

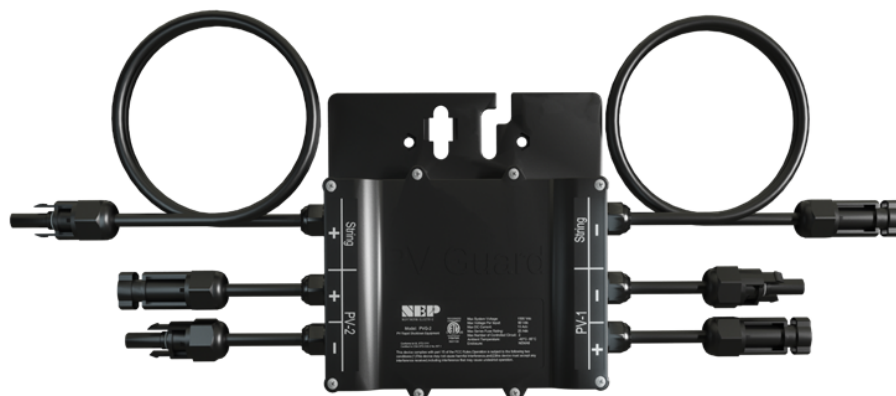
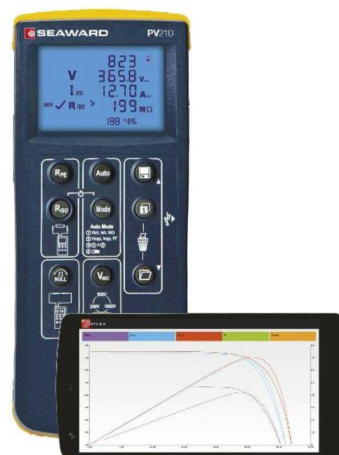
IV CURVE TRACE WITH NEP RAPID SHUTDOWN DEVICES and SEAWARD TESTING EQUIPMENT

This white paper aims to deliver a thorough and accessible guide for conducting an IV curve trace with Rapid Shutdown Devices (RSD) produced by NEP and Seaward testing equipment. As an essential diagnostic tool, the IV curve trace offers valuable insights into a solar PV module's performance under diverse conditions. By adhering to the detailed steps presented in this guide, solar industry professionals can acquire precise and dependable data, empowering them to enhance system efficiency and swiftly pinpoint potential issues.

Equipment Required:

To perform an IV curve trace, the following equipment is required:

1. NEP RSD (PVG-2/PVG-3)
2. Seaward testing equipment
3. A Functioning Solar String Inverter





Step-by-Step Guide:

The following steps should be followed to perform an IV curve trace with NEP RSDs and Seaward IV Curve Testers:

Step 1: Turn On the RSD if system already commissioned, skip to step 2

- Connect all PV-strings to the inverter.
- Turn on testing mode on the inverter (turn on inverter without powering string)
- Wait for the inverter to fully turn on

Step 2: Turn off the Inverter

- Turn off the inverter at its control panel after it is fully on

Step 3: Turn off all Disconnects

- Turn off all DC disconnects at the inverter first
- Turn off the AC disconnect at the inverter after all DC disconnects are off

Step 4: Disconnect the PV String for Testing

- Disconnect the PV string that you want to run the IV curve test on
- Connect your Seaward testing equipment to run the test

Step 5: Test the PV String

- Test the PV string with the Seaward equipment to obtain IV curve data
- Record the data for future reference and analysis

Step 6: Reconnect the Tested String

- Reconnect the tested string to the inverter
- Move on to the next PV string to repeat steps 4 to 6




Step 7: Repeat step 1

- After all PV strings are tested, repeat step 1 to turn on the inverter
- The system is now ready for normal operation

*****For more detailed instructions see the "PVG IV-Curve App Note" here:**

https://northernep.com/wp-content/uploads/2022/03/PVGIVCurve-20200619_app_note_v4.pdf



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Conclusion:

Performing an IV curve trace with RSDs for solar is an essential test that helps identify any issues with the system and optimize its performance. By following the steps outlined in this guide, solar professionals can obtain accurate and reliable data to make informed decisions and ensure that the system operates at peak efficiency. Our company's RSDs are designed to facilitate this process, and we are confident that they will deliver consistent results in every test.

Video Demonstration
<https://vimeo.com/813030838>