

WHELEN[®]

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Installation Guide:
Model CSL*A
Model CSL*D
LED Power Supply

Automotive: Power Supplies

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this product is mounted with tape or Velcro™, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owners manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post.**
- **If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

Selecting a Mounting Location:

The most common choice for a mounting area would be a trunk or similar compartment. However, due to the wide variety of vehicles onto which the power supply could be installed, this is not always possible. The following guidelines will help the installer select an acceptable alternative:

- Do not select a location where the unit will be exposed to potential damage from any unsecured or loose equipment in the vehicle.
- If Model CSL*A is being installed, be sure the area selected will not allow the unit or connectors to be exposed to water!
- When routing wires, it is important to choose a path that will keep these wires away from excessive heat and from any vehicle equipment that could compromise the integrity of the wires (ex. trunk lids, door jams, etc.).

Mounting Procedure:

WARNING! As it will be necessary to drill holes into the mounting surface, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins!

1. Position the unit in its proposed mounting location. With the unit in place, insert an awl or other suitable tool into the mounting screw area of the housing and scribe the areas that are to be drilled.
2. Remove the unit from its mounting area and, using an appropriately sized drill, drill a hole in each of the areas scribed in the previous step.
3. Return the unit to its mounting location and using sheet metal screws, secure the unit to its mounting surface.

Wiring:

WARNING! All customer supplied wires, that connect to the positive (+) terminal of the battery, must be sized to supply at least 125% of the maximum operating current, and fused "at the battery" to carry the load!

1. Locate the 2 power wires, RED (+) and BLACK (-) exiting the front of the unit (see wiring diagram).

Available LED Scan-Lock™ Patterns:

1a ALT - Signal Alert 75	3a ALT - Double Flash 75	5a ALT - Com Alert 75	8 Single 75 - BRN>YEL (RED&GRN Cal. Steady)
1b SIM - Signal Alert 75	3b SIM - Double Flash 75	5b SIM - Com Alert 75	9 Single 75 - BRN&YEL (RED&GRN Cal. Steady)
1c 360 - Signal Alert 75	3c 360 - Double Flash 75	5c 360 - Com Alert 75	10 Action Scan
2a ALT - Comet Flash 75	4a ALT - Single Flash 75	6 Comet 75 - BRN>YEL (RED&GRN Cal. Steady)	
2b SIM - Comet Flash 75	4b SIM - Single Flash 75	7 Comet 75 - BRN&YEL (RED&GRN Cal. Steady)	
2c 360 - Comet Flash 75	4c 360 - Single Flash 75		

2. Connect the RED wire to a fuse block (customer supplied) and then to the POSITIVE terminal on the battery. Although a 7.5 amp fuse (customer supplied) is required to be used in the fuse block, do not install the fuse until ALL of the wire connections are completed.
3. Connect the BLACK wire to the factory chassis ground typically adjacent to the battery.

GREY / Synchronization

NOTE: Synchronized power supplies should be configured to flash the same pattern.

This wire is used when synchronizing two (or more) CSL-series LED power supplies. In the default configuration, when synchronized, all lighthead connected to the BROWN output wire will flash simultaneously and all lighthead connected to the YEL output wire will flash simultaneously. Cycling through patterns will change the relationship between power supply outputs.

VIOLET / Low Power Control

The type of switch used is dependant on how the operator wishes the Hi/Lo feature to function:

Latching Mode: By applying +voltage to the Violet wire for less than 1 sec., the power supply is "latched" into low power operation. The unit must be turned off and then back on to restore normal, Hi power operation. A momentary switch is desired for this.

Level Mode: Applying +voltage to the Violet wire for more than 1 sec. holds the power supply in low power mode until that voltage is removed. A toggle switch is desired for this.

WHITE / Scan-Lock™

TO CYCLE THROUGH ALL PATTERNS: Apply +12 volts to the White wire for less than 1 second and release to cycle forward.

Apply +12 volts to the White wire for more than 1 second and release to cycle backward.

TO SET A PATTERN AS DEFAULT: When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthead will now display this pattern when active.

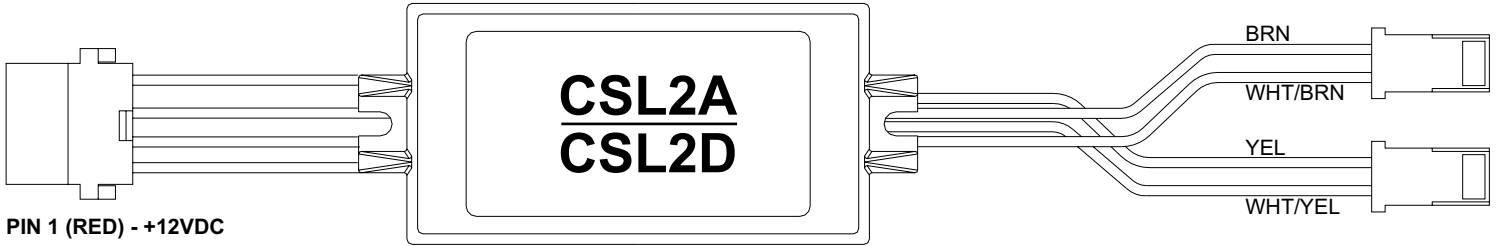
TO RESET TO THE FACTORY DEFAULT PATTERN: Turn off power, apply +12 volts to the White wire, then turn power back on.

Pattern Note:

The table shown here outlines which lighthoods will be active when the appropriate control wire is applied to +12VDC. The behavior of each lighthood, in relation to any other active lighthood is determined by the selected pattern. For example, if the currently selected pattern is Signal Alert 75 in ALT-mode (pattern 1a), lighthood #1 will alternate with lighthood #4 when the BLU control wire is activated.

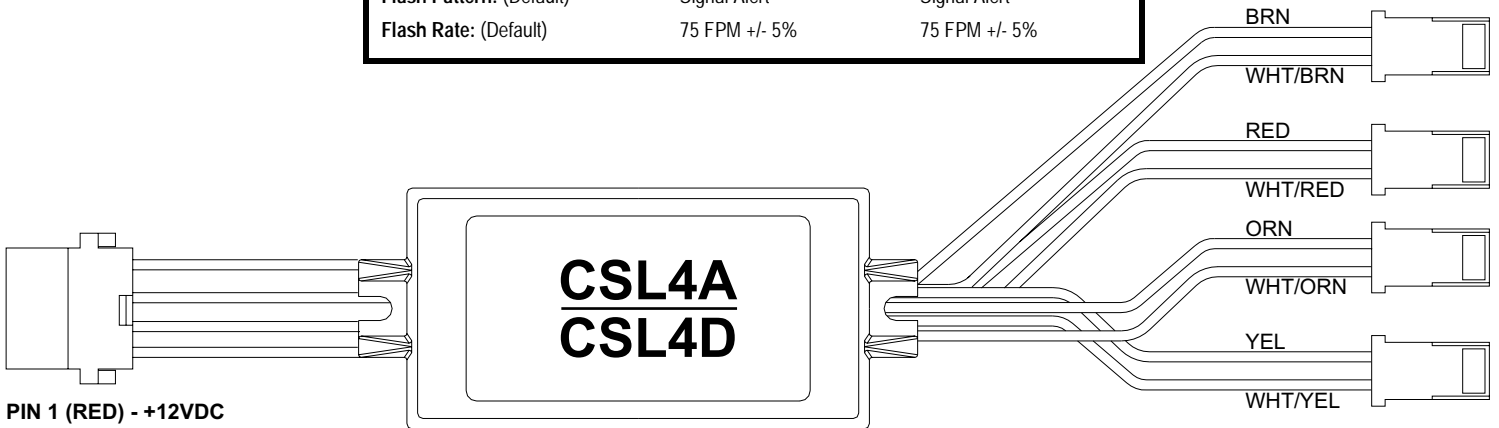
	GRN wire (2&3) Enabled*	BLU wire (1&4) Enabled	GRN & BLU wire Enabled
Alt.	RED > ORN	BRN > YEL	BRN + ORN > RED + YEL
Sim.	RED + ORN	BRN + YEL	BRN + YEL > RED + ORN
360	RED + ORN	BRN + YEL	BRN + RED + ORN + YEL

* available on 4-channel model only (CSL4A / CSL4D)



- PIN 1 (RED) - +12VDC
- PIN 2 (BLK) - Ground
- PIN 3 (GRN) - N/C
- PIN 4 (GRY) - SYNC
- PIN 5 (BLU) - Enable BRN + YEL
- PIN 6 (WHT) - Scan-Lock™
- PIN 7 (N/C)
- PIN 8 (VIO) - Lo Power

	Specifications:	
	CSL2*	CSL4*
	2 Channel	4 Channel
Input Voltage	12.8VDC +/-20%	12.8VDC +/-20%
Output Voltage (No Load)	43VDC +/-10%	43VDC +/-10%
Output Voltage (Load)	18VDC	18VDC
Input Current:	3 Amps	6 Amps
Output Current (Normal Load)	375mA@65% Duty Cycle	750mA@65% Duty Cycle
Output Current (Short Circuit)	1.2A@100us	2.4A@100us
Stand-by Current	< 1mA	< 1mA
Flash Pattern: (Default)	Signal Alert	Signal Alert
Flash Rate: (Default)	75 FPM +/- 5%	75 FPM +/- 5%



- PIN 1 (RED) - +12VDC
- PIN 2 (BLK) - Ground
- PIN 3 (GRN) - Enable RED + ORN
- PIN 4 (GRY) - SYNC
- PIN 5 (BLU) - Enable BRN + YEL
- PIN 6 (WHT) - Scan-Lock™
- PIN 7 (N/C)
- PIN 8 (VIO) - Lo Power

