Transmission Loss for Soiling



- Mars' innovative optical technology determines the soiling ratio by capturing and analyzing images of dust on the particle collection window
- User-friendly sensor, simple and robust installation
- Unlike other optical soiling sensor technologies, it does not require any site-specific calibration
- Install the sensor oriented like the PV modules to catch soiling particles. Wash the sensor each time you wash the PV array, to keep the cleanliness identical to that of the modules

The PRPMA4100 sensor measures the soiling ratio of photovoltaic modules using innovative Mars optical technology. By taking photographs of the sensor screen at a defined frequency, it enables an analysis of the deposition of soiling particles on the lens. Its simple, maintenance-free operation enables users to reduce technician man-hours and produce panel soiling-related efficiency loss measurements for PV systems at different scales. The sensor does not require site-specific calibration. By installing the sensor with the same orientation as the PV modules and subjecting it to the same washing operations, the soiling ratio of the modules can be obtained. The sensor is useful for: determining losses caused by soiling for monitoring PV performance; optimizing module washing schedules; determining typical soiling rates for prediction models; and collecting pre-construction prospecting data at new sites.

Technical features

PN	PRPMA4100	
Measurement	Measured quantity	Transmission loss due to soiling for photovoltaic modules
	Technology	Optical Mars
	Accuracy	±1%
	Local calibration	Not required
	Output	Modbus RTU (RS485)
General information	Power supply	10...30 VDC
	Energy consumption	<3 W average, <6W peak
	Protection grade	IP67
	Cable	Not included (see Accessories)
	Operational limits	-20...60 °C
	Dimensions	115 x 115 x 98.1 mm
	Weight	1.48 kg
	Data logger compatibility	Alpha-Log

Accessories

	CCCFA0500	Cable for PRPMA4100 sensor, L=25 m

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