

Document Number: 9100-127-2403-99 Revision: B February 03, 2017

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D564A13002GPS D564A15002GPS

Medium Intensity Obstruction Light FAA Compliant



User Manual Rev A

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Chapter 1: General description

1. General description



The D564A13002GPS/D564A15002GPS Medium intensity obstruction light beacon is a fully integrated LED based light system. The system is especially designed for use on large wind turbines, but can also used on antenna towers, tall buildings and other obstructions which requires marking for aviation.

The D564A13002GPS/D564A15002GPS is a fully integrated stand-alone beacon, with built in photocell for day/night switching, GPS receiver and antenna for flash synchronization and programmable flash character generator with input for reduced intensity, monitor and alarm outputs, for warning in case of malfunctions.

The D564A13002GPS/D564A15002GPS can be operated as FAA compliant medium intensity L-864 (2000cd red flashing light night).

The light engine is based on 5th generation LED array with parabolic reflector, it features a 3 degree vertical beam and 360 degree horizontal coverage.

The D564A13002GPS operates from 100-250V AC and the D564A15002GPS operates from 24V DC and has very low power consumption.





Chapter 2: Specifications

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Specifications

D564A13002GPS/D564A15002GPS LED Beacon and controller

Intensity: Red (FAA)	2000cd +25% effective
Horizontal range Vertical range	360° 3°
Ingress protection	IP66
Cable	5x1,5mm ² typical 15m of length
Input voltage	120-240V AC, 50/60HZ, AC models 20-34V DC, DC models
Power consumption	0.4A, 32 W, AC models 1.4A, 28 W, DC models
Flash rate Red (FAA)	20 flash/minute 1,5s ON – 1,5s OFF 20-60 flash/minute programmable - resolution 1ms
Alarm	Normally closed contact – open on alarm Alarm if one LED chain is open.
Photocell input	Change over at 40-80 lux.
GPS alarm	Normally closed contact – open at alarm When no satellite tracking for more than 30 minutes
Operating temperature	-40°C to +55°C
Mechanical dimensions	Ø380 x 210mm
Weight	10,5kg

Chapter 3: Installation of D564A13002GPS/D564A15002GPS

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2. Installation and Start up Procedure

Please read the following instruction thoroughly, before installation.

Unpacking

During unpacking, check that all items are in good condition and without any physical damage during transportation.

Tools necessary

No special tools are required for installation. Standard tools such as:

- A set of screwdrivers
- A 19mm spanner (for M12 nut)
- Multimeter

Will in most cases be sufficient to complete the set up and perform the test procedure.

Drilling tools could be required if the necessary hole patterns are not prepared.

D564A13002GPS/D564A15002GPS Beacon mounting and leveling

The beacon must be installed on a stable bracket, which can support the weight of the beacon and the wind load.

For mounting the D564A13002GPS/D564A15002GPS beacon, the receptacle bracket must have a pattern of four holes, recommended Ø12,5mm, and placed on a circle with a diameter of 336mm. It is recommended to use 12mm stainless steel bolts with adequate washer and lock washers to fasten the beacon to the bracket.



Corrosion protection (offshore environments)

To protect the beacon against lightning make sure that the isolation shoulder washers are mounted. This would prevent electrical contact between the beacon and the bracket. The bracket should be effectively grounded. Furthermore it is recommended to install a lightning rod beside the beacon.



Level adjustment

The vertical light angle of the beacon is very narrow. It is very important that the beacon is leveled accurate to the horizontal plane. Use the built in spirit level as an indicator for accurate alignment. If the bracket has no facilities for leveling use extra washers between beacon and bracket.





Installation checklist

Complete the following steps before applying power to the system for the first time:

- Check all units to be in proper condition and securely fastened.
- Verify the alignment of the beacon. The Beacon must be leveled for radiation in the horizontal plane.
- Check the cable routing. Ensure there is no risk for damage of the cables during vibrations or other movements. Check that cables are well protected, either in cable conduits, or well assembled to cable ladders or other fixing points.

Cables and wiring

The D564A13002GPS/D564A15002GPS are delivered pre wired with 15m of shielded robust cable. Install the cable with reasonable curves at bends typical 5 x radius. **Do not damage the cables**. Protect the cables against mechanical shock and vibrations. Fasten the cables at reasonable intervals with tape or cable strips of good quality, weather and UV resistant.

• Mount the beacon connectors as shown below. All wires are clearly marked with numbers for easy reassembly.



Electrical Connections DC input Beacon

Terminals inside the Beacon

- 1. 24 VDC (+) input connection white internal wire
- 2. 0 VDC (-) input connection blue internal wire
- 3. Alarm COMMON terminal, Dry Contact COM Gray internal wire
- 4. Alarm Normally Closed terminal, Dry Contact NC Black internal wire
- 5. 24 VDC (+) Out White internal wire, used for forcing night mode by applying to connection 6.
- 6. Day/Night Set input Green internal wire. applying 24 VDC to this input will force night mode.
- 7. Day/Night Status dry contact COMMON termal, orange internal wire

- 8. Day/Night Status Dry Contact Closed in Night mode terminal, pink internal wire
- 9. Day/Night Set input Yellow internal wire. applying 24 VDC to this input will force Day mode
- 10. Not used

Electrical Connections AC input Beacon



Terminals inside the Beacon

- 1. AC LINE (L) input connection Dark blue internal wire
- 2. NEUTRAL (N) input connection Light blue internal wire
- 3. Alarm COMMON terminal, Dry Contact COM Gray internal wire
- 4. Alarm Normally Closed terminal, Dry Contact NC Black internal wire
- 5. 24 VDC (+) Out White internal wire, used for forcing night mode by applying to connection 6.
- 6. Day/Night Set input Green internal wire. applying 24 VDC to this input will force night mode.
- 7. Day/Night Status dry contact COMMON termal, orange internal wire
- 8. Day/Night Status Dry Contact Closed in Night mode terminal, pink internal wire
- 9. Day/Night Set input Yellow internal wire. applying 24 VDC to this input will force Day mode
- 10. Not used

Test procedure

Before applying power to the system ensure the incoming voltage is within specifications. Turn on power and verify the system is starting up.

Check that the beacon is flashing (or steady burn) with right color and intensity in accordance with the expected mode of operation. (Day/Night)

When covering the Photocell, check that the level of the flashing light, changes from day level to night level. It will take from 30s to 1 minute before the controller changes.



WARNING:

- Unit should not be lifted from the tabs.
- Dome should not be removed nor manipulated.

3. Revision history

V1.00	First edition	Christian Vorrius		

Chapter 4: Maintenance

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4.1 Preventive Maintenance

Since the sides of the polycarbonate dome are almost vertical, cleaning is usually only necessary once a year. When cleaning, please only use fresh water and add a mild detergent if necessary. Solvents of any kind could damage the dome. Citric Acid 10%, Ethanol 95% and Isopropyl Alcohol are considered safe for use with polycarbonate.

During maintenance, please turn the D564A13002GPS/D564A15002GPS off and verify correct power up function.

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REVISION HISTORY

REV	ECO No.	DRN	<u>CKD</u>	<u>APP</u>	<u>QA</u>	<u>CM</u>	<u>DATE</u>
A	41499	BAM	SA	CAG	YS	JN	2/3/17
B	68542	HP	JPC	AV	YS	JN	6/19/20