

DustIQ Soiling Sensor

SD3100



DustIQ Soiling Sensor

Order number	Availability
SD3100	On request

Measurement of soiling ratio from 100% to 50%

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Measuring wind and solar power

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Description

- Optical Soiling Measurement (OSM) technology
- Measurement of soiling ratio from 100% to 50%
- Maintenance-free

Soiling of the PV module glass is one of the major problems in solar power plants with the attendant loss of efficiency and reduction in performance ratios. The DustIQ sensor is a simple and cost-effective method for soiling measurement. Based on the Optical Soiling Measurement (OSM) technology, the sensor can be easily integrated in solar power plant monitoring systems.

The unit is mounted to the frame of a PV module and does not need sunlight to operate. It continuously measures the transmission loss through glass caused by soiling, so that the reduction in light reaching the solar cells can be calculated.

Knowing exactly when and where to clean

DustIQ measures the soiling ratio, which can be translated to power loss in real time. This enables the plant operation and maintenance staff to know when a critical level of soiling is reached and it has become necessary to start cleaning procedures.

DustIQ is maintenance-free. It is cleaned in the same way, and at the same time, as the PV modules around it. Large solar power plants have different soiling rates across the site, which is why IEC 61724-1 requires multiple measurement points.

Specifications

DustIQ Soiling Sensor

General Information

Order Number SD3100

Measurement

Soiling Ratio's 2 sensor values 50 ... 100%

Soiling Ratio Measurement Accuracy
 90 ... 100%: $\pm 1\%$
 80 ... 90%: $\pm 2\%$
 50 ... 80%: $\pm 5\%$
 after post processing

Stability Auto calibrating, better than $\pm 1\%$ of full scale per year

Electrical & Communication

Connections
 1 – RS485 Modbus
 2 – Daisy chain to next device or PV module temperature sensor

Voltage Range 10 ... 30 VDC

Current Range 70 ... 200 mA

Power Consumption Max. < 2 W

Environmental

Ambient Operating Temperature Range -20 ... 60 °C

Glass Type Standard PV module glass with all coatings and laminates

Dimension 990 x 160 x 40 mm

Weight 4 kg

Manufacturer

Kipp & Zonen

Sensor connection diagram

DustIQ Sensor, PV Soiling Monitoring (via RS485 Half Duplex)

Meteo-42 Data Logger

