

# CM-550SK-V2

## Waterproof Keypad

### INSTALLATION INSTRUCTIONS



#### THIS PACKAGE INCLUDES:

(2) 0.15" x 1.06" (4mm x 27mm)  
Self-tapping screws

(2) 0.23" x 1.2" (6mm x 30mm)  
Rubber plug

(1) 0.78" x 2.4" (20mm x 60mm)  
Star screw driver

(1) 1N4007 Two-electrode valve

## 1. DESCRIPTION

The CM-550SK is a single door standalone keypad with a Wiegand input/output interface. It is suitable for mounting either indoors or outdoors in harsh environments. It is housed in a strong, sturdy and vandal proof Zinc Alloy electroplated case. The electronics are fully potted so the CM-550SK is waterproof and conforms to IP68.

The CM-550SK supports up to 2000 users with a 4~6 digit PIN. These features make CM-550SK an ideal choice for door access for commercial and industrial applications such as factories, offices, warehouses, laboratories, banks and prisons.

## 2. FEATURES

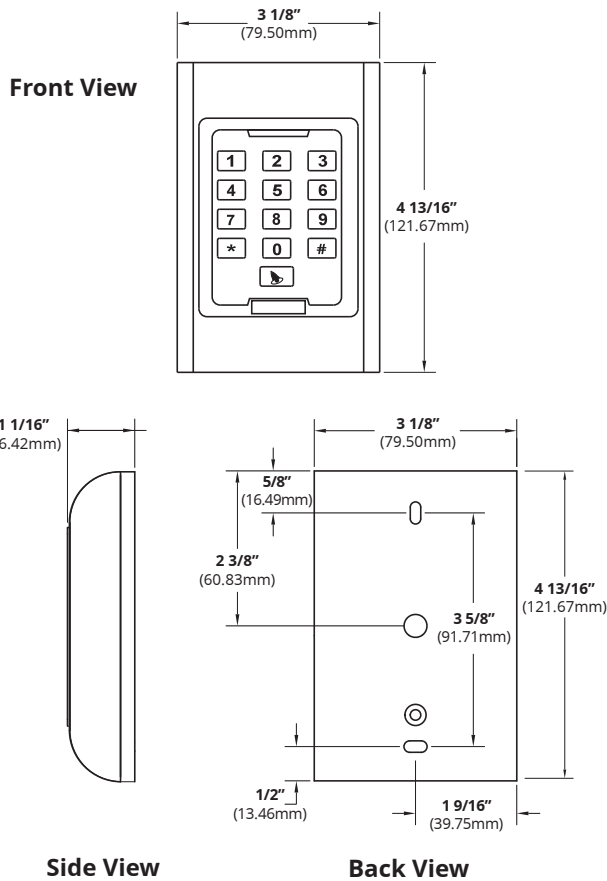
- Waterproof, conforms to IP68
- Strong Zinc Alloy Electroplated anti-vandal case
- Full programming from the keypad
- 2,000 users
- PIN length 4~6 digits
- Backlit keypad
- Wiegand input & output
- One programmable Relay output, NO, NC, COM
- Adjustable Door Output time, Alarm time, Door Open time
- Very low power consumption (< 60mA)
- Easy to install and program
- Built in light dependent resistor (LDR) for anti-tamper
- Built in buzzer
- Red, Yellow and Green LEDs display the working status
- 12 VDC +/- 10%
- Three-year warranty

## 3. SPECIFICATIONS

Model	CM-550SK-V2
<b>Voltage</b>	12 VDC +/- 10%
<b>IP rating</b>	68
<b>Idle Current</b>	25mA
<b>Contact Type</b>	(1) Form 'C'
<b>Contact Rating</b>	1 Amp@30VDC
<b>Alarm Output Load</b>	1 Amp@30VDC
<b>Ring Bell Load</b>	1 Amp@30VDC
<b>Card Read Distance</b>	1.75" (40Mm) Max
<b>Card Frequency</b>	125KHz, EM and HID
<b>Keypad Format</b>	4 bit, 8 bit and 26 Bit
<b>Operating Temp.</b>	-49°F to 113°F (-45°C to 55°C)
<b>Dimensions</b>	4 13/16" H x 3 1/8" W x 1 1/16" D (121.67mm x 79.5mm x 26.42mm)

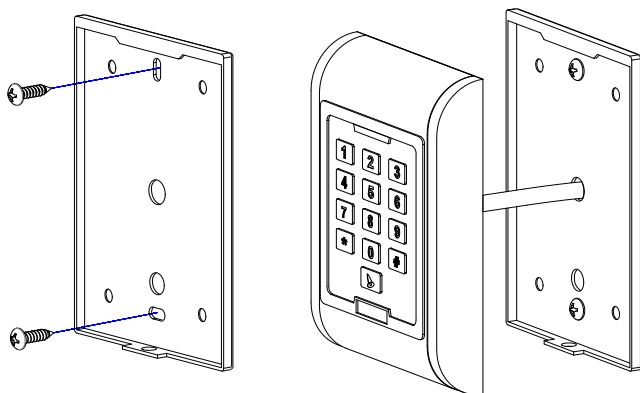
# CM-550SK-V2 WATERPROOF KEYPAD

## INSTALLATION INSTRUCTIONS



### 4. INSTALLATION

1. Remove the back cover from the keypad using the supplied special screw driver.
2. Drill 2 holes on the wall for the self tapping screws and 1 hole for the cable.
3. Put the supplied rubber plugs into the two holes.
4. Fix the back cover firmly on the wall with 4 flat head screws.
5. Thread the cable through the cable hole.
6. Attach the keypad to the back cover.



### 5. WIRING

No.	Marks	Colour	Description
1	BELL_A	Pink	Doorbell button
2	BELL_B	Pink	Doorbell button
3	D0	Green	Wiegand output D0
4	D1	White	Wiegand output D1
5	ALARM	Gray	Alarm
6	OPEN	Yellow	Request to Open (BUZ)
7	D_IN	Brown	Door Contact (LED)
8	DC	Red	Power IN
9	GND	Black	Ground
10	NO	Blue	Relay NO
11	COM	Purple	Relay Com
12	NC	Orange	Relay NC

### 6. SOUND AND LIGHT INDICATION

Operation	LED Colour	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		Di-Di-Di-
PIN inputting	Red	
Pin Reading	Red	
Under Menu	Red	
Under Setting	Orange	
Manager Card Enter	Orange	Di-Di-
Manager Card Exit	Red Flash	Di-
Alarm	Red Quick Flash	Alarm

## 7. QUICK PROGRAMMING GUIDE

### 7.1 Administrator Setting

Standby	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
		05	Anti-duress PIN#		Anti-duress PIN
		07	0000#		Delete All Users
		51		Master open	

### 7.2 User Setting

Standby	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	Red	Orange		
*	Master Code #	11	User ID number #, PIN #	Users can be added continuously without exiting programming mode	To add PIN users
		12	User ID Number #	Users can be added continuously without exiting programming mode	To Delete Users
		13	2 #	Default 2	Entrer by Card/PIN
		14	0-99 #	Default 5	Set Door Relay Time
		15	0 # 1 #	Default 0	Ready Setting-Pulse Mode Ready Setting-Toggle Mode

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## 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 #	This setting is not affected by resetting to factory default.	Wiegand Reader
			1 #		Standalone for Single Door
		33	0-2 #	This setting is not affected by resetting to factory default.	To set keypad transmission format 0=26 bit weigand 1=4 bit burst 2=8 bit burst
		34	1-3 #	Default 1	To set alarm time in minutes
		35	0 #	Default 0	Normal mode
			1 #		Lock out mode
			2 #		Alarm mode

## 7.4 User Optional Setting

Standby	Master Code	Menu	Setting	Remarks	Functions
Red Flash	Red	Red	Orange		
*	Master Code #	41	0 #		Buzzer is turned off, except while in programming mode
			1 #	Default 1	Buzzer will sound during key presses
		42	0 #		Disable keypad backlighting
			1 #		Enable keypad backlighting
		43	0 #		LED Light Disable while in stand-by
			1 #	Default 1	LED flashes while in stand-by

### Notes:

1. Master code must be 6-8 digits.
2. Anti-duress PIN must be 8 digits.
3. User PIN is 4-6 digits.
4. The user ID number is any number from 1-2000
5. Door open time is 0-99 second, 0=50mS.
6. While operating the keypad, pressing # means to confirm the input digits, in operation of a cycle adding or deleting PIN code, pressing # means to end the cycle operation and back up the operation; pressing \* means to exit the operation.
7. Keypad Wiegand modes are set at the factory to 26 bit. If the output format is changed through programming, the changes are not affected by a reset to factory defaults.

## 8. ADMINISTRATOR SETTING

### 8.1 Administrator Setting

Administrator setting on keypad	Press * master code # factory default: 999999
Change the master code	Press 00 new code # repeat new master code #

**Note: Master code length: 6-8 digits**

### 8.2 Set Anti-Duress PIN

Set anti-duress PIN	Press 05 8-digit duress PIN # (Zone 1)
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### 8.3 Delete All Users

Delete all users	Press 07 0000 #
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### 8.4 Activate the Lock Output While in Programming Mode

Activate the lock output while in programming mode	Press * master code # factory default: 999999
	Press 51

**Note: The relay will operate for the relay on time.**

### 8.5 Users Setting

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

Use ID number and PIN to add user	Press 11, ID number # PIN #, ID number #PIN #, #
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**Note: The PIN is any 4-6 digits, except 1234 which is reserved.**

### 8.6 Set Door Relay Time

Set door relay time	Press 14, 0-99, #
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**Note: 0-99 is to set the door delay time 0-99 seconds, factory default is 5 seconds.**

### 8.7 Set Relay Mode

Relay setting-pulse mode	Press 15, 0, #
Relay setting-toggle mode	Press 15, 1, #

### 8.8 System Setting

To set facility code	Press 30, 0-15, #
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**Note: Code should be 0-15, factory default setting: 0**

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Wiegand Reader	Press 31, 0, #
Stand alone for single door (factory default setting)	Press 31, 1, #
<b>8.9 Setting Keypad Transmission Format</b>	
Setting keypad transmission format	Press 33, 0-2, #
<b>Note: Keypad transmission format is 0 1 2, factory default is 0; not affected by resetting to factory default.</b>	
<b>8.10 Setting Alarm Time</b>	
Setting alarm time	Press 34, 1-3, #
<b>Note: Factory default is 1 minute, not affected by resetting to factory default.</b>	
<b>8.11 Setting Safe Mode</b>	
Normal mode (factory default)	Press 35, 0, #
Lock out mode	Press 35, 1, #
<b>Note: If an invalid card or wrong PIN is input 10 times in 10 minutes, user will be locked out for 10 minutes.</b>	
Alarm mode	Press 35, 2, #
<b>Note: If an invalid card or wrong PIN is input 10 times in 10 minutes, external alarm and built-in buzzer will sound.</b>	
<b>8.12 User Optional Setting</b>	
Setting keypad tone OFF or ON	Press 41, 0, # OFF
	Press 41, 1, # ON (Default)
<b>8.13 Setting Keypad Backlight</b>	
Disable keypad backlight	Press 42, 0, #
Enable keypad backlight	Press 42, 1, #
Automatic mode (factory default setting)	Press 42, 2, #, Keypad will illuminate when a key is pressed.
<b>8.14 Setting LED Light (Standby Status)</b>	
Disable LED light	Press 43, 0, #
Flash LED light (factory default setting)	Press 43, 1, #

## 9. USER OPERATION

### 9.1 Entry PIN Mode

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

### 9.2 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 PIN is entered, the relay changes state, which will not turn back until a valid PIN is entered again.

### 9.3 Modify User PIN (no need to enter programming)

- Press ID number #, old PIN #, new PIN #, new PIN #

## 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 connected with door contact: if the door is opened illegally, the buzzer and the external alarm will operate.

### 10.3 The Anti-Duress Alarm

- Input 8-digit PIN and press #
- Corresponding lock will open. At the same time, the external alarm will operate, but the device buzzer will not operate.

### 10.4 Remove Alarm

- Input master code, then alarm will be removed. The alarm will time out automatically after 1 min.

## 11. MULTI-WORKING MODE

There are 3 working modes with this device.

1. Wiegand Reader.
2. Standalone for single door.
3. Anti-passback for single 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 a reader, connected with the common access controller.

It has the following function:

- Modify master pin
- Set facility code
- 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 go back to normal.

When BZ level is low, the buzzer will beep, after 30 seconds or BZ level rising, the buzzer will go back to normal.

When used as the reader, the keypad transmits in Wiegand format, the output data is shown by the low level of D0&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.

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 (5-10th digit)

Facility code is any digit between 0-15, PIN code is 4-6 digits.

Example: facility code: 15

PIN code: 999999

Press 999999#, then output format will be 0015999999

#### Model 1: 4 Bit

The output data is provided in the 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

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### Model 2: 8 Bit

The output data is transmitted in the 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 Stand alone for single door

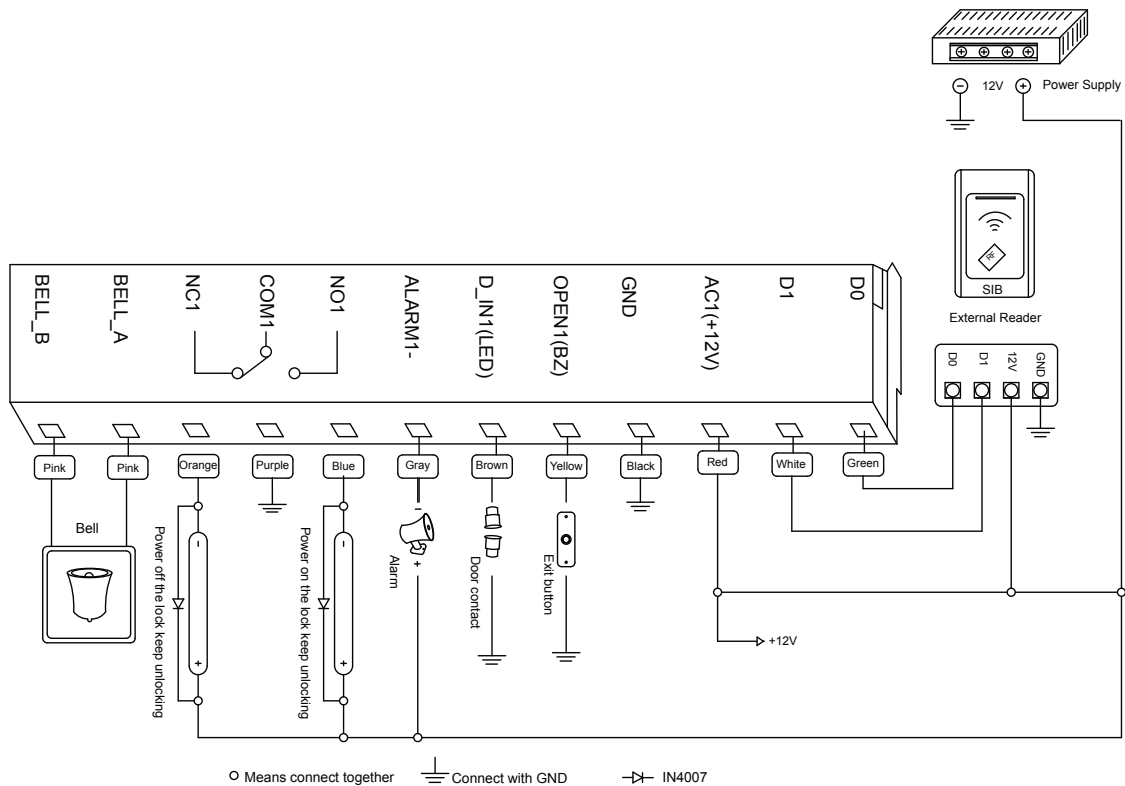
In this mode, the device supports connecting external card reader for exiting door. The users of Zone 1 or external can open the door by valid card or PIN.

### 11.3 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.

**Note: this is only for card users of Zone 1, PIN users of Zone 1 an all users of Zone 1 are invalid.**

## 12. DIAGRAMS FOR WORKING MODES



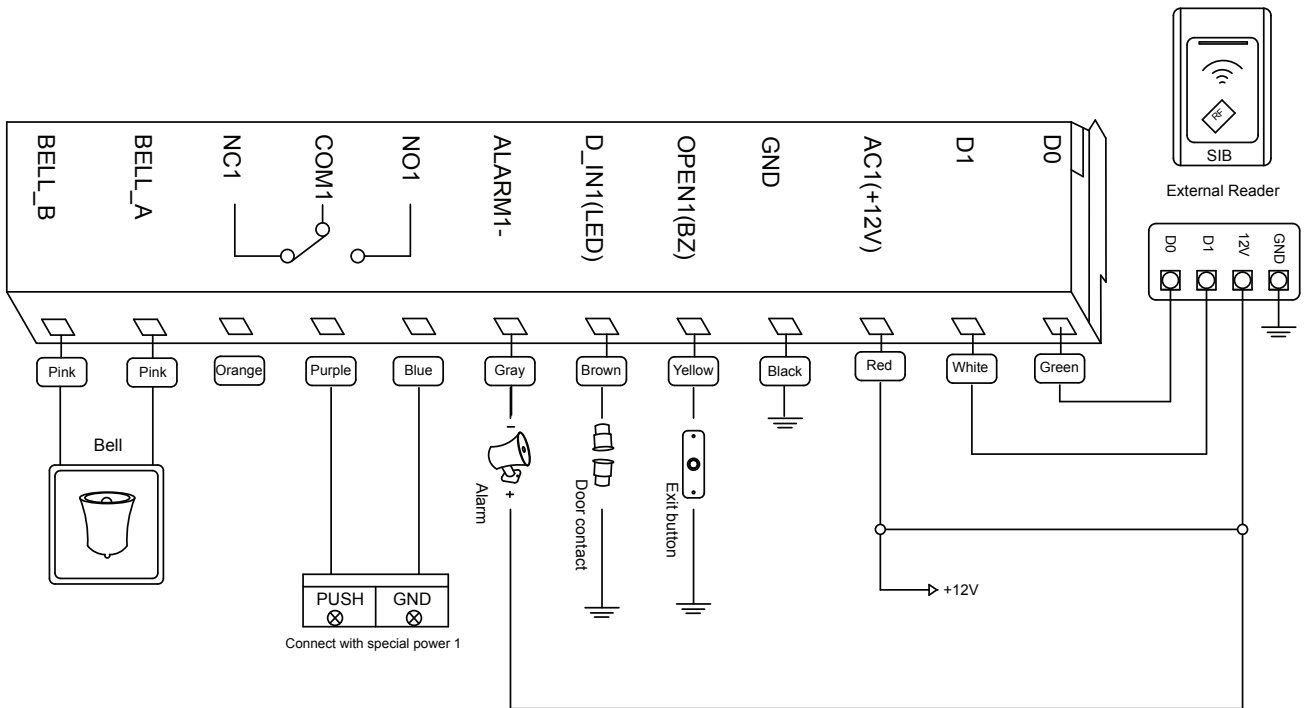
DC12V common power

Mode Standalone for single door diagram

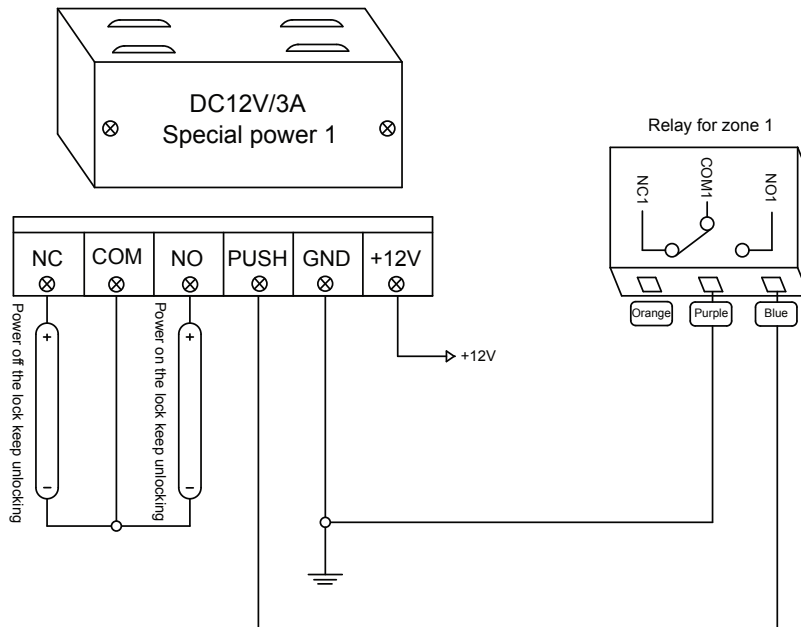
Mode Anti-passback for single door diagram



**CM-550SK-V2 WATERPROOF KEYPAD**  
**INSTALLATION INSTRUCTIONS**



○ Means connect together    ⏏ Connect with GND    ⚡ IN4007



special power with lock 1 diagram

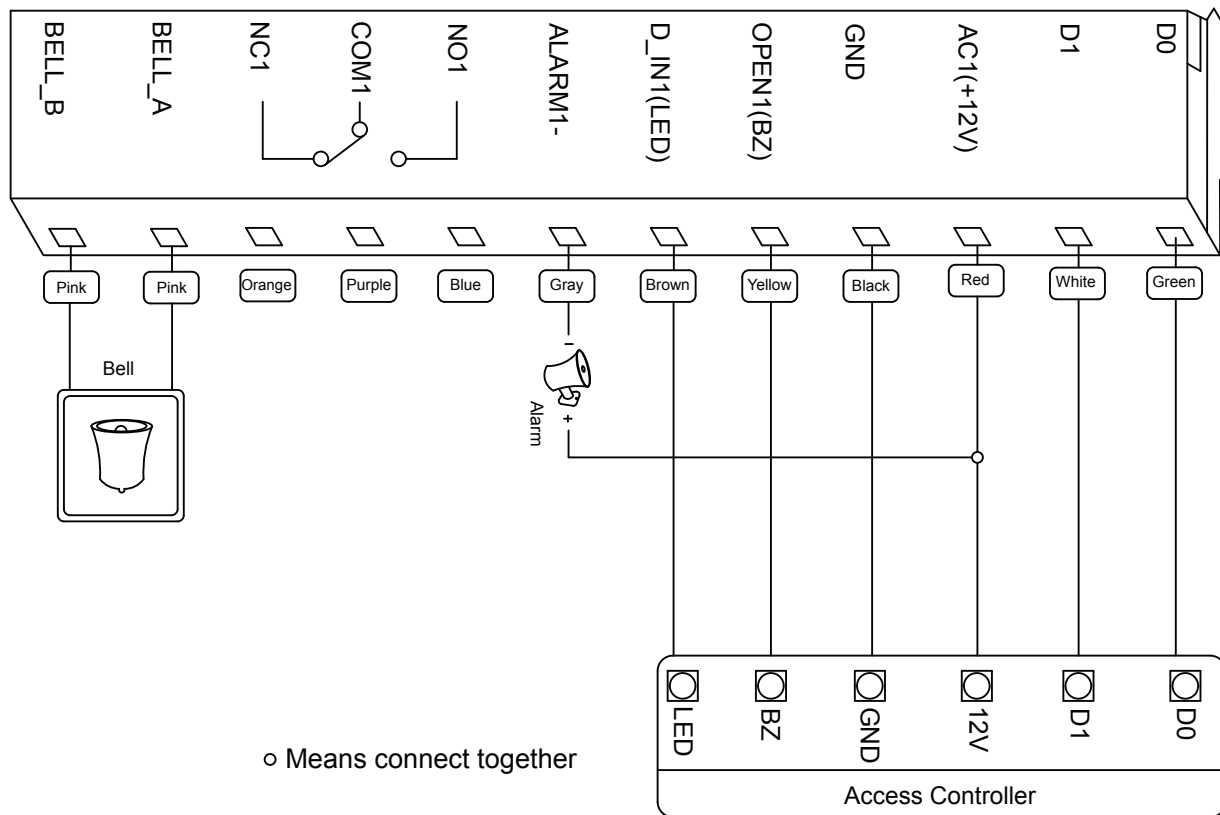
DC12V special power

Mode Standalone for single door diagram

Mode Anti-passback for single door diagram

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Mode Wiegand reader diagram

### 13. SIMPLE TROUBLESHOOTING

Code	Fault	Fault Cause	Solutions
1	Problem in PIN setting	1. PIN is not standard 2. Set Password at reader mode	1. PIN shouldn't be 1234 2. PIN is 4 to 6 digits 3. Don't set PIN at reader mode
2	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.
3	Alarms at normal condition	During installation, light leak under bottom	During installation, device should be close to wall
4			
5	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
6	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

### 14. 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.

**Note: Only installer data is restored, user data will not be affected.**