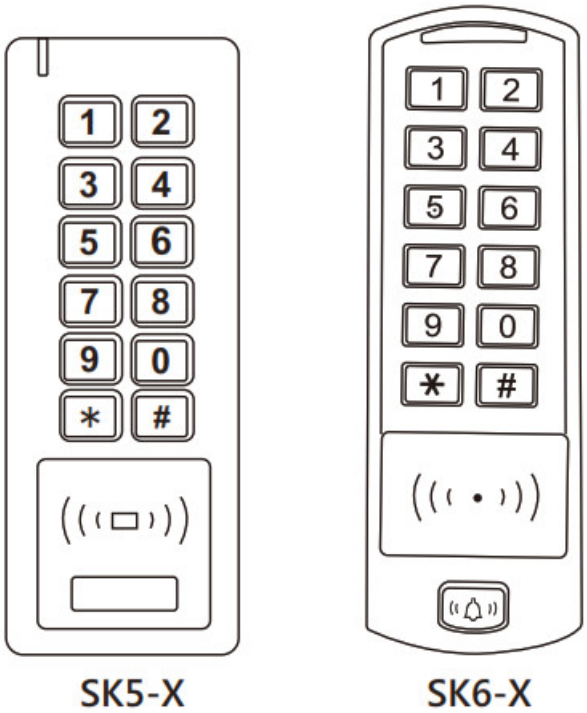
Secukey SK5-X Access Controller/Reader User Manual

Access Controller/Reader



User Manual

Contents

INTRODUCTION

The SK5-X/SK6-X is a universal keypad, can work as standalone keypad, access controller or standard Wiegand output reader. It uses Atmel MCU assuring stable performance. The operation is very user-friendly, and low-power circuit makes it long service life.

The SK5-X/SK6-X supports 600 users, it support multi-access modes in either card access, PIN access, Card+PIN access, or multi cards/PINs access, it can read 125KHz EM & HID for Low Frequency and 13,56MHz Mifare for High-Frequency tokens,cards and tags. Another advantage of the SK5-X/SK6-X is it has extra features including block enrollment, interlock, Wiegand 26~37 bits interface, 12~28V AC/DC voltage…etc.

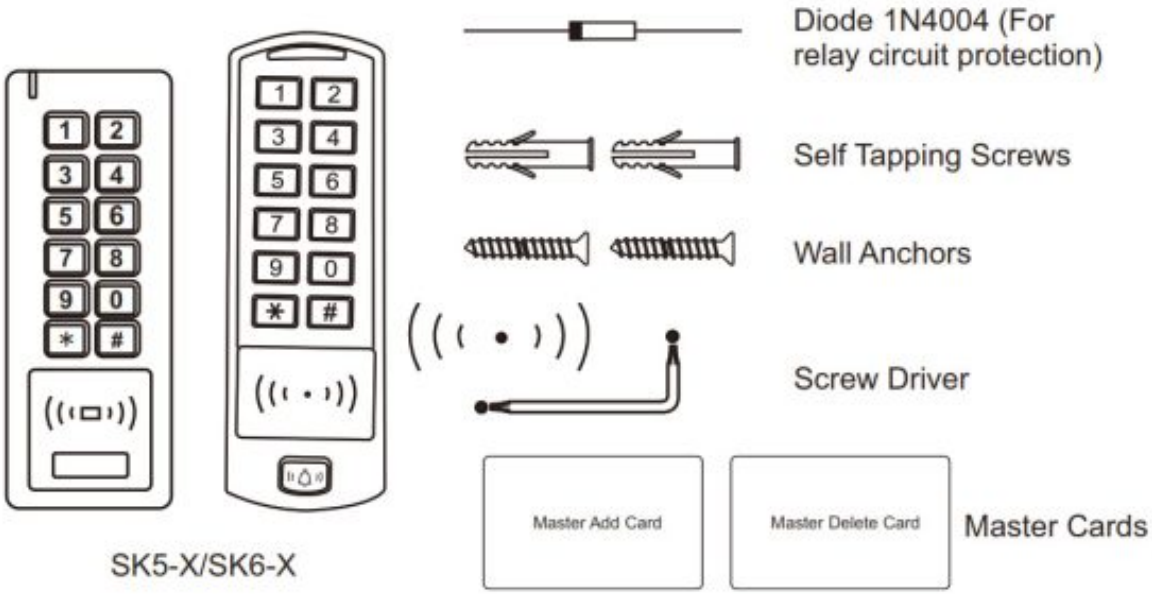
Features

- Waterproof, conforms to IP66
- One relay, keyboard programmer
- 600 users
- PIN length: 4~6 digits
- Card type: 125KHz EM card, 125KHz HID card, 13.56MHz Mifare card
- Wiegand 26~37 bits input & output
- Can be used as Wiegand reader with LED & Buzzer output
- Card block enrolment
- Tri-colour LED status display
- Pulse mode, Toggle mode
- 2 devices can be interlocked for 2 doors
- Built in light dependent resistor (LDR) for anti-tamper
- Backlit keypad
- Low temperature resistance(-40℃)

Specifications

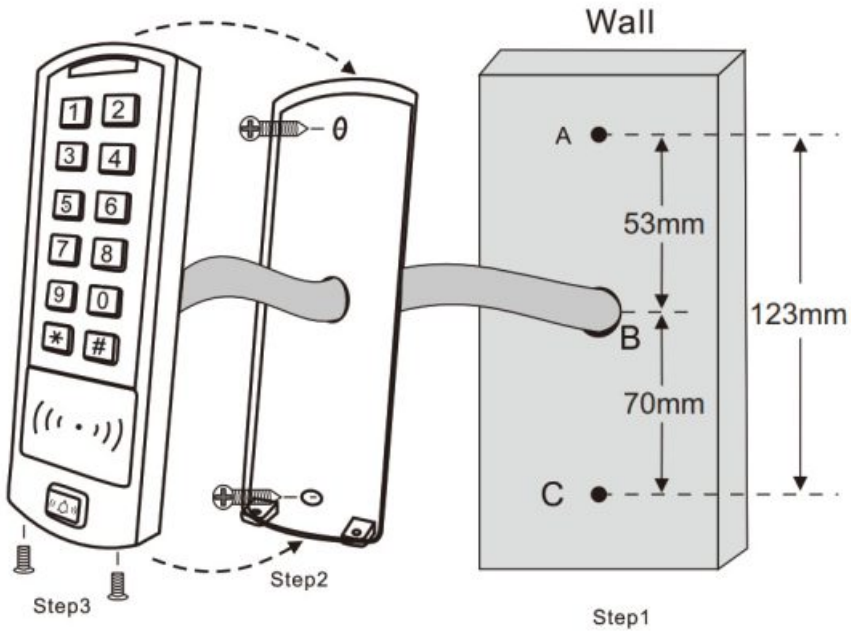
User Capacity Common Users Panic Users	**600** 598 2
Operating Voltage Idle Current Active Current	**12-28V AC/DC** < 65MA < 100MA
Proximity Card Reader Radio Technology Read Range	**HID & EM & Mifare** 125KHz & 13.56MHz 2-6cm
Wiring Connections	Relay output, exit button, alarm, door contact, Wiegand i nput, Wiegand output
Relay Adjustable Relay Output Time Lock Output Load	**One (NO, NC, Common)** 0-99 Seconds (5 seconds default) 2 Amp Maximum
Wiegand Interface Wiegand **Input** Wiegand Ouput **PIN** Output	**Wiegand 26-37 bits** 26-37bits (default: 26bits) 26-37bits (default: 26bits) 4bits, 8bits(ASCII), 10 digits Virtual Number (default: 4bits)
Environment Operating Temperature Operating Humidity	**Meets IP66** -40 C-60 C (-40 F-140 F) 10°A.RH- 98%RH
Physical Surface Finish Dimensions Unit Weight Shipping Weight	**Zinc-Alloy Enclosure** Powder Coat L148xW56xH22.5mm(SK5-X) L150xW51xH23mm(SK6-X) 500g 650g

Carton Inventory



INSTALLATION

- Remove the back cover from the unit
- Drill 2 holes(A,C) on the wall for the screws and one hole for the cable
- Knock the supplied rubber bungs to the screw holes(A,C)
- Fix the back cover firmly on the wall with 4 flat head screws
- Thread the cable through the cable hole(B)
- Attach the unit to the back cover



Wiring

Wire Color	Function	I Notes
Basic Standalone Wiring		
Red	AC&DC	12-28V AC/DC Power Input
Grey & Black	AC&DC	12-28V AC/DC Power Input
Black	GND	Negative Pole
Blue	Relay NO	Normally Open Relay Output
White & Black	Relay Common	Common Connection for Relay Output
Green & Black	Relay NC	Normally Closed Relay Output
Yellow	OPEN	Request to Exit(REX) Input

Pass-Through Wiring (Wiegand Reader or Controller)		
Green	D 0	Wiegand Input/Output Data 0
White	D 1	Wiegand Input/Output Data 1
Advanced Input and Output Features		
Grey	Alarm Output	Negative contact for Alarm
Brown	Contact Input	Door/Gate Contact Input (Normally Closed)
Brown & Black (SK6-X)	Door Bell A	Contact for Door Bell
Yellow & Black (SK6-X)	Door Bell B	Contact for Door Bell

Sound and Light Indication

Operation Status	LED	Buzzer
Stand by	Red light bright	–
Enter into programming mode	Red light shines	One beep
In the programming mode	Orange light bright	One beep
Operation error	–	Three beeps
Exit from the programming mode	Red light bright	One beep
Open lock	Green light bright	One beep
Alarm	Red light Shines quickly	Beeps

Basic Configure

Programming Step	Keystroke Combination
Enter Program Mode	* **(Master Code) #** (Factory default is 123456)
Exit Program Mode	*

Set Master Code

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Update Master Code	**0 (New Master Code) # (Repeat New Master Code)** *(*Master code is any 6 digits)
3. Exit Program Mode	*

Set Working Mode

Notes: the SK5-X/SK6-X has 3 working modes: Standalone Mode, Controller Mode, Wiegand Reader Mode, choose the mode you use.
(Factory default is Standalone Mode / Controller Mode)

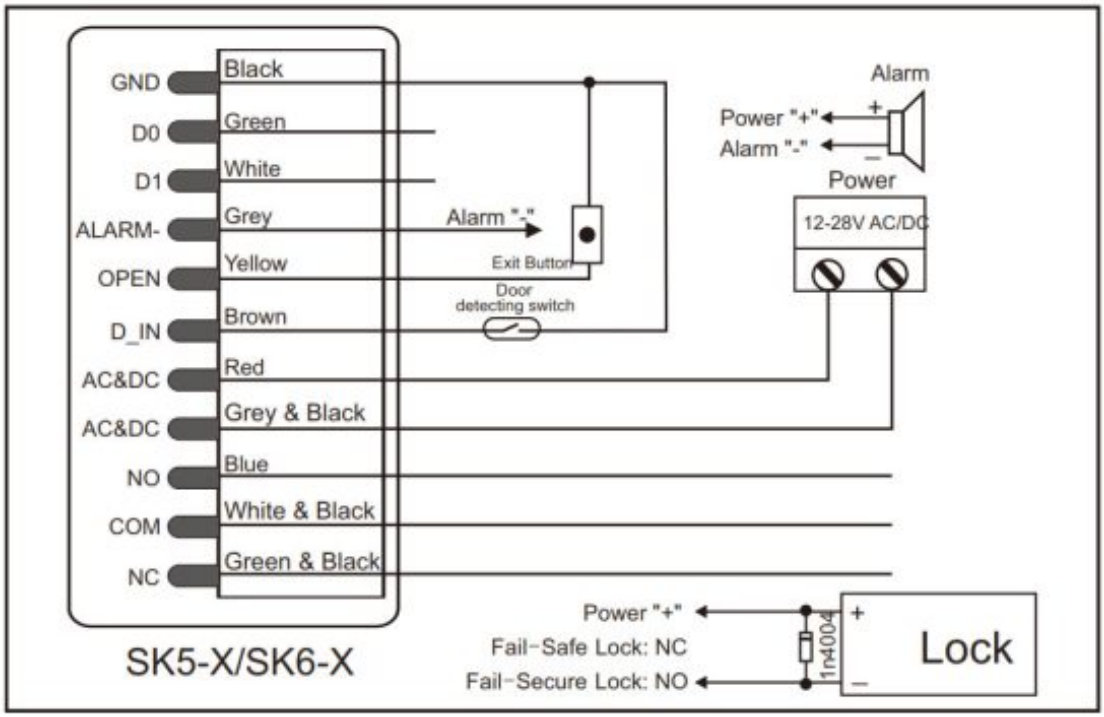
Programming Step	Keystroke Combination
1. Enter Program Mode	(Master Code) #
2. Standalone/Controller Mode OR 2. Wiegand Reader Mode	8 0 # (Factory default) 8 1 #
3. Exit Program Mode	*

STANDALONE MODE

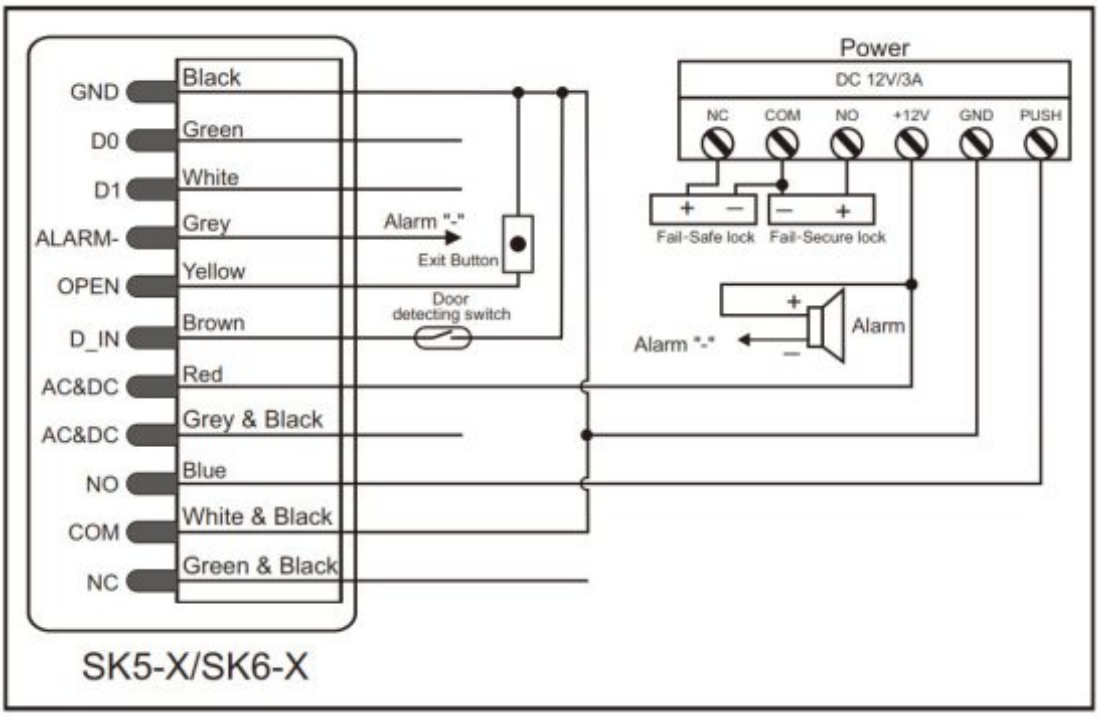
SK5-X/SK6-X can be worked as Standalone Reader for single door.
(Factory default mode)—8 0 #

Connection Diagram

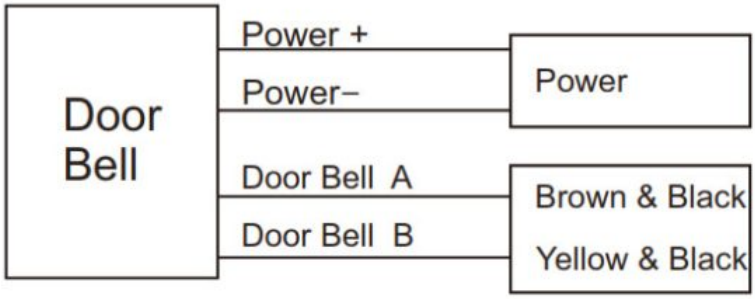
Common Power Supply:



Access Control Power Supply:



Door Bell Connect (for SK6-X only)



Attention:
Install a 1N4004 or equivalent diode is needed when use a common power supply, or the keypad might be damaged.
(1N4004 is included in the packing)
Programming
Programming will vary depending on access configuration.
Follow the instructions according to your access configuration.

Notes:

- User ID number: Assign a user ID to the access card / PIN in order to track it. The common user ID number can be any number from 1~598, the panic user ID is from 599~600. IMPORTANT: User ID is do not have to be proceeded with any leading zeros. Recording of User ID is critical.
  Modifications to the user require the User ID be available.
- Proximity Card: Any 125KHz industry standard 26 bits HID and
  EM cards and 13.56MHz Mifare card.
- PIN: Can be any 4~6 digits except 8888 which is reserved.

Add Common Users

Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**
Add Card User	
2. Add Card: Using Auto ID (Allows SK5-X/SK6-X to assign Card to next available User ID number)**OR**	**1 (Read Card) #** The cards can be added continuously.
2. Add Card: Select Specific ID (Allows Master to defi ne a specific User ID to associate the card to) **OR**	**1 (User ID) # (Read Card) #** (User ID is any number from 1-598)
2. Add Card: by Card Number **OR**	**1 (Input 8/10 digits Card number) #**
2. Add Card: Block Enrolment (Allows Master to add up to 598 card to the Reader in a single step) Takes 2 minutes to program.	**1 (User ID) # (Card quantity) # (The first card numbe r) #** Cards' number must be consecutive; Card quantity=nu mber of cards to be enrolled.
Add PIN User	
2. Add PIN: Using Auto ID (Allows SK5-X/SK6-X to assign PIN to next available User ID number) **OR**	**1 (PIN) #** The PINs can be added continuously. *(PIN: 4-6 digits)*

2. Add PIN: Select Specific ID (Allows Manager to define a specific User ID to associate the PIN to)	**1 (User ID) # (PIN) #** The user ID is any number from 1-598
3. Exit	*

SK5-X/SK6-X Simplified Instruction	
Function Description	**Operation**
Enter the Programming Mode	*- **123456 -#** then you can do the programming (123456 is the factory default master code)
Change the Master Code	**0 – New** Code – # – Repeat the New Code – # (code: 6 digits)
Add Card User	1 – Read Card -# (can add Card continuously)
Add PIN User	**1 -PIN -#** (PIN Length: 4-6 digits)
Delete User	**2 – Read Card – #** for Card user **2 -PIN -#** for PIN user
Exit From the Programming Mode	*
How to be granted access	
Card User	**Read card**
PIN User	**Input PIN #**

Add Panic Users

Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**
2. Add Card: **OR** 2. Add PIN:	**1 (User ID) # (Read Card / Input 8/10 digits Card number) #** **1 (User ID) # (PIN) #** (User ID is any number from 599-600)
3. Exit	*

Change PIN Users

Programming Step	**I Keystroke Combination**
Note: Below is done outside programming mode, users can undertake this themselves	
1. Change PIN: By Card (There will auto allocate PIN(8888) to cards when adding)	* **(Read Card) (Old PIN) # (New PIN) # (Repeat New PIN) #**
2. Change PIN: By PIN	* **(User ID) # (Old PIN) # (New PIN) # (Repeat New PIN) #**
3. Exit	*

Delete Users

Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**

Delete Common Card User	
2. Delete Card – By Card **OR** 2. Delete Card – By ID number **OR** 2. Delete User – By Card number	**2 (Read Card) #** The cards can be deleted continuously. **2 (User ID) #** **2 (Input 8/10 digits Card number) #**
Delete Common PIN User	
2. Delete PIN – By PIN **OR** 2. Delete PIN – By ID number	**2 (Input PIN) # 2 (User ID) #**
Delete Panic User	
2. Delete Panic Card User **OR** 2. Delete Panic PIN User	**2 (User ID) #** **2 (User ID) #**
Delete All Users	
2. Delete All Users	**2 (Master Code) #**
3. Exit	*

Set Relay Configuration
The relay configuration sets the behaviour of the output relay on activation.

Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**
2. Pulse Mode **OR** 2. Toggle Mode	3 **(1-99) #** (factory default) The relay time is 1-99 seconds. (1 is 50mS) (Default is 5 seconds) 3 **0 #** Sets the relay to ON/OFF Toggle mode
3. Exit	*

Set Access Mode
For Multi cards/ PINs access mode, the interval time of reading cards/inputting PINs can not exceed 5 seconds, or else, the SK5-X/SK6-X will exit to standby automatically.

Programming Step	**Keystroke Combination**
1.Enter Program Mode	* **(Master Code) #**
2. Card access **OR** 2. Card+PIN access **OR** 2. Card or PIN access **OR** 2. Multi cards/PINs access	**4 0 #** **4 1 #** **4 2 #** (Factory default) **4 3 (2-9) #** (Only after reading 2-9 cards or PINs, the door can be ope ned)
3. Exit	*

Door Detecting
Door Open Too Long (DOTL) warning: When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened normally, but not closed after 1 minute, the inside buzzer will beep automatically to remind people to close the door and continue for 1 minute before switching off automatically.

Door Forced Open warning: When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened by force, or if the door is opened after 60 seconds of the electro -mechanical lock not closed properly, the inside buzzer and alarm output will both operate. Enter Master code # or valid user card /PIN to silence.

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. To disable door open detection **OR** 2. To enable door open detection 3. Exit	**5 0 #** (factory default) **5 1 #** *

Set Strike-out Alarm
The strike-out alarm will engage after 10 failed card/PIN attempts (Factory default is OFF). It can be set to deny access for 10 minutes after engaging or disengage only after entering a valid card/PIN or Master code.

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Strike-Out OFF **OR** 2. Strike-Out ON **OR** 2. Strike-Out ON (Alarm)	**6 0 #** (factory default) **61 #** Access will be denied for 10 minutes **6 2 #**
3. Exit	*

Set Audible and Visual Response

Programming Step	Keystroke Combination	
1. Enter Program Mode	* (Master Code) #	
2. Control Sounds **OR** 2. Control LED **OR** 2. Control Keypad Backlit	OFF=70# OFF=72# OFF = 7 4 #	ON=71# ON=73# ON = 7 5 # (factory defaults are ON)
3. Exit	*	

Master Cards Usage

Using Master Cards to add and delete card / PIN users	
Add a User	**1. (Read Master Add Card)** **2. (Read User Card)** Repeat Step 2 for additional user cards **3. (Read Master Add Card)**
Delete a User	**1. (Read Master Delete Card)** **2. (Read User Card)** Repeat Step 2 for additional user cards **3. (Read Master Delete Card)**

Users Operation & Reset to Factory Default

- Open the door: Read valid user card or inputting valid user PIN
- Remove Alarm: Read valid user card or inputting valid user PIN,
  or input **Master Code #**
- **To reset to factory default & Add Master Cards: power off, press** the exit button, hold it and power on, there will be two beeps, and the LED light turns into yellow, release the exit button, then read any two cards(can be 125KHz EM card, 125KHz HID card or 13.56MHz Mifare card, the LED will turn into red, means reset to factory default successfully. Of the two cards reading, the 1st one is Master Add Card, the 2nd one is the Master Delete Card.

  Remarks:

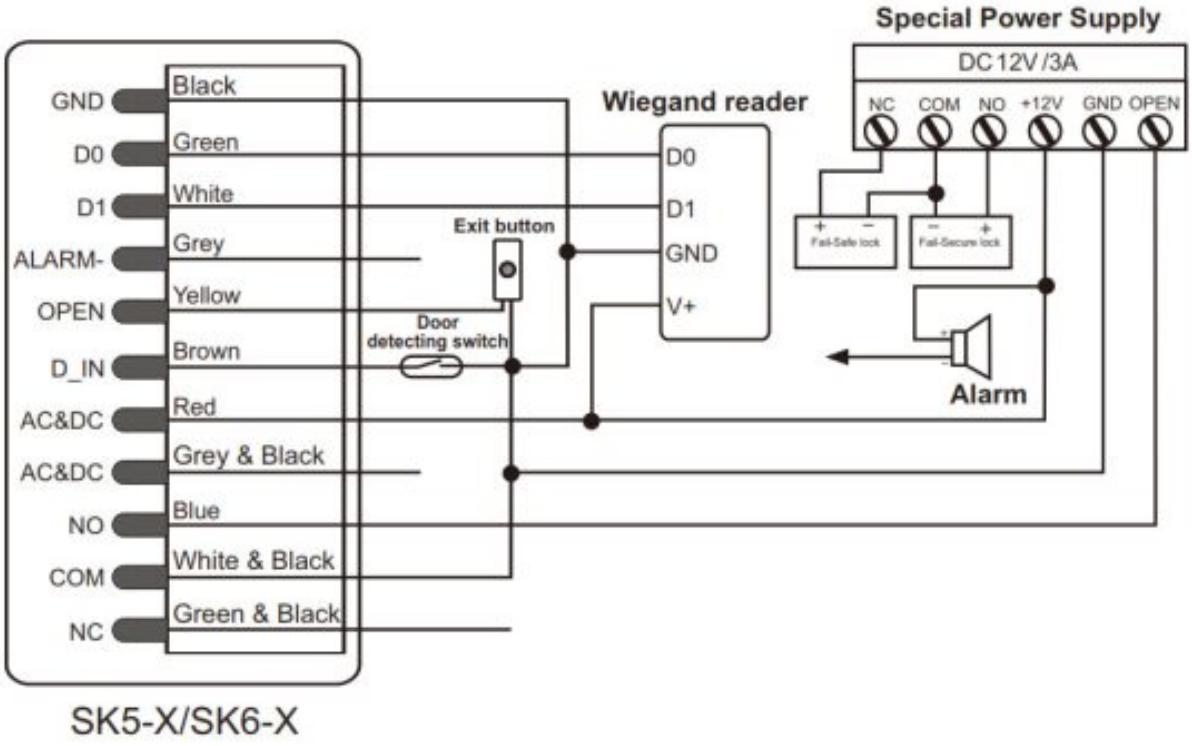
  ① If no Master Cards added, must press the Exit Button for at least 10 seconds before release.

  ② Reset to factory default, the user's information is still retained.

CONTROLLER MODE

SK5-X/SK6-X can work as Controller, connected with the external Wiegand reader. (Factory default mode)—8 0#

Connection Diagram



Attention: Install a 1N4004 or equivalent diode is needed when use a common power supply, or the reader might be damaged.
(1N4004 is included in the packing)

Set Wiegand Input Formats

Please set the Wiegand input formats according to the Wiegand output format of the external Reader.

Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**
2. Wiegand input bits	**8 (26-37) #** (factory default is 26bits)
3. Exit	*

Programming

- Basic Programming is the same as Standalone Mode
- There are some exceptions for your attention:

  SK5-X/SK6-X Connected with External Card Reader:

  If EM card reader or HID card reader: users can be added/deleted on either SK5-X/SK6-X or external reader.

  If Mifare reader: users can only be added/deleted on external reader.

SK5-X/SK6-X Connected with Fingerprint Reader:

For example:
Connect F2 as the fingerprint reader to SK5-X/SK6-X, it is of two steps to enroll the valid fingerprint.
Step 1: Add the Fingerprint (A) on F2
Step 2: Add the same Fingerprint(A) on SK5-X/SK6-X:

1.	Enter Program Mode* **(Master Code) #**
2. **OR** **2.**	**1 (Press Fingerprint A once on F2) #** (ID auto allocated) 1 (User ID) # (Press Fingerprint A on F2) # (Select specific ID)
3.	Exit: *

SK5-X/SK6-X Connected with Keypad Reader:

SK5-X/SK6-X Connected with Keypad Reader:
The keypad reader can be 4 Bits, 8 Bits (ASCII), or 10 Bits output format. Choose the below operation according to the PIN output format of your reader.

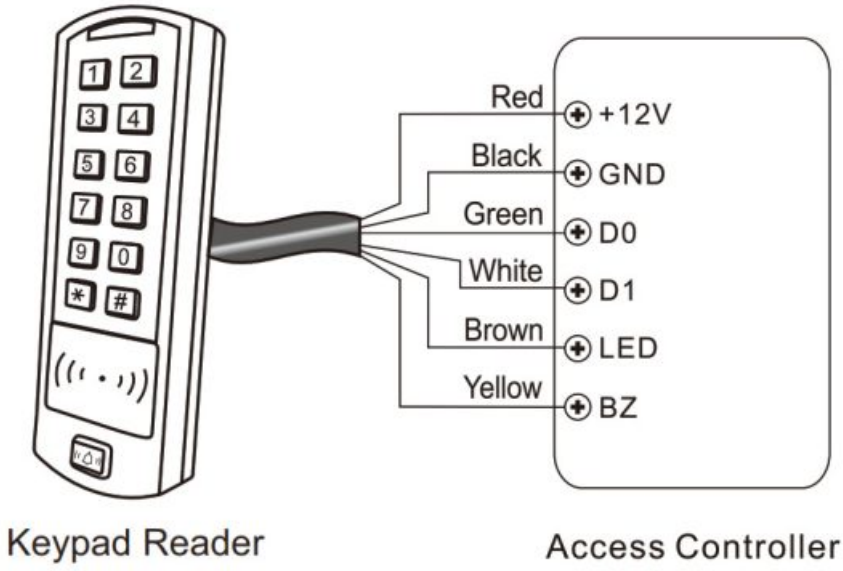
Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**
2. PIN input bits	8 **(4 or 8 or 10) #** (factory default is 4bits)
3. Exit	*

Remarks: 4 means 4 bits, 8 means 8 bits, 10 means 10 digits virtual number.
Add PIN Users:
To add PIN users, after enter into programming mode on SK5-X/SK6-X, PIN(s) can be input/ added on either SK5-X/SK6-X controller or the external
Keypad Reader.
Delete PIN Users: the same way as add users.

WIEGAND READER MODE

SK5-X/SK6-X can work as Standard Wiegand Reader, connected to the third party Controller— 8 1 #

Connection Diagram



Note:

- When set into Wiegand Reader mode, nearly all settings in Controller Model will become invalid. And Brown & Yellow wires will be redefined as below:
  -Brown wire: Green LED light control
  -Yellow wire: Buzeer control
- If you need to connect Brown/Yellow wires:
  When the input voltage for LED is low, the LED will turn into Green; and when the input voltage for Buzzer is low, it will sound.

Set Wiegand Output Formats
Please set the Wiegand output formats according to the Wiegand input format of the controller.

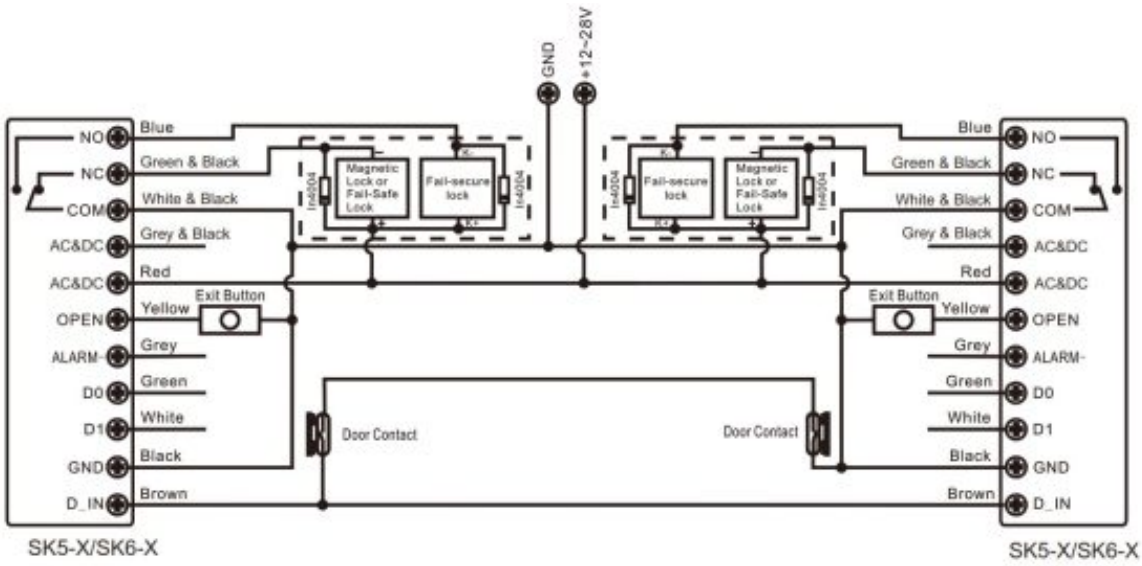
Programming Step	**Keystroke Combination**
1. Enter Program Mode	* (Master Code) #
2. Wiegand output bits PIN output bits	**8 (26-37) #**(factory default is 26bits) **8 (4 or 8 or 10) #** (Factory default is 4bits)
3. Exit	*

ADVANCED APPLICATION

Interlock

The SK5-X/SK6-X supports the Interlock funciton. It is of two keypads for two doors, and mainly used for banks, prisons, and other places where a higher level security is required.

Connection Diagram:



Remarks: The Door Contact must be installed and connected as the diagram.

Let's name the two SK5-X/SK6-X Keypads as "A"and "B" for two doors "1" and "2"

Step1: Enroll the users on Keypad A and Keypad B

Step2: Set both of the two readers (A and B) to Interlock function

Programming Step	**Keystroke Combination**
1. Enter Program Mode	* **(Master Code) #**
2. Interlocked-OFF **OR** **2. Interlocked-ON**	**9 0 #** (factory default) **9 1 #**
3. Exit	*

The interlock operation is finished, When and only door 2 is closed, the user can read the valid card or input PIN on Reader A, door 1 will open; then when and only door 1 closed, read valid card or input PIN on Reader B, door 2 will open.

FCC STATEMENT :

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and

(2)This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Documents / Resources

	**Secukey SK5-X Access Controller/Reader** [pdf] User Manual 5293, 2ATDU-5293, 2ATDU5293, SK5-X Access Controller Reader, SK5-X, Access Controller Reader, SK6-X

Manuals+,