# Capacitive Level Sensor Featuring LoRaWAN®

## EM300-CL



EM300-CL is a non-contact liquid level sensor based on LoRaWAN®, which relies on capacitive sensing principle. It is mainly used to monitor hand wash in restrooms and sending out alarms when there is insufficient hand wash left. An alarm will be triggered when the hand wash level approaches the electrode detection sheet, signaling hand wash insufficiency. It can be seamlessly integrated with containers of different shapes and sizes to alert and assure hand wash is replenished on time, promoting the good operation of smart hygiene and cleaning management system.

In addition, with LoRaWAN® technology that supports low power consumption, it allows the built-in high-capacity battery to last for several years without replacement. Moreover, EM300-CL is compatible with both Milesight's gateway and Milesight IoT Cloud to achieve remote monitoring and smart data management, allowing water conservation.

## ◆ Features

➢ High sensitivity real-time liquid level status monitoring, high stability, timely alarm

➢ Strong anti-interference ability and high accuracy based on electrode pad with 2 electrode plates

➢ Non-contact liquid level detection for hygiene purposes

➢ The minimalist and lightweight electrode pad design allows for convenient installation

➢ IP67 waterproof performance for high applicability

➢ A built-in 4000mAh replaceable battery and works for 10 years without replacement

➢ Equipped with NFC for easily configuration

- ➢ Ultra-wide-distance transmission up to a line of sight of 10km
- ➢ Compliant with standard LoRaWAN® gateways and network servers
- ➢ Quick and easy management with Milesight IoT Cloud
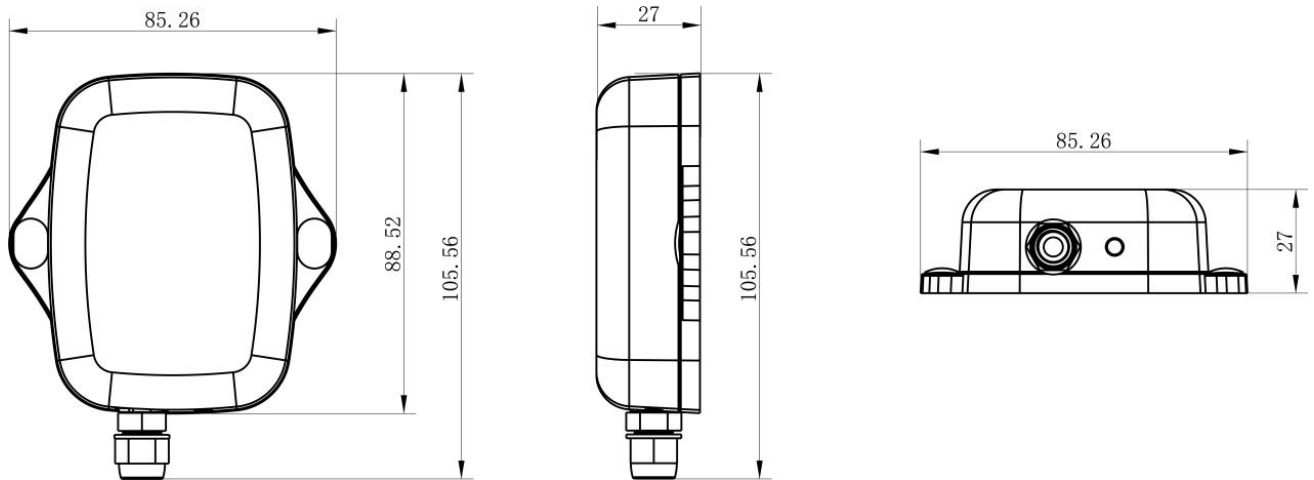
## ◆ Specifications

| Wireless Transmission | |
| --- | --- |
| Technology | LoRaWAN® |
| Frequency | CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4 |
| Tx Power | 16dBm(868 MHz)/20dBm(915 MHz)/19dBm(470 MHz) |
| Sensitivity | -137dBm @300bps |
| Mode | OTAA/ABP Class A |
| **Detector** | |
| Principle | Capacitive Level Sensor |
| Lead Length | 1m |
| Compatibility | Insulating Non-metallic Containers (Plastic, Glass, Acrylic, etc.) |
| **Operation** | |
| Power On & Off | NFC, Power Button (Internal) |
| Configuration | NFC Configuration via Mobile App |
| **Physical Characteristics** | |
| Power Supply | 1 × 4000 mAh ER18505 Li-SOCL$_2$ Battery (extendable to 2 batteries) |
| Battery Life[1] | >10 years (Trigger 3 Alarms per Day, 25℃) |
| Operating Temperature | -20°C to +60°C |
| Relative Humidity | 0% to 95% (non-condensing) |
| Material & Color | Transceiver: ABS + PC, White<br>Electrode Detection Sheet: Black |
| Ingress Protection | Transceiver: IP67<br>Electrode Detection Sheet: IP30 |
| Dimension | Transceiver: 105.6 × 85.2 × 27 mm (4.15 × 3.35 × 1.06 in)<br>Electrode Detection Sheet: 56.8 x 25.5 x 0.2mm (2.24 × 1 × 0.0079 in) |
| Weight | 110g (with 1 battery) |
| Installation | Transceiver: Wall Screw Mounting, 3M Tape Mounting<br>Electrode Detection Sheet[2]: Cable-Tie Mounting, 3M Tape Mounting |

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

[2]Attach electrode detection sheet to the outer surface, aligning it with the bottom of the container to detect the liquid capacity.

## ◆ Dimension

**Transceiver:**



**Electrode Detection Sheet:**



56.8mm

Electrode Plate-1  10mm

25.5mm

Electrode Plate-2  10mm

Thickness: 0.2mm