

Atomsenses LoRaWAN Ultrasonic Distance Waste Bin Sensor

Product Specification

Applicability

This guide applies to the following Atomsenses products, unless otherwise specified:

Model	Description
AEM310-UDL	- AEM310-UDL: Ultrasonic Distance Waste Bin Sensor

Declaration of Conformity

Atomsenses sensors and other products comply with the essential requirements and relevant provisions of CE/EMC, and RoHS standards.



Hardware Introduction

The device is a LoRa ultrasonic distance sensor mainly for the detection of waste bin and other container's fill level. With a compact size and wide measure range, AEM310-UDL can be installed to any types of waste bins or containers to monitor solid or liquid level. Compliant with our LoRaWAN® gateway and IoT Cloud solution, users can know the container status and fill-in level in real-time via browser or mobile App remotely.

AEM310-UDL can be widely used in waste management, water tank monitoring, manhole cover monitoring, etc.

Features

- GPS tracking function (optional)
- Uses standard LoRaWAN protocol
- 3-450 cm wide measuring range with short blind zone
- Easy to install, suitable for various types of waste bins or containers
- IP67 waterproof and salt pray resistant enclosure for outdoor applications and easy to clean
- Ultra-wide-distance wireless transmission up to line of sight of 15 km
- Function well with standard LoRaWAN® gateways and network servers

Device Appearance





Technical specifications and standards

Wireless Transmission	Technical Specifications and Standards
Technology	LoRaWAN® NB-IoT CAT-M
Frequency	CN470/EU868/US915/AS923/RU868/IN865/KR920Mhz
Tx Power	16 dBm (868 MHz)/22 dBm (915 MHz)/19 dBm (470 MHz)
Sensitivity	-137 dBm @300bps
Mode	OTAA/ABP Class A
Measurement	
Detection Range	4 meters
Detection Accuracy	$\pm (1+0.3\%*S)$ cm, S=distance
Distance Resolution	1 mm
Physical Characteristics	
Power Supply	2 × 4000 mAh ER18505 Li-SOCl ₂ battery
Battery Life	≥10 years (10 min interval + 20 triggers per day)
Operating temperature	-20 ~ +70°C
Storage Temperature	-40 ~ +85°C
Protection Level	IP68
Installation Method	Wall-mounted, Ceiling-mounted
Dimensions	Sensor box:114x89x56mm ; ultrasonic sensor :119*119*40mm
Weight	900g
Material	ABS