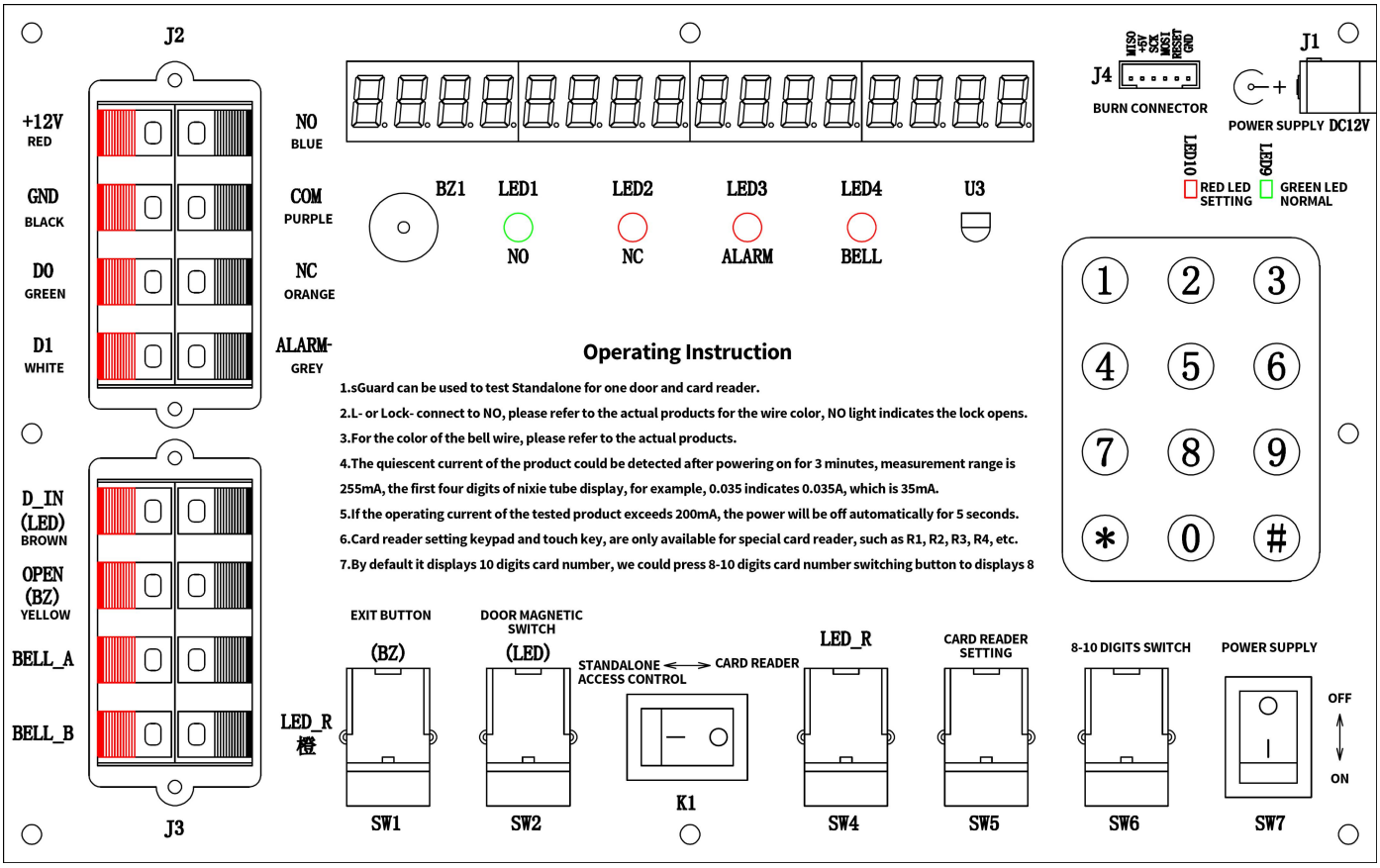
# sGuard

## User Manual




**sGuard**

## 1. Technical parameters and functional features

**power supply requirements:** DC12V ⩾ 500mA

**Static working current:** ⩽ 100mA

**Working current of external access control:** ⩽ 200mA (over current and short circuit protection)

**Accuracy of working current of standalone access control or card reader:** ±1mA

**Keypad:** touch panel

**Function 1:** Test the functions of the standalone access control including exit button, door magnetic switch, unlock relay No and NC, Alarm, Door bell button, etc

**Function 2:** Set the type of card reader, key and output format of card reader

**Function 3: T**est the functions of D0, D1, led and BZ wires of the reader

**Function 4：** Display the reader's output format, 4 bit, 8 bit key data, 26-37 bit card number data

**Function 5：** Display 10 bit format card number. Switch 10-bit to 8-bit format card number

**Function 6:** Test the key code data of infrared remote control

**Function 7:** After 3 minutes without operation, machine automatically enter sleep status.

## 2. Basic operation of all in one access control machine test

**2.1 wiring**

According to the following wiring diagram, connect the outgoing line of the standalone access control according to the color and function corresponding to the quick connection base of the access control special test tool, turn the switch K1 to the "all-in-one machine", and turn the "power switch" SW7 from "off" to "on". Until the machine enters the standby status, the following tests can be started.

**sGuard Wiring 1**

**2.2 function test**

Under normal conditions, green LED1 is off, red LED2 is on, red LED3 and LED4 are off. The first four digits of the nixie tube display the working current of the standalone access control within 3 minutes of power on. For example, 0.035 means 0.035 A and 35mA.

Press the "BZ" key SW1 of the special test tool to open the door. The green LED1 of the tool is on, and the red LED2 is off. After a certain time delay, it will return to normal state.

The "door magnetic switch (LED)" SW2 is closed by default in standalone access control mode, which is equivalent to the closing status. When SW2 is released , it can trigger Alarm function, and LED3 will flash until the alarm is canceled and the

alarm line function can be tested then.

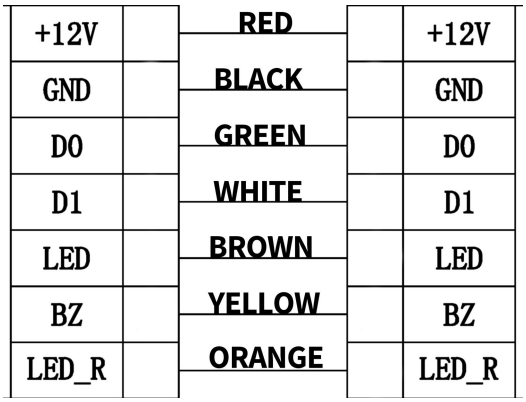
For standalone access control with doorbell button, LED4 will be on when the doorbell key is pressed and be off when releasing the key.

For information of test for Wiegand output function of D0 and D1 and the card reader mode of the standalone access control, Please refer to operations of card reading test in following.

## 3. Operations of card reading test

**3.1 wiring**

According to the following wiring diagram, connect the outgoing wire of the card reader into the quick connection base of the access control special test tool according to the color and function, turn the switch K1 to the "card reader", and turn the "power switch" SW7 from "off" to "on". After the machine enters the standby state, the following tests can be started.




**sGuard Wiring 2**

### 3.2 Card Reader Operating Current

If no operation within 3 minutes after power-on, the first 4 digits of the nixie tube display the working current of the external card reader, then end display and enter into sleep mode. For example, 0.035 means 0.035A, or 35mA. There is no current value displayed when displaying Wiegand output data.

The device will cut off the power supply When the current of the external access control card reader exceeds 200mA. The power supply will be recovered automatically 5 seconds later after the over current is eliminated.

### 3.3 Function Test

### 3.3.1 Initialize working mode

Mode 1: Wiegand 4Bit button code, Wiegnad 8Bit button code, Wiegand26-37Bit Card No with even/odd check digits.

Mode 2: Wiegand 4Bit button code, Wiegnad 8Bit button code, Wiegand26-37Bit Card No without even/odd check digits.

Keep pressing button SW6 for 8-10 digits card number switching, then turn the "power switch" SW7 from "off" to "on", release button SW6 after two beeps, the digital tube displays "E-- o" or "----", initialization completed.
"E--o" indicates device is in mode 1, and "----" indicates mode 2.Each initialization will change the mode in turn. Power off have no impact on the mode.

### 3.3.2 Card Reader Setting

Currently, card reader models can be set by sGuard are: R1/2/3/4 Series, mReader, sReader. Function test is applicable for other models card readers instead of setting up.

Press Card reader set up key“SW5”once then release, the card reader indicator wills turn into orange and LED10 light will turn on. For example, if the tube indicator display “01-14-26”, the front 2 digits start from 00-02, the middle 2 numbers range from 10-14 and the last 2 name between 26-37 (for Mode 1) or 27-35 (for Mode 2). Input numbers on the touch numeric keyboard. Press“*”to delete the last input number so the digits displaying as the above example conforms with the range, such as“01-14-26”. Then press“#”, the card reader gives 3“DI-, DI-, DI-”long rings. It means setting up succes sfully. Also the card reader’s indicator light turns into red and gets back to regular working state with sGuard’s LED9 green light on. The configures can be saved when power is off and maintain to next time use when power on.

The values input can be empty, repeated or exchange their positions. Take“01-14-26”for example. We can set up only one or several values or repeat the setting several times. The last setting will be effective. Input the values into the card reader in sequence, separately, no need in particular order. Such as "01-14-26", "1-14-26", "- 26-14", " - - 26", "26-14-34 " are all legal. If input "26-32-34 ", the result of set up is 34 Bit card number output.

**Meaning of setting value**

Key format selection (card reader with password keyboard):

00: 4-6 digit password is output in the format of card number

01: 4Bit single button output

02: 8Bit single button output

Card type selection

10: Read EM card

11: Read HID card

12: Read EM and HID cards.

13: Read IC card.

14: Read EM, HID and IC card.

Card number output format selection (mode 1):

26-37: Wiegand 26-37 has a parity bit card number

Card number output format selection (mode 2):

27-35: Wiegand27-35 No parity card number

**3.3.3 Card Reader Test**

Card reader outputs the Wiegand signal when swiping the card, the first and second digit of the nixie tube display 26-37, the third digit displays ”-”, The 15-16th digit displays the card number format. For example: 100100111473.

When the 10 digit card number format is displayed, press the "8-10 digit card number switch" key SW6 to switch to the 8-digit card number format. The first and second digit of the nixie tube display 26-37, the third digit displays”-” , the fourth digit displays 8, and the 9th-16th digit displays the card number such as : 132,10154. Press the "8-10 digit card number switch" key SW6 again to display the 10 base card number format, then the two display formats can be switched in turn.

For card readers with password keyboard, such as R3-K series card readers, if 4 bit single key output is set, 4 is displayed in the first digit of the nixie tubes; if 8 bit single key output is set, the first digit of the nixie tube displays 8. In these two cases, bits 9-16 display the input keys "0-9, *, #", and the 16th digit displays the last input key. The number previously entered moves one bit from right to left. "*" is displayed as "␣" and "# " is displayed as "⌟ ";

If the 4-6-digit password is set to output according to the card number format, the nixie tube display is consistent with the card number format.

Press the "door magnetic switch (LED)" key SW2, the card reader indicator light turns green, release the SW2 key, the reader indicator light turns red.

Press the "exit button (BZ)" key SW1, the buzzer of the card reader rings for a long time. Release the SW1 key, and the buzzer of the card reader stops ringing.

Some products, one more LED_ R outlet, press "led"_ R "key SW4, the reader indicator light changes from green to red. Release SW4 key, the reader indicator light changes from red to green.

## 4 Infrared Remote Controller (IRC) key internal code data test

sGuard can test the Remote controller of IRC of F007-II、F007EM-II、sPress、W2、W2-A. Aim the remote controller at infrared receiver U3, the 6 digital showed on the right side of the digital tube will display the IRC key number as follows:

Key1：01-000,　　Key2：02-001,　　Key3：03-002,

Key4：04-004,　　Key5：05-005,　　Key6：06-006,

Key7：07-008,　　Key8：08-009,　　Key9：09-010,

Key*：10-012,　　Key0：00-013,　　Key#：11-014.