

PM Sensor

A device designed to monitor air pollution levels and safeguard against harmful particulate matter (PM) present in the air. This device, belonging to the PRO sensor series, includes Aranet Sub-GHz ISM band radio which wirelessly transmits sensor measurements to the Aranet PRO base station.



Product numbers

European Union	TDSPPM02
United States	TDSPPMU2
Asia	TDSPPMU2

Particulate matter concentration measurement performance

	PM1.0	PM2.5	PM10
Range	0–1000 $\mu\text{g}/\text{m}^3$	0–1000 $\mu\text{g}/\text{m}^3$	0–1000 $\mu\text{g}/\text{m}^3$
Resolution	1 $\mu\text{g}/\text{m}^3$	1 $\mu\text{g}/\text{m}^3$	1 $\mu\text{g}/\text{m}^3$
Accuracy	$\pm 10\%$	$\pm 10\%$	$\pm 25\%$
Maximum long-term drift	$\pm 1.25\%$ /year	$\pm 1.25\%$ /year	$\pm 1.25\%$ /year

- The concentration metrics provided for PM1.0, PM2.5, and PM10 indicate particle concentration with overlapping size ranges: 0.3–0.5 μm , 0.3–1.0 μm , and 0.3–10 μm , respectively.

General specifications

Ingress protection rating	IP42	
Operating temperature range	-10–60 °C	14–140 °F
Operating relative humidity range	0–95 %	
Dimensions	104×67×37 mm	4.10×2.64×1.46 in
Weight (excl. wall mount)	116 g	4.1 oz
Power supply	External 12–24 VDC power supply unit	
Power consumption	0.5 W	
Packaging includes	Power supply unit, wall mount	

LED mode description

LED mode	Air quality index	Category
Green	0–50	Good
Yellow	51–100	Moderate
Orange	101–150	Unhealthy for sensitive groups
Red	151–200	Unhealthy
Purple	201–300	Very unhealthy
Flashing	>301	Hazardous

- The calculation of the air quality index and the corresponding implementation of LED modes were guided by the document titled: *U.S. Environmental Protection Agency, “Technical Assistance Document for the Reporting of Daily Air Quality” (2018).*

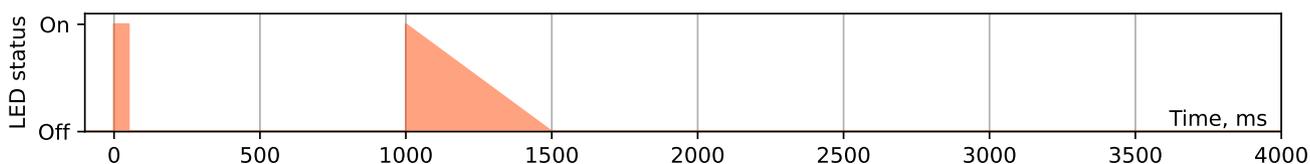
Aranet radio parameters

Line of sight range	3 km	1.9 mi
Transmitter power	14 dBm	25 mW
Data transmission interval	1, 2, 5 or 10 min	
Data protection	XXTEA encryption	

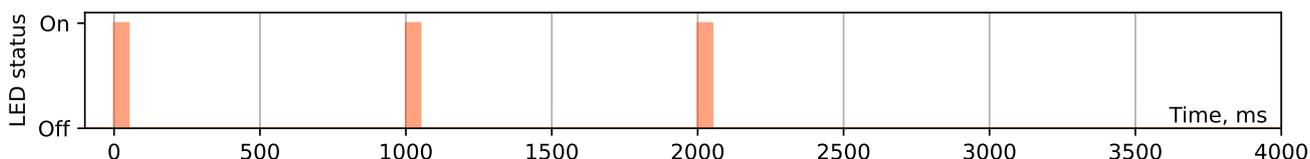
Pairing process description

As part of the Aranet PRO product series, this device enables wireless sensor reading transmission to the Aranet PRO and PRO Plus base station. Here’s how to pair the sensor with the base station:

- Place the sensor within 20 m (60 ft) of the base station during pairing. Once paired, it can communicate over a much greater distance (up to 3 km / 1.9 mi line of sight).
- If the sensor uses a power supply unit, unplug it. Open the sensor casing and remove the battery for at least 20 seconds. Alternatively (for newer hardware revisions), locate the PAIRING button on the sensor PCB which can be used to initiate pairing without the removal of battery.
- Access the SENSORS menu in the base station Web GUI. Set the measurement interval and select PAIR SENSOR to start the pairing process.
- Within a 2-minute window, insert the battery or press the PAIRING button on the sensor PCB (for newer hardware revisions) to initiate pairing.
- A successful pairing is indicated by the sensor appearing in the Web GUI and a specific LED blink sequence on the sensor PCB (one to three short blinks followed by a longer fade-out blink of the LED):



- If pairing fails, the sensor won't appear in the Web GUI, and the LED blink sequence will consist only of three short blinks. In this case, repeat the procedure closer to the base station.



- After successful pairing, customize parameters like name and tags in the Web GUI. Close the sensor casing and install it in the desired location.

Important notes

- The sensor best performs when operated within 10–40 °C (50–104 °F) and 20–80 % RH, should be placed in stable temperature and relative humidity locations. Avoid operating in a heavily contaminated environment, under excessive ambient light, and/or wind.

Compliance information

CE Conformité Européenne

FC Federal Communications Commission (USA)

IC Innovation, Science and Economic Development Canada