

Pre-RMA Bench Test Instructions

rev 03 - 03/2023



3. Pre-RMA test form - SUN Inverter

1. General

| Product, system and fault information | |
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| Date | |
| Model | |
| Part number | |
| Date of installation (if known) | |
| Date of failure (if known) | |
| Battery type, brand name and overall capacity (if known) | |

2. Initial check

| Initial check | |
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| Does the unit have internal water damage or corrosion? | <input type="checkbox"/> Yes, no warranty. <input type="checkbox"/> No. |
| Are the internals of the unit very dirty, or is there soot, dust or oil present inside the unit? | <input type="checkbox"/> Yes, no warranty. <input type="checkbox"/> No. |
| Are there foreign objects inside the unit: like screws, animals or insects? | <input type="checkbox"/> Yes, no warranty. <input type="checkbox"/> No. |
| Does the unit have burn marks on its internal parts, or does it smell burned? | <input type="checkbox"/> Yes. <input type="checkbox"/> No. |
| Does the unit have mechanical damage to any of its internal parts? | <input type="checkbox"/> Yes, no warranty. <input type="checkbox"/> No. |
| Does the unit have external mechanical, water or corrosion damage? | <input type="checkbox"/> Yes, no warranty. <input type="checkbox"/> No. |
| Does the unit have burn marks or melting marks on its housing, or does it smell burned? | <input type="checkbox"/> Yes. <input type="checkbox"/> No. |
| Does the unit have mechanical or burn damage to its electrical connectors? | <input type="checkbox"/> Yes, no warranty. <input type="checkbox"/> No. |

3. First power up

| Power the unit up and check | |
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| Remove all wires and cables from the unit. Connect the battery connections to a battery bank. Turn the battery supply on and switch the unit on via its main switch. Is there a DC short-circuit? | <input type="checkbox"/> Yes, lodge a warranty claim. <input type="checkbox"/> No. |
| Are there any LED(s) on or blinking? | <input type="checkbox"/> Yes, go to 4. <input type="checkbox"/> No. |

| Power the unit up and check | |
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| Check the internal fuse and replace the fuse if it is broken. What is the outcome? | <input type="checkbox"/> The fuse is not broken. <input type="checkbox"/> The replacement fuse blew, lodge a warranty claim. <input type="checkbox"/> Fuse replaced, there are no LEDs on or blinking. <input type="checkbox"/> Fuse replaced and LED(s) are on or blinking, go to 4. |
| Check if the remote link is in place; if not, place the link. Are any LED(s) on or blinking now? <u>Note:</u> To find the location of the remote link, refer to the product manual. | <input type="checkbox"/> Yes, go to 4. <input type="checkbox"/> No. |

4. Bluetooth

| Bluetooth check | |
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| Is the product a "Smart" product, i.e., does it have built-in Bluetooth? | <input type="checkbox"/> Yes. <input type="checkbox"/> No, go to step 5. |
| Is Bluetooth active, i.e., do you see the unit listed in the device list of the VictronConnect app? | <input type="checkbox"/> Yes, go to step 5. <input type="checkbox"/> No. |
| 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, consult the product manual. Is Bluetooth active now? | <input type="checkbox"/> Yes, go to step 5. <input type="checkbox"/> No. |
| If Bluetooth is still not active, rule out the following: <ul style="list-style-type: none"> • Are there problems with your phone or tablet? • Are you within Bluetooth range? • Only one phone or tablet can connect via Bluetooth at a time; is perhaps another phone or tablet already connected? • Consult the product manual and the VictronConnect manual to try to resolve the Bluetooth issue. Is Bluetooth active now? | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge a warranty claim. |

5. Firmware and settings

| Update the firmware and reset the settings to default | |
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| Connect via an interface (or Bluetooth) to the VictronConnect app and navigate to the unit. Is this possible? | <input type="checkbox"/> Yes. <input type="checkbox"/> 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: <ul style="list-style-type: none"> • 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. | <input type="checkbox"/> Yes, the firmware has been updated. <input type="checkbox"/> Yes, the firmware was already up to date. <input type="checkbox"/> No, not possible to update the firmware. |

| Update the firmware and reset the settings to default | |
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| <p>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:</p> <ul style="list-style-type: none"> Go to the VictronConnect settings page. On the settings page, click on the "disk" symbol at the top. | <input type="checkbox"/> Yes, the settings file has been saved. <input type="checkbox"/> No, not possible to save the settings. |
| <p>Reset all settings to default:</p> <ul style="list-style-type: none"> 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". | <input type="checkbox"/> Yes, the settings are set to default. <input type="checkbox"/> No, not possible to set the settings to default. |
| <p>Does the VictronConnect app display any error codes? If so, try to resolve the errors by consulting the product manual. Did it get resolved?</p> | <input type="checkbox"/> No errors, go to 6. <input type="checkbox"/> There were errors, but they were resolved. <input type="checkbox"/> There were errors, but they were not resolved. |
| <p>Write down the error number and name.</p> | <p>Error number: Error name:</p> |

6. Functionality

| Inverter functionality check | |
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| <p>Measure the DC voltage at the DC connection terminals inside the unit. Is this voltage the same as the battery voltage reading in the VictronConnect app?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Measure the AC output using a True RMS multimeter. Are you measuring exactly 230Vac or 120Vac depending on the unit's AC voltage rating?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Does the measured AC voltage correspond with the AC voltage reading in the VictronConnect app?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Load the unit using incandescent light globes, electric heaters or any other type of resistive AC load. Can the unit power a load as high as its power rating without overload or temperature alarm?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Is the unit making an unusual noise?</p> | <input type="checkbox"/> Yes, lodge a warranty claim. <input type="checkbox"/> No. |

| Solar charger functionality check | |
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| <p>Connect the PV input of the unit to an appropriate solar panel array or DC power supply with series resistors as specified in the Testing equipment, test bench and tools [1] chapter. Adjust the DC power supply to 20V for a 12V system, or 40V for a 24V system.</p> <p>Connect the SUN Inverter to a partly discharged battery. Measure the battery voltage. Is the voltage of the battery slowly increasing?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Is the battery being charged? Check if the charger is progressing through the "bulk", "absorption", "float", and "storage" charge stages. Is this the case?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Measure the charge current with a DC current clamp. Is the charge current the same as indicated in the VictronConnect app (a deviation of up to 1% is allowed)?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |
| <p>Force the unit to provide more charge current by using partly empty batteries or switch a large DC load on. Can the unit provide 100% of its rated charge current?</p> | <input type="checkbox"/> Yes. <input type="checkbox"/> No, lodge warranty claim. |

7. Remarks

| Provide additional fault information or add issues not already covered in earlier questions |
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8. RMA lodgement

| For your information purposes, provide details after lodging the RMA | |
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| RMA type: | <input type="checkbox"/> Warranty claim. <input type="checkbox"/> Non-warranty repair or replacement request. |
| RMA lodgement date | |
| Victron Energy RMA number | |
| Your reference number | |