



A Benny Lee Company

# PRODUCT USER GUIDE

## LVD-24

### 24-Volt Battery Low Voltage Disconnect

### Owners Guide

*(These instructions are intended for use by a technician familiar with electronic products)*

- The Model LVD-24 is an automatic Low Voltage Disconnect that monitors battery voltage and disconnects the load when the voltage drops below 21.5 VDC
- The LVD-24 is simple to install and maintenance free
- 3 year warranty



### DESCRIPTION

The low voltage disconnect is an automatic low voltage disconnect that monitors battery voltage and disconnects the load when the voltage drops below 21.5 VDC and with a reconnect voltage of 25.5 VDC. The LVD-24 has a maximum voltage input range of 20 to 35 VDC Max. These units are simple to install, maintenance free, and protect equipment that is sensitive to low voltage battery operations.

### SPECIFICATIONS

Voltage Input Range .....	20- 30 VDC Max
Current Capacity .....	50 Amps Max
Disconnect Voltage .....	21.5 VDC
Reconnect Voltage .....	25.5 VDC
Holding Current.....	200 mA
Size.....	8" W x 5" D x 1.75" H

### GENERAL APPLICATION NOTES and WARNINGS

**WARNING: THERE ARE NO USER SERVICEABLE PARTS INSIDE. HAZARDOUS VOLTAGES EXIST INSIDE THE UNIT. SERVICE AND REPAIR MUST BE REFERRED TO QUALIFIED FACTORY PERSONNEL.**

**NOTE:** *The individual user should take care to determine, prior to use or installation, whether this device is suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, DuraComm makes no representation or warranty as to the merchantability, suitability or fitness of these units for any specific application.*

**NOTE:** *The LVD-24 is pre-set to disconnect the load at 21.5 VDC. However, to prevent premature or false disconnect when the battery voltage drops below the 21.5-volt threshold a 2-minute timer is started. If the battery recovers to above 21.5 volts, the timer resets and waits. The battery can and will recover if the system is a repeater or remote base station or similar equipment that has a varying demand that fluctuates from low to high current. The 2-minute delay ensures the battery is not disconnected until necessary to prevent damage.*

*After the AC main power is restored and the battery is recharging, the LVD-24 will reconnect the load when the battery voltage exceeds 25.0 volts.*

## **INSTALLATION WARNING**

**NOTE:** DO NOT expose the unit to rain or moisture.

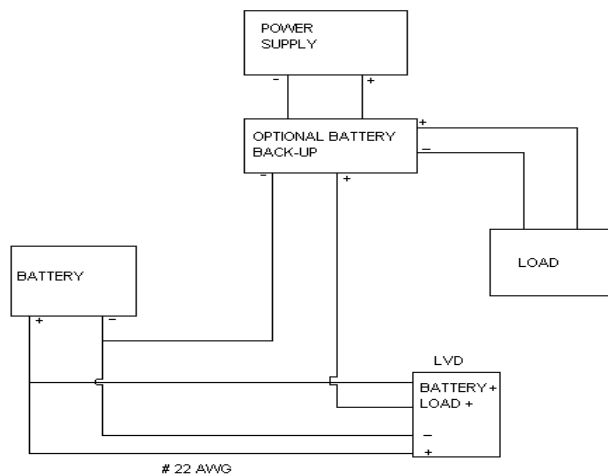
Connect the battery positive to the red terminal labeled, "Battery Positive (+)". Connect the load positive to the red terminal labeled, "Load Positive (+)".

Connect the two position barrier screw terminal strip to the battery using hookup wire, from No. 22 gauge to No. 16 gauge. Observe proper polarity to prevent damage to the LVD circuitry.

The LVD-24 was adjusted and calibrated at the factory for correct voltages disconnect and re-connect. No adjustment is required.

**CAUTION:** Under no circumstances should more than 30 VDC be applied to the input. Permanent damage to the LVD-24 will result.

## **WIRING DIAGRAM**



## **CONDUCTOR PRETREATMENT**

All kinds of copper conductors can be clamped without treatment. **DO NOT** solder tin stranded conductors. The solder yields and fractures under high pressure. The result is increased contact resistance and excessive temperature rise. Additionally, corrosion has been observed due to the fluxes. Notch fractures at the transition from the rigid tinned part to the flexible conductors are also possible. Ferrules can be used as a protection when wiring stranded conductors. Copper ferrules prevent the current transfer from being influenced by dissimilar metals and remove the risk of corrosion. Always use the correct tool to crimp the ferrule.

## **RECOMMENDED COPPER WIRE SIZE FOR CURRENT CAPACITY**

*(Insulated Wire, Single Conductor in free air)*

<b><u>Current Level in Amperes</u></b>	<b><u>Wire Size</u></b>
<i>&lt;7 AMPERES</i>	<i>20 AWG Up to 5 feet 18 AWG Up to 10 feet</i>
<i>14 AMPERES</i>	<i>18 AWG Up to 5 feet 16 AWG Up to 10 feet</i>
<i>20 AMPERES</i>	<i>16 AWG Up to 5 feet 14 AWG Up to 10 feet</i>
<i>30 AMPERES</i>	<i>14 AWG Up to 5 feet 12 AWG Up to 10 feet</i>
<i>40 AMPERES</i>	<i>12 AWG Up to 5 feet 10 AWG Up to 10 feet</i>
<i>50 AMPERES</i>	<i>10 AWG Up to 5 feet 8 AWG Up to 10 feet</i>
<i>70 AMPERES</i>	<i>8 AWG Up to 5 feet 6 AWG Up to 10 feet</i>
<i>100 AMPERES</i>	<i>6 AWG Up to 5 feet 4 AWG Up to 10 feet</i>

## **LIMITED WARRANTY**

*DuraComm warrants to the initial end user, each power supply manufactured by DuraComm to be free from defects in material and workmanship, when in normal use and service for a period of three year from the date of purchase, from an authorized DuraComm dealer.*

*Should a product manufactured by DuraComm fail or malfunction due to manufacturing defect, or faulty component, DuraComm, at its option, will repair or replace the faulty product or parts thereof, which, after examination by DuraComm, prove to be defective or not operational according to specifications in effect at the time of sale to the initial end user. The product that is replaced or repaired under the provisions of this warranty, will be warranted for the remainder of the original warranty period, only, and will not extend into a new three year warranty period.*

*The limited warranty does not extend to any DuraComm product which has been subject to misuse, accidental damage, neglect, incorrect wiring not associated with manufacture, improper charging voltages, or any product which has had the serial number removed, altered, defaced, or changed in any way.*

*DuraComm reserves the right to change, alter, or improve the specifications of its products at any time, and by so doing, incurs no obligation to install or retrofit any such changes or improvements in or on products manufactured prior to inclusion of such changes.*

*DuraComm requires any product needing in or out of warranty service to be returned to DuraComm. All requests for warranty service must be accompanied by proof of purchase, such as bill of sale with purchase date identified. DuraComm is not responsible for any expenses or payments incurred for the removal of the product from its place of use, transportation or shipping expenses to the place of repair, or return expenses of a repaired or replacement product to its place of use.*

*The implied warranties which the law imposes on the sale of this product are expressly LIMITED, in duration, to the three (3) year time period specified herein. DuraComm will not be liable for damages, consequential or otherwise, resulting from the use and operation of this product, or from the breach of this LIMITED WARRANTY.*

*Some states do not allow limitations on the duration of the implied warranty or exclusions or limitations of incidental or consequential damages, so said limitations or exclusions may not apply to you. This warranty gives you specific legal rights which vary from state to state.*

*This warranty is given in lieu of all other warranties, whether expressed, implied, or by law. All other warranties, including WITHOUT LIMITATION, warranties of merchantability and fitness or suitability for a particular purpose, are specifically excluded. DuraComm reserves the right to change or modify its warranty and service programs without prior notice.*

## **DuraComm® Corporation**

6655 Troost Avenue  
Kansas City, MO 64131  
Phone (816) 472-5544 Fax (816) 472-0959  
[www.duracomm.com](http://www.duracomm.com)