Smart Fill Level Monitoring Sensor

Featuring LoRaWAN®

WS201



WS201 is a wireless fill-level monitoring sensor that securely monitors a small container's fill level especially tissue boxes. Equip with the ToF technology with a high-focusing detecting range, WS201 is best suited for close-range sensing applications with great accuracy. Its ultra-low power consumption and standby mode ensure a durable battery life.

With a special structure design and damp-proof coating, WS201 can work stably in the metal environment and multiple scenarios. Built-in NFC makes it more operable and easy to configure. Compatible with Milesight LoRaWAN® gateway, and Milesight Development Platform, users can know the containers' status and fill level in real-time and manage them effectively and remotely.

WS201 can be widely used for airport, hotel, shopping malls, scenic spot, etc.

◆ Features

- High-focusing detection ranges from 1 to 55 cm with great accuracy based on Time-of-Flight technology
- Non-contact detection with wireless deployment
- Allow reporting the remaining amount by percentage with pre-set alarm thresholds
- Ultra-low power consumption with standby mode, ensuring a durable battery life
- Easy to install with its ultra-compact size and equip with NFC configuration
- Highly adaptive to most tissue boxes with a stable signal
- Damp-proof coating inside the device to ensure it works well in various conditions of bathrooms and other scenarios

- Function well with standard LoRaWAN® gateways and network servers
- Compliant with Milesight IoT Cloud and Milesight Development Platform

◆ Specifications

Wireless Transmission	
Protocol	LoRaWAN®
Antenna	Internal Antenna
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Tx Power	16 dBm (868 MHz)/22 dBm (915 MHz)/19 dBm (470 MHz)
Sensitivity	-132dBm@300bps
Mode	OTAA/ABP Class A
Distance Measurement	
ToF FoV	25 °
FoV Accuracy	± 5 °
Detection Range	1 ~ 55 cm
Detection Accuracy	± 1cm
Detection Resolution	①1mm (1.0≤ X ≤15.0cm) ②2mm (15.0< X ≤35.0cm) ③3mm (35.0< X ≤55.0cm) X = Detection Distance
Others	
Button	1 × Reset Button (Internal)
LED Indicator	1 × Indicator (Internal)
Software	
Configuration	Mobile App via NFC or Downlink
Advanced Feature	Threshold Alarm, Hibernate Mode
Physical Characteristics	
Power Supply	1 × 590mAh CR2450 Lithium Battery
Battery Life[1] (60-min report interval + Lack of paper twice a day + 13 work hours a day, 25°C)	Around 3.2 Years (SF7, EU868&US915) Around 2.1 Years (SF10, EU868) Around 1.9 Years (SF10, US915)
Operating Temperature	-10°C ~ +60°C
Relative Humidity	0 ~ 95% (Non-condensing)

Color & Material	White & ABS + PC (Flame Retardant)
Ingress Protection	IP30
Dimension	66 × 38 × 12 mm (2.60 × 1.50 × 0.47 in)
Weight	24.7g (Battery included), 18.1g (Battery excluded)
Installation	On the flat surfaces with 3M tapes
Approvals	
Regulatory	CE, FCC
Environmental	RoHS

[1] Tested under laboratory conditions and for guideline purposes only.

◆ Dimensions (mm)

