Monitor solar panel output diy

Monitor solar panel output diy

The ACS758, a Hall Effect-based linear current sensor, provides an analog voltage output proportional to the sensed current. It"s a robust, high-accuracy component that can measure both AC and DC currents, making it perfect for monitoring the power flow in a solar PV system.

A voltage divider circuit will be used to step down the high voltage output from the solar panel to a level that can be safely measured by the ADS1115. It does so by dividing the input voltage into a smaller, proportional voltage using two resistors.

The DS18B20 is a digital temperature sensor that provides high-precision readings over a wide temperature range. Monitoring temperature is essential as the efficiency of solar panels can be influenced by temperature changes.

The Xiao ESP32 is a compact, feature-rich microcontroller responsible for processing the data received from the ADS1115 and DS18B20 and then relaying this information to the OLED display. It also provides IoT capabilities such as remote monitoring due to its Wi-Fi and Bluetooth functionalities.

The XL7015 is a high-performance, adjustable step-down DC-DC module capable of handling input voltage up to 80V. It efficiently steps down the voltage from the solar panel to a safe 5V level to power the Xiao ESP32.

Current and Voltage Measurement: The ACS758 current sensor measures the current produced by the solar panels, and a voltage divider circuit steps down the solar panel voltage for safe measurement.

Monitor solar panel output diy

Web: https://sumthingtasty.co.za/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346