Albedometer Solar Radiation Sensor

SOLAR MONITORING SENSOR

Balaji Hydro Met gives albedometer basically consists of two pyranometers, mounted back-to-back, one looking upward (sky) and one downward (earth). The upward pyranometer measures the incident global radiation (direct radiation + diffuse radiation) striking the ground, while the downward one, measures the global radiation reflected from the ground. The outputs of the two pyranometers electric signals can be directly sent to a data logger or to an automatic data processor. Single device or part of an automatic weather station.

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 weathertight seal; it provides an excellent cosine response. The transducer is an hermetically-sealed silicon photodiode with integrated amplifier. Spring-loaded mounting screws, in conjunction with the level indicator, enable rapid and accurate levelling of the sensor. Each sensor is calibrated against a secondary standard Pyranometer in natural daylight.

Sensor - VIEW

PROFESSIONAL LINE	SPECIFICATION
Model	BHM-S-ALSR
Material	UV-resistant PVC plastic
Sensor Type	Silicon photodiode
Spectral Response	400 to 1100 nano meters
Cosine Response	±3% (0° to ±70° Incident angle)
Percent of reading	±10% (±70° to ±85° Incident angle)
Percent of full scale	±2% (0° to ±90°)
Operating temperature	-40° to +65° C
Range	0 to 2000 W/m²
Accuracy	±5% of full Scale
Drift	Up to ±2% per year
Output voltage	Global Radiation 0 to 3 VDC Green color Reflected Radiation 0 to 3 VDC White color
Weight	< 250 g including mounting hardware

APPLICATION - VIEW

- Solar Monitoring
- Solar Power Plant
- Solar Energy
- Meteorological Study
- Climate change studies
- Sun Shine Study