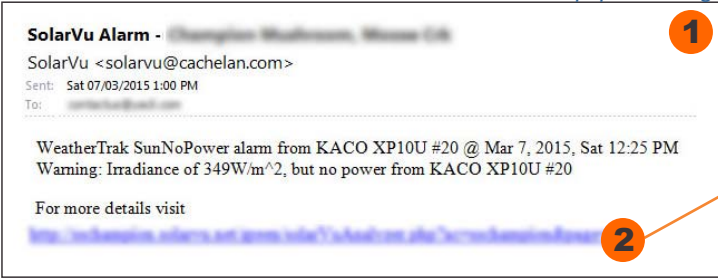


ANALYZER

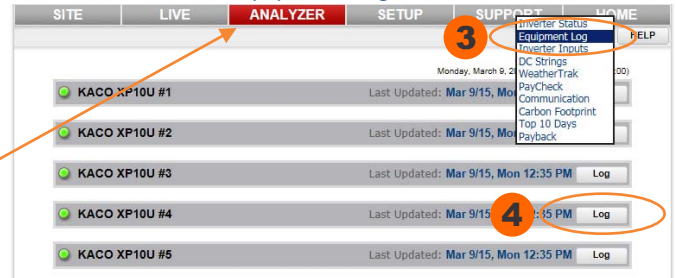
EQUIPMENT LOG When a fault condition is detected by an inverter or if WeatherTrak detects a below expected output, an email alarm ❶ is sent identifying the inverter and time. SolarVu keeps a 10 minute log for 30 days of all measured values for each inverter which can be a valuable troubleshooting tool to determine the cause of fault and what action is necessary to correct it.

When the email alarm is received, it will indicate the inverter name, timestamp and nature of the problem. Click the link ❷ in the email to go directly to the ANALYZER tools. Select Equipment Log ❸ in the ANALYZER tools pulldown then the Log ❹ button for the inverter with the problem.

Click link in alarm email to access the ANALYZER - Equipment Log



Select ANALYZER - Equipment Log



Select the actual time of the event identified in the email by clicking on the matching hourly navigation box ❺. All measured values ❻ at that time are displayed. Click the Next and Previous buttons ❼ to view conditions before and after the event. By studying the inverter error messages and measured values it should be possible to diagnose what is happening and whether corrective action is required. For difficult intermittent problems, show the ANALYZER link to the inverter OEM application support engineer who may have the expertise to determine whether the inverter needs repair. Using SolarVu to diagnose the problem cause before arranging a site visit can save valuable time, ensure the appropriate spares are in the truck and may eliminate unnecessary trips.

Equipment log shows measured inverter values at selected time

Compare any 2 inverters

Select inverter by ID

AC inverter power at selected time

Next - next 10 minute interval
Previous - last 10 minute interval

Daily energy from this inverter

Graph of daily energy from this inverter

Inverter instruction manual

SolarVu Installation Guide

All measured values at the selected time

Text log of reported faults

Status as reported by the inverter

Click for date and hour when fault occurred

Indicators

- Current Selected Time
- Data Received OK
- Intermittent Data Received
- No Data Received
- Click square to see log values

ANALYZER

EQUIPMENT LOG - COMPARE With a single central inverter, the most practical way to detect a bad string is to measure the current in each string using combiners with current sensors monitored by the SolarVu Smart Strings option. For systems 50-500kW using many small string inverters instead of a single central inverter, the cost of Smart String sensing can be avoided by comparing the output of each string inverter. A typical 10kW inverter will have 3 or 4 strings connected. A bad panel or connection will typically result in low output on one string so that the string inverter would have 66% (3 strings) or 75% (4 strings) less power than other inverters for any amount of irradiance. Use the inverter compare feature to detect this condition. Download the roof layout showing which strings are connected to each inverter to allow O&M staff to quickly locate and repair the bad panels.

To compare 2 inverters at any time, select ANALYZER ❶. Select Equipment Log ❷ from the pulldown menu. Click the Compare ❸ button. Select 2 inverters ❹ from the pulldown on each panel. Choose the same date and time in each panel by clicking on the time square ❺. Look at the values reported by each inverter at that time. For example, under any irradiance condition the power would typically be similar. In this example, with each inverter having 4 strings connected to two MPPT inputs, inverter #10 power is 77% of inverter #11. A closer look shows inverter #10 Power 1 MPPT input about 60% of Power 2 input. It is likely that one of the 2 strings connected to inverter #10 Power 1 input has a problem and should be checked. Left undetected, a bad string can result in significant lost revenue.

Compare 2 inverters

Click the Compare button

Then select 2 inverters

These 2 strings are about 1/2 the other 2 strings. Look for a bad panel or string connection in the low output string.

These sets of 2 string values are about the same.

Select the same time for comparing inverter values

Lost revenue in one year from a defective string for a system with a FIT sell rate of \$0.71/kWh would be:
 Annual lost revenue = \$2,721 3.5 full sun hours/day x (.250kW/panel x 12 panels) x \$0.71/kWh x 365 days/year