LoRaWAN Ultrasonic Level Sensor for Trash bin ULB

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

SKU: WSLRW-ULB

Safe Zone

Hazardous Zones

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WSLRW-ULB is a LoRaWAN ultrasonic level sensor to measure solid surface level in 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 ultrasonic transducer, go thru the air and reach the solid surface of the waste, then reflected back to the ultrasonic transducer, the measuring circuit will measure the flight time of the pulse then calculated distance from the transducer to the surface. The ultra-low power design and smart firmware allow the sensor to last for up to 10 years with just 2 x AA batteries (depending on configuration). The sensor will transmit data over kilo-meters away to the LoRaWAN gateway, any brand on the market.

Applications

Waste Management, Process Monitoring, Safety Monitoring, Infrastructure Monitoring

Notes For Applications

LoRaWAN communication
LoRaWAN 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 allow the sensor can last up to 10 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

Angle-adjustable mounting bracket
Easy mounting in any trash bin design

WSLRW-ULA-H2.PNG

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Specification

Sensor	Ultrasonic sensor
Measurement range	300～4500mm
Resolution & accuracy	1.0mm, ±10mm
Sensor sampling rate	configurable from 10s up to 3600s
Alarm setting	setting the alarm threshold for calculated value
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)
Vietnam Type Approval	
Working temperature	-15～60℃ (using L91 Energizer® battery)
Dimensions	H180xW50xD40
Net-weight	250g
Housing	Polycarbonate & POM plastic, IP67
Mounting	Angle-adjustable mounting bracket

LEVEL SENSOR INSTALLED IN THE TRASH BIN

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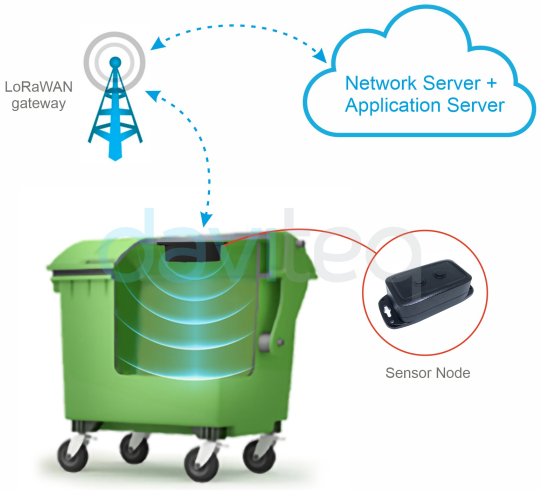
MOUNTING ULA SENSOR ON LARGE TRASH BIN

WSLRW-ULA-H4.PNG

SYSTEM ARCHITECTURE



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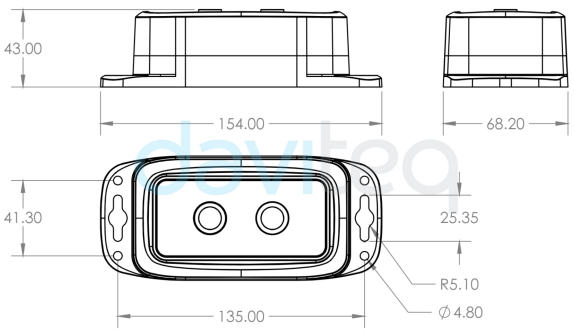
LoRaWAN NETWORK

WSLRW-ULA-H6.PNG

WHAT'S IN THE PACKAGE?

WSSFC-ULA-H7.PNG

DIMENSION DRAWING OF WSLRW-ULA (Unit: mm)



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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

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Ordering Information

ITEM CODE	DESCRIPTIONS
WSLRW-ULB-01	Wireless LoRaWAN Ultrasonic Level Sensor for Trash bin, Internal antenna, 4500mm range, Type AA battery 1.5VDC, IP67, 860-930MHz for all regions