

# No readings for the negative-to-ground connection of the photovoltaic combiner box



## Overview

A healthy array reading should be 0 volts to ground from either conductor. Once the fault is discovered, replace the wire (s) and record tests and. After confirming a ground fault in a photovoltaic (PV) string, the next challenge is determining where it is. Is the fault inside a module?

Along a wire run?

In a connector?

The key to locating the fault efficiently, without dismantling the entire array, is using voltage measurements and some basic. The reliability of the combiner box directly impacts the power generation efficiency, operational lifespan, and return on investment of the solar power station. Any electrical fault within this critical component can lead to power loss, equipment damage, and even fire hazards and personal safety. A ground fault occurs when a normally current-carrying electrical conductor, such as a positive or negative wire in a solar array, comes into contact with grounded metal components of the system, like the racking or conduit. This test should only be performed by qualified personnel. When your solar system underperforms, the real culprit is often the solar combiner box—leading to energy loss, safety risks, and costly repairs.

## Article Content

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How to Detect Ground Faults in Your PV System :

In this article, we'll show you how to locate a ground fault in a solar PV string using only a multimixer, a basic understanding of voltage behaviour,

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Tigo EI Inverter

If voltage to ground exists from either conductor, check each connection point (DC disconnect, combiner box) back to the array. Once the fault is discovered, replace

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A closer look at PV ground-fault testing tools | Megger

Starting big at the combiner box and going smaller through the conductors, use the 2.5 kV Insulation Resistance Tester to segment out different sections of the array to identify locations for

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Disconnecting DC+ and DC

Until about a decade ago most inverters had a ground-fault fuse that connected one side of the system to ground (usually negative, but not for Sunpower). This was understood to be a

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Solar Combiner Box Troubleshooting: 10 Common Problems and

Comprehensive guide to solar combiner box troubleshooting covering 10 common electrical faults. Any doubt please contact LETOP experts today.

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Grounding and Methods of Earthing in PV Solar System

Methods of Earthing and Grounding in PV Solar Panel Systems Grounding (also known as earthing) is the process of physically connecting the metallic and

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Step-by-Step Guide: Wiring Your PV Combiner Box

A pv combiner box wiring diagram is a useful tool for understanding how to properly connect multiple photovoltaic panels in a solar power system.

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### How to Use Voltage Readings to Locate Ground Faults in Solar PV

Get the step-by-step guide on using voltage readings to locate solar ground faults. Includes diagrams and equations.

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### PV DC combiner boxes

PV DC combiner boxes – compact, high-quality and cost-optimised Our DC combiner boxes offer users the possibility to integrate short-circuit and overvoltage

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### Electrical testing standards guide for the PV Industry

Electrical Testing Standards Guide Introduction A ground fault in a photovoltaic (PV) array is an accidental electrical short circuit between ground and one or more conductors that normally carry

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### Solar Combiner Box Common Problems & Troubleshooting

Learn how to detect and fix it. The solar combiner box, also known as a PV string combiner box, centralizes and protects your PV array wiring. Failure can stem

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### Electrical testing standards guide for the PV Industry

PV ground faults have many potential causes, but most result from improper installation or damaged components. For example, a frayed wire brushing against a conductive metallic enclosure induces a

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### How to find and repair ground faults in solar PV systems

For example, in utility-scale systems where multiple combiner boxes are connected to a large central inverter, the data acquisition system may not identify which combiner box has the ground fault.

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### The Ultimate Guide to Solar Combiner Boxes: From Basics to

Explore the comprehensive guide to PV Solar Combiner Boxes: Learn about types, components, selection criteria, installation best practices, maintenance, and advanced technologies.

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### 7-Point Guide to Wiring a Combiner Box Like a Pro

A combiner box is an electrical device that connects multiple solar panels together. The purpose of a combiner box is to combine the electrical output of multiple solar panels into a single

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### A Comprehensive Guide to Understanding PV Solar

Learn how to wire a PV solar panel system with a comprehensive wiring diagram. Find step-by-step instructions and diagrams to help you connect your solar

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### ON THE GROUNDING AND BONDING OF SOLAR

If ground-fault protection is installed outboard of the inverter or combiner box, it is permitted to be installed in its own enclosure; and the standard

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### Best Practices in PV System Ground Fault Testing —

Ground faults are common faults in PV systems. They manifest as an electrical connection between ground and one or more current-carrying

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### GFDI PV ground faults | Information by Electrical Professionals for ...

Currently my company has technicians test voltage to ground at this GFDI negative point with GFDI fuse open. The negative wire to ground is neg 600 vdc and supposedly will drop 2 volts

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### Best Practices in PV System Ground Fault Testing —

Using a digital multimeter (DMM), technicians should measure voltage from positive to negative, positive to ground, and negative to ground. The

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### Solar Ground-Fault: How to Identify, Locate, and Repair

Learn how to diagnose and locate ground faults in solar PV systems using simple voltage measurements. Follow a real-world case study for practical

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## Solar Combiner Box Common Problems & Troubleshooting

Although PV combiner boxes are designed to protect and simplify solar wiring systems, they're not immune to failure. These issues often go unnoticed until

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## A Comprehensive Guide to Combiner Boxes in

In a vast solar system, each element plays a vital role in ensuring optimal performance and efficiency. Combiner boxes play an important role in

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## Field Guide for Testing Existing Photovoltaic Systems for Ground

Verify that the damaged string has no solid voltage reading by testing the voltage at the combiner box for that string. (Note: if the circuit does not have a ground fault, the voltage reading will

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## Everything You Need to Know About PV Combiner Box

Learn everything about PV Combiner Boxes—how they work, key components, installation tips, and FAQs to optimize your solar power system

## Contact Us

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