

SCA

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QUALITY
ASSURED



6/12V 2/5/10A, 6/12V 2/8/15A 7 STAGE BATTERY CHARGER

INSTRUCTION MANUAL



PLU611233
PLU611234

TECHNICAL DATA

Model	HF0210DVD	HF0215DVD
Charger Type	7 Stage intelligent battery Charger	7 Stage intelligent battery Charger
Compatible Rechargeable Battery Types	6 and 12V, Flooded Lead Acid, AGM, GEL, Maintenance free, Calcium, LiFePO4 (6V 2 cells & 12V 4 cells)	6 and 12V, Flooded Lead Acid, AGM, GEL, Maintenance free, Calcium, LiFePO4 (6V 2 cells & 12V 4 cells)
Lithium Compatible	Yes, LiFePO4 batteries only	Yes, LiFePO4 batteries only
AC Input Voltage (V)	220V-240V / 50Hz-60Hz	220V-240V / 50Hz-60Hz
Maximum Input Power	171.8W	257.6W
Maximum Output Power	146W	219W
Maximum Output Current	2/5/10A	2/8/15A
Absorption Output (V)	7.3V/14.6V	7.3V/14.6V
Float Output (V)	6.6V/13.4V	6.6V/13.4V
Battery Type Selections	Manual and Automatic selection options	Manual and Automatic selection options
Maximum Recommended Battery Charging Capacities	Max 100Ah/1100CCA	Max 150Ah/1300CCA
Maximum Recommended Battery Maintenance Capacities	Max 200Ah/2200CCA	Max 300Ah/2600CCA
Minimum DC Start Charge (V)	Above 1V	Above 1V
Ambient Working Temperature	-20°C to 50°C	-20°C to 50°C
Case Type	Metal + Plastic	Metal + Plastic
Water Resistance	No, undercover use only	No, undercover use only
240V Cable Length	1.8m	1.8m
12V Cable Length	0.5m	0.5m
Additional Lead Lengths (1 x alligator clips, 1 x ring terminals)	0.5m each	0.5m each

SAFETY/WARNING

- Before using this SCA battery charger, ensure the instructions have been read and understood.
- This appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance, cleaning and user maintenance shall not be made by children without supervision.
- This SCA battery charger is designed to charge most 6 volt and 12 volt battery types including: Lead Acid, Deep Cycle, Calcium, Gel, Absorbed Glass Matt (AGM) batteries and LiFePO4 batteries, and flooded and maintenance free configurations.
- Always wear the appropriate Personal Protective Equipment (PPE) when working near batteries. This includes gloves and eye protection.
- Always ensure that there is no damage to the power source (240V power outlet). This includes cracks or exposed wires.
- When working with Lead Acid batteries remove all jewellery including watches and rings.
- Use insulated tools to ensure prevention of a battery short should the metal tool make contact with the battery terminals.
- Ensure battery is charged in a well ventilated area. Explosive gases may escape from the battery during charging. Never charge a battery in a closed off space or in an area without ventilation.
- Never smoke, use an open flame or create sparks near a battery or charger whilst charging as gases may cause an explosion. Please keep lit cigarettes, flames or other ignition sources away from the charging battery at all times.
- SCA battery chargers are designed for indoor use only, and are not water resistant or waterproof. Do not expose the battery charger to water or liquids.
- If the supply cord is damaged, it must be replaced by a service agent or similarly qualified person, in order to avoid a hazard.
- Do not disassemble the battery charger. The warranty will be void if this instruction is ignored.
- Ensure the battery charger is OFF before connecting and disconnecting from the battery. Once connected, power can be turned on.
- Ensure vehicles ignition is switched off before charging the battery.
- Do not place the battery charger where it is not able to get adequate ventilation. Do not place the battery charger on any painted panels on your vehicle, on fabric/leather/vinyl seats, on the battery, or balanced in the engine bay.
- This battery charger is not capable of charging frozen batteries or non-rechargeable, dry cell or lithium batteries (except LiFePO4 type).

FIRST AID

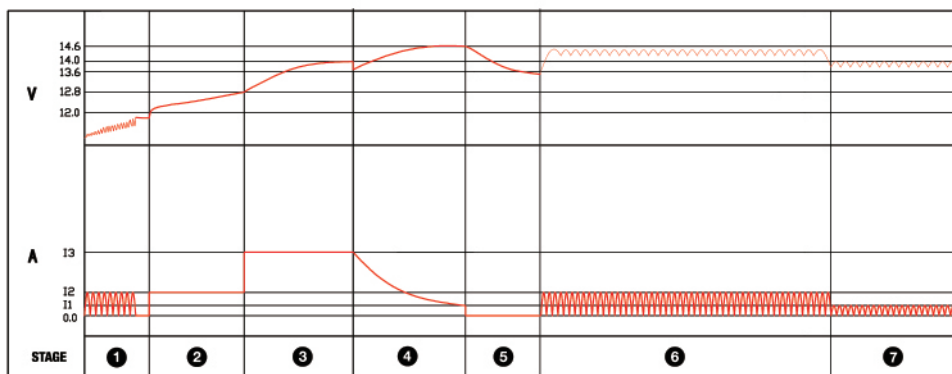
- For advice, contact the Poisons Information Centre in Australia (PH: 13 11 26) or the National Poisons Centre in New Zealand (PH: 0800 764 766)
- If battery acid makes contact with the skin or clothing, wash immediately with soap and water.
- If battery acid makes contact with the eyes, hold eyelids apart and flush the eye continuously with fresh running water for at least 15 minutes or until the Poisons information centre advises you to stop.
- If battery acid is swallowed, do not induce vomiting. Drink a glass of water and seek medical assistance.

FEATURES

- 7 stage charging system
- Suitable for Gel, Lead Acid, AGM, Maintenance Free, Calcium and Lithium LiFePO4 automotive battery types.
- Digital display shows charging status. Integrated battery test function notifies of battery fault or reverse polarity connections.
- Internal protection systems
- Supplied with alligator clamps and ring terminals for fixed connection

7 STAGES OF CHARGING

The charger uses an automatic 7 stage charging process, designed to optimally charge and maintain batteries. Below charging chart refers to 12V application.



1. Analysis And Desulphation

The charger will test the battery for faults. If the battery voltage is lower than 1V, it cannot be charged. If the battery voltage is too high, the charger will give a warning sound and the error LED will illuminate. Where the voltage is higher than 1V, pulse charging will commence. The charger will then identify the voltage selection required. Desulphation will then commence, using pulse currents to gently remove any sulphation build up on the battery plates.

2. Soft Start

After the charger identifies the battery voltage selection, it will start to charge the battery with a small current to activate the battery and improve battery charging efficiency.

3. Bulk Charge (Constant Current Stage)

Maximum charge current is delivered to the battery, minimising charge time.

4. Absorption (Constant Voltage)

With the increase of battery voltage, the charging current to the battery will then reduce in order to avoid battery overcharge.

5. Rest And Diagnosis

When the battery voltage level reaches a fully charged state, the charging current will drop to 0. The charger will then shut off all output and measure the voltage drop over 1 minute, before then entering into the next charging stage. At this point, if any battery fault is identified, the LED indicator will illuminate.

6. Recondition

The charger will continue sending small pulse current charge to the battery, keeping it at 7.2V in 6V mode, and 14.4V in 12V mode. If voltage drops below 6V in 6V mode, 12V in 12V mode, stages 1-5 will repeat.

Note: The battery charger will analyze the condition of the battery in stage 5 and may not perform this function.

7. Maintenance

The charger will continue charging the battery with a small current to keep the battery voltage in a full state. If the battery voltage drops below 6V in 6V mode, 12V in 12V mode, stages 1-5 will repeat.

BATTERY PROTECTIONS

a. Reverse polarity protection

If the clamps are connected to the battery in reverse, the reverse polarity protection will engage and the LED indicator will illuminate, along with an audible alarm.

b. Short circuit protection

If the charger detects less than 1.0V across the clamps, the short circuit protection will engage and no power will be delivered to the cables.

c. Over voltage protection

When the charger is set to charge in a different voltage than the detected voltage of the battery, this protection will engage. The LED indicator will illuminate and the audible alarm will sound for 10s to warn the user.

d. Overheat protection

The overheat protection mode will engage if the temperature of the charger's housing reaches 50°C. The charger will decrease the charging current and even shut itself off if overheating is detected. Once the charger cools down, charging will automatically resume.

e. Overload protection

This protection is triggered if the charger output current is greater than the maximum output. The charger will automatically cut off the output and enter into an idle state.

f. Overcharge protection

If the overcharge protection mode engages, the charging current will decrease with the increase of the battery voltage until the battery is fully charged. The charger will automatically disconnect the output and display "FUL", preventing the risk of overcharge.

BATTERY CHARGER DISPLAYS

PLU 611233: 6V/12V 2/5/10A Battery Charger



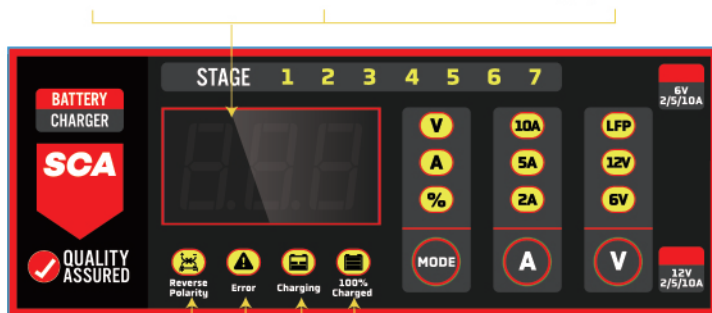
"FUL"- battery is at full charge



"bad"- battery fault detected



"V", "A" or "%" - displays during charge process



Reverse Polarity

Error indicator

100% Charged

Charging

Control panel options

The control panel digital display has three selection buttons:

1. **MODE**: press to check battery voltage, charging current and battery power percentage.
Note: Charging must progress to stages 2 to 7 before the above can be displayed.
2. **A**: press to switch between 6V 2/5/10A and 12V 2/5/10A settings.
3. **V**: press to select battery voltage type, or to stop/change current battery voltage type/charging current.

The "Error" LED indicator will illuminate to warn user of under/over voltage, incorrect or bad connection, a battery fault or if the charger has been connected to the battery for over 48 hours.

Charging current and voltage selections

Charger current	Charger voltage	Suitable battery
2A	6V	6V small battery
5A	6V	6V medium battery
10A	6V	6V large battery
2A	12V	12V small battery
5A	12V	12V medium battery
10A	12V	12V large battery

Note: The output charging current is related to the capacity of the battery itself, please select the appropriate current, otherwise be sure to charge the battery at a low current rate to ensure the safe charging of the battery.

PLU 611234: 6V/12V 2/8/15A Battery Charger



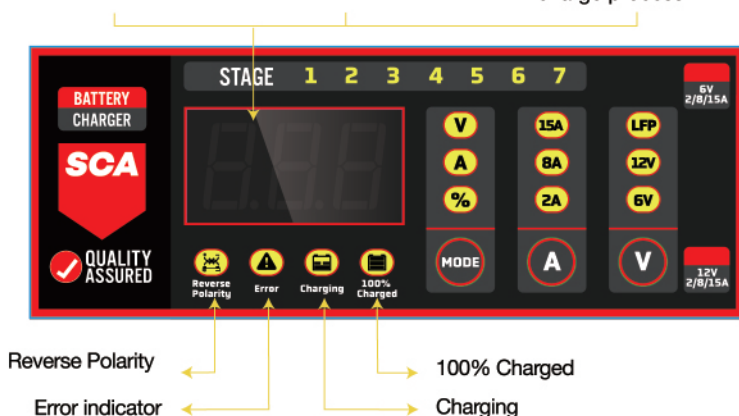
"FUL" - battery is at full charge



"bad" - battery fault detected



"V", "A" or "%" - displays during charge process



Control panel options

The control panel digital display has three selection buttons:

- MODE:** press to check battery voltage, charging current and battery power percentage.
Note: Charging must progress to stages 2 to 7 before the above can be displayed.
- A:** press to switch between 6V 2/8/15A and 12V 2/8/15A settings.
- V:** press to select battery voltage type, or to stop/change current battery voltage type/charging current.

The "Error" LED indicator will illuminate to warn user of under/over voltage, incorrect or bad connection, a battery fault or if the charger has been connected to the battery for over 48 hours.

Charging current and voltage selections

Charger current	Charger voltage	Suitable battery
2A	6V	6V small battery
8A	6V	6V medium battery
15A	6V	6V large battery
2A	12V	12V small battery
8A	12V	12V medium battery
15A	12V	12V large battery

Note: the output charging current is related to the capacity of the battery itself, please select the appropriate current, otherwise be sure to charge the battery at a low current rate to ensure the safe charging of the battery.

Charge operation

- Monitor the charging time of the battery, ensuring it doesn't exceed 48 hours.
- Connect the charger to the battery, following the CHARGING INSTRUCTIONS provided on pages 9-11.
- Connect the charger to an AC outlet.
- Press "A" button to choose appropriate charging current.
- This charger has both automatic & manual voltage selection options. Once connected and switched ON, it will analyze the 6V or 12V battery voltage type automatically. For lithium iron batteries, please press "V" to select the correct battery type.
- Automatic charging process, no need to press button to start.
- Press "V" to stop charging, or to select another battery type & charge current (within 5 seconds on switching ON). After 5 seconds, the battery charger will automatically start charging.
- After charging, remove AC plug and then clamps.

CHARGING INSTRUCTIONS

IMPORTANT: Note the time the charger is connected to the battery and switched on.

Step 1 - Electrolyte Level Check

For sealed maintenance free batteries check the state of charge indicator.

Please Note: Refer to the vehicle manufacturers' owner's manual.

Step 2 - Connect battery charger to the battery

Please Note: Refer to the vehicle manufacturers' owner's manual.

There are three (3) options for connecting the battery charger to a battery

- i. Connect battery charger to a battery out of the vehicle
- ii. Connect battery charger to a battery fitted inside vehicles engine bay
- iii. Hard wire connection battery charger to a battery

i. Battery out of a vehicle

- Ensure the battery is in a safe location on a stable surface with adequate ventilation.
- Ensure the correct Personal Protective Equipment is being worn i.e. gloves and eye wear.
- Connect the RED lead (Battery Clip) to the Positive Terminal (+/positive) on the battery.
- Connect the BLACK lead (Battery Clip) to the Negative Terminal (-/negative) on the battery.
- The battery charger is then to be connected to the supply mains.
- Turn the 240V AC power source ON to turn the battery charger on.
- Charging will automatically commence. After charging, disconnect the battery charger from the supply mains.
- Disconnect the BLACK lead (Battery Clip) from the Negative Terminal (-/negative).
- Disconnect the RED lead (Battery Clip) from the Positive Terminal (+/positive).
- Refit battery into vehicle and correctly reconnect using the vehicle manufacturer's recommendations.



ii. Battery connected in vehicle

- Ensure the correct Personal Protective Equipment is being worn I.e. Gloves and Eye Wear.
- Ensure vehicle ignition is switched OFF before making ANY connection to battery.
- The battery terminal not connected to the chassis (positive) must be connected first.
- The second connection (negative) 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.
- Turn the 240V AC Power Source ON to turn the battery charger on.
- Charging will automatically commence.
- After charging, disconnect the battery charger from the supply mains. Then remove chassis connection, and then the battery connection.



iii. Hard wire connection

- Ensure the battery is in a safe location on a stable surface with adequate ventilation.
- Ensure the correct Personal Protective Equipment is being worn i.e. gloves and eye wear.
- Secure the RED Battery Cable ring terminal to the Positive Terminal (+/positive) on the battery.
- Other connection is to be made to the chassis, remote from the battery and fuel line.
- Plug the battery charger into the one-way connector on the ring terminals.

- The battery charger is then to be connected to the supply mains.
- Turn the 240V AC Power Source ON to turn the battery charger on.
- Charging will automatically commence. After charging, disconnect the battery charger from the supply mains and disconnect battery connection.
- Disconnect the charger one way connector from the ring terminals, and ensure any loose leads in the engine bay are secure.

Step 3 – Charging

Either press the mode selection button on the battery charger (within 5 seconds of connection) to select mode, or the charger will automatically commence charging after 5 seconds.

Default battery type is lead acid battery.

Select LFPO4 for Lithium phosphate battery.

Note:

If the battery charger does not detect a properly connected battery, the LED 'error' indicator will illuminate. In this instance, follow the appropriate instructions and reconnect the charger to the battery terminals.

If the battery leads are placed on the reverse polarity terminals of the battery, reverse polarity indicator light up to indicate that the battery charger has been incorrectly connected to the battery. Immediately will disconnect the battery charger from the battery terminals and correctly fit the battery cables to the correct battery terminals.

FREQUENTLY ASKED QUESTIONS

Q. Is this battery charger waterproof, or water resistant?

A. No. This battery charger is designed for use indoors or undercover only.

Q. Is this battery charger suitable for lithium batteries?

A. This battery charger is suitable for 6V (2 cells) and 12V (4 cells) LiFePO4, Lithium Iron Phosphate batteries only.

Q. Is this battery charger suitable for 24V batteries?

A. No. This battery charger is suitable for 6V and 12V batteries only.

Q. Can this battery charger be left connected to a battery permanently?

A. No. Do not leave this battery charger connected to the battery for more than 48 hours.

IMPORTANT

Leaving a battery on charge permanently may cause damage to your battery, if a fault occurs. Lead Acid batteries require frequent checking of electrolyte levels. It is not recommended to leave AGM batteries on float charge permanently. Do not leave maintenance free batteries on float charge for extended periods as the electrolytes can dry out and cause an internal explosion.

Always refer to the vehicle or battery manufacturers' owners manual.

TROUBLESHOOTING

Problem	Possible reasons	Solution
<p>Error LED will illuminate & message 'bad' displays & audible alarm will sound (after 30 mins on charge)</p>	<p>Faulty battery Sulphation in battery</p>	<p>Visit your local Supercheap Auto store to get your battery tested.</p>
<p>Reverse connection LED flash and audible alarm will sound</p>	<p>Reverse connection to battery terminals</p>	<p>Check connections to battery are correct.</p>
<p>Error LED will illuminate and audible alarm will sound</p>	<p>Wrong connection</p>	<p>Check connections to battery are correct</p>
<p>Battery voltage display 0V or lower than 1V & charging LED not illuminate</p>	<p>1. Bad connection to battery 2. Battery voltage is lower than 1V</p>	<p>1. Check connection to battery is secure and tight 2. Please make sure the battery voltage higher than 1V before charge</p>
<p>Battery charger cannot work normally</p>	<p>Battery temperature is too low</p>	<p>Where possible, relocate battery to a warmer location and reconnect battery charger</p>

WARRANTY

Our product is guaranteed to be free from quality and manufacturing defects for a period of 5 years.

If your product becomes defective during this period, SRGS PTY LTD will offer you either a replacement, credit or refund where a product is faulty; wrongly described; different from the sample shown to you or do not do what they are supposed to do.

This warranty will not cover substantially modified product; misuse or abuse of the product contrary to user instructions or packaging label; change of mind and normal wear and tear.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

To claim the warranty, take the product to the front Service Desk of your nearest store of purchase. You will need to show receipt or other proof of purchase. Additional information may be required to process your claim. Should you not be able to provide proof of purchase with a receipt or bank statement, identification showing name, address and signature may be required to process your claim.

Any expenses relating to the return of your product to the store will normally have to be paid by you. For online store purchases, SRGS PTY LTD will pay for the return freight for any product assessed as having a major failure.

The benefits to the customer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods or services to which this warranty relates.

This warranty is provided by SRGS PTY LTD, 6 Coulthards Avenue, Strathpine QLD 4500, Australia. Phone: 1300 175 010.

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6/12V 2/5/10A, 6/12V 2/8/15A 7 STAGE BATTERY CHARGER

INSTRUCTION MANUAL



Manufactured and packaged for SRGS PTY LTD ABN 23 113 230 050
6 Coulthards Avenue, Strathpine QLD 4500, Australia