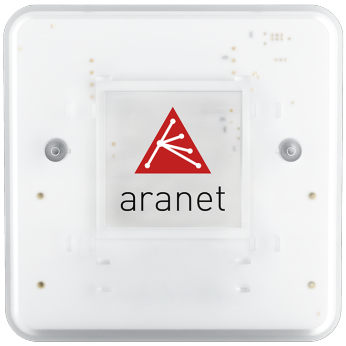
Aranet4 without Display



Wireless, portable device for measuring air quality. Measures carbon dioxide (CO_2) concentration, temperature, relative humidity, and atmospheric pressure. 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	TDSPC205
United States	TDSPC2U5
Asia	TDSPC2U5

Sensor performance

General notes

- 95 % of the sensors perform within the specified accuracy limits at the time of purchase, assuming they are in an equilibrium state. For evaluation of the total measurement error, long-term drift has to be taken into account.
- Measurement time constant τ is determined at 1 m/s airflow. This constant refers to the time it takes for the sensor reading to reach 63 % of a new steady-state value in response to a step change in the environment. It essentially represents the speed at which the sensor adjusts to changes in the measured quantity.

CO_2 concentration

Range	0–9999 ppm
Resolution	1 ppm
Accuracy	±(30 ppm + 3 % of reading)
Long term drift	Not available
Time constant τ	100 s

- CO_2 sensor of the device is calibrated at standard atmospheric pressure. CO_2 readings are pressure compensated and comply with the specifications down to 750 hPa. If the device has to be used at high altitude for a prolonged period of time, manual calibration of the unit should be performed for optimal performance. It is not intended to use the device higher than 4000 m (13’000 ft) above the sea level.

- CO_2 measurement accuracy is provided for a range 0–5000 ppm, temperature 15–35 °C (59–95 °F) and relative humidity 0–80 %. Accuracy above 5000 ppm is 10 % of reading, but not guaranteed since it is extrapolated form the calibrated range.
- If a drift of the CO_2 measurements occurs, calibration feature of the device should be used. Auto calibration mode is utilizing ABC algorithm whereas manual calibration mode demands sensor to be exposed to fresh air.

Temperature

Range	0–50 °C	32–122 °F
Resolution	0.1 °C	0.1 °F
Accuracy	±0.3 °C	±0.5 °F
Long term drift	0.03 °C/year	0.05 °F/year
Time constant τ	10 min	

Relative humidity

Range	0–85 %
Resolution	1 %
Accuracy	±3 %
Long term drift	0.5 %/year
Time constant τ	To be defined

Atmospheric pressure

Range	600–1100 hPa
Resolution	1 hPa
Accuracy	+3 hPa / -2 hPa
Long term drift	1 hPa/year
Time constant τ	0 s (instantaneous)

- Device measures absolute pressure, i.e., readings are not compensated for an elevation above the sea level.

General specifications

Ingress protection rating	IP20	
Operating temperature range	0–50 °C	32–122 °F
Operating relative humidity range	0–85 %	
Dimensions	71×71×24 mm	2.80×2.80×0.94 in
Weight (incl. batteries)	104 g	3.7 oz
Font height on display	10 mm	0.39 in
Enclosure material	Polycarbonate	
Packaging includes	2 pcs AA alkaline batteries, configuration pin	

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	

Bluetooth parameters

Line of sight range	10 m	33 ft
Transmitter power	4 dBm or -12 dBm	
Data transmission interval	1, 2, 5 or 10 min	

Battery lifetime

Measurement interval	Alkaline battery lifetime	Lithium battery lifetime
1 min	2.1 years	2.8 years
2 min	3.8 years	5.2 years
5 min	8.0 years	>10 years
10 min	>10 years	>10 years

- Battery lifetime data has been obtained by mathematical extrapolation and is provided for descriptive purposes only and is not intended to make or imply any guarantee or warranty.
- Battery lifetime tests and calculations performed assuming device is at 20 °C (68 °F) and using *Fujitsu Premium LR6G07* (alkaline) and *Energizer Ultimate Lithium L91* (lithium) AA batteries as reference.
- The operating temperature range may vary based on the battery type used. Generally, the range for alkaline batteries is between -20–50 °C (-4–122 °F), whereas for lithium batteries, it is -20–60 °C (-40–140 °F).

Important notes

- Device is qualified to work properly within ambient clean air. Qualification for use in harsh environment is the duty of the user of the sensor. Exposure to volatile organic compounds, acids or bases, etching substances such as H_2O_2, NH_3, shall be avoided.

Compliance information

CE	Conformité Européenne
FC	Federal Communications Commission (USA)
IC	Innovation, Science and Economic Development Canada