SOLAR TRACKER

Solar Tracker with Smart Photovoltaic Monitoring System (PVMS)

Solar Tracker is a single axis tracker controller that optimises photovoltaic (PV) panel direction towards incoming solar rays to achieve maximum power output. A Smart PV monitoring system (PVMS) provides analytics and enables predictive maintenance for an entire solar farm.

Overview

Solar Tracker improves the energy harvested from the available solar radiation as compared to a traditional fixed-mount solar panel array. It ensures that the arrays are tilted in the direction of incoming solar rays which results in optimal conversion of solar energy from the available direct irradiation. This is boosted by a Smart PVMS for predictive maintenance, centralised control and real-time monitoring.

Features

Solar Tracker provides the following features:

- **Proprietary AI-Optimised Solar Tracking Algorithm**

  MIMOS' proprietary artificial intelligence (AI)-optimised solar tracking algorithm allows more energy to be harvested by including the local irradiation distribution pattern.

- **Real-Time Weather and Cloud Coverage Imaging**

  Weather information with cloud coverage imaging simplifies plant-wide tracking thus improving overall solar to electrical energy conversion efficiency.

- **AI-Based Predictive Maintenance**

  AI-based predictive maintenance by a Smart PVMS aids ground-level crews with diagnostics and pre-emptive maintenance/repairs to improve system availability.

- **Edge-IoT and Cloud-Enabled**

  A Smart PVMS which is Edge-IoT and cloud-enabled allows trackers to be fused into a network for centralised control and real-time learning from incoming tracker data.

Technology Benefits

The main impacts of Solar Tracker are:

- **Enhanced Solar Farm Energy Harvest**

  Large-scale solar farms can harvest significantly more solar energy from the same land area by using solar tracking algorithms coupled with plant-wide coordinated tracking.

- **Vital Tracking Data and Predictive Maintenance**

  A Smart PVMS enables a plant operator to collect vital tracking data for real-time AI-based learning which subsequently improves tracking. It also empowers ground-level crews with operational information allowing pre-emptive servicing through predictive maintenance.

Applications
Large-Scale Solar (LSS) Farms

Single One-Module-In-Portrait (1P) Horizontal Solar Tracker

mimosmalaysia