

# WHELEN<sup>®</sup>

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## Installation Guide: BL420A Power Switch

### Automotive: Serial Communication

### 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 manual states that this product may be mounted with suction cups, magnets, 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 owner's 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 device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **If this product contains strobe light(s), halogen light(s) or high-intensity LEDs, do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **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!**

**For warranty information regarding this product, visit [www.whelen.com/warranty](http://www.whelen.com/warranty)**

### Selecting a mounting location...

The logical choice for a mounting area would be a trunk or similar compartment. However, due to the wide variety of vehicles onto which the BL420A could be installed, this is not always possible. The following guidelines will help the installer select an acceptable alternative:

- A) The BL420A should be mounted on a metal surface to aid heat dissipation. Be sure that this surface is not one that either generates or is exposed to excessive heat during normal operation of the vehicle.
- B) Do not select a location where the BL420A will be exposed to potential damage from any unsecured or loose equipment in the vehicle.
- C) Be sure the area selected will not allow the BL420A to be exposed to water!
- D) When routing the BL420A's 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.).

**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 that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

**WARNING! When extending the communication wires (BLUE & GREY), similar "twisted pair" wires MUST be used!**

When the best mounting location has been determined, securely fasten the BL420A to it's mounting surface using the supplied hardware.

**Caution:** *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!*

### Addressing your BL420A...

If there is to be more than one BL420A installed on a single vehicle, it will be necessary to set the network address on additional units. As you will see, the dip switch banks for all BL420A power switches are configured at the factory as shown:

**Note:** *Visually confirm that the dip switches are configured as shown when installing a single BL420A.*

DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

In this configuration (dip #1 down - all other's up), this BL420A will be identified to the B\*LINK network with address "0001". If more than one BL420A is installed on a single vehicle, subsequent BL420A's must change their dip switch settings as follows:

- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Identifies a 2nd BL420A as 0002**
- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Identifies a 3rd BL420A as 0003**
- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Identifies a 4th BL420A as 0004**

Refer to your MPC01 operating manual for information on how to operate the BL420A power switch.

### Low Power Disable...

If the operator wishes to disable the Low Power activation on specific pairs of outlets, the following dip switch settings must be used:

- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Disables Low Power for Outlets 1 & 2**
- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Disables Low Power for Outlets 3 & 4**

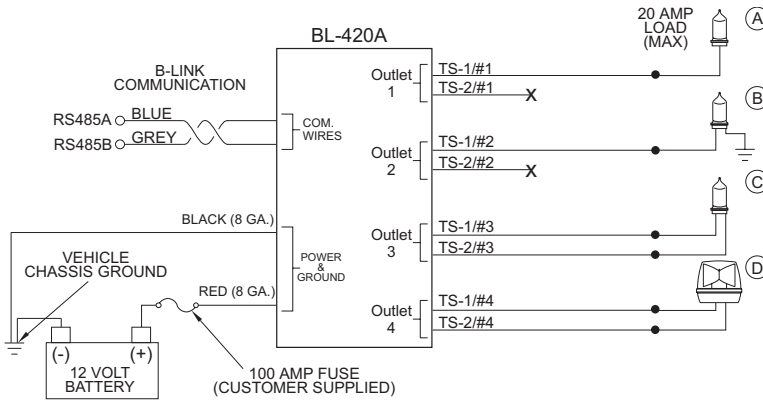
### Diagnostics Disable...

If the operator wishes to disable the Diagnostic activation on specific pairs of outlets, the following dip switch settings must be used:

- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Disables Diagnostics for Outlets 1 & 2**
- DIP SWITCH  
 1  2  3  4  5  6  7  8  
 = UP  
 = DOWN

**Disables Diagnostics for Outlets 3 & 4**



**Example A** - Represents an internally grounded lamp. In this example, extend the lamp's lead to terminal strip 1 (TS-1); terminal 1.

**Example B** - Represents a lamp that is grounded to the chassis at a location local to the lamp. In this example, extend the lamp's POSITIVE lead to terminal strip 1 (TS-1); terminal 2.

**Example C** - Represents a lamp with both its wires connected to the BL420A. This is the recommended installation, as it ensures the most reliable grounding of the lamp. In this example, extend the lamp's POSITIVE lead to terminal strip 1 (TS-1); terminal 3 and extend the NEGATIVE lead to terminal strip 2 (TS-2); terminal 3.

**Example D** - Represents a non-serial communication component (in this case, an RB6D) connected to the BL420A. This demonstrates the ability of the B\*LINK network to control the functionality of a non-B\*LINK device. In this example, extend the lamp's POSITIVE lead to terminal strip 1 (TS-1); terminal 4 and extend the NEGATIVE lead to terminal strip 2 (TS-2); terminal 4.

SPECIFICATIONS	
<b>POWER</b>	
INPUT VOLTAGE	12.8VDC 20%
OUTPUT VOLTAGE	INPUT VOLTAGE - 1VDC
OUTPUT CURRENT/OUTLET	20 AMPS(MAX)
OUTPUT POWER/OUTLET	250 WATTS (TYP)
LOW POWER	PWM 33%
<b>COMMUNICATIONS</b>	
TYPE	RS-485
BAUD RATE	9600bps

