IMPORTANT SAFETY INSTRUCTIONS – Read before use

SPARK

(Electric Vehicle Supply Equipment, Revision 6.0)

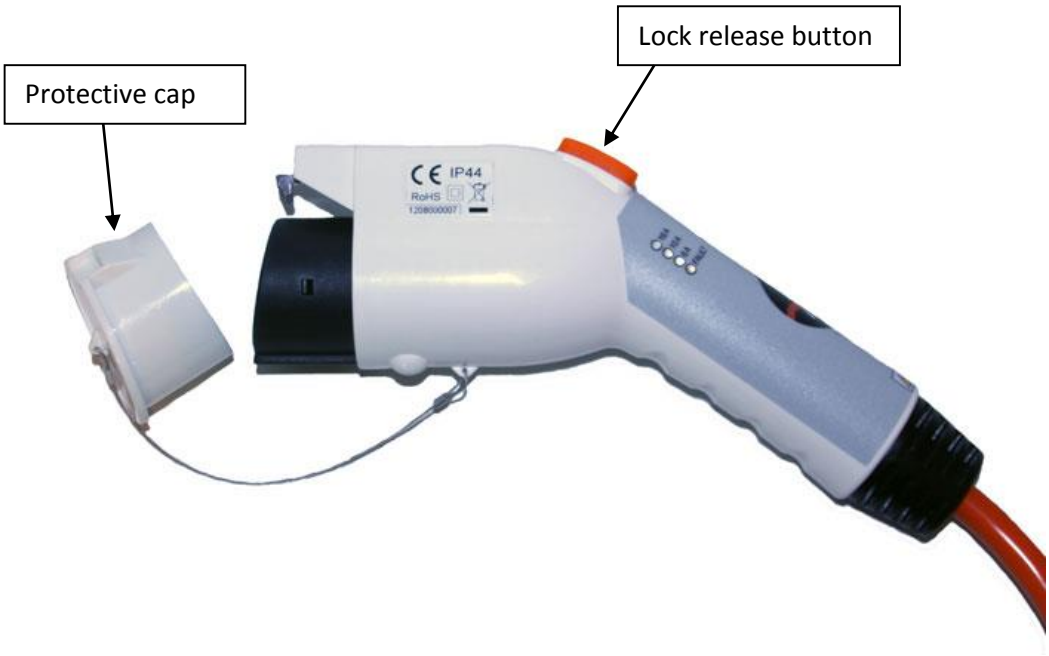
Contents

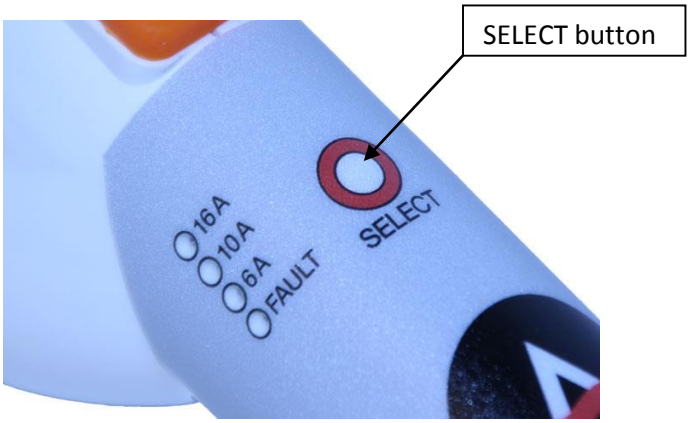
About the SPARK

The SPARK is a J1772 compliant EVSE.

It is designed for the European market and shall only be used within EU/EES.

The SPARK is only to be used with 1-phase 100-240V 50/60Hz.





How to use the SPARK

Read Safety precautions first

About 16A charging current

You should always have good knowledge about the electrical installation before you start charging with 16A.

16A charging requires that the outlet is rated for 16A (10/16A should not be used with 16A charging) and that the cable dimensions between the electric central and the outlet is 2.5mm² or more. You should also make sure that the installation and outlet is in good shape and can handle the continuous 16A load.

If you are uncertain about the quality or capacity of the electrical installation consult your certified electrician.

See safety precautions for more information.

To start charging

1. Connect the SPARK to an outlet socket.
2. The SPARK will start and indicate the selected charging current with a blue LED.
3. Make sure the SPARK cable is straightened and not creating a coil.
4. Select the desired charging current by pressing the SELECT-button until correct charging current is indicated by the blue LED. Read safety precautions regarding charging current.
5. Insert the SPARK into the EV. Charging starts automatically. The current LED will begin flashing when charging is in progress.

To stop charging

1. Press the lock release button and pull the SPARK out of the EV.
   Never pull the socket plug while charging, this will create arching and shorten the lifetime of the outlet and the SPARK.
2. Put the protective cap back to protect the connector from dirt and mist.
3. Remove the socket plug from the outlet.

Security code

The security code can be activated when needed. When the security code is activated and the SPARK is inserted into a car, you are required to enter the security code before the SPARK can be used next time the SPARK is powered on.

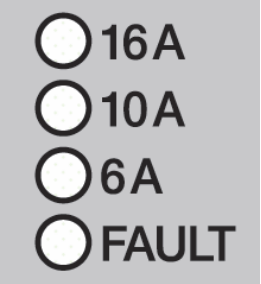
The security code consist of four numbers between 1 and 4, this creates 256 combinations. The default code is 4444.

If the wrong code is entered; the wait time before you can enter a new code is multiplied by 4. Thus the first code can be entered after 1 second, second try after 4 seconds and third try after 16 seconds and so on. When 8 codes have been entered and after about 24 hours of waiting the unit will be locked.

If you forgot your code or the unit has been locked you must contact Charge-Amps at info@charge-amps.com for directions about how to unlock your unit. Proof of purchase will be requested or registration data will be used for unlock information. Note that the unlock process can take up to a week to process.

Security code number system

Each LED indicates a separate number.



16A = 4

10A = 3

6A = 2

FAULT = 1

When you are required to enter numbers the selected number will flash quickly.

By pressing the SELECT-button you select the next number, 1 becomes 2, 2 becomes 3, 3 becomes 4 and 4 becomes 1.

By holding down the SELECT-button for two seconds all LEDs will be shut off and the number has been entered. When the SELECT-button is released; next number can be entered or the SPARK continues with next action if all numbers that was expected has been entered.

Security code activation

To activate the security code, hold down the SELECT-button for about two seconds before inserting the SPARK into the car. Then the selected current LED will flash quickly. When the SPARK is inserted into the car the security code is activated and charging will start as normal.

If you accidently activate the security code you can cancel the activation before inserting the SPARK into your car by either press the SELECT-button again and select the correct charging current again or unplug the mains power plug.

Security code unlock

When the SPARK starts after the security code has been activated you will notice the waiting pattern before the security code can be entered. The waiting pattern is recognized as follows: all LEDs light up every second and they are turned off in this order, FAULT, 6A, 10A and 16A.

When the waiting time is over you are able to enter the security code (the selected number will flash quickly). If the security code is entered correctly the SPARK will go into normal mode. If the security code was wrong the red FAULT-LED will lit up and you have to unplug the SPARK to try again.

Changing the security code

You can change the security code by holding down the SELECT-button while powering on. When you release the SELECT-button you are required to enter the current security code.

When the security code is entered, you are required to enter your new code twice in a row (4+4 numbers).

If the current security code was entered wrong the FAULT-LED will be lit and the security code will be activated as a safety feature. See security code unlock.

When all 12 numbers have been entered (4 current code, 4 new code and 4 new code confirmation), the SPARK will go into normal charging mode. If the new code doesn't match the new code confirmation the FAULT-LED will be lit and you are required to unplug the SPARK and try again.

Safety precautions

WARNING

Due to mishandling a dangerous condition might occur such as electric shock or fire

- Before you connect the SPARK make sure the correct charging current is selected.
  You must ensure that the outlet and circuit has enough current capacity to charge your vehicle safely. The outlet and circuit must be earthed and protected by a dedicated circuit breaker (max 16A) or fuse (max 16A). If in any doubt, consult a qualified electrician.
  Overloading an outlet may result in fire or in best case a blown fuse.
- Do not use an extension or adapter.
- Always connect the SPARK to a ground fault current interrupter (GFCI) protected outlet.
  The SPARK is equipped with a GFCI to protect the J1772 connector from ground faults but always use a GFCI protected outlet for your personal safety.
- Do not disassemble or try to repair.
  Contact vendor if service is required.
- Stop using the SPARK if a failure or abnormality occurs or the cable is damaged.
- Stop using the SPARK if the fault LED is illuminated or flashing.
- Stop using the SPARK if it gets very hot. The SPARK will get warm during charging, this is normal.
- Keep the plug dry and take appropriate care when operating in wet conditions.
- Do not touch the electric terminals of the SPARK.
- Do not use the SPARK if any parts are broken, worn, cracked, open or show any indication of damage.
  Contact vendor if you are uncertain if it is safe to use your SPARK.
- Not for use by children.
- Maximum ambient temperature is 40 degrees Celsius.
- Ensure the electrical supply is 100-240V 50/60Hz.
- Handle the SPARK with care; do not drop and do not pull the cable strongly.
- Ensure that the SPARK is placed to avoid submersion in water.
- Do not hang the SPARK in the cable.

CAUTION

Parts could be damaged due to mishandling

- Prevent foreign matter from getting into the terminal parts of the SPARK.
  Place the protective cap over the terminals of the SPARK when not connected to an EV.
- Avoid stepping on, folding, driving over, or putting tight kinks in the cable.
- Avoid using the SPARK during electrical storms.
- Do not place heavy objects on the SPARK.
- When charging, make sure the SPARK is not covered by objects preventing cooling of the SPARK.
- Do not drop the SPARK.

Troubleshooting

No LEDs light up at socket insertion	Verify AC Mains power	If AC Mains power exists, stop using immediately and contact manufacturer.
The FAULT-LED is lit and flashes	This indicates a problem. The FAULT-LED does flash with a timed interval to indicate the problem.	Flash every: 0.5 seconds – Diode test failed (EV problem, check connector for dirt) 1 seconds – Ventilation required is not supported (incompatible EV, return to manufacturer) 2 seconds – Ground fault detected (EV problem, check connector for dirt)
The FAULT-LED is lit	The wrong code is entered	Unplug the SPARK and retry. If the FAULT-LED light up immediately the SPARK is locked. See security code in this manual.
The FAULT-LED flashes quickly	You are expected to enter code or numbers	See security code in this manual.
The current LEDs don't flash and show that charging has started	EV haven't start charging process	Make sure the EV is ready to charge and verify timer settings.
The current LEDs flashes quickly	You have activated security code or are entering code or numbers	
The SPARK gets warm while charging	During 16A charging the SPARK and cabling will get warm.	This is normal. If the SPARK gets very hot; stop charging immediately.
All LEDs light up every second and turns off in order.	Security code waiting time	You must wait before you are able to enter the security code. Longer time for each wrong code entered.

If a problem occurs that is not listed above, contact manufacturer at info@charge-amps.com.

Technical specifications

Voltage	100-240VAC
Frequency	50-60Hz
Max charging power output	16A ±5%
Vehicle interface	SAE J1772 EV Connector
SAE Compliant	Level II per J1772
Cable length	7.5m 2.5mm²
Ground fault protection	Internal 30mA for car connector. Always use external GFCI for personal protection.
Standby power	<1W
Power requirement while charging	<5W
Indoor ventilation	Not supported
Encapsulation	IP44 when connected or protection cap is on
Operating temperature	-30°C to +40°C
Operating humidity	Up to 95% non-condensing

Disposal

The SPARK contains electronics and shall be recycled as such.

Contact your local community center for information about recycling and where to dispose your products.

You can also send used items back to Charge-Amps for disposal. Contact info@charge-amps.com for instructions on where to send items for disposals.