Passive Cloud Cover Detector
PCCD01

Cloud cover influences the amount of solar radiation reaching the Earth's surface. By comparing the measured GHI to a theoretical clear-sky GHI, the extent of cloud cover can be estimated. This is useful for monitoring solar energy systems, weather forecasting, and climate studies.

Calculating cloud cover using GHI measurements is a valuable tool for assessing solar radiation levels and understanding atmospheric conditions. By comparing measured GHI to theoretical clear-sky conditions, cloud cover can be estimated with a high degree of accuracy, which is crucial for solar energy applications and meteorological studies.

GPS Module Helps in Calculating Clear Sky GHI

The **latitude** and **longitude** provided by the GPS module are used to calculate the position of the sun in the sky at any given time. These coordinates are crucial for determining the solar zenith angle, which varies depending on the observer's location.

Altitude data is used to adjust the calculation for atmospheric pressure and other factors for more precise calculations.

Time information in **UTC (Coordinated Universal Time)**, which is important for determining the exact solar position at any given time of the day. This is essential because the solar zenith angle changes throughout the day and is influenced by the time of year.

GHI is measured using the solar Radiation Sensor PYRA 300 Cloud Cover

is calculated using Clear sky GHI and measured GHI

Specifications

Unit of Measurement: CC / Okta
Measurement Range: 0 to 100% /0 - 8 CC
Typical accuracy in CC output: ± 10%

Communication

Port- RS485, 2-wire, Half Duplex, Start-Stop Synchronized Protocol -

Modbus RTU

Baud Rate Default : 9600 ,Parity Fixed : None, Stop Bit Fixed : 1

Communication Parameters : programmable

Max. Units per Loop 31

Max. Distance 1200 Meters Power :

12 -24vdc
Enclosure : IP65 ,Dimensions 122*125*75 mm
Weight : Approx 200 gms