

FLUKE®

PVA-1500HE2/PVA-1500T2/SolSensor-300V3

Solmetric I-V Curve Tracer Kit

Getting Started Guide

Introduction

This document gives brief instructions and troubleshooting information for the PV-1500HE2 and PV1500T2 Solmetric I-V Curve Tracers (I-V Curve Tracer) and SolSensor-300V3 (SolSensor). For complete use information, see the Users Manual.

Contact Fluke

Fluke Corporation operates worldwide. For local contact information, go to our website.

To register your product, or to view, print, or download the latest manual or manual supplement, go to our website.

Safety Information

General Safety Information is in the printed Safety Information document that ships with the I-V Curve Tracer. More specific safety information is listed where applicable.

A **Warning** identifies hazardous conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.

PN 5597386 (English)

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Specifications

Safety specifications are in the Safety Information that shipped with the product.

Caution

To avoid damage to the Product:

- **Use only the test leads and alligator clips provided with the Product.**
- **Keep PV connectors, test leads, and equipment clean.**
- **Do not touch white eye of irradiance sensor. Cover when not in use. Clean only with distilled water and clean, soft cloth, no soaps.**

Table 1. LED States

I-V Unit LED	I-V Unit State	Pushbutton
Off	Off	Push once to turn on
Rapid flashing	Attempting to reconnect the I-V Unit with the PC Software	Push 3x to turn off.
Steady ON	Connected to PC Software, sweep enabled	Push once to pause, or 3x to turn off.
Very slow flashing	Paused (turns off automatically in 15 minutes)	Push once to enable sweep, or 3x to turn off.
Slow flashing / Steady ON	Battery charging / charged	–
Five flashes, pause, repeat	Re-pairing with SolSensor.	See Users Manual to initiate re-pairing
To turn off I-V Unit: In any state, press the pushbutton 3x.		
To reset I-V Unit or SolSensor: Hold pushbutton down 6 seconds and release.		

Measurement Example - Test Strings at a Fused Combiner Box

1. Turn on the I-V Curve Tracer and SolSensor. Blinking LEDs indicate searching for PC Software.
2. Connect your PC to the I-V Curve Tracer Wi-Fi hot spot.
3. Start the PVA software.
4. Open your Project from the **File** menu or create a new Project. Once connected, the LEDs on I-V Curve Tracer and SolSensor will be steady on and the status indicator in Software shows Ready.
5. Mount SolSensor to PV module frame, uncover irradiance sensor, plug thermocouple into T1 socket, and attach tip to module backside.
6. Open the dc disconnect to isolate combiner box from rest of system.
7. Lift all fuses to de-energize the combiner box buss bars.
8. Clip the PVA test leads to the combiner box buss bars.
9. Insert the fuse for the string to be measured.
10. Push **Measure Now** to take an I-V trace. When trace and tree appear, highlight the string number and click **Assign and Save**.

Table 2 shows typical curve and curve deviations.

Table 2. Deviations in the Shape of the I-V Curve

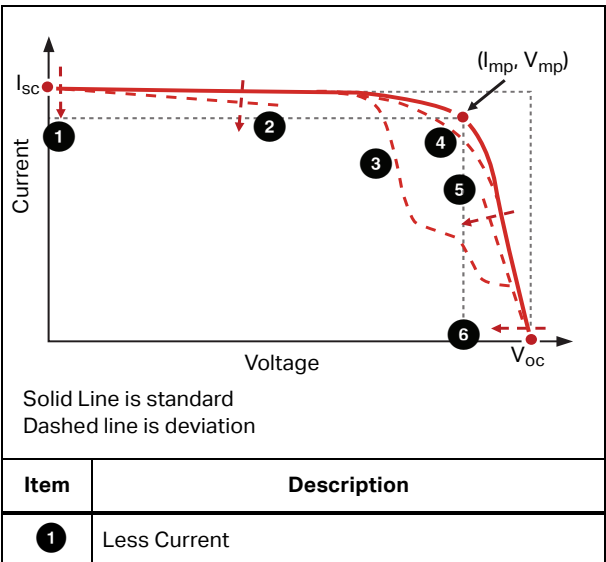


Table 2. Deviations in the Shape of the I-V Curve (cont.)

Item	Description
2	Increased Slope in horizontal leg
3	Steps
4	Rounder knee
5	Reduced Slope in vertical leg
6	Low Voltage
Fill Factor= $\frac{I_{mp} \times V_{mp}}{I_{sc} \times V_{oc}}$	

Troubleshoot the I-V Curve Tracer and SolSensor Operation

Table 3. Troubleshooting

Symptom or Message	Troubleshoot Method
Searching for I-V Unit or Searching for SolSensor	Equipment may be out of wireless range or may have turned itself off after extended inactivity (15 min). Improve line of sight, raise instruments above metal surfaces, or move equipment closer together. If LED off, push once to turn on.
Wireless connection briefly drops out	The network should restore in 1 minute to 2 minutes. If not, re-connect your PC to the I-V Curve Tracer Wi-Fi hotspot.
Wireless connection briefly drops out: Disabled	Click the status indicator for more information. Clear the underlying condition, (over-voltage, -current, -temp, low battery) and reset I-V Curve Tracer or charge the battery.
Zero irradiance reading	Remove lens cap. Confirm Project settings in Properties>Site Info... (latitude/longitude, date/time, tracking, azimuth).

For more troubleshooting information, see the Users Manual and the poster that shipped with the Product.