Design and development of PLC-based solar tracking system

What is solar tracker control architecture?
SIMATIC S7-1200 Solar Tracker Control Architecture (Tang, 2014) This process is conducted through the solar tracking and the calculation of the alignment for single axis tracking libraries, depending on whether the system is single or dual axis. The Siemens SPA (Solar Position Algorithm) calculates the azimuth and zenith.

What is a solar tracking system?
This is the true position of the sun as seen from an observer on the surface of the earth. From fig. A solar tracking system refers to a system which is able to track the movement of the sun throughout the day for maximum energy efficiency and have it at a perpendicular angle to the plane of the solar panel.

Why should you use Siemens plc for automatic solar tracking?
CPU and the programming tools allow users to design autonomous industrial processes and solve automation problems. Based on this specific application and its user-friendly programming tool and troubleshooting solutions,Siemens' PLC hardware and software were found to be the right fit for the automatic solar tracking application in this project.

Can a PLC measure solar energy?
A PLC type s7-200 from Siemens, a Human Machine Interface (HMI), an analog extension module (EM) , a temperature sensor type Pt100 and an inexpensive system for measuring solar radiation and applications of solar energy [8, 9,10] were used in this simulation. ...

Abstract- The capability of photovoltaic (PV) panel to generate energy approximately follows the intensity of the sunlight on the panel. A dual-axis solar ...

To validate the effectiveness of the proposed tracking method, we compared the real-time tracking angles calculated by the PLC-based test system with those derived from the ...

In case of clouds a switch will switched the system from active to chronological and using solar azimuth and altitude angles data, PLC will track the sun with the help of Stepper motors, and ...

This paper presents the design and implementation of an experimental study of a two-axis (Azimuth and Altitude) automatic control solar tracking system to measure the solar radiation in an ...

I want to make my career in automation industries plc based solar tracking system design and programming of linear motors in an autonomous solar tracking system

The objective of this paper is to develop an automatic solar tracking system where solar panels will keep aligned with the Sunlight in order to maximize in harvesting solar power. ...

This paper presents the design and implementation of an experimental study of a two-axis (Azimuth and Altitude) automatic control solar tracking system to measure the solar ...

This paper presents a new design of a Three-axis solar tracking system which is based on Programmable Logic Controller (PLC). The automatic tracking system of solar ...

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