

User Manual

ATLO-KRMD-520 / ATLO-KRMD-510

1. Description

The unit is single door multifunctional standalone access controller or a Wiegand output keypad or card reader. It is suitable for mounting either indoor or outdoor in harsh environments. It is housed in a strong, sturdy and vandal proof Zinc Alloy electroplated case which is available in either a bright silver or matt silver finish. The electronics are fully potted so the unit is waterproof and conforms to IP68. This unit supports up to 2000 users in either a Card, 4 digit PIN, or a Card + PIN option. The inbuilt card reader supports 125KHZ EM cards, 13.56MHz Mifare cards. The unit has many extra features including lock output current short circuit protection, Wiegand output, and a backlit keypad. These features make the unit 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.

2. Features

- Waterproof, conforms to IP65/IP68
- Strong Zinc Alloy Electroplated anti-vandal case
- Full programming from the keypad
- 2000 users, supports Card, PIN, Card + PIN
- Can be used as a stand alone keypad
- Backlight keys
- Wiegand 26 input for connection to external reader
- Wiegand 26 output for connection to a controller
- Adjustable Door Output time, Alarm time, Door Open time
- Very low power consumption (30mA)
- Fast operating speed, <20ms with 2000 users
- Lock output current short circuit protection
- Easy to install and programme
- Built in buzzer
- Red, Yellow and Green LEDS display the working status

3. Specification

Input Voltage AC/DC 12V

Idle Current <25mA

Lock output load <1A

Alarm output load <1A

Ring bell load <1A

Card reading distance 40mm Max

Card Frequency: 125KHz for EM and HID
13.56MHz for Mifare

Card transmission format 26-37 bit wiegand

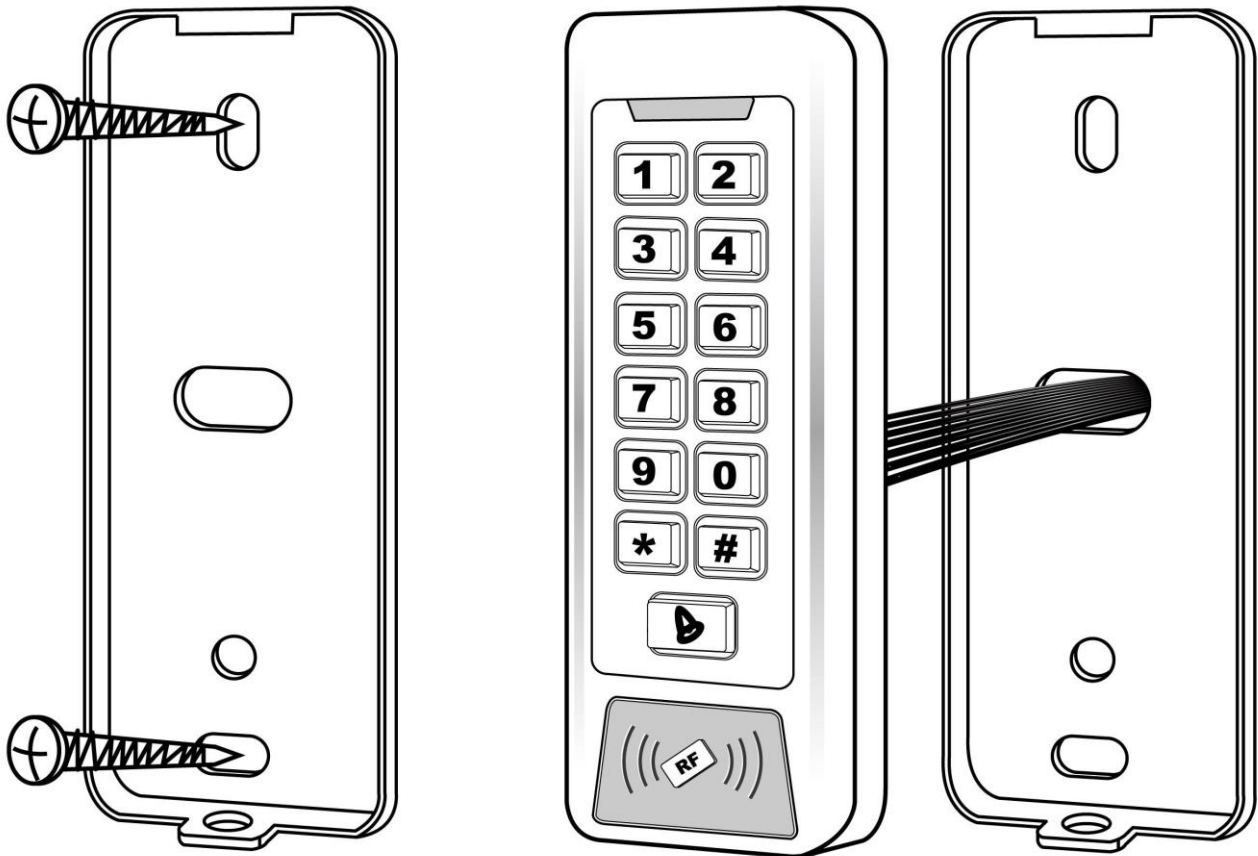
Keypad transmission format:4bit,8bit and Virtual card number

Operating Temperature:-45°C~55° C

Operating Humidity:0%~95%

4.Installation

- Remove the back cover from the keypad using the supplied special screw driver
 - Drill 2 holes on the wall for the Self tapping screws and 1 hole for the cable
 - Put the supplied rubber bungs to into the two holes
 - Fix the back cover firmly on the wall with 2 Self tapping screws
 - Thread the cable through the cable hole
- Attach the keypad to the back cover.



5.Wiring

ZONE1				ZONE2		
No.	Marks	Color	Description	Marks	Color	Description
1	BELL_A	pink	Doorbell button	D0	green	Wiegand output D0

2	BELL_B	pink	Doorbell button	D1	white	Wiegand output D1
3	ALARM+	red	Alarm anode	AC1	red	AC1 (+12V)
4	AC2	black	AC input	GND	black	GND
5	OPEN2	yellow	Exit button	OPEN1(LED)	yellow	Exit button (for green LED)
6	D_IN2	brown	Door contact	D_IN1(BZ)	brown	Door contact(for buzzer)
7	ALARM2-	gray	Alarm 2	ALARM1-	gray	Alarm 1
8	NO2	Blue	Relay 2 NO end	NO1	Blue	Relay 1 NO end
9	COM2	purple	Relay2Com	COM1	Purple	Relay1 Com
10	NC2	orange	Relay2 NC end	NC1	Orange	Relay1 NC end

6.Sound and Light Indication

Operation	LED Color	Buzzer
Standby	Red flash	
Press key		Di
Read card	Green	Di-
Door 1 Open	Green	Di-
Door 2 Open	Green Flash	Di-
Operation Successful	Green	Di-
Operation Failed		DiDiDi
PIN Inputting	Red	
Card&PIN Reading	Red	
Multi Card Reading	Red	
Under Menu	Red	
Under Setting	Orange	
Manager Card Enter	Orange	DiDi
Manager Card Exit	Red Flash	Di-
Alarm	Red Quick Flash	Alarm

7 Quick Programming Guide

7.1 Administrator Setting

Stand by	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	Red	Orange		
*	Master code#	00	New master code# Repeat new master code # (Note:Code length:6-8 digits)	Factory default:999999	Change the master code
		01	Read Manager Add Card	Default:Zone 1	Set Manager Add Card
		02	Read Manager Delete Card		Set Manager Delete Card
		03	Read Anti-duress card (Zone 1)		Set Zone1 Anti-duress card
		04	Read Anti-duress card (Zone 2)		Set Zone2 Anti-duress Card
		05	Anti-duress PIN# (Zone 1)		Set Zone1 Anti-duress PIN
		06	Anti-duress PIN# (Zone 2)		Set Zone2 Anti-duress PIN
		07	0000#		Delete All Users
		51			Master open Lock 1
	52			Master open Lock 2	

7.2 User setting for Zone 1

Standby	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	Red	Orange		
*	Master code #	11	Read card	Users can be added continuously without exiting programming mode	To add card users
			User ID number# read card		
			Card number#		
			ID number#card number#		
			User ID number#PIN#		
		12	Read card	Users can be deleted continuously without exiting programming mode	To delete users
			User ID number#		
			Card number#		
		13	0#	Default 2	Entry by Card
			1#		Entry by card+PIN
			2#		Entry by either Card or PIN
		14	0-99#	Default 5	Set door relay time
		15	0#	Default 0	Relay Setting-Pulse mode
			1#		Relay Setting-Toggle mode
		16	1-10#	Default 1	To set open door by multi cards
		17	User ID number#,card number#,card quantity#		To add a series cards users

User setting for Zone 2

Standby	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	red	orange		
*	Master code #	21	Read card	Users can be added continuously without exiting programming mode	To add card users
			User ID number# read card		
			Card number#		
			ID number#card number#		
			User ID number# PIN#		
		22	Read card	Users can be deleted continuously without exiting programming mode	To delete users
			User ID number#		
			Card number#		
		23	0#	Default 2	Entry by Card
			1#		Entry by card+PIN
			2#		Entry by either Card or PIN
		24	0-99#	Default 5	Set door relay time
		25	0#	Default 0	Relay Setting-Pulse mode
			1#		Relay Setting-Toggle mode
		26	1-10#	Default 1	To set open door by multi cards
		27	User ID number#,card number#,card quantity#		To add a series cards users

7.3 System Setting

Standby	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	red	orange		
*	Master code #	30	0-15#	Default 0	To set facility code
		31	0#	When device reset to factory default ,the setting is still valid	Wiegand reader
			1#		Standalone for single door (Factory default setting)
			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 door
		32	26-37#	Default 26	To set Wiegand format
		33	0-2#	When device reset to factory default ,the setting is still valid	To set keypad transmission format
		34	1-3#	Default 1	To set alarm time
		35	0#	Default 0	Safe mode 0
			1#		Safe mode 1
			2#		Safe mode 2

7.4 User optional setting

Standby	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	red	orange		
*	Master code #	41	0#		Buzzer will be in silence except enter the programming mode
			1#	Default 1	Buzzer will sound when press the key
		42	0#		Disable keypad backlight
			1#		Enable keypad backlight
			2#	Default 2	Automatic mode, Normally it is off(sleeping mode) but wake up with human approach
		43	0#		LED Light Disable when stand-by status
	1#	Default 1	LED flash when stand-by status		

Instruction:

1. Master code must be 6-8 digits, Anti-duress PIN must be 8 digits, user PIN is 4-6 digits, The 1st digit of user PIN and Anti-duress PIN in Zone1 must be 1; The 1st digit of user PIN and Anti-duress PIN in Zone 2 must be 2.
2. the user ID number is any number among 1-2000, Invalid 0 can be omitted; 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. Door open time is 0-99 second, 0=50mS
4. when register one card user into the device, the device will automatically generate a PIN 1234, this PIN can't open the door.
5. when an invalid master pin is pressed the device will go back to the standby status after 5 seconds, when a valid PIN is entered it will go back to standby status after 30 seconds.
6. in operating the keypad, pressing # means to confirm the input digits, In operation of a cycle adding or deleting cards, pressing # means to end the cycle operation and back the up operation; pressing * means to exit the operation.
7. When add a series cards, this unit will make the ID number and card number initial value; after adding one user, then it will increase the ID number and card number automatically, Until the specified number of card is added. the card number must be consecutive card quantity is between 1-2000.
8. Working mode and keypad transmission format have been set before shipping, customer can change according to requirement, but when device reset to factory default, the setting is still valid.
9. when users of Zone 1 is registered successfully, LED will turn green; when users of Zone 2 is registered successfully, LED will be green flash.

8. Administrator setting

Administrator setting on keypad

Press * [Master code #] factory default:999999,

8.1 Change the master code

Press 00 [new code #] [repeat new master code#]

Note: Master Code length:6~8 digits

8.2 Set Manager card

Set manager add card

Press 01 [read manager add card]

Set manager delete card

Press 02 [read manager delete card]

Note: when add the new manager card, the new one will automatically cover the old card, only one manager card for one device

8.3 Set Anti-duress card

Set Anti-duress card for Zone 1

Press 03 [read anti-duress card] (Zone 1)

Set Anti-duress card for Zone 2

Press 04 [read anti-duress card] (Zone 2)

Note: when add the new anti-duress card, the new one will automatically cover the old card, only one anti-duress card for one device

8.4 Set Anti-duress PIN

Set Anti-duress PIN for Zone 1

Press 05 [8-digit duress PIN#] (Zone 1)

Set Anti-duress card for Zone 2

Press 06 [8-digit duress PIN#] (Zone 2)

Note: 1.the 1st digit must be 1 for Zone 1

2.the 1st digit must be 2 for Zone 2

3. when set the new anti-duress PIN, the new one will automatically cover the old anti-duress PIN, only one anti-duress PIN for one device

8.5 Delete all users

Press 07 [0000 #]

Note: both zone 1 and zone 2 will be deleted. This is a dangerous option, so use with care.

8.6 Set administer open lock

Set administer open Lock 1

Press 51

Set administer open Lock 2

Press 52

8.7 Users setting for Zone 1

8.7.1 read card to add user

Press 11 [read card #] [read card]... [#]

8.7.2 use ID Number and read card to add user

Press 11 [ID number #] [read card] ... [ID number # read card] ... [#]

8.7.3 use card number

Press 11 [card number #] ... [card number#] ... [#]

Note: 1.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

2.Automatically increases, the user ID will be generated by the machine automatically, the range is 1 ~ 2000, and automatically search from 1 to 2000

8.7.4 Use ID number and card number to add user

Press

Note:1.ID number is 1~4 digits, the range is 1~2000, 1,01,001,0001, all these mean ID number 1.

2.add card user will generate one "1234" PIN, this PIN cant open door, only for user modify PIN

8.7.5 use ID number and PIN to add user

Press

Note: this fit PIN user, pin is irrelevant with card, the PIN is any 4-6 digits,1st digits must be 1 for Zone 1 with the exception of 1234 which is reserved.

8.8 Delete user

8.8.1 read card to delete user

Press ...

8.8.2 use ID number to delete user

Press ...

8.8.3 use card number to delete user

Press ...

8.8.4 delete all users

Press

Note: both zone 1 and zone 2 will be deleted.

8.9 Set opening door mode:

8.9.1 Entry is by card only

Press

8.9.2 Entry is by card and PIN together

Press

8.9.3 Entry is by card or PIN (factory default)

Press

8.10 set door relay time

Press

Note: 0~99 is to set the door delay time 0-99 seconds, factory default is 5 seconds

8.11 Set Relay mode

Relay setting -pulse mode

Press

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-Toggle mode

Press

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

8.12 Set opening door by multi cards

Press

Note: the door will be opened only after reading all the valid multi cards up to the card quantity setting. It is only for card entry mode(Factory default setting :1)

8.13 Add a series consecutive cards users

Press

Note: the card number must be consecutive card quantity is between 1~20000; card number is 10 digits or 8 digits

8.14 User setting for Zone 2

The method is the same with Zone 1, corresponding menu should be 21,22,23,24,25,26,27

8.15 system setting

8.15.1 To set facility code

Press

Note: code should be 0~15, factory default setting :0

8.15.2 Wiegang Reader

Press

8.15.3 standalone for single door(Factory default setting)

Press

8.15.4 Standalone for two doors

Press

8.15.5 With external reader for two doors

Press

8.15.6 Two units interlocked for two doors

Press

8.15.7 Anti-passback for Single door

Press

8.15.8 Anti-passback for two doors

Press

8.16 To set wiegang format

Press

Note: factory default setting :26

8.17 setting keypad transmission format

Press

Note: keypad transmission format is 0 1 2, factory default is 0; when device reset to factory default, the setting is still valid.

8.18 Setting alarm time

Press

Note: 1. factory default is 1 minute

2. when device reset to factory default, the setting is still valid.

8.19 setting safe mode

8.19.1 normal mode (factory default)

Press

8.19.2 dead mode

Press

If read invalid card or input wrong PIN 10 times in 10 minutes, system will be dead for 10 mins

8.19.3 alarm mode

Press

if read invalid card or input wrong PIN 10 times in 10 minutes, external alarm and built-in buzzer will work.

8.20 user optional setting

8.20.1 setting keypad tone OFF or ON

Press

The device will be in silence except enter the programming mode

Press

The device will give the voice when press the keys (Factory default setting)

8.20.2 setting keypad backlight

Disable keypad backlight

Press

Enable keypad backlight

Press

Automatic mode (factory default setting)

Press

Normally it is off(sleeping mode) but wake up with human approach

8.20.3 setting LED light (stand-by status)

Disable LED light

Press

Flash LED light (factory default setting)

Press

Manager card operation

8.21 add user for Zone1

Read Manager Add Card, read user cards continuously, read Manager Add card again.

8.22 delete user for Zone 1

Read Manager Delete Card, read user cards continuously, read Manager Delete card again.

9 User Operation

9.1 Entry by card mode,Set multi cards to open door when card quantity is 1

Read user card, lock will be unlocked

9.2 Entry by card mode,Set multi cards to open door when card quantity is 2-10

Read these cards one by one, present each card in 5 seconds, lock will be unlocked

9.3 Entry by card and PIN

Present card, then press PIN(4 to 6 digits), #, lock will be unlocked

9.4 Entry by card or PIN mode

Present card, lock will be unlocked

Or Press PIN(4 to 6 digits), #, lock will be unlocked

9.5 Relay mode

Relay setting -pulse mode

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

Relay setting-Toggle mode

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

9.6 Modifyuser PIN (no need enter programming mode)

*, read user card, press old PIN, #, new PIN # new PIN #

Or *, press ID number # old PIN# new PIN # new PIN #

Notice: user who dont have user card must get ID number and origin PIN from Admin, Zone 1 users PIN must start with 1, Zone 2 users PIN must start with 2.

10 Alarm function

10.1 Anti-tamper alarm

if the device is disassembled illegally, the buzzer and the external alarm will operate.

10.2 Door contact alarm

When connect with door contact, if the door is opened illegally, the buzzer and the external alarm will operate.

10.3 The Anti-duress alarm

When read zone 1 anti-duress card/input 8-digit anti duress PIN or zone 2 anti-duress card/input 8-digit anti duress PIN, then press #, The corresponding lock will open, at the same time, the external alarm will operate, but the device buzzer will not operate.

10.4 remove alarm

read valid user card, manager card or input master code, then alarm will be removed. If no any operation, alarm will be removed automatically after 1 min.

11 Multi working mode:

There are 7 working mode with this device.1.Wiegand Reader, 2.Standalone for single door, 3.standalone for two doors,4.with external reader for two doors 5.two units interlocked for two doors,6.Anti-passback for single door,7.Anti-passback for two door.

The factory default is Standalone for single door (we can change the default model according to customer order). User can modify the working mode, when the device reset to factory default,the setting is still valid.

11.1 Wiegand Reader mode

In this mode, the access control works as reader,connected with the common access controller, it has following function.

Modify master pin

Set facility code

Set the card transmission format

Set the keypad transmission format

Set optional setting

Anti-Tamper alarm

When LED level is low,indicator light(LED) will turn into green, after 30 seconds or LED level rising, LED 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 it used as the reader, both card number and keypad transmits in Wiegand format,the output data are shown by the low level of DO&D1 wire:

D0:low level means 0,green wire

D1:Low level means 1,white wire

The Pulse width of low level is 100uS,bit period is 1.6mS

The digits of card number can be set to 26-37 bit, 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 digits, 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:9999

Press 9999 #, then output format will be: 0015009999

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

11.2 Standalone for single door

In this mode, the device supports connecting external card reader for exiting door.

The users of Zone 1 or external can open the door by valid card or PIN.

11.3 Standalone for two doors

In this mode, users are for controlling two doors. Read valid card or input PIN of Zone 1 on this unit, door 1 will be opened; reading valid card or input PIN of Zone 2 on this unit, door 2 will be opened.

Remark: the common card for Zone 1 and Zone 2 can only open door 1.

11.4 With external reader for two doors

In this mode, this unit is for entering door 1, and external reader is for entering door 2.

Read valid card or input of Zone 1 on the machine, 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 this unit, and open door 2 on external reader.

11.5 Two units interlocked for two doors

The interlock 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 this machine, 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.

11.6 Anti-passback for Single door

In this mode, this unit install outside is for entering door, external reader inside for exiting door, the users can only enter door when read valid card on the machine, and exit from the inside external reader. If without the entering record from the machine, the users can not 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 1 are invalid.

11.7 Anti-passback for two doors

In this mode, this unit 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 this unit, and exit from door 2 when read valid card on external reader. If without the entering record from door 1, the users can not 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.

12 diagram for 7 working mode

12.1 Wiegand Reader mode

12.2 Standalone for single door

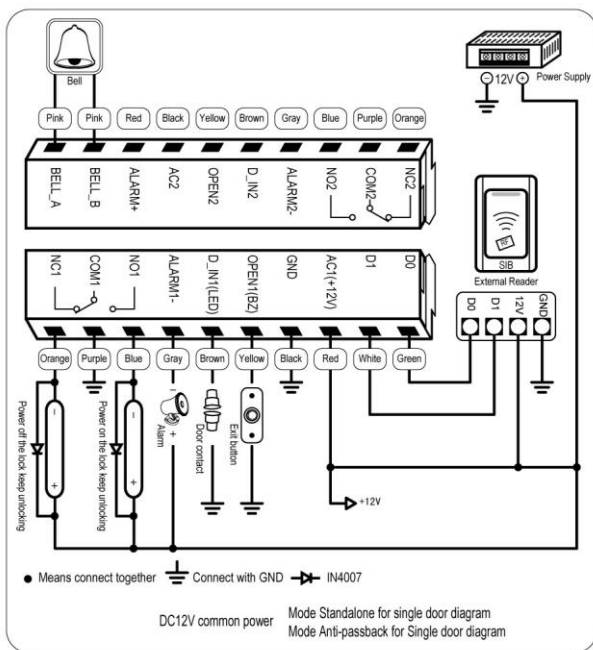
12.3 Standalone for two doors

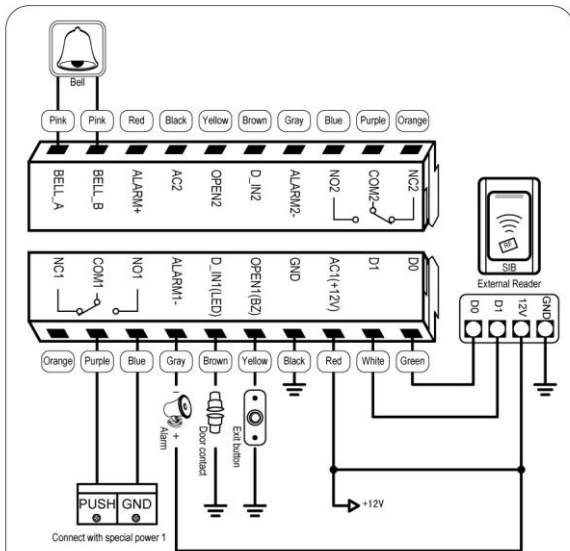
12.4 With external reader for two doors

12.5 Two units interlocked for two doors

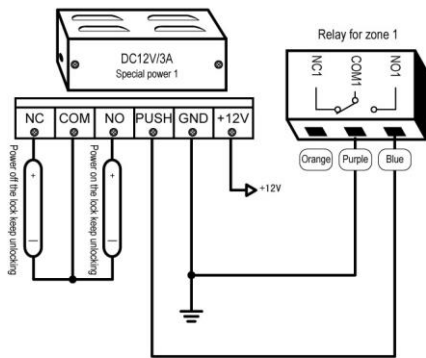
12.6 Anti-passback for Single door

12.7 Anti-passback for two doors



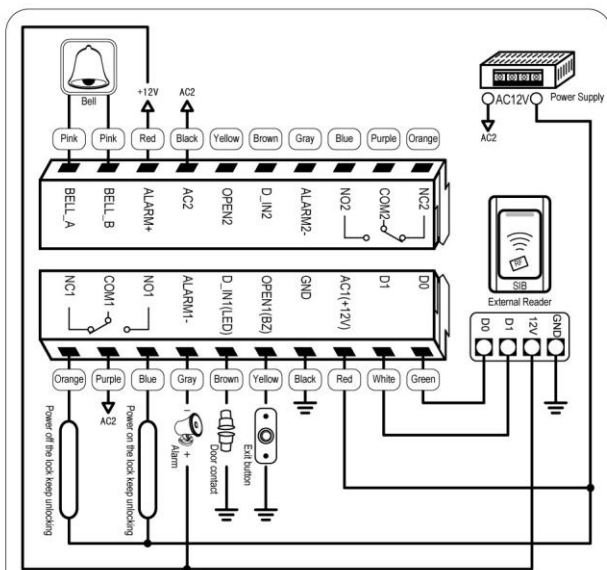


● Means connect together Connect with GND IN4007



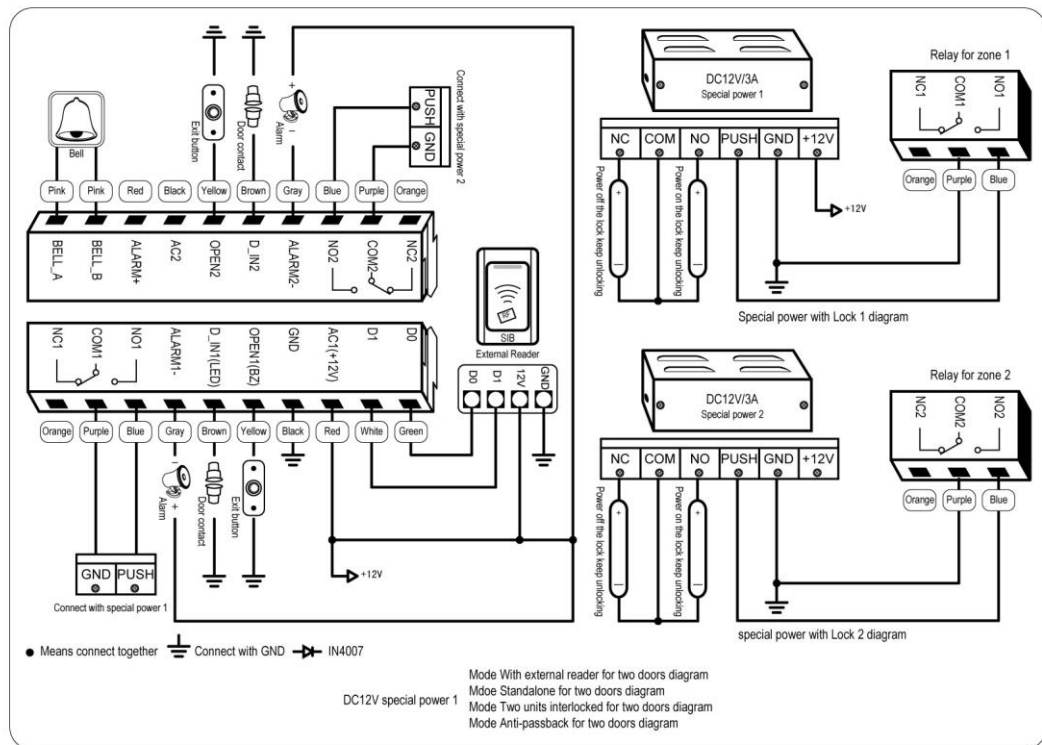
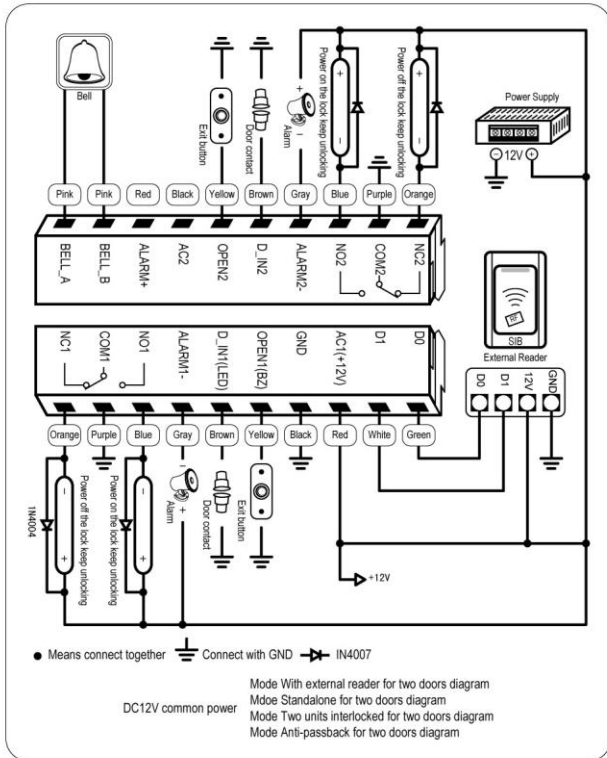
special power with Lock 1 diagram

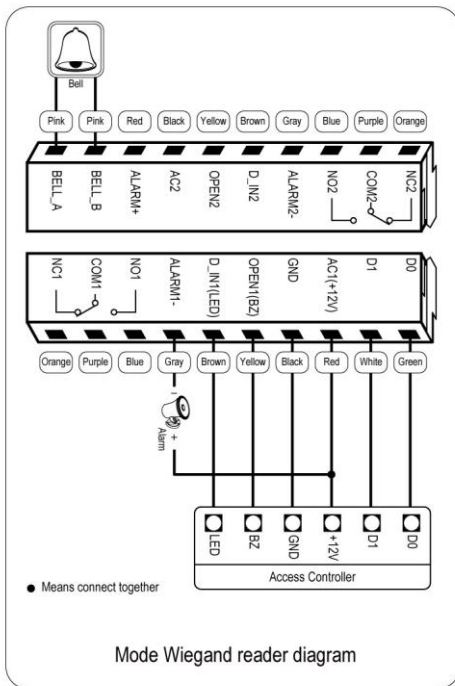
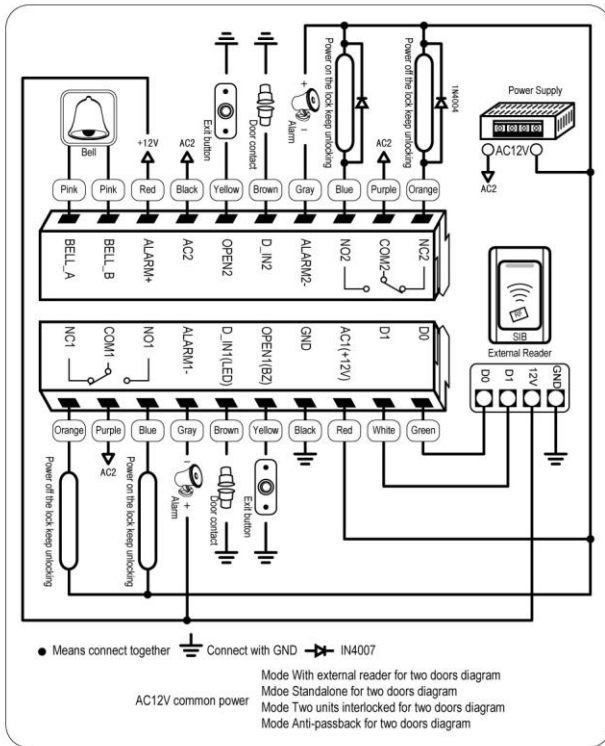
DC12V special power Mode Standalone for single door diagram
 Mode Anti-passback for Single door diagram



● Means connect together Connect with GND IN4007

AC12V common power Mode Standalone for single door diagram
 Mode Anti-passback for Single door diagram





13 Instance Operations

13.1 Modify master code as 201200

press * 999999 # 00 201100 # 201100 # .

13.2 Set Anti-duress PIN of Zone 1 as 12012000

press * 201100 # 05 12012000 # .

13.3 add last 8 digit card number as 00967865 and 86998736 user of Zone 1

Press * 201100 # 11 00967865 # 86998736 # .

13.4 add first 10 digit card number as 0098786500 and 8699873600 user of Zone2

Press * 201100 # 21 0098786500 # 8699873600 # .

13.5 add ID user 006, PIN 201200, Zone 2 user

press * 201100 # 21 6 # 201200 # .

13.6 set open mode of Zone 1 as card+PIN

press * 201100 # 13 1 # .

13.7 rapid increase consecutive numbers 1000 cards (start with 00987865 ID is 005)

press * 201100 # 17 05 # 00987865 # 1000 # .

13.8 set working mode as reader mode

press * 201100 # 31 0 # .

13.9 set card output format as WG34

press * 201100 # 32 34 # .

13.10 set master open lock 1

press * 201100 # 51 .

14 Simple Troubleshooting

Code	Fault	Fault Cause	Solutions
1	Close Read range	Quality of card	Use original card
2	Problem in PIN setting	1.PIN is not standard 2.Set Password at reader mode	1.first number of PIN should be 1 or 2, match with Area number 2.PIN shouldn't be 1234 3. PIN is 4 to 6 digits 4.don't set PIN at reader mode
3	PIN can't open door	1 use PIN 1234 2 entry mode setting	1.1234 is original PIN, can't open the door, should be modified as other PIN 2.set open mode as entry by card or PIN.
4	Alarms at normal condition	While installation, light leak under bottom	While installation, device should closed to the wall
5			
6	No responds after card reading	Units are not in ready mode	Press * key, light flash, units back to ready mode
7	Keypad light is not bright	Mode of keypad light setting is wrong	1.set keypad light as shine or auto 2.under auto mode, light shine after press keypad, delay 30 seconds
8	Can't enter master mode	Forget master code	Reset to Factory Default, master code will be 999999, only installer data is restored, user data will not be affected

15 To Reset to Factory Default

- a. Disconnect power from the unit
- b. Press and hold # key whilst powering the unit back up
- c. On hearing two "Di" release # key, system is now back factory settings

Please note only installer data is restored, user data will not be affected

16 Packing List

Name	Model/size	Quantity	Remarks
Keypad	CC1/CC2	1	
User manual	CC1/CC2	1	
Self tapping screws	Φ4mm×27 mm	2	Used in fixing
Rubber plug	Φ6mm×30 mm	2	Used in fixing
Star screw driver	Φ20mm×60mm	1	Special for Keypad
two-electrode valve	1N4007	1	