BrighterBins

Device Datasheet

The world's simplest, cheapest, stick and go solution for municipal garbage.

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 tunnel sensor angle to fit 90% of bins. Moving tunnel allows the device to be mounted in different orientations and the installation takes around 10 minutes. The operating temperature range is -20°C to +70°C to cover all regions across the globe.

The BrighterBins smart sensor is fully compatible with the most widely used LPWAN technologies like Lorawan, Sigfox and NBIoT. LPWAN technologies prolong device life and wireless range, leading to several years of operation on a single battery. The BrighterBins device supports most Lorawan regions including Europe 868 MHz, Australia/Canada 900-930 MHz, India 865MHz, and the USA. Any region support which is not listed here is also provided on request.

The BrighterBins hardware design complies with extremely low power and EMI proof technology standards. With an extremely low sleep current ~10uA and low average transmission current, the BrighterBins device's life on a single 14 Ah (Lithium Thionyl Chloride) battery is more than 7 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, which is remotely configurable with our device API. 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. You can request SmartEnds's device API document anytime by sending an email to support@brighterbins.com.

Specifications

Versions	BrighterBins LoRawan BrighterBins Sigfox BrighterBins NBIoT
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 +70 °C
Protection	Fire Alarm Temperature Sensor
Device life	>7 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)

Features

Installation
Easy installation.Can be mounted by screws or rivets

Mounting
Moveable tunnel offers flexible mounting

Ultrasonic Sensor
Adjustable in any direction at any angle
Range: 20-450 cm
Accuracy: Typically ±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
2- 30 minutes
3- 24 hours

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 >7 years (4 transmissions per day)

Factory Defaults

Transmission Interval
1- Transmission interval of 30 minutes per massage 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

IP65

CE

RoHS COMPLIANT