

Wireless Capacitive Proximity Sensor R718VA Data Sheet

Wireless Sensor Network Based on LoRa Technology



R718VA (subject to real object)

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Wireless Capacitive Proximity Sensor

Product introduction

R718VA is a device to detect the status of toilet water, hand sanitizer level, presence or absence of tissue. This device is connected with a non-contact capacitive sensor can be mounted to the exterior of the container, without direct contact with the object to be detected, which may detect the current water level of positions mounted, or the presence or absence of liquid soap or toilet paper; the detected data is transmitted to other devices through the wireless network. It uses the SX1276 wireless communication module.

Main characteristics

- Adopt SX1276 wireless communication module
- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Non-contact capacitive sensor
- Equipment body protection grade IP65/IP67 (optional), and the sensor probe part protection grade is IP67
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum technology
- Configuration parameters can be configured via a third-party software platform, data can be read and alerts
- Applicable to third-party platforms: Actility / ThingPark / TTN / MyDevices / Cayenne
- Low power consumption and long battery life

Note*:

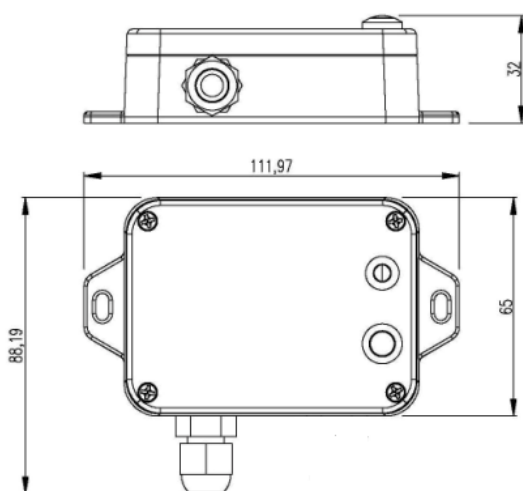
Battery life is determined by the sensor reporting frequency and other variables .

Please refer to http://www.netvox.com.tw/electric/electric_calc.html

On this website, users can find various types of battery life time in different configurations.

Wireless Capacitive Proximity Sensor**Application scenario**

- Flush toilet water level detection
- Hand sanitizer level detection
- Whether toilet paper presence or absence
- Other

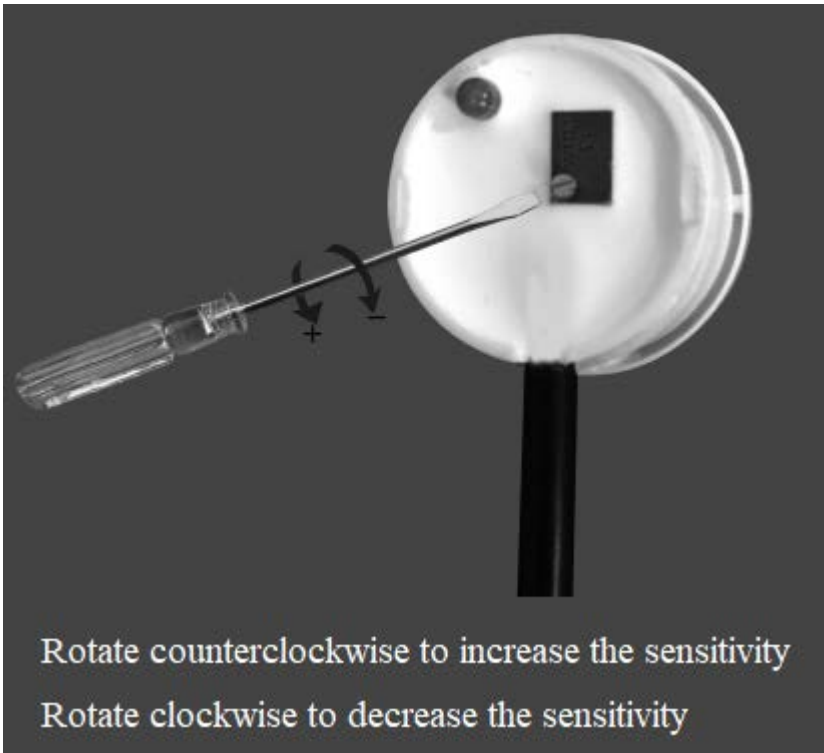
Dimensions**Electrical characteristics**

Power supply	2 ER14505 lithium batteries (3.6 V, 2400 mAh / section) in parallel
Battery life	Battery life are 3.5 years (condition: ambient temperature 25°C, report once every 15 minutes, txpower = 20 dBm , LoRa spreading factor SF = 10)
Standby current	About 30 uA
Wake-up current	6.3mA @3.3V
Low battery alarm	3.2V
RF receiving current	11 mA @3.3V
RF emission current	12 0mA @3.3 V

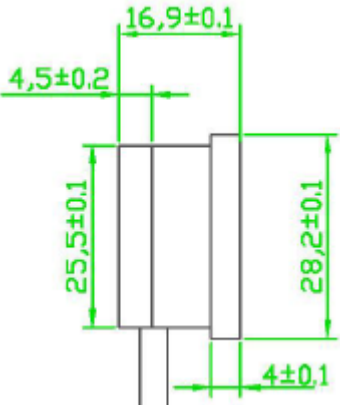
* Specific electrical characteristics will vary depending on the power supply voltage

Wireless Capacitive Proximity Sensor

Non-contact capacitive sensor device

Model	XKC-Y25-V
Power supply	+ 5 V
Working temperature	-5~100°C
Working humidity	5%~100%
Sensing container (non-metal) wall thickness	≤20mm (glass, plastic, non-absorbent ceramic, acrylic, rubber, etc. or composite materials thereof)
Material	ABS
Waterproof level	IP67
Sensitivity	The sensitivity of the non-contact capacitive sensor must be adjusted in the field according to different liquids or objects and the thickness of non-metallic containers.
Sensitivity adjustment	<p>Open the back cover of the sensor head, adjust the sensitivity knob with a small screwdriver, rotate counterclockwise to increase the sensitivity, and rotate clockwise to decrease the sensitivity. Sensitivity from high to low 12 cycles in total.</p>  <p>Rotate counterclockwise to increase the sensitivity Rotate clockwise to decrease the sensitivity</p>

Wireless Capacitive Proximity Sensor

Sensor size	
Installation method	Stick the probe with mucilage glue

Sensitivity

The height of the sensed liquid level or the distance between the toilet paper and the sensor is related to the sensitivity of the sensor; the higher the sensitivity, the lower the level of the induced liquid is detected, or the greater distance between the toilet paper and the sensor (up to approximately 2 cm) is detected.

During installation, when the liquid level below the sensor installation position is not detected, the sensitivity can be adjusted to be higher to detect the wanted liquid level height; when there is paper in the sanitary carton that is not detected by the sensor, the sensitivity can be adjusted to be greater.

Note:

1. Avoid metal materials at the probe mounting site so as not to affect the detection.
2. The liquid with higher concentration will appear on the wall which will affect the detection.

When applied to hand sanitizer, in order to avoid the impact of the wall, users should pay attention to the decision of installation location.

Wireless Capacitive Proximity Sensor**Radio frequency characteristics**

Frequency range	863MHz-928MHz 470MHz-510MHz
Power output	US915 20dbm; AS923 16dbm; AU915 20dbm; CN470 19.15dbm; EU868 16dbm; KR920 14dbm; IN865 20dbm;
Receiving sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps); -121 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna type	Built-in antenna
Communication distance	Up to 10 km, the actual transmission distance depends on the real environment.
Data transfer rate	0.3kbps to 50kbps
Modulation system mode	LoRa/FSK (Note: choose one of them)
Supportable LoRaWAN band	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 (Note: The frequency band is optional and needs to be configured before the shipment)

Physical characteristics

Size	L: 112 mm*W: 88.19 mm*H: 32 mm
Body weight	About 150g
Ambient temperature range	-20°C to 55°C
Ambient humidity range	<90% RH (no condense)
Storage temperature range	-40 °C ~ 85 °C