

# Wireless LPG Tank Monitor Sensor DF530

## Datasheet



V1.2

Date:2020-10-27

## Change Notes

**V1.2** Modify battery information.

**V1.1** Modify Installation part.

**V1.0** Released version.

**V0.9** Initial version.

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## Disclaimer

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Due to the manually photos of the products and printing reasons the photos in this documents maybe different from the real released products. Please use the released product as final reference.

## 1 Overview

The DF530 is one kind of ultrasonic liquid level sensor, which can detect the LPG tank liquid level by outside bottom installation without drilling holes.

The tank thickness can be up to 10mm. (For special thickness, please contact with CNDingtek for confirmation.) The resolution is 1mm or 0.1%FS (the bigger value). The measurement ranges from 0-10 meters. It can be used for kinds of tanks, including iron, aluminium alloy, plastic and etc. It is applicable for automotive, oil station, chemical storage, LPG tank, and other industrial tanks to realize realtime monitoring of storage, online inventory management, statistics and estimation of production.

It is optional with wireless module, like LoRaWAN, NB-IoT, Sigfox, GPRS, 3g/4g and etc.

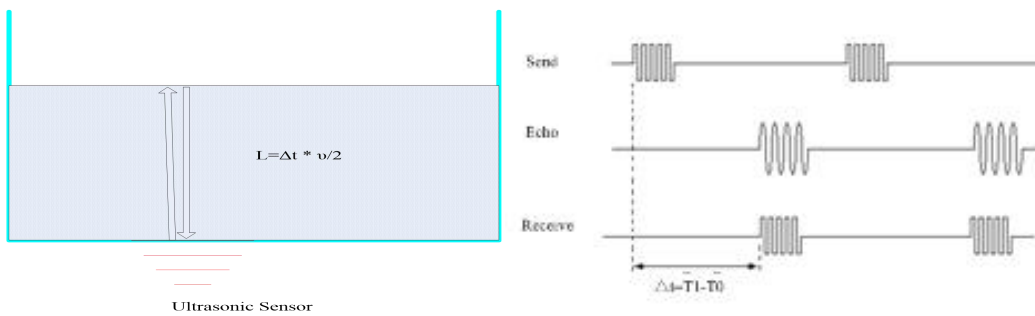
It is with inner battery. It is opened for customized design (OEM/ODM) on hardware or software.

## 2 Specification

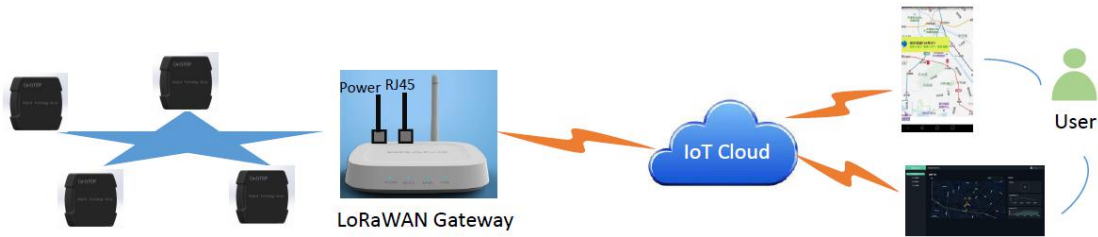
<b>Overview</b>	Dimension	Transducer $\varnothing$ 30, Controller box 80*78*30mm
	Color	Black
<b>Detector</b>	Principle	Ultrasonic
	Detection Range	30~ 10000mm
	Blind area	0-30mm
	Accuracy	3mm or 0.3%FS, the bigger one
	Resolution	1mm or 0.1%FS, the bigger one
	Driving Frequency	2Mhz
<b>Controller</b>	MCU	STM32, 32bit ARM® core controller
<b>Wireless</b>	LoRaWAN	CN470,EU868,AS923,AU915,US915 and so on; ClassA, OTAA mode
	NB-IoT	B3/5/8/20/28

	GPRS	850/900/1800/1900Mhz
	3G/4G	
	Sigfox	RCZ1/2/3/4
<b>Power</b>	inner battery	ER26500 8000mAh 3.6VDC, non-recharged. Every day 4 times upload, battery can work for more than 3 years. (depend on wireless type, environment and etc.)
<b>Environment</b>	Operating Temperature	-20 ~ +70°C
	Storage Temperature	-40 ~ +85°C
	Protection Level	IP66
<b>Media</b>	liquid	Diesel, gasoline, water, LPG, Ethanol, and other liquids
<b>Mounting</b>	Bottom fasten	Transducer stick to tank bottom by buter and magnet.

### 3 System Diagram



### 4 Network Diagram



### Example of LoRaWAN:

The data from device will be collect from the DF530 Sensor will be received to the gateway then the gateway send the data to LoRaWAN network server through internet. After that the data from usage sensor of LoRaWAN network will be transferred through the internet to the application server. So the user can monitor the level status through web or mobile app.

It is already supported by some lorawan network server, like the Things Network、Mydevices and etc.

## 5 Package List

Part List			
NO.	Item	Quantity	Remark
1	Controller Box	1	Drive ultrasonic transducer and upload signal
2	Ultrasonic Transducer	1	Transducer attached to bottom of container
3*	<i>Glue</i>	-	<i>one component RTV Silicon Adhesive 703</i>



**\*: The couplant and glue is forbidden to delivery for airplane shipping or express shipping. So we do not offer them in the standard package.**

**It is applicable if you can find one of the RTV silicon adhesive 703. (if you can not**

find the recommend glue, you can choose other glues, and their freezing time is less than 10 minutes )

## 6 Installation

### 6.1 Preparation & Cleaning

Before installation, please make sure the tank ground is horizontal so that the sensor can be perpendicular to the liquid level. Otherwise, the sensor maybe can not get correct value or even no value output.

Select the center area on bottom of the container, and clean the dirt on the flat area to make it smooth. If paint cover on the steel tank, please use the abrasive paper to remove the paint cover. After cleaning, there is no any part between the transducer and the bottom shell of the container.



### 6.2 Installation with butter

Put the probe into the probe holder and apply butter. To avoid air, put a little more butter on the energy and tighten the back cover of the holder. Attach the probe to the position marked in the previous step. Monitor the status values on the server to



ensure that the liquid level is correct. Tighten the three fixing bracket screws to ensure that there is no gap between the probe and the tank bottom.



### 6.3 Data Checking

Check the data by online web page, the original data is liquid level in mm.



## 7 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.

Please contact our sales team [service@dingtek.com](mailto:service@dingtek.com) if you want to integrate the protocol with your own system.

**Notes: The protocol maybe update without notification. Please contact with us for**

the latest protocol.

## 8 Package



25\*21\*8cm



### 8.1 Optional Part



## 9 Video Link

## 10 After Sales

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