# Datasheet:

PLANT MONITOR

V1A - 2022-05-04

Monitor soil moisture, temperature and relative humidity measurement with the Plant Monitor. This board is compatible with the BBC micro:bit, Raspberry Pi and most microcontroller boards.

- Superior capacitative sensor
- Alligator / crocodile clip rings
- Ready soldered header pins for your choice of microcontroller.
- Easy to use UART serial interface
- Additional analog output for moisture only
- Built-in RGB LED
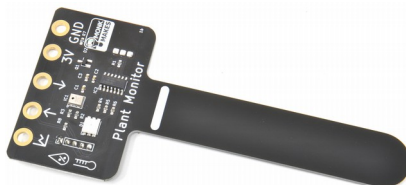
Electrical

		Units
Absolute maximum supply voltage	3.6	V
Minimum supply voltage	2.4	V
Typical current consumption	8	mA
Maximum current consumption	15	mA

Sensor Characteristics

		Units
Moisture range	0..100	%
Moisture analog output sensitivity	0..2.5	V
Moisture analog output sensitivity	25	mV/%
Temperature range	-10..60	deg. C
Temperature accuracy (from AHT10 datasheet)	+/- 0.3	deg. C
Relative Humidity range	0..100	%
Relative Humidity accuracy (from AHT10 datasheet)	+/- 2	%
Sample time (moisture)*	20-1500	ms
Max sample time (temp and humidity)	100	ms

* samples typically take 1000ms for wet 20ms for dry.

Serial Protocol

All communication is at 9600 baud 8N1. Commands are a single letter with no terminating character or line feed required. Any extraneous command characters are ignored by the board. Some commands are followed by a response from the board within a few milliseconds. The responses are variable length and terminated with a \n character.

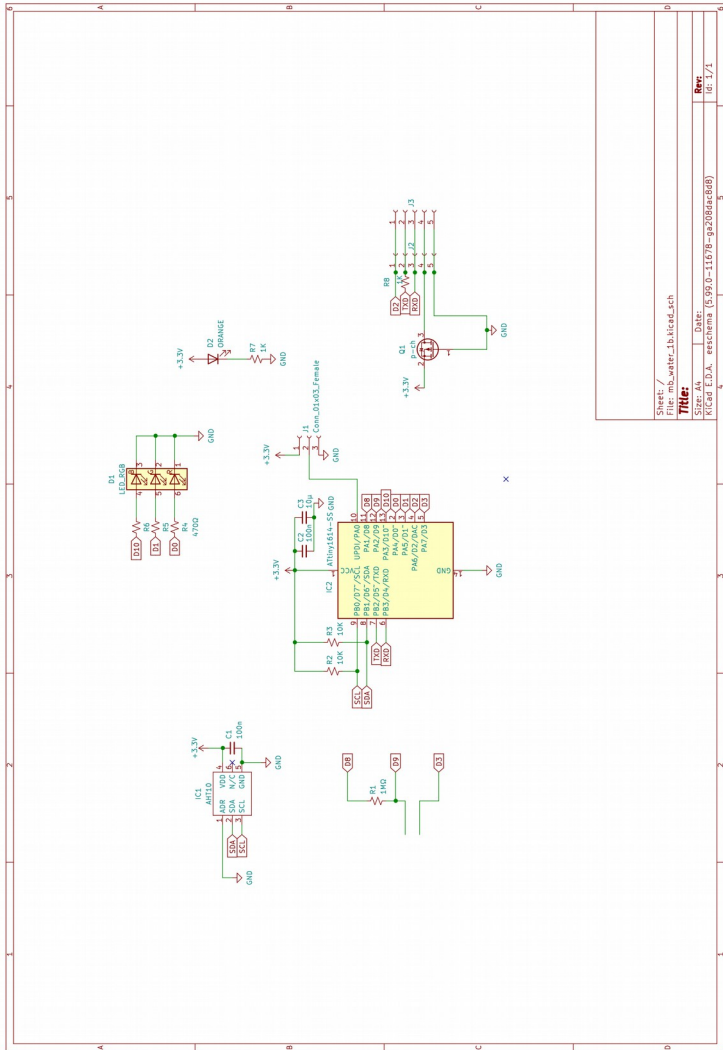| Command	Response	
w	w=55\n	returns the moisture level 0 to 100 %
t	t=20.5\n	returns the temperature in degrees C
h	h=50.5\n	returns the relative humidity %
j	{"wetness" : 230, "humidity":50, "temp":20}	returns all three readings in JSON format
L	no response	turn on the LED to display the current moisture. Red dry (0%), green wet (100%), mix of red and green in between.
l	no response	LED off
v	1d	returns the firmware version

Other Documents

User Manual: http://monkmakes.com/instructions_pmon.pdf
Examples: // todo //
Firmware: https://github.com/monkmakes/plant_monitor_firmware

Schematic

Mechanical