SK Anti-Vandal RFID Reader/KeyPad

User Manual (V05/24)

Waterproof Standalone Keypad Access Control

+12V / GND	Power
NO / COM / NC	Lock
OPEN	Push Button

Standalone Mode

Lock

Power Supply

Exit Button

INTRODUCTION

The keypad is a single-entry multi-function Access Control with integrated keypad and card reader. It is designed and manufactured to perform in a wide range of indoor, outdoor and harsh environments.

The keypad supports up to 1000 users (990 normal users + 10 visitor users) in multiple access configurations (Card, PIN, or Card + PIN). The built in card reader supports 125KHz EM / 13.56MHz Mifare frequency cards. The relay can operate in Pulse Mode (suitable for access control) or Toggle Mode (suitable for arming/disarming alarms, switching lights, machines....etc)

The keypad offers advanced programming features like: Facility code; Wiegand 26-37bits input and 26bits output interface. These features make it an ideal choice for door access not only for small shops and domestic households but also for commercial and industrial applications such as factories, warehouses, laboratories, banks and prisons.

Features
> Waterproof, meets IP66
> Vandal resistant metal enclosure
> One programmable relay output
> Standalone or pass-through operation
> 1000 users (990 normal users + 10 visitor users)
> Access method: Card, PIN, Card+PIN
> Card type: 125KHz EM card / 13.56MHz Mifare card
> Latch mode to hold door or gate open
> Wiegand 26-37bits input and 26bits output
> Facility code programmable
> Integrated alarm & buzzer output
> Low power consumption (55mA)
> Anti-tamper alarm
> Backlit keypad
> Multi-color LED status display
> 12-28V AC/DC power input

Specifications

User Capacity	1000 Cards/PINs
Normal Users	990
Visitor Users	10
Operating Voltage	**12-28V AC/DC**
Idle Current	35mA
Active Current	80mA

| PIN length	4-6 digits
Proximity Card Reader Radio Technology Read Range	**EM/Mifare (Optional)** 125KHz EM / 13.56MHz Mifare Card 3-6cm
Wiring Connections	Electric Lock, Exit Button, DOTL, External Alarm, Wiegand (in/out)
Relay Adjustable Relay Output Time Adjustable Alarm Output Time Lock Output Load Alarm Output Load	**One (NO, NC, COM)** 0~99 Seconds (5 seconds default) 0~3 minutes (1 minute default) 3 Amp Maximum 3 Amp Maximum
Wiegand Interface	Wiegand 26 bits input/output
Environment Operating Temperature Operating Humidity	**Meets IP66** –40°C~60°C, or -40°F~140°F 10%~ 90% Non–Condensing
Physical Surface Finish Dimensions Unit Weight Shipping Weight	**Zinc-Alloy Enclosure** Powder Coat L117 x W76 x H25mm 600g 700g

Carton Inventory
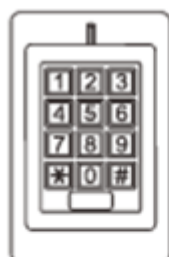
Access Control

Diode 1N4004 (For relay circuit protection)

Self Tapping Screws

Wall Anchors

Screw Driver

Master Add Card

Master Delete Card

Master Cards
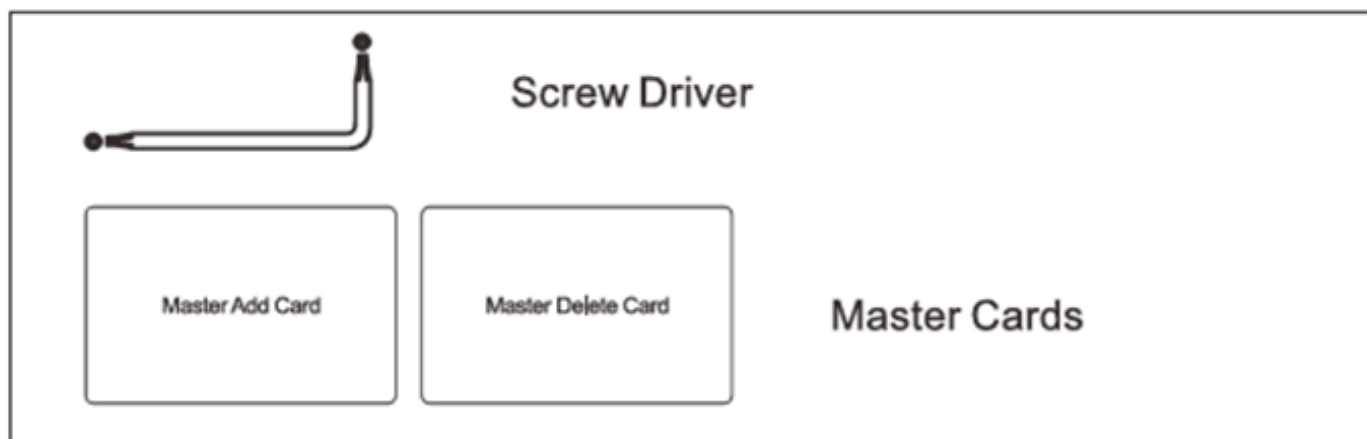
INSTALLATION

Install

> 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)
> 2 flat head screws
> Thread the cable through the cable hole(B)
> Attach the unit to the back cover
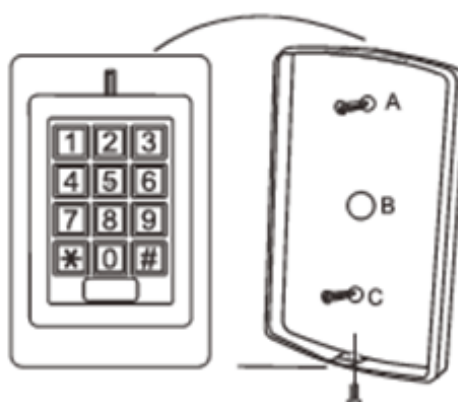
Wiring

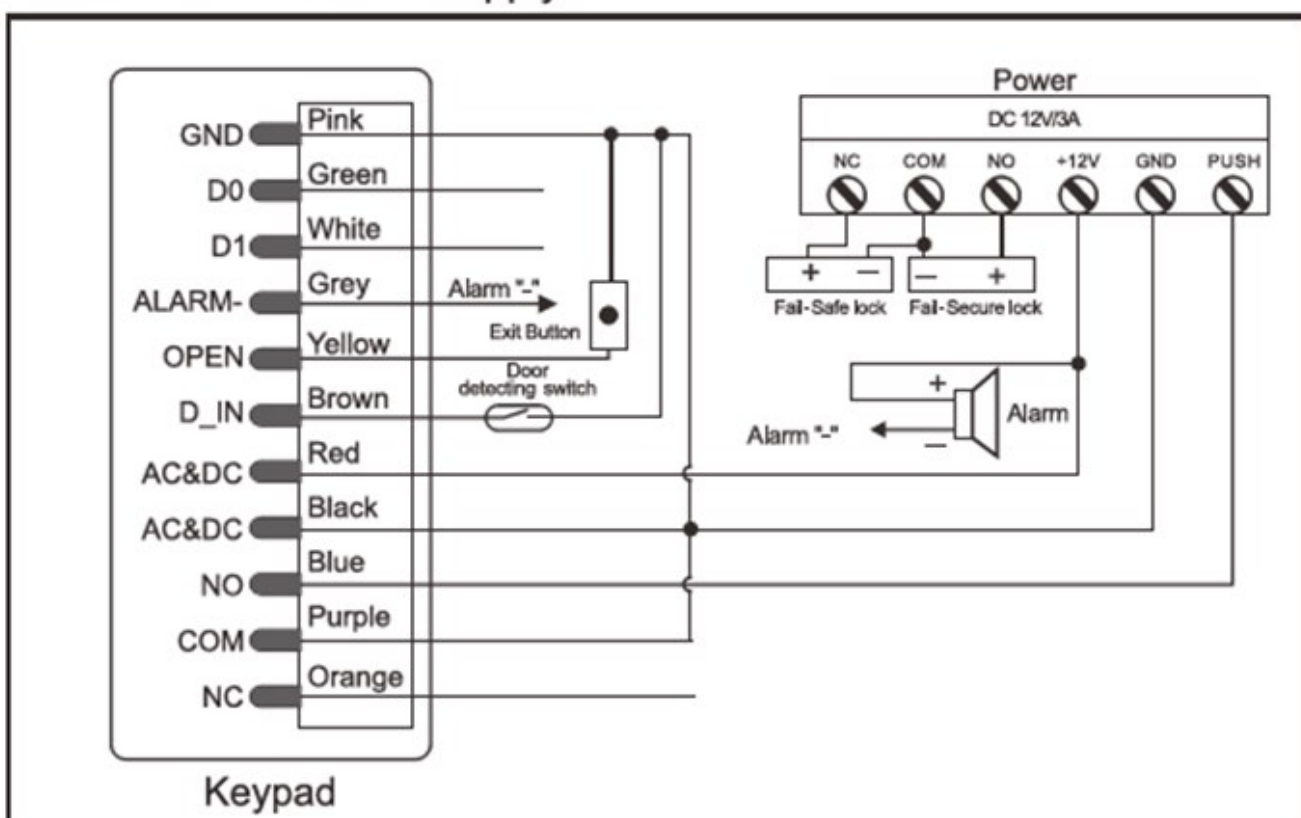| Wire Colour	Function	Notes
Basic Standalone Wiring		
Red	AC&DC	12–28V AC/DC Regulated Power Input
Black	AC&DC	12–28V AC/DC Regulated Power Input
Pink	GND	Negative Pole
Blue	NO	Normally Open Relay Output
Purple	COM	Common Connection for Relay Output
Orange	NC	Normally Closed Relay Output
Yellow	OPEN	Request to Exit Button
Advanced Input and Output Features		
Green	D0	Wiegand Input/Output Data 0
White	D1	Wiegand Input/Output Data 1
Grey	Alarm –	Alarm Negative
Brown	D_IN	Door Status Detecting

Connection Diagram

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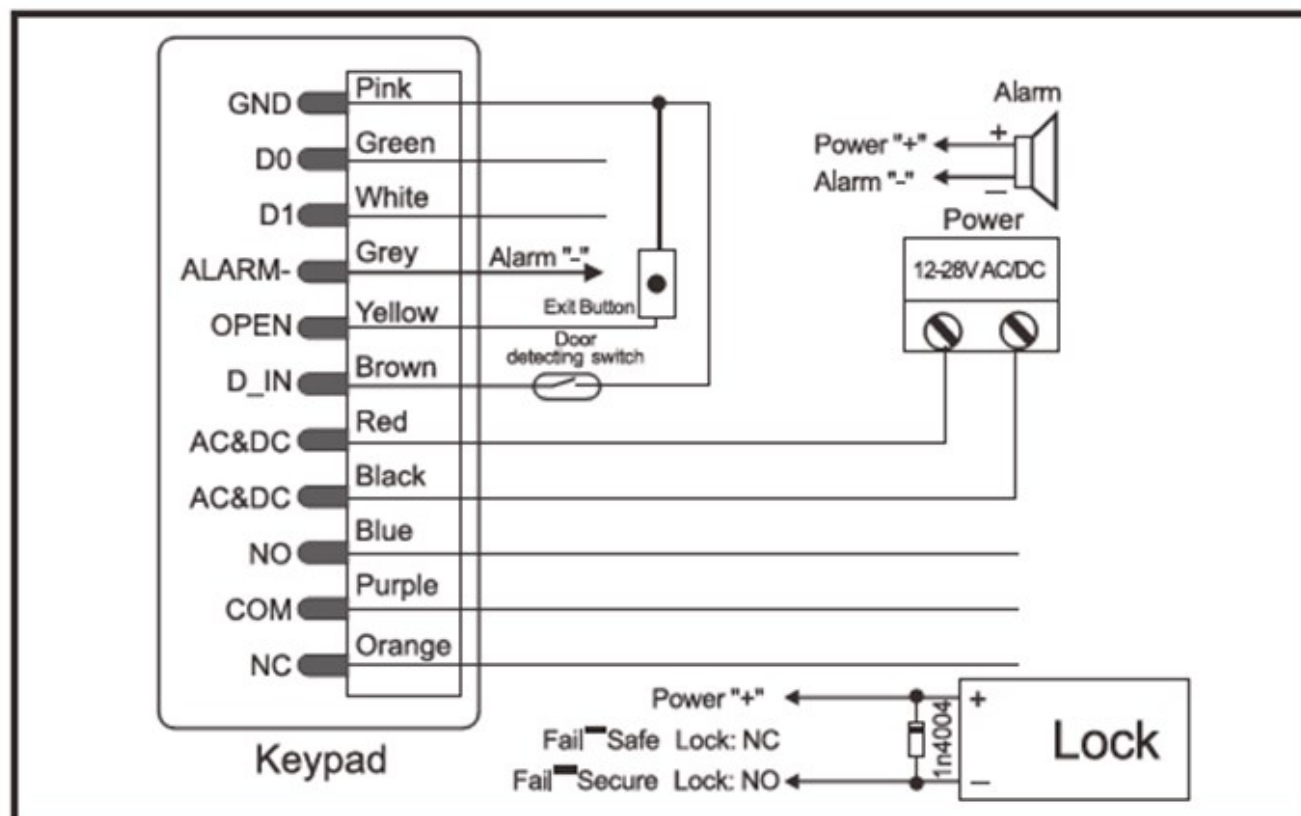
Attention: Install a 1N4004 or equivalent diode is needed when use a common power supply, or the reader might be damaged. (1N4004 is included in the packing)

Access Control Power Supply:

To add a **PIN** user	`1` `User ID number` `#` `PIN` `#`
	 OR `1` `PIN` `#`
	 The ID number is any number between 0~989. The PIN is any 4~6 digits between 0000~999999 with the exception of 1234 which is reserved. Users can be added continuously without exiting from programming mode as follows:
	 `1` `User ID no 1` `#` `PIN` `#`
	 `User ID no 2` `#` `PIN` `#`

To delete a **PIN** user - By user ID	`2` `User ID number` `#` Users can be deleted continuously without exiting programming mode
To delete a **PIN** user - By PIN	`2` `Input PIN` `#` Users can be deleted continuously without exiting programming mode
To change the **PIN** of a PIN user (This step must be done out of programming mode)	`*` `ID number #` `Old PIN #` `New PIN #` `New PIN #`
To add a **card** user (Method 1) This is the fastest way to add cards using ID number auto generation	`1` `Read card / Input 8/10 digits card number` `#` Cards can be added continuously without exiting programming mode
To add a **card** user (Method 2) This is the alternative way to add cards using User ID Allocation. In this method a User ID is allocated to a card. Only one user ID can be allocated to a single card	`1` `ID number` `#` `Read card / Input 8/10 digits card number` `#` The ID number is any number between 0~989.
To delete a **card** user - By card Note: users can be deleted continuously without exiting programming mode	`2` `Read Card` `#`
To delete a **card** user - By user ID This option can be used when a user has lost their card	`2` `User ID` `#`
To delete a card user - By card number	`2` `Input 8/10 digits card number` `#`
To set a card and PIN user in card and PIN mode `3` `1` `#`	

Simplified Instruction	
Function Description	**Operation**
Enter the Programming Mode	**∗ (Master Code) #** (123456 is the factory default master code)
Change the Master Code	**0 (New Master Code) # (Repeat New Master Code) #** (code: 6 digits)
Add Card User	**1 (Read Card)**
Add PIN User	**1 (User ID) # (PIN) #** The ID number is any number between 0-999. The PIN is any 4-6 digits between 0000~999999
Delete User	**2 (Read Card) #** **2 (User ID) #**
Exit from the Programming Mode	**∗**
How to be granted access	
Card User	**Read Card**
PIN User	**Enter (PIN) #**

To Add a **card** and **PIN** user (The PIN is any 4~6 digits between 0000~999999 with the exception of 1234 which is reserved.)	Add the card as a card user Press `*` to **exit from the programming mode** Then allocate the card a PIN as follows: `*` Read card `1234 #` `PIN #` `PIN #`
To change a **PIN** in card and PIN mode (Method 1) Note that this is done outside programming mode so the user can undertake this themselves	`*` Read Card Old PIN `#` New PIN `#` New PIN `#`
To change a **PIN** in card and PIN mode (Method 2) Note that this is done outside programming mode so the user can undertake this themselves	`*` ID number `#` Old PIN `#` New PIN `#` New PIN `#`
To delete a **Card and PIN** user just delete the card	`2` User ID `#`
To set a card user in card mode `3` `2` `#`	
To add and delete a **card** user	The operating is the same as adding and deleting a card user in `3` `0` `#`
To delete All users	
To delete **All users** Note that this is a **dangerous** option so use with care	`2` Master Code `#`
To unlock the door	
For a **PIN** user	Enter the PIN then press `#`
For a **card** User	Read card
For a **card** and **PIN** user	Read card then enter PIN `#`

1.2 Visitor User Setting

There are 10 groups Visitor PIN/card available, the users can be specified up to 10 times of usage, after a certain number of times, i.e. 5 times, the PIN/card become invalid automatically.

To Add Visitor PIN User	1 User ID number # 0~9 # PIN # PIN is any 4~6 digits number except 1234
To Add Visitor Card User	1 User ID number # 0~9 # Read card/ Input 8/10 digits card number #
To Delete Visitor Users	2 User ID #
Note: Number of time is 0~9, 0=10 times User ID number must be any number between 990~999 Visitor PIN/card must be unique, should be distinguished from common PIN and card	

1.3 Master Cards Using

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

1.4 Relay Setting (Pulse mode, Toggle mode)

Pulse mode (factory default)	4 1~99 # The door relay time is between 1~99 seconds, the factory default setting is 5 seconds.
Toggle mode (**Latch mode**)	4 0 #

1.5 Door Detecting, Alarm, Sound and Light Settings

Door Open Detection
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. The Alarm Output time is adjustable between 1~3 minutes with the factory default setting 1 minute.

To set alarm time	5 0~3 # (Factory default is 1 minute) Enter Master Code # or valid user card/ PIN to silence
To disable door open detection	6 0 # (Factory default)
To enable door open detection	6 1 #
Set Audible and Visual Response	
LED always OFF	6 2 #
LED always ON	6 3 # (Factory default)
Keypad Backlit always OFF	6 4 #
Keypad Backlit always ON	6 5 #
Keypad Backlit Automatic OFF	6 6 # (Factory default) Automatic OFF after 20 seconds, it will go ON by pressing any key(this key isn't taken into consideration)
Disable Sound	6 7 #
Enable Sound	6 8 # (Factory default)
Set Keypad Lockout & Alarm Output If there are 10 invalid cards or 10 incorrect PIN numbers in a 10 minute period either the keypad will lockout for 10 minutes or the alarm will operate for 10 minutes, depending on the option selected below.	
Normal status: No keypad lockout or alarm	7 0 # (Factory default)
Keypad Lockout	7 1 #
Alarm Output	7 2 #

Sound and Light Indication

| Operation Status	Red LED	Green LED	Yellow LED	Buzzer
Power on	Bright	—	—	Short Ring
Stand by	Bright	—	—	—
Press Keypad	—	—	—	Short Ring
Operation successful	—	Bright	—	Short Ring
Operation failed	—	—	—	3 Short Ring
Enter into programming mode	Bright	—	—	Short Ring
In the programming mode	—	—	Bright	—
Exit from the programming mode	Bright	—	—	Short Ring
Open the door	—	Bright	—	Short Ring
Alarm	Bright	—	—	Alarm

WIEGAND MODE

Pass-through Mode
The Keypad Operates as a Wiegand Output Reader)

In this mode the keypad supports a Wiegand 26bits output so the
Wiegand data lines can be connected to any controller which supports a
Wiegand 26 bit input, and then the keypad will operate as a slave reader.

Wiring Diagram
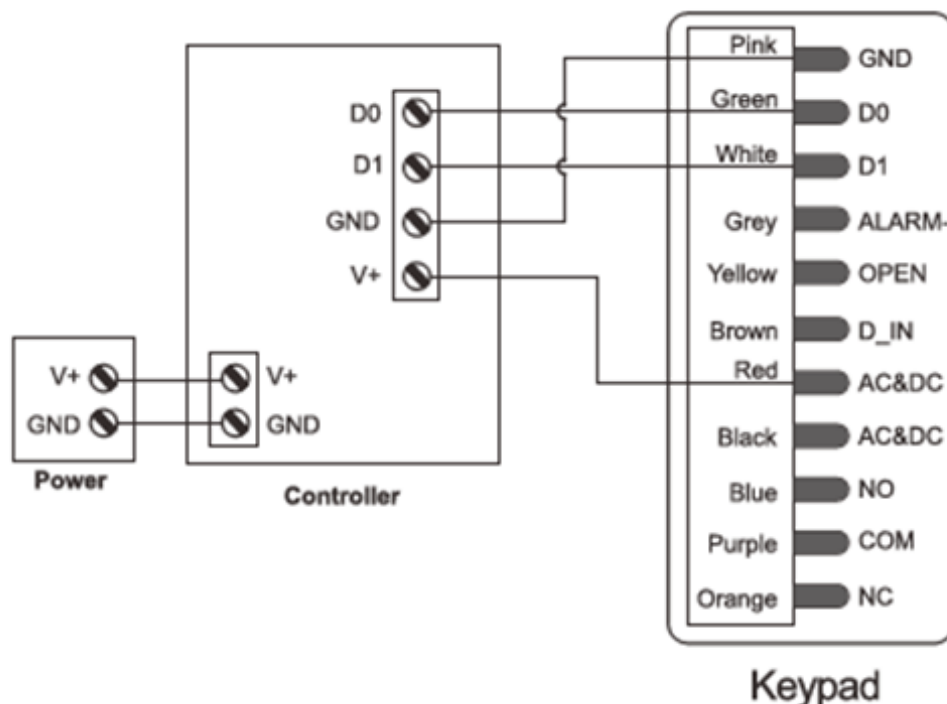
Keypad

Transmission Format
Keypad Transmission:
①When the keypad facility code is 0 (Factory default is 0)
The Reader will transmit the PIN data when it receives the last key (#)
press after PIN code.
Format: PIN Code (any 4~6digits between 0000~999999)
Example:
PIN code: 123456
Press 123456 #, then the output format will be: 00123456

②When the keypad facility code is between 1~255
The reader will transmit the facility code and PIN Data (for 4 digits PIN only)
when it receives the last key (#) after PIN code.

Example:
PIN code: 3456
Facility code: 5
Press 3456 #, then the output format will be: 00503456

SET DEVICE ID

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Set Device ID	8 (0-255) # (Factory default is 0)
3. Exit	*

Proximity Card Transmission:
The Reader will transmit the card data when it reads the Card.
Format: Card Number
(Note: no matter the card is valid or invalid, the data will be transmitted)

Controller Mode

The Keypad Operates as a Controller

The keypad supports a Wiegand 26-37bits input, so an external Wiegand device with a 26-37bits output can be connected to the Wiegand input terminals on the keypad. Either an ID card reader (125 KHz) or an **Mifare** card reader (13.56MHz) can be connected to the keypad. Cards can be added at either reader or controller.

Wiring Diagram

Keypad