

# DF400 Toilet Paper Detector Datasheet

## \_LoRaWAN Version



Version: V1.0

Date: 2020-10-10

## Changes

V1.0 Initial version.

## Content

1 Overview.....	1
2 Features.....	1
3 Appliation.....	1
4 Specification.....	2
5 Mechanical Dimensions.....	3
6 System network diagram.....	3
7 Protocol and API interface.....	4
8 Package.....	4

## Disclaimer

CNDingtek makes every effort to make this document accurate, complete and clear. However, CNDingtek reserves the right to modify hardware, software, colors, specifications, guidelines, packaging, etc. without notice. Due to photographing and printing reasons, the photos in this document may be different from the actual released products. Please use the published products as the final reference.

## Cautions

- The battery is non-rechargeable. Please do not charge it.
- If the battery is out of power, please replace it with a battery of the same specification obtained from CNDingtek
- The battery can not work when temperatures is above 85 ° C.



## 1 Overview

DF400 is a Toilet Paper detector, which can be used to detect the toilet paper remaining; when empty alarm occurs, the data will be immediately transmitted to the LoRaWAN server through the built-in LoRaWAN module. Users can observe status information remotely. The device uses a built-in battery to transmit data through the LoRaWAN method, with high real-time performance and low power consumption.

Due to the low power consumption algorithm, the internal battery can work for about 1 year (report 3 times a day).

## 2 Features

- Easy to install and small in size
- Accurate and timely , real-time monitoring, alarm immediately when empty alarm occurs
- Low power consumption.
- Multiple application environments

## 3 Appliation

Widely used for toilet paper boxes in public toilets. Such Hotels, shoppingmalls, restaurants, schools, hospitals, train, public places,etc.,.



## 4 Specification

<b>Detector Specification</b>	Dimension	68x64x18mm
	Net weight	40g
	Color	Host: Black
	Shell material	ABS
<b>Detector</b>	Theory	Laser Ranging
	Measuring range	3~200cm
	Blind area	3cm
	Accuracy of height	3mm
<b>Wireless</b>	Wireless	LoRaWAN
	Frequency	CN470,EU868,US915,AU915,AS923,IN865 and so on
	Activation	OTAA(default) or ABP(optation)
	Classes	ClassA
<b>Power</b>	Inner Battery	2 AA battery*2 , (Battery is not included by default, please purchase if necessary)
	Battery Life	1 year, three times report per day
<b>Environment</b>	Working	-20 ~ +70°C

	Temperature	
	Storage Temperature	-40 ~ +85°C
<b>Toilet paper box (Optional)</b>	Color	Transparent Black
	Size	270x126x280mm
	Weight	460g
	Material	ABS flame retardant new material

## 5 Mechanical Dimensions



68x64x18mm



270x126x280mm

(Note: For reference only, actual product updates are frequent without notice)

## 6 System network diagram

Through the built-in LoRaWAN wireless module, it transmits data to the LoRaWAN gateway, Then the Internet transmits the data to the LoRaWAN network server and application server. Finally, the user can monitor the status of the door magnetic switch in real time according to the Web or APP, and online monitoring and management.



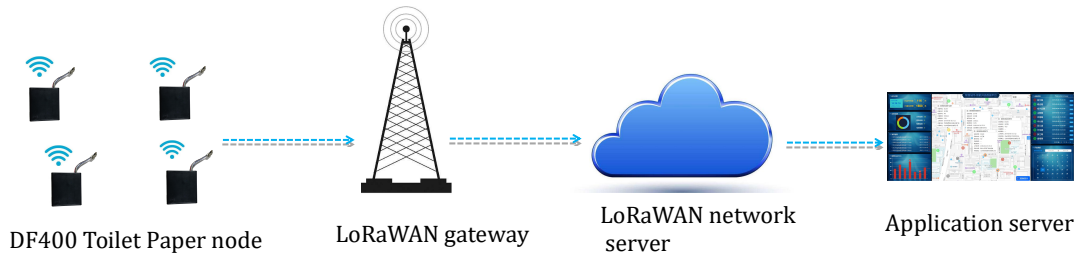


Figure 6.1 Network diagram

## 7 Protocol and API interface

The terminal communication protocol and API interface files are confidential documents and are only available to customers who purchased the device and signed NDA (non-disclosure agreement) documents with CNDingtek and his own company. If you want to integrate with your own system by using a protocol / API interface, please contact our sales team at [service@dingtek.com](mailto:service@dingtek.com).

## 8 Package

Accessories name	Specification	Quantity	Note
Device	DF400 Toilet Paper Detector	1	
TTL	Serial tools	1	Serial tools (at least one per batch of equipment)
3M glue		3	For installation
Manual		1	