



## Charger 12/24 V

**SPI PRO 16** - 12 V-16 A / 24 V-8 A

**SPI PRO 25** - 12 V-25 A / 24 V-12.5 A



## EN - English - Instructions for use

Only use the charger to recharge 12 V and 24 V rechargeable lead-acid and 12 V LiFePO4 lithium-ion batteries. Do not use it for any other purpose. This charger is designed for use only with the supply mains of 220 - 240 V~, 50/60 Hz.

### 1. CAUTION - SAFETY INSTRUCTIONS

	Read the instructions before use. Keep these instructions for future reference. This manual will explain how to use the appliance safely and effectively. Please read and follow these instructions and safety guidelines carefully. Failure to do so could result in serious injury or death.
	Read, understand and follow all instructions of the battery, vehicle and any equipment used. Review the cautionary markings on the battery and on the engine.
	For indoor use only.
	Connect and disconnect the charging connectors (clamps, eyelets...) only after disconnecting the appliance from the supply mains.
	WARNING: Explosive gases. Prevent flames and sparks. Provide adequate ventilation during charging/use.
	Risk of electric shock.
	Risk of fire.
	Risk of hazardous materials.
	Wear protective clothes; complete eyes and body protection, including safety goggles.

- 1.1 Keep out of reach of children.
- 1.2 The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- 1.3 Children being supervised not to play with the appliance.
- 1.4 Cleaning and user maintenance shall not be made by children without supervision.
- 1.5 Do not charge non-rechargeable batteries.
- 1.6 Use in a dry, well-ventilated area away from liquids.
- 1.7 Use only attachments recommended by the manufacturer.
- 1.8 Never pull on the power cord to remove the power plug from the main. This may damage the cord or the plug.
- 1.9 Do not use the appliance with damaged input or output cables.
- 1.10 If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- 1.11 Do not open or disassemble the appliance; take it to a qualified service person when service or repair is required.

- 1.12 Do not use the appliance if it has received a sharp blow, been dropped or otherwise damaged in any way.
- 1.13 Do not put fingers or hands into the appliance.
- 1.14 Never put the appliance on top of the battery while using it.
- 1.15 Do not attempt to charge a damaged battery.
- 1.16 Never charge a frozen battery.
- 1.17 Keep away from jewelry. Remove personal metal objects such as rings, bracelets, necklaces and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- 1.18 Keep away from tools. Be extra cautious, to reduce the risk of dropping a metal tool onto the battery. It might spark or short-circuit the battery or other electrical part that may cause an explosion.
- 1.19 Never allow clamps to touch together or contact the same piece of metal.
- 1.20 Determine the voltage of the battery by referring to the vehicle owner's manual and make sure that the output voltage of the appliance is correct.
- 1.21 The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains.
- 1.22 After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.
- 1.23 Refer to the instructions for cleaning and user maintenance.
- 1.24 Unplug the appliance from the supply mains before attempting any maintenance or cleaning.

## 2. GENERAL INFORMATION

### 2.1 Function button

	<p>The type of battery and the charging current parameters are set using the « <b>Function</b> » button on the control panel. You can set:</p>
<b>Battery type</b>	
	<p>Suitable for charging WET and Gel batteries.</p>
	<p>Suitable for charging AGM-START&amp;STOP and AGM-SPIRAL and EFB or WET batteries with temperatures below 5 C°.</p>
<b>RECON</b>	<p>The recondition function allows you to recover WET and AGM 12 V batteries that have been inactive for a long time and that have either acid stratification or sulphation. This function acts physically on the electrolytic solution of the battery so that it mixes again counteracting the stratification and also de-sulphates the plates. Only available in 12 V mode / for 12 V batteries.</p> <p><b>Warning:</b> Due to the high voltage that is reached during this charging cycle, recovery must be carried out with battery removed from the vehicle. A battery recovery connected to the vehicle could cause damage to the on-board electronics.</p>

	Suitable for charging lithium batteries LiFePO4. Do not charge other types of lithium batteries. Only available in 12 V mode / for 12 V batteries.
<b>Charging current</b> according to the battery capacity.	
SPI PRO 16	
4 A	<ul style="list-style-type: none"> <li>For charging 5 Ah to 80 Ah batteries.</li> <li>For maintenance 5 Ah to 120 Ah batteries.</li> </ul>
8 A	<ul style="list-style-type: none"> <li>For charging 50 Ah to 160 Ah batteries.</li> <li>For maintenance 50 Ah to 250 Ah batteries.</li> </ul>
16 A	<ul style="list-style-type: none"> <li>For charging 90 Ah to 360 Ah batteries.</li> <li>For maintenance 90 Ah to 550 Ah batteries.</li> </ul> <p>Only available in 12 V mode / for 12 V batteries.</p>
SPI PRO 25	
5 A	<ul style="list-style-type: none"> <li>For charging 5 Ah to 100 Ah batteries.</li> <li>For maintenance 5 Ah to 150 Ah batteries.</li> </ul>
12.5 A	<ul style="list-style-type: none"> <li>For charging 70 Ah to 250 Ah batteries.</li> <li>For maintenance 70 Ah to 360 Ah batteries.</li> </ul>
25 A	<ul style="list-style-type: none"> <li>For charging 150 Ah to 550 Ah batteries.</li> <li>For maintenance 150 Ah to 800 Ah batteries.</li> </ul> <p>Only available in 12 V mode / for 12 V batteries.</p>

## 2.2 Mode button

	By using the « <b>Mode</b> » button on the control panel you can set the following functions / modes:
	<p><b>Show Room</b></p> <p>The charger is equipped with the show room function 13.8 V. This function keeps vehicle accessories in operation during demonstrations in the dealership.</p> <p>Only available in 12 V mode / for 12 V batteries.</p>
 	<p><b>12 V - 24 V</b></p> <p>The charging voltage according to the battery voltage.</p>
	<p><b>Supply DC</b> - Power supply function: 14 V</p> <p>Press and hold the « <b>Mode</b> » button for 5 seconds to activate this function.</p> <p>This function allows you to keep the memory of a vehicle active during battery changes or in all cases where the battery is disconnected from the vehicle circuit.</p> <p>Only available in 12 V mode / for 12 V batteries.</p> <p><b>Warning:</b> In this function the charger is not protected against reverse polarity. <b>RISK OF DAMAGE !</b></p>

## 2.3 Display

	The display will show the different charging parameters chosen with the « Mode » and « Function » button as well as: <ul style="list-style-type: none"><li>• The battery voltage, charging voltage.</li><li>• FUL when the battery is charged.</li><li>• Error indication if error / malfunction of the battery.</li></ul>
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## 2.4 Charging cycles

Charging phase battery		Description
1	Diagnosis stage « A1 »	The charger state of charge of the battery to be charged.
2	« Recovery from deep discharge »	The charger starts using a pulse current until the battery has reached optimal voltage and current levels to start the second charging phase.
3	« Soft I »	Reduced constant current charge.
4	« I »	Charge at constant current until the maximum battery voltage is reached.
5	« U0 »	Charge at constant voltage until battery absorbs minimum current.
6	« Recovery »	Only with charger set on « Recon »: constant current deep charge phase and increasing voltage to increase battery charging capacity.
7	Diagnosis stage « A2 »	The charger analyzes the state of efficiency of the charged battery.
8	« U »	The battery charge status is maintained at a reduced
9	« Up »	The battery charge is maintained with pulses of current (provided constantly).

## 2.5 Interruption of the charging cycle

In case of blackouts in the supply mains 220 - 240 V~, the battery charger stops the charging cycle in order to restore it automatically as soon as the supply mains is restored. This function is crucially important if the battery charger is used to charge batteries without the operator supervising the charging process; for example, during very long charging cycles (maintenance charging) or when charging overnight (charging for vehicles that need to be charged daily).

## 2.6 Safety devices

The battery charger is equipped with safety devices to ensure the utmost safety during use and operation.

- Full protection against sparks
- Protection against short-circuits
- Protection against overheating
- Protection against polarity reverse
- Protection of voltage compensation

## 3. OPERATION INSTRUCTIONS

### 3.1 Charging a battery

Ignite OFF and all electrical devices (heating, lighting...) before using the charger if the battery is installed in the vehicle.

Clean the battery terminals before using the charger.  
 Lay the DC cables away from any fan blades, belts, pulleys and other moving parts.

**1. Before connecting the charger with the battery: make sure that the power cord is not connected with the supply mains!**

**2. Connection to the battery**

Connect the output cable to the charger.

**Output cable with clamps**

Check first if the negative terminal is connected/grounded to the chassis. If not, contact your reseller.

Connect the red clamp (+) to the positive terminal (+) of the battery, then connect the black clamp (-) to the earth/chassis of the vehicle (a heavy gauge metal part of the frame or engine block. Do not connect to the carburetor or fuel lines).

**Output cable with eyelets - Only available for SPI PRO 16**

Loosen and remove the nuts from the bolts of the battery terminals. Connect the positive eyelet (+) to the positive terminal (+) of the battery, then connect the negative eyelet (-) to the negative (-) terminal of the battery. Refit and tighten the nuts to secure them.

In both cases: make sure that the outlet cables of the charger are tightly connected.

**3. Connection to the supply mains**

Plug the power cord of the battery charger into the socket of the supply mains. The digital display lights up and the « ON » LED lit blue.

**4. Selection of the charging parameters**

Within 5 seconds:

Make sure that the voltage corresponds to the rated voltage of the charger, using the « Mode » button.

With the charger in 'Stand-by' mode; select the appropriate battery type and charging current using the « Function » button:

For 12 V batteries			
	Battery Type	<ul style="list-style-type: none"> <li>• STD</li> <li>• AGM</li> <li>• RECON</li> <li>• LI</li> </ul>	
	Charge Current	<b>SPI PRO 16:</b> <ul style="list-style-type: none"> <li>• 4 A</li> <li>• 8 A</li> <li>• 16 A</li> </ul>	<b>SPI PRO 25:</b> <ul style="list-style-type: none"> <li>• 5 A</li> <li>• 12.5 A</li> <li>• 25 A</li> </ul>
For 24 V batteries			
	Battery Type	<ul style="list-style-type: none"> <li>• STD</li> <li>• AGM</li> </ul>	
	Charge Current	<b>SPI PRO 16:</b> <ul style="list-style-type: none"> <li>• 4 A</li> <li>• 8 A</li> </ul>	<b>SPI PRO 25:</b> <ul style="list-style-type: none"> <li>• 5 A</li> <li>• 12.5 A</li> </ul>

After selection the appropriate parameters, the charging process starts

automatically after 5 seconds.

**NOTE:** Lithium batteries are equipped with a BMS that in some cases can prevent the start of the charging cycle. To activate the charge process in this scenario; press and hold the « **Function** » button for 5 seconds, after setting the charger in lithium mode.

### 5. After the charging process

Disconnect the charger from the supply mains.

### 6. Disconnect the output cables

Disconnect the negative output cable from the negative (-) terminal of the battery or the earth/chassis at first, then the positive output cable from the positive (+) terminal.

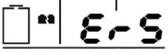
## 3.2 Charging indications

	<p><b>Battery charging.</b></p> <ul style="list-style-type: none"> <li>• The level lines in the battery on the display go up in repeats.</li> <li>• Green « <b>Status</b> » LED flashing.</li> </ul>
	<p><b>The battery is 100% charged.</b></p> <ul style="list-style-type: none"> <li>• The level lines in the battery on the display are fixed.</li> <li>• The display shows the voltage and « <b>FUL</b> » alternately.</li> <li>• Fixed green « <b>Status</b> » LED.</li> </ul> <p>From this moment the charger enters the maintenance phase and will constantly monitor the state of charge of the battery, ensuring that it always remains at an optimal level.</p>

## 4. BATTERY TESTS AND ERROR INDICATIONS

The battery charger is designed to determine the battery's condition before and during charging process, and indicate any connection faults between the battery charger and the battery. An error code will be shown on the display, which allows the fault to be quickly and simply identified.

Display indication	Cause	Solution
	The clamps / eyelets of the output cables are not connected correctly to the battery. Polarity reversal.	Position the clamps / eyelets correctly and start charging the battery again.
	Battery with too low voltage. (You are trying to charge a 12 V battery with charger set to 24 V).	Check the battery voltage. The battery may be defective. Contact a battery service center.
	Charger in error.	The battery may be defective. Contact a battery service center.
	After a certain period of time the battery is unable to absorb current.	The battery may be defective. Consult the nearest battery service center.

	Battery recovery failed after a full cycle of desulfation.	The battery may be defective. Contact a battery service center.
	The output current is > 13.5 A on the DC power supply mode.	Remove/turn off excessive load.
	Disconnected cables, short circuit cables.	Position the clamps / eyelets correctly and resume the battery charge.
	Battery completely short circuit.	The battery may be defective. Contact a battery service center.

## 5. MAINTENANCE AND STORAGE

Disconnect the battery charger from the battery and supply mains. Clean the enclosure with a soft, dry cloth before storage.

When the battery charger will not be used for a long time, it must be stored in a dry place to protect it against humidity and moisture.

## 6. WARRANTY

The warranty applies to manufacturing and material faults during a two-year period from the date of purchase.

To benefit from the guarantee, the purchaser is required to return the product with proof of purchase to the place of purchase.

The devices on which will have been seen any abuse, improper use or improper handling or modifications, as well as entrusting the device to be repaired to third parties other than authorized representatives will void the warranty.



Electrical products should not be discarded with household products. Electrical products used must be collected separately and disposed of at collection points provided for this purpose. Talk with your local authorities or dealer for advice on recycling.





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