Sebury ®

Metal Access   Fashion&Safe

Sebury Technology Co., Ltd.
Address: 5/F, Building 8, Xinwu Industrial Park, Xili, Nanshan District, Shenzhen, China.
Tel: +86-755-82885464   Fax: +86-755-82884565
P.C.: 518055   www.sebury.com.cn

User Manual

S Touch / S Key

Before installation and use, please read the user manual carefully.

S Touch-w   **S Key**-w   **S Touch**-s   **S Key**-s

Contents

1. Description, Features and Specifications

1.1 Description

The sTouch-w / sKey-w / sTouch-s / sKey-s include an access host and a i Box, which are connected by Wiegand Bus.
The access host permits entry using proximity technology and keypad with PIN, and the i Box provides
Power Supply, Lock Driver, Alarm, Ring Bell, Exit Button and Door Contact for the whole system.

The access host supports 125KHz EM, HID cards and 13.56MHz (sTouch-w / sKey-w) Mifare, CPU cards all in one.
It is with 2 relays to control 2 doors and supports up to 2000 users in total, each user can possess one card and one PIN.

Besides, it also supports 1 Master Code, 2 Manager Cards, 2 Duress Card users and 2 Duress PIN users, providing users with easy operations and safety reliability.

1.2 Features

- Strong pure aluminium alloy case; waterproof, conforms to IP65
- Built-in switching power supply for i Box, input AC 100-240V or DC 12-14V
- Split design of the control part, prevent opening the door by strong magnetic, short circuit, open circuit or other illegal ways
- Built-in 125KHz and 13.56MHz card reader (sTouch-w / sKey-w)
  Built-in 125KHz card reader (sTouch-s / sKey-s)
- Digital backlit key, the back light can be set to Normal ON, Normal OFF or Human-Approach ON
- Built-in door bell and also support external door bell function
- Multi working modes: reader, one door, two doors, interlock, anti-passback and so on, suitable for many occasions
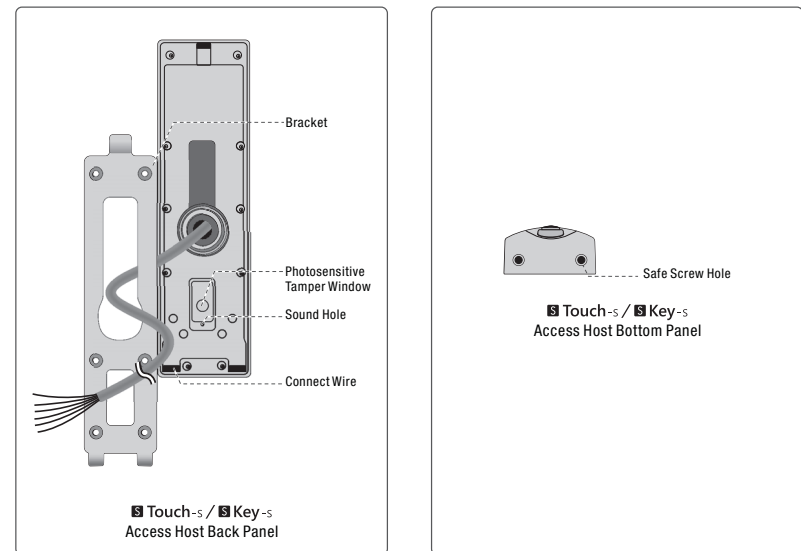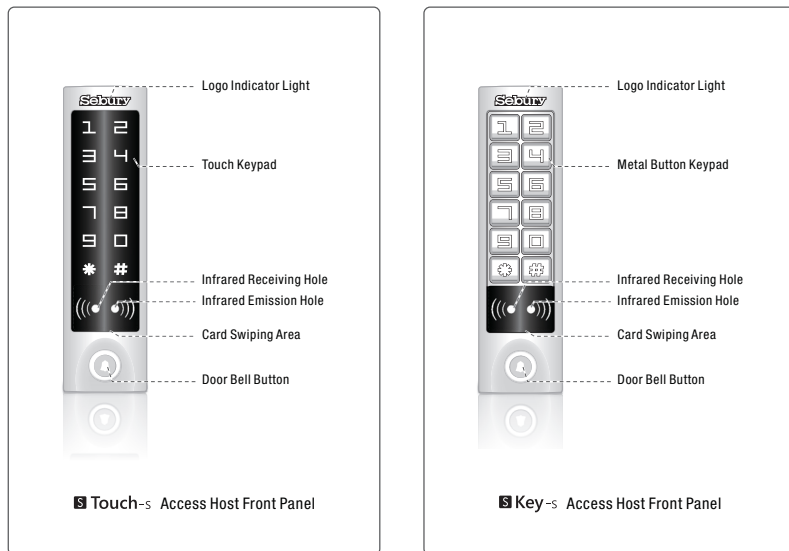
1.3 Specifications

1.3.1 Access Host

Input Voltage	DC 12V-14V
Idle Current	≤35mA
Card Reading Distance	40mm Max
Card Frequency	125KHz & 13.56MHz(sTouch-w / sKey-w)
	125KHz (sTouch-s / sKey-s)
Card Transmission Format	26-37 Bit
Keypad Transmission Format	4 Bit, 8 Bit and Virtual Card Number
Dimension	125×83×21.7 mm (s Touch-w / s Key-w)
	158×43×21.7 mm (s Touch-s / s Key-s)
Operating Temperature	-40° C ~ 60° C
Operating Humidity	0%~95%

1.3.2 i Box

Input Controller	AC 100V-240V
Total Output Power	≤36W
Power Input Voltage	DC 12V-14V
Access Host Port Output Current	≤0.5A
i Box	261×97×42 mm
Operating Temperature	-20° C ~60° C
Operating Humidity	0%-95%

2. Quick Installation Guide (Before installation and use, please read the Quick Installation Guide carefully)

Logo Indicator Light

Touch Keypad

Infrared Receiving Hole
Infrared Emission Hole

Card Swiping Area

Door Bell Button

Ⓢ Touch-s Access Host Front Panel

Logo Indicator Light

Metal Button Keypad

Infrared Receiving Hole
Infrared Emission Hole

Card Swiping Area

Door Bell Button

Ⓢ Key-s Access Host Front Panel

Bracket

Photosensitive
Tamper Window

Sound Hole

Connect Wire

Ⓢ Touch-s / Ⓢ Key-s
Access Host Back Panel

Safe Screw Hole

Ⓢ Touch-s / Ⓢ Key-s
Access Host Bottom Panel

S Touch-w Access Host Front Panel

- Logo Indicator Light
- Touch Keypad
- Infrared Receiving Hole
- Infrared Emission Hole
- Card Swiping Area
- Door Bell Button

S Key-w Access Host Front Panel

- Logo Indicator Light
- Metal Button Keypad
- Infrared Receiving Hole
- Infrared Emission Hole
- Card Swiping Area
- Door Bell Button

S Touch-w / S Key-w Access Host Bottom Panel

- Safe Screw Hole

S Touch-w / S Key-w Access Host Back Panel

- Bracket
- Photosensitive Tamper Window
- Sound Hole
- Connect Wire

1 Drill Holes

For concrete wall, drill the hole in 6mm diameter

2 Fix the Bracket and Install the Access Host

① ②

Pay attention to the sequence during installation

3 Fix Safe Screws
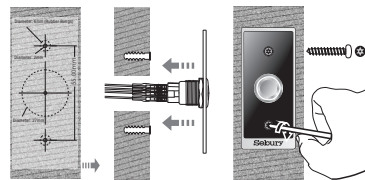
Safe Screws

4 Install i Box and Exit Button

Diameter: 6mm (Rubber Bungs)

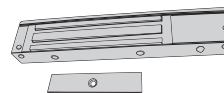237mm

Diameter: 2mm

Sebury

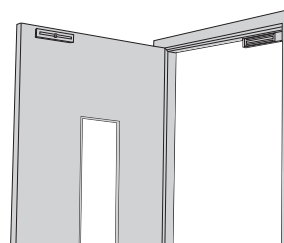Diameter: 6mm (Rubber Bungs)

Diameter: 2mm

Sebury
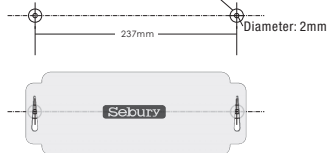
Before installing exit button, please read its user manual carefully

5 Install Lock

Lock (not included in the package, please equip it locally)

6 Wiring

③

AC100V~240V

Yellow-Green

Blue Ⓝ ⏚ Ⓛ Brown

Short circuit plug for lock

②

①

+12V GND D0 D1

Red Black Green White

OPEN1 GND

Yellow   Yellow

NC 1   +12V

Black   Red
1N4004

1N4004

Access Host   Exit Button   Lock
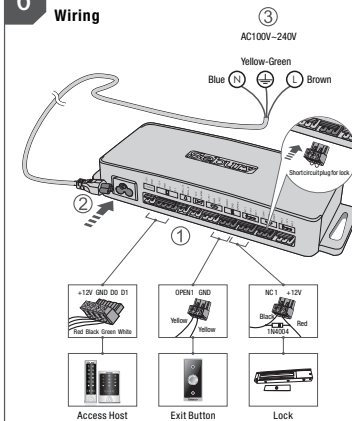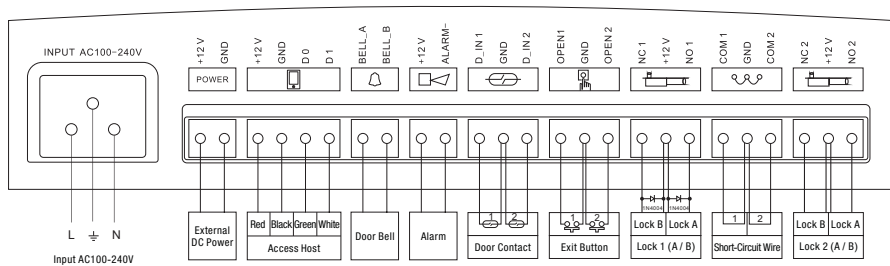
Remark: 1> Pay attention to the sequence when wiring, for different types of locks, please refer to their user manual
2> For the indicator light of exit button, need to connect an extra 12V power supply

INPUT AC100-240V

POWER

+12V GND | +12V GND D0 D1 | BELL_A BELL_B | +12V ALARM- | D_IN1 GND D_IN2 | OPEN1 GND OPEN2 | NC1 +12V NO1 | COM1 GND COM2 | NC2 +12V NO2

L ⏚ N

Input AC100-240V

External DC Power | Red Black Green White | Door Bell | Alarm | Door Contact | Exit Button | Lock B Lock A | Short-Circuit Wire | Lock B Lock A

Access Host | Lock 1 (A / B) | Lock 2 (A / B)

（ Wiring ）

Door Bell Interface Principle
Relay contact in BELL_A & BELL_B will be close for 200mS then release for each bell stroke.

Alarm Interface Principle
FET (field effect transistor) will be connected when alarm operates, and vise verse.

Lock Interface Principle
Relay will be picked up once unlocking instruction received, and it will be released when unlocking time is beyond.
COM: Relay Contact
NC: Normal Close, which is connected with COM normally.
NO: Normal Open, which is disconnected with COM normally.
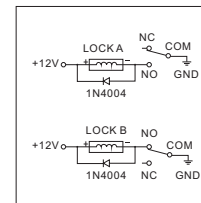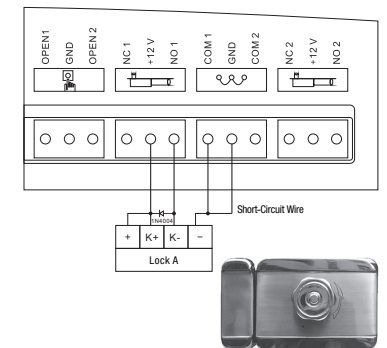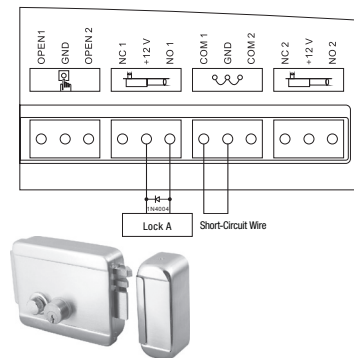
Lock Wiring
Connecting COM and GND, **then connecting lock to +12V and NO** (**or NC**)
Lock Type A: Fail Secure Lock (Unlock when power on) , such as Electric Controlling Lock, etc.
Lock Type B: Fail Safe Lock (Unlock when power off) , such as EM Lock, Electric Bolt Lock, etc.
IN4004: Diode, which is mainly used for preventing the harmness on relay from surge high voltage of Lock when relay contact is released. The use life of relay will be shortened and the high voltage pulse will affect other circuit

LOCK A NC COM
+12V NO GND
1N4004

LOCK B NO COM
+12V NC GND
1N4004

Here are some lock wirings based on different locks:

OPEN1 GND OPEN2 | NC1 +12V NO1 | COM1 GND COM2 | NC2 +12V NO2

1N4004 Lock A Short-Circuit Wire

OPEN1 GND OPEN2 | NC1 +12V NO1 | COM1 GND COM2 | NC2 +12V NO2

1N4004 Short-Circuit Wire
+ K+ K- −
Lock A

Short-Circuit Wire
Lock B

Short-Circuit Wire
Lock B
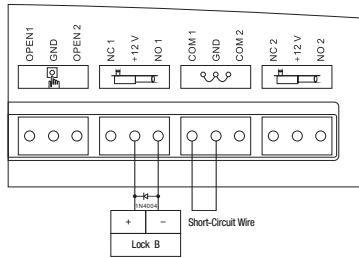
3. Manager Card Operation

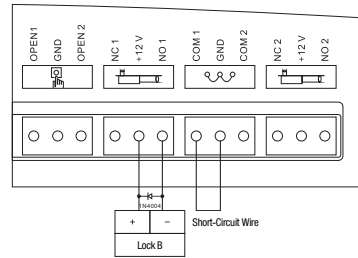**3.1 To add card user by Manager Add Card (only for Zone 1)**
Manager Add Card | User Card | Manager Add Card
  Cards can be added continuously

3.2 To delete card user by Manager Delete Card (for both Zone 1 and Zone 2)
Manager Delete Card | User Card | Manager Delete Card
  Cards can be deleted continuously

4. User Settings

4.1 To unlock the door by single card only: Read valid card once, the door will open.
Precondition: 1> Set the door entry by card only
               2> Set "1" for opening the door by multi cards

4.2 To unlock the door by multi cards: Read 2–10 pcs valid cards (time interval can not exceed 5s), the door will open.
Precondition: 1> Set the door entry by card only
               2> Set "2-10" for opening the door by multi cards

4.3 To unlock the door for card and PIN users
Read valid card | Input 4-6 digits PIN | # , the door will open

4.4 To unlock the door for card or PIN users
Read valid card | Or | Input 4-6 digits PIN | # , the door will open

4.5 Relay operation
Both of the two relays on board can operate in Pulse Mode (suitable for access control) or Toggle Mode (suitable for arming/disarming alarms, switching lights, machines…etc)

Pulse Mode
Every time a valid card/tag read or PIN input in Pulse Mode, the relay will operate, for the pre-set relay pulse time.

Toggle Mode
Every time a valid card/tag read or PIN input in Toggle Mode, the relay changes state, which will not turn back until read card/tag or input PIN again.

4.6 To change the PIN of a PIN user

| * | Read card | Old PIN | # | New PIN | # | Repeat New PIN | # |

Or

| * | User ID number | Old PIN | # | New PIN | # | Repeat New PIN | # |

Remark:
For users without card, must get ID number and initial PIN from the master. For Zone 1, the 1st digit of PIN must be "1",
for Zone 2, the 1st digit of PIN must be "2"
For the card users with PIN "1234", must use reading card to change the PIN for the first time.

4.7 Door Bell
Press the door bell button on the access host, the buzzer will sound ring-back tone, at the same time, the smart
controller's built-in door bell or the external door bell will ring. There are 4 working modes optional:
Mode "0": Door bell function is unavailable.
Mode "1": Access host's ring-back tone is available, i Box's built-in door bell is available, the
external door bell is unavailable.
Mode "2": Access host's ring-back tone is available, i Box's built-in door bell is unavailable, the
external door bell is available.
Mode "3": Access host's ring-back tone is available, i Box's built-in door bell is available, the external
door bell is available.
Remark: When the access host's working mode is Automatic Mode (Factory Default Mode), without the smart
controller, there will be no ring-back tone.

Automatic Mode:
In this mode, when the access host connects to i Box, it is standalone for single door; If without smart
controller, it work as Wiegand reader automatically.

5. Alarm

5.1 Anti Tamper Alarm
When enable the anti tamper alarm function, if the access host is disassembled illegally, the access host's buzzer
and the external alarm will operate.

5.2 Door Contact Alarm
When connect with door contact, if the door is opened illegally, the access host's buzzer and the external
alarm will operate.

5.3 Anti−duress Alarm
When read Zone 1 duress card / input 8-digit duress PIN or Zone 2 duress card / input 8-digit duress PIN, then
press #, the corresponding lock will open, at the same time, the external alarm will operate, but the access host
buzzer will not operate.

5.4 To Remove the Alarm
Read valid card or input master code can remove the alarm. If there is no operation, the alarm will remove
automatically after 1 min.

6. To Reset to Factory Default
To reset to factory default, power off, then power on, the logo will turn into orange after 1s, press * within 1s, release
it until hear two beeps, then will hear one long beep and the logo turn in white, means reset to factory default
successfully.

Remark: Reset to factory default, the users' information is still retained.

7. Sound and Light Indication

Operation Status	Logo Color	Buzzer
Standby	White	
Press Key		Short Ring
Read Card	Green	Long Ring
Door Open	Green	Long Ring
Operation Successful	Green	Long Ring
Operation Failed		3 Short Ring
PIN Inputting	Red	
Card & PIN Reading	Red	
Multi Card Reading	Red	
Start Menu	Slow Shine in White	
Sub Menu	Red	
Under Setting	Orange	
Manager Card Enter	Orange	2 Short Ring
Manager Card Exit	White	Long Ring
Alarm	Quick Shine in Red	Alarm
Ring-back Tone		Ding-Dong

8. Detailed Programming Guide

Standby	Master code	Start Menu	Sub Menu	Setting	Remarks	Functions
				Logo LED Light indication		
White	Red	White Flash	Red	Orange		
				Administrator setting		
*	Master code #	0	0	New master code # Repeat new master code # (Note: Code length:6~8 digits, factory default :888888)		Change the master code
			1	Read Manager Add Card		Set Manager Add Card
			2	Read Manager Delete Card		Set Manager Delete Card
			3	Read duress card (Zone 1)	To set duress users (Note: There are only one duress card and one PIN available for each Zone. When input duress PIN/card, the door will open, at the same time, the external alarm operates.)	
			4	Read duress card (Zone 2)		
			5	8-digit duress PIN # (Zone 1) (Note: The 1st digit must be 1)		
			6	8-digit duress PIN # (Zone 2) (Note: The 1st digit must be 2)		
			9	0000 # (Note: This is a dangerous option, so use with care)		Delete ALL users
				User Setting for Zone 1		
*	Master code #	1	1	Read card / User ID number # read card / Card number # / ID number # Card number #	1. The user ID number is any number among 1- 2000. 2. Card number must be 8 or 10 digits, if the card number is less than 8 or 10 digits, input 0 before the card number 3. Users can be added continuously without exiting programming mode	To add **Card** users

∗	Master code #	1	1	User ID number # PIN #	1. The user ID number is any number among 1-2000. 2. The PIN is any 4-6 digits, 1st digit must be 1 with the exception of 1234 which is reserved 3. Users can be added continuously without exiting programming mode	To add **PIN** users
				Add the card as for a card user Press ∗ exit from the programming mode, then allocate the card a PIN as follows: ∗ Read card 1234# PIN# Repeat PIN #		To add **Card and PIN** users
			2	Card number #	Note: > Users can be deleted continuously without exiting programming mode > To delete **Card and PIN** users just delete the card	To delete **Card** users by card number
				Read Card		To delete **Card** users by cards
				User ID number #		To delete **Card or PIN** users
			3	0 #	Entry is by Card ONLY	To set valid **Card** users
				1 #	Entry is by Card and PIN together	To set valid **Card and PIN** users
				2 #	Entry is by either Card or PIN (Factory default setting)	To set valid **Card or PIN** users
			4	0~99 #	0 = 50mS, factory default setting: 5	To set door relay time
			5	0 #	Every time a valid card/tag read or PIN input, the relay will operate, for the pre-set relay pulse time. (Factory default setting)	Relay Setting- Pulse mode
				1 #	Every time a valid card/tag read or PIN input, the relay changes state, which will not turn back until read card/tag or input PIN again	Relay Setting-Toggle mode

∗	Master code #	1	6	1~10 #		Note: The door will open only when read the valid card quantity up to the quantity set. It is only for Card ONLY Mode (Factory default setting: 1)	To set open door by multi cards
			7	User ID number # Card number # Card Quantity #		The card number must be consecutive Card quantity is between 1-2000	To add a **series cards** users-**Block Enrollment**
User Setting for Zone 2							
∗	Master code #	2	The method is same as Zone 1, the only difference is the 1st digit of PIN for Zone 2 must be 2				
Advanced Application (System setting)							
∗	Master code #	3	0	0~15#		Factory default setting: 0	To set facility code
			1	0#		Wiegand reader	To set working mode
				1#		Standalone for single door	
				2#		Standalone for two doors	
				3#		With external reader for two doors	
				4#		Two units interlocked for two doors	
				5#		Anti-passback for single door	
				6#		Anti-passback for two doors	
				9#		Automatic mode (Factory default setting)	
			2	26~37 #		Factory default setting: 26	To set Wiegand format
			3	0~2 #		Note: When device reset to factory default, the setting is still valid	To set keypad transmission format

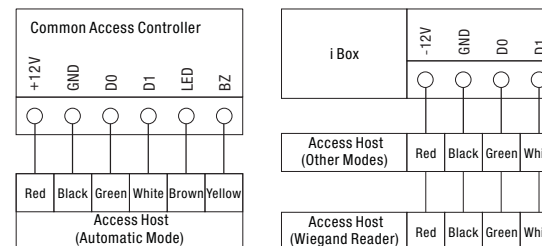| Optional Setting						
*	Master code #	4	1	0 #	**OFF**- The device will be in silence except enter the programming mode	To set keypad tone ON or OFF
				1 #	**ON**-The device will give the voice when press the keys (Factory default setting)	
			2	0 #	No door bell function	To set door bell function
				1 #	**Built–in** door bell - ON(Factory default setting)	
				2 #	**External** door bell - ON	
				3 #	**Built–in** & **external** door bell - ON	
			3	0 #	Disable keypad backlight	To set keypad backlight
				1 #	Enable keypad backlight(Factory default setting)	
				2 #	Automatic mode Normally it is off (sleeping mode) but wake up with human approach	
			4	0 #	Disable	To set logo LED light (Stand-by status)
				1 #	Enable (Factory default setting)	
			5	0 #	Disable anti tamper alarm (Factory default setting)	To set anti tamper alarm
				1 #	Enable anti tamper alarm	
Administrator open the door						
*	Master code #	9	1			Administrator open door 1
			2			Administrator open door 2

9. Advanced Application – Various Working Modes Application
Access host can work in 8 modes as below.
1. Wiegand reader
2. Standalone for single door

3. Automatic mode (Factory default setting)
4. Standalone for two doors
5. With external reader for two doors
6. Two units interlocked for two doors
7. Anti-passback for single door
8. Anti-passback for two doors

9.1 Wiegand Reader Mode

In this mode, the access host works as reader, it can be done below settings.
> Change Master Code
> Set Facility Code
> Set the card transmission format
> Set the keypad transmission format
> Set optional setting
> Anti-Tamper alarm

When LED level is low, Logo light will turn into Green, after 30 seconds or LED level rising, Logo light will back to normal.
When BZ level is low, the Buzzer will beep, after 30 seconds or BZ level rising, the Buzzer will back to normal.

When the access host worked as reader, both card number and keypad transmits in Wiegand format, the output data are shown by the Low Level of D0 & D1 cable:
D0: Low Level means 0, green cable
D1: Low Level means 1, white cable

The Pulse Width of Low Level is 100uS, Bit period is 1.6mS

The digit of card number can be set to 26~37Bit, should be matched with the controller. (Factory default is 26Bit)
Keypad transmission can be set in the following 3 modes (modes can be set by user)

Model 0: Virtual card number
The Reader will transmit the PIN data when it receives the last key (#) press after PIN code
Format: Decimal card number with 10-digit, Facility Code (1st ~4th digit) + PIN Code (5th~10th digit)
(Facility code is any digits between 0~15, PIN code is 4~6 digits)
Example: Facility code: 15
PIN code: 2999
Press 2999 #, then output format will be: 0015002999
PIN code: 999999
Press 999999#, then output format will be 0015999999

Model 1: 4-Bit
The output data is provided in following
format after every key is pressed:

| Key	Output in hex	Output in Binary
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
*	A	1010
#	B	1011

Model 2: 8-Bit
The output data is transmitted in following
format after every key is pressed:

Key	Output in hex	Output in Binary
0	0	11110000
1	1	11100001
2	2	11010010
3	3	11000011
4	4	10110100
5	5	10100101
6	6	10010110
7	7	10000111
8	8	01111000
9	9	01101001
*	A	01011010
#	B	01001011

9.2 Standalone for Single Door
The wiring diagram is shown as below. In this mode, the access host uses for entering the door, it supports connecting external card reader for exiting door.
The users of Zone 1 of access host or external card reader can open the door by valid card or PIN.
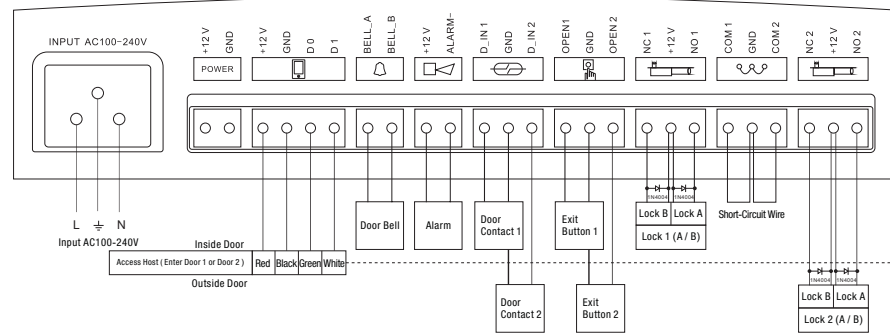Zone 2 is invalid.
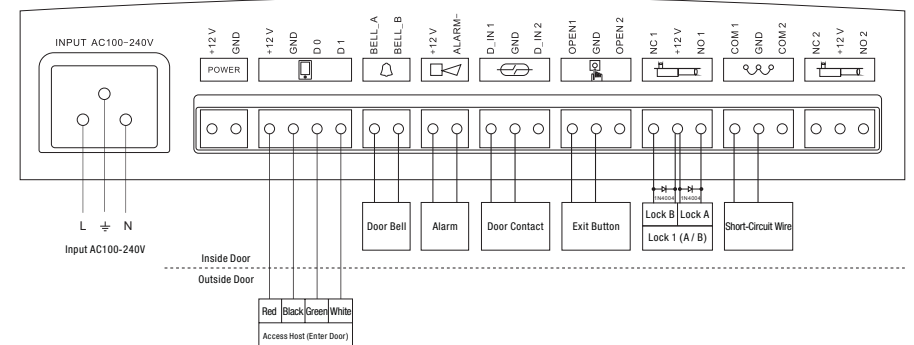
9.3 Automatic Mode
In this mode, when the access host connects to i Box, it is standalone for single door; If without smart controller, it work as Wiegand reader automatically.

9.4 Standalone for Two Doors
In this mode, sTouch-w/sKey-w / sTouch-s / sKey-s users are for controlling two doors. Read valid card or input PIN of Zone 1 on access host, door 1 will open; read valid card or input PIN of Zone 2 on access host, door 2 will open.
Remark: The common card for Zone 1 and Zone 2 can only open door 1.

INPUT AC100-240V

+12 V | GND | +12 V | GND | D 0 | D 1 | BELL_A | BELL_B | +12 V | ALARM- | D_IN1 | GND | D_IN 2 | OPEN1 | GND | OPEN 2 | NC 1 | +12 V | NO 1 | COM 1 | GND | COM 2 | NC 2 | +12 V | NO 2

POWER

L N
Input AC100-240V

Inside Door
Access Host (Enter Door 1 or Door 2) Red Black Green White
Outside Door

Door Bell Alarm Door Contact 1 Exit Button 1 Lock B Lock A / Lock 1 (A / B) Short-Circuit Wire

Door Contact 2 Exit Button 2 Lock B Lock A / Lock 2 (A / B)
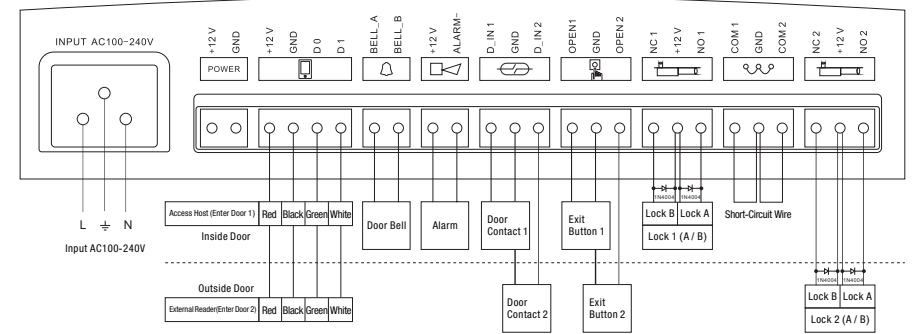
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9.5 With External Reader for Two Doors
In this mode, access host is for entering door 1, and external reader is for entering door 2.

Read valid card or input PIN of Zone 1 on access host, door 1 will open; read valid card or input PIN of Zone 2 on external reader, door 2 will open.
Remark: The common card for Zone 1 and Zone 2 can open door 1 on access host, and open door 2 on external reader.

INPUT AC100-240V

+12 V | GND | +12 V | GND | D 0 | D 1 | BELL_A | BELL_B | +12 V | ALARM- | D_IN1 | GND | D_IN 2 | OPEN1 | GND | OPEN 2 | NC 1 | +12 V | NO 1 | COM 1 | GND | COM 2 | NC 2 | +12 V | NO 2

POWER

L N
Input AC100-240V

Access Host (Enter Door 1) Red Black Green White
Inside Door

Outside Door
External Reader(Enter Door 2) Red Black Green White

Door Bell Alarm Door Contact 1 Exit Button 1 Lock B Lock A / Lock 1 (A / B) Short-Circuit Wire

Door Contact 2 Exit Button 2 Lock B Lock A / Lock 2 (A / B)

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9.6 Two Units Interlocked for Two Doors

The interlocked function is mainly used in banks, prisons, and other places where a higher level security is required.

When and only door 2 closed, read valid card/input PIN on access host, door 1 will open; when and only door 1 closed, read valid card/input PIN on external reader, door 2 will open.

Remark: The valid card/PIN is only for users of Zone 1, users of zone 2 are invalid.
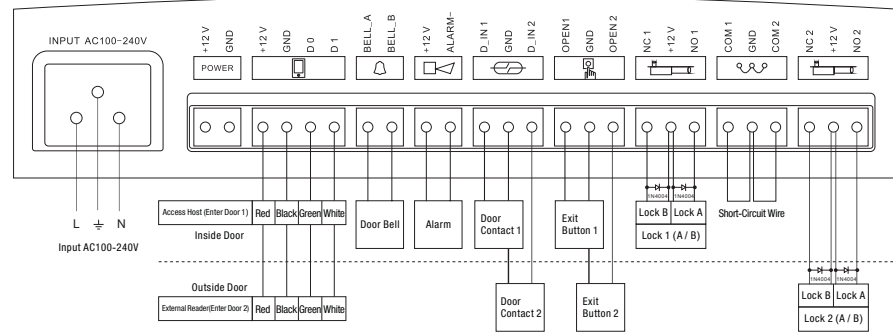
9.7 Anti-passback for Single Door

In this mode, access host install outside is for entering door, external reader inside for exiting door, they build up a single door anti-passback system, access host is the anti-passback master unit.

The users can only enter door when read valid card on access host, and exit from the inside external reader. If without the entering record from access host, the users cannot exit from the inside reader, also the users can't enter in twice without the first exit record.

Remark: This is only for card users of Zone 1, PIN users of Zone 1 and all users of Zone 2 are invalid.
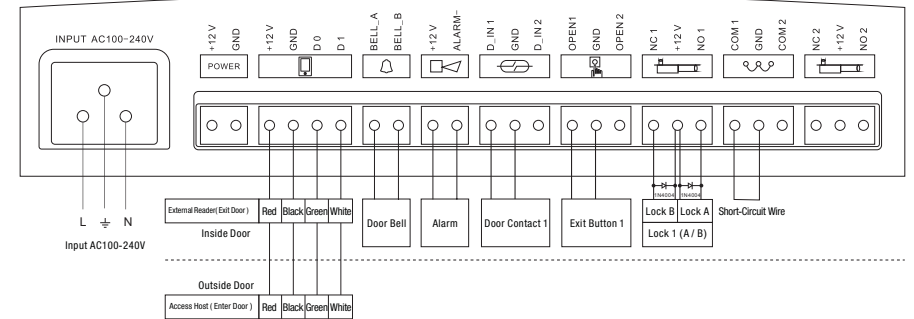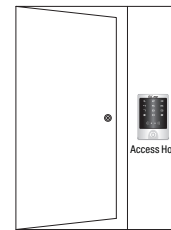
9.8 Anti–passback for Two Doors

In this mode, access host on door 1 is anti-passback master unit,and external reader on door 2 as the anti-passback auxiliary unit. Then they build up a two doors anti-passback system, which is normally used for parking lot.

The users can only enter door 1 when read valid card on access host, and exit from door 2 when read valid card on external reader. If without the entering record from door 1, the users cannot exit from the door 2, also the users can't enter in twice without the first exit record.

Remark: This is only for card users of Zone 1, PIN users of Zone 1 and all users of Zone 2 are invalid.
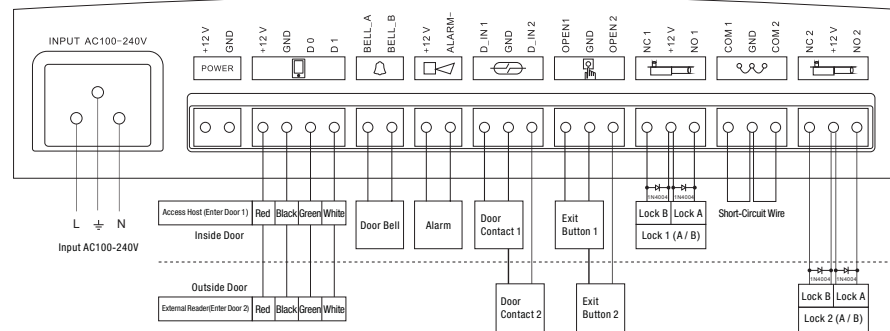
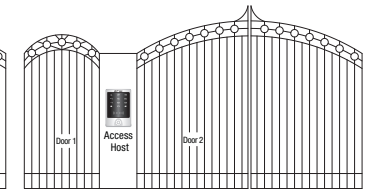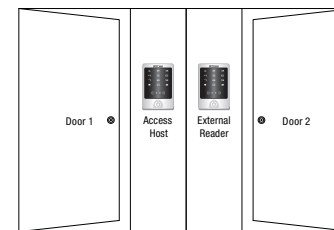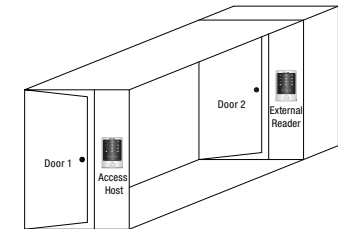## Application Scene Graph

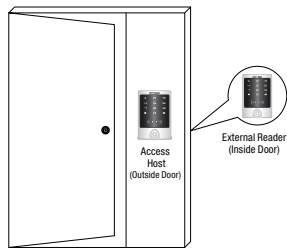Standalone for single door
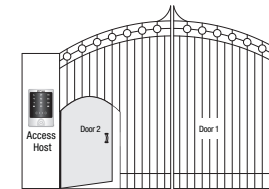
Standalone for two doors

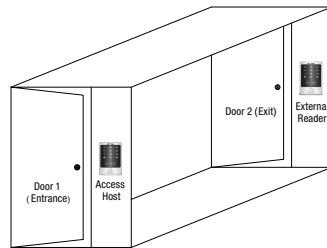With external reader for two doors

Two units interlocked for two doors

Anti-passback for single door

Anti-passback for two doors

10. Simple Troubleshooting

Fault Phenomenon	Fault Cause	Reason & Solution
Reading distance is too close	1. Card problem 2. Switch power supply interferences card reading	1. Please use original made card 2. Wiring power supply and access host shell to ground wire
Set user PIN failed	1. Wrong way of PIN setting 2. Setting PIN under card reading mode	1. Corresponding to users ID, 1st digit of users PIN should be 1(Zone 1) or 2 (Zone 2) 2. User PIN cannot be 1234 3. User PIN only can be 4-6 digits 4. setting PIN under card reader mode is not allowed

Can't open door after inputting user's PIN	Use 1234 as user's PIN	1234 is the initial value, can't be used to open doors, unless after resetting them to other 4~6 digits
Alarm under normal situation	Light leaking when install access host	Leaning on wall closely when install access host
No reaction when reading card	Machine is not on standby status	Exit by pressing * until logo light turns to white
Keypad light off	Set keypad light mode improperly	1. Set the keypad light to always On or automatic mode 2. Under automatic mode, keypad light will on when people approaching
Cannot enter Administrator setting mode	Forget master code	Reset to Factory Default, default master code is 888888, need to reset conditions and specifications, but users' information is still retained

For other issues beyond above, welcome to contact our technicians for more details.

11. Packing List

Name	Qty	Remark
S Touch / S Key	1	
User Manual	1	
Quick Use Guide	1	
Fixing Location Sticker	1	Used for locating installation position
Self Tapping Screw	4	$\varnothing$ 3X20 mm
Rubber Bungs	4	$\varnothing$ 6X24 mm
Diode	2	IN 4004 Diode
Manager Cards	2	Manager Add Card & Manager Delete Card
User Cards	3	EM Thin Card

Name	Qty	Remark
S Button	1	
User Manual	1	
Fixing Location Sticker	1	Used for locating installation position.
Self Tapping Screw	2	$\varnothing$ 3X20 mm
Rubber Bungs	2	$\varnothing$ 6X24 mm
Screw Driver	1	
Wire	4	Four Wires (Corlor: Yellow X2, Red, Black)
i Box	1	
Self Tapping Screw	2	$\varnothing$ 4X25 mm
Rubber Bungs	2	$\varnothing$ 6X30 mm
Power Connecting Wire	1	Length: 50 cm
Screw Driver	1	