

MODEL K63

Hotplate® Total Precipitation Gauge

Designed and developed in conjunction with NCAR, the Model K63 Hotplate® Total Precipitation Gauge is based on patented technology licensed to Pond Engineering by UCAR. The third generation of this product, it further refines the most significant breakthrough in basic precipitation measurement in many years. Utilizing a state-of-the-art single board microcontroller together with Pond Engineering's ultra-high precision temperature control technology, it independently controls the temperature of two thermally isolated plates in the solid-state sensing head. Temperature control and calibration to within $\pm 0.1^\circ\text{C}$ assures accurate and repeatable measurements. Precision power measurement circuitry and individual system calibration (uncertainty $\pm 1.2\text{W}$) together with data provided by an environmental sensor allows calculation of highly accurate liquid equivalent precipitation rates of rain or snow, as well as 24-hour accumulation totals.

Unlike traditional precipitation measurement systems, the Hotplate® system provides data with very low latency, reporting precipitation events as short as 1 minute in duration. Any incident precipitation is quickly evaporated and measured, allowing the system to quantify events that may have been missed by legacy precipitation measurement systems.

Fundamental to the design of the Hotplate® system, there are no moving parts. There is no requirement for maintenance or disposal of anti-freeze solutions or oil skim overlays to assure system functionality in all weather conditions. Virtually maintenance-free, the Hotplate® Total Precipitation Gauge is ideally suited for installation in harsh environments and limited access applications.

Additional measured parameters include wind speed, ambient temperature, barometric pressure and relative humidity. Robust remote communications capability is provided via an RS-232 interface allowing the system to be operated as a stand-alone weather station or integrated into a larger measurement network. Standard power and data cable length is ~12 feet. Custom cable lengths available on request.

The Hotplate® technology is protected by U.S. Patent No. 5,744,711, titled "Winter Precipitation Measuring System, U.S. Patent No. 6,546,353, titled "Hotplate Precipitation Measuring System", and five (5) continuation patents (No. 6,708,133, No. 6,714,869, No. 6,675,100, No. 6,711,521, and No. 6,751,571) filed on February 18, 2003.

TO ORDER, OR FOR MORE INFORMATION:

PHONE – (303)651-1678

FAX – (303)651-1668

EMAIL – info@pondengineering.com



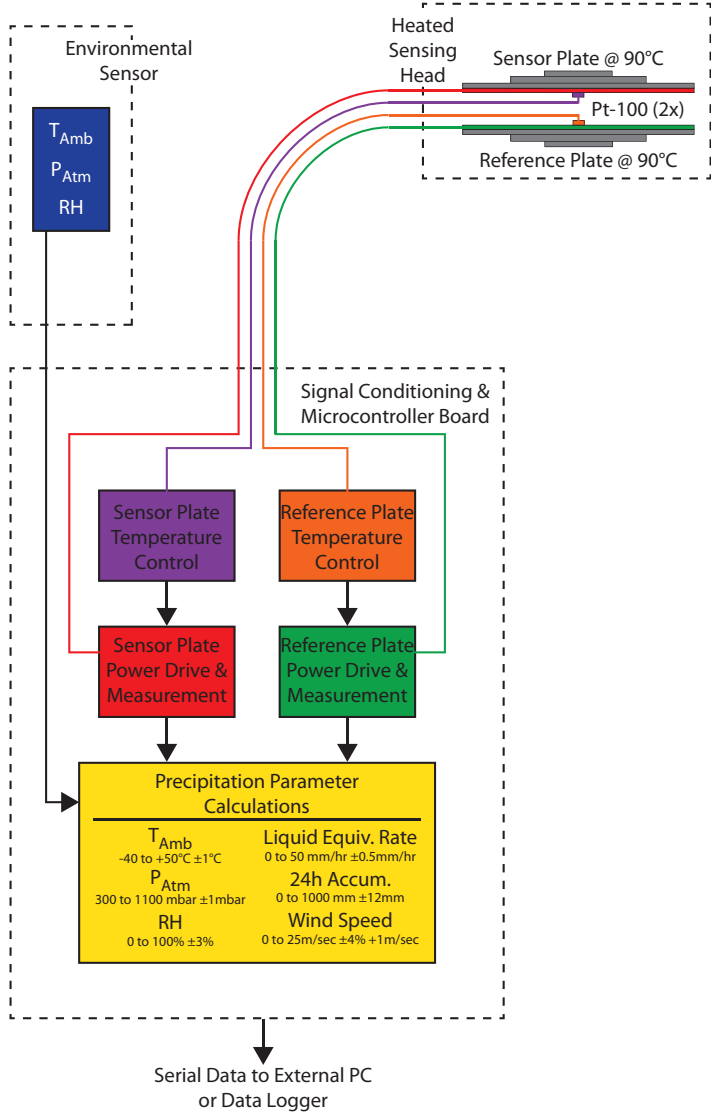
SPECIFICATIONS

Operating Temp Range:	-40°C to +50°C
Remote Interface:	RS-232 via DB-9 Female connector
Sensing Head:	Aluminum 5.125" (14.6 cm) dia. 0.75" (1.9 cm) tall Mounts via (2x) u-bolts to post or tower
Measured Parameters:	
Liquid Equiv. Rate:	0 to 50mm/hr $\pm 0.5\text{mm/hr}$
Wind Speed:	0 to 25 m/sec $\pm 1\text{ m/sec}$
Ambient Temp:	-40°C to +50°C $\pm 1^\circ\text{C}$
Relative Humidity:	0 to 100% RH $\pm 3\%$
Pressure:	300 to 1100 mbar $\pm 1\text{ mbar}$
Power Requirements:	100 - 250 Volts 6 Amps max. A.C. 50/60 Hz.
	DC powered systems available on request
Control Box	10.0" (25.4 cm) wide
Physical Dimensions:	5.2" (13.2 cm) deep 15.3" (38.8 cm) high

All specifications subject to change without notice.

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KEY TECHNICAL FEATURES



- 1 Solid-state design - no moving parts or fluids, making the system ideal for harsh environments or limited access applications
- 2 Heated sensing head prevents ice formation and provides accurate measurement of liquid and freezing precipitation
- 3 Low-profile sensing head, made possible by high-performance aerogel insulation, allows for lower measurement uncertainty and minimizes disruption of natural precipitation trajectory
- 4 Universal input-switching power supply operates with AC line power worldwide

SYSTEM PERFORMANCE

Data collected from a GEONOR gauge in a DFIR shield and a Hotplate® system, both installed at the NCAR Marshall Field Site.

