

How to adjust a multimeter to test photovoltaic panels



Article Overview

To test a photovoltaic panel, set your multimeter to measure DC voltage (V $\square$) for open-circuit voltage and DC current (A $\square$) for short-circuit current, using appropriate ranges.

Measuring Open-Circuit Voltage (Voc)

- Set the multimeter to DC voltage (V $\square$). Most digital multimeters have a dial with a "V" and a solid line over a dashed line, indicating DC voltage .
- Select a voltage range higher than the panel's rated Voc to prevent overloading the meter . For example, if the panel is rated 36V, choose a 50V or higher DC range.
- Connect the probes: red to the positive terminal, black to the negative terminal of the panel .
- Measure under sunlight with no load connected. The reading should be close to the panel's rated Voc, typically within $\pm 5\%$.

Measuring Short-Circuit Current (Isc)

- Set the multimeter to DC current (A $\square$). Ensure the meter can handle the expected current; many standard multimeters cannot safely measure currents above 10A without a shunt .
- Connect the probes directly across the panel terminals to measure Isc, or use a DC clamp meter for high-current panels to avoid damaging the multimeter .
- Perform this test carefully, as short-circuiting a panel can be dangerous if the curr...

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