



INSTALLATION MANUAL

A500-UGL SERIES

Control Box User Manual & Installation Guide



Product Overview

The A500-UGL-CB-6A is a high-performance control unit designed for precision lighting and power management. Engineered for durability and ease of use.

Key Features

- IP67 Waterproof Rating
- Smart Load Balancing
- Thermal Protection System
- Universal Mounting Interface

SAFETY NOTES

Critical Warnings Before Installation



THERMAL MANAGEMENT

The plastic housing is designed to dissipate heat but may become warm during extended operation.

Do not cover the control box with insulating materials. Ensure at least 5cm of clearance around the unit for proper airflow.



POWER LIMITATIONS

Maximum Output: 160W

Ensure the total connected load does not exceed 160 Watts. Overloading may trigger the internal protection circuit or cause permanent damage.

Formula: $P \text{ (Watts)} = V \text{ (Volts)} \times I \text{ (Amps)}$



MOISTURE PROTECTION

While IP67 rated, connections must be properly sealed. Do not submerge connectors unless they are mated and locked.



MODIFICATIONS

Opening the housing voids the warranty. There are no user-serviceable parts inside.

SPECIFICATIONS

Hardware Overview & Package Contents

Technical Data

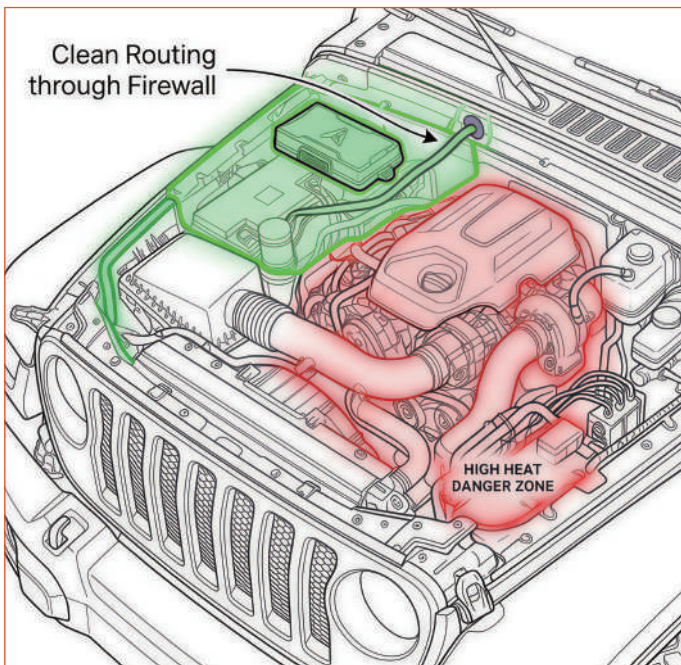
Model Number	A500-UGL-CB-6A
Input Voltage	12V DC
Max Power Output	160W Total
Output Channels	2 Independent Channels
IP Rating	IP67 (Dust/Water)
Operating Temp	-20°C to +60°C
Dimensions	145mm × 90mm × 35mm
Weight	320g

In The Box

- 1 × Control Box Unit
- 4 × Extension Cable
- 4 × Waterproof Connector Caps
- 1 × Quick Start Guide

INSTALLATION

Recommended Location & Routing



Mounting Location

- Mount vertically where possible to prevent water pooling on connectors.
- Avoid direct proximity to engine headers or turbochargers.

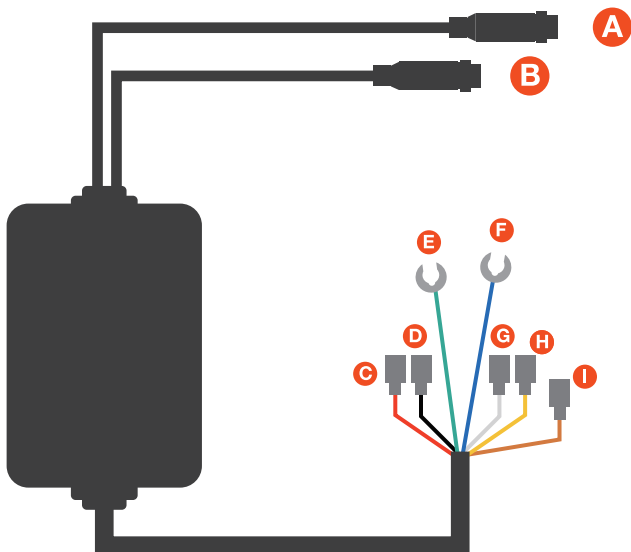
Wiring Requirements

- Route cables away from moving parts and sharp edges.
- Use zip ties every 15cm to secure the harness.
- Connect directly to the battery for optimal performance.

PRODUCT SPECIFICATION

Hardware Overview

- A** Chassis Lamp Plug -1
- B** Chassis Lamp Plug -2
- C** Brake Line
- D** Left Turn Line
- E** Positive Wire
- F** Negative Wire
- G** Reversing line
- H** Right Turn Line
- I** ACC Line



WORKFLOW

Mount, Route, and Connect



Step 1 :

Mount the control box. Do NOT connect to battery yet.



Step 2 :

Plan cable routing. Use included extension cables if needed.



Step 3 :

Drill pilot holes if necessary. Secure the control box using the provided stainless steel screws. Do not overtighten.



Step 4 :

Verify the power limit. Confirm total power per channel is $\leq 80W$.



Step 5 :

Connect power last. Connect to battery, test functions.

PRECAUTIONS

Troubleshooting & Longevity



Cleaning Instructions

Do not use high-pressure washers directly on the control box or connectors. High pressure can force water past the seals. Clean with a damp cloth and mild soap only.

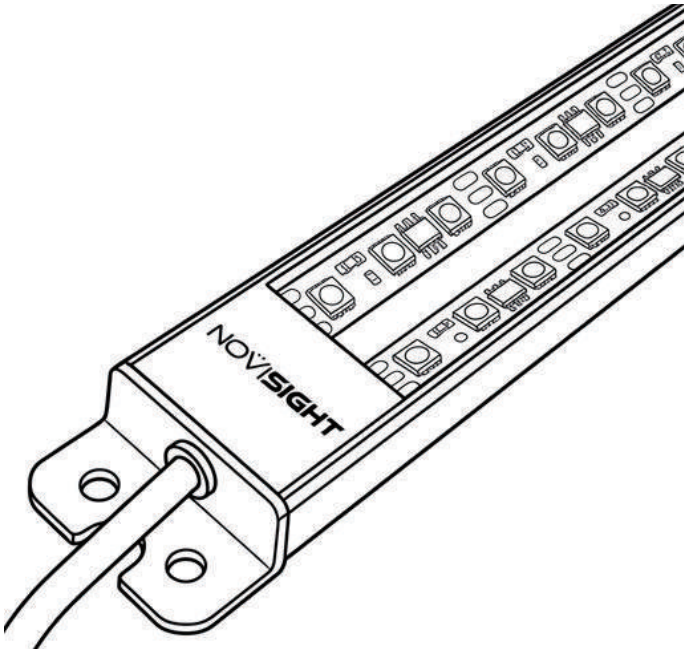
Troubleshooting Guide



Problem	Possible Cause	Solution
Unit does not power on	Blown fuse or loose battery connection	Check in-line fuse and verify battery terminal tightness.
Channel output failure	Short circuit or overload (per-channel is >80W)	Disconnect load, cycle power, and check accessory wattage.
Intermittent operation	Poor ground connection	Ensure the black wire is connected to a clean, bare metal chassis point or battery negative.

A500-UGL SERIES

Underglow Lighting Kit User Manual & Installation Guide



⚠ SAFETY WARNING

Disconnect the vehicle battery negative terminal before starting installation. Do not install components near high-heat areas such as exhaust pipes or engine blocks.

1.PRODUCT OVERVIEW

The **A500-UGL-84 Series** is a high-performance modular joinable RGB underbody lighting kit designed for automotive enthusiasts. Featuring dual-row high-brightness **5050 LEDs**, this system delivers vibrant and seamless lighting effects.

The kit supports both RF remote and Bluetooth app control, allowing for extensive color customization and dynamic modes. Additionally, it integrates with vehicle signals (Turn Signals, Brake, Reverse) for enhanced safety and visual appeal.

2.KEY FEATURES

1. Dual-row high-brightness 5050 LEDs

- Higher brightness than standard single-row strips (approx. 2× brightness)
- Dual-row LEDs use different beam angles to provide wider and more uniform light spread, illuminating a larger ground area

2. Modular / joinable installation

- Underbody Lights Bars can be combined to match chassis length, suitable for different vehicle models and mounting positions

3. Multiple mounting methods for a more secure installation

- 3M adhesive backing on the rear of the Underbody Lights Bar
- Reserved M2 screw holes on both sides
- Cable-tie locating holes (recommended to use cable ties for vibration resistance)

4. Designed for underbody environments

- IP68 waterproof and dustproof
- Theoretical lifespan: 20,000 hours

3.SPECIFICATIONS & MODELS

3.1 General Specifications

- Voltage: **DC 12-24V**
- LED Type: **Dual-Row 5050 RGB SMD**
- Control Method: **RF Remote + Bluetooth App**
- Signal Linkage: **Turn (Amber), Brake (Red), Reverse (White)**
- Waterproof Rating: **IP68**
- Lifespan: **> 20,000 Hours**
- Warranty: **1 Year**
- Operating Temp: **-20°C to 60°C**

3.2 Models & Package Contents

Product Code	Dimensions	Rated Power	LED Quantity	Package Contents
A500-UGL-84-25LR	11 × 1.2 × 0.5 in	8W	36	25cm (Left+Right)×1
A500-UGL-84-40LR	17 × 1.2 × 0.5 in	14W	60	40cm (Left+Right)×1
A500-UGL-84-65LR	27 × 1.2 × 0.5 in	24W	102	65cm (Left+Right)×1

Note: Always verify the contents of your package against the model number ordered before beginning installation.

4.BEFORE INSTALLATION

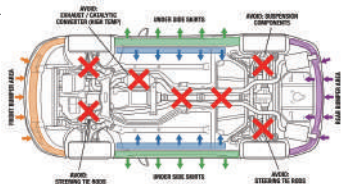
4.1 Recommended Mounting Locations

Identify flat, secure areas along the chassis side rails for mounting the Underbody Lights Bars. The surface should be clean and capable of adhesior or screw mounting.

Areas to Avoid:

- Exhaust pipes, mufflers, or catalytic converters (Extreme Heat).
- Moving suspension parts (Control arms, springs).
- Sharp metal edges that could cut wiring.
- Jack points (Ensure lights do not obstruct lifting).

Ensure light orientation is facing directly downward for the best underglow effect.



4.2 Wiring Notes

Plan your wiring route carefully. Secure the harness every 10-12 inches using the provided cable ties. Avoid routing wires near hot engine components or rotating shafts. Leave a small amount of slack at connection points to prevent strain on the connectors.

5.LEFT/RIGHT IDENTIFICATION & POWER FEED DIRECTION

The light bars are directional to ensure correct dynamic lighting effects (e.g., chasing from front to back). Please follow the L/R labeling strictly.

5.1 Default Installation Rule (Power from Front)

If the control box and power source are located at the FRONT of the vehicle (Engine Bay):

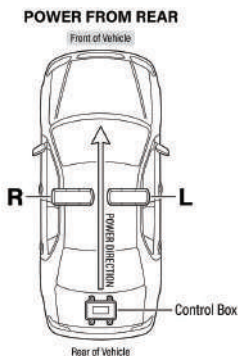
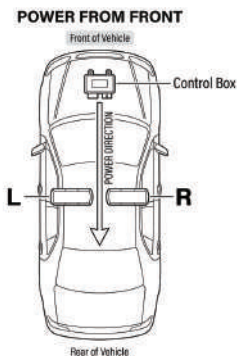
- L (Left) = Driver Side
- R (Right) = Passenger Side

Connect the Left strip series to the Left output of the controller, and Right to Right.

5.2 Important: If Battery/Power Tap Is at Rear

If you are powering the system from the trunk or rear of the vehicle, the signal direction is reversed relative to the vehicle's motion. You MUST swap the sides:

- Connect the strip labeled L to the Passenger Side.
- Connect the strip labeled R to the Driver Side.

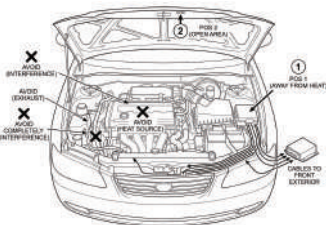


6.INSTALLATION STEPS

Please confirm the power direction as per Section 5 before proceeding.

Step 1: Mount the Control Box

1. Locate a dry, cool spot in the engine bay or trunk (depending on power source).
2. Keep the control box away from the engine block, exhaust manifold, or turbo.
3. Ensure the location allows for good RF/Bluetooth signal reception (avoid enclosing in a fully metal box if possible).
4. Secure the box using heavy-duty double-sided tape or cable ties.
5. Route the output cables down towards the chassis side rails.



Step 2: Confirm Mounting Positions & Plan Test Fit

1. Lay out the light bars on the ground next to the vehicle to confirm length and fitment.
2. Plan the modular connections. Ensure that the gap between Underbody Lights Bars does not exceed the max cable length.
3. Distance Limitations: The lead wire is approx. 7.8in. The maximum gap between connected bars should not exceed 13.8in.
4. Perform a quick test fit to ensure clearances around wheels and jack points.

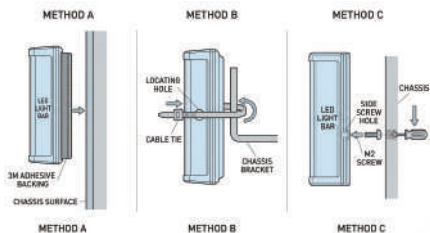
Step 3: Clean the Mounting Surface

- Thoroughly clean the chassis mounting area with isopropyl alcohol or degreaser to remove road grime, oil, and wax.
- Ensure the surface is completely dry before applying adhesive.

Step 4: Install and Secure Underbody Lights Bars

Choose one or a combination of the following mounting methods:

- Method A (Adhesive): Peel off the red backing of the 3M tape and press firmly for 20 seconds.
- Method B (Cable Ties - Recommended): Use cable ties through the locating holes on the Underbody Lights Bar brackets if mounting to a rail or tube.
- Method C (Screws): Use the included M2 screws and mounting clips for a permanent hold on plastic or metal surfaces.



Step 5: Use 6.5ft Extension Cables

1. Use the included 6.5ft extension cables to bridge the gap between the front wheel well and the side skirts, or rear bumper to side skirts.
2. Route cables behind the fender liner where possible to protect them from debris.
3. Ensure cables are not pulled tight; leave a small service loop.
4. Secure loose cable length with zip ties to prevent dragging.

Step 6: Connect Harness and Perform Power-On Test

1. Connect all extension cables and Underbody Lights Bar leads, ensuring the waterproof connectors are fully seated and the screw caps are tightened.
2. Connect the control box power wires to the battery: Red to Positive (+), Black to Negative (-).
3. Turn on the system using the remote or App.
4. Verify that all LEDs light up correctly.
5. Test the Turn Signal, Brake, and Reverse functions if wired (Yellow/Red/White signal wires).

WARNING:

Double check polarity before powering on. Reverse polarity may damage the control box.

7. Modular Connection Tips

- **Joining Plan:** Plan your sequence (e.g., Front -> Side -> Rear) before sticking anything down.
- **Leave Slack:** Always leave a little slack at the connector joints to accommodate chassis flex and vibration.
- **Secure Joints:** Use additional electrical tape or heat shrink over the screw connectors for extra weatherproofing and security.

8. Use & Maintenance

- **Avoid High-Pressure Water:** While IP68 rated, avoid aiming high-pressure washers directly at the connectors or control box.
- **Flickering Issues:** If lights flicker, 90% of the time it is a loose ground connection or a connector not fully screwed in. Check these first.
- **Routine Check:** Re-check all fasteners, zip ties, and adhesive bonds after the first 100 miles of driving, and then periodically during oil changes.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.