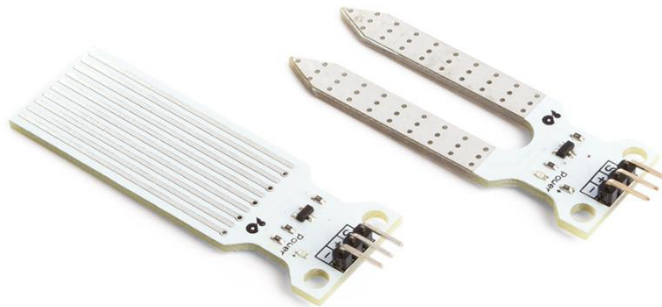# WHADDA
EXCITING ELECTRONICS

EN soil moisture sensor + water level sensor module

WPSE303

Introduction

To all residents of the European Union
Important environmental information about this product
This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit (or batteries) as unsorted municipal waste; it should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules.
If in doubt, contact your local waste disposal authorities.

Thank you for choosing Whadda! Please read the manual thoroughly before bringing this device into service. If the device was damaged in transit, do not install or use it and contact your dealer.

Safety Instructions

Read and understand this manual and all safety signs before using this appliance.

For indoor use only.

- This device can be used by children aged from 8 years and above, and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the device in a safe way and understand the hazards involved. Children shall not play with the device. Cleaning and user maintenance shall not be made by children without supervision.

General Guidelines

- Refer to the Velleman® Service and Quality Warranty on the last pages of this manual.
- All modifications of the device are forbidden for safety reasons. Damage caused by user modifications to the device is not covered by the warranty.
- Only use the device for its intended purpose. Using the device in an unauthorized way will void the warranty.
- Damage caused by disregard of certain guidelines in this manual is not covered by the warranty and the dealer will not accept responsibility for any ensuing defects or problems.
- Nor Velleman Group nv nor its dealers can be held responsible for any damage (extraordinary, incidental or indirect) – of any nature (financial, physical...) arising from the possession, use or failure of this product.
- Keep this manual for future reference.

What is Arduino®

Arduino® is an open-source prototyping platform based on easy-to-use hardware and software. Arduino® boards are able to read inputs – light-on sensor, a finger on a button or a Twitter message – and turn it into an output – activating of a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so, you use the Arduino programming language (based on Wiring) and the Arduino® software IDE (based on Processing). Additional shields/modules/components are required for reading a twitter message or publishing online. Surf to www.arduino.cc for more information.

Product Overview

This package includes a water level sensor and a soil moisture sensor.
If the boards have water covering the sensor parts, an analogue value will be available at the "SIG" connection.
The water level sensor can sense up to 4 cm of water. This way, you can track whether or not your aquarium or your pet's water bowl still has enough water in it.
You can use the soil moisture sensor to keep an eye on your plant's soil or the environment of a terrarium for example.

Specifications

- voltage: 5 VDC
- dimensions: 65 x 20 mm (2.6 x 0.79")
- weight: 5 g

Features

- measures water levels up to 40 mm (1.57")
- includes:
  - water level sensor
  - soil moisture sensor

Making a Soil Moisture Sensor

The hardware consists of an Arduino® microcontroller (here a Velleman WPB100 Arduino® Uno) and the soil moisture sensor module and/or water level sensor.

The soil moisture sensor module gives an analogue voltage corresponding to the moisture level of the soil. The higher the moisture level, the higher the output voltage will be.
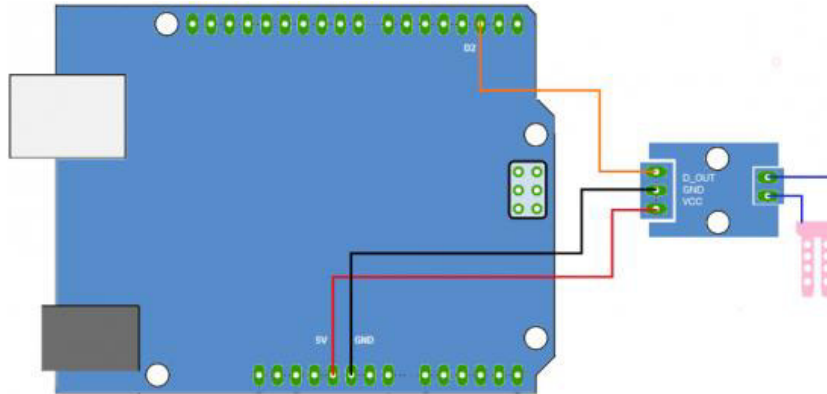
The water level sensor gives an analogue voltage corresponding to the water level present on the sensing element. If a larger proportion of the sensing elements are exposed to water, the output voltage will increase.

The same shematic and code can be used for using both the soil moisture sensor and water level sensor.

The +5 V supply line (VCC) of the module is linked to the 5 V line of the Arduino®. GND of the module is the common (0 V) connection. The analogue signal output to be detected (usually marked as S on in the module) is applied to analogue input A0 of the Arduino®. The sensor head of the module contains two probes in a small metal PCB. When the sensor head is inserted in wet soil, the moisture bridges the probes through a low-resistance path (when the soil is dry, resistance between the probes is also high).

Example

```
int GLED= 13; // Wet Indicator at Digital PIN D13
int RLED= 12; // Dry Indicator at Digital PIN D12
int SENSE= 0; // Soil Sensor input at Analog PIN A0
int value= 0;
void setup(){
  Serial.begin(9600);
  pinMode(GLED, OUTPUT);
  pinMode(RLED, OUTPUT);
  Serial.println("SOIL MOISTURE SENSOR");
  Serial.println("--------------------------");
}
void loop(){
  value= analogRead(SENSE);
  value= value/10;
  Serial.println(value);
  if(value<50)
  {
    digitalWrite(GLED, HIGH);
  }
  else
  {
    digitalWrite(RLED,HIGH);
  }
  delay(1000);
  digitalWrite(GLED,LOW);
  digitalWrite(RLED, LOW);
}
```

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