netvox™

Wireless LoRa Siren

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R602A
User Manual

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1. Introduction

R602A is a long-range wireless alarm device for Netvox ClassC type devices based on the LoRaWAN open protocol, compatible with the LoRaWAN protocol.

The R602A has five kinds of alarm sounds - fire/ emergency / burglar / doorbell /mute mode.

It has a high-decibel speaker and high-brightness LED which can realize sound and light alarms.

LoRa Wireless Technology:

LoRa is a wireless communication technology dedicated to long distance and low power consumption. Compared with other communication methods, LoRa spread spectrum modulation method greatly increases to expand the communication distance. Widely used in long-distance, low-data wireless communications. For example, automatic meter reading, building automation equipment, wireless security systems, industrial monitoring. Main features include small size, low power consumption, transmission distance, anti-interference ability and so on.

LoRaWAN:

LoRaWAN uses LoRa technology to define end-to-end standard specifications to ensure interoperability between devices and gateways from different manufacturers.

2. Appearance

Alarm Indicator*6

Network Indicator

Function Key

Function Key

DC in

3. Main Features

- Compatible with LoRaWAN

- 12V DC power supply

- Simple operation and setting

- Five types of alarm sounds and different ways of flashing lights, and can be controlled separately

- Compatible with LoRaWAN^{TM} Class C (Please make sure the Network Server support Class C.)

- Frequency hopping spread spectrum

- Configuration parameters can be configured through third-party software platforms, data can be read and alarms can be set via SMS text and email (optional)

- Applicable to third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne

4. Set up Instruction

On/Off

Power on	Connect the 12V DC power supply to the power interface for power supply. When the power is turned on, the network indicator flashes once and a clear sound is heard.

Network Joining

Never joined the network (Or at factory setting)	After power-on, R602A will request to join the network. The network indicator stay on : success The network indicator stay off : fail
Had joined the network (Not at factory setting.)	After power-on, R602A will search the network. The network indicator stay on : success The network indicator stay off : fail
Fail to join the network (when the device is on)	Suggest to check the device verification information on the gateway or consult your platform server provider.

Function Key

Press 2 function key for 5 seconds	Restore to factory setting The network indicator flashes for 20 times: success The network indicator is not flash: fail
Press any function key	The network indicator will flash once and it will send a data report.

Remote Control

Remote Control	The R602A can be controlled by sound and light alarms, and there are five alarm sounds that can be controlled are as follows: 1. Fire Mode 2. Emergency Mode 3. Burglar 4. Doorbell 5. Mute Mode According to the received command, it can also be determined whether the alarm flash of the device is blinking, and the alarm flash of the device is divided into three types of flashing modes: flowing light, blink and unlighted.

5. Data Report

When the device is turned on, it will immediately send a version package.

Data will be reported by default setting before any configuration.

Default setting:

Maximum time: 3600s

Minimum time: 3600s   (Mintime and Maxtime must be set to the same report time.)

The reported data is decoded by the Netvox LoRaWAN Application Command document and

http://www.netvox.com.cn:8888/cmddoc

Data report configuration and sending period are as following:

Min Interval (Unit: second)	Max Interval (Unit: second)
Any number between 1~65535	Any number between 1~65535

Example of ReportDataCmd

Bytes	1	1	1	Var (Fix=8 Bytes)
	Version	DeviceType	ReportType	NetvoxPayLoadData

Version– 1 byte –0x01――the Version of NetvoxLoRaWAN Application Command Version

DeviceType– 1 byte – Device Type of Device

The devicetype is listed in Netvox LoRaWAN Application Devicetype doc

ReportType – 1 byte –the presentation of the NetvoxPayLoadData，according the devicetype

NetvoxPayLoadData– Fixed bytes (Fixed =8bytes)

Device	DeviceType	ReportType	NetvoxPayLoadData		
R602A	0x69	0x01	Hearbeattime (2Bytes,Unit:1s)	WarningStatus (1Byte) 0x00_NoWarnring, 0x01_Warning	Reserved (5Bytes,fixed 0x00)

Uplink: 01 69 01 0E10 00 0000000000

heartbeat is 3600s and no warning.   //0E10 (H_{ex}) = 3600

Example of ConfigureCmd

Bytes	1	1	Var (Fix =9 Bytes)
	CmdID	DeviceType	NetvoxPayLoadData

CmdID– 1 byte

DeviceType– 1 byte – Device Type of Device

NetvoxPayLoadData– var bytes (Max=9bytes)

Description	Device	Cmd ID	Device Type	NetvoxPayLoadData			
StartWarning	R602A	0x90	0x69	WarningMode (1byte) 0x00_FireMode, 0x01_EmergencyMode, 0x02_Burglar, 0x03_Doorbell, 0x04_MuteMode Other Value is Reserved	StrobeMode (1byte) 0x00_NoLedIndication, 0x01_LedBlinkMode1 in Parallel to Warning, 0x02_ LedBlinkMode2 in Parallel to Warning	Warning Duration (2bytes,Unit:1s)	Reserved (5Bytes, Fixed 0x00)
ConfigReportReq		0x01		MinTime (2bytes Unit:s)		MaxTime (2bytes Unit:s)	Reserved (5Byte,Fixed 0x00)
ConfigReportRsp		0x81		Status (0x00_success)		Reserved (8Bytes,Fixed 0x00)	
ReadConfig ReportReq		0x02		Reserved (9Bytes,Fixed 0x00)			
ReadConfig ReportRsp		0x82		MinTime (2bytes Unit:s)		MaxTime (2bytes Unit:s)	Reserved (5Byte,Fixed 0x00)

(1) Command Configuration:

a. WarningMode= FireMode、StrobeMode= LedBlinkMode1、WarningDuration=10s

   Downlink：90690001000A0000000000

b. WarningMode= Doorbell 、StrobeMode= NoLedIndication、WarningDuration=10s

   Downlink：90690300000A0000000000

c. WarningMode= MuteMode、StrobeMode= LedBlinkMode1、WarningDuration=10s

   Downlink：90690401000A0000000000

d. Stopping sounds and flashing lights

 （WarningMode= MuteMode、StrobeMode= NoLedIndication、WarningDuration=0s

   Downlink：90690400000000000000000

e. Setting MinTime / MaxTime = 300s = 5min   * MinTime / MaxTime must equal

   Downlink: 0169012C012C0000000000   012C (H$_{ex)}$ = 300 (D$_{ec}$)

   Response: 8169000000000000000000 （Configuration success）

            8169010000000000000000 （Configuration failure）

f. Read MinTime / MaxTime

   Downlink: 0269000000000000000000

   Response:

            8269012C012C0000000000 （Current configuration）

6. Installation and Precaution

This product does not have a waterproof function. After the join the network, please place it indoors.

1. Use screws (should be purchased) to fix it on the wall.

   It is recommended that the distance between the screw head and the wall is more than 3mm, so that the sound and light alarm can be hung, as shown below.

   Note:

   Do not install the device in a metal enclosure or other electrical equipment around it to avoid affecting the wireless transmission of the device.

2. Hang the groove on the back of the sound and light alarm (red circle in the figure below) on the screw head .
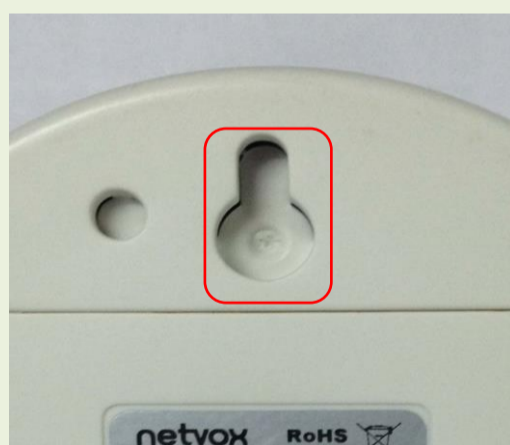
3. Insert the adapter output cable (included) interface into the power interface (DC 12V) of the sound and light alarm, as shown on the right.

   The other end of the adapter is plugged into a traditional socket (AC 220V) to power the sound and light alarm (as shown below).

4.The device is compatible with the LoRaWAN open protocol Class C class device, which supports four kinds of sound and mute functions such as fire alarm, emergency, burglar, doorbell and the like through the downlink command control device; and also supports the LED light function: flowing light, blink and unlighted

R602A can be applied to the following scenarios:

1.Family

2.Engine room

3.School

4.Mining plant site

As a reminder of a security alert.

Adapter Output Cable

7. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

• Keep the device dry. Rain, moisture, or any liquid, might contain minerals and thus corrode electronic circuits. If the device gets wet, please dry it completely.

• Do not use or store the device in dusty or dirty environment. It might damage its detachable parts and electronic components.

• Do not store the device under excessive heat condition. High temperature can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.

• Do not store the device in places that are too cold. Otherwise, when the temperature rises to normal temperature, moisture will form inside, which will destroy the board.

• Do not throw, knock or shake the device. Rough handling of equipment can destroy internal circuit boards and delicate structures.

• Do not clean the device with strong chemicals, detergents or strong detergents.

• Do not apply the device with paint. Smudges might block in the device and affect the operation.

• Do not throw the battery into the fire, or the battery will explode. Damaged batteries may also explode.

All of the above applies to your device, battery and accessories.

If any device is not working properly, please take it to the nearest authorized service facility for repair.