage to the LED fixture not covered by warranty. It is always recommended that the continuity/polarity of the wiring be confirmed prior to connecting the fixture.

Failure to observe this caution may result in equipment damage.

2.3.3.2 For Parallel Voltage Powered Version (-LV):

1. Verify the condition and polarity of the conductors running up the pole and through the swivel. Ensure that the swivel brushes and slip-rings are in good condition - replace or repair as necessary.
2. Refer to Figure 6 and mark existing conductors with color electrical tape to denote correct polarity.
3. Remove the existing fixture/swivel lamp mounting casting from the swivel (4 Allen screws) and install the fixture in place of the existing fixture. Orient so that the 1/2" NPT hole on the casting is at the bottom when installed on the swivel. Connect the fixture to swivel leads, again ensuring correct polarity.
4. Re-install the fixture/casting on the swivel and ensure fixture is fully tightened and correctly oriented. Tighten two locking screws in knuckle of fixture. Apply Loctite 262 thread locking compound to all threaded joints (refer to Figure 1) isolating transformer.

Figure 1: Thread Locking Compound Application



2.3.4 LED Current Power Supply Adjustment

ADB LED internally illuminated windsock towers are designed to be used on a variable brightness runway or taxiway circuit series (5-step or 3-step) and are equipped with a constant brightness output power supply that will maintain the illumination level of the LED windsock tower fixture as the circuit brightness level is decreased to the lower intensities.

There are no adjustments required for the LED fixture power supply. Open the power supply enclosure and referring to Figure 2, ensure that the P1 jumper is removed from all pins on the power supply PCB.

2.3.5 LED Voltage Fixture Adjustment

There are no adjustments on the voltage powered LED version. Simply connect the windsock tower to a source of 120-277VAC as per wiring diagram Figure 6.

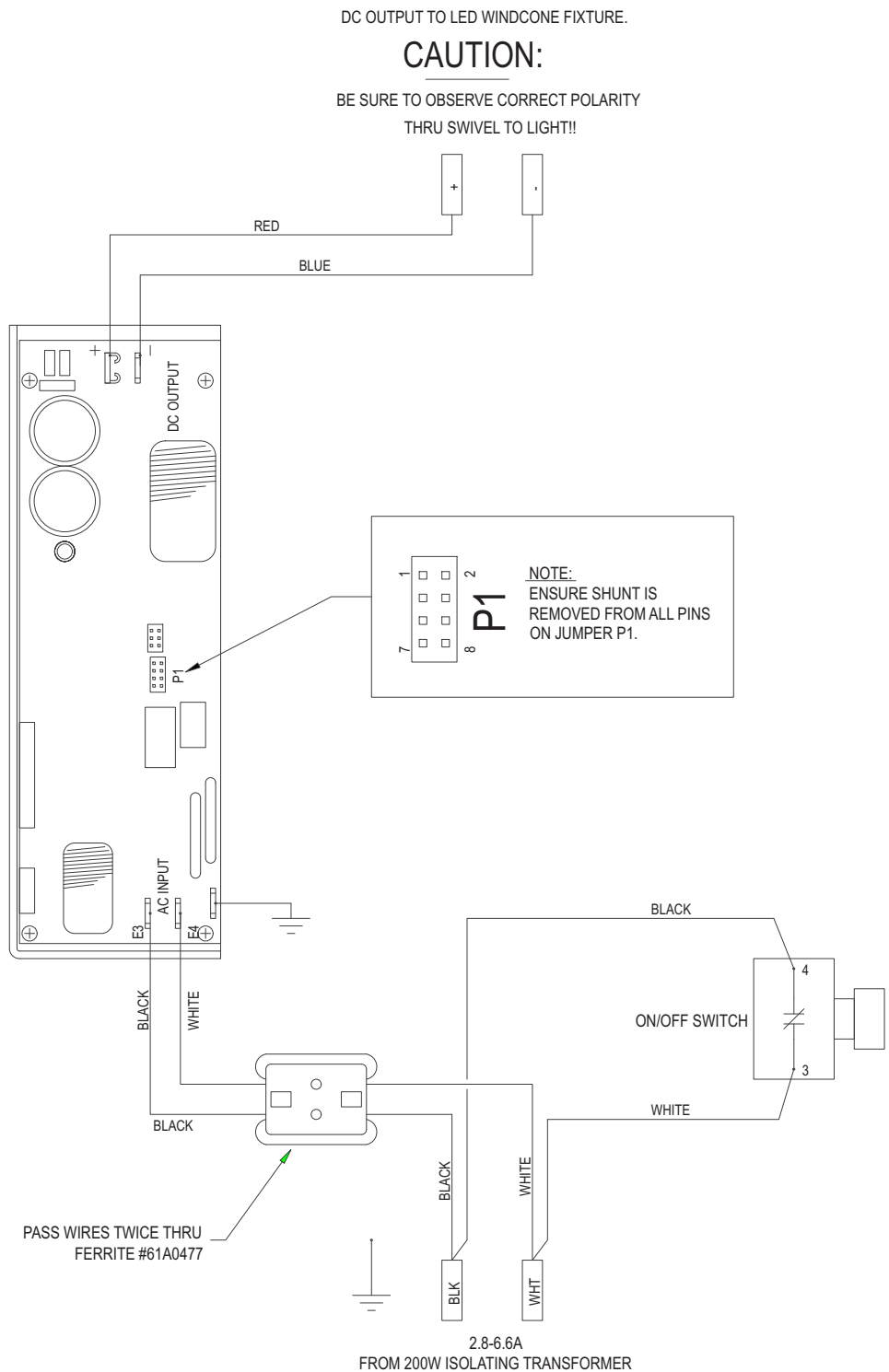
2.4 Operation

2.4.1 LED Current Power Supply

The operation of the windsock tower is straight forward. The internal light unit energizes when power is supplied to the unit and the disconnect switch is turned on.

LED current power supply PCB has an indicator diode on the PCB. A normal operating power supply will flash the PCB LED D4 at a 2 second rate when power is first applied. If the power supply senses current flowing to the LEDs the PCB LED D4 will continue to flash at a 2 second rate. If the power supply senses an open circuit on its output after about 5 seconds, it will turn off the PCB LED D4.

Figure 2: LED Windcone Fixture



Maintenance

2.5 Maintenance

2.5.1 Periodic Maintenance Schedule

Perform maintenance based on frequency as established by airport policies and procedures recommended by Transport Canada.

Table 1: Recommended Minimum Maintenance Schedule Table

MAINTENANCE REQUIREMENT	D	W	M	BM	SA	A	U
1. Inspect for outages; repair as necessary	X						
2. Check light fixture alignment and orientation			X				
3. Clean fixture & check for moisture in light				X			
4. Lubricate pivot bolt and wingnut with a suitable waterproof lithium based grease.					X		
5. Check all fasteners for proper tightness.					X		
6. Inspect structure for any cracks, corrosion etc. and replace where required. Touch up any bare metal areas to prevent corrosion and maintain high visibility.					X		
7. Check input power to ensure voltage/current is within specifications.						X	
8. Inspect and replace any cracked or frayed wiring.						X	
9. Replace windsock if torn or faded.							X
10. Check swivel bearings for smoothness and ease of rotation.						X	
10. Inspect swivel brushes for wear.						X	
10. Replace lamps after 80 percent of the rated life and prior to 90 percent of the rated life.							X
D = Daily, W = Weekly, M = Monthly, BM = Bi-monthly, SA = Semi-Annual, A = Annual, U = Unscheduled							

2.5.2 Swivel Maintenance

The windsock swivels are equipped with permanently lubricated bearings that require no maintenance. The brushes are field replaceable and can be obtained by contacting ADB. It is recommended that for any further repair required on the swivel unit that it be returned to ADB for refurbishment.

2.6 Troubleshooting

Refer to the following troubleshooting guide table specific to your model:

Table 2: LED Current Powered (-LC)

Problem – LED Current Powered	Possible Cause	Corrective Action
Light fixture is out	Loose wires or connections	Tighten or replace wires.
	No current or incorrect current coming into the power supply	Verify correct current is coming into the power supply using a true RMS ammeter. This would be 2.8 A to 6.6 A for a 5-step CCR; 4.8 A to 6.6 A for a 3-step CCR. Check the isolating transformer wattage rating, it should be 200W.
	Power supply ON/OFF switch is closed	Check the power supply ON/OFF switch for proper operation. Replace if necessary.
	Power Supply fault	With field current on, on power supply PCB 44A7260/010, measure the voltage at test point E7 with respect to E8. E7 will be 10 VDC to 13 VDC on a properly operating power supply when powered. Check to insure that the jumper on the power supply is set properly. The jumper at P1 should be removed at not across any terminals. See Figure 2. Next, the power supply can be checked for operation by performing the following: Remove input power, disconnect the output LED load at E6 and E5. Connect a DC volt meter from E8 to E5. Look for a rising voltage to approximately 195 VDC within the first few seconds of powering on the board. This voltage will then drop to less than 50 VDC and the onboard LED (D4) will flash within a few seconds. If the voltage was between 50-195 VDC during the first few seconds of applying power, then the power supply is likely good. Note: the voltage at E8-E5 will cycle again about 40 seconds after dropping to less than 50 VDC and repeat five times and will stabilize. The input power must be cycled off for about 1 minute to get the output to cycle on again. Follow the correct polarity when reconnecting the LED fixture wiring.
Light fixture is out.	Incorrect polarity in wiring.	Refer to Figure 5 and confirm that windsock tower and swivel are wired such that polarity is maintained. Confirm continuity of each leg.
	Defective/worn swivel brushes.	Examine swivel brushes to confirm proper contact with slip-rings on swivel shaft. Check brushes for wear and replace as necessary.

Table 3: LED Voltage Powered (-LV)

Problem – LED Voltage Powered	Possible Cause	Corrective Action
Light Fixture is out.	Loose wires or connections	Tighten or replace wires.
	Switch is defective or in OFF position	Ensure that the switch is ON position. Check for voltage on both terminals of switch. Replace if necessary
	Defective LEDs or driver unit in fixture.	Replace fixture with correct voltage powered unit.
	Swivel brushes are worn.	Examine and replace brushes and carrier as necessary.

Wiring Diagrams

2.7 Wiring Diagrams

Wiring diagrams can be found at the end of the manual.

2.7.1 General Wiring

Figure 3: 2.8-6.6A Series Circuit - LED (Class 3) Wiring Diagram

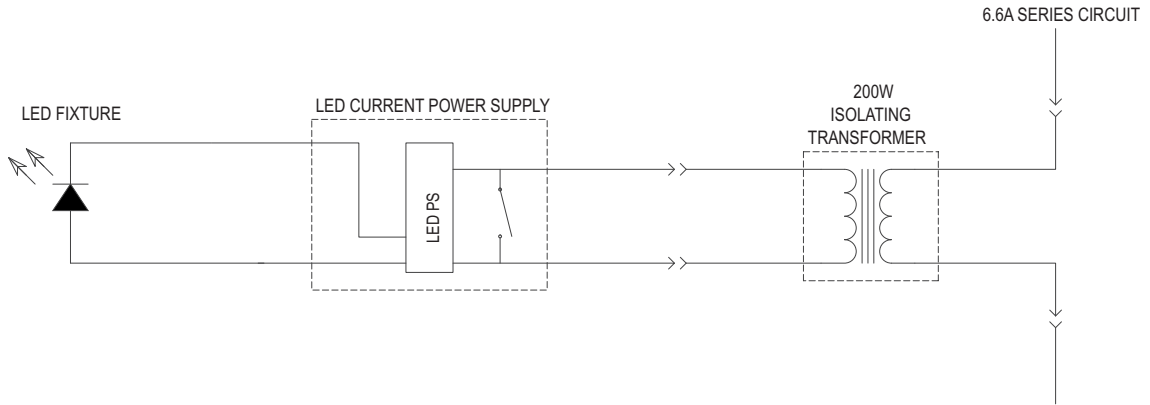
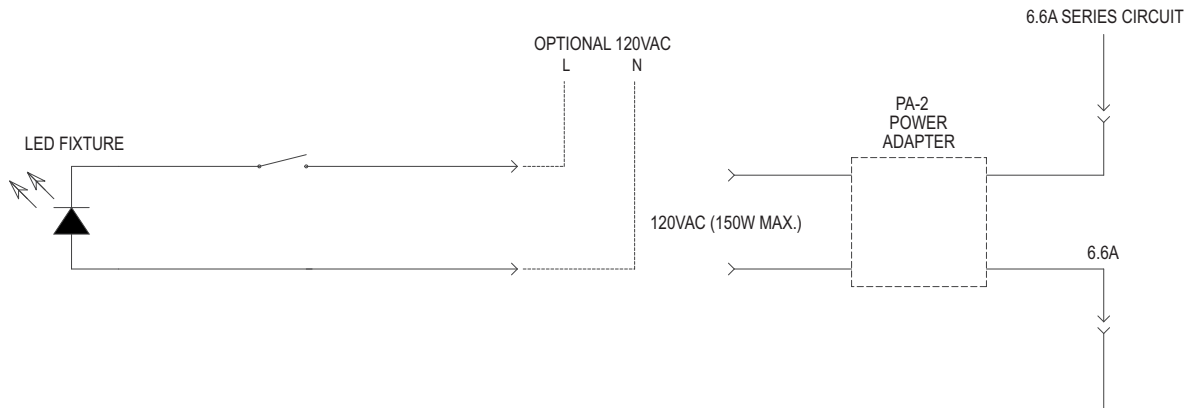


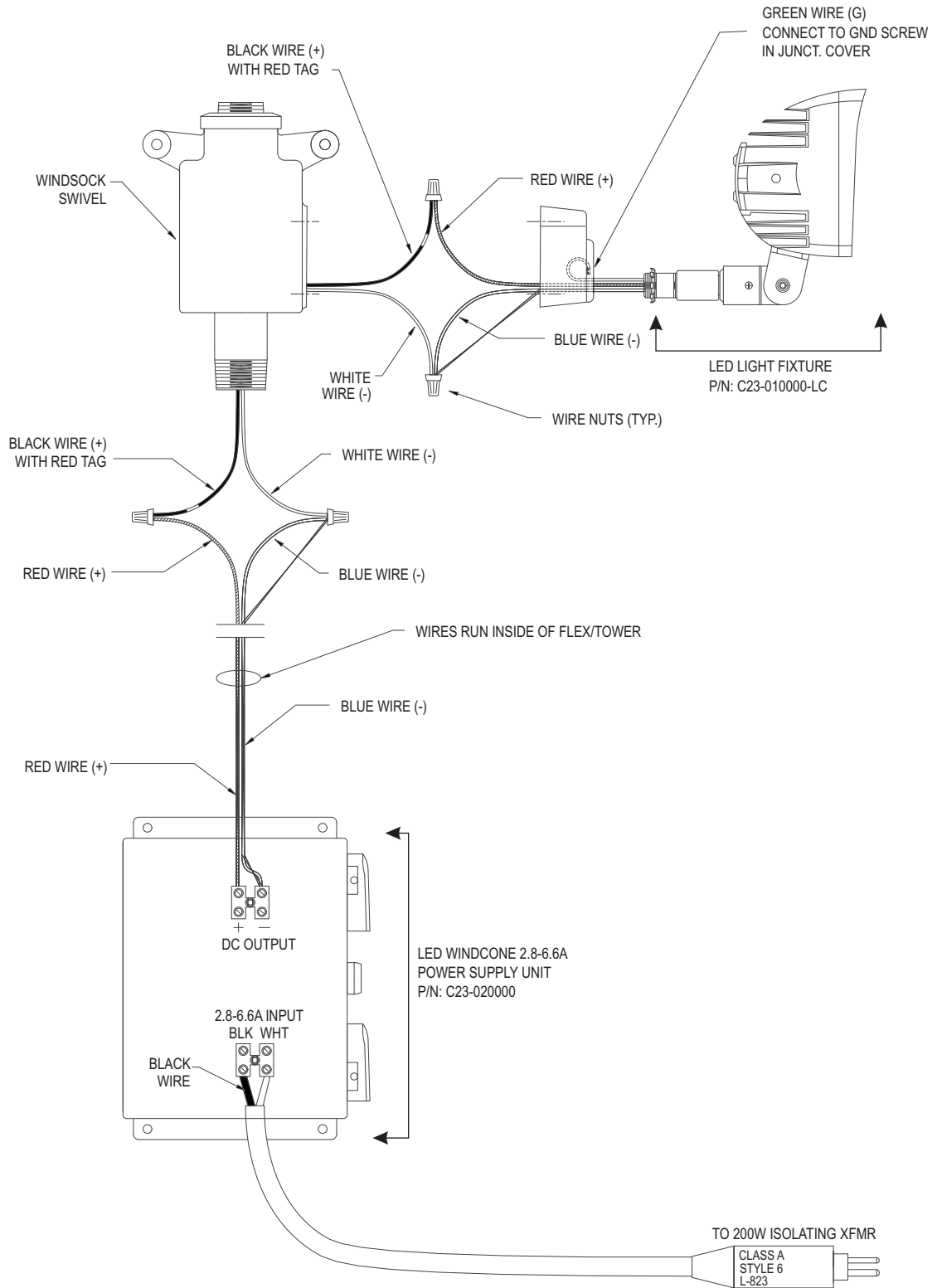
Figure 4: 6.6A Series Circuit With 120vac Power Adapter (Class 2) or 120Vac (Class 1) Wiring Diagram (LED/Quartz)



2.7.2 Current Powered LED Version (-LC)

LED current powered version should be wired in accordance with Figure 5.

Figure 5: LED Windsock Tower 2.8-6.6 A (-LC)

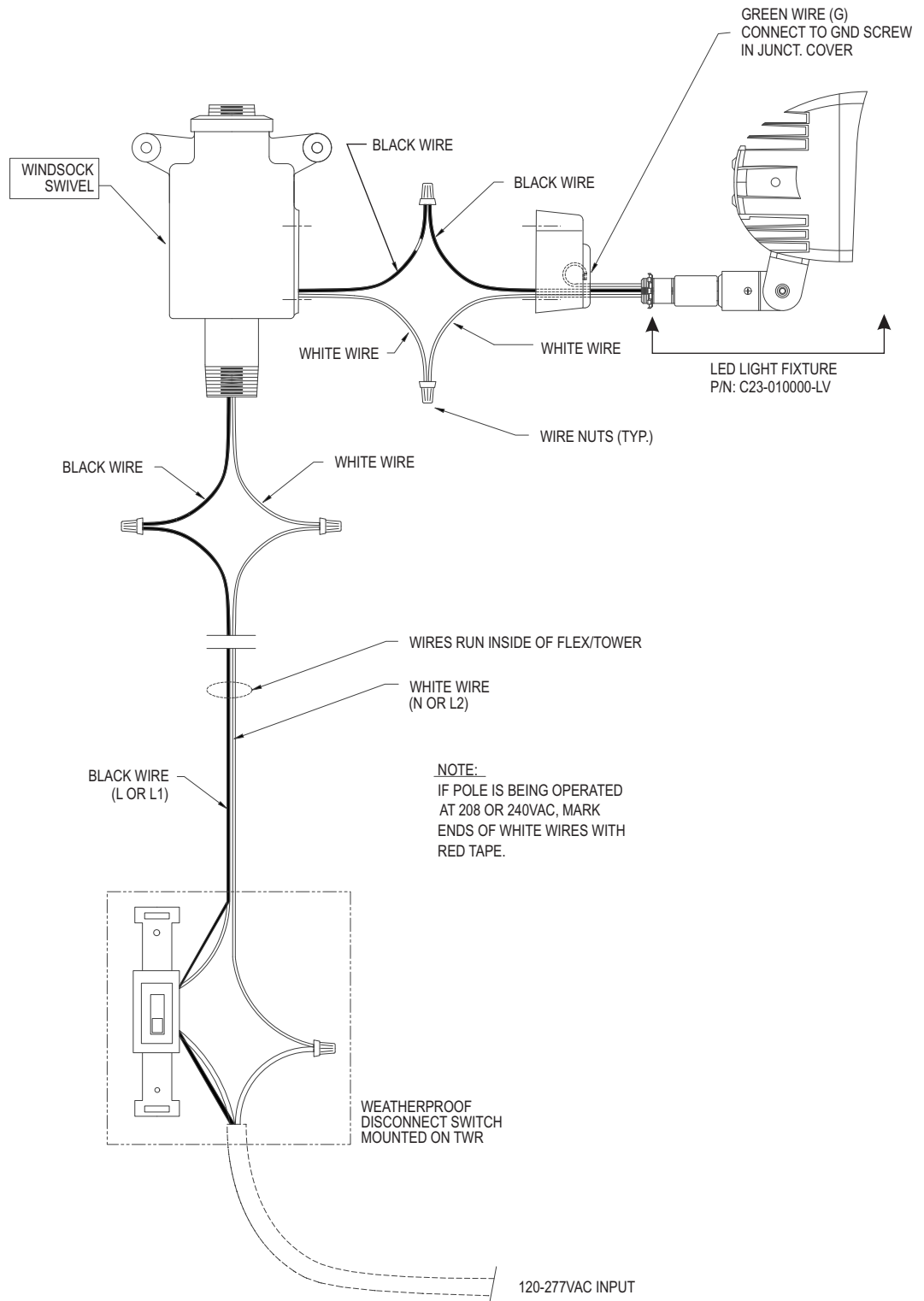


Wiring Diagrams

2.7.3 Voltage Powered LED
Version (-LV)

LED voltage powered version should be wired in accordance with Figure 6.

Figure 6: LED windsock tower 120 vac (-LV) Wiring Diagram



3.0 Parts

The parts section is a separate file in the book so that it can be used in the Parts manual.

3.1 Order Codes

Ordering Code

C23-030000-

Input Power Type

LC = Series-Powered (Class 3), LED 2.8-6.6 A

LV = Voltage-Powered (Class 1) 120-277 VAC

(Class 2 with the use of a 150 W PA-2 Power Adapter)

Note

Conversion Kit consists of:

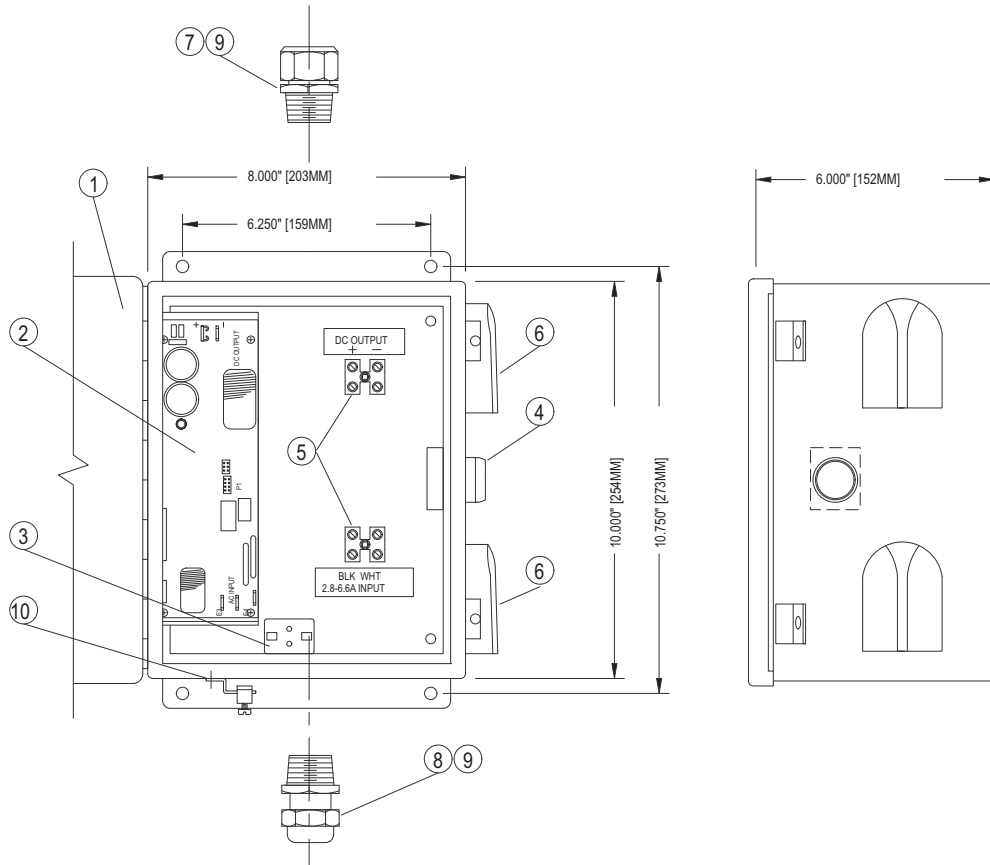
LC - Fixture, Mounting Adapters and separate Power Supply Unit

LV - Fixture with integral power supply, Mounting Adapters

3.2 Parts Diagram

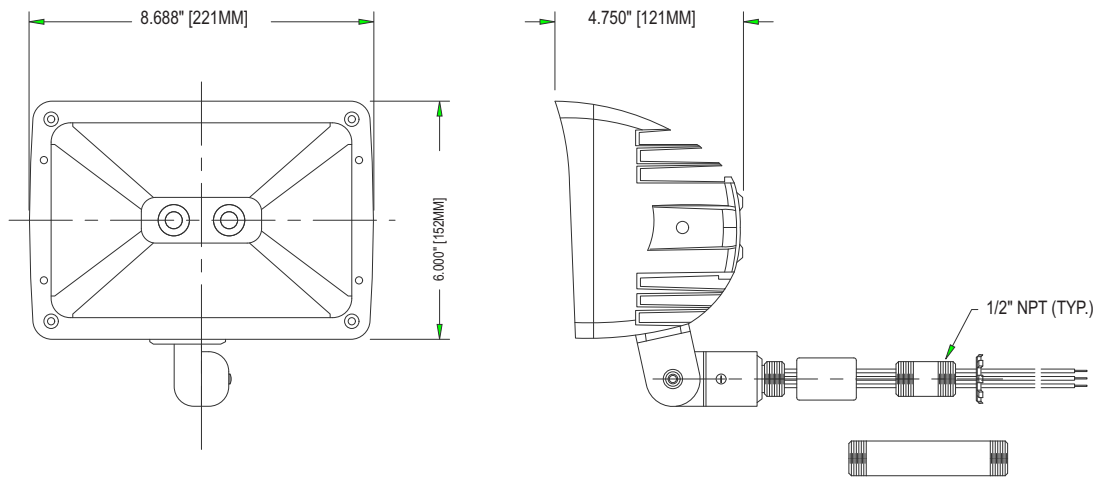
See Figure 7.

Figure 7: LED Windsock Tower Power Supply Unit



BILL OF MATERIALS				
ITEM	QTY	PART NO.	DESCRIPTION	DESIGNATION
1.0	1	1414PHI6	ENCL. N12 10 X 8 X 6 GREY	
2.0	1	44A7260/010	CURRENT DRIVEN PS ASSY (SGL)	FIRMWARE REV. 102C MIN.
3.0	1	61A0477	FERRITE CORE	
4.0	1	45A0456	SWITCH PB 1 N.O. 10A 600VAC	
5.0	1	20ED/S	TERMINAL BLOCK STRIP	(CUT AS REQUIRED)
6.0	1	DV-2	ENCL VENT (SET OF 2)	
7.0	1	ZEN4104	3/4 LT CONN STRAIGHT - WS	
8.0	1	T&B2534	LT CABLE CONNECTOR 3/4"	
9.0	2	T&B142	3/4" GALV. LOCKNUTS	
10.0	1	SLU-35	GROUND LUG	
11.0	1	MISC	LAMACOID NAMEPLATE 2" X 4"	

Figure 8:



ORDERING CODES:

C23-010000-xx

INPUT POWER TYPE:

LC- LED FOR SERIES CURRENT POWERED APPLICATIONS

LV- LED FOR PARALLEL VOLTAGE POWERED APPLICATIONS**

NOTES:

- 1) LIGHT KIT INCLUDES, FIXTURE, 1/2" ADAPTER, 1/2" ALUM. COUPLING, CLOSE NIPPLE, 4" NIPPLE AND LOCKNUT.
- 2) CLOSE NIPPLE IS FOR USE WITH P.WEDGE CAGES OR ADB CAGES SUPPLIED AFTER OCT. 2015.
- 3) 4" NIPPLE IS FOR USE WITH SIEMENS/ADB CAGES PRODUCED PRIOR TO OCT. 2015.
- 4) FIXTURE FOR CURRENT APPLICATIONS IS COMPATIBLE ONLY WITH ADB POWER SUPPLY P/N: C23-020000.
- 5) VOLTAGE POWERED FIXTURE CAN BE USED WITH 120-277VAC SUPPLY VOLTAGE.. WATTAGE: 30W, 0.97PF @ 120VAC.

Table 4: Spare Parts Table

Description	Part No.
"LC" Option:	
Light Fixture Assembly LED, 2.8-6.6A	C23-010000-LC
Replacement LED Power Supply	44A7260/010
"LV" Option:	
Light Fixture Assembly LED, 120-277VAC	C23-010000-LV



Company Offices

- | | | |
|---|---|---|
|  <p>ADB BVBA
Leuvensesteenweg 585
B-1930 Zaventem
Belgium
Tel: 32/2/722.17.11
Fax: 32/2/722.17.64
Email: info@adb-air.com</p> |  <p>Erni AGL AG
Zürichstrasse 72
8306 Brüttisellen
Schweiz
Tel: +41 44 835 33 43
Fax: +41 44 835 33 42
Email: info@erni-agl.com</p> |  <p>ADB
Dubai Silicon Oasis
Wing D - Office D-309
P.O. Box 341218
United Arab Emirates
Tel: +971 4372 4970
Fax: +971 4372 4975</p> |
|  <p>ADB Airfield Technologies Ltd. China
Room 901, 9F, Fang Heng Intl. Plaza
Building C, No. 6 Futong East Road,
Chaoyang District
Beijing 100102
P.R. China
Tel: +86 (10) 8476 0106
Fax: +86 (10) 8476 0090</p> |  <p>ADB Airfield Solutions
2820 Argenta Rd., Unit #2
Mississauga, Ontario L5N 8G4
Canada
Tel: +1 (905) 567-6070
Fax: +1 (905) 567-5312
Email: canada@adb-air.com</p> |  <p>ADB UK
Suite 4
110 High Street
Maidenhead
Berkshire
SL6 1PT
United Kingdom
Fax: +01628784865
Customer Services: +01628672906
Sales & General: +01628785339</p> |
|  <p>ADB Airfield Solutions LLC
977 Gahanna Parkway
Columbus, OH 43230
USA
Tel: +1 (614) 861 1304
Fax: +1 (614) 864 2069
Web: www.adb-air.com
Email: adb-sales.us@adb-air.com</p> |  <p>ADB BVBA
Niederlassung Deutschland
Von-der-Tann-Str. 31
90439 Nürnberg
Deutschland
Tel: +49 (0)911 2105 61 60
Fax: +49 (0)911 2105 61 61
Email: info.ADB-GER@adb-air.com</p> |  <p>ADB Italia
Via Quasimodo 46
Primo Maggio
40013 Castelmaggiore (BO)
Italia</p> |
|  <p>LUCEBIT GmbH
Airport Technology
Konrad-Zuse-Ring 6
D - 68163 Mannheim
Deutschland
Tel: +49 621 87 55 76-0
Fax: +49 621 87 55 76-55
Email: mail@lucebit.com</p> |  <p>ADB Succursale France
Paris Nord 2
22 Avenue des Nations
BP 55428 Villepinte
F-95944 Roissy Charles de Gaulle
France
Tel : +33 1 49 89 66 30
Fax : +33 1 49 89 17 81</p> |  <p>ADB Equipamentos Para Aeroportos
Ltda
Avenida Moaci n° 395
Conjunto 91
Moema CEP 04083-000
Sao Paulo-SP
Brasil
Tel: +55 (11) 5096-2169
Tel: +55 (11) 5049-2304
Email: brasil@adb-air.com</p> |
|  <p>ADB Airfield Solutions, Ltd.
2nd Floor, 3 Rivonia Village
Cnr Mutual Road and Rivonia
Boulevard South
Rivonia 2128
South Africa
Tel: +27 (0) 11 525 9340
Fax: +27 (0) 11 525 9348
Email: info-sa@adb-air.com</p> |  <p>ADB Asia Pacific Regional HQ
Unit A-10-01, Level 10
Empire Tower
Jalan SS16/1
47500 Subang Jaya
Selangor, Malaysia
Tel: +603 5880 5568
Fax: +603 5622 1437</p> |  <p>ADB Doha
C/O Watad Group
PO Box 192
Doha, Qatar
Tel: +974 44 35 38 03
Fax: +974 44 35 44 89</p> |
| | |  <p>ADB bvba Taiwan Branch
6th floor, No. 283, Section 2 FU Hsing
South Road
Taipei 106
Taiwan R.O.C</p> |
| | |  <p>Lucebit Hellas ΕΠΕ
25th Martiou Street 11
GR-15233 Halandri Athens
Tel: +30 210 6856 558
Fax: +30 210 6856 556
Email: mail@lucebit-hellas.com</p> |

ADB

Airfield Solutions

Manufacturing Offices

ADB BVBA
Leuvensesteenweg 585
B-1930 Zaventem
Belgium
Tel: 32/2/722.17.11
Fax: 32/2/722.17.64
Email: info@adb-air.com

ADB Airfield Technologies Ltd. China
Room 901, 9F, Fang Heng Intl. Plaza
Building C, No. 6 Futong East Road,
Chaoyang District
Beijing 100102
P.R. China
Tel: +86 (10) 8476 0106
Fax: +86 (10) 8476 0090

ADB Airfield Solutions LLC
977 Gahanna Parkway
Columbus, OH 43230
USA
Tel: +1 (614) 861 1304
Fax: +1 (614) 864 2069
Web: www.adb-air.com
Email: adb-sales.us@adb-air.com