Introduction

This DFRobot rainfall sensor is a reliable and convenient tool for measuring rainfall.

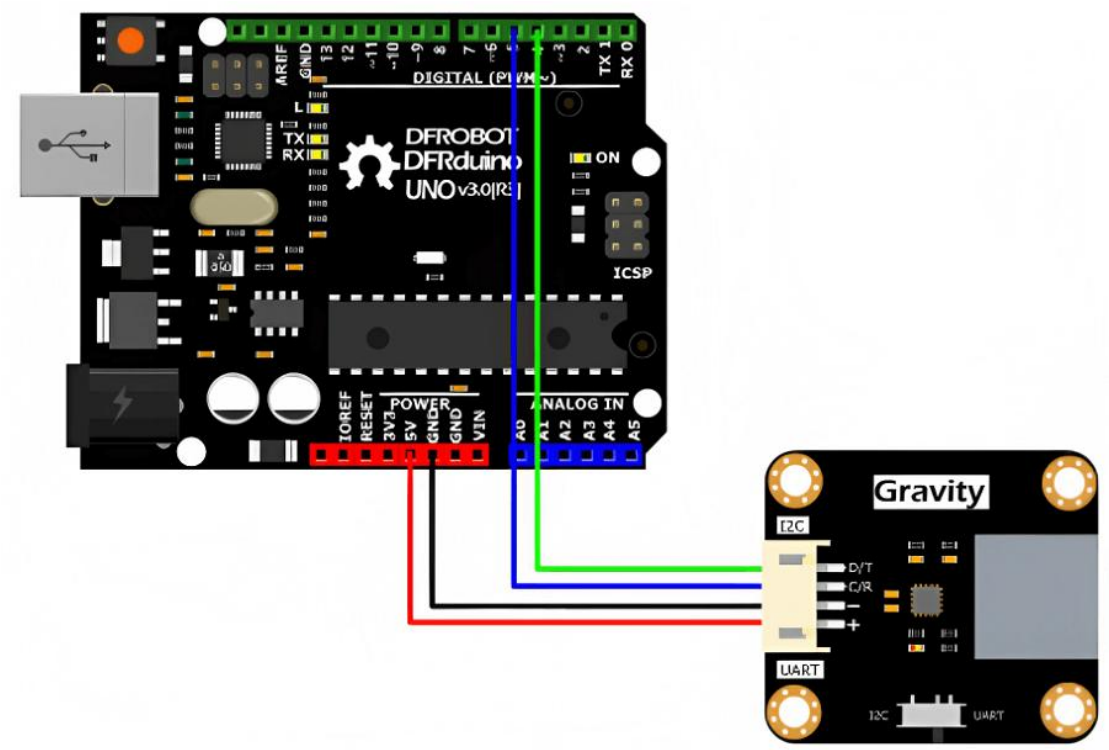
Based on the principle of tipping bucket rainfall, the rainfall sensor provides users with rainfall values in millimeters and system operating time. The sensor has no electronic components inside and features a hollow bottom design that allows rainwater to automatically drain, making it more stable and sensitive.

It supports I2C and UART data outputs, compatible with micro:bit, Arduino, ESP32, Raspberry Pi. Integrated with the easy-to-use Gravity interface, this rainfall sensor can be used to set up a rain monitoring system easily with the provided ready-to-go libraries. The tipping bucket rainfall sensor can provide high-quality rainfall data for weather stations, environmental monitoring stations, or smart farms.

What is a tipping bucket rainfall sensor?

The tipping bucket rainfall sensor is one of the commonly used precipitation monitoring devices in meteorological observations. It consists of a collection container and a measuring mechanism. During rainfall, water enters the collection container through the top inlet and flows into the tipping bucket through a funnel. When a certain amount of water accumulates, the tipping bucket loses its balance and tips over, generating a pulse signal with each tip. By recording the number of pulse signals, the controller can calculate the rainfall amount.

Note: The signal adapter board is not waterproof. Do not expose the signal adapter board to rain.



Wiring Diagram of Gravity: Tipping Bucket Rainfall Sensor and Arduino Uno

If you want to know the principle of the rain gauge, please click here to read more.

Features

- Measures rainfall in millimeters and system operating time
- No electronic components inside
- Hollow bottom design for automatic drainage
- Supports I2C and UART data outputs
- Compatible with micro:bit, Arduino, ESP32, Raspberry Pi
- Integrated with Gravity interface
- Ready-to-go libraries for easy setup of rain monitoring system

Applications

- Weather monitoring
- Environmental monitoring
- Smart farming

Research and education

Specification

Working Voltage: 3.3 to 5.5V DC

Working Current: < 3mA

Output Signal: I2C/UART

Resolution: 0.28mm

Operating Temperature: -40 to 85°C

PCB Size: 32mm x 37mm/1.26 x 1.46 inches

Tipping Bucket Size: 118mm*59mm*80mm/4.65 x 2.32 x 3.15inches

Mounting Hole Size: 3.1mm

Weight: 119g (Tipping bucket), 5.3g (PCB)

Documents

Product wiki

Rain Sensors Principle

Shipping List

Gravity: Tipping Bucket rainfall Sensor x1

Signal Adapter x1

Gravity-4P I2C/UART Sensor Connector x1