

Aranet Soil sensor (Teros-12)

Measures volumetric water content,
electroconductivity and temperature of soil

TDSPHE02 (EU)
TDSPHEU2 (US, AS)

Sensor performance

	Volumetric Water Content (VWC)	Apparent dielectric permittivity	Bulk Electrical Conductivity (EC)	Temperature ¹
Range	0 – 100 % ²	1 – 80	0 – 20 dS/m	-40 °C to 60 °C (-40 °F to 140 °F)
Resolution	0.1 %	0.01	0.001 dS/m	0.1 °C (0.1 °F)
Accuracy ³	± 3 % ⁴	1–40 : ±1 40–80 : 15%	±8 % of reading	±0.5 °C (±1.0 °F)

Radio parameters

Line of sight range	3 km (1.9 mi)
Supported ISM bands	EU868, RU869 US920, AS923
Transmitter power	14 dBm
Data transmission interval	1, 2, 5 or 10 minutes
Data protection	XXTEA encryption
Compatible base stations	Aranet PRO

General

Ingress protection rating	IP68
Operating temperature range	-40 °C to 60 °C (-40 °F to 140 °F)
Weight ⁵	320 g (11.3 oz)
Included in the box	AA alkaline battery

Power

Type	AA battery	
	Alkaline ⁶	Lithium ⁷
TX interval	Battery lifetime at 20 °C (68 °F) ⁸	
1 minute	0.9 years	1.2 years
2 minutes	1.7 years	2.3 years
5 minutes	3.9 years	5.3 years
10 minutes	6.6 years	9.5 years

Compliance

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

¹ Temperature measurement may not be accurate if sensor is not fully immersed in the medium of interest, due to longer equilibration time.

² The VWC range is dependent on the media the sensor is calibrated to. A custom calibration will accommodate the necessary ranges for most substrates.

³ 95 % of the sensors measure within these typical limits in equilibrium state at the time of sale.

⁴ A typical value in mineral soils that have solution EC <8 dS/m. The VWC accuracy is dependent on the media the sensor is calibrated to. A custom calibration can improve the accuracy up to 1 % of VWC.

⁵ Weight with alkaline Fujitsu Premium LR6G07 AA batteries.

⁶ Fujitsu Premium LR6G07 AA batteries used for tests and calculations.

⁷ Energizer Ultimate Lithium L91 AA batteries used for tests and calculations.

⁸ 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.