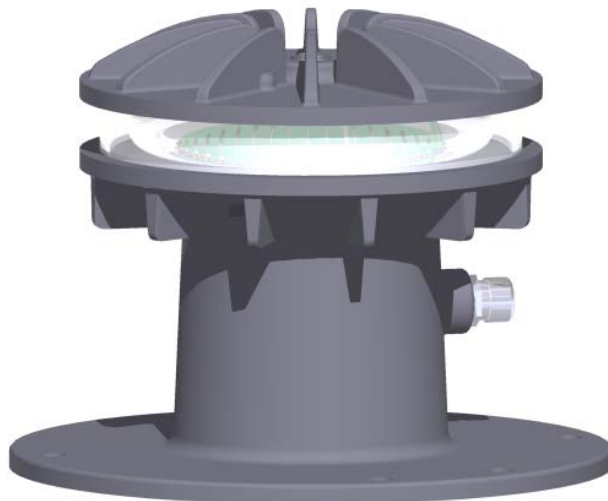




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A-L864 Red LED Flashing Beacon Installation and Maintenance Manual



Medium Intensity Flashing Red Obstruction Light
FAA Type L-864
115 / 230 Vac, 50 / 60 Hz (input)



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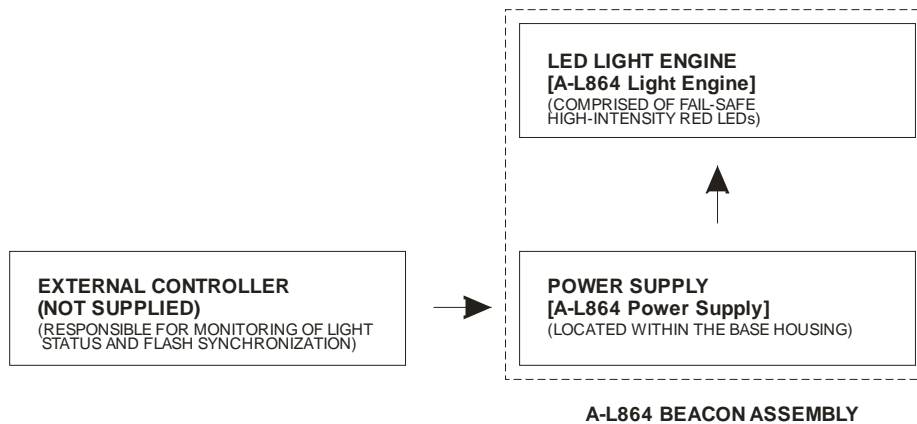
Introduction

The A-L864 Medium Intensity Red LED Flashing Beacon (A-L864) is designed to visibly mark any obstacle that may present hazards to aircraft navigation. It has been RF hardened for operation in high-powered MF (medium frequency) to VLF (very low frequency) systems. This unit complies with FAA, ICAO, CASA, and Transport Canada requirements as follows.

FAA AC NO: 150/5345-43F
ICAO Annex 14, 4th Edition, July 2004
CASA Manual of Standards Part 139
Transport Canada CAR 621.19

System Schematic

Below you will see the main components that make up the A-L864:



The A-L864 is essentially made up of a power supply located within the base housing [p/n: A-L864 Power Supply] and the LED Light Engine [p/n: A-L864 Light Engine]. The power supply is used to turn on the LEDs within the Light Engine and allows for use at either 115 Vac or 230 Vac (specify at time of order). In addition the power supply incorporates an internal flasher assembly to allow the LEDs to operate in flash mode or steady mode. Steady mode operation would be used together with an external flasher when multiple A-L864 beacons are used on a single structure. Use in steady mode or flashing mode is to be specified at time of order.

The Light Engine consists of multiple LEDs placed circumferentially around a metal heat-sinking body along with an optical lens designed to focus the beam to meet regulatory requirements. An outer acrylic lens provides an environmental seal.



The A-L864 is designed for use with external periphery equipment. Please consult Austin Insulators Inc. (AUSTIN) to confirm operation.

Installation

Caution!

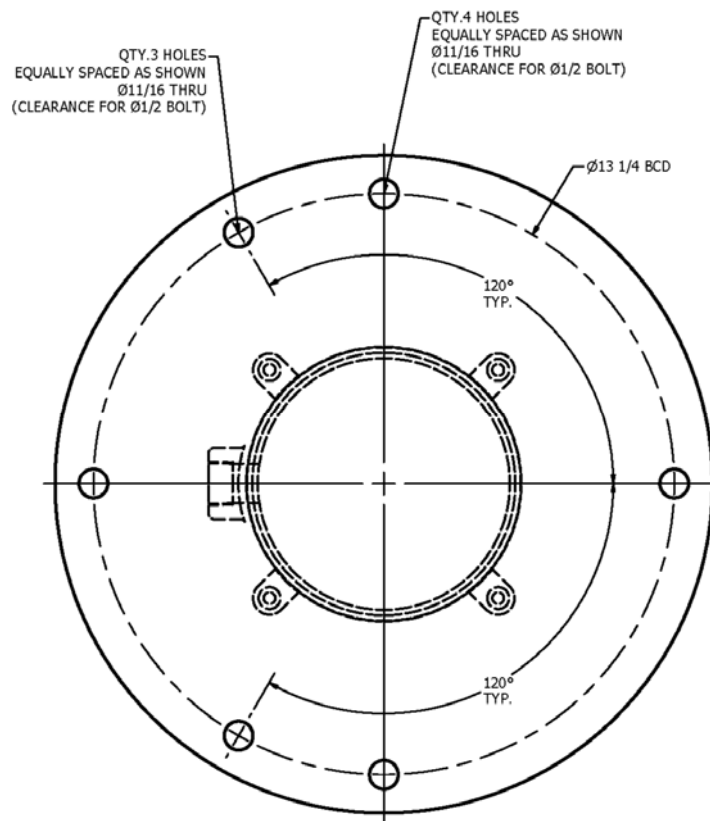
Before proceeding with installation or service, make sure the following conditions are met:

- Ensure that the tower or mast is grounded (NO RF HAZARD).
- Check that the mast lighting circuit is not faulty.
- Ensure that the power lines are not “live” (NO ELECTRICAL HAZARD).

Avoid Touching Live Circuits!

Avoid touching any component or any part of the circuitry while the unit is operating. Do not change components or make adjustments inside the unit with power on.

The A-L864 comes with a provision for a three or four hole mounting pattern to adapt to existing installations. The layout is indicated below.





The holes are designed to accept ½ in. diameter hardware (not included).

In addition this unit comes with a liquid level to assist in ensuring that the unit maintains proper aiming of its beam. Shim material beneath the beacon assembly can be used as required to ensure that the bubble inside the liquid level is located within the center circle.

To optimize performance in harsh RF environments, a 10 ft long, 14 gauge, 3 conductor shielded power cable with 100% aluminium foil and 85% tinned copper braid has been provided. For further protection a liquid tight, metallic strain relief cable gland for EMC shielded cable is used. Wiring is as follows:

Line – Black cable “1-ONE”
Neutral – Black cable “2-TWO”
Ground – Green and Yellow cable

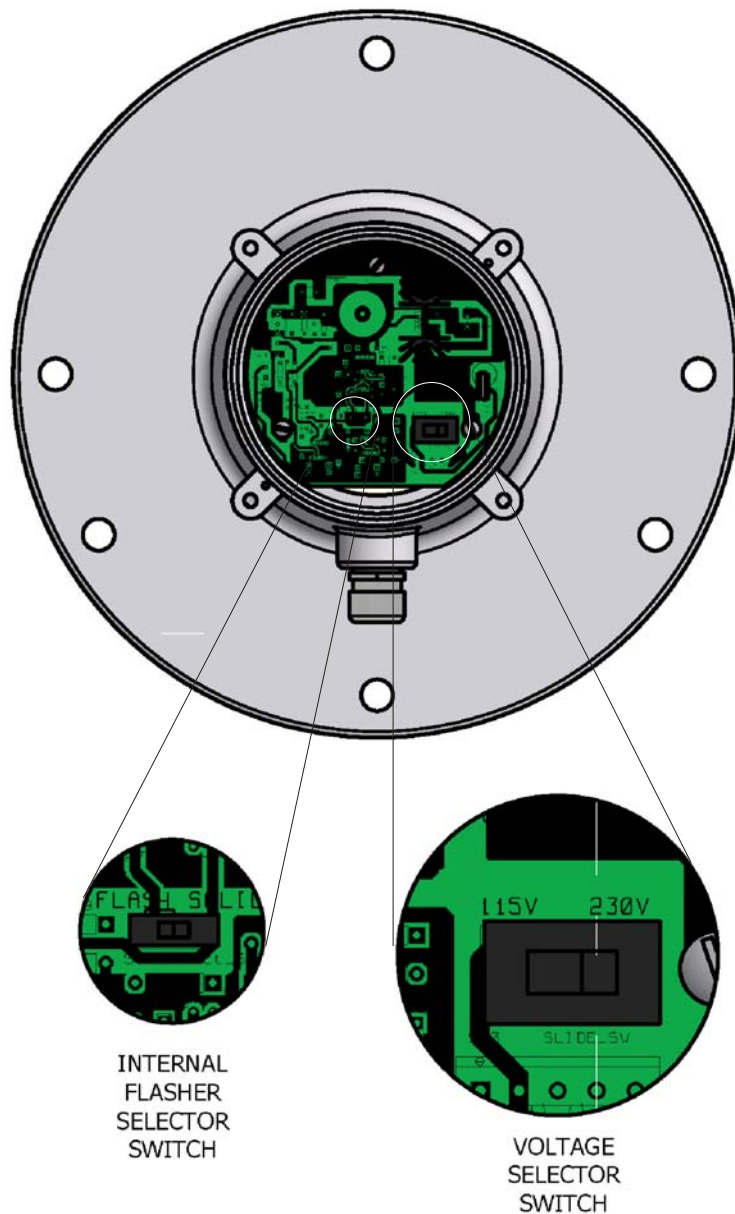
A wiring diagram is provided in Appendix A. Please note that Line and Neutral are interchangeable. It is important that Ground be connected to ensure proper operation and protection of the A-L864 beacon. The following should be considered when undertaking the installation of the A-L864:

- In order to ensure proper operation in RF conditions, it is essential that all connections to and from the A-L864 be shielded and that the shielding be properly grounded throughout. This also includes any peripheral equipment used with the A-L864.
- Housed within the A-L864 is electronic equipment. Care should be taken to prevent moisture from entering the unit.

Operating Instructions

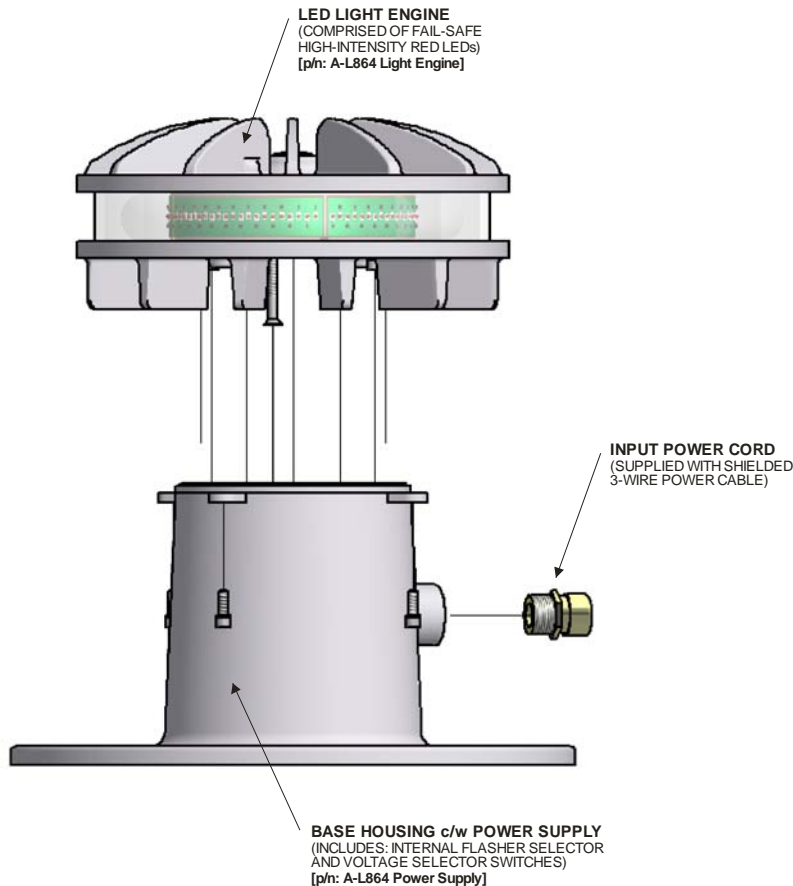
The A-L864 comes supplied with either 115 Vac or 230 Vac and can be set at time of order. In addition this unit can operate in either flash mode using its internal flash assembly or in steady mode with continuous light output. The unit is factory set to operate in flash mode but can also be set to steady mode if specified at time of order.

With the unit installed as described previously the A-L864 should provide years of continuous satisfactory service.



In the event that either the voltage or flash/steady mode settings need to be changed, this can be done by removing the LED Light Engine and accessing the A-L864 Power Supply. On the top power supply board you will see the internal flasher selector switch and voltage selector switch. The figure above indicates the location of these switches. Instructions for removing the LED Light Engine can be found in the Maintenance section of this manual.

Drawing Layout with Part References



Parts List of Field Replaceable Items

- Light Engine (p/n: A-L864 Light Engine)
- Base Housing Assembly (p/n: A-L864 Power Supply)

Note

If field replaceable parts need to be changed, only the parts specified above should be used. Use of any other parts can lead to potential damage to the A-L864. Consult AUSTIN for further assistance if required.



Maintenance

No regular maintenance is required for the A-L864. In the event of a failure of the A-L864 Light Engine, the A-L864 is set up to allow easy replacement. Ensure that no moisture is allowed to enter the A-L864 assembly when replacing components.

Caution!

Before proceeding with installation or service, make sure the following conditions are met:

- Ensure that the tower or mast is grounded (NO RF HAZARD).
- Check that the mast lighting circuit is not faulty.
- Ensure that the power lines are not “live” (NO ELECTRICAL HAZARD).

Avoid Touching Live Circuits!

Avoid touching any component or any part of the circuitry while the unit is operating. Do not change components or make adjustments inside the unit with power on.

1. With the power off remove the qty.(4) ¼-20 tpi x 1” long hex head cap screws joining the Light Engine to the Base Housing assembly.
2. Gently lift the Light Engine to separate it from the Base Housing assembly.
3. A connector will be seen that joins the Light Engine to the top power board. Carefully pull to disengage the connector and set the item to be replaced aside.
4. Ensure that the o-ring located on the Base Housing assembly is set properly in place.
5. With the new Light Engine in hand, push the connector into place as per the previous setup.
6. Gently place the Light Engine in place making sure that the unit is properly oriented such that the thumb screw assembly will come into contact with the interlock switch.
7. Ensure wiring is not pinched between Light Engine and Base Housing assembly.
8. Set the (4) ¼-20 tpi x 1” long hex head cap screws into place and torque evenly to approximately 39 in-lb.

Note

If field replaceable parts need to be replaced, only the parts specified above should be used. Use of any other parts can lead to potential damage to the A-L864. Consult AUSTIN for further assistance if required.

Warning

The LED Light Engine is a factory assembled component containing optics which have been adjusted to meet regulatory requirements and cannot be field serviced.



Troubleshooting

Problem	Cause	Solution
A-L864 does not turn on	AC power not connected	Check AC supply line to beacon
	Damaged Light Engine	Replace LED light engine
	Power supply not functioning	Change A-L864 Power Supply
	Thumb screw not engaging interlock switch (for reassembled units)	Disassemble A-L864 as described in Maintenance Section and ensure that thumb screw is set to engage interlock switch
A-L864 appears dim	Improper line voltage	Check line voltage of supply line
	Multiple individual LED failure	Continuously monitor A-L864 and replace LED light engine when greater than 25% failure occurs and A-L864 shuts off
A-L864 does not flash	External flasher not working	Replace external flasher
	Internal flash not set	Disassemble A-L864 as described earlier and set internal flash selector switch to flash mode



Appendix A

Wiring Diagram

