Plc solar tracking system

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. ...

How is the solar tracking process governed and controlled?

In this paper,the tracking process is governed and controlled by programmable logic controller (PLC)where two stepper motors are used to guide the motion of the solar panel in azimuth and elevation angle. The azimuth and solar altitude angles of sun were calculated at 24.3636ºN,88.6241ºE (Rajshahi,Bangladesh).

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. Figure 1.

Can linear motors be used to create a solar tracking system?

This thesis project aimed to explore the programming of linear motors in an attempt to create a solar tracking panel system,and to examine the value of sun tracking as opposed to fixed panels. The program described in this paper utilizes Siemens' adaptation of a sun tracking algorithm to create single and dual axis tracking.

This research paper presents the design, implementation, and performance evaluation of a single-axis solar tracking system (SASTS) employing Siemens programmable ...

algorithm and necessary calculations. PLC system is used as main control unit. It collects input and gives output to execute drive mechanism. 3. Drive mechanism: Tracking ...

Using sunrise and sunset times to facilitate dual axis tracking is an atypical and unproven method, and warrants more research before implementation. On the other hand, the ...

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develop an automatic solar tracking system where solar panels will keep aligned with the Sunlight in order to maximize in harvesting solar power. The system focuses on the ...

In this paper, automatic solar tracking system is implemented using DELTA PLC which tracks the sun more effectively with its simple and precise control structure in all ...

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.

The Siemens S7-1214 DC/DC/DC PLC is used to control the dual axis solar tracking system rotation. Four LDRs are used to detect the sun ...

Three-axis solar tracking system which will be based on Programmable Logic Controller (PLC). The automatic tracking system of solar radiation will be done on the basis of ...

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...

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