

# **STEMinds**

## **Soil Moisture V1.0 (long and short) Data-sheet**

# Capacitive soil moisture sensors

STEMinds soil moisture sensors are one of the markets most accurate and most affordable sensors allowing anyone to develop cutting edge agriculture and IoT applications with ease.

STEMinds currently produce and sell 2 types of soil moisture sensors, one is longer than the other one but both contain the exact same hardware design.

## Specifications

- \* Capacitive sensor (corrosion resistant)
- \* Operation voltage: 5V
- \* Min voltage output: 0.987V for short and 0.561V for long
- \* Max voltage output: 3.3V for both sensors
- \* Min output value (analog): 1354 for short and 106 for long
- \* Max output value (analog): 668 for short and 683 for long
- \* Operation current: 7mA
- \* Resolution (high value - low value): 514 for short sensor, 577 for long sensor.



## Useful applications

- \* Smart watering solutions
- \* IoT environmental control
- \* Green house controller for mushrooms, flowers and all kind of plants
- \* Smart irrigation system
- \* Accurate data collection for data scientific and environmental analysis
- \* Educational purposes and real life applications

## Support & Documentation

STEMinds offers complete support and documentation, the documentation is officially available at [wiki.steminds.com](http://wiki.steminds.com) and the software is open source and available at the official STEMinds GitHub repository: <https://github.com/steminds/eduponics-mini>

## Hardware pinout

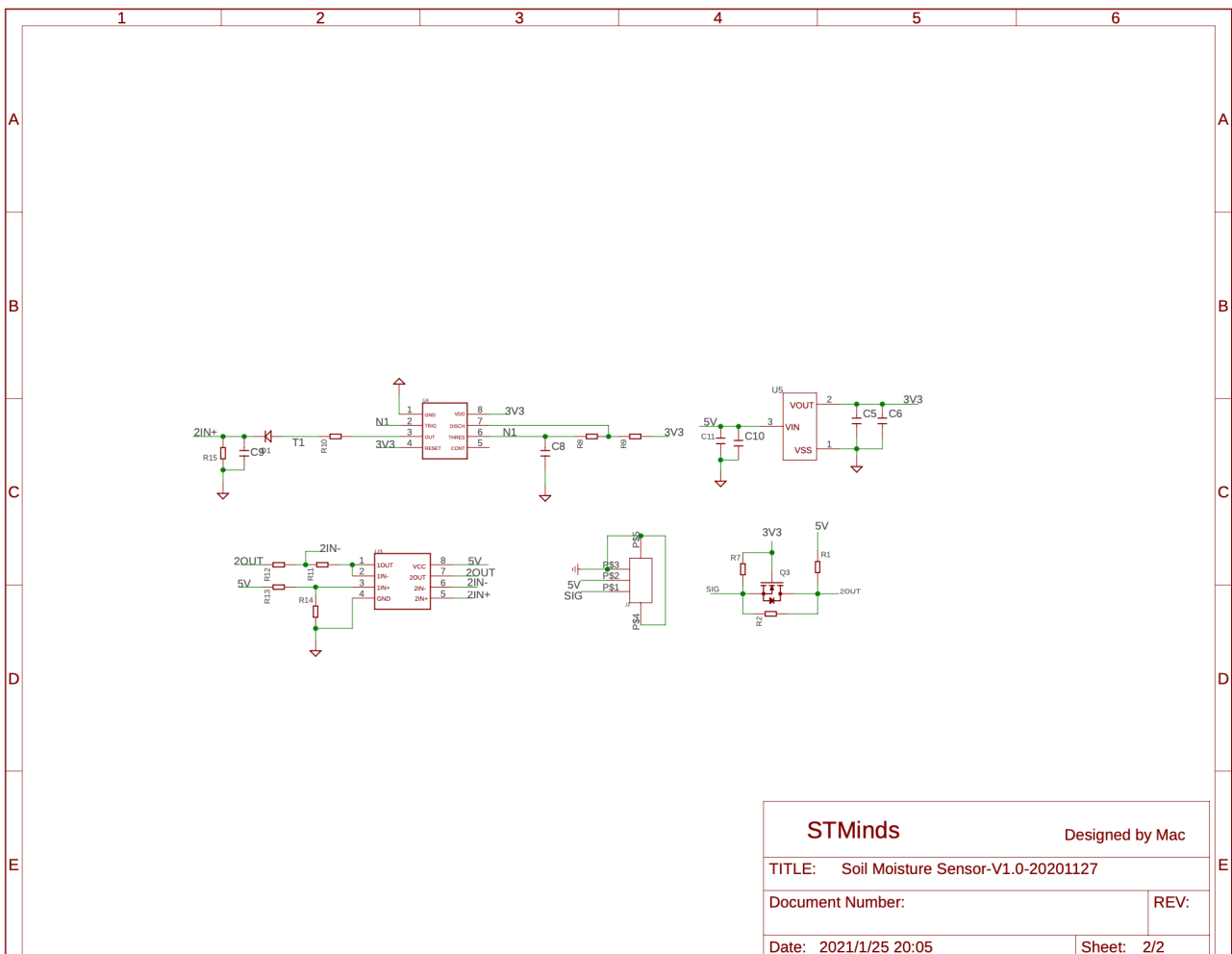
The soil moisture sensors require ADC or analog pins (Can work directly with Arduino or ESP32 but Raspberry Pi for example requires external ADC) the sensor VCC pin must be connected to 5V (not 3.3V) or it might not work properly.

<b>PIN</b>	<b>Definition</b>
VCC	5V VCC
GND	GND
SIG	Analog input

## Schematic

For the complete schematic at high resolution, please refer to our GitHub repository:

<https://github.com/STEMinds/Eduponics-Mini/blob/main/hardware/Soil%20Moisture%20Sensor-V1.0-schematic.pdf>



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