

LPS II Series



CLAYTON
POWER

Safety instruction

The Lithium Power Supply (LPS) is classified as Class 9 hazardous material UN3480, a power source with high energy density and dangerous materials in a closed metal case.

Installation must strictly follow the national safety regulations in compliance with the enclosure, installation, creepage, clearance, casualty, markings, and segregation requirements of the end-use application. Installation must be performed by professional installers only. Switch off the system and check for hazardous voltages before altering any connection!

The Lithium Power Supply must be handled only by qualified and trained personnel.

The lowest protection degree of specific parts of the LPS is IP21. Ensure that the installation of the Lithium Power Supply is in accordance with IP21 requirements.

This is a Class I product. Only connect 230VAC from a source that is connected to electrical protective earth, including any extension cords between the source and the unit.

Especially keep these rules:

- Do not open the Lithium Power Supply.
- Do not discharge a new Lithium Power Supply before it has been fully charged.
- Charge only within the specified limits.
- Keep the LPS turned off when moving and installing.
- Do not mount the Lithium Power Supply upside down or on its sides.
- Check if the Lithium Power Supply has been damaged during transport.
- Do not put Lithium Power Supplies in serial or parallel.
- Do not place unprotection from the weather.
- Do not cover or block the fan or the air inlet to ensure the battery does not overheat.

Dangers involved in case of fire:

- Danger of dust particle explosions
- Decomposition through fire or heat under development of toxic and cauterizing gases
- Combustion gasses which strongly irritate eyes and respiratory organs

General actions to be taken by the driver if these dangers occur:

- Turn off the engine.
- Put a warning signal on the road to warn others.
- Inform others about the danger and direct them to stand away from the wind direction.
- Call the police and fire department immediately and inform that lithium batteries (UN3480) are on board.

Instruction for fire extinguishing:

- Extinguish with water, if possible, submerge lithium power supply completely in water
- Extinguishing with water will produce fluoride, phosphate, fluoride-oxide and carbon-oxide.
- Alternatively extinguish with a CO2 extinguisher.



**NON SPILLABLE
LI-ION BATTERY**

Introduction

All information and instructions in the present Safety instruction have been generated in consideration of current standards, industry guidelines and our years of experience. User guides are separate documents which can be found on www.ClaytonPower.com. The User guides can provide you with further information about how to install LPS II in different setups and operate the product with Clayton Power accessories.

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In the box

- 1 x LPS Charging Cable Neutrik - CEE 7/7
- 1 x AC Output (Neutrik Grey)
- 4 x Cable shoe covers
- 4 x M8 Screws
- 2 x M4 Screws

Mounting

The LPS II must be fixated safely before taking in to use. It is recommended to use the Clayton Power LPS II Mount (Not included) for a secure fixation. When mounting the LPS II make sure to leave enough space around the unit to secure an effortless air flow.

ATTENTION:

When installing the Lithium Power Supply, do not mount it upside down or on the sides.

ATTENTION:

The LPS has forced air cooling. Make sure air can flow freely around the unit.

Power Cable

Included with the LPS II is a country specific power cable. The cables can be one of the four type, United Kingdom, Germany, Denmark, or Switzerland (UK, DE, DK, CH). Make sure you use the right cable for the specific area.

Transport

The Lithium Power Supply is classified as Class 9 hazardous material UN3480 and tested according to UN 38.3. Transport of the Lithium Power Supply must always be in original certified packaging. The transport of Lithium Power Supply must only be handled by trained people in accordance with ADR, RID and IMDG, exceptions can occur for private and service transport, please check with authority of the country. For transport by air (IATA) the packaging must be in accordance with P965, here the original packaging complies. For shipment of defective batteries, contact your retailer for further information.

Storage

When storing the LPS II for a longer period the unit must be fully charged before stored away. While in storage the unit must be recharged every 6 months.

Service

Your LPS II does not have any user-serviceable parts. If you need service, contact Clayton Power or one of our authorized service providers. You can find more information about the service options on our service page.

Disposal

Batteries marked with the recycling symbol must be processed via a recycling agency recognized by official authority in the given country. If agreed, the unit may be returned to the manufacturer for proper disposal. Batteries must not be mixed with any kind of domestic or industrial waste.

Installation and initial start

The initial installation includes setting up the LPS II unit for a standard setup. The following information summarizes the key aspects to be observed during the setup. You can find the installation diagram on the last page of the safety manual.

Switching the appliance on and off

Power 12 V

Use the button "12 V" to switch the unit on or off.

When the unit is switch on, a green light will appear above the button.

Power 230 V

Use the button "230 V" to switch the unit on or off.

When the unit is switch on, a green light will appear above the button.

Certifications / Compliance

Low Voltage Directive 2014/35/EU

EN62368-1:EU

EMC 2014/30/EU

EN61000-6-2:2019, EN61000-6-3:2007 / A1:2007

UNECE Regulation 10

RoHs Directive 2011/65/EU

EN 63000:2018

Safety protections

- 230 VAC Input protected by 16 A fuse (not replaceable)
- 230 VAC output protected by RCD 30 mA | CL2001:10A | CL2002: 10 A | CL2003: 13 A (replaceable by Clayton Power or an authorized service provider)
- DC Input protected by 50 A midi fuse (replaceable by Clayton Power or an authorized service provider)
- DC Output protected by 180 A fuse (replaceable by Clayton Power or an authorized service provider)
- Lithium battery protected by fuse (not replaceable)
- L/N relay hazard is hardware protected.
- PE/N relay hazard is hardware protected.
- Solar 20 A fuse (replaceable by Clayton Power or an authorized service provider)

Warranty

CAUTION & WARNING:

DO NOT USE OR ATTEMPT TO USE THIS PRODUCT UNTIL YOU HAVE READ THIS USER MANUAL IN ITS ENTIRETY. IMPROPER INSTALLATION OR USAGE OF THIS DEVICE MAY BE HAZARDOUS AND MAY CAUSE DAMAGE TO OTHER ELECTRICAL EQUIPMENT AND WILL VOID WARRANTY.

Clayton Power warrants, to the original purchaser only, for a period of 24 months from the date of purchase, that the Clayton Power device will be in good working order when properly installed and operated as described in this manual.

If the device fails within this period of time in normal use, Clayton Power will, without charge, at the place of Clayton Power's choosing, repair or replace the device - with new or reconditioned parts or a new or reconditioned device as Clayton Power deems necessary.

This warranty is not valid in cases of:

Usage against the recommendations of this manual.

Usage in applications outside of general automotive, solar, industrial or marine applications without the agreement of Clayton Power.

Device modification or repair without written authorization from Clayton Power.

Reverse polarity, excessive overload, general abuse, neglect, wear & tear, ingress of liquids (water, oil, acid, or otherwise), foreign objects, lightning strikes, over or under voltage, RFI/EMI, etc.

Obtaining Warranty Service:

To obtain warranty service, please contact the outlet at which you purchased your product. Do not contact Clayton Power directly. For warranty service provide the following:

- Proof of purchase
- The unit model number
- The unit serial number
- A brief description of the application and problem including any failure codes displayed on the unit.
- Contact your Clayton Power dealer for an authorization number prior to dispatch - do not send without authorization.

Once this number has been obtained, please carefully pack your unit and send (freight paid) to the Clayton Power dealer.

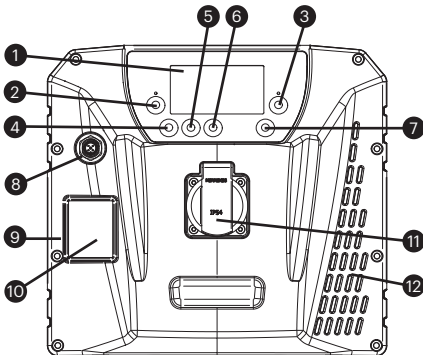
- Please note that the unit contains Lithium batteries and must be shipped as dangerous goods according to UN3480 Lithium-Ion Batteries.

Copyright

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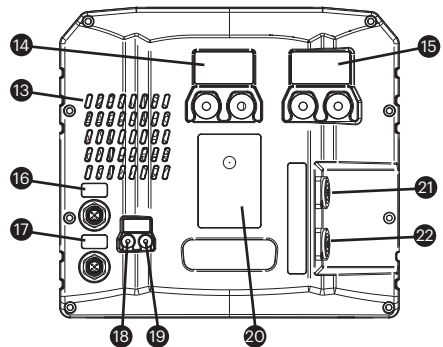
Front

- 1 Display
- 2 12 V DC Power Button On/Off
- 3 230 V AC Power Button On/Off
- 4 Down Button
- 5 Up Button
- 6 Ok/Menu
- 7 Return
- 8 M12 - Data front
- 9 Serial number
- 10 RCD - Residual-current device
- 11 230 output - Schuko socket
- 12 Air cooling - Front



Back

- 13 Air cooling - Back
- 14 DC out
- 15 DC in
- 16 M12 - remote
- 17 M12 data
- 18 C1 (D+)
- 19 C2 (Solar +)
- 20 Label
- 21 AC out
- 22 AC in



Specifications

Model name:	LPS II 1500 - 1 kWh	LPS II 2500 - 1 kWh	LPS II 3000 - 2 kWh
Model No.	CL2001	CL2002	CL2003
Battery type	Li-Ion 12V – 100Ah	Li-Ion 12V – 100Ah	Li-Ion 12V – 160Ah
Battery chemistry	LiFePO4	LiFePO4	LiFePO4
Battery capacity	100Ah (1320Wh)	100Ah (1320Wh)	160 Ah (2112Wh)
Battery available capacity	80Ah (1050Wh)	80Ah (1050Wh)	136 Ah (1900Wh)
AC Input voltage	207 VAC – 253 VAC	207 VAC – 253 VAC	207 VAC – 253 VAC
AC input frequency	45 Hz – 65 Hz	45 Hz – 65 Hz	45 Hz – 65 Hz
AC Input power (Charge power)	720 W	720 W	720 W
AC Output voltage +/- 10%	230 VAC pure sine wave	230 VAC pure sine wave	230 VAC pure sine wave
AC Output frequency	50 Hz	50 Hz	50 Hz
AC output power – Continuously (ambient temp)	1300 W	2000 W	2300 W
AC output power - 10 min	1500 W	2500 W	3000 W
AC output power – Peak	2600 W	4000 W	5000 W
AC output power - AC in connected	2300 W	3000 W	3000 W
AC output efficiency (1000W)	94%	94%	94%
DC Input voltage	11.5 - 32 VDC	11.5 - 32 VDC	11.5 - 32 VDC
DC input current	45 A	45 A	45 A
DC input current with 1 external converter (efficiency)	90 A	90 A	90 A
DC output voltage	10-14,4 VDC	10-14,4 VDC	10-14,4 VDC
DC output charge current – Continuously	90A	90A	90A
DC output discharge current – Continuously	180A	180A	180A
DC output discharge current – 1min	270A	270A	350 A
Solar input charging power (max.)	400W	400W	400 W
Solar input voltage	15 – 40 VDC	15 – 40 VDC	15 – 40 VDC
Solar input charging current (max.)	15 A	15 A	15 A
Input signals (5)	C1, C2, M12 x 3	C1, C2, M12 x 3	C1, C2, M12 x 3
Output signals (4)	C2 & M12 x 3	C2 & M12 x 3	C2 & M12 x 3
Self-discharge rate per month	< 5%	< 5%	< 5%
Self consumption - Operating mode, Only DC Output active	< 1 W	< 1 W	< 1 W
Self consumption - Operating mode, inverter and DC Output in with > 50W	20 W	30 W	30 W
Connection 230VAC	Neutrik and Schuko	Neutrik and Schuko	Neutrik and Schuko
Connection C1/ C2	M4	M4	M4
Connection DC input	M8	M8	M8
Connection DC output	M8	M8	M8
Cooling	Forced air (fan)	Forced air (fan)	Forced air (fan)
Operating temperature (output will be limited below 0°C and ab)	-20°C-50°C	-20°C-50°C	-20°C-50°C
IP rating	IP21	IP21	IP21
Product weight	27,5 kg	27,5 kg	29,5 kg
Product dimensions (HxWxL)	256x277x409mm	256x277x409mm	256x277x409mm
Jumpstart	40 A / 5 min	40 A / 5 min	40 A / 5 min

*There may be a from the prototype to the final production unit.