Moisture Sensor User Manual

1. Features

Operating voltage	2.0V-5.0V
Output type	Analog output
Detectable depth	38mm
Dimensions	20.0mm*51.0mm
Fixing hole size	2.0mm

Operating principle:

This module is an application of the current amplification by a transistor. When the water in the soil is sufficient enough to conduct the current between the base and the positive power supply, a certain amount of current is generated between the base and the emitter. And in a mean while, an electric current is produced in a certain amplification factor between the collector and the emitter, and applied to the resistant in the emitter to produce a voltage. Then, this voltage will be collected by an AD converter.

2. Applications

This module can be applied to automatic watering system, soil moisture detection, Automatic irrigation system, etc.

3. Interfaces

Pin No.	Symbol	Descriptions
1	AOUT	Analog output
2	GND	Power ground
3	VCC	Positive power supply (2.0V-5.0V)

4. How to use

We will illustrate the usage of the module with an example of soil moisture detection by connecting a development board.

① Download the relative codes to the development board.

② Connect the development board to a PC via a serial wire and the module to the development board. Then, power up the development board and start the serial debugging software.

Here is the configuration of the connection between the module and the development board.

Port	STM32 MUC pin
AOUT	GPIOA.6

GND	GND
VCC	3.3V

Port	Arduino pin
AOUT	A0
GND	GND
VCC	5V

Here is the configuration of the serial port.

Baud rate	115200
Data bits	8
Stop bit	1
Parity bit	None

③ Insert the sensor into the soil.

④ Water the soil little by little, and you may find the serial output changes from *I'm thirsty!* to *I had enough!*