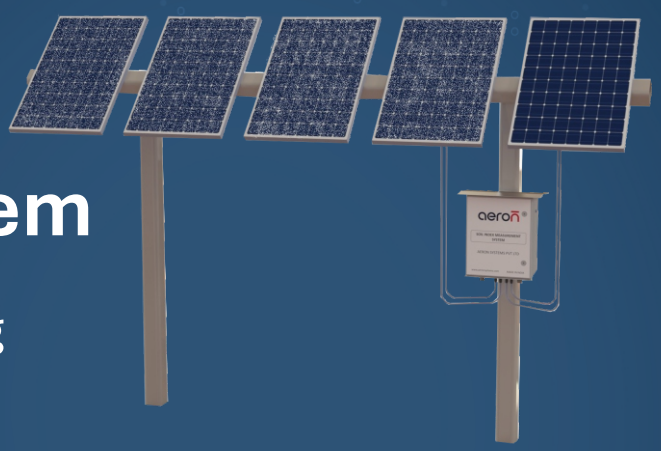
Soiling Index Measurement System

Real-time measurement of soiling loss of a Solar PV plant.



IEC61724-1:2021 complaint Short-circuit current reduction due to soiling of solar PV plants.

DESCRIPTION

The Soiling Index Measurement System (ARN-SIMS100) is used to monitor the real-time status of the soiling index of the photovoltaic cells i.e. solar panels. Soiling is the building up of dirt, dust, sand and many other contaminating agents on the surface of solar panels. The deposition of such soiling agents on the panel hampers the solar energy power plant performance.

ARN-SIMS100 provides vital information to the Solar plant O&M team, enabling them to manage and enhance their PV power plant performance.
ARN-SIMS100 is designed to perform in accordance with the "Measurement method 2 - Short-circuit current reduction due to soiling as per the IEC61724:1-2021 Annex C: Soiling measurement using clean and soiled PV reference device pair"

The ARN-SIMS100 consists of a solar panel interface device ARN-SPIM2000 which efficiently measures the short-circuit current of both the clean (reference) and soiled (test) panels simultaneously. This data along with the module temperature data of both the panels is processed through an algorithm to derive the instantaneous real time Soiling Loss Index values and daily average Soling Loss Index values.

PRODUCT FEATURES

Compliance

System compliance as per IEC61724-1:2021

Real time Instantaneous Soiling Level Index.

Daily Average Soiling Index calculated based on Fixed as well as Tracker based systems.

Connectivity over Ethernet, Wi-Fi & LTE (4G) / UMTS / GPRS

Seamless data connection to SCADA over RS485 Modbus RTU and TCP

Onsite PV modules used to calculate the accurate soiling Index.

Time synchronization via GPS and internet

Easy configuration

Simple installation and maintenance

TECHNICAL SPECIFICATIONS

ARN-SIMS100

SOILING MEASUREMENT

Panel Wattage	Upto 1200W
Short-Circuit Current (Isc) Range	0 - 20 A
Shunt Accuracy	±0.05% FSD
Soiling Leveling Index Resolution	0.01%

ELECTRICAL

Voltage I/P	+9 to +28V DC
Current consumption	12V ≤ 85mA

STORAGE

SD Card Memory	8 GB (default) (expandable upto 32 GB)
USB	Data retrieval on Pen Drive

TEMPERATURE MEASUREMENT (AT BACK PANEL)

Sensor Type	RTD PT1000 Class A
Range	-40 ˚ C to 150 ˚ C
Accuracy	Class A ±(0.15 + 0.0020 | t |)

ENVIRONMENT

Operating Temperature	-40 to +80 ˚ C
Protection	IP65

COMMUNICATION

Interfaces and Protocols	RS232(1) : NMEA (O/P) / MODBUS (slave)
	RS232(2) : MODBUS (master)
	RS485(1) : MODBUS (master)
	RS485(2) : MODBUS (slave)
Baudrate	Rs232 / RS485: 9600, 19200, 38400, 57600 & 115200
Network Interfaces	Ethernet, Wi-Fi and LTE (4G)
Output data format	Comma Separated Format (CSV)

ORDERING INFORMATION

ARN - SIMS100-01 (Product Code: 90001) without soiling panel and mounting structure (on site panels to be used)

ARN - SIMS100-02 (Product Code: 90063) With soiling panel (75W- 2nos.) and mounting structure