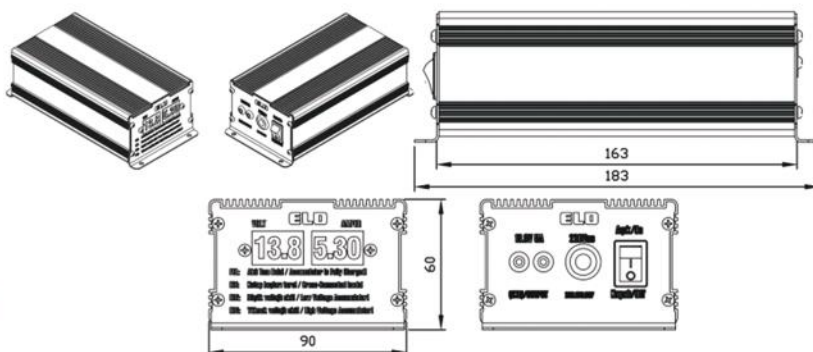


**Battery Charger - Full Automatic SMPS w/ Display**

Product Code                      **220.100.007** 12V - 5A  
    **220.100.008** 24V - 3A


**Terminal Configuration & Dimensions**

**Technical Data**

	<b>220.100.007</b>	<b>220.100.008</b>
<b>Short Description</b>	12V 5A w/ Display	24V 3A w/ Display
<b>Nominal Voltage</b>	12V	24V
<b>Voltage Set Point</b>	13,8V	27,6V
<b>Charging Current</b>	5A	3A
<b>Suggested Battery Capacity</b>	20-105Ah	10-60Ah
<b>Battery Type</b>	Lead Acid / AGM / GEL	
<b>Architecture</b>	SMPS, w/o Fan	
<b>Input Voltage</b>	176-264Vac 50 / 60 Hz	
<b>Input Current</b>	<1Aac / 164Vac	
<b>Insulation Voltage</b>	I / O 3kVac, I / I 2,5kVac, I / O 500Vac	
<b>Insulation Resistance</b>	100MOhm / (500Vdc 25°C)	
<b>Vibration</b>	10 - 500Hz, 2G/10min.	
<b>Short Circuit Protection</b>	Yes	
<b>Current Limit</b>	Yes	
<b>Voltage</b>	3 Digit Voltage Information on LED Screen	
<b>Current</b>	3 Digit Current Information on LED Screen	
<b>Notification of Full Battery</b>	Battery Voltage and "FULL" on LED Screen	
<b>Cross Connected Battery Indication</b>	Yes / E01 Error Code Flashing	
<b>Unsuitable Battery Warning</b>	E02 and E03 Error Codes Flashing Depending on the Unsuitable Battery Type	
<b>Damaged Battery</b>	E04 Error Code Flashing	
<b>Automatic Restart</b>	Charging continued after error or cross connection is eliminated	
<b>Over Temperature Protection</b>	Yes	
<b>Input Leads</b>	Minimum 1,5 m Grounded	
<b>Output Leads</b>	Black & Red Cables (minimum length 1,5 m, cross section 1,5 mm <sup>2</sup> ) with Crocodile Clips	
<b>Ambient Temperature</b>	- 10 / + 40 °C	

**Notes**

All measurements are in millimeters.



**Battery Charger - Full Automatic SMPS w/ Display**

Product Code                      **220.100.007 12V - 5A (Cont'd)**  
    **220.100.008 24V - 3A**

**Product Details**

ELO Full Automatic SMPS Battery Charger provides the batteries to be charged in the most optimum way without exceeding the charge voltage limits. Charger reduces the charge current automatically when the charge voltage limit has been reached and switches to trickle charge mode only to compensate for battery self-discharge.

**CURRENT LIMITATION**

ELO Full Automatic SMPS Battery Charger encompasses a current limiter. The charger limits the current at 5A for 12V units and 3A for 24V units in the case of any defective/shorted cell battery being connected. The charger keeps voltage reduced and continues to charge until the batteries reach the normal charge level (5A for 12V units and 3A for 24V units). Charger reduces the charge current automatically when the charge voltage limit ( 14.2V for 12V batteries / 28.4V for 24V batteries) has been reached and switches to trickle charge mode only to compensate for battery self-discharge. The charging status can be observed from display on the front panel. A fully charged battery will read "FUL" in the display.

**SHORT CIRCUIT PROTECTION**

Due to its short circuit protection, the charger will not give an output unless the battery is properly connected. Consequently, if the (+) terminal and the (-) terminals are short circuited, there will be no negative consequences since there is no output. In such instances, the display will read 13.8V/000A for 12V chargers and 27.6V/000A for 24V chargers. The charger begins to give output when the battery is correctly connected. When one of the terminals is removed from the battery, the charger cuts off the output voltage automatically.

**CROSS CONNECTION**

The unit has the feature of protecting the battery when terminals are reversely connected to the charger, also known as cross connection. Therefore, if the battery terminals are accidentally connected in a reverse manner, the charger will not give an output. This way a possible damage to the charger or the battery is avoided. In case of cross connection the display will show "E01" error. The charger begins to give output only when the terminals are connected correctly. Again, the charger ceases to give output when terminals are shorted or cross connected. The charger and the battery do not face any damage even in the case of battery terminals being reversely connected to the charger cables.

**OVERHEAT PROTECTION**

In cases which many parallel batteries or a battery which is below the permitted discharge values or a faulty battery connected, there will be excessive heating due to the prolonged drawing of maximum charge value of 5A (3A for 24V) from the charger. In the case of overheating of the electronic components, the charger switches to excessive heat protection mode. When the heat decreases the charger switches back to charging mode according to the need of the battery.

**INPUT VOLTAGE RANGE**

The input voltage needed for the unit is 220 VAC. However, the unit is designed to operate normally in order to compensate the fluctuations between 176 and 264V of voltage input.

**FAST CHARGING**

Fast charging starts when the device is switched on and off, the battery is replaced, or the same battery is removed and reinstalled. The charging voltage is increased from the nominal voltage of 13.8V to 14.2V for 12V batteries and from nominal voltage of 27.6V to 28.4V for 24V batteries. This process continues until the battery is full, the sign "FULL" is shown on the display. After this point, the charging voltage is decreased to nominal values.

**LOW VOLTAGE BATTERY PROTECTION**

If a 6V battery is connected to a 12 V battery charger or a 12V or a 6V battery is connected to a 24V battery charger, "E02" error code will flash on the display to warn the user. Charging starts automatically when a battery of the appropriate voltage is connected to the charger.

**HIGH VOLTAGE BATTERY PROTECTION**

If a 24V battery is connected to a 12V battery charger or a battery of 36V or 48V is connected to a 24V battery charger, the "E03" error code flashes on the display to warn the user. Charging starts automatically when a battery of the appropriate voltage is connected to the charger.

**DEAD BATTERY**

When the battery connected to the battery charger does not draw current despite the applied voltage and does not accept any charging, "E04" code will flash on the display to warn the user.

**INPUT VOLTAGE LIMITS**

The input voltage supplying the device must be 220 VAC. However, considering the fluctuations in the input voltage, the device is designed to operate between 176V and 264V without compromising from any of its features.