



# SolarEdge String Monitoring Solution



## Enhance field operation with pinpoint accuracy

- Less downtime, more power, better cost of ownership
- Ideal for large solar farms
- Sophisticated fault detection with no added wiring
- Advanced nighttime anti-theft capabilities
- Works with any module or inverter



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# “SolarEdge’s string monitoring solution introduces a new level of solar field maintenance that was never before possible”

## LESS DOWNTIME, MORE POWER, BETTER COST OF OWNERSHIP

PV installations are becoming bigger and bigger, making fault recognition and detection more and more difficult. Failures in a panel, string or even in a cluster can go unnoticed for long periods of times and finding their sources is time consuming. Over the lifetime of an installation such failures will reduce power generation. The SolarEdge system gives near real-time alerts, reducing downtime and increasing power generation.

## SOPHISTICATED FAULT DETECTION WITH NO ADDED WIRING

Locating a ground fault in a large field demands tremendous effort. The SolarEdge system will isolate the fault location to a specific cluster of strings reducing the time needed to eliminate the fault to a fraction of the time previously required. Even a single under-performing module will reduce the power generation of an entire string. String monitoring allows you to locate any string that underperforms, enabling you to verify the installation power output with unique resolution. In conjunction with SolarEdge’s monitoring portal, SolarEdge will identify and create alerts to a wide range of faults and report possible causes. Burned fuses, overvoltage, shading warnings and more are also reported, allowing you to focus on solving problems rather than on looking for their sources.

## ADVANCED NIGHTTIME ANTI-THEFT CAPABILITIES

The SolarEdge system will protect your investment even during the night. By continuously monitoring string connectivity it provides real-time alerts of any tampering with the installation, protecting your investment and saving money on costly security methods that might be bypassed.

## FAST INSTALLATION

The string monitoring system is installed without changing the installation methods of solar fields and without the need for any added wiring, enabling rapid plant set-up. By detecting common wiring mistakes, it eliminates the need for lengthy verification after the initial installation, allowing faster commissioning and delivery of power.

## USE IN ANY INSTALLATION

Whether your installation has been up and running for years or it is still being planned, this solution can be seamlessly added. It is built-in to SolarEdge’s revolutionary power harvesting solution, but can also be installed as a standalone addition to any field using any module and any inverter.

## THE SYSTEM HAS A MODULAR DESIGN THAT CAN BE FITTED FOR ANY INSTALLATION SIZE. IT INCLUDES 3 COMPONENTS WHICH ARE IP65 CERTIFIED FOR OUTDOOR USE, AND ACCESS TO ONLINE MONITORING PORTAL:

### SOLAREEDGE PROBE

A single SolarEdge Probe is connected to each string of modules. Each probe measures the performance of its string, and transmits monitoring data over the existing power line, so additional wiring is not required.

Features:

- Reverse current protection – internal string diode
- Measures string current and charge during the day
- Measures string connectivity during the night
- No need for external power source – works day or night

### SOLAREEDGE BRIDGE

A SolarEdge Bridge groups clusters of strings. Each Bridge measures the performance of its clusters, while also collecting the string performance data that has been measured by SolarEdge Probes and transmitted to the Bridge over the power lines. All cluster and string performance data is wirelessly sent by the Bridges to the SolarEdge PoleStar.

Features:

- Measures cluster current, charge and voltage during the day
- Measures cluster connectivity during the night
- Individually identifies ground faults for each cluster
- Each cluster is fused – identifies blown fuse

### SOLAREEDGE POLESTAR

The SolarEdge PoleStar wirelessly collects monitoring data from all the Bridges in the field. In addition, the PoleStar monitors the performance of the inverters in the site, be it SolarEdge or non-SolarEdge inverters. Monitoring data from the entire site is then securely sent by the PoleStar to the remote SolarEdge server via the Internet, where it can be accessed through the SolarEdge Monitoring Portal.

Features:

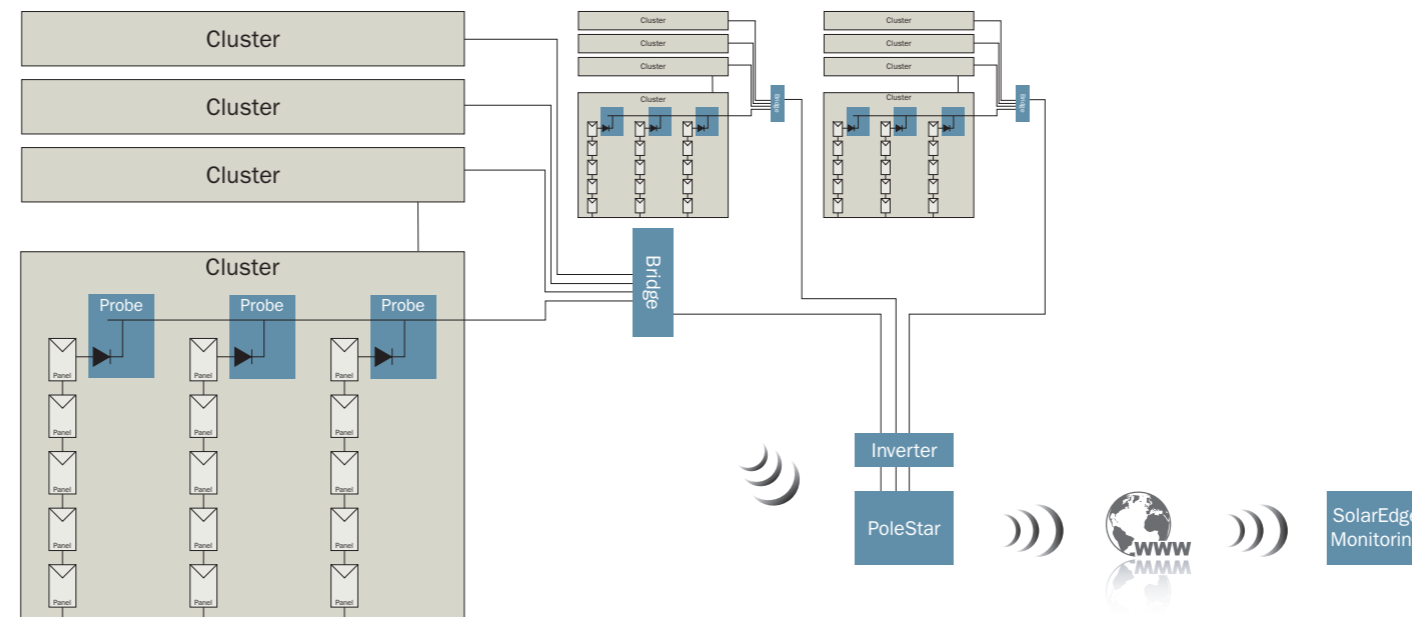
- Connects wirelessly to all SolarEdge Bridges
- Connects to SolarEdge inverter or 3rd party inverter
- Stores 1 week of raw data
- Server connection via dial-up / GSM / Ethernet

### SOLAREEDGE MONITORING PORTAL

The SolarEdge Monitoring Server provides a comprehensive, hierarchal monitoring system that tracks system performance. Smart algorithms continuously track the installation to detect suboptimal performance or events that require intervention or maintenance. The SolarEdge Monitoring Portal provides recommendations and suggested solutions. This enables installers and site owners to quickly detect faults, efficiently manage maintenance operations, and analyze site profitability.

Features:

- Fast Troubleshooting
- Artificial Intelligence
- Powerful Embedded Reporting Tools
- Solar Field Maintenance Tools



### DETECTABLE FAULTS

SolarEdge’s string monitoring will detect and pinpoint the location of many faults, such as:

- Incorrect wiring during installation
- Module malfunction and degradation
- Dirty modules
- String level performance degradation
- Disconnection problems
- Shading
- Cluster-level ground-fault
- Blown fuse indication
- Inverter malfunctions
- Theft detection





## About SolarEdge

SolarEdge provides next generation power conversion electronics that effectively remove all known system constraints across the photovoltaic energy space. Our Smart DC technology enables increased production of clean, grid-ready energy at a lower cost per watt than any other competitive offering.

SolarEdge technology marries traditional photovoltaic workflows and installation methods with a groundbreaking holistic system approach. It is a quiet revolution that is at once disruptive because of its profound benefits in changing the manner in which energy is harvested, deployed, managed and delivered and complementary because it fits into the current photovoltaic workflow.

At SolarEdge we believe the PV delivery chain is ultimately only as strong as its weakest link. By adopting a "system first" philosophy that identifies and eliminates the Achilles heel in each step in the process, we enable a constraint-free delivery of sun harvested energy.

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