



aranet

# Aranet T/RH sensor with Radiation Shield



- ① Measures temperature and relative humidity
- ② Protects measurements from sun radiation
- ③ IP65 casing
- ④ Up to 10 years of battery life
- ⑤ Designed for greenhouse environment

Convection Radiation Shield in combination with temperature and relative humidity sensor is a unique solution, provides precise air temperature measurements for the greenhouse environment.

## Aranet T/RH sensor with Radiation Shield

TDSPT509 (EU)

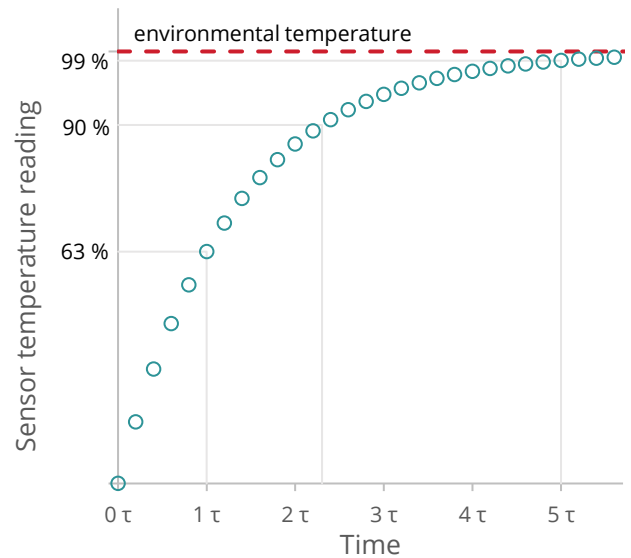
Measures the temperature and relative humidity of the environment

TDSPT5U9 (NA)

TDSPT5R9 (RU)

### Sensor performance

	Temperature	Relative Humidity
Range	-40 °C to 60 °C (-40 °F to 140 °F)	0-100 %
Resolution	0.1 °C (0.1 °F)	0.1 %
Accuracy <sup>1</sup>	±0.3 °C (±0.5 °F)	± 2 %
Hysteresis	N/A	± 1 %
Long-term drift	0.03 °C/year (0.05 °F/year)	0.5 %/year
Time constant $\tau$ (63 %)²	1 minute	TBD



### Radio parameters

Line of sight range	3 km (1.9 mi)
Supported ISM bands	EU868, NA915
Transmitter power	14 dBm
Data transmission interval <sup>3</sup>	1, 2, 5 or 10 minutes
Data protection	XXTEA encryption
Compatible base stations	Aranet PRO

### General

Ingress Protection code	IP65
Maximum operating temperature range	-40 °C to 60 °C (-40 °F to 140 °F)
Dimensions	Ø 80 x 660 mm (Ø 3.1 x 26 in)
Weight <sup>4</sup>	230 g (8.1 oz)
Enclosure material	ASA, PP plastics
Included in the box	1 AA alkaline battery, polyester string

### Power 1 AA battery

Type	Alkaline <sup>5</sup>	Lithium <sup>6</sup>
Operating temperature	-20 °C to 55 °C (-4 °F to 131 °F)	-40 °C to 60 °C (-40 °F to 140 °F)
TX interval	Battery lifetime at 20 °C (68 °F) <sup>7</sup>	
1 minute	1.8 years	2.3 years
2 minutes	3.4 years	4.7 years
5 minutes	6.9 years	10 years
10 minutes	10 years	10+ years

### Compliance

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

Aranet qualifies its T/RH sensor 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<sub>2</sub>O<sub>2</sub>, NH<sub>3</sub>, shall be avoided.

<sup>1</sup> 95 % of the sensors measure within these typical limits in equilibrium state at time of sale. For evaluation of the total measurement error hysteresis and long-term drift has to be taken into account.

<sup>2</sup> Time constant is determined at 0 m/s airflow.

<sup>3</sup> Due to regulatory requirements 1 minute data transmission interval is not available in Russia.

<sup>4</sup> Weight with alkaline AA Fujitsu LR6G07 Premium battery.

<sup>5</sup> AA Fujitsu LR6G07 Premium battery used for tests and calculations.

<sup>6</sup> AA Energizer L91 Ultimate Lithium battery used for tests and calculations.

<sup>7</sup> 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.



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