



SENSORS
MODEL 4015
Solar Radiation Sensor

General Description

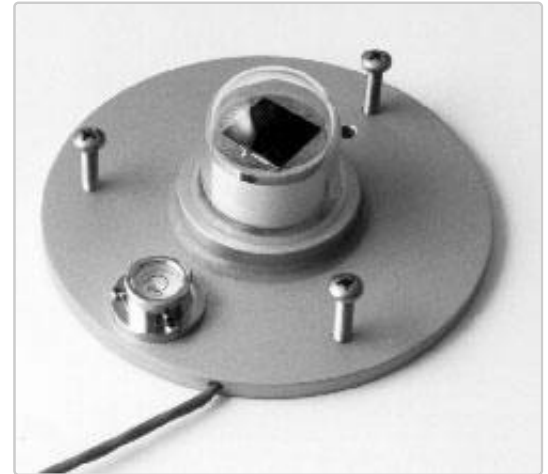
The Model 4015 Solar Radiation Sensor measures total sun and sky (global) radiation. A silicon photovoltaic cell provides a millivolt output signal proportional to solar radiation energy from 0 to 1400 W/m². The sensor responds to a 100% change in incoming radiation within one millisecond. Signal conditioning is provided to produce a 0-5 Vdc output.

Each sensor is provided with a calibration certificate. Sensors are calibrated for the entire solar spectrum by comparison with thermopile type radiometers in bright sunshine on clear days. Cosine effects and air mass corrections are made during calibration. A Pyrex glass dome, sealed with desiccant, protects the silicon cell from dust and moisture. The desiccant can be replaced by the user as necessary to ensure consistent long-term performance.

The Model 4015 is used in HydroLynx packaged weather stations (Models 5381/A2 and 5881/A2) and in standalone environmental monitoring installations. Typical applications include evapotranspiration (ET) calculation for agricultural water management, fire weather monitoring, and climate research. Solar radiation data is also used in energy balance models for snowmelt forecasting and reservoir evaporation estimation.

The Model 4015 connects to HydroLynx 50386 and 50388 series data transmitters through a standard analog input channel. The 0-5 Vdc output interfaces directly with the transmitter's 16-bit analog-to-digital converter, providing high-resolution measurement without external signal conditioning. Data can be sampled at programmable intervals and transmitted in real time via ALERT2 radio telemetry, SCADA radio, cellular, or satellite communications.

The sensor mounts on a standard bracket (Model 4015MB, ordered separately) and includes 10 feet of cable with MS connector. Additional cable length is available in any increment.



Specifications

Sensor	Silicon photovoltaic cell
Spectral response	0.35 to 1.15 microns
Output	0 to 5 Vdc (0 to 1400 W/m ²)
Accuracy	±5%
Temperature compensation	-40° F to +140° F
Full scale response time	Less than 1 ms
Standard cable	25 ft. with MS connector
Size	5 in. diameter x 2 in. high
Shipping weight	1-1/2 lbs.

Ordering Information

Model 4015	Solar Radiation Sensor
Model 4015C	Additional Cable, per foot
Model 4015SC	Replacement Signal Conditioning Card