



TENSIO-LW Soil Water Potential Sensor

Description

TENSIO-LW is a wireless tensiometer powered by LoRaWAN™ - a long-range and low-power wireless technology.

It measures soil water potential which is an indication of the suction force that plants' roots must exert to extract water from the soil.

It is a low-power sensor which has long battery life and robust build quality.

- Long-range wireless communication (up to 15 km)
- Very long battery life (> 3 years)
- Configurable reading interval (15 minutes default)
- Supports remote re-configuration
- Replaceable sensing probe (various lengths available)
- Robust build quality for outdoor usage



Specifications

Dimensions	120x80x50 mm (50cm probe)	Radio interface	LoRaWAN / 868 MHz
Weight	150 gr (approx)	Sensor range	0 - 1000 mbar soil tension *
Casing	waterproof PVC	Accuracy	± 1 mbar
Battery	4.5 V (3 x AA batteries)	Read interval	15 min (re-configurable via APIs)
Expected battery life	min 2 years (with 5 min interval)	Working range	-15°C .. +60°C 0% .. 100% RH



TENSIO-ST-LW Soil Water Potential + Temperature Sensor

Description

TENSIO-ST-LW is a wireless tensiometer and soil temperature sensor powered by LoRaWAN™ - a long-range and low-power wireless technology.

It measures soil water potential which is an indication of the suction force that plants' roots must exert to extract water from the soil. In addition it also measures soil temperature.

It is a low-power sensor which has long battery life and robust build quality.

- Long-range wireless communication (up to 15 km)
- Very long battery life (> 3 years)
- Configurable reading interval (15 minutes default)
- Supports remote re-configuration
- Replaceable sensing probe (various lengths available)
- Robust build quality for outdoor usage



Specifications

Dimensions	120x80x50 mm (50cm probe)	Radio interface	LoRaWAN / 868 MHz
Weight	150 gr (approx)	Sensors range	0 - 1000 mbar soil tension * -10°C .. +85°C temperature * calibrated over temperature range of 0°C .. +50°C
Casing	waterproof PVC	Accuracy	± 1 mbar soil tension ±0.5°C temperature
Battery	4.5 V (3 x AA batteries)	Read interval	15 min (re-configurable via APIs)
Expected battery life	min 2 years (with 5 min interval)	Working range	-15°C .. +60°C 0% .. 100% RH



WAVA-LW Water Valve

Description

WAVA-LW is a wireless latching water valve powered by LoRaWAN™ - a long-range and low-power wireless technology.

It is a battery-powered 9V water valve that can be triggered wirelessly from remote. Low-power consumption thanks to the 2-way latching (bistable) solenoid which can be adapted to various compatible valve bodies.

It is particularly indicated for precision irrigation scenarios in combination with soil moisture sensors.



- Long-range wireless communication (up to 15 km)
- Very long battery life (> 3 years)
- Configurable triggering interval
- Supports remote re-configuration
- Replaceable valve body
- Robust build quality for outdoor usage

Specifications

Dimensions	100x100x50 mm (50cm probe)	Radio interface	LoRaWAN / 868 MHz
Weight	150 gr (approx)	Pressure range	0.5 - 10 bar
Casing	waterproof PVC	Inlet/Outlet ports	3/4" M (default valve body)
Battery	4.5 V (3 x AA batteries) plus 1 x 9 V battery	Trigger interval	5 min (re-configurable via APIs)
Expected battery life	> 2 years (5 min trigger interval) 9V solenoid battery life depends on usage	Working range	-15°C .. +60°C 0% .. 100% RH



WSENSE-LW Mini Weather Station

Description

WSENSE-LW is a wireless mini weather station powered by LoRaWAN™ - a long-range and low-power wireless technology.

It measures air temperature, relative humidity and barometric pressure. It is easily deployable making it a perfect choice to precisely monitor the conditions of different areas of a single field.

It is a low-power sensor which has long battery life and robust build quality.

- Long-range wireless communication (up to 15 km)
- Very long battery life (> 3 years)
- Configurable reading interval (10 minutes default)
- Supports remote re-configuration
- Robust build quality for outdoor usage



Specifications

Dimensions	180x90 mm	Radio interface	LoRaWAN / 868 MHz / class A
Weight	150 gr (approx)	Sensors range	-40°C .. +85°C temperature 0% ..100% relative humidity 300 ..1100hPa barometric pressure
Casing	radiation shield with wall/post mountable bracket	Accuracy	±1°C temperature ±3% relative humidity ±1hPa barometric pressure
Battery	6 V (4 x AA batteries)	Read interval	10 min (re-configurable via APIs)
Expected battery life	min 3 years (with 10 min interval)	Working range	-15°C .. +60°C 0% .. 100% RH



FROSTSENSE-LW Frost Monitoring Station

Description

FROSTSENSE-LW is a wireless frost monitoring station powered by LoRaWAN™ - a long-range and low-power wireless technology.

It measures wet-bulb and dry-bulb temperature in order to monitor the possibility of a frost event to happen. Various types of alarm thresholds can be configured to be notified in case of frost-risk conditions or to automatically trigger anti-frost irrigation systems.

It is a low-power consumption device which has long battery life and robust build quality.



- Long-range wireless communication (up to 15 km)
- Very long battery life (> 3 years)
- Dynamic reading interval depending on frost risk
- Configurable alarm thresholds
- Supports remote re-configuration
- Robust build quality for outdoor usage

Specifications

Dimensions	210x185x150 mm (110x85mm bucket)	Radio interface	LoRaWAN / 868 MHz
Weight	1500 gr (approx)	Sensors range	-10°C .. +85°C temperature
Casing	radiation shield mountable on a pipe/wood post/wall	Accuracy	±0.5°C / 0.0625°C resolution
Battery	6 V (4 x AA batteries)	Read interval	5 min (re-configurable via APIs) automatically adjusted in case of frost risk
Expected battery life	min 2 years (with 5 min interval)	Working range	-15°C .. +60°C 0% .. 100% RH



Ongoing integration

The following is a list of sensors which are going to be integrated:

Rain gauge

Tipping bucket rain gauge that performs rainfall measurements.

Model: YOUNG 52202



Leaf wetness

Detect presence of wetness on plant leaves and measure its duration.

Model: under evaluation



Soil Water Potential

This sensor measures water potential and soil temperature. Useful in specific scenarios (e.g. deep measurements, very wide-range required).

Model: Metergroup TEROS 21



Anemometer and wind direction

This sensor measures wind speed and wind direction.

Model: under evaluation



Solar radiation

This sensor measures global solar radiation. It is often coupled with the anemometer and temperature/humidity sensor for monitoring evapotranspiration.

