MPPT Solar Charger PV Short Relay Reset

This document explains how to perform a reset of an internal protection built into the Smart Solar Charger 250/100. Called the PV Short Relay.

The protection consists of a latching relay, which is mounted across the PV Input. When the firmware detects a short between PV inputs and Battery outputs, by monitoring the battery voltage for an over voltage, it engages the relay and as such shorts the PV Input. See errors 80 to 83 descriptions here.

List of models with newer PV short protection with latching relay:

- SmartSolar VE.Can MPPT 250/100 - Pv Short Relay introduced per Serial number HQ2150 and newer.

When to perform this procedure?

Applying a higher battery voltage than configured in the Solar Charger (eg. 48V battery to a 12, 24 or 36V configured charger), and then connecting the PV Array, can cause the protection to “mistrigger”. Meaning that the charger sees an over voltage, and as such assumes that there is an internal fault and then engages the latching protection.

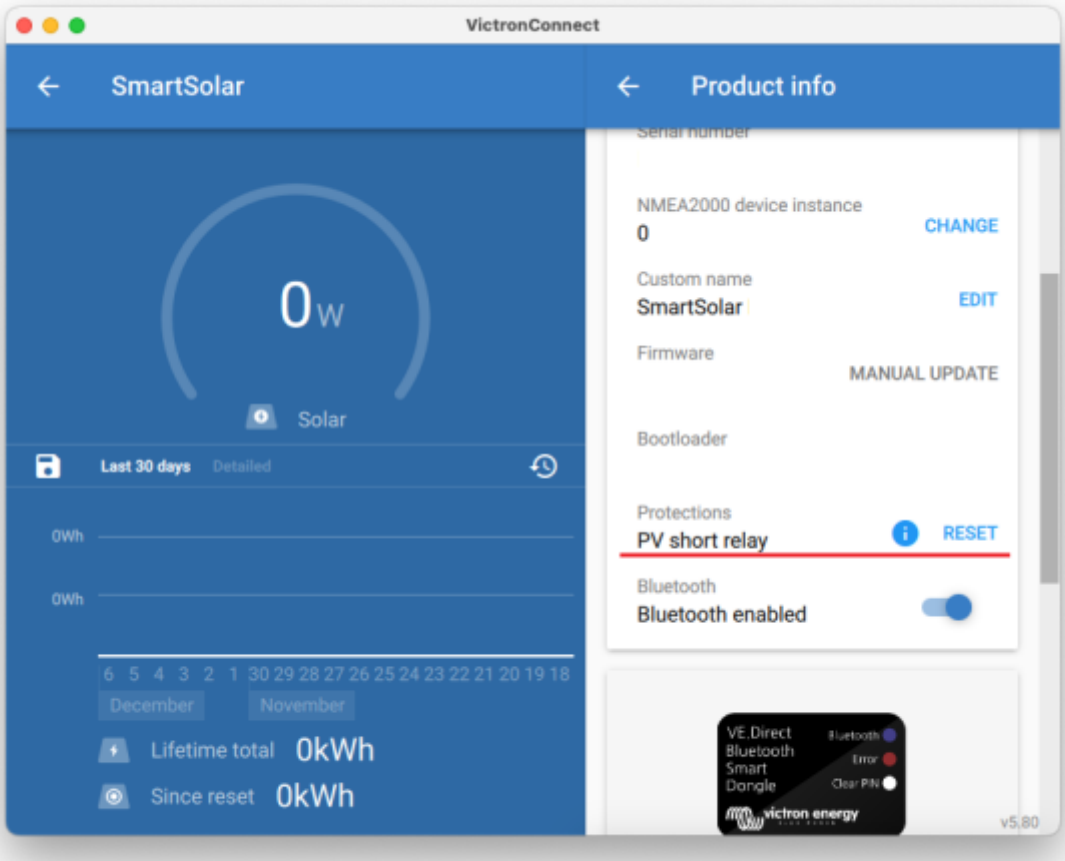
Recovering from such mistriggers is the purpose of the here documented reset feature.

Follow below procedure only if (a) the charger is not measuring any PV voltage when it should (i.e. during the day, with sun shinning, and all connections are ok). (b) the charger no longer charges the battery and measuring the PV Input with a MultiMeter in resistance mode shows a few Ohms or lower. (c) the charger no longer charges an error 80 to 87 is/was shown.

Reset latching relay

To recover from such failure, the below reset procedure must be followed.

1. Disconnect the PV Input terminals.
2. Power the solar charger through its battery terminals with a **12V** battery or bench power supply set to **12V**. Note that if the voltage at the solar charger battery terminals is higher than 15V, reset button is disabled in VictronConnect so the reset procedure won't be possible.
3. Make sure no error 80 to 83 is active. If it is active, power cycle the unit.
4. Open VictronConnect and navigate to the Product settings menu. There the PV Short reset feature is shown.



Note that the feature only shows when (a) the connected units features the protection, ie. 250/100 VE.Can model, HQ2150 and later; (b) requires the battery voltage to be between 10 and 15V; (c) requires VictronConnect v.580 or later; (d) requires firmware version v3.12 or later to be installed on the Solar Charger and (e) no error 80 to 83 is active.

5. Then click the RESET button. It will gray out for a few seconds and return blue. A click might be heard.

For the SmartSolar VE.Can MPPT 250/100 with a serial number between HQ2150 and HQ2250, the reset procedure – unfortunately – often does not work. In this case, contact your dealer for replacing the MPPT under warranty.

Is my charger faulty if the reset menu is shown?

Not necessarily, as described above, the charger takes into account the PV and battery voltages to decide if the reset menu needs to be shown or not. In case, for example, the charger is connected to a 12V battery and no voltage is detected at the panel terminals (e.g. during the night), the menu will be shown, even if the charger is not faulty. Pressing the reset button in this case won't have any effect.

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