

Soiling Measurement Kit

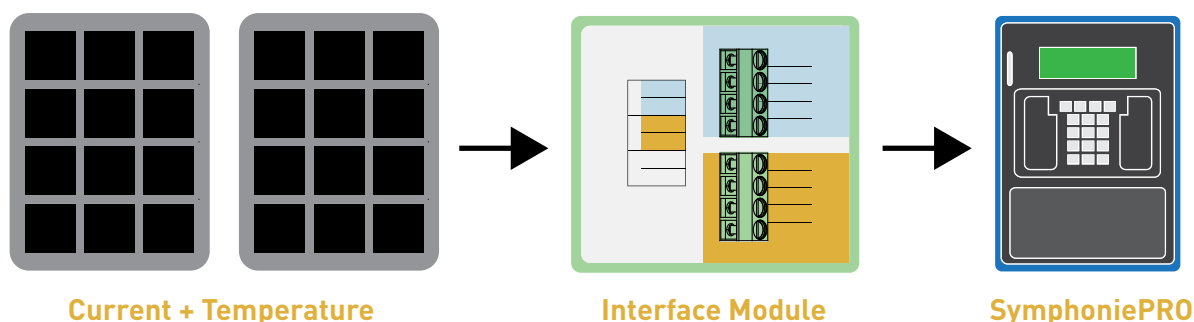
RNRG's Soiling Measurement Kit provides users with the information needed to quantify the site-specific impacts of soiling caused by snow, dust, and other particles on prospective and current PV projects. These data are used to improve pre-construction annual energy production (AEP) estimates as well as maintenance schedules (i.e., panel washing) and forecast models in the post-construction setting.

Key Benefits

- Determine site-specific soiling loss characteristics with this turnkey soiling measurement solution.
- Install easily as an accessory to RNRG's SRA System – complete with PV modules, pre-installed back-of-module temperature sensors, flexible mounting hardware, and integrated soiling interface module.
- Measure short circuit current and back-of-module temperature with user's choice of statistical interval as well as optional 1 Hz sample data collection for flexible analysis options to meet data demands.



Component Overview:



Specifications:

Description	<p>Soiling Ratio(*)</p> <ul style="list-style-type: none"> Measurement of short circuit current (Isc) of both a clean reference solar panel and uncleaned test solar panel, including back of panel temperature compensation <p>Application</p> <ul style="list-style-type: none"> Soiling loss measurement with 15W solar panel 	<p>Instrument Compatibility</p> <ul style="list-style-type: none"> RNRG Solar Resource Assessment System using SymphoniePRO Data Logger <p>Signal Type</p> <ul style="list-style-type: none"> Analog voltage outputs
Specification	<p>Soiling Ratio Accuracy</p> <ul style="list-style-type: none"> < 1% accuracy* <p>*for Isc values > 0.50 Amp including back of panel temperature error</p>	<p>Recommended Panel Isc Measurement Range for Soiling Ratio Calculation</p> <ul style="list-style-type: none"> 0.50 Amp to 1.5 Amp
Power Requirements	<p>Supply Voltage</p> <ul style="list-style-type: none"> Soiling station interface module: 5-15 Vdc 	<p>Supply Maximum Current</p> <ul style="list-style-type: none"> Soiling station interface module and the amplifier power for the Isc measurement: 2.5mA
Installation	<p>Mounting</p> <ul style="list-style-type: none"> Panels: Rail mounting with angle adjustment Interface Module: DIN rail mount 	<p>Wiring/Interconnection</p> <ul style="list-style-type: none"> Solar panel current measurement and back of panel temperature are connected via a 5 terminal screw connector on the interface module The connections to the logger from the interface module are via a 6 terminal screw connector
Environmental	<p>Operating Temperature and Humidity Range</p> <ul style="list-style-type: none"> PCB Temperature: -40C to +65C Temp Probe and adhesion Temperature: -40C to +85C Humidity: 0 to 100%, Corrosion resistant, UV resistant 	<p>IP Rating</p> <ul style="list-style-type: none"> Interface module: IP55 when installed in a standard Symphonie Shelter Box FRP <p>Electrical</p> <ul style="list-style-type: none"> EN 61000-4-2 ESD <p>Compliance</p> <ul style="list-style-type: none"> CE <p>Other</p> <ul style="list-style-type: none"> Packaging meets ISTA-1A 2014 Shock Drop Test

[*]Michael G., Tim D., and Christopher T., "Accurately measuring PV soiling losses with soiling station employing module power measurements", Proceedings of the 42nd IEEE Photovoltaic Specialists Conference, June 14-19, 2015, New Orleans, LA.