



CHARGE AMPS

Amp Guard v.1.0
Installation Guide

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Overview

The Amp Guard is a device for measuring current in the power distribution box for use in a loadbalanced Charge-Amps charger installation. When power consumption other than charging is detected, the load balancer automatically reduces the power available for charging.

Technical Specification

Measurement Range (Current)	0-100A*)
Measurement Range (Voltage)	Future functionality
Network	Wi-Fi, LAN
Power	MicroUSB (5V, 2A)
Installation	DIN (6 modules) or stand-alone
Dimensions (mm)	108 x 97 x 57

*) The device can support 750 A if current sensors are replaced

Installation Instructions

The Amp Guard must be connected to the internet in order to deliver data to the load balancer. This can be done either by Wi-Fi or LAN. Normally, no firewall settings need to be modified.

As soon as the Amp Guard is powered up and connected to the internet, it will start delivering data.

Electrical installation

The Amp Guard must be connected to the internet in order to deliver data to the load balancer. This can be done either by Wi-Fi or LAN. Normally, no firewall settings need to be modified.

As soon as the Amp Guard is powered up and connected to the internet, it will start delivering data.

Connect the current sensors as shown below:



Connect the Amp Guard to a micro USB power supply.

LAN Installation

1. Clamp the current sensors around incoming power by the distribution box – one for each phase. NOTE: It is *very* important that the sensors are attached to the correct phase.
2. Connect a network cable to the LAN port.
(The network should have DHCP enabled for automatic IP-address)

Wi-Fi Installation

For Wi-Fi setup, Amp Guard must be connected to a computer via the LAN port.

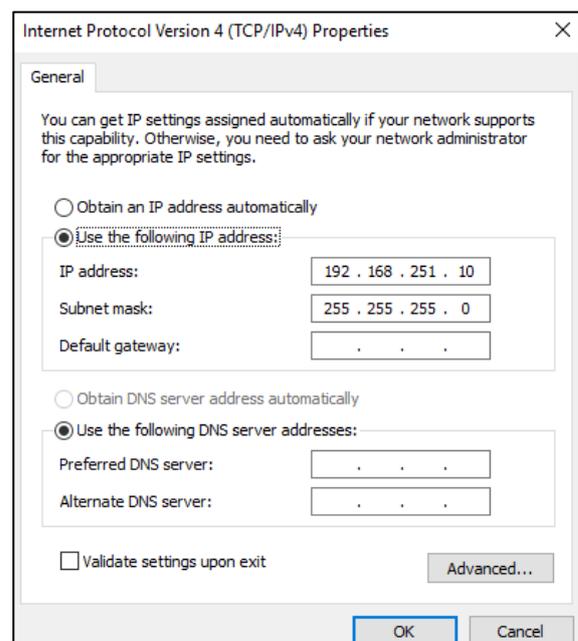
1. Connect to Amp Guard to the computer using the LAN port.
2. Configure your computer to use the following network setup:

IP-address: 192.168.251.10

Gateway: Not necessary
(can be set to
192.168.251.1)

Network mask: 255.255.255.0

Press ok and go to step 3 after the IP-configuration have changed.



3. From a web browser enter the following address: <http://192.168.251.1>
4. Enter SSID and password of the Wi-Fi where the Amp Guard is to be connected.
5. After the settings have been confirmed, the LAN-port cable can be removed.

Cloud Configuration

To be used within a load balanced group, the Amp Guard must be correctly set up. This is done using My Charge Space (Partner).

Import Amp Guard

1. Log in as a partner (my.charge.space/partner).
2. Select “Amp Guard” in the menu and press “Add”:

The screenshot shows a web interface for managing Amp Guards. At the top, there are input fields for 'Serial No', 'Organization', and 'Name', along with 'CLEAR' and 'SEARCH' buttons. Below this is a table header for 'AMP GUARDS' with columns for 'Serial No', 'Name', 'Description', 'Organization', and 'Active'. A blue 'Add' button is located in the top right corner of the table area, circled in yellow.

3. Enter serial number, password and the organization where the Amp Guard should reside.

The screenshot shows a modal form titled 'Add amp guard'. It has three input fields: 'Serial number' with the value '1901000008G', 'PIN code' with the value '12345678', and 'Organization' which is a dropdown menu. At the bottom of the form are two buttons: 'Cancel' and 'Save'.

4. Press “Search” to find the newly imported Amp Guard.
5. Press the Serial number to go to the details page.
6. Press “Activate” to enable the Amp Guard.

Set up Amp Guard in a load balanced charger group

1. Log in as a partner (my.charge.space/partner).
2. Select “Loadbalancer” in the menu and create a new group or select an existing one.

3. Edit the group (the load balancer group needs to be deactivated to do this).
4. Select the newly imported Amp Guard and enter correct values into the “Max Current Per Phase” fields (see information below).

Details for loadbalancergroup:

Name: Group with Amp Guard

Phases: 1,2,3

Organisation: ACME corp.

Description: test

Schuko Enabled:

Max Current Per Phase (Standalone): 32

Max Current Per Phase (Amp Guard):

Min Current Per Charger: 6

Amp Guard: Select

Loadbalancer Type: Standard_V1

CANCEL CLEAR SAVE

5. Press Save and enable the load balancing group.

Max Current Per Phase settings

With an Amp Guard installed, we can allow a higher total current per phase, since the load balancer will automatically reduce the charging power if necessary. However, there is always a risk that the Amp Guard stops sending data (network problems, power turned off etc.). In that case, we do not want to give the load balancer access to the maximum current the system can handle, since there can be other consumers active.

Example:

We have a distribution box that is dimensioned for 25 A. In the system, there are other consumers that are expected to use up to 15 A. A suggested setting would be the following:

Max Current Per Phase (Standalone): 10 A (allowing for the other consumers to be active)

Max Current Per Phase (Amp Guard): 25 A (when we can see the other consumers' usage, we can compensate for it)