

UNIVERSAL 24V 25A

STOP!

Review the contents
of this document
before operating.



EFFICIENT DESIGN



OPTIMIZATION



GLOBAL FITMENT



ELECTRIC PROTECTION



UNIVERSAL COMPACT



TROUBLESHOOTING (cont...)

UNIVERSAL 24V 25A



High Frequency, Universal A/C
Input Battery Charger

IMPORTANT: SAVE THESE DOCUMENTS!

Read and follow all instructions before installing, operating, or servicing your charger. Avoiding all cautions, warnings or information in these documents can cause serious and permanent damage. Installation and servicing must be performed by qualified personnel. Failure to follow the instructions may void warranty on the charger.



The icon to the left is used and noted to alert the user to the presence of un-insulated “dangerous voltages” within the equipment’s enclosure; that may be of a risk to shock to persons using or operating this equipment.



The icon to the left is used and noted to alert the user to the presence of important information or condensed instructions important to operating and servicing this equipment.

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BATTERIES DO NOT FULLY CHARGE

If the batteries are charged overnight, make sure the AC supply is not being switched off at night or disconnected from power by other building items or power sources.

NEW BATTERIES

If the batteries are new they sometimes need 20 to 30 charge/discharge cycles before they charge normally due to a process called plate formation. With new batteries the 100% LED may not light after a normal overnight charge. The batteries and charger are most likely fine - the machine should be used and charged each night. Within a few days to a week the 100% LED will go on during a normal overnight charge.

Brand new batteries are more easily damaged by heavy discharge than batteries that are older. Try to avoid heavy discharge when the batteries are installed for at least the first 20 charge cycles.

OLD BATTERIES

If the batteries are old check the battery condition by following the manufacturer’s or supplier’s instruction for care, service or maintenance. Check for weak or dead cells in the battery. If the charger gets warm after several hours of charging, the charger is most likely in good condition, but the batteries are damaged or not in peak operating condition.

UNINSTALLING THE CHARGER



WARNING: Disconnect from A/C voltage before performing any service to the equipment. When plugged in to the A/C wiring is an electric shock hazard. Disconnecting the D/C output connector near the batteries when the charger is ON may cause arcing and the batteries to explode resulting in serious injury.



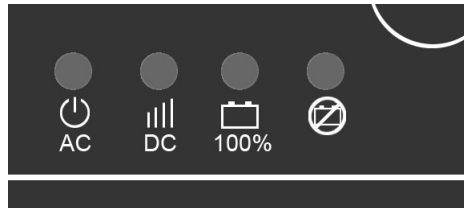
WARNING: Risk of electric shock causing serious injury or death. Do not touch un-insulated parts of the charger wires, battery connectors or terminals. Be careful with tools or other items that can conduct or cause contact. Remove accessories such as rings, watches, etc to avoid electrical shock or arcing.



WARNING: Do not disassemble this charger. Take the charger to a factory authorized repair facility and service agent if repairs are necessary. High voltages inside the charger are an electric shock hazard and can result in serious injury or death.

9 TROUBLESHOOTING (cont...)

- LED Table for Troubleshooting



SCENARIO:	AC	DC	BATT	ERROR	Possible Issues:
CASE 1:	ON	OFF	OFF	*blinks* once every 8 secs	DC Output Short Circuit, Battery High or Low Voltage, check DC connections
CASE 2:	ON	OFF	OFF	*blinks* twice every 8 secs	Charging Timeout, check cables
CASE 3:	ON	OFF	OFF	*blinks* three times every 8 secs	Temperature Sensor Too High, allow temperature to become normal
CASE 4:	BLINK (8)	OFF	OFF	OFF	AC Input Failure, connect to stable power source
CASE 5:	ON	OFF	OFF	*blinks* four times every 8 secs	Charger has Overheated, will re-sume charge when temperature is less than 85C

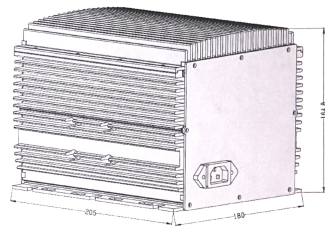
CHARGER FEATURES

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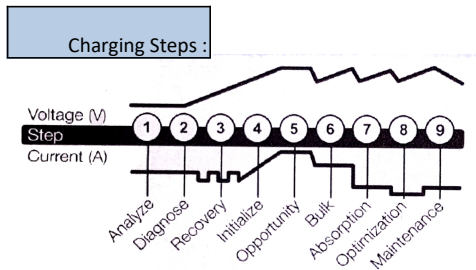
- Optional A/C input voltage
 - High Efficiency
 - Operates on any single-phase grid worldwide
 - Reduced electricity cost
 - 85-130/170-264 VAC, 47-63 Hz range
 - Single model for worldwide use
- 25 amps DC Charging Current
- Convection Cooled with NO Moving Parts
- Customized charging curves
 - Precision charging and termination algorithms
 - Flooded type batteries and sealed gel (AGM) batteries
 - Extend battery life while minimizing charge times
 - Auto-recharge for low voltage
 - Ensures equipment is ready for use
- LED Indicators
- Charger Protection
 - Voltage mismatch
 - Reverse polarity, short circuit
 - Temperature protection
- AC Line Interlocking
- Smart Timer
 - Automatically shuts down charger if charging cannot complete
- Sealed Enclosure
 - Protected against high vibration, temperatures, water, chemicals, and dust.
- Light Weight and Compact Size

3 SPECIFICATIONS

Technical Specifications			
Input Voltage AC :	100/230VAC,50-60Hz	Dimensions(LxWxH) :	8.07" x 7.08" x 6.48"
Working Voltage AC :	85-125VAC,185-265VAC,50/60Hz	Net Weight :	11 LBS
Max Power :	750W	AC Input Connector :	IEC320 / C14 (Region Specific)
Efficiency :	95% (Approximately)	DC Output Connector :	M6 Threaded Fasteners
Maximum Interlock Current :	0.5A	Cooling :	Natural
Maximum DC Voltage :	31.5VDC(Nominal24VDC)	Mounting Holes :	Secure Installation
Battery Type :	Lead Acid & Lithium-Ion	Enclosure :	IP66
Battery Chemistries :	Wet, Gel/AGM, Lithium-Ion		
Reverse Polarity :	Electronic Protection, Auto-Reset		
Short Circuit :	Electronic Current Limit		
Operating Temperature :	-104F to 149F (-40C to 65C)		
Storage Temperature :	-104F to 185F (-40C to 85C)		



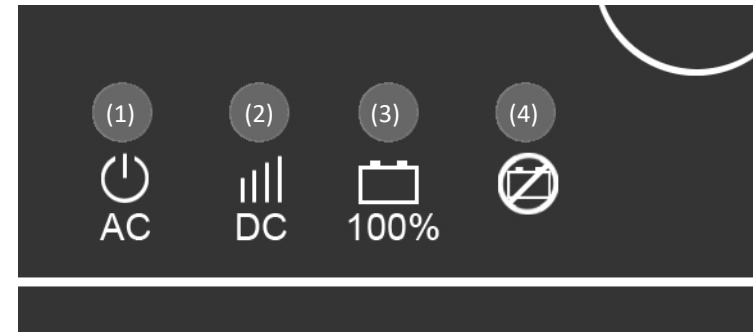
Options :	Interlock	Cutout :	Select between flood or AGM types
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TROUBLESHOOTING

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- Normal Operation:
 - (1) Yellow with AC Power
 - (2) Green when Charging
 - (3) Green Full Charge
 - (4) Red if ANY fault



CAUTION: If the AC plug or receptacle is broken, twisted, bent, or loose, it may not make a good electrical connection and an electrical shock hazard may exist. Have it repaired or replaced by a qualified person immediately. **DO NOT USE THE CHARGER UNDER THIS CONDITION.** Fire, injury, or death may result if not corrected.

7 MAINTENANCE

Maintenance Instructions

1. Unplug the charger from both AC and DC sources when cleaning, moving or conducting any maintenance or repair on the charger.
2. Do not expose charger to oil, dirt, mud or direct heavy water spray when cleaning the vehicle or machine.
3. The enclosure of the charger meets IP65, making it dust-tight and protected against powerful water jets. The AC inlet connection itself, when mated, is rated to IP20, which is not protected against water. Protect the AC connection if used in wet or dusty environments.
4. If the detachable AC input power supply cord or the DC output cord set is damaged, do not use the charger until they are replaced. Replace with a cord that is appropriate for your region:

* This charger is provided with a cord set for connection to outlets operating at nominal 120 Volts (or 240 Volts as appropriate). If the input plug does not fit the power outlet, contact the vendor for the proper cord set terminating in an attachment plug of the proper configuration for the power outlet.

* North America: EU CERTIFICATE, ISO 9001:2008, Chinese

* All other regions: Safety approved detachable cord, 1.5mm² minimum, rated appropriately for industrial use. The cord set must be terminated on one end with a grounding type input connector appropriate for use in the country of destination.

Operating Instructions

The charger may become hot during charging. Use hand protection to safely handle the charger during charging. Extension cords must be 3-wire and no longer than 30m (100') at 10 AWG or 7.5m (25') at 16 AWG.




INSTALLATION & SAFETY

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Installation

- A wire loop provides for selection of battery types: flooded (Wet) type (do not cut the wire loop), sealed (AGM, Dry) and gel type (cut the wire loop and tape the wire ends with electrician's tape).
- Battery Cable connection: Black output wire goes to battery negative terminal, Red output wire goes to battery positive terminal.
- AC interlock wire – should follow equipment manufacturer's instruction for correct connection method. Fix the battery charger to a stable surface through the appropriate holes inserted on the fixing flanges.
- Preferably the charger should be installed horizontally – with the heat-sink facing to the side. Vertical installation (with the heat-sink facing up) is allowed. Never install in the vertical position with the heat-sink facing down.
- Ensure all heat sinks are not obstructed, to avoid the overheating. Do not put the battery charger near heat sources.
- Make sure that free space around the battery charger is sufficient to provide adequate ventilation and an easy access to the cable's sockets.

Safety Instructions

- Verify that the available supply voltage corresponds to the voltage that is stated on the battery charger name plate.
- To avoid damaging the power cord, do not put anything on it or place it where it will be walked on. If the cord becomes damaged or frayed, replace it immediately.
- Do not operate a charger that is not working correctly. An electric shock hazard or battery explosion hazard from overcharging may exist.
- Though the charger is resistant to water and spray washing, DO NOT wash the charger when it is hot. Do not fully immerse. Do not spray wash for an extended time.
- Liquid can get inside the charger and may cause serious injury or death.
- The charger is designed for use in industrial areas. It is not designed to be used in medical (hospital) environments where interference with life critical equipment could cause serious injury.
- This charger is intended only for use on industrial equipment and 24V lead acid batteries.
- The charger surface can get hot while operating and contact with the skin or surrounding materials should be avoided.
- If you use an extension power cable with your charger, ensure the total current draw of the items plugged into the extension power cable do not exceed the current rating of the extension cable and meets all national and local electrical code requirements.
-  Be careful not to allow tools or other conductive instruments to short between terminals.
-  Do not touch battery terminals or any exposed electrical parts during charging or when power is on. Contact with the battery terminals or other exposed electrical parts may cause electrical shock.
-  May become hot during charging. Use hand protection to handle charger while charging.

5 INSTALLATION & SAFETY (cont...)



Do not operate charger if wiring is damaged. An electrical shock could cause injury or death.



Ensure that the AC voltage supplied to the charger is within the ranges in the specification table. Voltages outside this range, particularly high voltages, can result in electric shock and fire hazard and will fail the charger.



To reduce the risk of electric shock, connect only to a properly grounded single-phase (3-wire) outlet.



Do not attempt to service the charger if you are not a trained service technician. The high voltages inside the charger are a shock hazard and can cause serious injury or death. Warranty voided if opened.



The charger contains chemicals that may cause birth defects or other reproductive harm. Wash hands thoroughly after handling.



There could be a spark during charging. Be careful when using fuels, solvents or other flammables near the charger or batteries. An explosion could result causing death or serious injury.

OPERATION

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Warning

Use charger only with an algorithm selected that is appropriate to the specific battery type. Other usage may cause personal injury and damage. Lead acid batteries may generate explosive hydrogen gas during normal operation. Keep sparks, flames, and smoking materials away from batteries. Provide adequate ventilation during charging. Chargers require 1" clearance on both sides and the ends left open (where cables exit and indicator lights can be seen). Never charge a frozen or non-rechargeable battery. Observe all battery manufacturers' specific precautions (e.g. maximum charge rates and if cell caps should be removed while charging).



Danger

Risk of electric shock. Connect charger power cord to an outlet that has been properly installed and grounded in accordance with all local codes and ordinances. A grounded outlet is required to reduce risk of electric shock—do not use ground adapters or modify plug. Do not touch uninsulated portions of output connector or uninsulated battery terminals. Disconnect the AC supply before making or breaking the connections to the battery. Do not open or disassemble charger. Do not operate this charger if the AC supply cord is damaged or if the charger has received a sharp blow, been dropped, or is damaged in any way. Refer all repair work to the manufacturer, or qualified personnel. This charger is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge on electrical systems and battery charging, unless they have been given supervision or instruction concerning the use of the charger by a person responsible for their safety. Children should be supervised to ensure that they do not play with the charger.