# User Manual

## QR Code Reader

Version: 1.0

Date: December 2019
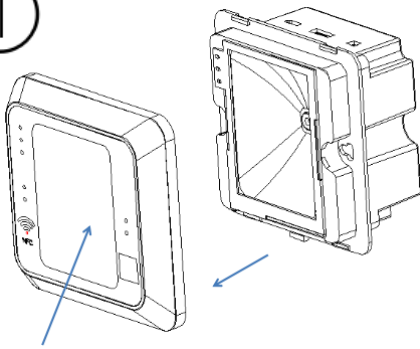
# Contents

# 1. Equipment Installation

Installation precautions: In order to ensure the normal use of the equipment, please strictly follow the installation instructions.
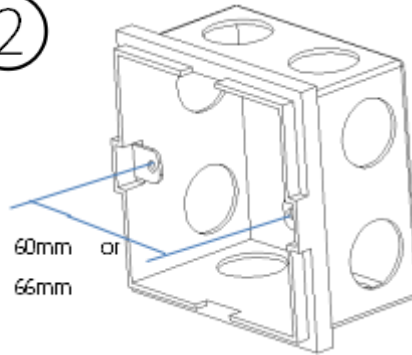
① Faceplate (with panel)
Remove the faceplate (with panel) from the device. You must gently remove the panel from the side of the USB socket to avoid any damage to the LED light.

② 60mm or 66mm
Purchase a standard 86 mounting box with an installation distance of 60mm or 66mm. Place the mounting box on the wall, mark and drill on the wall according to the box's dimensions, then fix the box with cement-bonded sand.
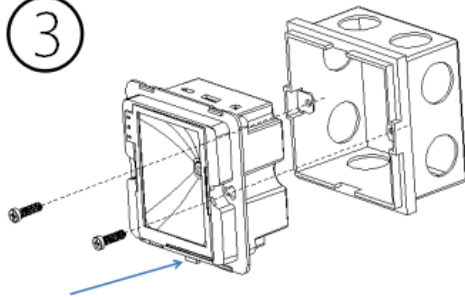
③ The protruded tiny area of the device pointed by the arrow as shown above should be facing the bottom. Before installing the device, connect it to the cable and test it. Then, install the device into the 86 mounting box as shown in the figure, fix the device with two M4*15PB fasteners. Please note that the area as pointed in the figure above should be facing downwards.
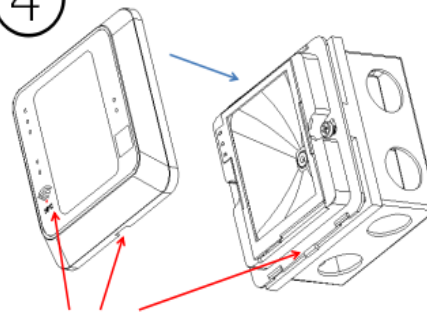
④ Align the notch at the bottom of the faceplate with that of the mounting box.
Find and align the notch of the faceplate with the protruded area of the device. Push the faceplate (with panel) against the device. Pay attention to the assembly direction during installation and check whether the printing on the rear panel is upright.

# 2. Product Introduction

The QR500 QR code Reader is a new generation of intelligent access control card reader developed by our company. The product has a high-end appearance, high scanning speed, high recognition rate, strong compatibility, and can be connected to any access controller that supports Wiegand input. The reader adapts to various application scenarios and supports the identification of RFID radio frequency cards and QR codes, which can be applied in community management, visitor management, hotel management, unmanned supermarkets, and other fields.

The characteristics of the QR code reader are as follows:

- New QR code access control technology development;
- Comes with a card reader antenna and working frequency is 13.56MHz;
- Support MF, CPU, NFC (analog card), DESFire EV1, Chinese resident ID card, QR code;
- Support Wiegand, RS485, USB, TCP/IP network output mode.

# 3. Wiring Instructions

## 3.1 Wiring Definition



From left to right (based on the image above):

| DC(+12V) | GND | 485+ | 485- | WGO | WG1 | NO | COM | NC | Config |
|---|---|---|---|---|---|---|---|---|---|
| Power | Ground | RS485 Interface | | WG Interface | | Normally Open | Public | Normally closed | Configuration interface |

## 3.2 Instructions

**Note:** Please connect the device to other equipment according to the wiring definition of the QR code reader. In addition, the following only refers to the partial wiring of the QR code reader and the controller. It does not represent all wiring definitions of the controller. Please refer to the actual controller wiring definition.

## 3.2.1 Wiegand or RS485 Communication

1. First, connect the QR code and card reader to the controller via Wiegand or RS485 and then connect it the +12V power supply.

The two-dimensional code reader does not need to be connected to the lock body when it is used as a read head. When it is used as an integrated machine, it is necessary to connect the lock to control the switch door. The controller in the figure only lists some of the wirings, and there are many kinds of connections between the machines. Wiegand or RS485 common connection reference as shown below:
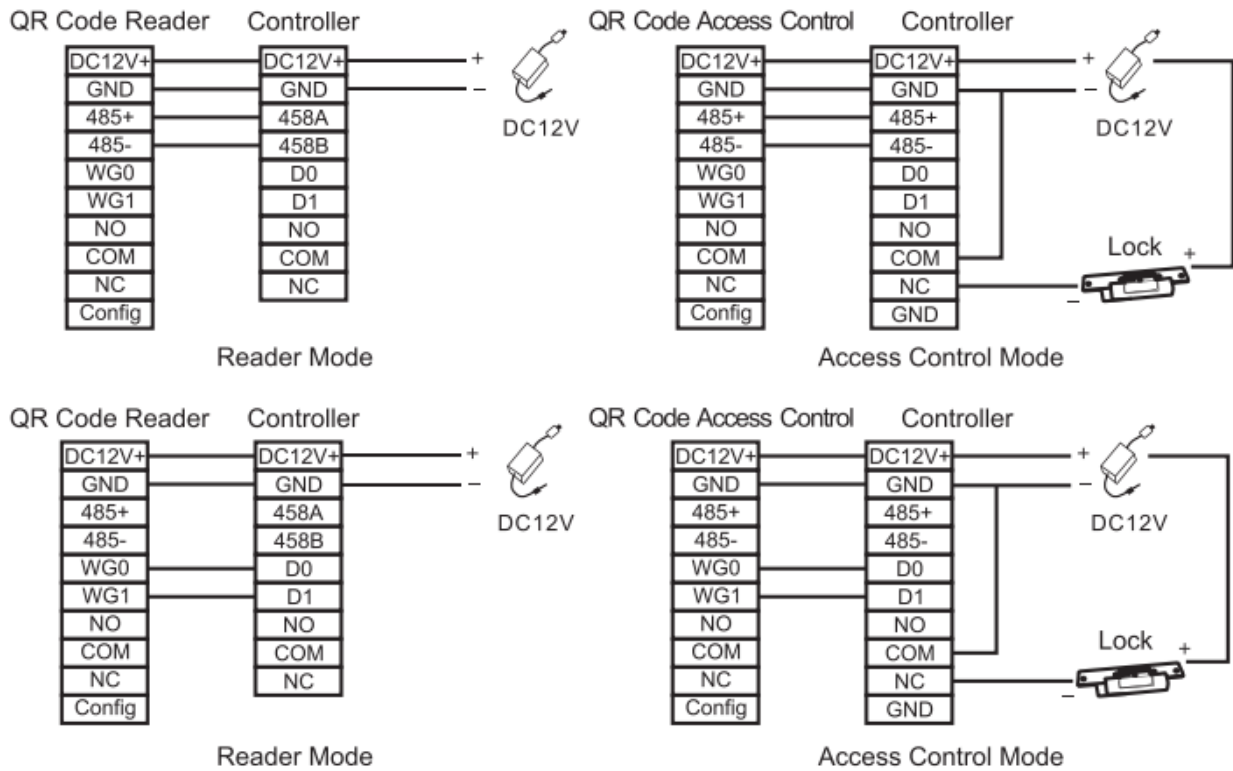


2. Then, place a card or QR code (paper, electronic, mobile phone) within the reader's recognition range, the card reader will automatically obtain and transmit the information carried by the card or QR code to the controller.

## 3.2.2 USB Communication

1. First, connect the QR code and card reader to the PC terminal through the USB cable.
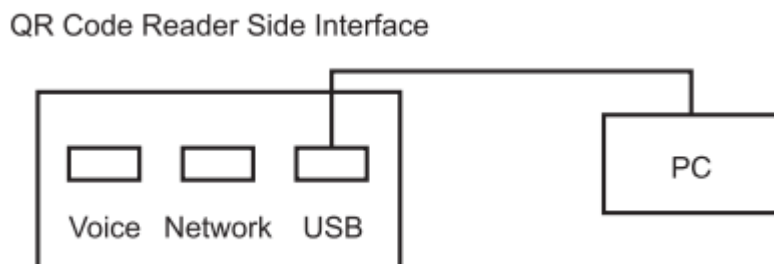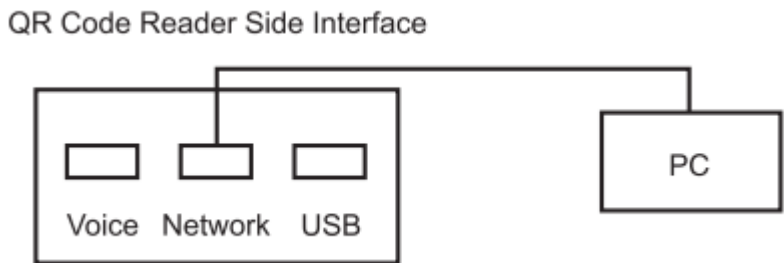


2. Then, enable "HID Keyboard" on the DEMO software setting interface, place a card or QR code (paper, electronic, mobile phone) within the reader's recognition range, the card reader will automatically obtain the information

carried by the card or QR code and transmit it to the PC, which can be demonstrated by text.

## 3.2.3 TCP/IP Network Communication

**Note:** Only a few models support TCP/IP network communication.

1. First, connect the QR code and card reader to the PC through the network terminal.



QR Code Reader Side Interface

2. Then, place a card or QR code (paper, electronic, mobile phone) within the reader's recognition range, the card reader will automatically obtain the information carried by the card or QR code and transmit it to the PC, which can be demonstrated by text.

# 4. Set up The QR code Reader with DEMO Software

This section describes how to configure the QR code and card reader through the DEMO software.

## 4.1 Basic Operation

1.Connect the reader to the computer with a USB cable, open the Demo software, select the USB-HID port, and click OK.

**Note:** Support connecting configuration tools via USB and serial ports.

If you select RS485 communication mode to connect the device to the configuration tool, the baud is 115200 by default.
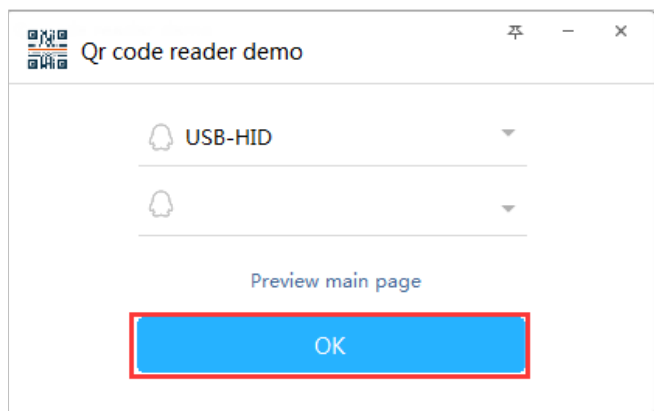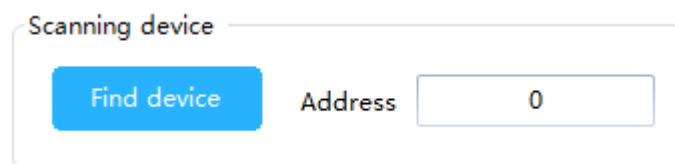


2.The connection is successful; you may access the main interface.
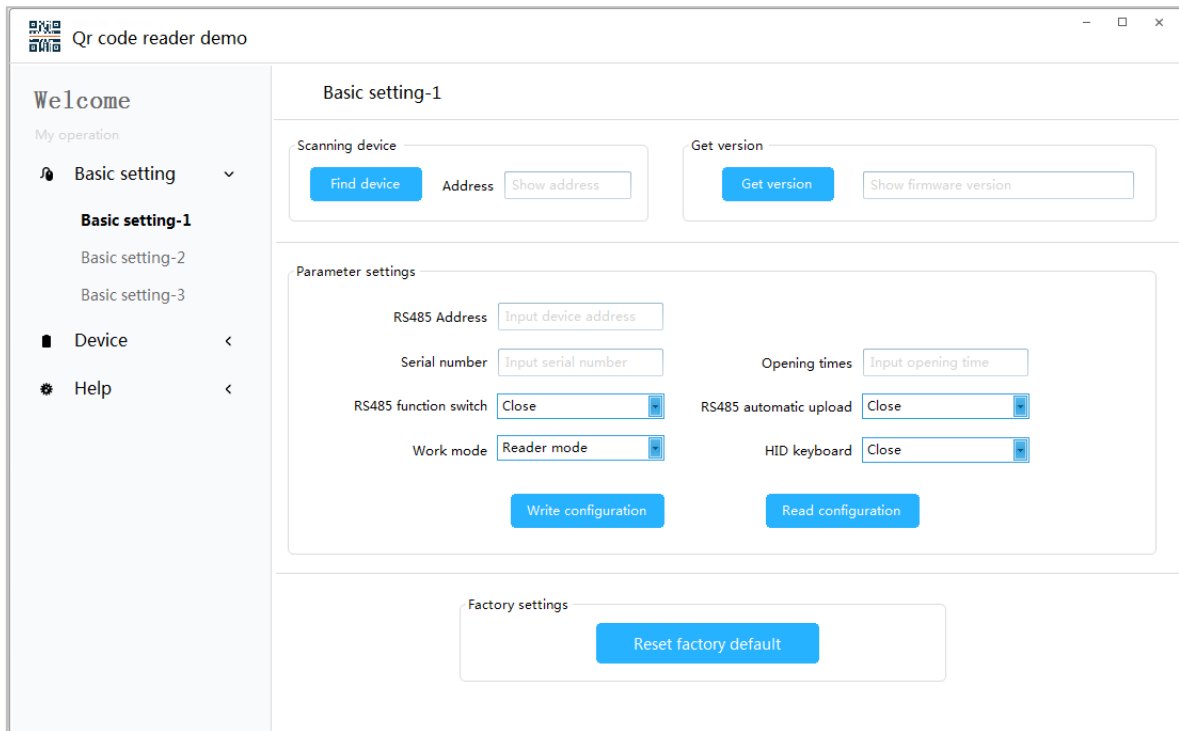
3. On the "**Basic settings-1**" page, set the configuration parameters of the reader as needed.

1) Click **Find a device** to view the address of the card reader.

**Note:** If you choose RS485 communication, you need to click **the Scanning device** to get the correct device address before you can perform other operations.



2) Click **Get version** to view the version number information of the card reader.
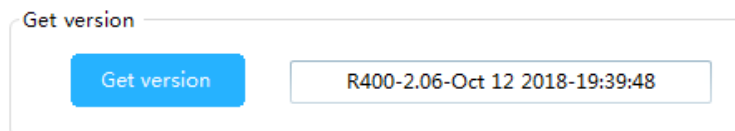


3) Click **Read configuration** to view the configuration information of the current reader.
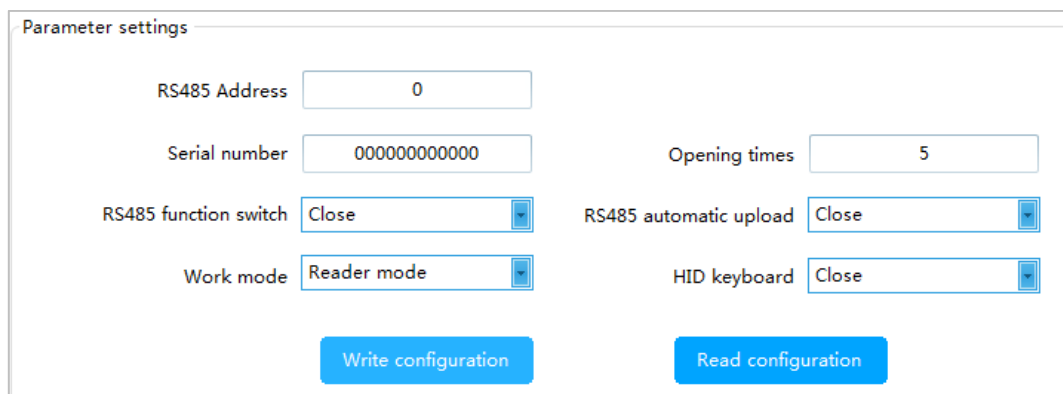


4) The user can set the parameter information of the card reader and click **Write configuration** to configure the parameter information of the QR code reader.

| Parameter | Description |
|---|---|
| RS485 Address | 0: Broadcast address, that is, the communication connection can be made regardless of whether the machine 485 address is set to 0~255.<br>If the machine 485 address is set to 1~255, fill in the corresponding, you can also communicate. |
| Opening times | When the card reader is directly connected to the door lock, the length of time the door is opened when the card or QR code with a normal door opening permission is swiped. |
| Serial number | The serial number of the device of the reader. |
| RS485 function switch | Turn RS485 communication on or off.<br>The configuration tool can still be connected via 485 when it is turned off. |
| RS485 automatic upload | When opened, the card reader data is automatically uploaded to the server under the 485 interface.<br>When closed, the reader data will not be uploaded to the server. |
| Work mode | Reader mode: When the card reader is connected, the read head mode is selected, and the parameters of the read head are set by the DEMO software.<br>Offline mode: When connecting to the all-in-one, select the all-in-one mode and set the parameters of the all-in-one through the DEMO software. |
| HID keyboard | When turned on, USB communication can transfer the card number/information to a computer (such as a text document).<br>When turned off, the swipe/QR code will have normal feedback, but USB will not transfer the card number/information to the computer. |
| Write configuration | After modifying the above parameters, click **Write Configuration**, that is, the new configuration information is successfully written to the card reader. |
| Read configuration | Get the current configuration information of the reader and display it. |

4. Supports factory reset of the card reader.
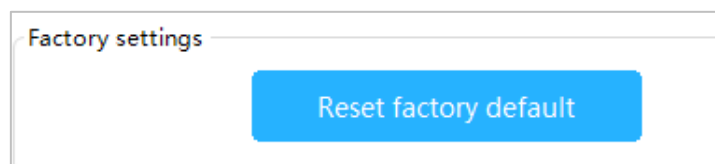
## 4.2 Parameter Settings

1. On the "**Basic settings-2**" page, set the relevant parameters of the QR code.



| Parameter | Description |
| --- | --- |
| QR code decoding key | The decryption key of the QR code when the encryption mode is selected. |
| QR code effective time | The effective time of the QR code display. |
| Door ID | The access ID number, support setting output or not output ID number. |
| QR code mode | The output mode of the two-dimensional code: Not encrypted, Custom encryption, Dynamic QR code. |
| Light mode | QR code light mode: Constantly bright, intermittent, induction. |
| Write configuration | After modifying the above parameters, click **Write Configuration**, that is, the new configuration information is successfully written to the card reader. |
| Read configuration | Get the current configuration information of the reader and display it. |

2. On the **Basic Settings-2** page, set the parameters for Wiegand.



| Parameter | Description |
| --- | --- |
| Wiegand mode | Choose WG26, WG34, or WG66. |
| Output format | When Wiegand outputs the card number information, the card number can be selected for forward or reverse output. |
| Whether to check | Choose whether to output the Wiegand check digit or not. |
| Pulse Width | Wiegand pulse width, optional (1~99)*10ms |

| Pulse interval | Wiegand pulse gap, optional (0-89)*100+1000ms |
|---|---|
| Write configuration | After modifying the above parameters, click **Write Configuration,** that is, the new configuration information is successfully written to the card reader. |
| Read configuration | Get the current configuration information of the reader and display it. |

## 4.3 Card Reading Parameter Settings

On the **Basic Settings-3** page, set the card reader's card reading parameters.

Card reading parameter setting

App ID [ 3F00 ] (Hex decirral) File ID [ 21 ] (Dec1mal) Key ID [ 0 ] (Decirral)

CPU user k$_{e y}$ [ FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF ]

Start block [1 ]  Start byte [0 ]

MF user key [ FFFFFFFFFFFF ]

Prior choice [CPU priority ]

☑ CPU card [um ]  ☑ MF card [um ]

☑ ISO15693 card [um ]

Write configuration    Read configuration

| Parameter | Description |
|---|---|
| App ID | The directory file number of the user card content to be read. |
| FileID | The file number of the user card content to be read. |
| Key ID | The key identifier for external authentication of the CPU card. |
| CPU user key | The key to the CPU user card content to be read. Note: The authentication key of the user card must be the same as the **user card key** set on the configuration card. |
| Start block | The content of the user card to be read starts from the first block. |
| Start byte | The content of the user card to be read starts from the first few bytes. |
| MF user key | The sector key of the MF user card content to be read. |
| Prior choice | Select the CPU priority or MF card priority when setting the card reader composite card. |
| Reading Card mode | Custom settings read the physical card number or content of the CPU card, MF card UID or content, ISO15693 card UID or content. |

| | |
|---|---|
| Write configuration | After modifying the above parameters, click **Write Configuration**, that is, the new configuration information is successfully written to the card reader. |
| Read configuration | Get the current configuration information of the reader and display it. |

## 4.4 Reader Parameter Settings

On the Reader Operation page, set the parameters of the reader.



| Parameter | Description |
|---|---|
| Read RTC | Get the time of the reader. |
| Write RTC | Set the time of the reader. |
| Write in real-time RTC | The time when the reader is connected to the PC. |
| Control door | Support setting remote door opening and remote closing. |
| Opcode | 1~23 is a fixed ringtone, and 255 is a vocal broadcast. |
| Encoding | GB2312, GBK is a different Chinese coded character set. |
| Text data | You can enter the text you want to play. When the opcode is 255, click **Play voice**, the card reader will play the text. |
| Save voice | You can select the small ringtone from 1~23 or enter "Hello" as the opening voice and save it. The card reader will play the voice automatically when you open the door next time. |
| Get voice | Let the saved open-door voice play out. |

# 4.5 Firmware Upgrade

On the **Firmware Upgrade** page, click **Open file**, select the upgrade program, click the **Start** button, plug in the USB and reconnect the computer to the computer to view the prompt message, indicating that the upgrade is successful.

**QR500 Code Reader**