



Tipping Bucket Rain Gauge 6021 Series

allweatherinc

Tipping Bucket Rain Gauge

The 6021 series Tipping Bucket Rain and Snow Gauges are standard, precision instruments for measuring rainfall volume and/or rate. Rain enters the gauge through a large funnel, the rim of which is protected by a metal ring to prevent distortion. Collected water passes through a debris-filtering screen and is funneled into one of the two tipping buckets inside the gauge. The bucket tips when a given amount of water has been collected; the amount is determined by gauge calibration. As the bucket tips, it causes a 0.1-second switch closure. The tip also brings a second bucket into position under the funnel, ready to fill and repeat the cycle. After the rain water is measured, it drains out through tubes in the base of the gauge. The drain holes are covered by screens to prevent insect entry.

Electrically Heated Rain & Snow Gauge

For areas where snow or freezing rain may occur, the 6021 series Electrically Heated Rain and Snow Gauges are available. Each gauge includes 4 separate heaters. A Ni-Chrome wire heater wraps around the collection funnel to melt the precipitation. A second Ni-Chrome wire heater warms the internal components and the gauge base to prevent refreezing of the water inside the gauge. In addition, a cartridge heater is installed into each of the two gauge drain tubes so that the measured precipitation passes out of the gauge freely without freezing on contact with the cold outside air.



The funnel and the base heaters are controlled by thermostats; the drain tube heaters are continuous duty. Rain gauge models may operate on either 115 VAC or 230 VAC power.

Available Models

The 6021 series gauges have an orifice diameter of approximately 8 inches and a resolution of either 0.01 inch or 0.1 mm.

All gauges utilize a mercury-wetted reed switch. The mercury wetting prevents the arcing that is common with reed switches and provides a better electrical contact.

Features

AWI rain gauges are designed for many years of accurate, trouble-free operation. They utilize all metal construction, including aluminum, nickel-plated brass, and stainless steel. The built-in level and pre-drilled feet aid in proper installation. The calibrated measurement accuracy is $\pm 0.5\%$ at a precipitation rate of 0.5 inch per hour, with a repeatability of $\pm 3\%$.

SENSORS

SPECIFICATIONS

Sensor Type	Tipping Bucket	
Switch	Form A reed, mercury-wetted	
Output	0.1-second switch closure	
Sensitivity	1 tip per 0.01"	
Resolution	0.01" (0.25 mm)	
Calibrated Accuracy	0.002"/h (0.05 mm/h) or $\pm 0.5\%$ of actual, whichever is greater	
Repeatability	$\pm 3\%$ @ 0.5"/h	
Collector Orifice	8.214" diameter (208 mm)	
Size	17.5" high x 8.5" diameter (445 x 210 mm)	
Funnel Heater	NiChrome wire in foil, 125 W, thermostatically controlled	
Base Heater	NiChrome wire in foil, 150 W, thermostatically controlled	
Drain Tube Heaters	2 cartridge heaters, 20 W each, continuous duty	
Thermostat Set Point		
Funnel Heater	~11°C (52°F)	
Base Heater	~6°C (43°F)	
Operating Temperature	-25°C to +40°C	
Heater Voltage	115 V AC, 60 Hz	230 V AC, 50 Hz

The Model 6021-A is Federal Aviation Administration (FAA) certified, meeting the most current regulatory requirements.

ORDERING INFORMATION

Part Number	Description
Options & Accessories	
60103	Rain Gauge Calibrator
60211	Heater Kit 115 V AC
60212	Heater Kit 230 V AC
T600723	3-Conductor, 16 AWG Heater Power Cable
T600502	2-Conductor, 20 AWG shielded cable to connect rain gauge to output device (specify length)
User-Replacable Parts	
M102495	8" Screen Assembly
M102491	Collector Tube Assembly
M102512	Drain Tube
M102515	Foot Mount
M102701	Drain Tube Heater
M104705	Inner Funnel Assembly
M403249	Termination Heater Assembly
M403251	Base Heater Assembly
M403253	Funnel Heater Assembly
M404355	Reed Switch Assembly

DIMENSIONS & WEIGHTS

Dimensions	17.5" high x 8.5" diameter (445 x 210 mm)
Product Weight	8 lb (3.6 kg)
Shipping Dimensions	13" x 13" x 21" (33 x 33 x 53.3 cm)
Shipping Weight	15 lb (6.8 kg)



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