

SOILING MEASUREMENT KIT

For Operational and Site Assessment



1

Dedicated Soiling Rate Python Script

2

Full Compatibility Kintech Engineering data loggers

3

Precision Temperature & SC Current Sensors



The Soiling Measurement Kit supplied by Kintech Engineering allows users to estimate the site-specific effects of soiling on PV modules

How it works

What is Soiling loss? This term refers to the power lost due to snow, dirt, dust and other particles that cover the PV module surface.

The short-circuit current, essential characteristic of the PV panels, is proportional to the PV panels effective radiation. By comparing the short circuit current of a "clean" PV panel to the "soiled" PV panel, and compensating for PV panel temperature we can estimate the exact effect of soiling.

The output data from the PV panels and temperature sensors is fully compatible with the analog input channels on the Orbit 360 data logger. Once the dataset has been downloaded, a dedicated Python script calculates the exact soiling ratio between "dirty" panel and "clean" panel and automatically adds a new data column in your dataset.

What is included in the Soiling Kit

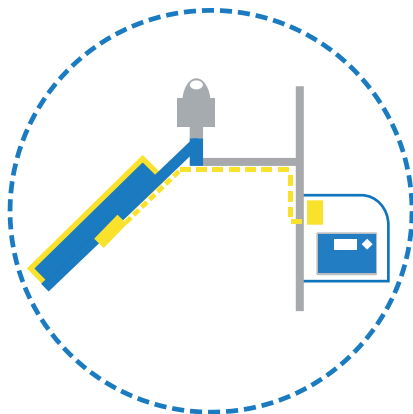
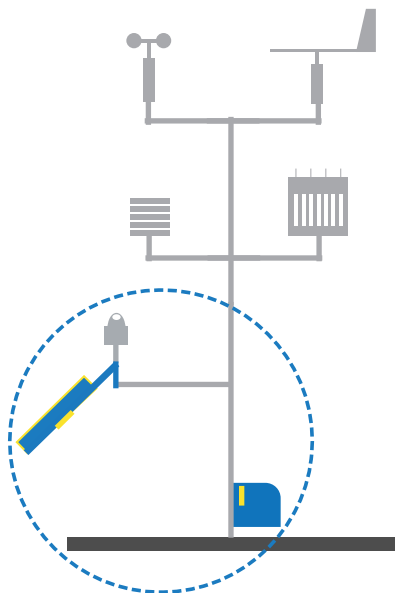
- Two 10W-monocrystalline-PV panels from the same production lot*
- High precision temperature sensors (preinstalled on the back of the PV panels)
- High precision current measurement sensors
- Support bracket for PV panels (adjustable)
- Cabling (for solar panel and temperature sensors)
- Dedicated Python Script

Required

- Data Logger (e.g. Orbit 360)
- Frequent maintenance for cleaning of the "clean" PV panel

* We check short-circuit current values on both panels to assure equal performance.

The support bracket supplied with the Soiling Measurement Kit assure the exact same inclination and orientation of both solar panels.



1

Soiling data automatically added to your dataset

SHORT CIRCUIT CURRENT MEASUREMENT



CHARACTERISTIC

VALUE

Current sensor type	Shunt resistor + Current sense amplifier
Output signals type	Analog Signal (Slope=200)
Shunt Resistor	0.050hm +/-0.1%
Current range measurement	±1 A
Accuracy:	
Gain Error:	0.20% (max)
Gain Drift:	2.5 ppm/°C (max)
Offset Voltage:	±25 µV (max)
Offset Drift:	250 nV/°C (max)
V supply	12Vdc
Temperature range	-40...+85 °C

TEMPATURE MEASUREMENT



CHARACTERISTIC

VALUE

Temperature sensor type	Precision integrated-circuit temperature
Range	-50...+100°C
Output signal type	Analog signal (from 0 to 10 mV)

Last modified: 06.02.2020