



BrighterBins sensor is a wireless container fill-level monitoring device and a principal product of SmartEnds. The unique hardware peripherals and intelligent firmware makes it the most suitable garbage management solution.



Introduction

BrighterBins smart sensor is an IoT product from SmartEnds which makes your waste collection intelligent and cost-effective. The device has many advantages over currently available solutions in the market. The device is more rugged, has a 40% smaller body design and has an adjustable transducer to fit 90% of bins. The moveable transducer tunnel allows the device to be mounted in different orientations and the installation takes around 10 minutes.

The BrighterBins smart sensor is fully compatible with the most widely used LPWAN technologies like Lorawan, Sigfox and Narrowband IoT (NB-IoT). LPWAN technologies prolong device life and wireless range, leading to several years of operation on a single battery.

The BrighterBins hardware design complies with extremely low power and EMI proof technology standards. With an extremely low sleep current and low average transmission current, the BrighterBins device's life on a single (Lithium Thionyl Chloride) battery is more than 5 years (dependent on number of transmissions). Hardware stability makes BrighterBins a non-maintenance device.

The BrighterBins device runs on a very flexible and robust firmware. Finely designed and scheduled firmware runs multiple processes in parallel at power-optimized CPU speed, providing high speed and high performance at a very low battery consumption.

Brighterbins sensors can integrate with the Third party platforms seamlessly using Brighterbins Data API. Data API relay data from the sensors in ready to consume data format, to get you up and running in no time. You can request the integration documentation anytime by sending email to support@brighterbins.com



Specifications

Versions	BrighterBins LoRawan BrighterBins Sigfox BrighterBins NBloT
LoRaWAN Supported Regions	LoraWAN EU 863 to 870 MHz LoraWAN USA 902 to 928 MHz LoraWAN AUS 915 to 928 MHz LoraWAN IND 865 to 867 MHz
Sensor Type	Ultrasonic Sensor
Antenna	Built-in
Operating Temperature	-20 °C to +60 °C
Protection	Fire Alarm Temperature Sensor
Device life	>5 years (4 transmissions per day)
Sleep current	<10 uA
Weight	360 grams
Dimensions	130 x 70 x 53 mm (L x W x H)
Casing Material	ABS (Acrylonitrile Butadiene Styrene)
Battery	14 Ah (Lithium Thionyl Chloride)
IP Rating	IP67



Features

Installation

Easy installation. Can be mounted by screws or rivets

Mounting

Adjustable transducer at selectable angles offers flexible mounting

Ultrasonic Sensor

Range: 25-450 cm

Accuracy: Typically $\pm 5\%$

Monitoring

Monitors fill level, battery and temperature

Fill level measurement

Selectable Configuration: Raw distance or percentage fill level (transmit after 25% or 50% or 75% etc.)

Can measure solid objects

Battery measurement

Battery Health percentage

Temperature measurement

Temperature measurement in degree celsius

Alarm generation on fire detection

Transmission

Adjustable and optimized transmission based upon fill level. It can transmit data to

backend after:

1- Minimum 2 minutes

2- Maximum 24 hours

Buzzer

Beeps on turning on the device

Beeps after completing self test





Sensing Interval

Following intervals could be configured on the device to receive data:

1- 10 minutes

Configurations

Radio Power

Lorawan EU 14 dBm

Lorawan AU 18.5 dBm

Lorawan USA 18.5 dBm

Mode

Configurable

Sleep Time

Configurable

Uplink Packet Type

Configurable

Bin Dimensions

Configurable

Platform Access

Data access from anywhere via the internet

Data Processing

Real-time

Power

Totally independent with internal power supply lasting for >5 years (4 transmissions per day)

2- 30 minutes

3- 24 hours

Factory Defaults

Transmission Interval

1- Transmission interval of 30 minutes per message for the first 24 hours after turning on the device for the first time

2- After 24 hours, if no downlink is offered, the device will automatically shifts to 3 hours transmission interval

Measurement

The device is set to measure raw distance

Uplink Packet Type

The first message will be type-2 which contains device information. From onwards, the device will transmit the type-1 message which contains sensed parameters such as distance, battery and temperature.

Durable in extreme environments

Zero maintenance

Lower carbon footprint



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