Automatic sun tracking system based on PLC solar panels

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.

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.

How accurate is solar tracking?
When in range,the system has a tracking accuracy of ±1°. Data analysis from research shows that even a single axis three-position system can increase efficiency and make solar tracking a worthwhile endeavour. Automated tracking,Linear motors,PLC,Solar tracking,Solar panels.

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.

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This paper is proposed for a sun tracking system based on LDR sensor using PLC for rotating motor. The paper shows how to develop and implement a single axis solar tracking ...

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The auto-tracking control system based on the solar cell panels was composed by PLC, sensors and signal processing units, photovoltaic modules, electromagnetic and the ...

Furthermore, a comparison was drawn between traditional static solar panels and various tracking systems. This was done by examining other peer reviewed research into the ...

Aiming at low density of solar energy, intermittent of solar ray, changing light intensity and

direction with time, the paper studies maximum power point of photovoltaic ...

The PLC-based control system provides a reliable and automated approach to solar tracking, offering benefits such as improved energy efficiency, reduced reliance on fixed-tilt ...

The designed tracking system consists of a software based tracking method as shown in Fig 3.The main components of the designed system consist of Three-axis movement ...

An automatic light tracking system based on PLC is proposed to make photovoltaic panels track solar illumination in real time, so as to improve the energy generation ...

Precision control of solar tracking systems ABB has developed solutions based on programmable logic controller (PLC) that enables collectors, mirrors and panels to capture ...

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