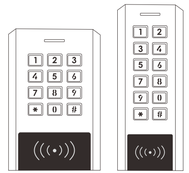
Waterproof
Standalone Dual-relay Access Control



User Manual

INTRODUCTION

The device is a waterproof 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 device supports 999 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)

Features

> Waterproof, conforms to IP66
> Metal case, anti-vandal
> Fashion design, all-metal key button
> Two relays, 999 users
> PIN length: 1~8 digits
> Card type: 125KHz EM card / tag
> Multi-color LED status display
> Integrated alarm & buzzer output, can set the volume from level 0~5
> Pulse mode, Toggle mode
> Built in light dependent resistor (LDR) for anti tamper
> Backlit keypad, can set always ON, always OFF, or turn off automatically after 60 seconds
> Relay 2 supports external door bell
> Low temperature resistance(-40°C)
> Voltage: 12~28V AC/DC

Specifications

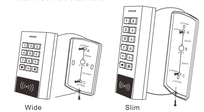
User Capacity	**999**
Operating Voltage Idle Current	**12~28V AC/DC** < 50mA
Proximity Card Reader Radio Technology Read Range	**EM** 125KHz 2~6 cm
PIN Length	**1~8 digits**
Wiring Connections	**Relay Output, Exit Button, Alarm, Door Contact, Doorbell**
Relay Adjustable Relay Output Time Lock Output Load	**Two (NO, NC, Common)** 0~300 Seconds (5 seconds default) 2 Amp Maximum
Environment Operating Temperature Operating Humidity	**Meets IP66** -40°C ~ 60°C (-40°F~ 140°F) 0%RH~98%RH
Physical Color Dimensions Unit Weight Shipping Weight	**Zinc-Alloy** Silver L114.5 x W75 x D22mm (Wide) L134 x W55.5 x D21mm (Slim) 360g (Wide) / 340g (Slim) 440g (Wide) / 420g (Slim)

Carton Inventory

Diode IN4004 (For relay circuit protection)
Wall Anchors
Self Tapping Screws: Φ4*25mm
Screw Driver

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	12-28V AC/DC Regulated Power Input
Black	AC&DC	12-28V AC/DC Regulated Power Input
Green	NC1	Normally Closed Relay 1 Output
White	COM1	Common Connection for Relay 1 Output
Blue	NO1	Normally Open Relay 1 Output
Yellow	OPEN1	Request to Exit input 1 (REX)
Grey	GND	Negative Pole
Black&Green	NC2	Normally Closed Relay 2 Output
Black&White	COM2	Common Connection for Relay 2 Output
Black&Blue	NO2	Normally Open Relay 2 Output
Orange	OPEN2	Request to Exit Input 2 (REX)
Advanced Input and Output Features		
Purple	Alarm -	Alarm Negative
Brown	D_IN	Door Status Detecting

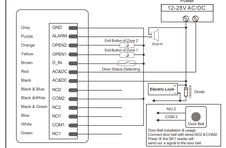
Sound and Light Indication

Operation Status	LED	Buzzer
Power supply connection	Blue ON 3 sec	ON 3 sec
Standby	Blue blinking 0.3 sec. ON / 2 sec. OFF frequency	-
Waiting for Master code after pressing *	Yellow blinking 0.5 sec frequency* Timeout = 60 sec	ON 1 x 0.5 sec

In programming mode	Yellow ON	-
Card correct reading in programming mode	Green ON 1 x 0.5 sec	ON 1 x 0.5 sec
Card incorrect reading in programming mode	Red blinking 5 x 0.2 sec	Blinking 5 x 0.2 sec
Correct step in programming mode	Green blinking 2 x 0.5 sec	Blinking 2 x 0.5 sec
Incorrect step in programming mode	Red blinking 5 x 0.2 sec	Blinking 5 x 0.2 sec
Relay 1 activated	Green ON during activation time	ON 1 x 0.5 sec
Relay 2 activated	Blue ON during activation time	ON 1 x 0.5 sec
Relays 1 + 2 activated	Green / Blue ON alternatively 1 sec. / 1 sec during activation time	ON 1 x 0.5 sec
Card correct reading and waiting the PIN code in Card + PIN mode	Blue blinking 1 sec. ON / 1 sec. OFF frequency Time out = 10 sec	*
Power supply connection	Red blinking 5 x 0.2 sec	Blinking 5 x 0.2 sec
Factory default reset	Green blinking 4 x 0.5 sec	Blinking 4 x 0.5 sec
Alarm	Red blinking 0.2 sec frequency *	Blinking 0.2 sec frequency*

*frequency means that the LED is blinking ON/OFF during the same time.
Example: blinking 1 sec. frequency = 1 sec. ON / 1 sec. OFF / 1 sec. ON / 1 sec. OFF / ...

Connection Diagram



Remarks: The relay 2 can use to operate the doorbell when no need to operate a second door. The wiring is connecting the door bell to NO2 and COM2. Press "0 #", the reader will send out a switching signal to the doorbell.
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.

Simplified Instruction	
Function Description	**Operation**
Enter the Programming Mode	* **(Master Code) #** *(888888 is the factory default master code)*
Change the Master Code	**0 (New Master Code) #** **(Repeat New Master Code) #** *(master code: 4~8 digits, except 00000000)*
Add Card User	**11 (User ID) # (Relay Selection) # (Read Card) #** *Relay selection: 1 = relay 1 only, 2 = relay 2 only, 12 = relays 1 & 2 simultaneously*
Add PIN User	**11 (User ID) # (Relay Selection) # (PIN) #** *(PIN code: 1~8 digits, except 0 and 00000000)*
Delete User	**2 (Read Card) #** **2 (User ID) #**
Exit from the programming mode	*
How to Release the Door	
Card User	Read card
PIN User	Enter (PIN) #
Card + PIN User	Read card, then enter (PIN) #

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 card/tag read or PIN input in Pulse Mode, the relay will operate, for the preset relay pulse time.
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.

Anti-tamper Alarm

The device 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

GENERAL PROGRAMMING INFORMATION

> User ID number: Assign a user ID to the access card / PIN in order to track it. The user ID number is 1-999
IMPORTANT: User IDs 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: 125KHz EM card / tag .
> PIN: Can be any 1~8 digits except 0 and 00000000.

Enter and Exit Program mode

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #** (Factory default is 888888)
2. 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 4~8 digits, except 00000000)
3. Exit Program Mode	*

Add Users

(User ID is any number from 1-999; PIN length: 1~8 digits except 0 and 00000000)

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Add Card Users by Reading Card **OR** 2. Add Card Users by Card Number **OR** 2. Add PIN Users	**11 (User ID) # (Relay Selection) # (Read Card) #** **11 (User ID) # (Relay Selection) # (Input 8~10 Digits Card Number) #** **11 (User ID) # (Relay Selection) # (PIN) #**

2. Add Card Users Successively **OR** 2. Add Card + PIN Users	**12 (Start User ID) # (Relay Selection) # (Read Card Successively) #** **15 (User ID) # (Relay Selection) # (PIN) # (Read Card) / (Input 8~10 Digits Card Number) #** Relay selection: 1 = relay 1 only, 2 = relay 2 only, 12 = relays 1 & 2 simultaneously
3. Exit	*

Remark: If the "Doorbell push button" mode is activated, it must not be possible to select the relay 2.

Delete Users

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Delete User - By card **OR** 2. Delete User - By Card number **OR** 2. Delete User - By User ID **OR** 2.Delete ALL Users	**2 (Read Card)** The cards can be deleted continuously **2 (Input 8~10 Digits Card number) #** **2 (User ID) #** **2 (00000000) #**
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 (factory default) Relay 1 Relay 2 **OR** 2. Toggle Mode Relay 1 Relay 2	**3 1 (1-300) #** **3 2 (1-300) #** The relay time is 1-300 seconds. (1 is 500mS.) (Default is 5 seconds) **3 1 0 #** **3 2 0 #** Sets the relay to ON/OFF Toggle mode
3. Exit	*

Set Doorbell Push Button Mode

(If press "0 #", it can activate the relay 2 with doorbell output)

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Activate Doorbell Push Button Mode **OR** 2. Deactivate Doorbell Push Button Mode	**4 1 # A #** (A = 1~300 = output activation time in seconds.) **4 2 # (factory default)**
3. Exit	*

Remark: If the relay 2 is registered with users, then it is not possible to activate the "Doorbell push button" mode

Set Keypad Backlight

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Always ON **OR** 2. Always OFF **OR** 2. Automatic OFF After 60 Seconds	**5 1 1 #** (factory default) **5 1 2 #** **5 1 3 #** If the keypad backlight is OFF, it will go ON by pressing any key (this key isn't taken into consideration).
3. Exit	*

Set Buzzer Volume Level

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Set Buzzer Volume Level	**6 1 (0~5) #** (factory default: 3) (0 means deactivate the buzzer sound)
3. Exit	*

Set Door Open Too Long Detection

(Need use with an external magnetic contact)

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Enable Door Open Detection 2. Disable Door Open Detection	**7 1 1 # A # B # C #** **7 1 2 #** (factory default)

Notes
A=1~300=The preset door open duration in seconds before the alarm start

B=1=Built-in buzzer ON while alarming
B=2=Built-in buzzer OFF while alarming

C=1=Enable external alarm output while alarming
C=2=Disable external alarm output while alarming

3. Exit	*

Reset of the alarm: Close the door or input a valid user.

Door Forced Open Detection

(Need use with an external magnetic contact)

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Enable Door Forced Open Detection 2. Disable Door Forced Open Detection	**7 2 1 # A # B # C #** **7 2 2 #** (factory default)

Notes
A=1~300=Alarm time in seconds

B=1=Built-in buzzer ON while alarming
B=2=Built-in buzzer OFF while alarming

C=1=Enable external alarm output while alarming
C=2=Disable external alarm output while alarming

3. Exit	*

Reset of the alarm: Close the door and after expiration of the programmed alarm time or input a valid user.

Set Strike-out Alarm

(The strike-out alarm will engage after 10 successive failed PINs/Cards attempts within 10 minutes)

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Set Strike-out Alarm ON 2. Set Strike-out Alarm OFF	**7 3 1 # A # B # C #** **7 3 2 #** (factory default)

Notes
A=1~300=Blocking and alarm time in seconds

B=1=Built-in buzzer ON while alarming
B=2=Built-in buzzer OFF while alarming

C=1=Enable external alarm output while alarming
C=2=Disable external alarm output while alarming

3. Exit	*

Reset of the alarm: After expiration the programmed alarm time.

Set Tamper Alarm

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Enable Tamper Alarm 2. Disable Tamper Alarm	**7 4 1 # A # B # C #** **7 4 2 #** (factory default)

Notes
A=1~300=Alarm time in seconds

B=1=Built-in buzzer ON while alarming
B=2=Built-in buzzer OFF while alarming

C=1=Enable external alarm output while alarming
C=2=Disable external alarm output while alarming

3. Exit	*

Reset of the alarm: Close the product and after expiration the programmed alarm time or input a valid user

Users Operation & Reset to Factory Default

- Open the door
Card/tag: Read a valid card/tag.
PIN code: Enter a valid user PIN code #.
Card/tag + PIN code: Read a valid card/tag and enter the associated user PIN code #.

- Reset to factory default
Power OFF, press "*" and hold it during power ON until LED blinks green 4 x 0.5 sec. + 4 x 0.5 sec. beeps.
Correct step: Green LED 4 x 0.5 sec. + 4 x 0.5 sec. beeps.
Incorrect step: Red LED 10 x 0.2 sec. + 10 x 0.2 sec. beeps.