LoRaWAN Ultrasonic Level Sensor for Trash bin ULA

Smart Agriculture, Smart Building, Smart City, Smart Facility, Smart Farm, Smart Factory, Smart Transportation

SKU: WSLRW-ULA

daviteq

LoRaWAN ULTRASONIC LEVEL SENSOR FOR TRASH BIN
WSLRW-ULA

LoRaWAN

10-Year

WSLRW-ULA-H1.PNG

✓ Safe Zone   ◯ Hazardous Zones

WSLRW-ULA is a LoRaWAN ultrasonic level sensor to measure the solid surface level in the trash bin for waste management systems. This level sensor uses ultrasonic technology to measure the solid surface of waste, the principle is to measure the time of flight of the ultrasound pulse in the air environment. The ultrasound pulse will be ejected from the ultrasonic transducer, go thru the air and reach the solid surface of the waste, then be reflected on the ultrasonic transducer, the measuring circuit will measure the flight time of the pulse and then calculate the distance from the transducer to the surface. The ultra-low power design and smart firmware allow the sensor to last up to 5 years with just 2 x AA batteries (depending on configuration). The sensor will transmit data over kilo-meters to the LoRaWAN gateway, any brand on the market. Typical Applications: Waste measurement and monitoring, waste treatment system,...

Applications
Waste Management, Process Monitoring, Safety Monitoring, Infrastructure Monitoring

Notes For Applications

- Material and density: Identify the material and know the bulk density.
- Stickiness and buildup: consider stickiness and buildup.
- Corrosiveness: Assess material corrosiveness.
- Moisture: Note moisture presence.
- Temperature and pressure: Consider conditions.
- Vibration: Be aware of vibration.
- Dust, foam, steam, or vapor: Account for these factors

✓ LoRaWAN communication
LoRaWAN Class A 1.0.3 communication standard to allow sensor connect to any LoRaWAN Gateway on the market

✓ 5-10 years battery
Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology allows the sensor can last up to 5 years with 2 x AA batteries 1.5VDC

✓ High Accuracy & Stable
Advanced ultrasonic sensor with digital signal processing to deliver high accuracy and stable measurement of level or distance for solid surface of waste

✓ IP68 Outdoor
IP68 design for both Indoor and Outdoor applications and easy cleaning

LEVEL SENSOR INSTALLED IN THE TRASH BIN

WSLRW-ULA-H2.PNG

Specification

Sensor	Ultrasonic sensor 40kHz
Measurement range	3~450cm
Accuracy	±(1cm + 0.5% reading)
Resolutions	1mm OR 1‰
Alarm setting	setting the alarm threshold for calculated value
Working temperature/humidity	-15~60℃/ 0~99% RH (non-condensing)
Storage temperature/humidity	-25~80℃/ 0~99% RH (non-condensing)
Transducer material	Ceramic
COMMUNICATION	
SF Factors	SF7~SF12
Antenna	Internal Antenna 2.0 dbi
Battery	02 x AA size 1.5, battery not included
RF Frequency and Power	860~930MHz, 14~20dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915
Protocol	LoRaWAN, class A
Data sending modes	Interval time and when alarm occurred
RF Module complies to	ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)
Electronics working temperature	-40~60℃ (using L91 Energizer® battery)
Housing	H154xW68xD43, Polycarbonate, IP68
Net-weight	250g

LEVEL SENSOR INSTALLED IN THE TRASH BIN

WSLRW-ULA-H3.PNG

MOUNTING ULA SENSOR ON LARGE TRASH BIN
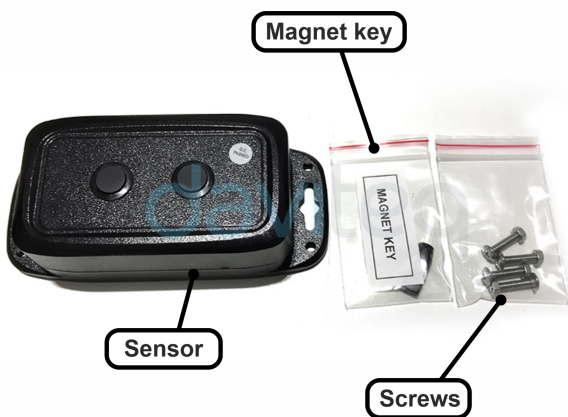
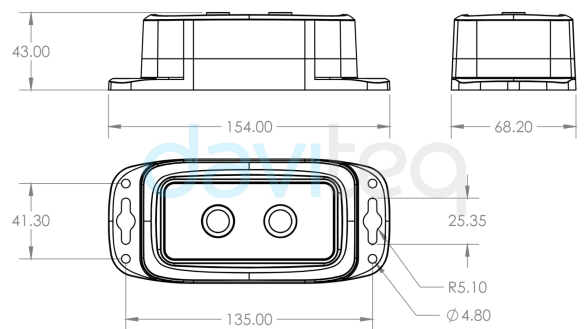WSLRW-ULA-H4.PNG

SYSTEM ARCHITECTURE

LoRaWAN gateway

Network Server + Application Server

Sensor Node
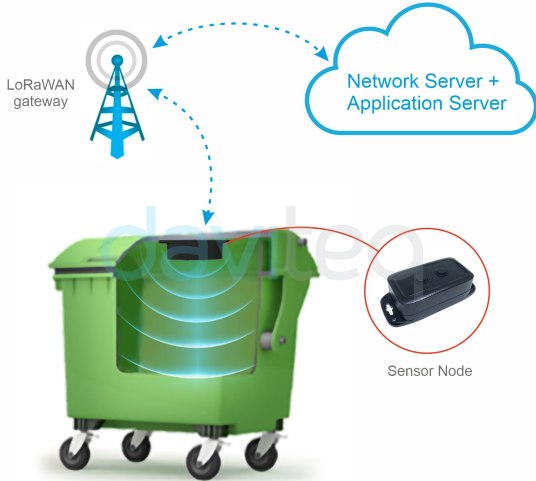
WSLRW-ULA-H5.PNG

LoRaWAN NETWORK

Any LoRaWAN Gateway

This wireless network can connect any kind wireless sensors:

* RELAY OUTPUTS FOR VALVE/PUMP CONTROLS;

* AIR HUMIDITY/TEMPERATURE SENSOR;

* CO2 SENSOR;

* AMBIENT LIGHT SENSOR;

* ...ETC

WSLRW-ULA-H6.PNG

WHAT'S IN THE PACKAGE?

Magnet key

MAGNET KEY

Sensor

Screws

WSSFC-ULA-H7.PNG

DIMENSION DRAWING OF WSLRW-ULA
(Unit: mm)

43.00

154.00

68.20

41.30

25.35

135.00

R5.10

⌀ 4.80

WSLRW-ULA-H7.PNG

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RECOMMENDED BATTERIES

E91 AA Alkaline battery

-18 .. + 60 oC working temperature

10-year shelf life

3000 mAH Capacity

Price: 1X

L91 AA Lithium battery

-40 .. + 60 oC working temperature

20-year shelf life

3500 mAH Capacity

Price: 3.5X

WSLRW-ULA-H8.PNG

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Ordering Information

ITEM CODE	DESCRIPTIONS
WSLRW-ULA-01	Wireless LoRaWAN Ultrasonic Level Sensor for Trash bin, Internal antenna, 3-450cm range, Type AA battery 1.5VDC, IP68, 860-930MHz for EU868, IN865, RU864, KR920, AS923, AU915, US915