# DF200 Level sensor_User's Manual

# _LoRaWAN Version

**V1.0**

**Date: 2020-08-04**

# Changed

**V1.0** Initial version

# Index

# 1 Overview

These documents are helpful to understand the DF200 level sensor's following:

- DF200 sensor parameter setting by default
- DF200 sensor function description
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# 2 DC500 Parameters

## 2.1 DC500 Default Parameters

| Parameters | Default configuration | Description |
|---|---|---|
| Heartbeat interval | 24hours | Sensor will report at the 24 hour interval, and report the reading of the moment. |
| Periodic detection time | 10 minutes | Periodic detection of current liquid level status |
| Level alarm threshold | 25% | When the liquid level is lower than 25%, it will alarm |
| Battery alarm threshold | 20% | When the percentage of the battery is less than 20%, the battery is considered to be battery lower. |

## 2.2 LoRaWAN Band

The main LoRaWAN band are used given below CN470, EU868, US915, AU915, AS923. The default frequency settings are as follows:

| Band | The default uplink frequency | RXWIN1 | RXWIN2 |
|---|---|---|---|
| CN470 (470-510MHz) | 470.3,470.5,470.7,470.9, 471.1,471.3,471.5,471.7, | 500.3,500.5,500.7,500.95 01.1,501.3,501.5,501.7 | 505.3 |
| EU868 (863-870MHz) | 868.1,868.3,868.5 | 868.1,868.3,868.5 | 869.525 |
| US915 (902-928MHz) | 902.3,902.5,902.7,902.9, 903.1,903.3,903.5,903.7 | 923.3,923.9,924.5,925.1 925.7,926.3,926.9,927.5 | 923.3 |
| AU915 (915-928MHz) | 915.2,915.4,915.6,915.8 916.0,916.2,916.4,916.6 | 923.3,923.9,924.5,925.1 925.7,926.3,926.9,927.5 | 923.3 |
| AS923 (915-928MHz) | 923.2,923.4 | 923.2,923.4 | 923.2 |

# 3 DF200 Sensor Function Description

## 3.1 Non-contact infrared sensor

The non-contact hand sanitizer uses the principle of infrared sensing. When the hand is close to the sensing part at the bottom of the hand sanitizer, the solution will automatically flow out.

## 3.2 Check liquid level

The liquid level sensor periodically detects the liquid level in the hand sanitizer tank.

By default, when the liquid level percentage is lower than 25%, the liquid in the hand sanitizer is considered empty, and when it is higher than 25%, the liquid in the hand sanitizer is considered full.

## 3.3 Data reporting rules

(1) Report current status data periodically, and the default reporting interval is 24 hours.

(2) Trigger to report: After the liquid level reaches the limit threshold, the device is triggered to report alarm data and status information such as battery power. For example, when it detects that the liquid level is 0%, an alarm message will be reported. The default level alarm threshold is 25%.

# 4 Connect to Power

Note:

There are two power supply methods for this device, one is powered by four AA batteries, and the other is powered by 6V power supply.

(1) Battery powered

Open the case, push the battery case to the left, insert the battery, pay attention to the positive and negative direction.

(2) Power supply

Plug the attached power supply directly into the DC (6V, 1A) hole.

(3) Turn on the power

Toggle the power switch to the ON position

# 5 Installation

(1)Choose a smooth wall and wipe the wall clean.

(2) Open the soap dispenser with the key and take out the solution bottle.

Note: The solution bottle needs to be pulled out slowly when taking it out, because the solution bottle and the controller below have a connection line to avoid disconnection.

(3) Attach the back to the wall and mark the hole with a pen.

(4) Tear off the screw stickers, with the pointed end facing down, stick to the mark on the wall and squeeze out air bubbles.

(5) Align the rear shell with the screws and hang it firmly.

(6) Tighten the screw cap.

(7) Replace the solution bottle.

(8) Open the cap, pour the liquid, and close the cap.

(9) Close the front cover panel, reach out and sense, and the liquid can be discharged.

# 6 Protocol

The communication protocol is confidential is only open for customer who has purchase the device and sign the NDA(non-disclosure agreement) file with CNDingtek and his own Company. Please contact our sales team service@dingtek.com if you want to integrate the protocol with your own system.

# 7 FAQ

**Q1 Why can not I see the device data?**

A1:no battery connected;

Considering shipping rules, some is not connected for battery. So user should open cover and connect battery with the PCB board. For some version with magnetic part outside, please remove the magnetic part, then the battery will power on the sensor.

A2: Because frequently unplug/plug battery; Try to reboot the device with a magnet;

A3:band error;

Please confirm whether the device frequency is the same as the gateway frequency;

A4:The device is not properly registered on the Network server;

Please check the information about whether the device is properly registered on the web server, including devaddr, deveui, appeui, appkey information and frequency band;

A5: The gateway is not connected to the Network server;

Please check if the gateway is properly connected to the Network server and confirm it can work well;

A6:The device is far away from the gateway;

A7:The battery is dead;

Please check if the data shows a battery alarm, or use a voltage measurement tool to measure the battery voltage, or replace another battery for verification.