

Model GEO-MDFS2

Automatic Soiling Monitoring System

Soiling becomes an important factor on PV plant performance. It is actually the third factor in order of impact into energy production, after Solar Irradiation and Ambient Temperature.

Unlike other meteorological parameters, Soiling can be controlled by solar panel cleaning. **GEO-MDFS2** with **METEODATA** datalogger provides automatic soiling ratio calculation & configurable alarm in a PV plant useful for:

- 1) Planning ad-hoc the cleaning schedule.
- 2) Obtain the Performance Ratio (PR) parameter of PV plant on every instant, so an improved and detailed control of plant performance is possible.



GEO-MDFS2 sensor provides up to 6 channels with information:

1. Clean Cell Radiation (W/m^2)
2. Dirty Cell Radiation (W/m^2)
3. Corrected Dirty Cell Radiation (W/m^2)
4. Solar Elevation Angle ($^\circ$)
5. Soiling Ratio (%)
6. GEO-MDFS2 Status

GEO-MDFS2 is based on the comparison of two similar sensors: clean and soiled from where the “Soiling Ratio” is obtained. Several configurations are possible:

- To match plant’s configuration, clean and soiled sensors should be PV panels of the same kind of the plant. In this case current/power sensors to be attached to the PV panels are included.
- An off-the-shelf solution is also provided based in solar reference cells. In this case clean and soiled sensors are provided.

GEO-MDFS2 based on solar reference cells includes two Polycrystalline Compensated Calibrated Cells for the measurement of Solar Irradiance with internal temperature compensation, both mounted on a common adjustable tilt stand.

- Automatic Soiling Ratio Monitoring
- Accurate Real-Time Measurement
- Temperature Compensation
- Auto-Adjustment
- Status Information
- **METEODATA** unit for Datalogging and Communication features

GEO-MDFS2 is engineered as an add-on for **METEODATA** datalogger. Thanks to the advanced capabilities of ultra-low power autonomous **METEODATA** unit, Soiling Ratio can be requested using any of the communication options available (3G / GPRS, radio link, satellite, Ethernet connection, MODBUS, etc.). From Central Station or the SCADA is possible to manually or automatically get information from each and every one of the measurement stations, remotely program all their functionalities. To assure an almost perfect availability of the soiling data when no communication or power is available, its Flash internal memory gives autonomy of several months.



METEODATA
Datalogger/Transmitter Unit
3G / GPRS, Line, Radio or Satellite