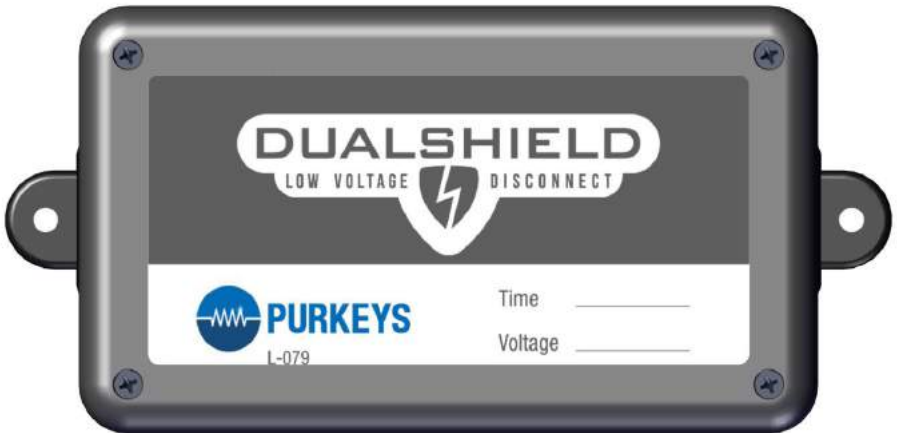


PURKEYS

DUAL SHIELD LVD

INSTALLATION GUIDE



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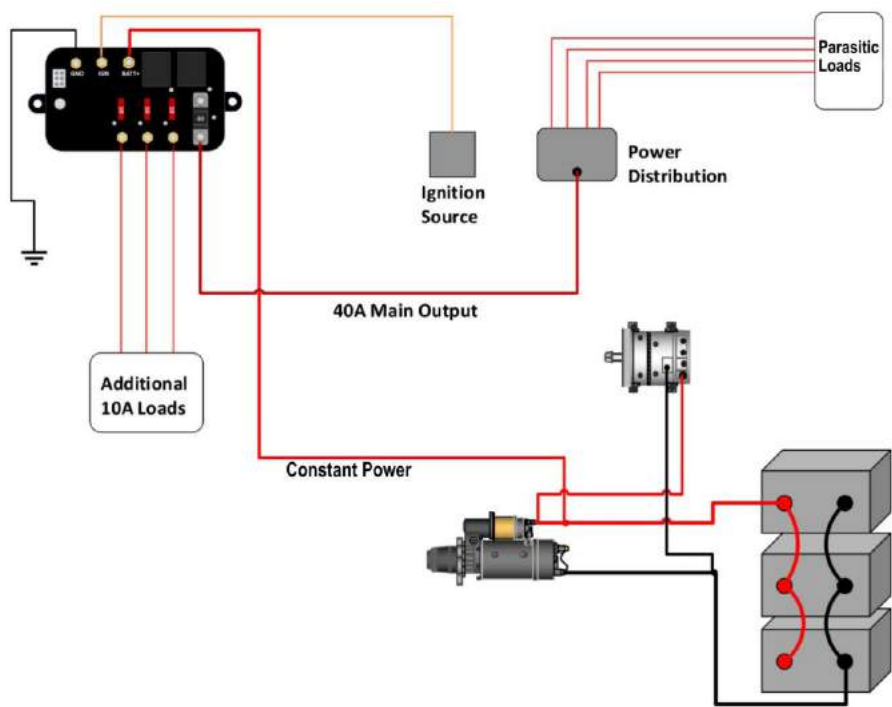
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GENERAL INFORMATION

The Purkeys Low Voltage Disconnect (LVD) is designed to drastically reduce the parasitic drain on the vehicle's batteries. Parasitic loads are caused by electrical devices such as interior lights, radios, child safety devices, etc. While these devices are critical to operation, there is a risk that the parasitic drain will be enough to discharge the battery and keep the vehicle from starting. The Purkeys LVD is a device that shutS off parasitic loads either by voltage or by time. While the ignition is on, this device will not impact any of the electrical devices. The Purkeys LVD has built-in LEDs that indicate its status.

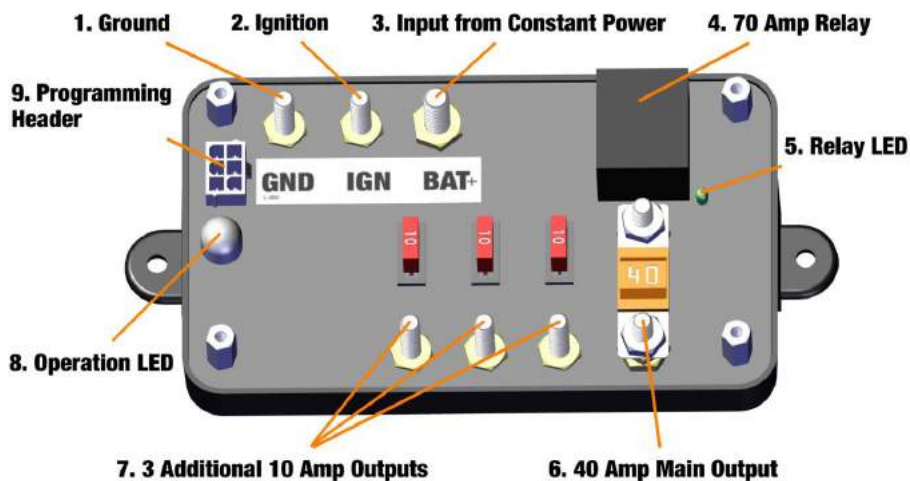
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LVD DIAGRAM

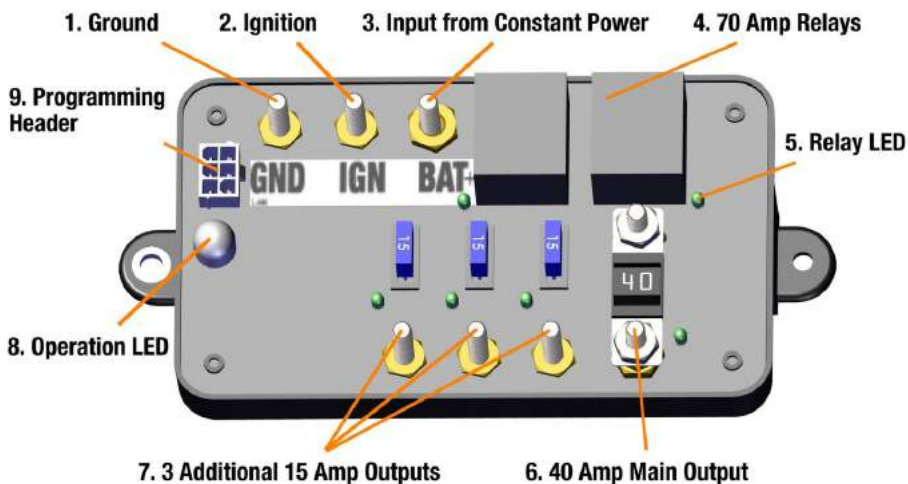


LVD CALL-OUTS

Single Channel



Dual Channel



DUAL SHIELD LVD INSTALLATION GUIDE

Connection	Suggested Wire Gauge for Connection
1	14
2	14
3	4 (or larger existing cable)
4	N/A
5	N/A
6	8
7	14
8	N/A
9	N/A

NOTE: The photos in this guide were taken of a particular bus application. Other applications will be similar, but may vary by vehicle, make, model, and year.

Step 1: Determine what parasitic loads the LVD will control. It is possible that the majority of the parasitic loads are coming through the constant power cable.

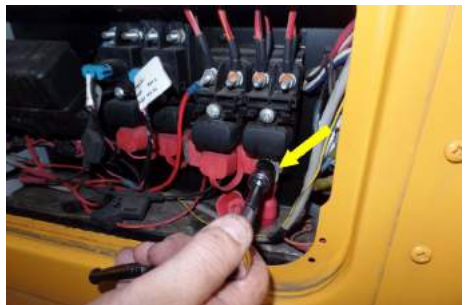
NOTE: The LVD can control up to four outputs (a total of 70 amps for Single Channel and a total of 85 for Dual Channel).

Step 2: Disconnect ground cable(s) at the vehicle batteries.



CAUTION: Failure to disconnect ground could result in damage to electrical components or personal injury.

Step 3: Locate and disconnect the constant power cable at the vehicle (leave connected at 12 V power source).



DUAL SHIELD LVD INSTALLATION GUIDE

Step 4: Mount the LVD within reach of the constant power cable removed in step 3.



Step 5: Connect the constant power cable to the battery positive (BAT+) post on the LVD.



Step 6: Locate vehicle ignition source and run a 14-gauge wire* from it to the ignition (IGN) stud on the LVD.



*Note: This wire is not provided with the kit. An ignition interface for school bus applications can be purchased to avoid cutting factory wires.

Step 7: Locate a good vehicle ground and connect a ground cable (not provided) from the vehicle ground to the ground stud (GND) on the LVD.



Step 8: Connect an output wire (not included) from the LVD 40 amp main output stud to location where the constant power cable was removed in step 3 (this is typically on a power distribution block).



NOTE: There are three additional outputs for any additional circuits that may have parasitic loads.

Step 9: Use the four supplied screws to put the cover on the LVD.

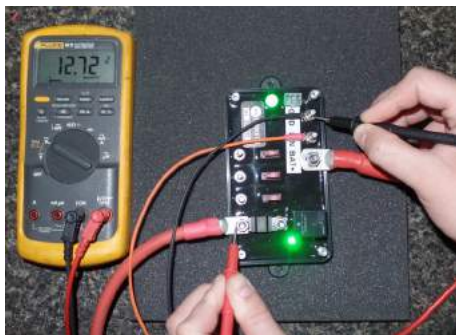


Step 10: Ensure all wires are secure from pinch/chaffing points.

Step 11: Reconnect the ground cable(s) at the vehicle batteries.

Step 12: Turn the ignition key to the run position to activate the LVD.

Step 13: Use a voltmeter to ensure there is battery voltage at the 40 amp main output stud on the LVD.



Installation Complete.

DUAL SHIELD LVD INSTALLATION GUIDE

LED OPERATION

The relay has an LED next to it. When the LED is illuminated, the output of the relay has power (see LED #2 below).

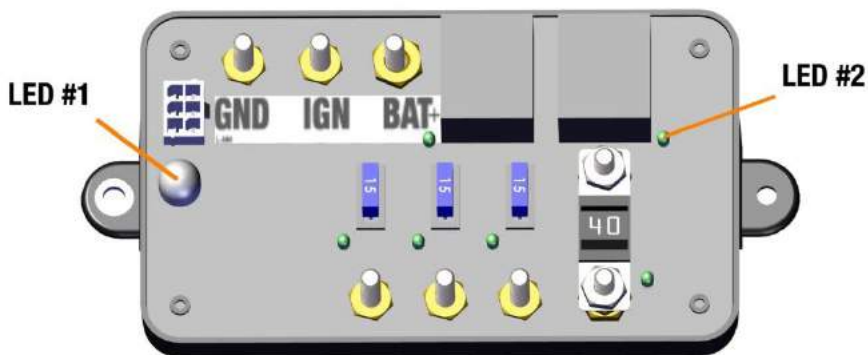
When the key is in the ON position, the LVD turns the relay output on. When the key is in the OFF position, the LVD turns the relay output off if one of the following occurs:

- the vehicle voltage drops below 12.4 V for approximately 10 seconds
- the key is turned OFF for one hour

Single Channel



Dual Channel



Key	Engine	Operation LED	LVD Condition	Recommended Actions
ON	ON	Solid Green	Normal - Vehicle is above 13.2 V. LVD relay output is ON.	None
OFF	OFF	Single Green Blink	Normal - Vehicle is above 12.4 V. LVD relay output(s) is OFF due to time.	None
OFF	OFF	Double Green Blink	Normal - Vehicle is above 12.4 V. LVD relay output is OFF due to voltage.	None
OFF	OFF	Single Orange Blink	Low Voltage. Vehicle is below 12.4 V. LVD relay output is OFF due to time.	None if vehicle voltage is above 12.2 V. If voltage is below 12.2 V: charge batteries, determine reason for discharge, test batteries and/or charging system, and correct any issues.
OFF	OFF	Double Orange Blink	Low Voltage - vehicle is below 12.4 V. LVD relay output is OFF due to voltage.	None if vehicle voltage is above 12.2 V. If voltage is below 12.2 V: charge batteries, determine reason for discharge, test batteries and/or charging system, and correct any issues.
N/A	N/A	OFF	LVD inoperative - open power/ground circuit to LVD.	Test power and ground circuit(s) to LVD for open circuits and correct any issues.

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PART LIST: SINGLE CHANNEL

LVD, Dual Shield Single Channel

Part #: DSLVD-02



Fuse, 10 AMP ATM Mini

Part #: F00018



Fuse, 40 AMP Midi

Part #: F00074



Guide, Installation Dual Shield
Single Channel LVD

Part #: INST099



PART LIST: DUAL CHANNEL

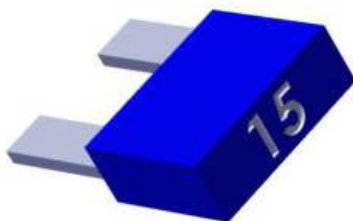
LVD, Dual Shield Dual Channel

Part #: DSLVD-01



Fuse, 15 AMP ATM Mini

Part #: F00019



FUSE, 40 AMP MIDI

Part #: F00074



Guide, Installation Dual Shield
Single Channel LVD

Part #: INST099



DUAL SHIELD LVD INSTALLATION GUIDE

LIMITED COMMERCIAL WARRANTY POLICY

Purkeys Fleet Electric, Inc. (hereafter “Purkeys”), warrants each product to be free of defects in material or workmanship under normal use and service. This warranty is for the benefit of Original Equipment Manufacturers, Dealers, Warehouse Distributors, Fleets, or other End Users (hereafter “Customers”) and covers products manufactured by Purkeys and sold new to Customers either directly by Purkeys or by its authorized dealers, distributors, or agents. The length of the Warranty Period is 36 months.

The warranty period commences on the in-service or install date and is not transferable. Failure to provide the in-service or install date on the warranty claim form will cause the warranty period to begin on the date the part was manufactured or date of sale recorded on the original sales invoice, whichever is earlier.

A completed warranty claim form should accompany all parts submitted to Purkeys for consideration for repair or replacement under warranty. The submitted claim form should contain all of the information required. Lack of a properly or fully completed claim form will result in delay or denial of warranty claim. Claims must be submitted no later than 30 days after part is removed.

This warranty does not apply if, in sole judgement of Purkeys, the product has been damaged or subjected to accident, faulty repair, improper adjustment, improper installation or wiring, neglect, misuse, or alteration or if the product failure is caused by defects in peripheral vehicle components or components attached to the Product or failure of a part not manufactured by Purkeys.

This warranty shall not apply if any Purkeys product is used for a purpose for which it is not designed or is in any way altered without the specific prior written consent of Purkeys. ANY Product alleged by a Customer to be defective must be inspected by Purkeys as a part of the warranty claims process in order to confirm that the part has failed as a result of a defect in material or workmanship.

Transportation for products and parts submitted to Purkeys for warranty consideration must be prepaid by Customer. Repaired or replaced products and or components will be returned to Customer pre-paid by Customer or “freight collect” to the address provided by Customer in the warranty claim form. No charge will be made for labor or material in effecting such repairs.

The Warranty provided by Purkeys hereunder is specifically limited to repair or replacement of the Product as Purkeys deems most appropriate in its sole discretion. Purkeys neither assumes nor authorizes any other person to assume on its behalf any other warranty or liabilities in connection with Purkeys products. The Warranty does not apply to fuses or other “consumable” or maintenance items which are or may be a part of any Purkeys product.

THIS WARRANTY DOES NOT APPLY TO LOSS OF VEHICLE OR EQUIPMENT, LOSS OF TIME, INCONVENIENCE, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. PURKEYS SPECIFICALLY DISCLAIMS AND SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES arising out of or from the use of Purkeys products by the Customer.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, INCLUDING COMMON LAW WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, AND ANY OTHER EXPRESS OR IMPLIED WARRANTIES. ALL OTHER SUCH WARRANTIES ARE SPECIFICALLY DISCLAIMED.

This Limited Commercial Warranty supersedes all previous Warranty Policies issued by Purkeys and any of its suppliers.



WATT Keeps You Trucking