

ALT'O : Water Level Altimeter



Alt'O is a LoRaWAN® sensor for detecting the height of clear water, brackish water, etc.

APPLICATIONS

- Aquatic Environment Management
- Coastal monitoring
- Flood detection
- Measuring water levels in lakes/water reserve/ponds

BENEFITS & FEATURES

- LoRaWAN®, Classe A
- Easy to install and use
- Data compression
- 2 to 5 years of battery life
- 61 GHz FMCW radar technology
- Measurement ranges/accuracy:
 - Water depth: 30 cm to 8 m
 - Standard accuracy +/- 10 mm, see conditions
 - Resolution 1 mm

CERTIFICATION

- RED, RoHS



The ALT'O sensor measures the height of fresh, brackish, salted, and polluted water. Data is transmitted via the public or private LoRaWAN® network periodically or immediately in the event of an alert:

- Exceeding minimum or maximum water level thresholds.
- Sensor moved from its original position.

Installation and commissioning are fast and easy. The sensor adapts to all types of round or square supports or walls (with a mounting bracket). The sensor's design limits wind resistance and provides resistance to harsh conditions: UV rays and extreme temperatures.

No photovoltaic panels, no visible antenna: it blends perfectly into its surroundings and is particularly resistant to vandalism and various types of damage (animal waste, pollution, salty outdoor environments, submersion).

The sensor is equipped with a magnetic switch for activation and deactivation.

Each sensor is identified by a QR code on a label and an NFC tag in the case.

Measurement data is transmitted individually or aggregated and compressed (batch mode) before being transmitted over the LoRaWAN® network. Batch mode significantly reduces the amount of data transmitted while preserving the sensor's battery life.

Powered by an LS33600 battery, the sensor has a battery life of over 5 years with a configuration of 1 measurement every 30 minutes and 1 transmission per hour.

The battery voltage level is transmitted regularly.

THE WIDEST RANGE OF IOT SENSORS SUITABLE FOR YOUR PROJECT

WATTECO is a European leader specializing in the design and manufacture of IoT sensors and actuators, as well as in the development of versatile remote meter reading and remote data collection solutions.

WATTECO is a member of the LoRa Alliance®.



Water Level Altimeter

TECHNICAL SPECIFICATIONS

RADIO	Frequencies (MHz)	Transmission power (dBm)	Sensibility (dBm)
	EU : 863 - 870	+14	-140

FIRMWARE	
Protocol	LoRaWAN®, Class A
Measurement period	From 10 minutes to 24 hours (configurable)
Transmission interval	Immediately after measurement or in batches of 30 minutes to 48 hours (configurable)
Data compression	By differential coding (configurable)
Activation	Activation by Personalization (ABP) or Over-The-Air Activation (OTAA)
Data encryption	AES128

MEASURES	Height	Magnitude	Tilt
Range	0.3 m to 8 m with SNR (Magnitude) information	0 to 100 x 0.01 dB	0° to 180°
Precision	+/-10mm on calm water +/-20mm on rough water (such as hail)	-	+/-2°
Resolution (across the entire range)	1mm	0.01	0.8°

ALARMS	
Distance to water	Minimum and maximum thresholds configurable from 0.5 m to 8 m in increments of 0.1 m
Tilt of sensor	Minimum and maximum alert thresholds configurable from 4° to 45° in 1° increments

POWER SUPPLY	
Voltage	Replaceable 3.6 V / 17 Ah lithium battery [LS33600 Saft] Transmitted battery voltage level (configurable in 0.1 V increments)
Autonomy (in the range +10°C to +25°C)	<ul style="list-style-type: none"> ➢ 2 years with 1 measurement every 10 minutes ➢ 5 years with 1 measurement every 30 minutes - 1 transmission (batch) per hour ➢ 4 years with 1 measurement every 10 minutes at high threshold (vigilance), 20 minutes at medium threshold, and 40 minutes at low threshold. N.B.: Thresholds and frequencies can be configured according to usage.

USER INTERFACE	
Magnetic Switch & Buzzer	Network association; sensor status

CASE	Dimensions (mm)	Weight (g)	Fasteners	IP index	Material
	180x130mm	800 (+800 with support)	Via the stainless steel support plate	IP68 (72h@1m)	Polyethylene

ENVIRONMENT	
Operating temperature	-15 °C / +55 °C
Storage temperature	10 °C / +30 °C ; +0% rH / +60% rH

STANDARDS & REGULATIONS	
Radio Equipment Directive 2014/53/EU, RoHS	

PRODUCT REFERENCES

REFERENCES	HS Code	DESIGNATIONS
50-70-236		ALT'O - LoRAWAN® EU868 & MOUNTING BRACKET
72-50-539, 72-50-538		ALT'O - LoRAWAN® EU868, MOUNTING BRACKET

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