

Pre-RMA Bench Test Instructions - Smart Solar RS Solar Charger

REV:05/2024

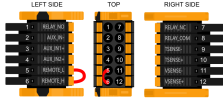


7. Pre-RMA test form - SmartSolar MPPT RS solar charger

1. General

Product, system and fault information	
Date	
Model number	
Serial number	
Date of installation (if known)	
Date of failure (if known)	
VRM site name or ID (if applicable)	
Battery type, brand name and overall capacity (if known)	
Solar array power rating (W)	
Solar array maximum open-circuit voltage (V)	

2. Initial check

Initial check	
Does the unit have mechanical damage to its housing?	☐ Yes, no warranty. ☐ No.
Does the unit have burn marks or melting marks on its housing?	☐ Yes. ☐ No.
Does the unit have mechanical or burn damage to its electrical connectors?	☐ Yes, no warranty. ☐ No.
For models with a remote link only: - Check if the remote connector and the wire link are in place - If not, place the link. - What is the outcome?	 ☐ The remote link was in place. ☐ The remote link was not in place and has now been placed.

3. Latching relay check

Latching relay check	
Is the unit equipped with red safety latching relays near the PV connections as indicated in the below image? 	☐ Yes. ☐ No, go to section 4

Latching relay check

Indicate the position of the relays from left to right.



DO NOT manually operate or reset the levers. If the lever is in a closed position, this indicates a safety trip because of a (warrantable) fault.



A O (open) grey lever is in down position



B C (closed) grey lever is in up position

1. Open / close
2. Open / close
3. Open / close
4. Open / close

Are any of the levers in the closed position (lever is up)?

- ☐ Yes, lodge a warranty claim.
- ☐ No.

4. First power up**Power up check**

Power the solar charger by using a bench power supply set to 48V and a current limit of 0.5A, connected to the battery terminals. Alternatively, use a 48V battery with a 0.5A fuse in the positive supply.

Does the unit turn on?

- ☐ Yes.
- ☐ No.

In case the unit did not turn on, check and rectify (if needed) the following:

- Has the unit been switched on?
- Is the remote terminal link in place?
- Is the on/off switch wire terminal correctly connected to the PCB?

Does the unit turn on now?

- ☐ Yes.
- ☐ No, lodge a warranty claim.

Does the display indicate an error?

If so, write it down below:

- ☐ Yes.
- ☐ No.

5. Bluetooth**Bluetooth check**

Is Bluetooth active, i.e., do you see the unit listed in the device list of the VictronConnect app?

- ☐ Yes, go to section 6.
- ☐ No.

Bluetooth check

If Bluetooth is not active, it is unlikely to be a faulty Bluetooth module. More likely, Bluetooth has been turned off in the VictronConnect settings.

To re-activate Bluetooth:

1. Connect to the unit's VE.Direct port using a [VE.Direct to USB interface](#) and a computer, Android phone or Android tablet.
2. Open the VictronConnect app and navigate to the unit's "Settings" page.
3. From the "Settings" page, go to the "Product Info" page.
4. Verify if Bluetooth is enabled. If it is not enabled, activate it.

Is Bluetooth active now?

- ☐ Yes, go to section 6.
- ☐ No.

If Bluetooth is still not active, rule out the following:

- Are there problems with your phone or tablet?
- Are you within Bluetooth range?
- Just one phone or tablet can connect via Bluetooth at once. If another is connected, the unit will be listed but greyed out in VictronConnect app.
- Consult the product manual and the [VictronConnect manual](#) to try to resolve the Bluetooth issue.

Is Bluetooth active now?

- ☐ Yes.
- ☐ No, lodge a warranty claim.

6. Firmware and settings**Update the firmware and reset the settings to default**

Connect via an interface (or Bluetooth) to the VictronConnect app and navigate to the unit. Is this possible?

- ☐ Yes.
- ☐ No, not possible; lodge a warranty claim.

Check if the firmware is up to date. If the firmware is not up to date, update the firmware to the most recent version using the VictronConnect app:

- Go to the VictronConnect settings page.
- On the settings page, click on the "3 dots" symbol in the top right-hand corner.
- Select "Product info".
- On the product info page, check and/or update the firmware.



Note that when connected via Bluetooth, both the solar charger and the BLE module needs to be up to date. If connecting via VE.Direct, only the solar charger needs to be up to date.

- ☐ Yes, the firmware has been updated.
- ☐ Yes, the firmware was already up to date.
- ☐ No, not possible to update the firmware.

Save the unit's settings. File the settings under its serial number and keep the file on record for future reference. To save the settings:

- Go to the VictronConnect settings page.
- On the settings page, click on the "disk" symbol at the top.

- ☐ Yes, the settings file has been saved.
- ☐ No, not possible to save the settings.

Reset all settings to default:

- Go to the VictronConnect settings page.
- On the settings page, click on the "3 dots" symbol in the top right-hand corner of the page and select "Reset to defaults".

- ☐ Yes, the settings are set to default.
- ☐ No, not possible to set the settings to default.

Update the firmware and reset the settings to default	
Does the VictronConnect app display any active error codes? If so, try to resolve the errors by consulting the product manual. Did it get resolved?	☐ No errors. ☐ There were errors, but they were resolved. ☐ There were errors, but they were not resolved.
If there is an active error, write down the error number(s) and name(s). Use this form's "Remarks" section if more space is needed.	Error number: Error name:
Check the history. Were there any historical errors? If so, write them down. Save a copy of the history file for your reference.	☐ Yes, Number(s): ☐ No.
Check the history tab. What was the highest PV voltage recorded? Compare this to the rated maximum PV voltage of the solar charger. Has the PV voltage been higher than 450V?	☐ Yes, no warranty. ☐ No.
Check the trends tab. Does it contain data?	☐ Yes, make a screenshot and submit it with the RMA. ☐ No.

7. Functionality

Solar charger functionality check	
Prepare the solar charger for the functionality test: • Connect the battery terminals to a 48V battery. • Connect the PV terminals to a power supply capable of supplying at least 120VDC.  Skip this section step if you cannot provide a 120VDC to the PV terminals.	☐ Done. ☐ If unable to provide 120VDC, go to section 8.
Measure the voltage on the solar charger PV terminals. Compare this to the solar voltage as indicated in the VictronConnect app. Are they both the same? A small deviation is allowed due to measurement inaccuracies.	☐ Yes. ☐ No, lodge a warranty claim.
Measure the voltage on the solar charger battery terminals. Compare this to the battery voltage as indicated in the VictronConnect app. Are they both the same? A small deviation is allowed due to measurement inaccuracies.	☐ Yes. ☐ No, lodge a warranty claim.
Is the battery being charged? Check if the solar charger is progressing through the bulk, absorption and float charge stages. Is this the case? <u>Background information:</u> Charging begins when the PV voltage reaches at least 120V and continues as long as it stays above 65V.	☐ Yes. ☐ No, lodge a warranty claim.
Force the solar charger to provide more charge current by connecting it to an empty battery or by switching on a large DC load connected to the same battery. Is the unit able to provide its full current rating?	☐ Yes. ☐ No, lodge a warranty claim.
Measure the charge current with a DC current clamp. Is the charge current the same as indicated in the VictronConnect app? A small deviation is allowed due to measurement inaccuracies.	☐ Yes. ☐ No, lodge a warranty claim.
While the solar charger is providing the full current, measure the battery voltage. Compare this to the voltage as indicated in the VictronConnect app. Do the voltages deviate less than 3% from each other?	☐ Yes. ☐ No. This is probably not warrantable as bad cables, or cable connectors can cause it.

8. Remarks

Provide additional fault information or add issues not already covered in earlier questions

9. RMA lodgement

For your information purposes, provide details after lodging the RMA

RMA type:	☐ Warranty claim.
	☐ Non-warranty repair or replacement request.
RMA lodgement date	
Victron Energy RMA number	
Your reference number	