Tipping Bucket Rain Gauge

METEOROLOGY | PRECIPITATION | RAINFALL

General Description

HyQuest Solutions' TB3 is a **high-quality tipping bucket rain gauge** for measuring rainfall and precipitation in urban and rural locations. Due to the integrated syphon, the gauge delivers **high levels of accuracy across a broad range of rainfall intensities** With the optional heater the TB3 is the ideal device for **cold climates**.

The TB3's tried and proven design ensures **long-term, accurate and repeatable results**. It is manufactured from high quality, **durable materials ensuring long-term stability in the harshest of environments**. It consists of a robust powder-coated aluminium enclosure, an aluminium base, and stainless steel finger filter and fasteners.

TB3 provides a **finger filter** that ensures the collector catch area remains unblocked when leaves, bird droppings and other debris find their way into the catch.

The TB3's base incorporates **two water outlets at the bottom** allowing for water collection and data verification.

Maintenance of the TB3 is easy, because removal of the outer enclosure and access to the tipping bucket mechanism and finger filter assembly is made easy with quick release fasteners.

Output options

TB3 includes a **dual output 24 V DC reed switch** allowing for output redundancy or the addition of a second data logger. The second output could also be used for connecting HyQuest Solutions' current meter counter CMCbt paired with the free FCD application that allow for easy and accurate field calibration even in noisy (urban) environments. The reed switch incorporates **varistor protection against surges** that may be induced on long, inappropriately shielded signal cables.

Main Features

- Long-term stable calibration
- Accuracy not affected by rainfall intensity
- Minimal maintenance required
- Robust design for all environments
- Expandability: Optional **autonomous real-time rain monitoring and reporting system** RainTrak Undercover with in-built telemetry and logging (see flip side)

Applications

- Classical Meteorology and Climatology
- Hydrometeorology
- Environmental, Hydrological and Air Quality Monitoring
- Road Traffic Infrastructure
- Water Treatment Plants, Dams, Reservoirs
- Agrometeorology
- Airports and Airfields
- Water Resources Management

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Technical Specifications

Resolution	0.1 mm	0.2 mm	0.5 mm	0.01 inch	1.0 mm
Catch diameter	282.84 mm	200 mm			
Bucket	Teflon-impregnated ASA plastic UV-stabilized or synthetic ceramic-coated brass				Synthetic ceramic-coated brass
Pivot/Bucket Mechanism	Machined, robust stainless steel axle resting on corrosion-free sapphire pivots				
Enclosure and base	Anodized, powder-coated aluminium				
Accuracy	■ 0-250 mm per hour: +/-2 % ■ 250-500 mm per hour: +/-3 %				
Range	0-700 mm/h (maximum intensity: 700 mm/h)				
Operating Temperature	-20 °C to +70 °C (heater recommended below +4 °C)				
Operating Humidity	0 to 100 %				
Dimensions and Mass	Ø 282.84 mm x H 410 mm 3.8 kg	Ø 200 mm x H 330 mm 3.3 kg			

Accessories

Autonomous System RainTrak Undercover: TB3 can be used as a component of the RainTrak to provide a reliable and autonomous real-time rain monitoring and reporting system. Features: turnkey operation, battery operated with solar panel, integrated IP-capable data logger, periodic or event-driven data communication, wireless communication, incl. antenna, custom designed for harsh environments.

Pole Mount Bracket: Pole mount bracket with stainless steel bolts, nuts and washers to suit TB3, TB4 or TB6 base. Suits 50 mm NB galvanised pipe with 2" BSP thread.

Bird Guard: Prevents wild or feral birds from perching or roosting and thus increases accuracy by stopping bird feces from dropping inside the gauge funnel.

Portable Field Calibration Device (FCD): The FCD effectively enables field technicians to run functional tests and calibrations of any given rain gauge in the field avoiding dismantling of TBRG's, reducing TBRG downtime and thereby saving time and money.

iRIS dataloggers and data modems:

- Robust housing
- IP over one or two channels of your choice: xG / GPRS, satellite, IoT
- I/O: analog, digital, SDI-12, Modbus
- iLink software
- Telemetry or cloud app

Pulse Counter CMCbt: The CMCbt is a Bluetooth Pulse Counter that provides an interface between the TBRG's Reed Switch output and the FCD-App calibration software used in conjunction with HyQuest Solutions' Field Calibration Device FCD.

Heater Kits: A thermostatically controlled heating element raising the temperature of the interior of the rain gauge, funnel and catch to avoid the freezing of the gauge in cold climates with subsequent loss of precipitation records. Option: Low-power version with snow sensor

Please ask for details.

Specifications are subject to change without notice. Weights and dimensions are indicative. - © HyQuest Solutions | 04.2021

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