

# LVD20 Series

## Low Voltage Disconnects



**Solid-state high current low voltage disconnects with over current shutdown protection.**

### Technical Description

InPower's Model LVD20 Series *Low Voltage Disconnects (LVD)* automatically disconnects 12 volt loads from the battery when the battery voltage drops below a critical level, leaving enough charge for the vehicle to be restarted.

The LVD contains a solid-state disconnect switch that is rated for 100, 150 or 200 amps, and provides automatic fault shutdown protection for over current, short circuit, high temperature and loss of ground conditions. When the fault is cleared the control input voltage must be removed and re-applied to activate the disconnect switch.

When positive voltage is applied to the control terminal, the disconnect switch turns on, applying battery voltage to its load output. When the disconnect switch is on, its controller monitors the battery voltage at its battery terminal. When the battery voltage drops below 11.5 volts for 60 seconds\* the disconnect switch turns off, removing power from its load terminal. This removes the power draw on the battery. When the battery has been recharged and the battery voltage exceeds the shut off preset voltage the disconnect can be manually re-actuated by removing the control input voltage and re-applying it, though an automatic turn on may be custom programmed.

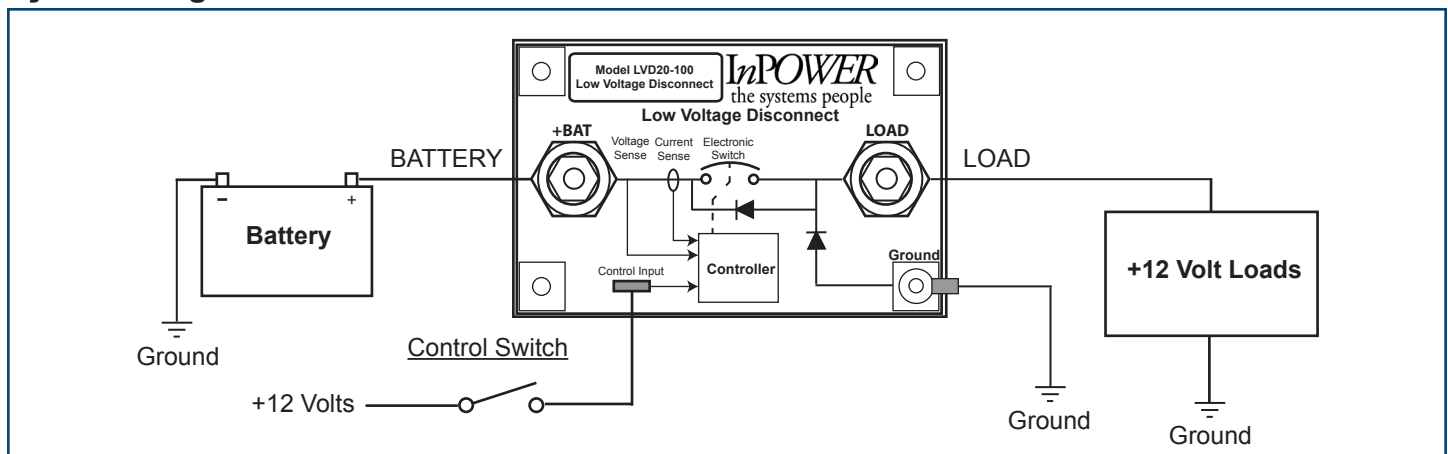
The low voltage disconnects are sealed and packaged in an anodized aluminum case. Four corner mounting hole pads provide the required connection to ground. The control input utilizes a ¼ inch Faston blade terminal. Connections for the high current DC cable utilize ⅜"-16 threaded stainless steel studs with brass contact pads for low contact resistance.

\* other voltage and time set points and functions may be customized. Please call InPower for more details at (740) 548-0965.

### Key Features

- Prevents excessive battery discharge by automatically disconnecting loads.
- 100% solid-state design - No moving parts to cause arcing and electrical noise.
- Automatic shutdown protection for short circuit, over current, loss of ground and high temperature.
- Sealed construction is resistant to mechanical shock and vibration.
- Compact size and low profile.
- Protective Terminal Boot Option

### System Diagram



### Specifications for Select Models

Maximum Current Rating:	<u>LVD20-100-SPC48</u> 100 Amps	<u>LVD20-150-SPC58</u> 150 Amps	<u>LVD20-200-SPC49</u> 200 Amps
Operating Voltage Range:	+9.5 to +18.5 volts		
Shut-Off Voltage:	<11.5 Vdc		
Shut-Off Time Period:	60 Seconds		
	The disconnect switch will shut off when the battery voltage remains below 11.5 volts for 60 seconds. To reset and activate the disconnect switch the control input voltage must be removed and re-applied.		
Control Input Voltage:	>9.5 volts to activate; <8.5 volts to deactivate.		
Control Terminal:	0.250 Inch male push-on blade terminal		
Power Terminals:	Two 3/8 - 16 threaded stainless steel studs, with locking nuts.		
Fault Shutdown Reset:	For over current, short circuit, over temperature or loss of ground shutdowns the fault must be cleared, then the control input voltage must be removed and re-applied to activate the disconnect switch.		
Weight:	0.40 lbs (0.181 kg)		
Dimensions:	2.85 (72.29 mm) x 4.35 (110.49) x 1.10 inches (27.94 mm)		
Status LED Indicator:	On steady when disconnect switch is on. Flashes during fault or low voltage shut down. Off when disconnect switch is off.		
Fault Shutdown Conditions:			
Over Current:	100% to 110% of rated amperage for 500 milliseconds		
Loss of Ground:	250 milliseconds		
Maximum Temperature Trip:	Case Temperature > 185° F (85° C)		

### Product Customization

LVD20 Series *Low Voltage Disconnects* can be customized to meet your exact specifications. Typical modifications include changes to the low voltage setpoint, low voltage shutdown timer and disabling the control input for completely automatic operation. Contact InPower for more details at (740) 361-8920.

### Ordering Guide for Select Models

<u>Model</u>	<u>Description</u>
LVD20-100-SPC48	Low Voltage Disconnect, 100 Amp
LVD20-150-SPC58	Low Voltage Disconnect, 150 Amp
LVD20-200-SPC49	Low Voltage Disconnect, 200 Amp

### Mechanical Drawing

