Solar Radiation Sensor with RS485

Model :PYRA 300

The Solar Radiation Sensor, or solar pyranometer, measures global radiation, the sum at the point of measurement of both the direct and diffuse components of solar irradiance. The sensor's transducer, which converts incident radiation to electrical current, is a silicon photodiode with wide spectral response. From the sensor's output voltage, the console calculates and displays solar irradiance. It also integrates the irradiance values and displays total incident energy over a set period of time.

The outer shell shields the sensor body from thermal radiation and provides an airflow path for convection cooling of the body, minimizing heating of the sensor interior. It includes a cutoff ring for cosine response, a level indicator, and fins to aid in aligning the sensor with the sun's rays. The space between the shield and the body also provides a runoff path for water, greatly reducing the possibility of rain- or irrigation-water entrapment. The diffuser is welded to the body for a weather-tight seal; it provides an excellent cosine response. The transducer is a hermetically sealed silicon photodiode with integrated amplifier. Spring-loaded mounting screws, in conjunction with the level indicator, enable rapid and accurate leveling of the sensor. Each sensor is calibrated against a secondary standard Pyranometer in natural daylight.
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Specifications

Operating Temperature : -40° to +65° C
Storage Temperature : -45° to +70°C
Transducer : Silicon photodiode
Spectral Response : 400 to 1100 nanometers

Cosine Response
Percent of Reading : ±3% (0° to ±70°), ±10% (±70° to ±85°)
Percent of Full Scale : ±2% (0° to ±90°)

Temperature Coefficient : + 0.12% per °C
Reference temperature : 25°C
Housing Material : UV-resistant PVC plastic
Weight : 250 g
Range : 0 to 1800 W/m2
Accuracy : ±5% of full scale
Drift : up to ±2% per year

Communication : Modbus RTU 1. Baud Rate : 9600
2. Data Rate : 8
3. Parity : None
4. Stop Bits : 1

Holding Register Details :

Parameter	Holding Register	Raw value Example	Actual Value Example
Solar Radiation w/m2	40005	800	800

ID	DIP SWITCH SETTING			
	1	2	3	4
1	1	0	0	0
2	0	1	0	0
3	1	1	0	0
4	0	0	1	0
5	1	0	1	0
6	0	1	1	0
7	1	1	1	0
8	0	0	0	1
9	1	0	0	1
10	0	1	0	1
11	1	1	0	1
12	0	0	1	1
13	1	0	1	1
14	0	1	1	1
15	1	1	1	1

24 V+	24 v-	485+	485-		+	I/p	Gnd
POWER	COM					pyra	
1	2	3	4		7	8	9

After changing the Dipswitch setting power should be switched OFF and Switched ON