



# LIND

POWER SPECIALISTS FOR  
MOBILE COMPUTING

AUTO & AUTO/AIR ADAPTERS

AUTO/AIR/AC POWER ADAPTERS

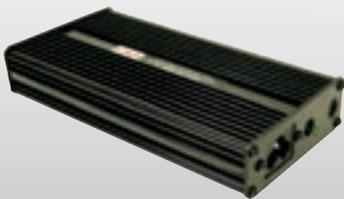
REPLACEMENT AC ADAPTERS

MIL-STD POWER ADAPTERS

BB-2590 BATTERY CHARGERS

SOLAR CHARGE SYSTEMS

STOCK & CUSTOM CABLES



# MILITARY

LIND ELECTRONICS MOBILE POWER SOLUTIONS CATALOG



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## **YOUR TRUSTED MOBILE POWER EXPERTS**

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Lind Electronics is a proven leader in designing and producing dependable mobile power solutions. Lind's product lines include standard and custom AC/DC and DC/DC power adapters, battery chargers, USB adapters, shut down timers, solar chargers, stock and custom cables. Lind works directly with users, installers and engineers in the Military, Public Safety, Healthcare and Forklift/Warehousing industries to design products that perform continuously in all types of demanding applications and harsh environments.

Our sales team works with you to identify the right solution for your mobile power needs. Our staff is knowledgeable and experienced in specific mobile power application experience. From initial assessment to final build and delivery of your mobile power solution, let Lind's sales force develop a custom solution that will meet your mobile power requirements.

Lind's engineering team includes knowledgeable experts in electronic and component design, developing innovative solutions to meet your specific mobile power requirements. Our technical support team provides expert customer service when troubleshooting issues that may occur with your product or installation.

Lind's manufacturing and production teams build the device to your specifications and then delivers your product quickly and efficiently. Each unit is built to meet exact engineering standards and is quality checked so you can be assured it will function as expected.

From concept to design to delivery, whether it is a standard or custom product, Lind Electronics has a solution for all your mobile power applications.

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## **MILITARY MOBILE POWER SOLUTIONS**

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Lind Electronics provides standard and custom rugged portable and specialized solutions to all branches of the military. Lind offers AC/DC and DC/DC military spec products and battery charger solutions designed to meet various military power and environmental requirements. Custom mobile power and specialized cabling solutions may be engineered and manufactured for specific military applications.



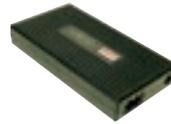
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## POWER YOUR LAPTOP ON THE GO WHEREVER THE MISSION TAKES YOU

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Power your laptop from your military vehicle using a Lind Auto Power Adapter. Our adapters are built to ensure the highest level of compatibility and performance when charging your mobile computer.

Lind's Auto Power Adapters work with 11-16 VDC or 12-32 VDC power sources, including automobiles, military vehicles or batteries. Output voltages and connectors are available to power nearly all current laptop models.

Special connector, packaging and mounting configurations are available as well as custom input and output characteristics that can be programmed into the adapters for special applications.



Scan to learn more about Lind's Auto Power Adapters online now



**Cigarette Lighter/  
Auxiliary Port DC  
Input Cable**



**Bare Wire/Flying  
Lead DC Input  
Cable**



**DC Output  
Cable**



## FEATURES

- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- Adapter LED: indicates output power is present
- Cig Plug LED: indicates input power is present (most models)
- Output Power up to 120W

## TECHNICAL INFORMATION

- Dimensions (approx.): 5.5 x 3.06 x 1.1 inches (139 x 77 x 27 mm) excluding cables
- Weight (approx.): 0.85 pounds (0.38 kg) excluding cables
- Power Input: Noted on label
- Power Output: Noted on label
- Input Fuse: Auto Mini (noted on label)
- Indicators: LED on automobile plug (most models input present); LED on adapter (output present)



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# KEEP YOUR LAPTOP POWERED FOR MOBILE MISSIONS ON THE GROUND OR IN THE AIR

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Charge your laptop from the ground or air using a Lind Auto/Air Power Adapter. Our adapters charge laptops requiring 70 watts of power or less\*.

Lind's Auto/Air Power Adapters work with 11-16 VDC or 12-32 VDC power sources, including automobiles, airplanes, military vehicles or batteries. Output voltages and connectors are available to power nearly all current laptop models.

Special connector, packaging and mounting configurations are available as well as custom input and output characteristics that can be programmed into the adapters for special applications.

*\* The power provided on commercial flights is limited to 70 watts and is subject to availability on aircraft. Contact your airline for in-seat power availability on your flight.*



Scan to learn more about Lind's Auto/Air Power Adapters online now



Airline In-seat  
DC Input Cable



Cigarette Lighter/  
Auxiliary Port  
DC Input Cable



DC Output  
Cable



## FEATURES

- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- Adapter LED: indicates output power is present
- Cig Plug LED: indicates input power is present (most models)
- Output Power up to 70W

## TECHNICAL INFORMATION

- Dimensions (approx.): 5.1 x 2.4 x 1.3 inches (130 x 61 x 33 mm) excluding cables
- Weight (approx.): 0.73 pounds (0.33 kg) excluding cables
- Input Voltage Range: 11 - 16 VDC or 12 - 32 VDC (depending on model)
- Output Voltages Available: 9 - 24 VDC (others available - contact Lind)
- Input Fuse: 3AG in input cable



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# A COMPACT DESIGN FOR COMPACT SPACES IN MILITARY VEHICLES

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Lind's Micro Power Adapters are designed to charge devices requiring a maximum of 24 watts of power. With a compact and lightweight design the Micro Power Adapter is easy to install in tight and narrow spaces.

Designed with special safety circuitry to protect both your laptop and the adapter, and power conversion circuits with extensive protection circuitry for reliable and continuous power to your mobile device.

The Micro Power Adapter's electronics are enclosed in an epoxy-sealed case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments. Snap-in connections make replacing missing or damaged cables easy and hassle-free.



Scan to learn more about Lind's Micro Power Adapters online now



Airline In-seat  
DC Input Cable



Cigarette Lighter/  
Auxiliary Port  
DC Input Cable



DC Output  
Cable



## FEATURES

- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- Automatic Restart after Fault Removal (most models)
- Field Replaceable Cables (most models)
- LED Output Power Present Indicator on Adapter
- LED Input Power Present Indicator on Cig Plug (most models)
- Output Power up to 24W

## TECHNICAL INFORMATION

- Dimensions (approx.): 3.7 x 1.7 x 0.9 inches (94 x 43 x 23 mm) excluding cables
- Weight (approx.): 0.26 pounds (0.12 kg) excluding cables
- Input Voltage Range: 11 - 16 VDC or 12 - 32 VDC (depending on model)
- Output Voltages Available: 3.3 - 24 VDC (others available - contact Lind)
- Input Fuse: 3AG in input cable



# KEEP YOUR LAPTOP POWERED FOR MISSIONS CONDUCTED FROM THE OFFICE, ON THE ROAD, OR IN THE AIR

Lind's Auto/Air/AC Power Adapters power your laptop from an automobile cigarette lighter socket, an AC wall outlet, or an airline in-seat power plug.\*

These adapters are designed to meet the power specifications of your computer and include a convenient USB port to charge devices such as cell phones, tablets, and digital cameras.

The unit provides protection against over-voltage, over-temperature, over-current and short circuits.

Lind's Auto/Air/AC Power Adapters are built to work with most existing laptop models. Our adapters can also be designed for custom applications, contact us to discuss solutions for your mobile power needs.

*\* In AC or DC input mode, up to 90W can be supplied. In airplane input mode, only 70W can be supplied due to aircraft in-seat power limitations.*



Scan to learn more about Lind's Auto/Air AC Power Adapters online now

# AUTO/AIR/AC POWER ADAPTERS



ADAPTERS



DC Input Cable Options  
(Cigarette/Auxiliary Port -  
Top; Airline In-seat  
- Bottom)



AC Input  
Cable



DC Output  
Cable



## FEATURES

- Powers electronic devices from a standard auto cigarette lighter, airline seat, or AC wall outlet
- Provides up to 90W\* of output power
- Provides protection against over-voltage, over-temperature, over-current, and short circuits
- Black PC/ABS Plastic Case
- The USB port can charge additional devices using a USB cable (cable not included)
- Blue LED indicates Output Present

\* 70W in Airplanes

## TECHNICAL INFORMATION

- Dimensions (approx.): 5.6 x 3.0 x 1.0 inches (142 x 76 x 25 mm) excluding cables
- Weight (approx.): 0.7 pounds (0.32 kg) excluding cables
- Input Voltage: 100 - 240 VAC (50 - 60 Hz @ 2.5A) or 11.5 - 16 VDC
- Output Voltage: 16 or 20V models available
- Output Current: 5.6A Max. (16V models) or 4.5A Max. (20V models)
- USB Power Port: 5VDC, 0.6A Max.



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# TWICE THE CHARGING CAPABILITY KEEPS DEVICES POWERED SIMULTANEOUSLY FOR CRITICAL MISSIONS

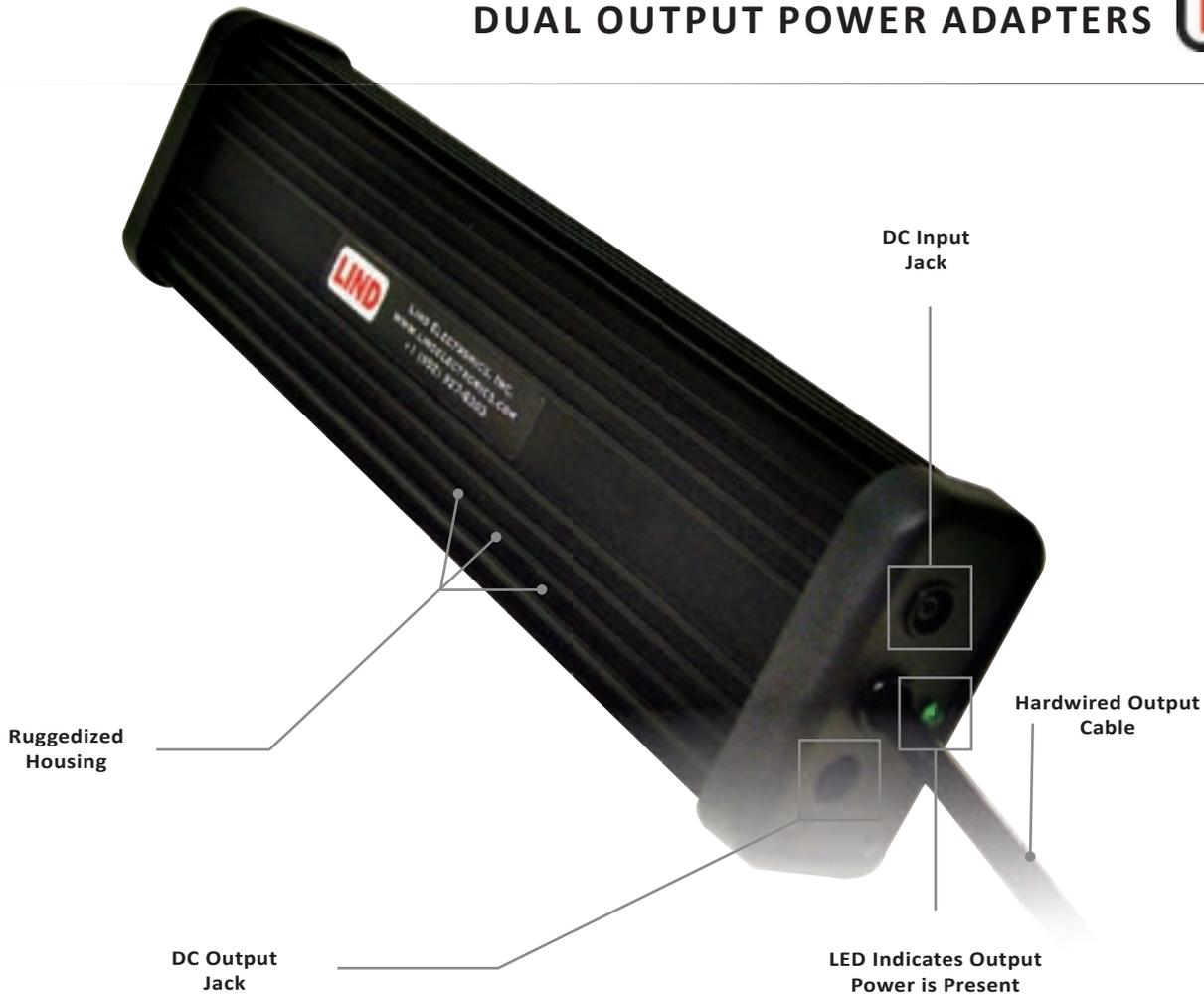
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Lind Dual Output Power Adapters are designed to simultaneously power both a laptop and other mobile devices (i.e. a portable printer) using a single power source. These adapters fit a wide range of laptop models and accessories.

Our Dual Output Power Adapter incorporates a high degree of circuit protection for both your laptop and the adapter. Its electronics are enclosed by a ruggedized epoxy-sealed case to protect the internal components from damage caused by shock and vibration. Durable materials and construction can withstand extensive wear and tear from harsh mobile environments.



Scan to learn more about Lind's Dual Output Power Adapters online now



Cigarette Lighter/  
Auxiliary Port  
DC Input Cable



Bare Wire / Flying Lead  
DC Input Cable



DC Output  
Cable



## FEATURES

- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- LED Output Power Present Indicator on Adapter
- LED Input Power Present Indicator on Cig Plug (most models)
- Total Output Power up to 120W

## TECHNICAL INFORMATION

- Input Voltage Range: 11 - 16 VDC or 12 - 32 VDC (depending on model)
- Main Output Voltages Available: 10 - 24 VDC
- Auxiliary Output Voltages Available: 5 - 24 VDC (contact Lind)
- Input Fuse: 3AG in input cable



# MOLDED HOUSING MAKES MOUNTING THIS ADAPTER TO YOUR MILITARY VEHICLE EASY AND EFFICIENT

Lind Mountable Power Adapters (80 - 120 watt series) are designed so the adapter can be mounted to a flat surface without the use of clamps, brackets or tie wraps. Screw slots are molded in each corner to make mounting the adapter to your military vehicles easy.

The Mountable Power Adapter's electronics are enclosed in an epoxy-sealed case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments. Snap-in connections make replacing missing or damaged cables easy and hassle-free.



Scan to learn more about Lind's Mountable Power Adapters online now



Cigarette Lighter/  
Auxiliary Port  
DC Input Cable



Bare Wire / Flying Leads  
DC Input Cable



DC Output  
Cable



## FEATURES

- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- LED Output Power Present Indicator on Adapter
- LED Input Power Present Indicator on Cig Plug
- Output Power up to 120W

## TECHNICAL INFORMATION

- Dimensions (approx.): 5.61 x 3.05 x 1.03 inches (143 x 78 x 26 mm) excluding cables
- Weight (approx.): 0.86 pounds (0.39 kg) excluding cables
- Input Voltage Range: 11 - 16 VDC or 12 - 32 VDC (depending on model)
- Output Voltages Available: 10 - 24 VDC (others available - contact Lind)
- Input Fuse: 15A ATO Mini in adapter



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# PREVENT GROUND LOOPS WITH LIND ISOLATED ADAPTERS

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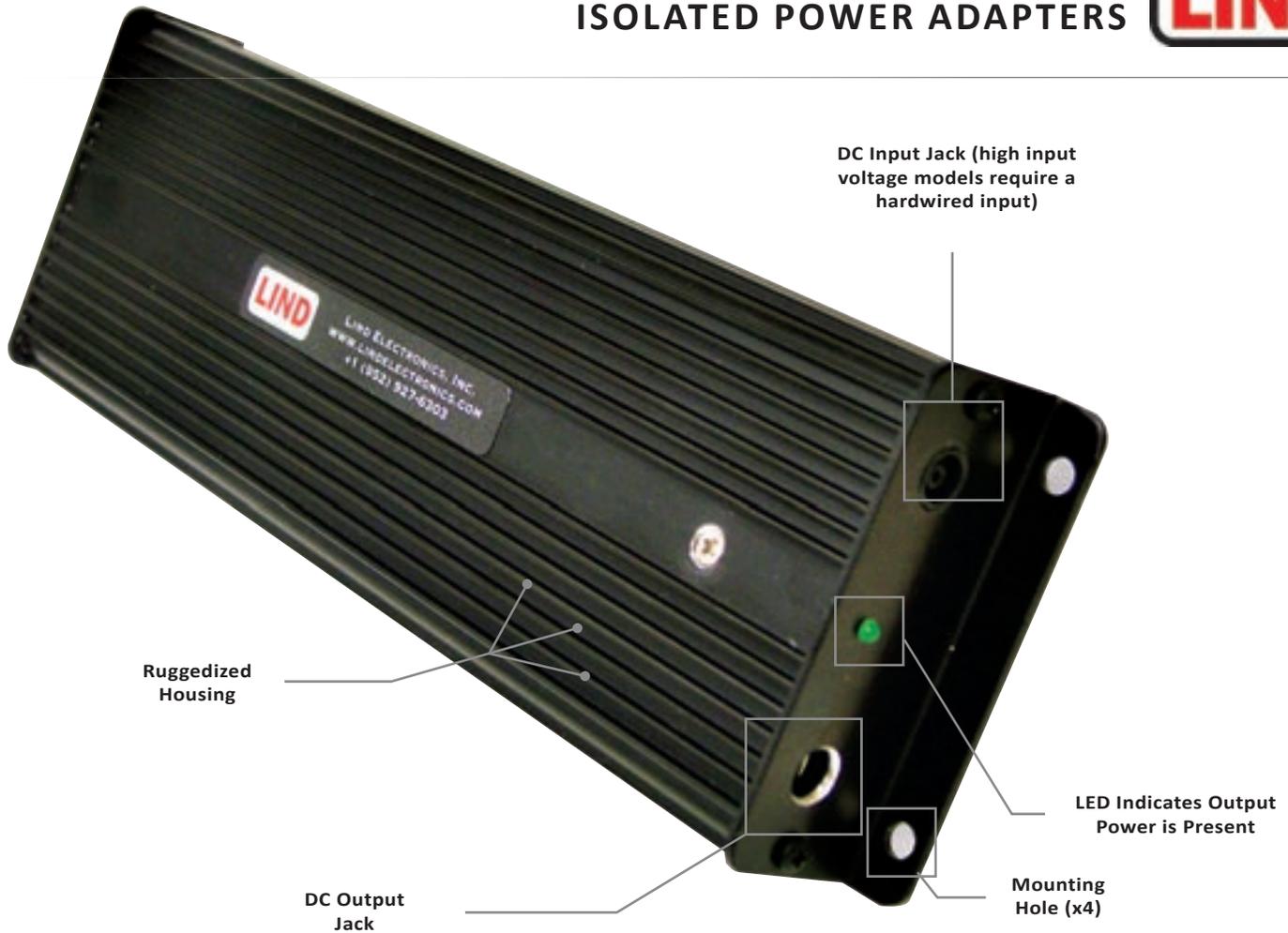
Lind Isolated Power Adapters provide a regulated, isolated DC output to power laptops, thin clients, monitors and other devices from a DC voltage source. Output and input DC returns are electrically isolated preventing possible electrical noise caused by ground loops.

The Isolated Power Adapter's electronics are enclosed in an epoxy-sealed case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments. Snap-in connections make replacing missing or damaged cables easy and hassle-free.

Lind's Isolated Power Adapters are built to work with most existing laptop models. Our adapters can also be designed for custom applications, contact us to discuss solutions for your mobile power needs.



Scan to learn more about Lind's Isolated Power Adapters online now



Bare Wire / Flying Leads  
DC Input Cable



DC Output Cable



## FEATURES

- Rugged Aluminum Housing
- Flanged Endplates for Easy Mounting
- Wide Range of Input Voltages Available
- Output Power up to 100W
- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Over Temperature Protection

## TECHNICAL INFORMATION

- Input Voltage Ranges: 11 - 32, 20 - 60, or 72 - 110 VDC
- Output Voltages Available: 10 - 24 VDC (others available - contact Lind)
- Output Power: Models up to 100 Watts.
- 500 VDC Input/Output Isolation (2500 VDC on 72 - 110V models)
- 500 VDC Input - Chassis Isolation (2500 VDC on 72 - 110V models)
- 100 VDC Output - Chassis Isolation



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## POWER MILITARY MOBILE DEVICES

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The Lind DC/DC Power Modules provide a regulated DC output voltage to power laptops and other mobile devices. Voltage spikes or surges occurring on the input voltage line are filtered by the adapter to eliminate the possibility of damage to the load caused by supply voltage variations.

The DC/DC Power Module's electronics are enclosed in an aluminum case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments.



## FEATURES

- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- Automatic Restart 10 seconds after Fault Removal
- Terminal Block Input and Output Connections
- Output Power up to 120W

## TECHNICAL INFORMATION

- Input Voltage Range: 11 - 16 VDC, 12 - 32 VDC, 9 - 42 VDC or 72 - 110 VDC (depending on model)
- Output Voltages Available: 10 - 24 VDC (others available - contact Lind)
- Temperature Range: -20°C — +40°C operating; -40°C — +85°C storage
- Input Fuse: External input fuse required



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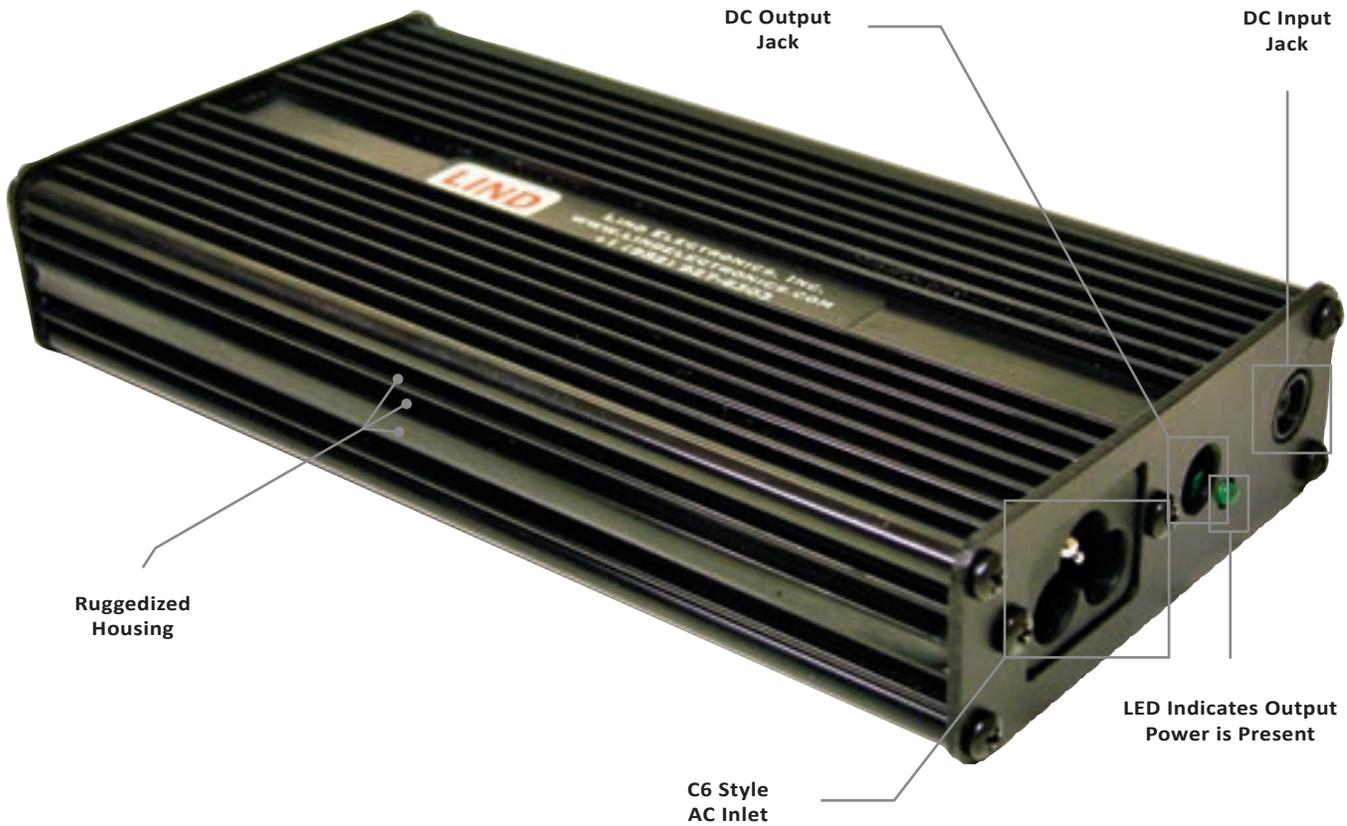
## POWER MOBILE DEVICES FROM YOUR MILITARY VEHICLE

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Lind's Rugged Combo Adapter is designed to power laptops from either an AC or DC power source.

This adapter features a power-on LED and universal switching for 110 - 240 VAC input voltage. The unit comes with a 36-inch output cable to charge laptops; a 36-inch cigarette lighter input cable to power direct from an automobile; and a 72-inch AC input cord to power direct from a standard AC power source. Other cable input options are available by contacting Lind.

The Rugged Combo Adapter's electronics are enclosed in an aluminum case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments.



Cigarette Lighter/  
Auxiliary Port  
DC Input Cable



AC Input  
Cable



DC Output  
Cable



## FEATURES

- Designed to Power Rugged Laptops in Different Industries and Applications
- Rugged Aluminum Adapter Housing: Aluminum extrusion housing for added durability
- Epoxy Potted: sealed to protect against shock, vibration and humidity
- CE, TUV, RoHS, WEEE

## TECHNICAL INFORMATION

- Dimensions (approx.): 5.6 x 3.0 x 0.97 inches (142 x 76 x 24 mm)
- Weight (approx.): 0.7 pounds (0.32kg) without cables
- Input Voltage Range: 110 - 240 VAC; 11 - 16 VDC
- Output Voltage: 16 or 20V models available
- Total Load Current: 5.6 ADC max (16V); 4.5 ADC max (20V)

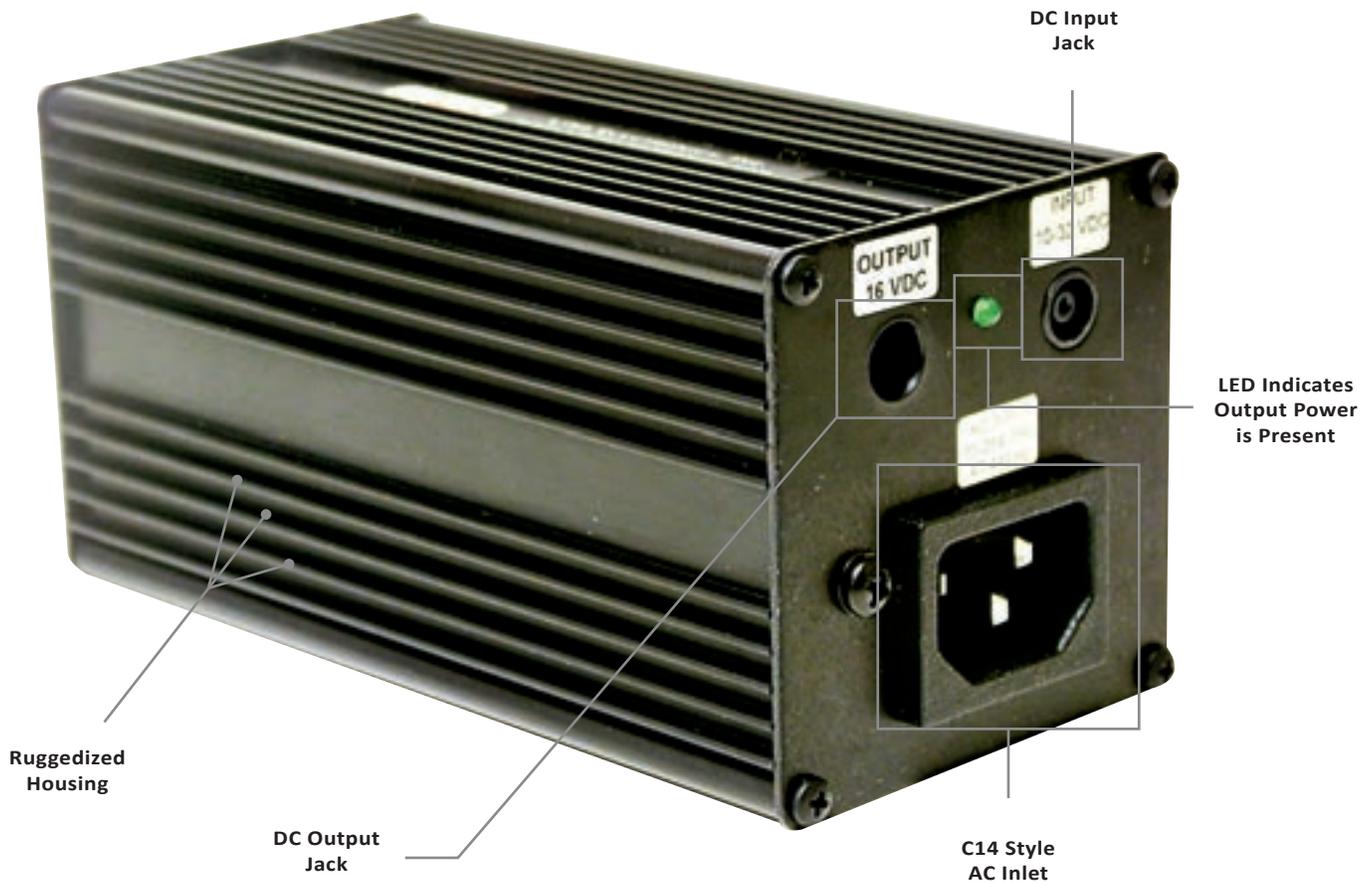


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## POWER YOUR RUGGED MILITARY LAPTOP USING AC OR DC POWER

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Lind's Rugged Combo Power Adapters can power and charge your laptop from an AC or DC voltage source. The adapter's electronics are enclosed in an aluminum case to protect the internal circuits from damage caused by shock and vibration.



AC Input Cable



DC Input Cable Options  
(Bare Wire Input - Top;  
Military Battery - Bottom)



DC Output Cable



## FEATURES

- Withstands Extreme Shock and Vibration
- Operation Over Wide Temperature Range
- Epoxy Sealed to Resist Moisture and Humidity
- Output Overvoltage and Overcurrent Protection
- Replaceable Input and Output Cables on most Models
- The Combo Adapter can Accept Power from AC or DC Voltage Sources
- Optional 400 Hz AC Adapters Available
- Output Power up to 120 watts

## TECHNICAL INFORMATION

- Dimensions (approx.): 5.7 x 2.5 x 2.5 inches (145 x 64 x 64) excluding cables
- Input Voltage Range: 110 - 240 VAC, 11 - 32 VDC

## PROTECTION FEATURES

- Output Short Circuit Protected
- Output Current Limit
- Internal Overtemperature Shut Down (DC input only)
- Low Input Voltage Cut Off (DC input only)
- Automatic Reset of Safety Cut Offs



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# POWER UP TO 2 USB MILITARY DEVICES SIMULTANEOUSLY

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The Lind Dual USB Power Adapters allow you to charge two devices simultaneously via USB. This adapter uses one of three different input cable options: a NATO Slave connector; an input cable with a BA-5590 or BB-2590 military battery connector; or a cigarette lighter connector.

The Dual USB Power Adapter provides regulated DC output for charging mobile phones, MP3 players, digital cameras, and other mobile devices using a USB cable (not included).

Our adapter's electronics are enclosed in an aluminum case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments.



Scan to learn more about Lind's Dual USB Power Adapters online now



NATO Slave DC Input Cable



Military Battery DC Input Cable



Cigarette Lighter/ Auxiliary Port DC Input Cable



**FEATURES**

- Simultaneously Power up to 2 USB Devices
- Three (3) Input Cable Options (others available - contact Lind)
- Output Current Limit Protection
- Regulated DC Output for Charging USB devices
- Rugged Aluminum Extrusion
- Epoxy Sealed Components

**TECHNICAL INFORMATION**

- Power Input: 12 - 32 VDC
- Power Output: 5V, 3A total
- Dimensions (approx.): 2.80 x 2.28 x .98 inches (71 x 58 x 25 mm) excluding cables
- Weight (approx.): 0.6 pounds (0.27 kg) excluding cables



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## MIL-STD POWER ADAPTERS

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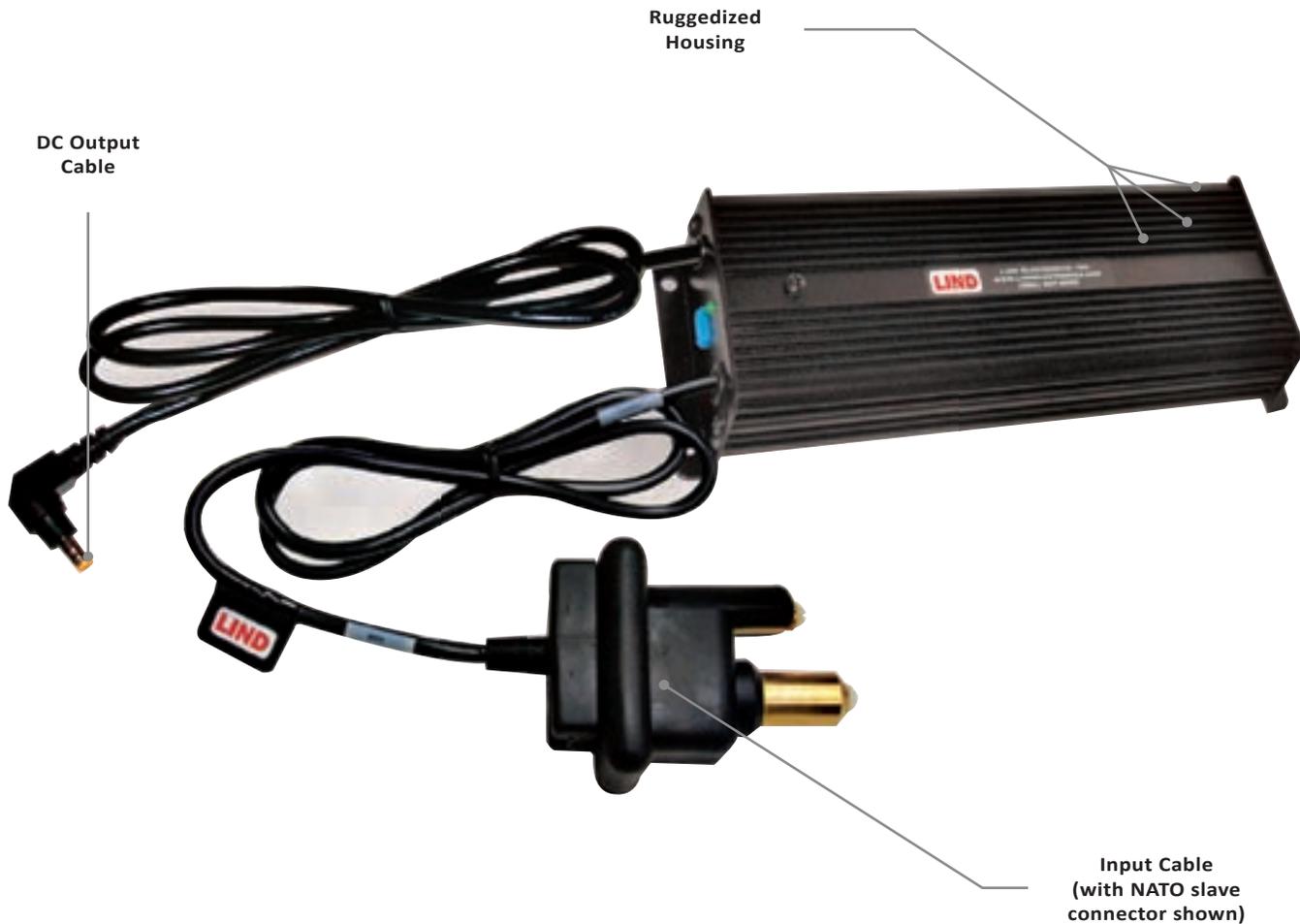
Lind's MIL-STD Power Adapters offer a rugged design for meeting electrical and environmental standards MIL-STD461E, MIL-STD1275B and MIL-STD810F.

The adapter's electronics are shielded by an aluminum case to protect the internal circuits from damage caused by shock and vibration. Its durable construction withstands extensive wear and tear in harsh mobile environments.

Input power is provided via a NATO Slave connector, BA-5590 battery, cigarette lighter input cable or other specific connection. Standard or custom cable lengths may be made to order upon request by contact Lind.



Scan to learn more about Lind's MIL-STD Power Adapters online now



#### DC INPUT SPECIFICATIONS

- Input: 11 - 32 VDC
- EMI/RFI Characteristics: Meets MIL-STD461E (or F), CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103
- Input Transient Protection: Meets MIL-STD1275D, Voltage Surge +100 VDC, Voltage Spike  $\pm 250$  VDC
- RTCA/DO-160D (Sec.21 Conducted/Radiated)
- Load Dump Protection: Meets ISO 7637
- Reverse Polarity: Auto Recovery
- Output Power up to 100W (120W for certain models)

#### DC OUTPUT SPECIFICATIONS

- Output Voltages Available: 12 - 24 VDC (others available - contact Lind)
- Short Circuit Protection: Auto Recovery
- Isolation Voltage: Input to output non-isolated, 100 VDC output to case

#### TECHNICAL INFORMATION

- Dimensions (approx.): 9.3 x 3.0 x 1.2 inches (236 x 76 x 30 mm) excluding cables
- Weight (approx): 1.6 pounds (0.72 kg) excluding cables



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# REPLACE FAULTY AC ADAPTERS WITH A RELIABLE LIND AC ADAPTER

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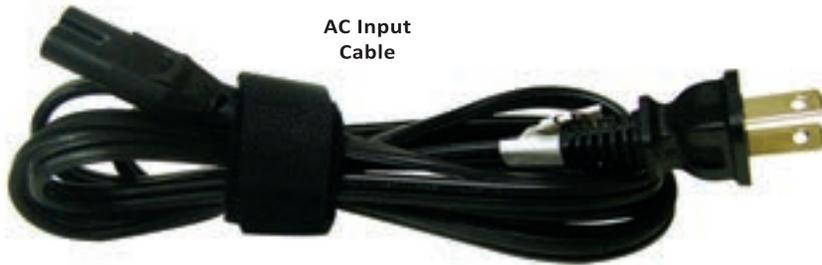
The Lind Replacement AC Adapter is designed to replace missing or damaged AC power supplies provided originally with your laptop.

Each unit features universal switching for 100 - 240 VAC input voltage. The device comes with a 48 inch long attached output cable and a 60 inch long AC input cord.

Lind Replacement AC Adapters are built to work with most existing laptop models including 90, 120 and 150 watt output versions.



Scan to learn more about Lind's Replacement AC Adapters online now

AC Input  
Cable**FEATURES**

- Universal AC Input Range
- 16V or 20V Output (other voltages available by contacting Lind)
- Various DC Output Connectors Available
- 90, 120 and 150 Watt Models Available
- UL Listed and CE Marked
- Various AC Cords Available
- RoHS Compliant
- 400Hz Solutions



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# A VERSATILE ADAPTER SOLUTION FOR CHARGING BB-2590 BATTERIES DURING MOBILE MISSIONS

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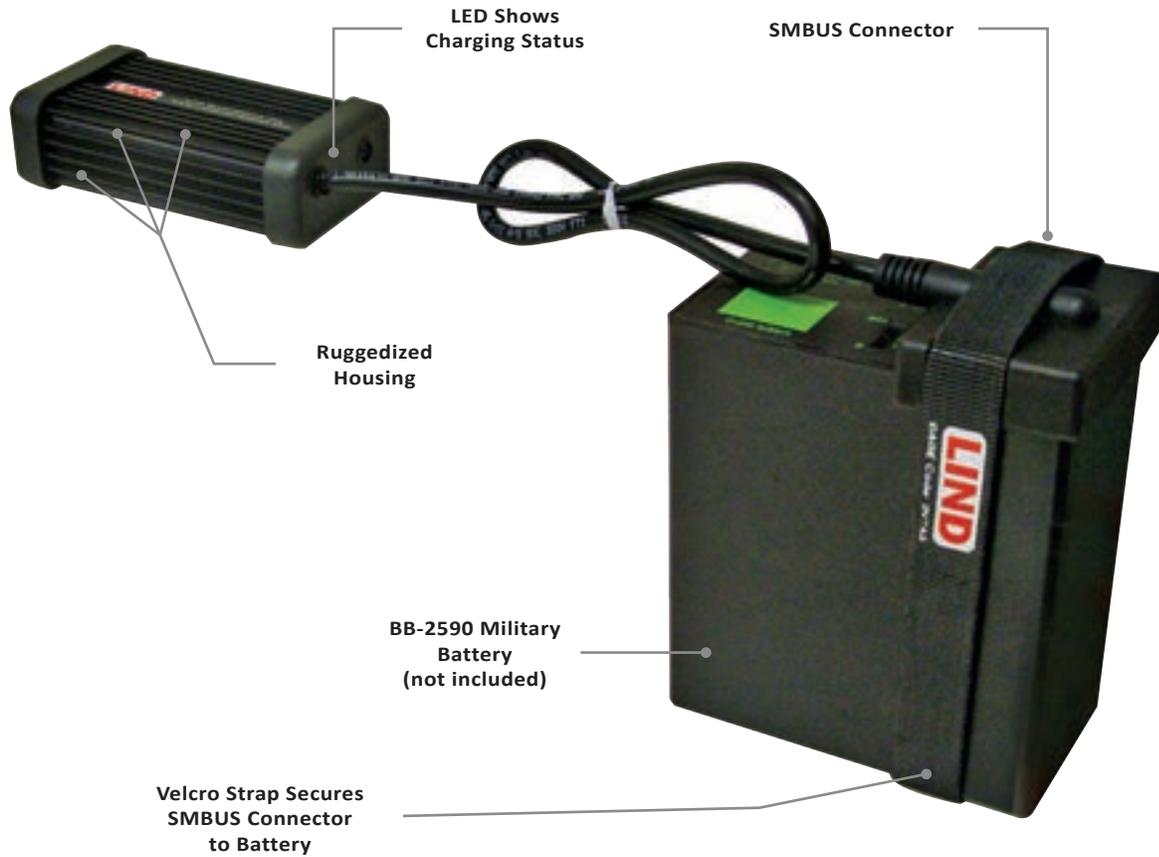
The Lind BB-2590 Battery Charger is designed to charge BB-2590 military batteries with or without SMBUS. The charger automatically regulates voltage and current accurately to charge the BB-2590 battery.

Our BB-2590 battery charger is housed in a rugged aluminum case for durability and will run off any DC sources supplying 11 - 32 VDC, such as a 12 or 24 VDC vehicle system or solar panel. The battery charger incorporates maximum power point (MPP) tracking to maximize solar panel output.

The Lind BB-2590 Battery Charger charges both battery sections in parallel at a 3A maximum rate. The green LED indicator flashes while charging, and becomes solid when the charge is complete. The device will charge both BB-2590 batteries and BB-2590 batteries with SMBUS.



Scan to learn more about Lind's BB-2590 Battery Chargers online now



DC Input Cable Options  
(Bare Wire Input - Top;  
Cigarette Plug - Bottom)



Nato Slave DC  
Input Cable



Solar Charge System



## FEATURES

- Low Input Voltage Disconnect
- High Input Voltage Disconnect
- Output Short Circuit Protection
- Output Overcurrent Protection
- Internal Over Temperature Protection
- LED on Adapter Indicates Charging Status
- LED on Cig Plug Indicates Input Power is Present (most models)

## TECHNICAL INFORMATION

- Input Voltage Range: 12 - 32 VDC (depending on model)
- MPP (Max Power Point) Tracking when Used with a Solar Panel



## DC BACKUP UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM

### RELIABLE MOBILE POWER BACKUP WHEN YOU NEED IT MOST FOR YOUR MISSIONS

The Lind DC Backup UPS System is a reliable DC power source that will operate electronic equipment for a short time when emergency power is needed. When 12 or 24 VDC input power is unavailable, the internal battery in this backup UPS system can provide DC output power for up to one hour depending on the power requirements of the load.

The back UPS system automatically provides power when the main power source is interrupted. The unit's ruggedized construction makes it well suited for most mobile military environments.

The Lind DC Backup UPS System's compact design occupies minimal space for easy transport in a flight bag or military vehicle.



Scan to learn more about Lind's DC Backup Uninterruptible Power Supply (UPS) System online now

# DC BACKUP UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM



## FEATURES

- Up to One Hour of Backup Time Depending on Load
- Automatically Reverts to Backup During Input Power Loss
- Charges Battery and Powers Output at the Same Time
- Battery Charges Even with Output Turned Off
- Regulated Output with On/Off Switch
- Can be Used with 12 VDC or 24 VDC Input Systems
- Charging and Output Status Indicators

## TECHNICAL INFORMATION

- Input Voltage: 12 - 32 VDC
- Maximum Input Current: 10 amps
- Output Voltage: 9 - 24 VDC Factory Set
- Output Power: 60 watts maximum
- Input Protection: 15 amp replaceable fuse
- Operating Temperature: +5°C — +35°C
- Battery Type: Internal NiMH (replaceable)
- Battery Capacity: Approximately 60 watt hours



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# DC TO AC POWER CONVERSION FOR CRITICAL MISSIONS OR APPLICATIONS

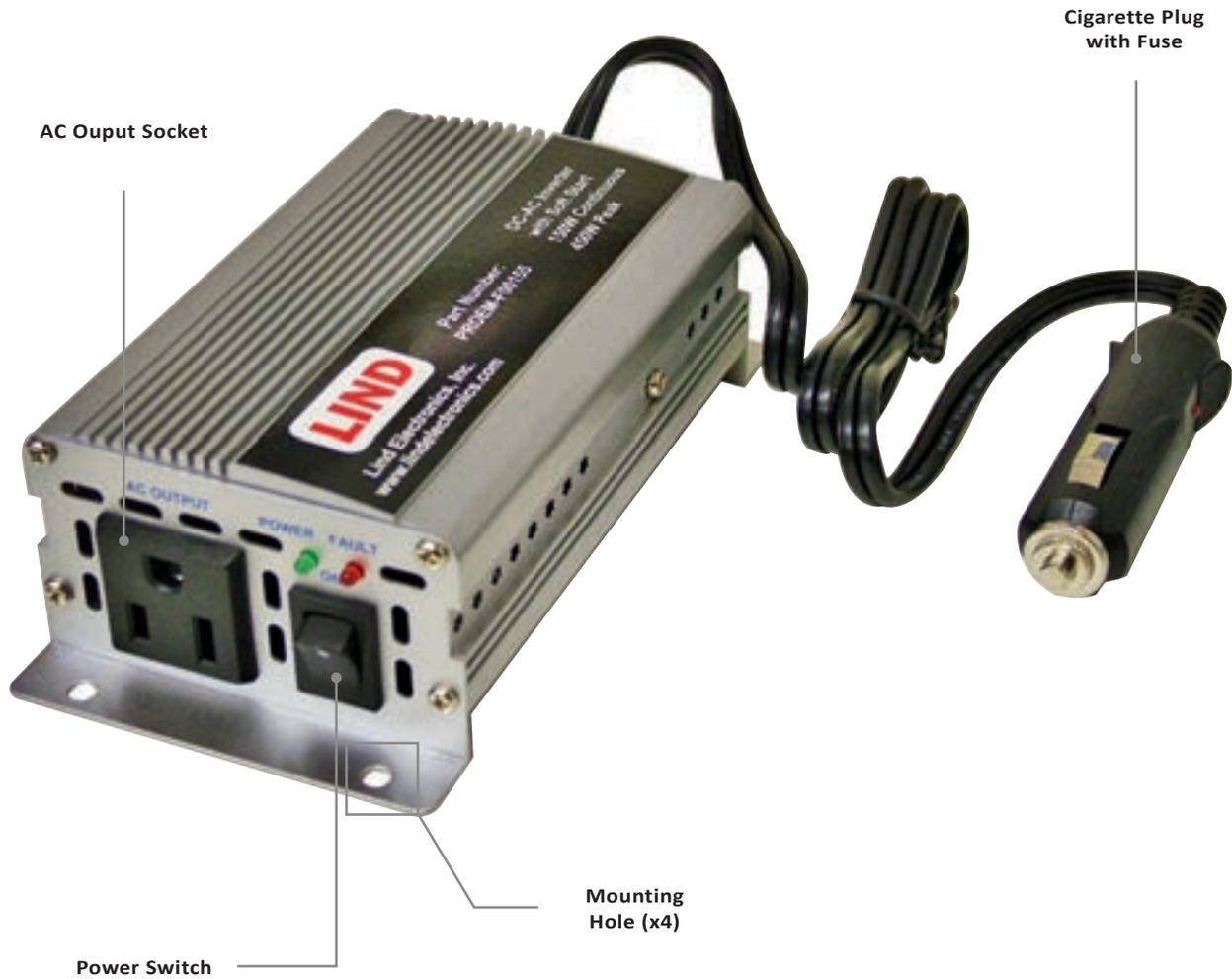
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Modified Sine Wave Inverters convert power supplied from a 12 or 24 VDC power source to AC power for operating AC-powered devices. These inverters are well-suited for powering lights, televisions, power tools, and other basic electrical devices.

The Modified Sine Wave Inverters are available in either 150 watt or 400 watt DC/AC versions (contact Lind for more information).



Scan to learn more about Lind's Modified Sine Wave Inverters online now



**FEATURES**

- Output: 120VAC @ 60 Hz or 220 VAC @ 50 Hz
- Convection-cooled: 150 W; Fan-cooled: 300 W
- Low Battery Alarm: 10.5 VDC (12 VDC Input)
- Low Battery Alarm: 21 VDC (24 VDC Input)
- Low Battery Shut Down: 10 VDC (12 VDC Input)
- Low Battery Shut Down: 20 VDC (24 VDC Input)
- Alarm and Thermal Shut Down: 55°C
- Contact Lind for Custom Configurations



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## DC TO AC POWER CONVERSION FOR CRITICAL MISSIONS OR APPLICATIONS

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Pure Sine Wave Inverters convert power supplied from a 12 or 24VDC power source to AC power used for operating more critical AC-powered devices.

These inverters provide an output voltage wave with very low distortion and clean power (similar to that supplied by a utility). The units are designed to power sensitive electrical or electronic devices such as laptop computers, laser printers and other specialized communications equipment.

The Pure Sine Wave Inverters offer higher efficiency ratings than Modified Sine Wave Inverters. These units are available in either 150 watt or 400 watt DC/AC versions.



Scan to learn more about Lind's Pure Sine Wave Inverters online now



LED Indicates Output Power is Present

Cigarette Plug

AC Output Sockets

USB Port

**FEATURES**

- 90% Efficient at Full Load, 95% Efficient at 1/3 Load
- Output: 120 VAC @ 60 Hz or 220 VAC @ 50 Hz
- Fan Cooled
- Low Battery Alarm: 10.5 VDC (12 VDC Input)
- Low Battery Alarm: 21 VDC (24 VDC Input)
- Contact Lind for Custom Configurations
- Low Battery Shut Down: 10 VDC (12 VDC Input)
- Low Battery Shut Down: 20 VDC (24 VDC Input)
- Regulation:  $\pm 6\%$
- Total Harmonic Distortion (Max.): 4%
- Alarm and Thermal Shut Down: 55°C



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## AN ALTERNATIVE POWER SOLUTION IDEAL FOR CRITICAL MOBILE MISSIONS

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The Lind Solar Charge System is used with the BB-2590 rechargeable battery (not included) to power your mobile devices where primary power sources are limited or unavailable.

The system consists of a combination charger/controller DC output module, foldable solar panel and related cabling for complete connection between the battery, laptop and solar panel.

The charger/controller uses the power obtained from the solar panel to recharge the BB-2590 battery and the power drawn from the battery operates the laptop.

The green LED is on when the DC output is on and the yellow LED flashes while the battery pack is being charged.



Scan to learn more about Lind's Solar Charge Systems online now

Foldable Solar Panel



Adapter with SMBUS Connector for hookup to Military Battery



DC Output Cables



**FEATURES**

- Lightweight Portable Solar Power Solution for Powering Laptops or other Mobile Devices
- Recharges Military BB-2590 Li-Ion Battery while Powering the Laptop
- Can be Powered from Solar Panel (60W typ.): 12V or 24V vehicle electrical systems
- Over-Temperature Shut Down with Auto Reset
- Over Current Shut Down with Auto Reset after 10 Seconds if Input is Present
- MPP (Max Power Point) Tracking: gets the most power available from the solar panel under all conditions

**TECHNICAL INFORMATION**

- Input Voltage from 60W Solar Panel: 15.6 VDC @ 3.6 amps typical with full illumination
- Input Voltage from Vehicle: 12 - 32 VDC
- Output Voltage: 10 - 28V factory set, as required by load
- Output Current: as required by load
- Output Power: up to 120W for the mobile device
- Charge Time: 5 hours from complete discharge, at no load with full power from 60W solar panel



## RELIABLE CHARGING CABLES FOR BB-2590 BATTERY APPLICATIONS

Lind 2590 SMBUS Battery Cables are designed to interface with BB-2590 batteries\*, with or without the SMBUS. These Lind cables are also compatible with other -xx90 military batteries.

Many optional configurations are possible, including:

- Preconfigure for 12V or 24V
- On-board charge enable available
- With or without charge enable
- With or without SMBUS connections
- Various cable lengths and types available
- On-board diode isolation available

\* NOTE: BB-2590 military battery not included

PIN CONFIGURATION	
CONNECTOR	WIRE COLOR
J1-1 SECTION A-	BLACK (16 AWG)
J1-2 SECTION B-	GREEN (16 AWG)
J1-3 SECTION A-	PINK (22 AWG)
J1-4 SECTION A+	RED (16 AWG)
J1-5 SECTION B+	WHITE (16 AWG)
W1 SECTION A CLOCK	ORANGE (22 AWG)
W2 SECTION A DATA	YELLOW (22 AWG)
J1-1 SECTION A SIGNAL RETURN	BROWN (22 AWG)
W4 SECTION B CLOCK	VIOLET (22 AWG)
W5 SECTION B DATA	GRAY (22 AWG)
J1-2 SECTION B SIGNAL RETURN	BLUE (22 AWG)



Scan to learn more about Lind's 2590 SMBUS Battery Cables online now



BB-2590 Military Battery  
(not included)



SMBUS Connector

Velcro Strap Secures SMBUS  
Connector to Battery

### FEATURES

- Compatible with BB-2590 w/SMBUS, BA-5390, BB-2590, BB-390 and BA-5590 Military Batteries
- Velcro Strap: secures the connector to the battery to ensure a solid connection between the connector spring loaded pins and the battery contacts
- Access to BB-390 Thermister Contacts
- Splash Resistant SMBUS Connector Housing
- Low Profile Design
- Lightweight

### TECHNICAL INFORMATION

- Maximum Current: 13 amps
- Cable Length: 36 inches standard
- Cable Jacket: PVC, Black
- Connector Material: Santoprene, Black
- Temperature Rating: -20°C — 70°C
- Weight: 0.5 pound
- RoHS Compliant



## NATO SLAVE CONNECTOR CABLE

The Lind NATO Slave Connector plugs into a military HUMVEE's NATO slave receptacle. The connector is available with either an external auto mini style fuse (shown), or an internal, non-replaceable fusible link.

*NOTE: Other cable configurations and lengths available. Contact your Lind Sales Representative for more information.*



## RIGHT-ANGLE NATO SLAVE CONNECTOR CABLE

The Lind Right Angle NATO Slave Connector allows you to connect 12 - 32 VDC Lind adapters to the NATO receptacles installed on military HUMVEE vehicles. The connector is available with either an external auto mini style fuse, or an internal, non-replaceable fusible link.

*NOTE: Other cable configurations and lengths available.*



## HIGH-AMPERAGE NATO SLAVE CONNECTOR

The Lind-designed High Amperage NATO Slave Connector can conduct up to 50 amps. The High Amperage NATO Slave Connector offers light-weight yet heavy-duty construction and provides easy screwdriver lug wire terminals for cable connections. Can accept up to 2 AWG copper strand wire. Easy to tighten compression fit wire strain relief connectors.

*NOTE: Other cable configurations and lengths available.*



### MILITARY BATTERY TO MP205 CONNECTOR CABLE

Use the BA-5590 to MP205 Cable to power a Lind DC/DC Adapter from a BA-5590 or BB-2590 military battery.

*NOTE: Other cable configurations and lengths available. Contact your Lind Sales Representative for more information. BA-5590 military battery pictured not included with cable purchase.*



### MILITARY BATTERY TO AUXILIARY PORT CONNECTOR CABLE

The BA-5590 to Auxiliary Port Connector allows you to connect a BA-5590 or BB-2590 military battery to a female cigarette lighter/auxiliary port socket.

*NOTE: Other cable configurations and lengths available. Contact your Lind Sales Representative for more information.*



### MILITARY TRIPLE INPUT CONNECTOR CABLE

The Lind BA-5590 Triple Input Connector allows you to hook up three BA-5590 or three BB-2590 batteries simultaneously to use as a single output. This results in more wattage provided for operating mobile devices that require more power.

*NOTE: Other cable configurations and lengths available.*





### **AUTOMATIC RESTART OF ADAPTER**

After approximately 10 seconds the adapter will restart if the fault is no longer present (no manual intervention required).

### **EMI**

Standard Lind adapters are designed to meet the radiated limits of EN55022 and susceptibility limits of EN55024, meeting E-mark and the EMC Directive.

### **FLEXIBILITY**

Many adapter thresholds and features can be adjusted per individual customer requirements.

### **HIGH INPUT VOLTAGE CUT OFF**

If the input rises above a preset threshold the adapter will turn itself off to protect itself and the powered device from damage. The adapter will automatically restart when the input voltage returns to its normal operating range.

### **INPUT POWER LIMIT**

The input power is limited to reduce stress on the input fuse and wiring. Soft-start circuitry also reduces the stress to the system at adapter start-up.

### **ISOLATION**

Some models have input to output isolation of 500 VDC for those customers requiring this feature.

### **LED INDICATOR**

Most adapters have an LED (light emitting diode) indicator that is lit when output voltage is present. Certain models also have the LED flash to indicate the fault condition when the adapter is in shut down mode.

### **LOW INPUT VOLTAGE CUT OFF (LIVCO)**

The adapter will shut off if the input voltage goes too low. This helps prevent the vehicle battery from being discharged to a point where it will no longer start the vehicle. The adapter will automatically turn on again when the battery voltage rises back above a preset threshold (i.e. after the vehicle has been started and the engine is running). The low voltage shut down feature has a delay to allow the adapter to handle momentary dips that typically occur during vehicle startup. A faster shut down occurs if a large dip in the battery voltage takes place.



### **OUTPUT OVERLOAD PROTECTION**

Lind adapters have current limiting circuitry that limits the amount of power fed into a faulty load (such as a faulty laptop or shorted output cable). The adapter has a short delay that allows it to operate during inrush, or a momentary fault. If the overload persists the unit will turn the output off, wait 10 seconds and attempt to restart. If the fault is still present the adapter will repeat the 10 second off period before trying to restart.

### **OVER-TEMPERATURE SHUT DOWN**

If the adapter gets too hot it will shut down to prevent damage to itself. The adapter will stay off until it has cooled to a safe temperature and then automatically restart.

### **REVERSE INPUT PROTECTION**

Most Lind adapters have a cigarette plug designed to prevent mis-wiring. In certain hard-wired applications, if the adapter input wiring is reversed the unit will blow its input fuse to protect the adapter and the powered device.

### **RUGGED**

The electronics in most Lind adapters are epoxy sealed in a thermally conductive potting material. The epoxy seal helps evenly distribute heat generated by the adapter and makes the unit resistant to shock, vibration and moisture.

### **SHUT DOWN TIMING DELAY**

Lind's Shut Down Timers and Timer Series (T) Laptop Power Adapters detect a vehicle's battery voltage and, based on preset thresholds, determine when the vehicle is running in order to turn on. The Shut Down Timer and Timer Series Adapters determine when the vehicle engine is turned off. These units will then wait for a preset period of time before turning off all connected devices. This feature is designed to prevent vehicle battery drain.

### **WIDE INPUT OPERATING RANGE**

Many Lind adapters can operate from 12 VDC or 24 VDC battery systems. This allows the customer to buy one unit to operate with either system.



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