Air Quality PM1, PM2.5, PM10 MQTT

Description

Sensor's air vents
ESP reset
Micro USB
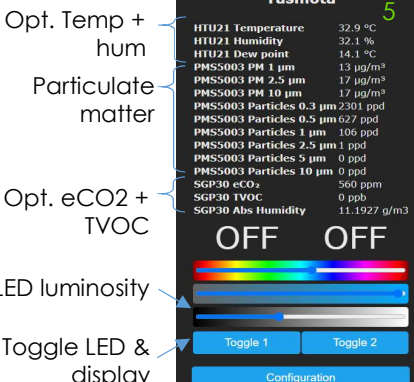Toggle OLED display
Toggle LED

Everything can be accessed without opening the enclosure, even reprogramming. An optional reset button may be accessible with a pen.

I2C display
ESP8266
I2C ports (free to use)
LED connector

Local IP
Opt. Temp + hum
Particulate matter
Opt. eCO2 + TVOC
LED luminosity
Toggle LED & display

A web interface is activated at startup to monitor the data, modify the light intensity, or the device behavior (console). Do not edit the configuration unless you know what you are doing.

<u>**Important**</u>: **Do not upgrade firmware as you would loose the ability to talk to the sensors.**

Usage

The sensor must be powered to work. If a reset is needed just unplug and plug back the USB connector. The sensor should not be used in very polluted environment for long periods of time, see the [PMS5003 datasheet](#) for more information.

Set up

WiFi

On the first boot you will need to configure your WiFi credentials.

1. Find the WiFi access point named 'xtopic—XXXX'. Connect to it without password.
2. A web browser window should open automatically, if not enter the URL 192.168.4.1
3. Select your WiFi access, enter its password and press 'Save' The sensor can connect to internet.
4. The sensor will now restart and display it's local IP address.
5. You can connect to this address to find the configuration.

Hack

Console

Most parameters and the rules can passed through the console. More information on the commands [here](#). For example you can rotate the display with the command ['DisplayRotate 1'](#).
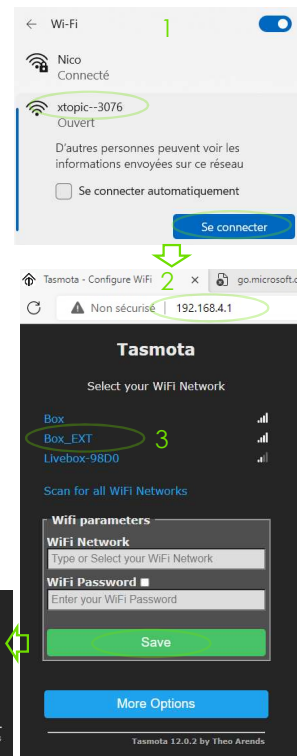
Rules

Rules are an event based script that you can add to tweak Tasmota's behavior.

A set a 3 rules are precoded to manage the behavior of the OLED display, the RGB LEDs, so that they react to the PM2,5's sensor values. The two first sets are occupied with the sensor's behavior. The third is not activated but set with an example MQTT publish.

<u>Note</u>: only the PM values are displayed and used to act on the color of the LED, but eCO2 or TVOC values could easily be added to the display or enter in the color composition by modifying the rules.

See the documentation of [Tasmota's rules](#) and the annexed file AirQualityRules.txt to find the rules and a set of commands to pass to the console. You can also send the command 'Rule1' on the console to get the current rule.

<u>Note</u>: the behavior of the 2 buttons are not handled in rules but directly in the configuration. If needed it would also be possible to handle them in rules for more advanced functionnalities.

MQTT

MQTT server and port can be parametered in the Configuration.

The 3rd rule take care of sending sensors' data over MQTT to a home automation system that will record them. The preset exemple rule is specific for a Domoticz server as it retrieves a specific virtual sensor's ID. On Domoticz, you will first need to create a virtual device, then set its IDX in the rule.

On HomeAssistant, the values might be retrieved automatically (not tested).