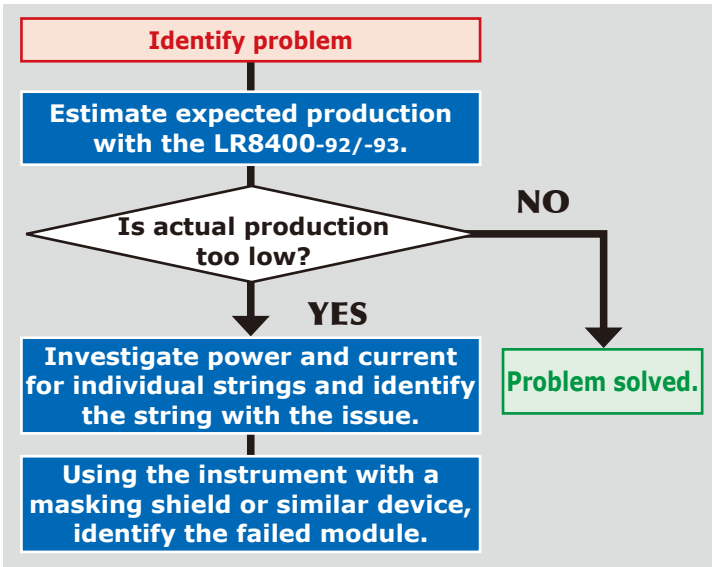
PAAAP

HIOKI

Solar Power Measuring Instruments for Maintenance and Inspection Applications

Verify the Correct Power Level to Solve Power Loss Problems

PV POWER VERIFIER LR8400-92, LR8400-93



CE

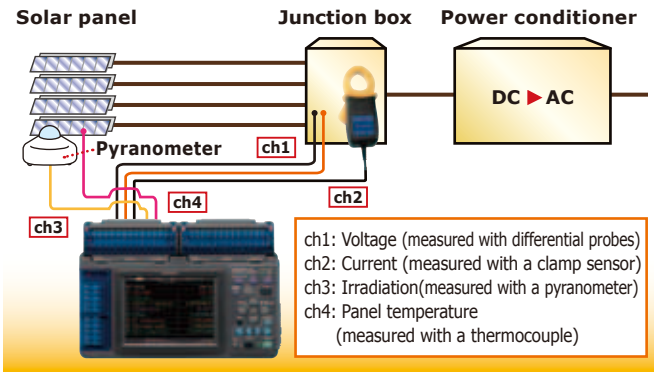
Features

- **Estimate expected electricity production (estimated electrical energy).**
  - Estimate the expected electricity production at the current time under continuously varying conditions of air temperature and insolation.
  - Compare the estimate with actual electricity production.
- **Production can be measured without shutting off the circuit.**
- **Measure the production trend.**
- **Investigate module failures by identifying strings with wiring breaks and using the instrument in conjunction with a masking shield.**
- **Add up to 7 more channels of clamp or temperature measurements even in PV mode.**
  - When PV mode is turned OFF, the instrument can also be used as a 30-channel data logger.

Applications

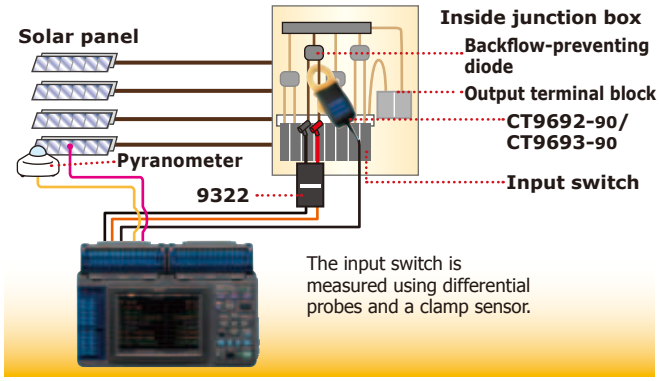
Investigate expected electricity production (estimated electrical energy)

Compare actual electricity production with the expected electricity production (estimated electricity production).



Investigate and identify failed strings

Investigate line failures by switching the string being measured.



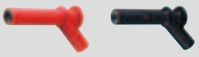
System components

PV Power Verifier LR8400-92 (200A AC/DC Sensor and other bundled accessories)

Memory HiLogger
LR8400-23 (PV Edition)

Clamp On AC/DC Sensor
CT9692-90

Differential Probe 9322



Magnetic Adapter 9804-01 (Red)
9804-02 (Black)

Option Parts Set (Bundled)
- Pyranometer (Manufactured by EKO INSTRUMENTS for LR8400-92/ -93)
- Thermocouple (20m)
- Power Cord (for Differential Probes)
- BNC Conversion Cable x 2 (for Clamp Sensors and Differential Probes)
- Magnetic Sheet

PV Power Verifier LR8400-93 (2000A AC/DC Sensor and other bundled accessories)

Memory HiLogger
LR8400-23 (PV Edition)

Clamp On AC/DC Sensor
CT9693-90

Differential Probe 9322

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- Magnetic Sheet

Options

Clamp On AC/DC Sensor CT9691-90 (AC/DC 100A)
Clamp On AC/DC Sensor CT9692-90 (AC/DC 200A)
Clamp On AC/DC Sensor CT9693-90 (AC/DC 2000A)
Battery Pack Z1000
Carrying Case

PC Card	2G	9830
PC Card	1G	9729
PC Card	512M	9728

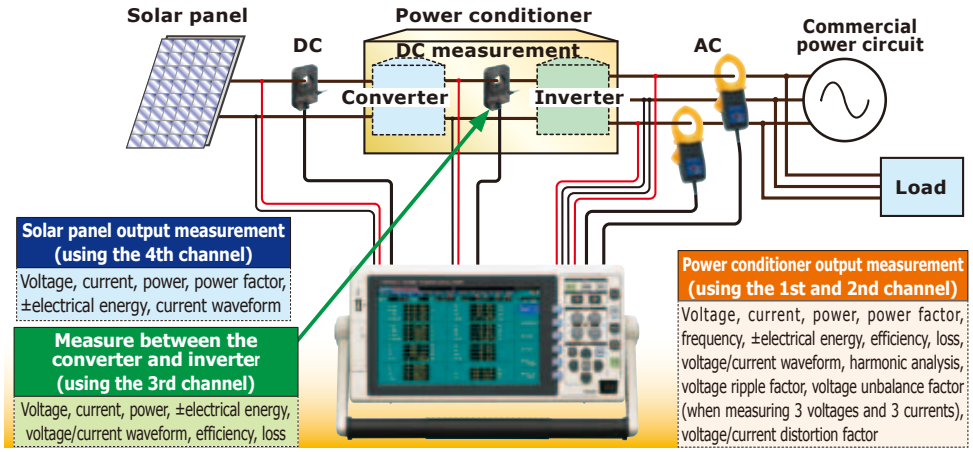
PC Card Precaution

Use only PC Cards sold by Hioki. Compatibility and performance are not guaranteed for PC cards made by other manufacturers. You may be unable to read from or save data to such cards.

Hioki Meets A Variety of PV Applications

Identify power conditioner malfunctions

By combining the Hioki Power Analyzer Model 3390 with AC/DC current sensors, you can simultaneously measure power conditioner input and output characteristics. Connecting the instrument is simple with plug-in clamp sensors. Higher-accuracy measurement is also possible by using pass-through sensors. In a grid-tied system, this single instrument can also measure the amount of energy bought and sold over the power lines to which the power conditioner is connected.

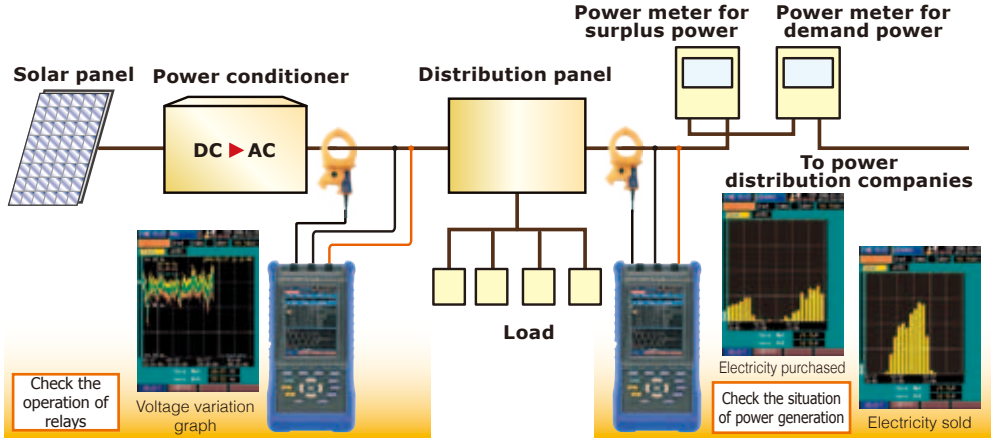


Power Analyzer 3390

- Directly measure the secondary side of inverter-equipped devices.
- Maximum accuracy of ±0.16% achieved with current sensors!

Investigate the amount of energy sold

Measured values can be displayed as demand graphs showing the amount of energy bought and sold (average energy over 30 days), providing an understanding of how much power is being sold at a glance.



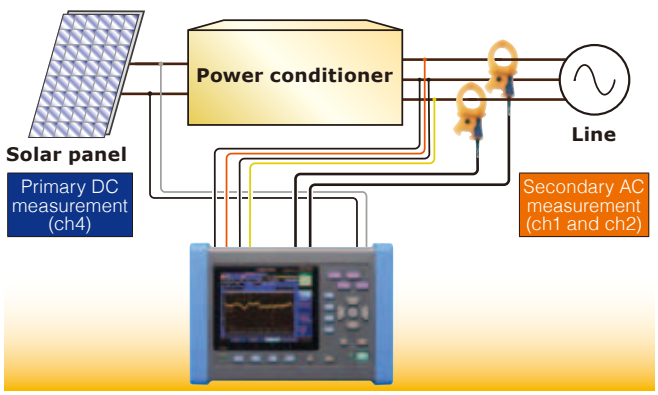
Power Quality Analyzer 3197

- Record measurements in internal memory
- Make settings easily using onboard QuickSet guide
- Use the included software to analyze measurement data.

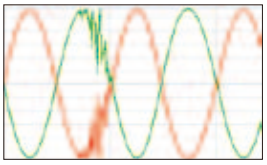
Assess the power quality of power conditioners

The PW3198 is ideal for maintaining systems and verifying their proper operation since it can measure all parameters simultaneously.

- Identify changes in the output voltage of the power conditioner
- Capture transient overvoltages
- Monitor for frequency fluctuations impacting system interconnectivity
- Power and integrated power
- Identify changes in the harmonic voltage and current included in the output



Example of inflow and outflow
(inflow of the 5th and 7th harmonic order)



Example of voltage waveforms during circuit switching

Power Quality Analyzer PW3198

- Simultaneously record time-series data, detect events, and monitor power with one single instrument.
- Simple configuration functionality ensures ease of use

Extensive Product Line Field Measuring Instruments

Complete insulation resistance testing with one single instrument

Insulation Tester IR4056-20, IR4057-20

50/125/250 500/1000V | AC/DC 600V

IR4056-20

IR4057-20

with Bar Graph

Check charging status behavior with a bar graph.

Use the built-in comparator (comparison judgment) function to compare reference and measured values and generate PASS/FAIL judgments.
Identify PASS/FAIL using light and sound.

PASS (No change)
When the measured value is greater than or equal to the reference value
Short beep

FAIL (Red)
When the measured value is less than the reference value
Continuous beep

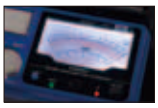
Choose a single-, or 3-range model depending on your application

Analog MΩ HiTester IR401X-20, 3490

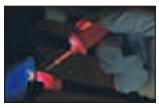
IR4018-20

250 to 1000V single- or 3-range | AC 600V

IR4016-20 : 500V/100MΩ
IR4017-20 : 500V/1000MΩ
IR4018-20 : 1000V/2000MΩ
3490 : 250V/100MΩ, 500V/100MΩ, 1000V/4000MΩ



Luminous Scale



Bright LED (option)

3-electrode measurement provides greater precision

Earth HiTester 3151

3 Electrode method | 0 to 1150Ω

- Wide measurement range for 0 to 1150 Ω, based on EN standard
- Switchable measurement frequency to minimize the influence of harmonic earth voltage
- Semi-dust-proof construction

Clamp testers for AC/DC current and voltage measurement

Clamp On AC/DC HiTester 3288-20, 3285

True RMS | φ35mm | AC/DC 1000A

- Compact & easy
- Slim body allows easy clamping even for narrow conductors

True RMS | φ55mm | AC/DC 2000A

- Large jaw
- Measure high AC and DC currents of up to 2,000 A.

High-accuracy voltage measurement

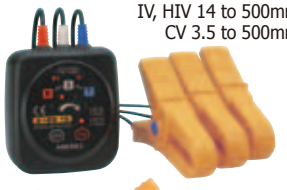
Digital Multimeter DT4282

True RMS | AC/DC 1000V | AC/DC 10A

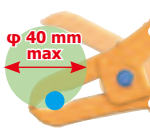
- Rapid response and superior stability
- Optimal safety specifications

No metal contact phase detection

Phase Detector 3129-10



IV, HIV 14 to 500mm²
CV 3.5 to 500mm²



- No metallic exposure ensures absolutely safety to the operator
- CAT IV 600V
- Magnetic adapter

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