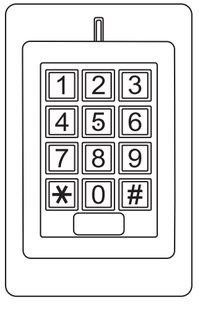
SK1-Waterproof Dual-relay Access Control



User Manual

INTRODUCTION

The SK1 is a dual- entry multi-function Access Controller with integrated keypad and card reader. It is designed and manufactured to perform in a wide range of indoor, outdoor, and harsh environments.

The SK1 supports up to 1100 users in multiple access configurations (Card, PIN, or Card + PIN). The built in card reader supports EM 125KHz frequency cards.

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)

The SK1 offers advanced programming features like: block enrollment, advanced relay programming, and door bell. 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

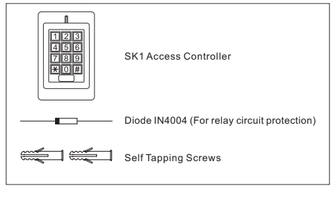
> Waterproof(IP66)
> Vandal Resistant Enclosure
> Backlit Keypad
> Multi-color LED status display
> Two Programmable Relay Output
> 1100 Users (Card/PIN/ Card+PIN)
> Card Block enrollment
> Integrated Alarm Buzzer & Output
> Low power consumption (55mA)
> Anti-Tamper Alarm
> Latch Mode to hold door or gate open
> Relay 2 supports external door bell
> 12-24V DC/12-18V AC Power input

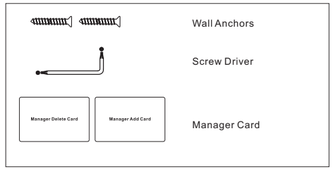
Specifications

User Capacity	**1100 Cards/PINS**
Zone 1	1000
Zone 2	100
Operating Voltage	**12~24V DC / 12~18V AC**
Idle Current	55mA
Active Current	80mA

Keypad	**12 Key (3*4)**
Proximity Card Reader	**EM**
Radio Technology	125 KHz Industry Standard Proximity Card
Read Range	3-6cm
Wiring Connections	Electric Lock, Exit Button, DOTL, External Alarm, Door Bell
Relay	**Two (NO, NC, COM)**
Adjustable Relay Output Time	1-99 Seconds (5 seconds default)
Adjustable Alarm Output Time	1-3 minutes (1 minute default)
Lock Output Load	3 Amp Maximum
Alarm Output Load	3 Amp Maximum
Environment	**Meets IP66**
Operating Temperature	-30℃~60℃, or -22°F~140°F
Operating Humidity	10%~90% Non-Condensing
Physical	**Zinc-Alloy Enclosure**
Surface Finish	Powder Coat
Dimensions	L 120 X W 76 X H 25 (mm)
Unit Weight	600g
Shipping Weight	700g

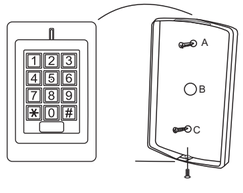
Carton Inventory





INSTALLATION

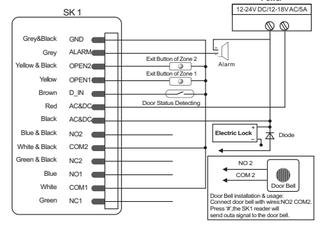
> Remove the back cover from the unit
> Drill 2 holes(A,C) on the wall for the screws and one hole for the cable
> Knock the supplied rubber bungs to the screw holes(A,C)
> Fix the back cover firmly on the wall with 4 flat head screws
> Thread the cable through the cable hole(B)
> Attach the unit to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



Wiring

Wire Color	Function	Notes
Basic Standalone Wiring		
Red	AC&DC	12~24V DC/12-18V AC Regulated Power Input
Black	AC&DC	12~24V DC/12-18V AC Regulated Power Input
Grey&Black	GND	Negative Pole
Blue	NO 1	Normally Open Relay 1 output
White	COM1	Common Connection for Relay 1 output
Green	NC 1	Normally closed Relay 1 Output
Yellow	OPEN1	Request to Exit input 1(REX)
Advanced Input and Output Features		
Blue&Black	NO 2	Normally Open Relay 2 Output
White&Black	COM2	Common Connection for Relay 2 Output
Green&Black	NC 2	Normally closed Relay 2 Output
Yellow&Black	OPEN2	Request to Exit input 2(REX)
Grey	Alarm	Alarm Negative
Brown	D_IN	Door status detecting

Connection Diagram



Remarks: the Zone 2, it can be used to operate the door bell when no need to operate a second door. The wiring is connecting the door bell to NO2 and. COM2. Press #, the keypad will send out a switching signal to the door bell, as long as you press the" #", the door bell will continuous operate, it will stop until you release the " #"

Connect the negative pole of the lock to NC is for Fail –safe lock.
Connect the negative pole of the lock to NO is for Fail-secure lock.

FUNCTION DESCRIPTION

Relay operation (Pulse mode and Toggle mode)
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)

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

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

Master Card
SK1 master can use master cards to program user cards into and out of the system. There are two pre-programmed master cards (an Add Card, and a Delete Card) to allow rapid card enrollment. It is for Zone 1 only.

Anti Tamper Alarm
The SK1 uses a LDR (light dependent resistor) as an anti tamper alarm. If the keypad is removed from the cover then the tamper alarm will operate.

PROGRAMMING

Configure the Keypad
Change the configure settings according to your application (optional). Multiple configuration settings can be changed at one time: enter program mode, change desired settings, then exit program mode.

Set Master Code
The 4-6 digit Master Code is used to prevent unauthorized access to the system. To interface with the SK1, the manager will need a Master Code (factory default code: 666666). We highly recommend immediate update and recording of your Master Code.

SK1- Simplified Instruction	
Function Description	**Operation**
Enter the Programming Mode	**＊(Master Code) #** (666666 is the default factory master code)
Change the Master Code	**0 (New Master Code) # (Repeat New Master Code) #** (code: 4-6 digits)
Add Card User	**1 (Read Card) #** (for Zone 1) **2 (Read Card) #** (for Zone 2)
Add PIN User	**1 (User ID 1~1000) # (PIN)#** (for Zone 1) **1 (User ID 1001 ~1100) # (PIN) #** (for Zone 2) The PIN is any 4-6 digits between 0000 ~ 999999
Delete User	**3 (Read Card) # 3 (User ID) #**
Exit from the programming mode	＊
How to be granted access.	
Card User	**Read card**
PIN User	**Enter (PIN) #**

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

SET ACCESS CONFIGURATION
> **Card or PIN (Default):** The User must present a valid Card to the SK1 or enter their PIN code followed by the # key, in order to be granted access.
> **Card + PIN:** The User must first present a valid Card to the SK1 and then enter their PIN code followed by the # key, in order to be granted access.

Programming Step	Keystroke Combination
1. Enter Program Mode	＊ **(Master Code) #**
2.Card or PIN Zone 1 Zone 2 OR 2.Card + PIN Zone 1 Zone 2	 **4 1 0 #** **4 2 0 #** **4 1 1 #** **4 2 1 #**
3. Exit Program Mode	＊

User Settings

To enter the programming mode	＊ Master code #
To exit from the programming mode	＊
Note that to undertake the following programming, the master user must be logged in	
Note: When adding users, if the Card or Pin user has been enrolled already, you can not add it again on the same zone, or the device will give a bleep as error. But it is ok to enroll the same card or Pin for the both zones.	

Factory default setting: Card or PIN mode
To set users for Zone 1. (4 1 0 #)

To add **PIN** users	1 User ID number # PIN # The ID number is any number from 1~ 1000. 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 programming mode as follows: 1 User ID no 1 # PIN # User ID no 2 # PIN #
To delete **PIN** users	3 User ID number # Users can be deleted continuously without exiting programming mode.
To change the **PIN** of a PIN user (Note: This step must be done out of programming mode)	＊ ID number # Old PIN # New PIN # Repeat new PIN #
To add **Card** Users. (Method 1) This is an easy way to enter cards with auto-generated ID numbers. The ID number will start from 1 if no user has been programmed	1 Read card # Card can be added continuously without exiting programming mode.
To add **Card** Users. (Method 2) This is the alternative way to enter 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 # Card # The ID number can be any number among 1~ 1000.
To add a **series cards** users-**Block Enrolment** The card number must be consecutive. (This operation is only for Zone 1)	1 ID number # 8 digits or 10 digits Card number # Card quantity # Card quantity is between 1-1000.
To **delete Card** users by cards. Note: Users can be deleted continuously without exiting programming mode.	3 Read card # The device can automatically identify the card of Zone 1 or Zone 2.

To **delete Card** users by user ID. This option can be used when a user has lost their card.	3 User ID #
To **delete card** users by card number	9 Input 8 digits or 10 digits Card number # Cards can be deleted continuously without exiting from programming mode.
To set users for Zone 2. (4 2 0 #)	
To set **Pin** user for Zone 2 is the same as Zone 1, only the ID number is 1001-1100 for Zone 2. To set **Card** user for Zone 2 is the same as Zone 1, with the exception of adding **Card** users with auto-generated ID numbers and Block enrolment as below.	
To add Card Users. (Method 1) Auto-generated ID numbers.	2 Read card # Card can be added continuously without exiting programming mode.

Card and PIN Mode	
To set users for Zone 1. (4 1 1 #)	
To Add a **card** and **Pin** user (The PIN is any four digits between 0000 & 999999 with the exception of 1234 which is reserved.)	Add the card as for 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	3 Read Card # or 3 User ID #
To set users for Zone 2. (4 2 1 #) The operation is the same as Zone 1.	

To set **Card** user only.(in this mode, users can only be valid by card)	
To set **Card** user only.	4 1 2 #, Zone 1 4 2 2 #, Zone 2 Entry is by **Card only**

Relay Setting (Pulse mode, Toggle mode)

Pulse mode (Factory default)	
Pulse mode-Door relay time setting	For Zone 1: 5 1 1~99 # For Zone 2: 5 2 1~99 # The door relay time is between 1~99 seconds, the factory default setting is 5 seconds. 1 means Zone 1. 2 means Zone 2.

Toggle mode	
Toggle mode	For Zone 1: 5 1 0 # For Zone 2: 5 2 0 #

Door, Alarm, Acoustic Signal, Door Bell 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 forced open, the inside buzzer and alarm output will both operate.

To disable door open detection. (Factory default setting)	6 0 #

To enable door open detection	6 1 # It is optional to connect the D_IN line to LOCK1 or LOCK 2
Keypad Lockout & Alarm Output options. 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 setting)
Keypad Lockout	7 1 #
Alarm Output	7 2 #
Alarm output time	
To set the alarm output time (1-3 minutes) Factory default is 1 minute	8 1~3 #
Acoustic Signal The acoustic signal can be set on or off. When on, the device will give the voice when press the keys; when off, the device will be in silent.	
Normal status: On	8 6 # (Factory default setting)
Acoustic signal Off	8 7 #
Change Zone 2 to Door Bell (When no need to operate a second door, Zone 2 can be set to operate the Door Bell. The wiring is connecting the door bell to COM2 and NO2. Press #, the keypad will send the signal to the door bell.	
Zone 2	8 8 # (Factory default.)
Door bell	8 9 #
To remove the alarm	
To reset the Door Forced Open warning	Read valid card or Master Code #
To reset the Door Open Too Long warning	Close the door or Read valid card or Master Code #

OTHERS

Using Master Cards

Using Master Card (It is only available for Zone 1)	
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)**

Reset to Factory Default:
This will reset the SK1 to the factory default but all card/PIN information will still be retained. This will also require reprogramming of the Master Add and Delete Cards. **NOTE:** This is useful if the original Master Add and Delete Cards have been lost.

1. Power the SK1 down.
2. Press * and hold the button while power is restored to the keypad.
3. Release the button and wait until the amber LED shines.
4. Present any 125KHz proximity EM card or the Master Add Card (provided) to the SK1. This card is now the Master Add Card.
5. Present any 125KHz proximity EM card or the Master Delete Card (provided) to the SK1. This card is now the Master Delete Card.

When the red LED begins to blink, the SK1 has been successfully reset.

Erase all Users
This will delete ALL User data of Zone1 or Zone 2 or Both.
1, Enter Program Mode by press: *(Master Code) #.
2, Press 30000 # (for Zone 1)
Or
2, Press 90000 # (for Zone 2)
3, Exit: *
All configuration data is retained.

Sound and Light Indication

Operation Status	Red LED	Green LED	Bule LED	Sounds
Power on	Flashing			Short Single Beep
Stand by	Flashing			
Press Keypad	Flashing			Short Single Beep
Enter Master Code Entry Mode	ON			Short Single Beep
In program mode	ON	Single Flash		Short Single Beep
Entered Program Step Successfully	ON	Single Flash		Short Single Beep
Entered Program Step Incorrectly				3 Short Beeps
Exit from the programming mode	Flashing			Short Single Beep
Entry Granted for Zone 1		ON		Short Single Beep
Entry Granted for Zone 2			ON	
Alarm Mode Engaged	Flashing			Alarm