

# LIND

POWER SPECIALISTS FOR  
MOBILE COMPUTING

AUTO & AUTO/AIR ADAPTERS

AUTO/AIR/AC POWER ADAPTERS

MIL-STD POWER ADAPTERS

REPLACEMENT AC ADAPTERS

SHUTDOWN TIMERS

SOLAR CHARGE SYSTEMS

STOCK & CUSTOM CABLES



# INDUSTRIAL

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

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Power your laptop from your 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, trucks 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 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, trucks 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

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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



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

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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

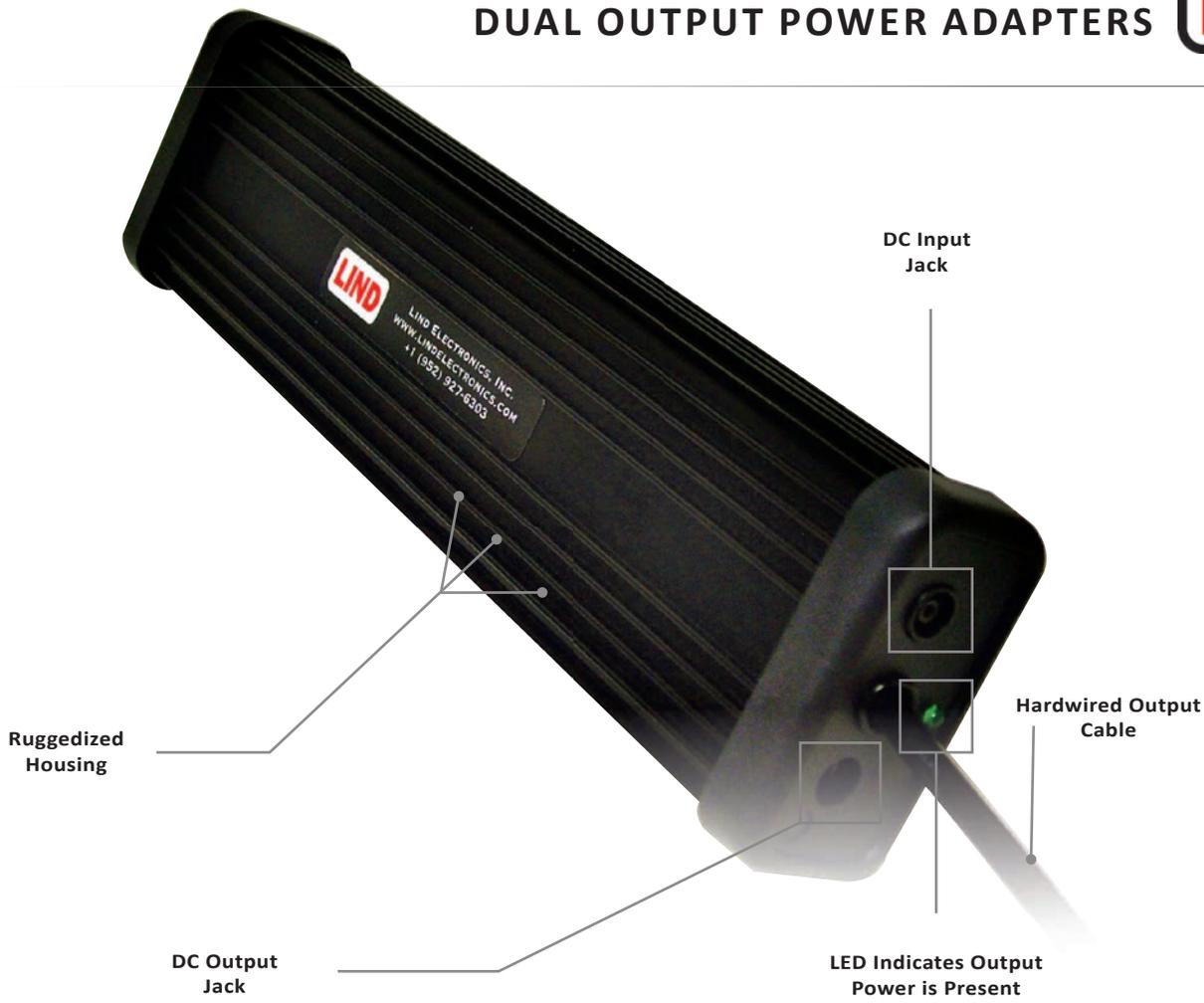
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Lind Dual Output Power Adapters are designed to simultaneously power both a laptop and other mobile devices (i.e. a portable printer) using a single power source. These adapters fit a wide range of laptop models and accessories.

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



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# MOLDED HOUSING MAKES MOUNTING TO YOUR VEHICLE EASY AND EFFICIENT

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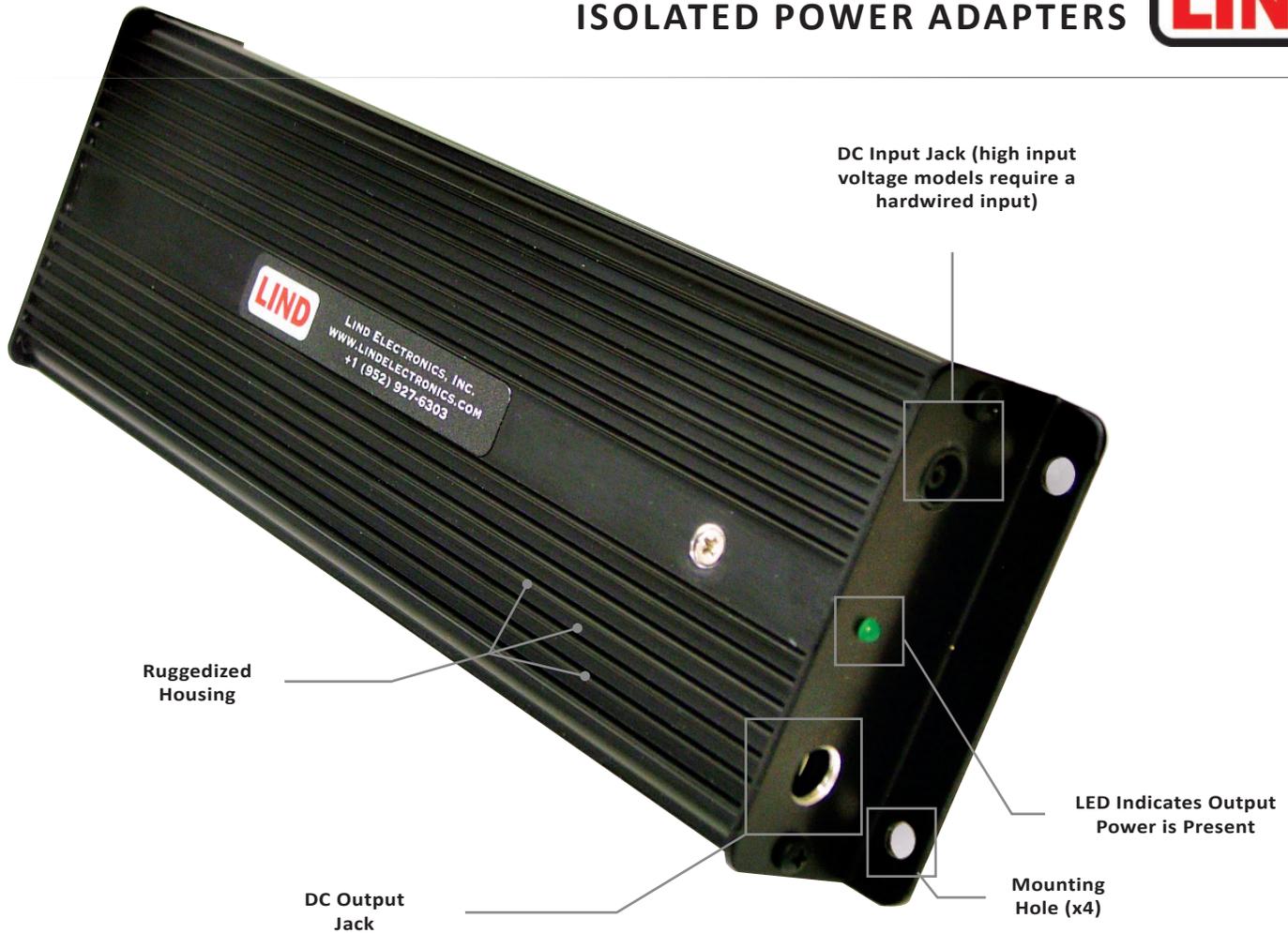
Lind Isolated Power Adapters provide a regulated, isolated DC output to power laptops, thin clients, monitors and other devices from a DC voltage source. Output and input DC returns are electrically isolated preventing possible electrical noise caused by ground loops.

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



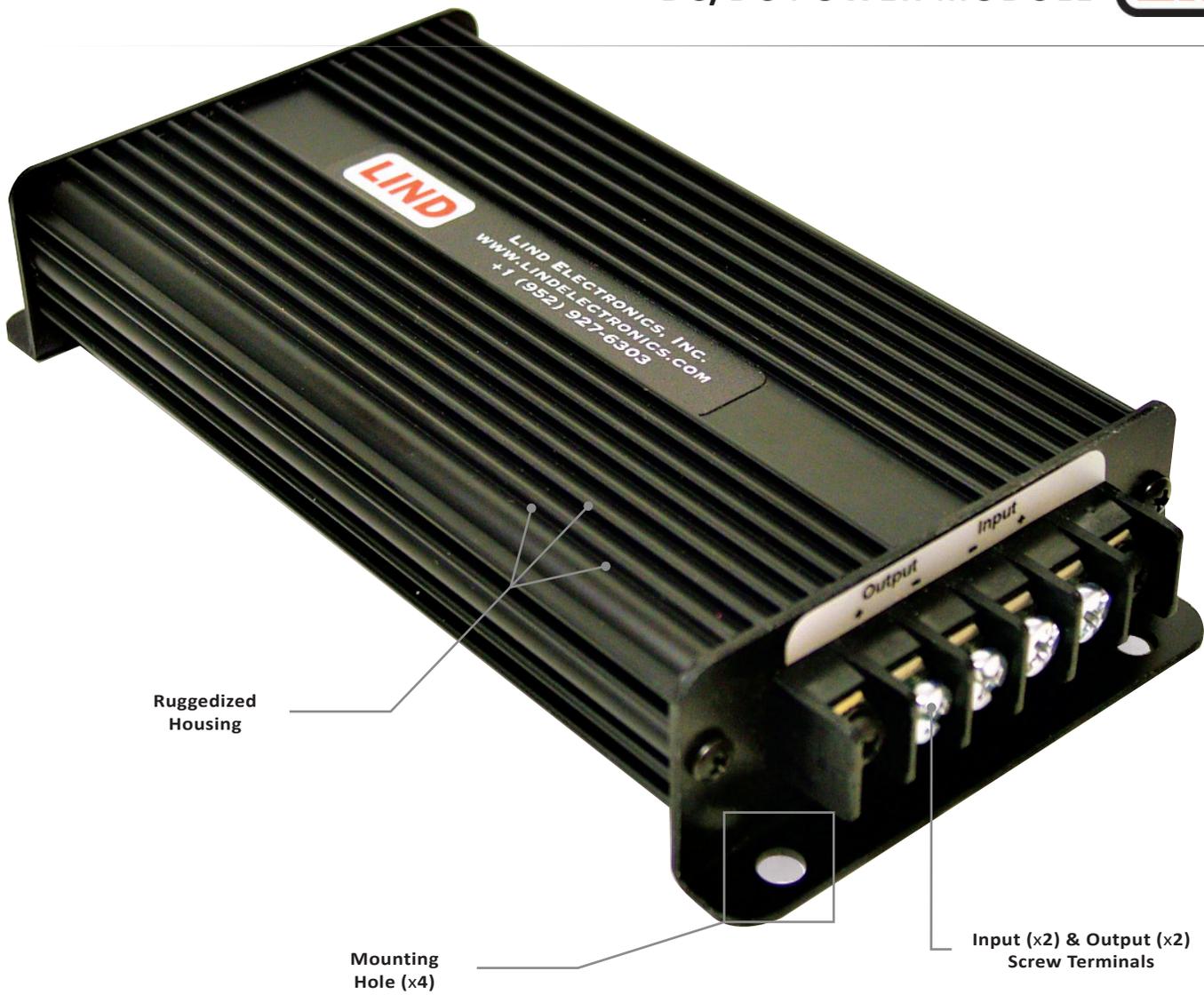
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## POWER MOBILE DEVICES

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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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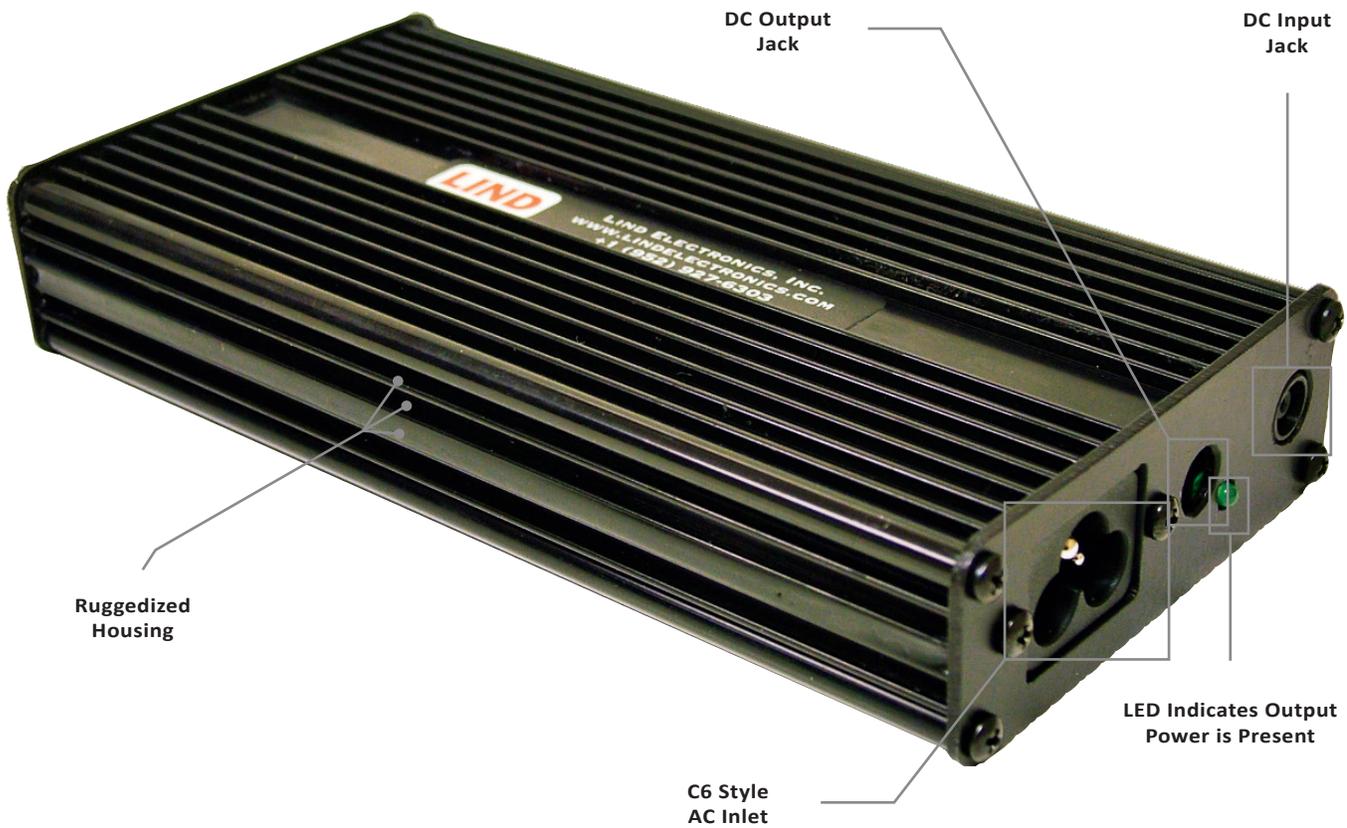
## POWER MOBILE DEVICES FROM YOUR VEHICLE OR OTHER POWER SOURCE

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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 LAPTOP USING AC OR DC POWER

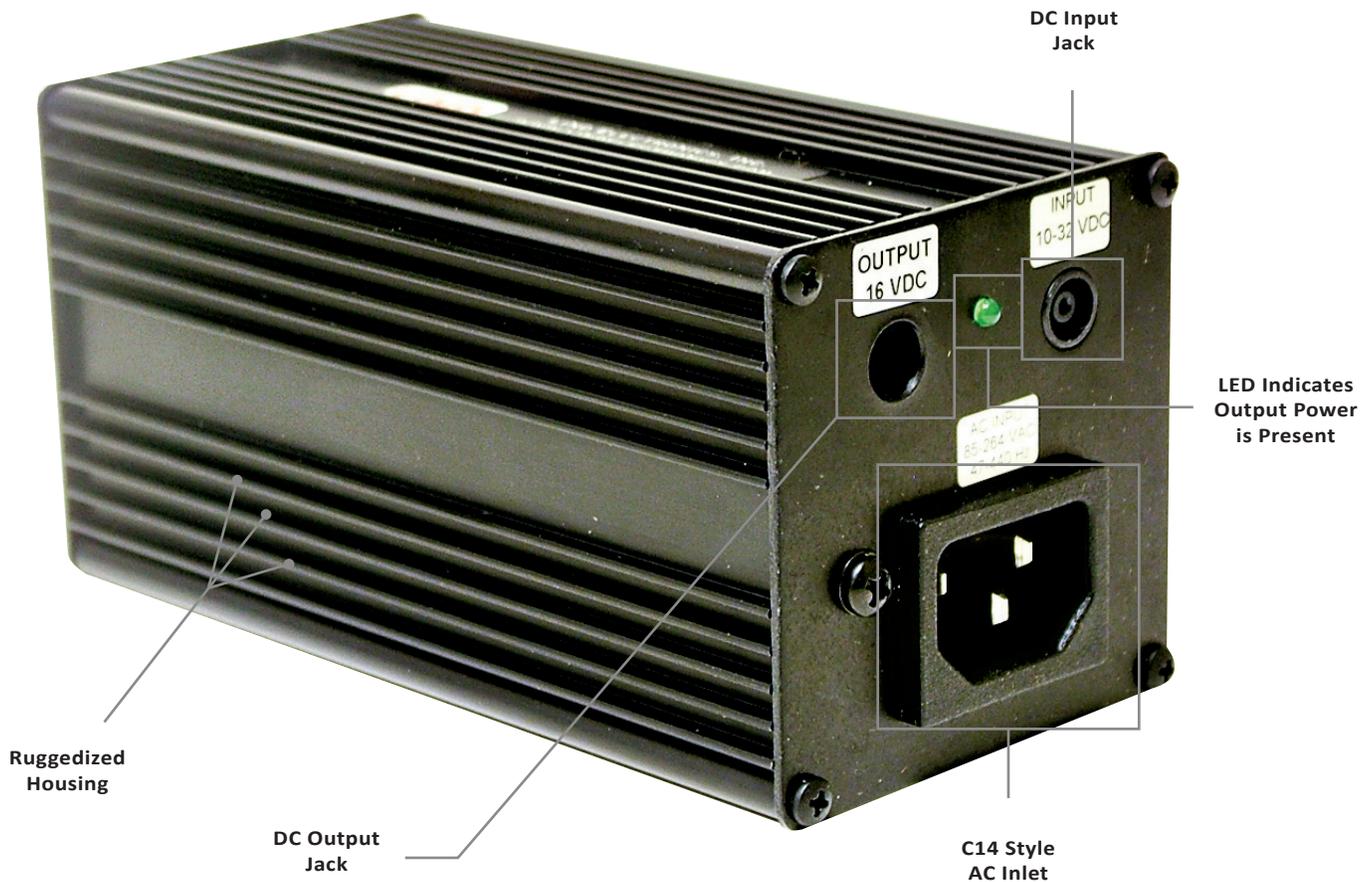
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Lind's Rugged Combo Power Adapters can power and charge your laptop from an AC or DC voltage source. The adapter's electronics are enclosed in an aluminum case to protect the internal circuits from damage caused by shock and vibration.

# RUGGED COMBO POWER ADAPTER



ADAPTERS



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 DEVICES SIMULTANEOUSLY

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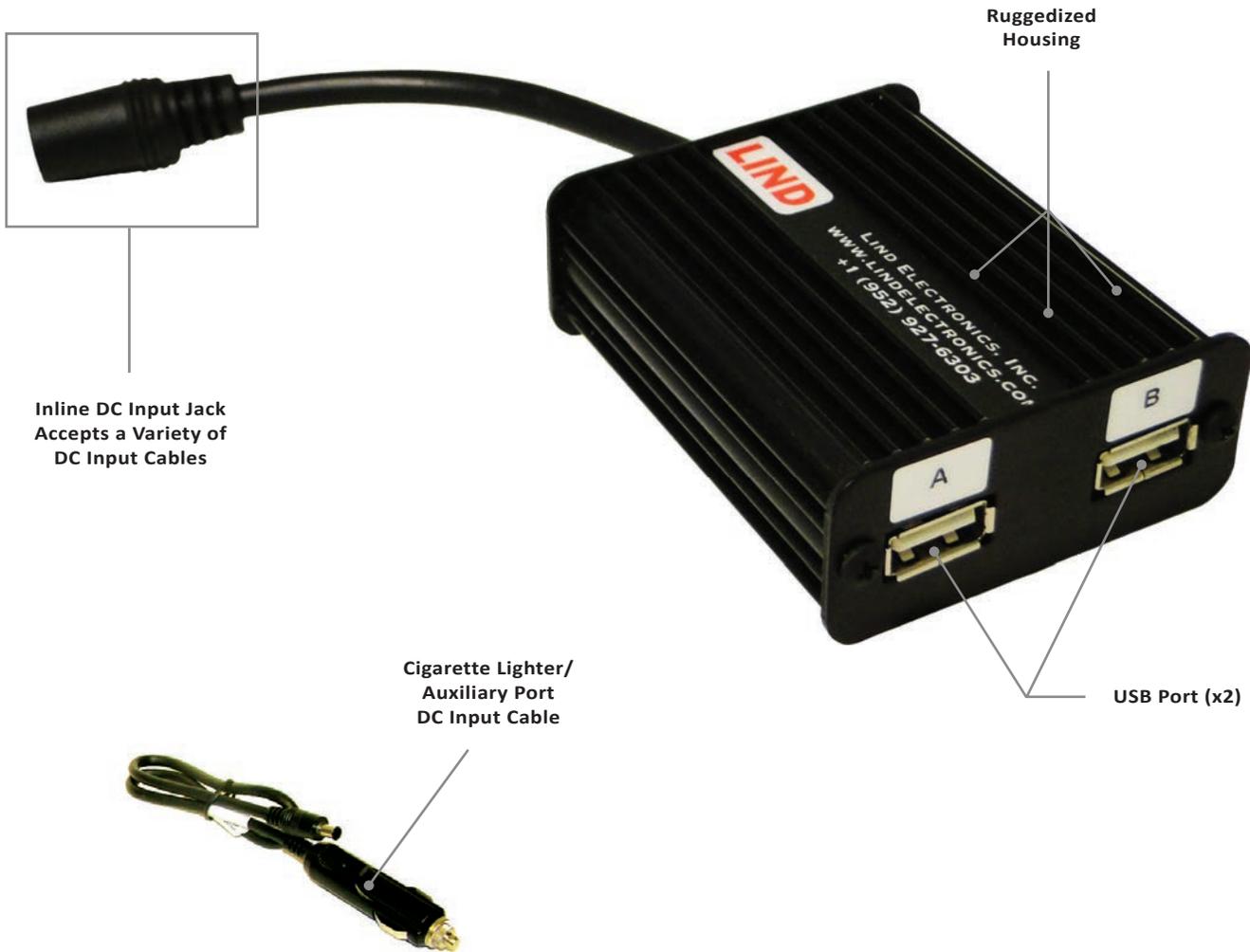
The Lind Dual USB Power Adapters allow you to charge two devices simultaneously via USB.

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



Inline DC Input Jack  
Accepts a Variety of  
DC Input Cables

Cigarette Lighter/  
Auxiliary Port  
DC Input Cable

USB Port (x2)

### 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

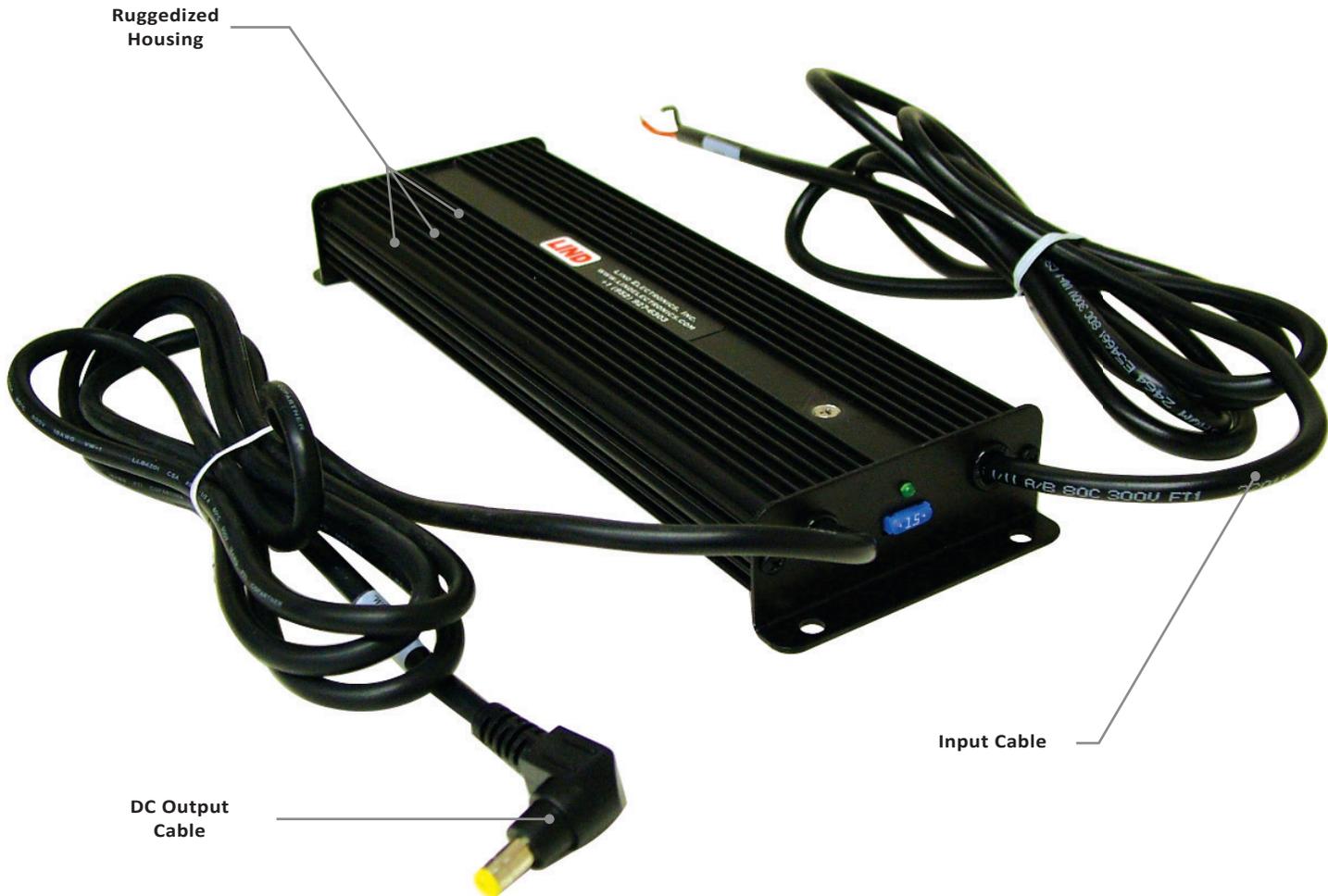
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Lind's MIL-STD Power Adapters offer a rugged design for meeting electrical and environmental standards MIL-STD461E, MIL-STD1275B and MIL-STD810F.

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.



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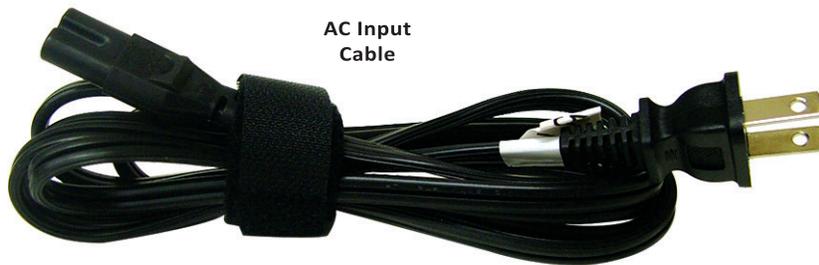
The Lind Replacement AC Adapter is designed to replace missing or damaged AC power supplies provided originally with your laptop.

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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## RELIABLE MOBILE POWER BACKUP WHEN YOU NEED IT MOST

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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.

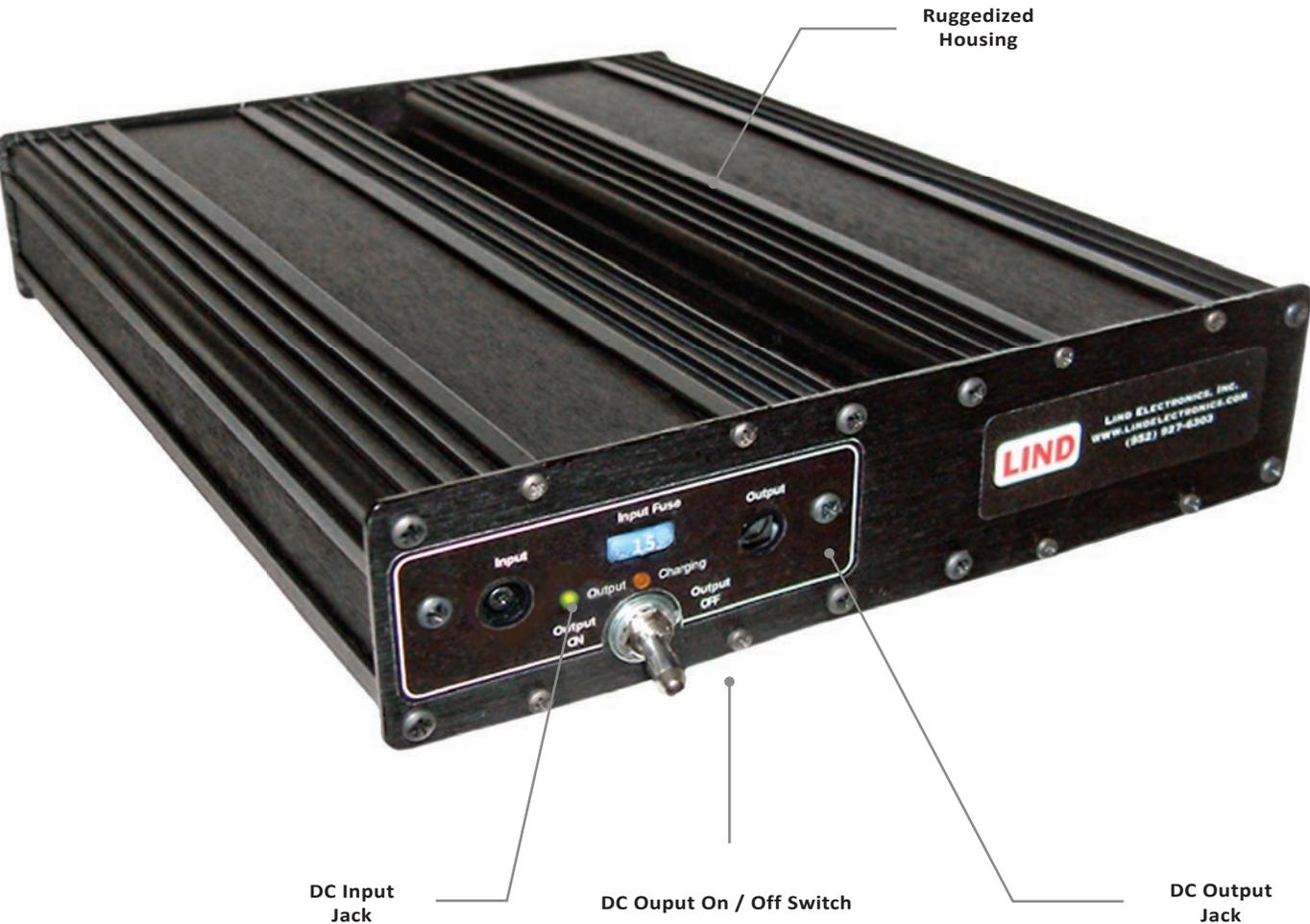
The back UPS system automatically provides power when the main power source is interrupted. The unit's ruggedized construction makes it well suited for most mobile military environments.

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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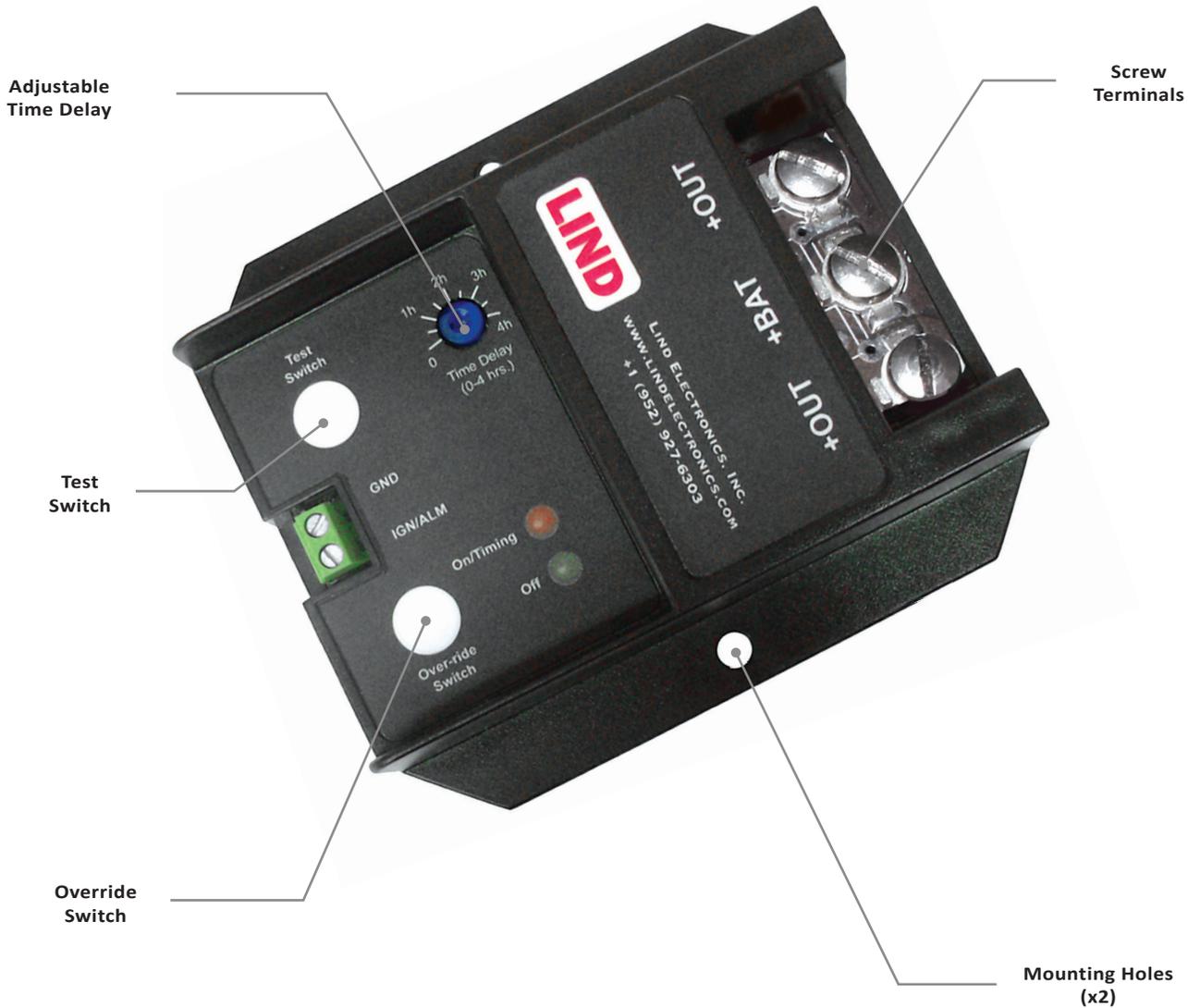
## PROTECTION FOR YOUR VEHICLE'S BATTERY

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The Lind Low Profile Shutdown Timer protects your vehicle's battery from over discharge by shutting off up to 30 amp loads at a preset time after the engine is shut down or when the battery reaches a low voltage level.

An emergency switch allows 12 minutes of operation after the timer shuts down the equipment. The Low Profile Shutdown Timer is normally activated by sensing the electrical system voltage. When the alternator goes off the timed sequence is started.

A unique feature of the Low Profile Shutdown Time is that it allows full testing of the system after installation. Momentary closure of the test switch reduces the delay time by a factor of 100 to allow a quick test of the system timing function.



**FEATURES**

- Adjustable Shutdown Delay (5 seconds — 4 hours, other delays possible, consult factory)
- Low Voltage Shutdown (at 10.5 VDC)
- High Voltage Shutdown (at 18 VDC with auto reset)
- Automatic Activation Sensing the Battery Voltage
- Optional Activation by Ignition Switch Connection
- LED Indicators for ON, OFF and Timing
- Test Switch (set delay divided by 100)
- Over-ride Emergency Switch
- Automotive Load Dump Protection

**TECHNICAL INFORMATION**

- Battery Voltage Sensing Thresholds: Turn-On > 13.5 VDC, Start < 13.0 VDC
- Ignition Thresholds: ON (if Used) > 5 VDC, OFF (if Used) < 2.5 VDC
- High Battery Voltage Disconnect: > 18 VDC
- Low Battery Voltage Disconnect: < 10.5 VDC
- Low Battery Voltage Disconnect Delay: > 10 sec
- Input Voltage Range: 9 - 18 VDC
- Maximum Output Current: 30 amps
- LED Flash Rate (Timing Mode): Normal – 2 seconds, Test Mode – 0.5 seconds



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# PROTECTION FOR YOUR VEHICLE'S BATTERY

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The Lind Ruggedized Shutdown Timer protects your vehicle's battery from over discharge by shutting off loads at a preset time after the engine is shut down or when the battery is discharged. The timer also protects radio or computer equipment from damage caused by low or high input voltage experienced with alternator failure or improper voltage jump-starts.

The Ruggedized Shutdown Timer is normally activated by sensing the voltage of the battery. When the alternator stops charging, the timed sequence is started. An ignition input switch is provided as an optional activation method.

Used as a shutdown timer, the timer can be used for loads up to 20 amps. As a relay driver, the timer will drive relays up to 200 amps. The Ruggedized Shutdown Timer can be factory set to any desired delay from a few seconds to several hours.

\* *NOTE: Ruggedized Shutdown Timers are available for either 12 or 24 VDC inputs.*



## FEATURES

- Low Voltage Shutdown (at 10.5 VDC)
- High Voltage Shutdown (at 18 VDC with auto reset)
- Automatic Activation Sensing the Battery Voltage
- Optional Activation by Ignition Switch Connection
- LED Indicator for Timing
- Loads up to 20 amps (at 12 volts) with External Relay (higher loads possible)

## TECHNICAL INFORMATION

- Input Voltage Range: 9 - 18 (or 18-36) VDC
- Battery Voltage Sensing Thresholds: Turn-On > 13.5 (27) VDC, Start < 13.0 (26) VDC
- Ignition Thresholds: ON (if Used) > 5 (10) VDC, OFF (if Used) < 2.5 (5) VDC
- High Battery Voltage Disconnect: > 18 (36) VDC
- Low Battery Voltage Disconnect: < 10.5 (21) VDC
- Low Battery Voltage Disconnect Delay: > 10 sec
- Maximum Output Current: 20 amps
- LED Flash Rate (Timing Mode): 2 seconds



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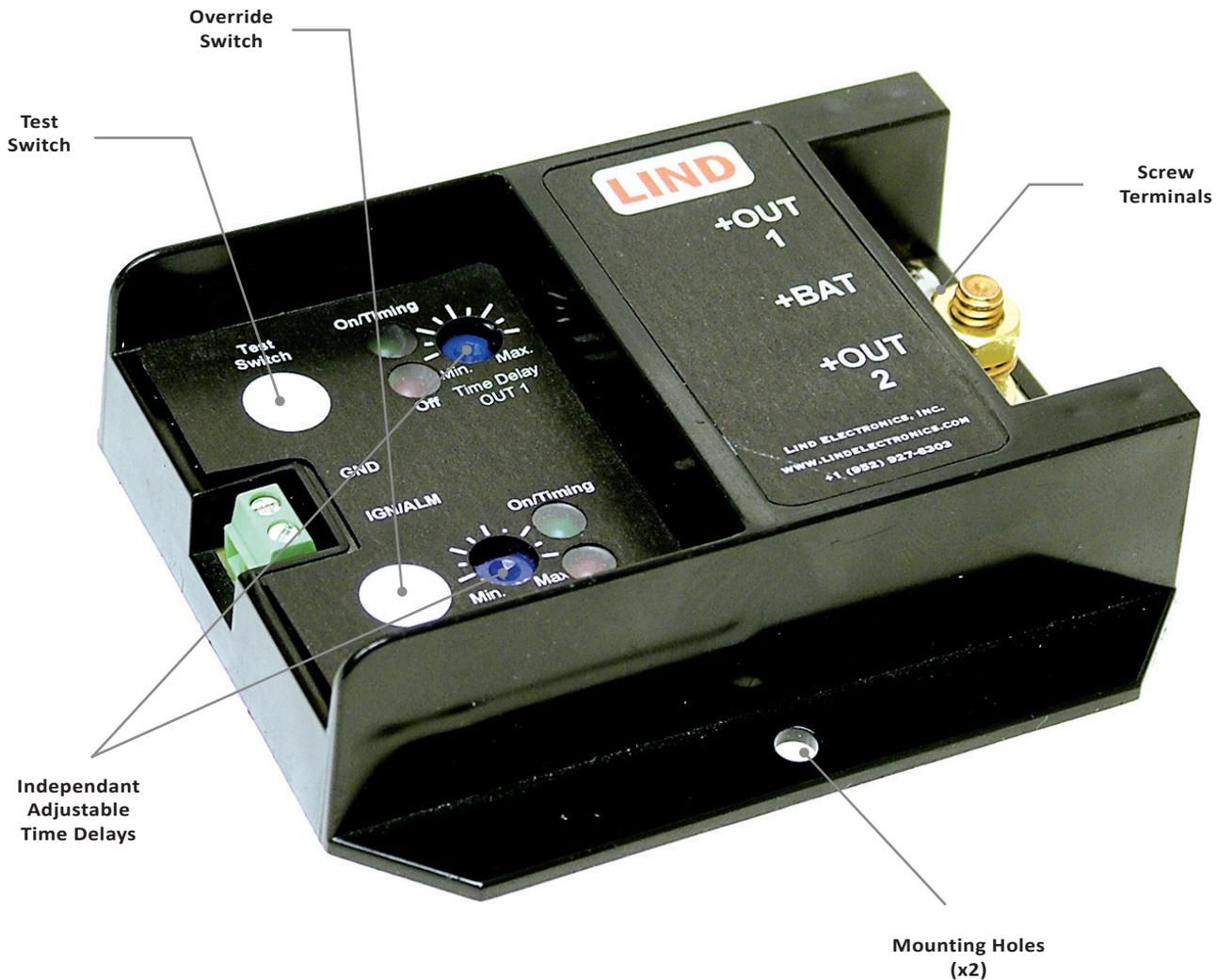
# PROTECT TWO SEPARATE LOADS USING ONE DEVICE

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The T2 Dual Shutdown Timer protects your vehicle's battery from over-discharge by shutting off up to 50 amp loads at a preset time after the engine is shut down or when the battery is discharged to a low voltage level. The T2 Timer also protects radio or computer equipment from damage due to low or high input voltage as experienced with alternator failure or improper voltage jump-starts.

An emergency switch allows 15 minutes of operation after the T2 Timer shuts down the equipment. An ignition switch input is provided as an optional activation method but is not necessary. The T2 Timer is normally activated by sensing the alternator charge voltage level applied to the battery. When the alternator goes OFF the timed sequences are started.

A unique feature of the T2 Shutdown Timer is that it allows full testing of the system after installation. Momentary closure of the test switch reduces the delay time by a factor of 100 to allow a quick test of the system timing function.



## FEATURES

- Adjustable Shutdown Delay (5 seconds — 4 hours, other delays possible, consult factory)
- Low Voltage Shutdown (at 10.5 VDC)
- High Voltage Shutdown (at 18 VDC with auto reset)
- Automatic Activation Sensing the Battery Voltage
- Optional Activation by Ignition Switch Connection
- LED Indicator for On, Off and Timing
- Loads up to 50 amps (30 amps max each output)
- Test Switch (set delay divided by 100)
- Over-ride Emergency Switch
- Automotive Load Dump Protection

## TECHNICAL INFORMATION

- Battery Voltage Sensing Thresholds: Turn-On > 13.5 VDC, Start < 13.0 VDC
- Ignition Thresholds: ON (if Used) > 5 VDC, OFF (if Used) < 2.5 VDC
- High Battery Voltage Disconnect: > 18 VDC
- Low Battery Voltage Disconnect: < 10.5 VDC
- Low Battery Voltage Disconnect Delay: > 30 sec
- Input Voltage Range: 9 - 18 VDC
- Maximum Output Current: 30 amps (each output)
- LED Flash Rate (Timing Mode): Normal – 2 seconds, Test Mode – 0.6 seconds
- Over-ride Mode Time Setting: 15 minutes



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# DC TO AC POWER CONVERSION FOR CRITICAL APPLICATIONS

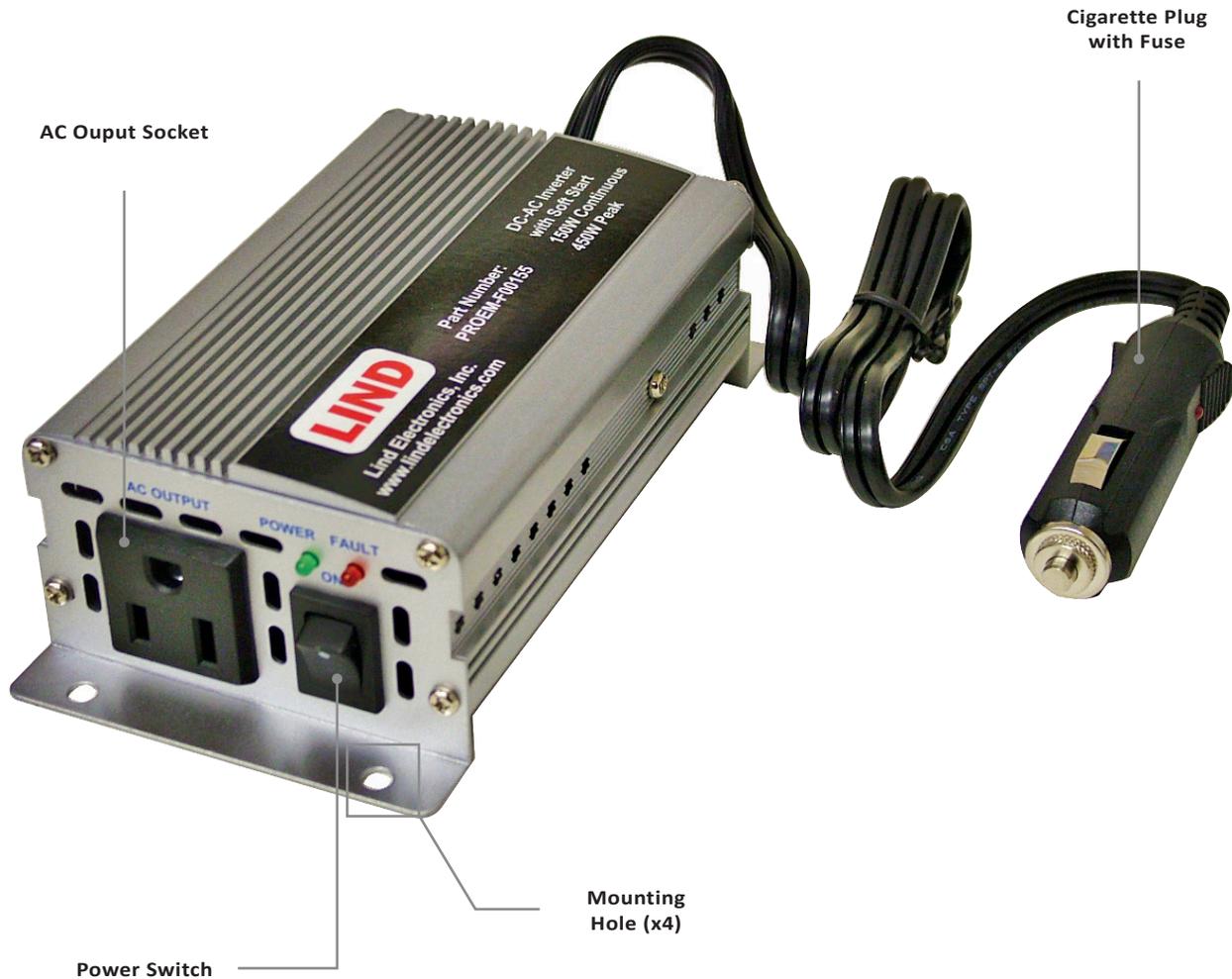
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Modified Sine Wave Inverters convert power supplied from a 12 or 24 VDC power source to AC power for operating AC-powered devices. These inverters are well-suited for powering lights, televisions, power tools, and other basic electrical devices.

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 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

AC Output Sockets

USB Port

Cigarette Plug

**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 MOBILE APPLICATIONS

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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



### **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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POWER SPECIALISTS FOR  
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