EL510-2412-63 Power supply with battery backup

Product description

Output power: 24VDC 5A (27.6VDC)
Output power: 12VDC 4A
Output power: 138W (total for 24V and 12V outputs)

Battery backup: 24V 63Ah (70Ah)
Enclosure size: 500x700x250 mm

Built in battery test function,
controlled automatically or remotely.
Automatic protection against deep
discharging of batteries.
The power supply can be used with and without batteries.

Number of secured outputs: 2
Potential free alarm output for main/charger fault.
Potential free alarm output for battery failure.

All outputs secured against overload, short circuit and over voltage.

EL510-2412-63 is marked with a CE label.

The product is delivered complete with battery cables, cable duct and membrane spouts in the flange plate.
Battery cables with cable lugs is customised to fit the battery size and include an short circuit safety (35A)
The flange plate sizes 10 pieces of membrane spouts, fits cables with a diameter of 1-13mm

Produkt code: 130.08.2412.063.0

EL510-2412-63 is a reliable power supply based on switch-mode technology that provides high efficiency and compact dimensions. The power supply is designed to operate in parallel with a 24V battery to ensure an uninterrupted power supply even when the mains voltage fails. During normal operation, the power supply keeps the battery charged while simultaneously supplying power to the load. When the mains voltage fails, the battery automatically takes over and continues to supply the required power to the load without any interruption in voltage. The battery capacity is determined by the desired operating time, typically from 7Ah to 63Ah. The battery is managed by the power supply's internal battery monitoring circuits and charging function to ensure the longest possible battery life. **EL510-2412-63** has outputs for remote monitoring of battery condition and charge/mains status.
The outputs consist of potential-free relay contacts. LED indicators show the battery condition, mains/charger status, as well as blown fuse and overload.

Battery supervision and battery protection:

EL510-2412-63 has a built-in automatic battery test procedure. The battery will be tested every 60 min. If the battery voltage falls below 22V, the LED marked BATTERY OK will be turned off. The LED will illuminate again when battery voltage increases to 23,8V. If the main voltage ceases, the battery will supply current to the load and the LED will start flashing. A battery test may be done manually by short circuiting the terminals marked BATTERY TEST for a few seconds. During mains failure the battery will be discharged. In order to protect the battery from completely discharging and risk being destroyed, the load will be disconnected as soon as the battery voltage is dropping to about 19V. As soon as the main power is again present, the load will be connected when the battery voltage has increased to about 23,8V.

Operating without batteries:
If the power supply is to be operated without batteries, install jumper S2 (NO BATT).
The unit will automatically terminate the battery test routine, and the BATTERY OK LED will remain permanently off.
The output voltage may then be adjusted to the desired level, e.g., 24V DC, if required.
Adjustment is carried out using potentiometer POT1 (located under the cover).

Supervising the Mains and the Charger:
When the charger is supplying power and operating correctly, the LED labeled MAINS/CHARGER OK is illuminated.
If the power supply stops delivering power due to a mains failure or charger fault, the MAINS/CHARGER OK LED will turn off.

Alarm outputs:
The power supply is equipped with has separate relay outputs for easily collecting battery status mains/charger status. The relay contacts are potential free and limited to a max current of 1 A.

Mains/Charger faults:
Relay contacts marked MAINS/ CHARGER FAULT C and NO is connected by mains/charger faults.
Relay contacts marked MAINS/ CHARGER FAULT C and NC is disconnected by mains/charger faults.
When these faults occur there it is a time delay of 30 seconds before the relay contacts is activated.

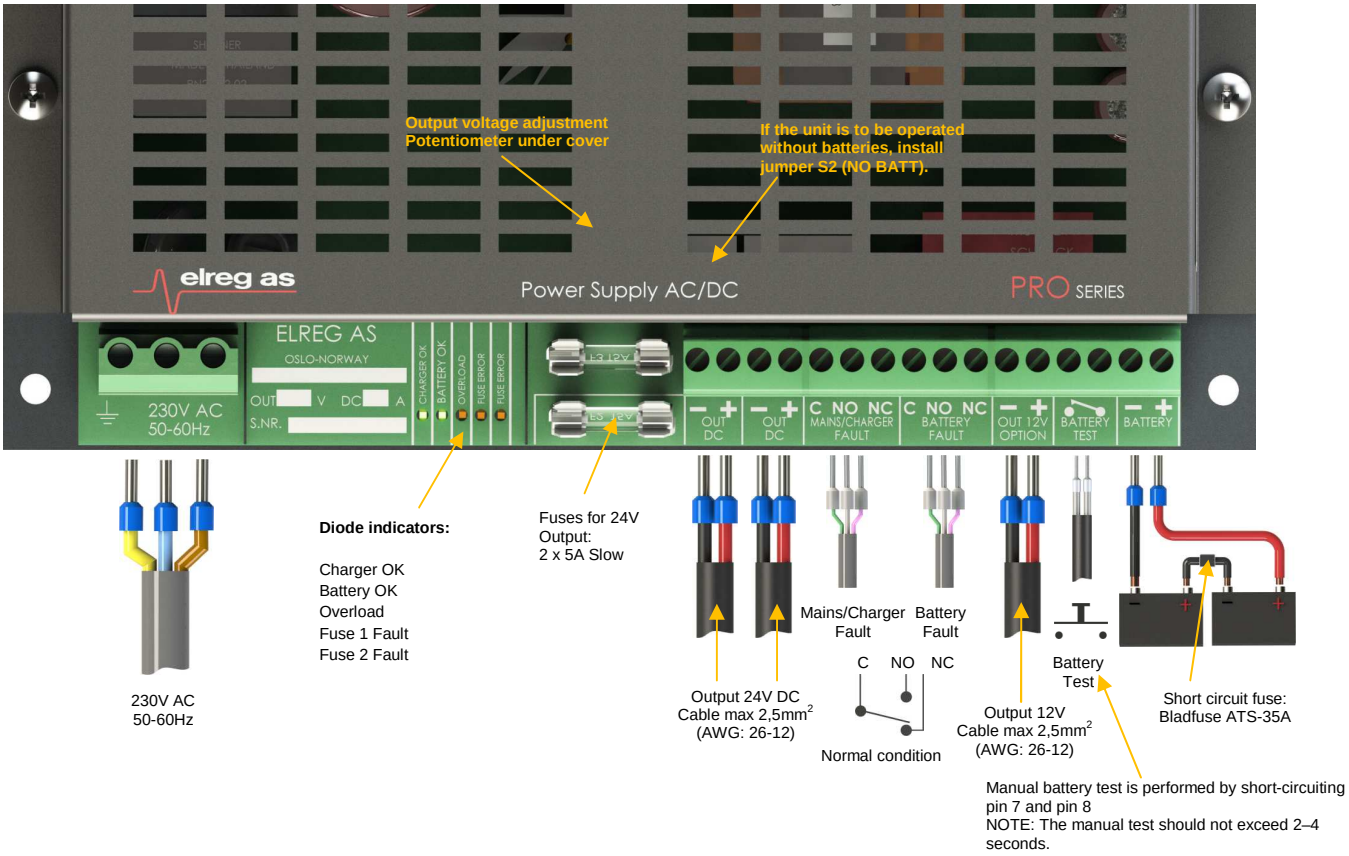
Battery fault:
Relay contacts marked BATTERY FAULT C and NO is connected by battery fault.
Relay contacts marked BATTERY FAULT C and NC is disconnected by battery fault.

Protection against overload and short-circuiting:
The LED marked OVERLOAD illuminates when the current consumption exceeds the rated current of the rectifier.
The rectifier will limit the output current to max 5,5A and the output voltage decrease in order to maintain the output current constant without any danger for the power supply.
The charger is equipped with 2 separate outputs (24V), each with a 5A fuse (slow).
The basic purpose of these fuses is to protect the battery against irregular current draw.

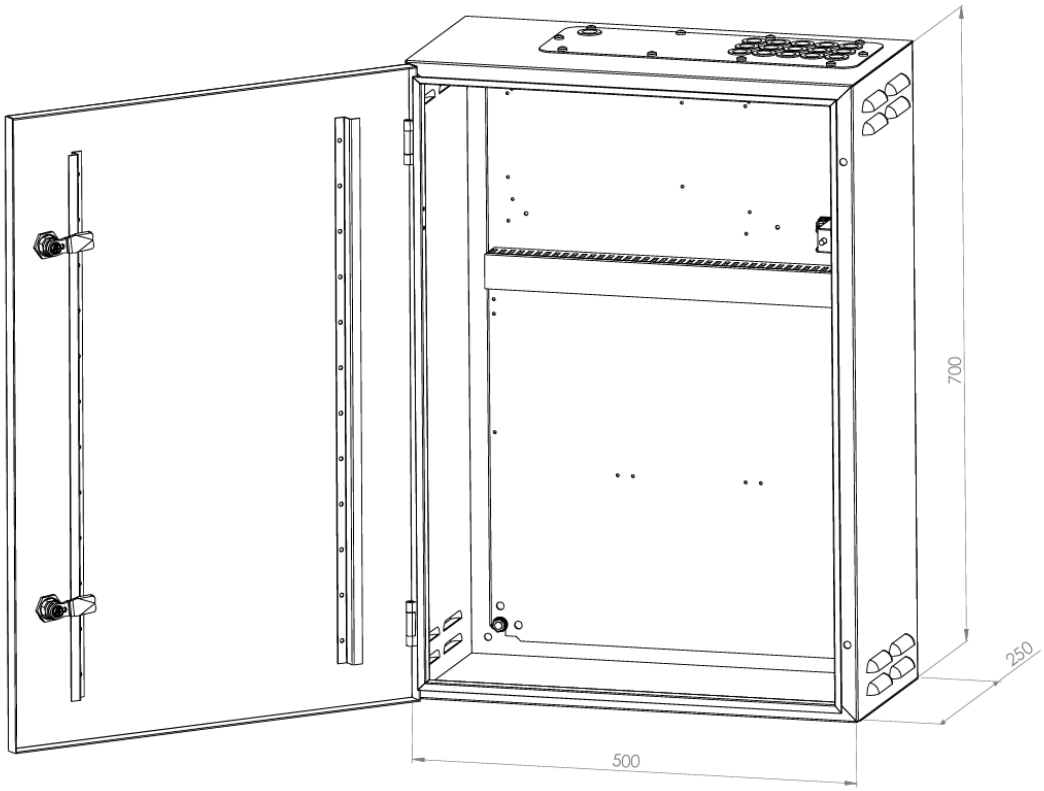
Red LED`s on the front marked FUSE ERROR 1 and FUSE ERROR 2, illuminates when the respective fuses are broken. The fuses are marked in the same way (F1,F2).
The LED`s will only illuminate if an external load is connected to the power supply.

Over voltage protection:
The Mains input is protected by a MOV (Metal oxide varistor) against transients and over voltage. In addition a common mode and a diff. mode coil is connected together with X and Y capacitor to line / earth in order to attain the EMC requirements. On the secondary side of the power supply all inputs and outputs are equipped with tranzorb diodes to protect against static electricity or induced voltage transients from outside the cabinet through the cables.

Connections:



Enclosure dimensions:



Technical data	
Input	
Input voltage:	180 - 250VAC 47-63 Hz
Input power:	150W (On full load on all outputs)
Power factor:	> 88%
Overvoltage protection:	Yes, MOV (metal oxide varistor)
Input fuse:	20x5mm glass fuse 2A slow blow
Connections:	Screw terminals max 2,5mm^2 (AWG:12)
Output	
Output voltage:	27,6VDC +/- 100mV (Adjustable +/- 2,5V)
Output current (24V) max:	5A continuously
Output power (24V) max:	138W (total for 24V og 12V)
Output voltage (12V) max:	12VDC +/- 100mV
Output current (12V) max:	4A continuously
Voltage accuracy:	<1% by 0-100% load and/or input voltage variations from 180 to 250VAC
Output circuits:	2 pcs. Each with 20x5mm glass fuse 5A slow blow
Battery input:	1 pcs. 24V
Short circuit protected:	Yes
Protected against overload:	Yes, Current limiting at 5,5A +/- 0,5A
Over voltage protection:	Yes, level : 30V +/- 0,5V
Ripple and noise on output:	<100mV p-p DC-30MHz, measured with a noise probe direct on the output connectors.
All connections:	Screw terminals max 2,5mm^2 (AWG:12)
Statusutganger / Innganger:	
Mains/charger faults:	Potential free relay contacts no,nc,c max load 1 A
Battery fault:	Potential free relay contacts no,nc,c max load 1 A
Battery test input:	Active low , Internal pull up with 10Kohm
Connections:	Screw terminals max 2,5mm^2 (AWG:12)
General data :	
Battery connections:	Screw terminals max 2,5mm^2 (AWG:12)
Switchfrequency:	48kHz
Efficiency:	>88%, Under full load on the outputs.
Soft start:	Yes
MTBF:	400.000 hours (MIL-HDBK-217)
Physical size:	
Weight :	64,1 kg including 2 pcs. batteries (21,0 kg each)
Dimensions:	500 x 700 x 250 mm (WxHxD)
Ambient temperature storage:	-20 ^{o}C til +60 ^{o}C
Ambient temperature operations:	0 ^{o}C til 40^{o}C
Density:	IP20
Cooling:	Free air passage
Mounting:	4 pcs. Holes for screws

Approvals:
Safety standard: EN62368-1
EMC emission: EN55032(CISPR32), CNS15936, EN61000-3-2, 3-3
EMI immunity: EN61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
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IMPORTANT:
Follow the procedures in the file: ELREG AS Installation and Safety Rules Rev.1.0x.doc
This is downloaded separately under each individual product on our website.