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WHEN MEASUREMENTS MATTER

# Tipping Bucket Raingauges

*ARG100, SBS500/500H & 52202/52203*

SBS500/SBS500H
Extremely rugged, coated aluminium construction, with optional heater

## Rainfall sensors

### Well proven method for automatic measurement of precipitation

## Overview

Tipping bucket rain gauges provide a well proven method for the automatic measurement of precipitation. We offer five different models from two leading manufacturers including two heated variants. All models are compatible with any Campbell Scientific data logger.

## ARG100 & SBS500/500H

Unlike conventionally shaped rain gauges the ARG100 and SBS500/500H are aerodynamically designed to minimise sampling errors that can occur during wind-driven rain. The deep collector body of the SBS series is also less susceptible to 'splash-out' errors. The profile of these gauges follows extensive research by the Institute of Hydrology at Wallingford in the UK, and is very similar to that derived theoretically and independently by the UK Meteorological Office as an 'ideal' shape.

Correction equations are available which extend accurate measurements in rainfall rates up to 1000 mm/hr.

The ARG100 is vacuum formed from UV-resistant plastic for a low cost yet rugged and precise instrument. The SBS500/500H collector bodies are precisely engineered from powder-coated aluminium, and the base from LM6 marine grade aluminium. They are corrosion-free, extremely rugged and provide increased rainfall catch with minimal airflow interference. The SBS500H is a heated version of the gauge.

Recommended installation is by bolting to a concrete base. However, for fast, semi-permanent installations on soft ground the optional RGB1 Levelling Baseplate is available for the ARG100. The SBS500 / SBS500H have a built-in levelling device.

## RM Young 52202 & 52203

The YOUNG Tipping Bucket Rain Gauge uses a proven tipping bucket mechanism for simple and effective rainfall and snow measurement which meets the specifications of the World Meteorological Organisation (WMO).

The bucket geometry and material are specially selected for maximum water release, thereby reducing contamination and errors. A catchment area of 200 $cm^2$ and a measurement resolution of 0.1 mm meet the recommended specification of the WMO.

The extensive use of moulded thermoplastic components ensures maximum performance and value. Levelling screws and bullseye level are built-in for easy and precise adjustment in the field. Measured precipitation is discharged through a collection tube for verification of total rainfall. Model 52202 is heated for operation in cold temperatures whilst the unheated 52203, is available for use in moderate climates.

The 52202 heated gauge requires a reliable source of 24V A.C. power.

The 52202 includes a pole mount base (no pole is included).

# Specifications

## ARG100

**Funnel Diameter:** 254 mm

**Overall Height:** 340 mm

**Tip Sensitivity:**
Standard setting 0.20 mm of rain per tip (other setting 0.25 mm per tip; please specify with order)

**Maximum rainfall rate (with software correction):** 500 mm/hr

**Output:** Contact closure at tip

**Cable:** 6 m (other lengths available to order)

**Weight:** 1.0 kg

ARG100
A rugged, UV resistant gauge offering precision at low cost (shown with optional RGB1 Levelling Baseplate)

## SBS500/SBS500H

**Collector Area:** 500 $cm^2$

**Overall Height:** 440 mm

**Output:**
Contact closure at tip (two reed switches providing two independent data channels).

**Tip Sensitivity:***
Standard setting 0.20 mm of rain per tip (other setting 0.25 mm per tip; please specify with order)

**Maximum rainfall rate (with software correction):** 1000 mm/hr

**Cable:** 6 m (other lengths available to order)

**Weight:** 6 kg

**Heaters:** (SBS500H)
Thermostatically switched at approximately 1°C; current consumption 2.2A (typical) at 12V DC when operating (12mA when off)

* SBS1000 Series (available to special order) provides 0.1 mm / tip sensitivity

Internal view of the SBS500H high-quality raingauge with heater

## 52202/52203

**Size:** 18 cm dia x 30 cm high (39 cm high with mounting base)

**Catchment Area:** 200 $cm^2$

**Resolution:** 0.1 mm per tip

**Accuracy:** 2% up to 25 mm/hr
3% up to 50 mm/hr

**Output:** Magnetic reed switch (N.O.) rating 24V A.C./D.C. 500 mA maximum

**Operating Temperature:** -20°C (heated)

**Power:** 18 Watts for heater only

**Mounting:** Clamp for 2.54 cm (3.4 cm dia.) iron pipe or 3 bolts on 160 mm dia. circle

**Other:** Levelling adjustment, thermostatic control for heater, intake screen


52202/52203
Heated/unheated rain gauges to WMO specification

## Calibration (all models)

The nominal sensitivity of a raingauge is set by the manufacturer, and each gauge is subsequently calibrated to provide a calibration factor, which is given on a certificate provided with each new gauge. This factor can then be used in a datalogger program to improve the accuracy of recorded measurements.

Recalibration can be done either statically or dynamically when required (full details are provided in the raingauge manual). Campbell Scientific Ltd. offers a recalibration and maintenance service.