T/RH Probe (ammonia resistant)

Measures temperature and relative humidity through a sensor probe connected to the transmitter body via a cable. Probe construction offers increased protection from ammonia-rich atmosphere often present in livestock and poultry housing. 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	TDSPT409
United States	TDSPT4U9
Asia	TDSPT4U9

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.

Temperature

Range	-40–85 °C	-40–185 °F
Resolution	0.1 °C	0.1 °F
Accuracy	±0.3 °C	±0.5 °F
Long-term drift	0.05 °C/year	0.09 °F/year

- Provided accuracy is relevant for the temperature measurement range 0–60 °C (32–140 °F).

Relative Humidity

Range	0–100 %
Resolution	0.1 %
Accuracy	±3 %
Long-term drift	0.5 %/year

- Provided accuracy is relevant for the relative humidity measurement range 0–80 % at 23 °C (73 °F).

- Long-term drift value is provided at laboratory conditions: 23 °C (73 °F) and 30–70 % relative humidity. In significantly different conditions, higher long-term drift might occur.
- Long-term exposure to high humidity conditions (>80 %, especially condensing atmosphere) might temporarily increase the relative humidity reading above the actual value. To rectify this, it's advisable to dry the probe in an environment with low relative humidity.

Measurement probe specifications

Probe material	Polytetrafluoroethylene (PTFE)	
Cable insulation material	Silicone	
Probe dimensions	⌀10×80 mm	⌀0.39×3.15 in
Cable length	0.35 m	1.1 ft

- Probe extension cables with lengths 1/2/5/10 m (3.3/6.6/16.4/33 ft) are available as accessories upon request.

General specifications

Ingress protection rating	IP67	
Maximum operating temperature	-40–60 °C	-40–140 °F
Dimensions	⌀35×120 mm	⌀1.4×4.7 in
Weight (incl. battery)	100 g	3.5 oz
Enclosure material	ASA plastic	
Power supply	1 pc AA battery	
Packaging includes	1 pc AA alkaline battery, polyester string for hanging the device	

Battery lifetime

Measurement interval	Alkaline battery lifetime	Lithium battery lifetime
1 min	1.3 years	1.7 years
2 min	2.3 years	3.0 years
5 min	4.8 years	6.8 years
10 min	8.2 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 -40–60 °C (-40–140 °F).

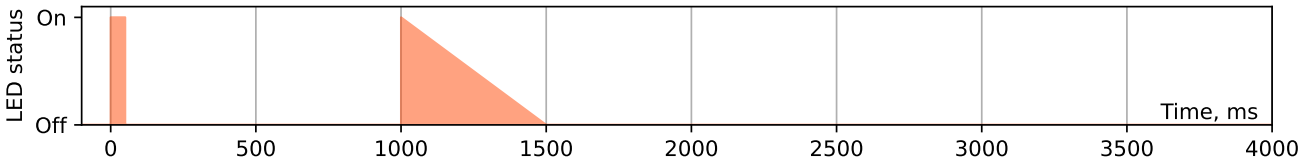
Aranet radio parameters

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	

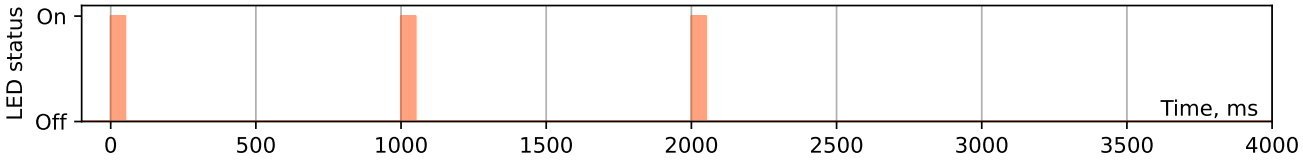
Pairing process description

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.

Compliance information

CE Conformité Européenne

FC Federal Communications Commission (USA)

IC Innovation, Science and Economic Development Canada