# W3-M

## Metal waterproof standalone access control/reader

User Manual

# 1. Packing List

| Name | Quantity | Remark |
|---|---|---|
| Digital Keypad W3-M | 1 | |
| User Manual | 1 | |
| Screw driver | 1 | |
| Rubber bungs | 4 | 6*27mm, used for fixing |
| Self-tapping screws | 4 | 4*28mm, used for fixing |
| Diode | 1 | IN4004 |

Please ensure that all the above contents are correct. If any are missing please notify the supplier of the W3-M.

# 2. Description

The W3-M is single door multifunction 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. The electronics are fully potted so the W3-M is waterproof and conforms to IP65.

The W3-M supports up to 1500 users in either a Card, or 4~6 digits PIN, or a Card + PIN option and additional 10 groups Anti-duress PIN/Card. The inbuiltcard reader supports Mifare, 13.56MHz frequency card/tag. The W3-M has many extra features including Anti-duress PIN/card, Wiegand 26/34 bits interface, and backlit keypad…etc.

These features make the W3-M 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.

# 3. Features

- Waterproof, conforms to IP65
- Strong zinc alloy electroplated anti-vandal case
- Full programming from the keypad
- 1500 users, supports Card, PIN, Card + PIN
- Can be used as standalone keypad only

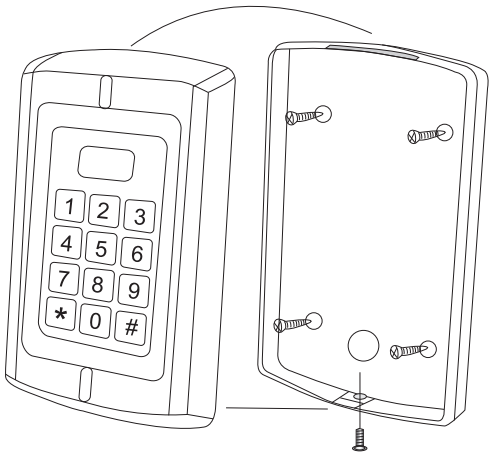
- PIN length:4~6 digits
- Card interface: Mifare 13.56MHz
- 10 groups Anti-duress PIN/Card
- Wiegand 26/34 input & output
- Programmable one relay output
- Backlight keypad
- Pulse mode, Toggle mode
- Adjustable door output time, alarm time, door open time
- Very low power consumption (30mA)
- Fast operating speed, <0.1S with 1500 users
- Lock and alarm output current short circuit protection
- Built in light dependent resistor (LDR) for anti tamper
- Built in buzzer
- Red, Yellow and Green LEDs display the working status
- DC12-24V&AC12-18V
- Two- year warranty

## 4. Specifications

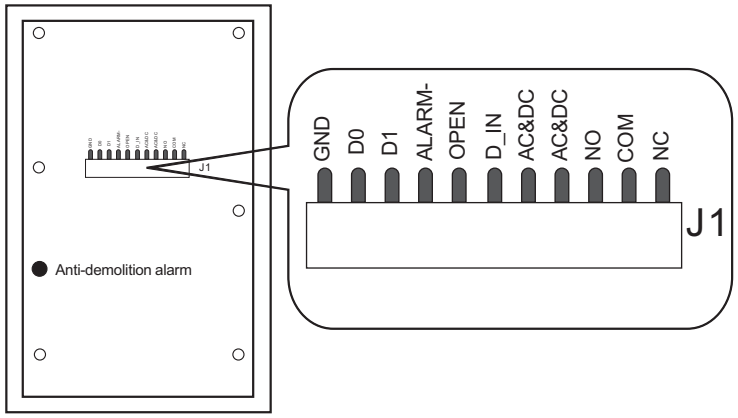
| | |
|---|---|
| Operating Voltage | DC12-24V&AC12-18V |
| User Capacity | 1500 |
| Anti-duress User Capacity | 10 |
| Keypad | 12 keys:3 x 4 digits |
| Card Type | Mifare 13.56MHz |
| Card Reading Distance | 3~6 cm |
| Idle Current | 25±5mA |
| Lock Output Load | Max 2A |
| Alarm Output Load | Max 20A |
| Operating Temperature | -20~60℃ |
| Operating Humidity | 10%~ 90% RH |
| Adjustable Door Relay time | 1~99 seconds |
| Wiegand Interface | Wiegand 26/34 bits |
| Wiring Connections | Electric Lock, Exit Button, DOTL, External Alarm |
| Dimensions | L128xW82xH28mm |
| Net Weight | 600 g |
| Gross Weight | 700 g |

# 5. Installation

- Remove the back cover from the keypad using the supplied security screwdriver
- Drill 4 holes on the wall for the screws and I hole for the cable
- Fix the back cover firmly on the wall with 4 flat head screws
- Thread the cable through the cable hole
- Attach the keypad to the back cover.




W3-M

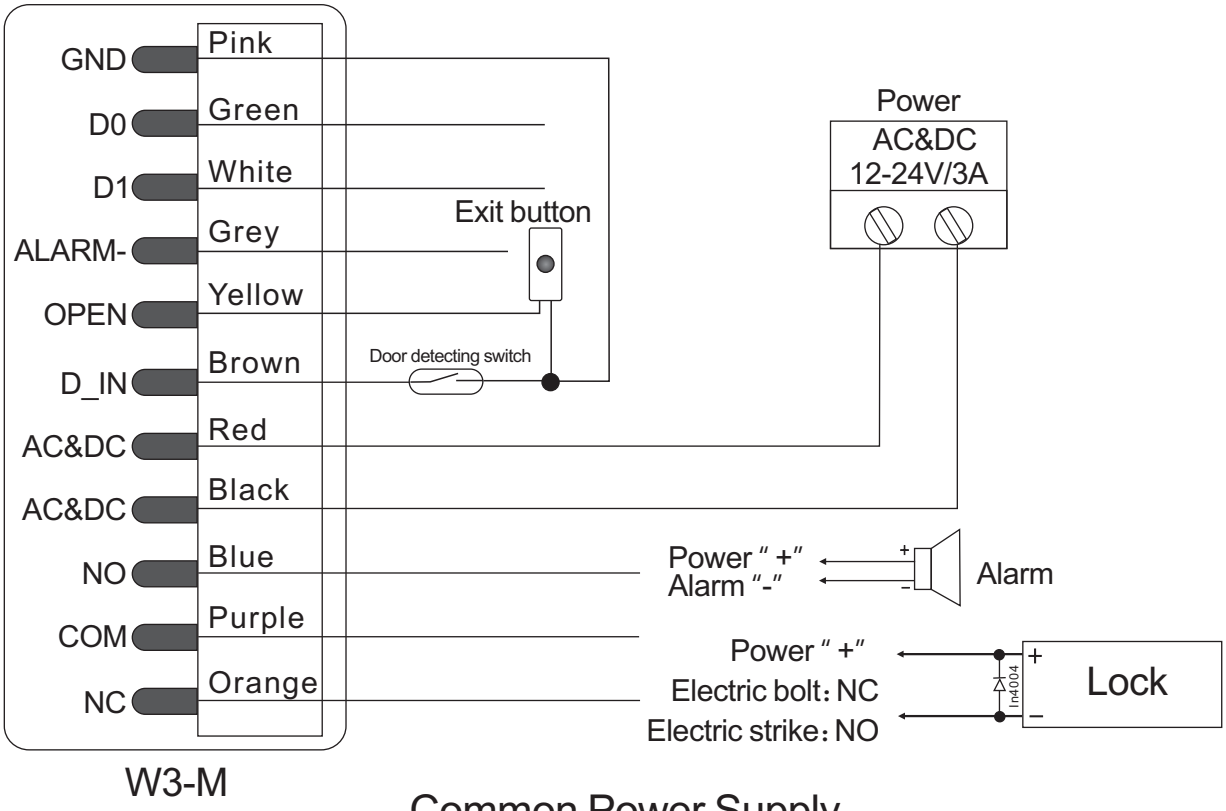



PCB Connect Diagram

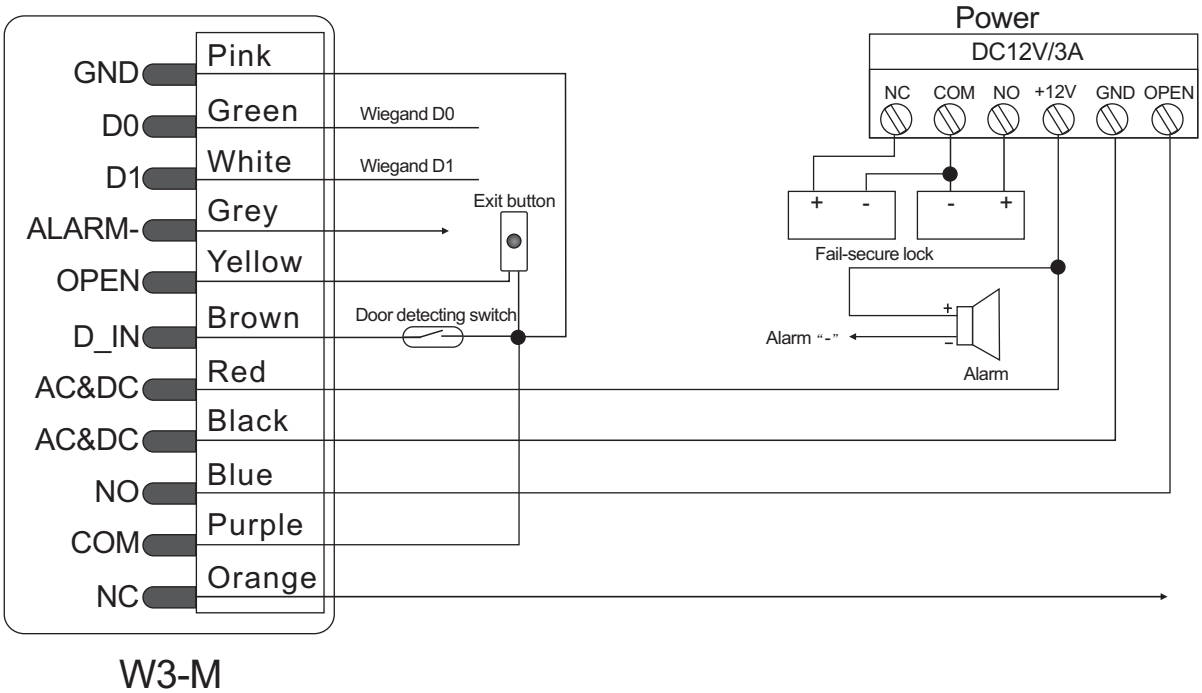
# 6. Wiring

| Color | Function | Description |
|---|---|---|
| Green | D0 | Wiegand output D0 |
| White | D1 | Wiegand output D1 |
| Grey | ALARM- | Alarm Negative |
| Yellow | OPEN | Connect to Exit Button |
| Brown | D_IN | Door Contact |
| Red | DC12-24V&AC12-18V | DC12-24V&AC12-18V Power Input |
| Black | DC12-24V&AC12-18V | DC12-24V&AC12-18V Power Input |
| Blue | NO | Relay NO |
| Purple | COM | Relay COM |
| Orange | NC | Relay NC |
| Pink | GND | W3-M Negative |

## Connection Diagram




Common Power Supply




Special Power Supply

Notes:
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.

## 7. Relay operation (Pulse mode and Toggle mode)

The relay 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 or Pin is read/input in Pulse Mode, the relay will operate, for the pre-set relay pulse time.

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

## 8. To Reset to Factory Default

To reset to factory default, power off, press [*] , hold it and power on, release it after hear two beeps, means reset to factory default successfully.

Remarks: Reset to factory default, the user's information is still retained.

## 9. Anti Tamper Alarm

The W3-M 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.

## 10. Sound and LED Light Indication

| Operation Status | Red Light | Green Light | Buzzer |
|---|---|---|---|
| Power on | - | Bright | Beep |
| Stand by | Flash slow | - | - |
| Press keypad | - | - | Beep |
| Operation successful | - | Bright | Beep |
| Operation failed | - | - | 3 Beep |
| Enter into programming mode | Bright | - | Beep |
| In the programming mode | - | - | - |
| Exit from the programming mode | Bright | Bright | Beep |
| Open the door | - | Bright | Beep |
| Alarm | Flash quick | - | Alarm |

# 11. W3-M Detailed Programming Guide

## 11.1 User Settings

| | |
|---|---|
| To enter the programming mode | * Master code # <br> 888888 is the default factory master code |
| To exit from the programming mode | # |
| ***Note that to undertake the following programming the master user must be logged in*** | |
| To change the master code | 0 New code # New code # <br> The master code is any 6~8 digits. |
| **Setting the working mode:** <br> To set valid card only users <br> To set valid card **and** PIN users <br> To set valid card **or** PIN users (factory default) | <br> 3 0 # Entry is by Card only <br> 3 1 # Entry is by Card **and** PIN together <br> 3 2 # Entry is by either Card **or** PIN (default) |
| **To add and delete users in either card or PIN mode ( 3 2 # ) (Default setting)** | |
| To add a **PIN** users | 1 User ID number # PIN # <br> The ID number is any number between 1 ~ 1500. 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: <br> 1 User ID No 1 # PIN # User ID No 2 # PIN # |
| To Delete a **PIN** user | 2 User ID number # <br> 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) | * User ID number # Old PIN # New PIN # New PIN # |

| | |
|---|---|
| To add a **card** user (Method 1)<br>This is a fast way to enter cards using ID number auto generation. | 1 Read Card #<br>Cards can be added continuously without exiting programming mode |
| To add a **card** user (Method 2)<br>This is the optional way to enter cards using User ID Allocation.<br>In this method a User ID is allocated to a card. Only one user ID can beallocated to a single card. | 1 User ID number # Card #<br>(The ID number is any number between 1~1500) |
| To delete **card** user by card<br>Note Users can be deleted continuously without exiting from programming mode. | 2 Read Card # |
| To delete a **card** user by user ID.<br>This option can be used when a user has lost their card | 2 User ID number # |
| ***To add and delete users in card and PIN mode ( 3 1 # )*** | |
| To Add a **card** and **PIN** user<br>(The PIN is any 4~6 digits between 0000 ~ 999999 with the exception of 1234 which is reserved.) | Add the card as for a card user<br>Press * to **exit from the programming mode**<br>Then allocate the card a PIN as follows:<br>* Read Card 1234 # PIN # PIN # |
| To change a **PIN** in card and PIN mode (Method 1) Note that this is done out of programming mode so the user can undertake this themselves | * Read Card Old PIN # New PIN #<br>New PIN # |
| To delete a **Card and PIN** user just delete the card by ID number | 2 User ID number # |
| ***To add and delete card user in card only mode ( 3 0 # )*** | |
| To Add and Delete a **card** user | The operating is the same as adding and deleting a card user in 3 2 # |
| ***To delete All users*** | |
| To delete **ALL users**. Note that this is a **dangerous** option so use with care | 2 0000 # |

| *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 # |

## 11.2 Relay Setting (Pulse mode,Toggle mode)

Pulse mode(Factory default)

| | |
|---|---|
| Pulse mode<br>(Door relay time setting) | 4 1~99 #<br>The door relay time is between 1~99 seconds, the factory default setting is 5 seconds. |

Toggle mode

| | |
|---|---|
| Toggle mode | 4 0 # |

## 11.3 Alarm, Door Open Detection, Duress user Settings

| **Alarm output time** | |
|---|---|
| To set the alarm output time (0~3 minutes). Factory default is 1 minute | 5 0~3 # |
| **Door Open Detection**<br>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 being 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.<br><br>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, or if the door is opened after 120 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 0~3 minutes with the default being 1 minute. | |
| To disable door open detection. (Factory default setting) | 6 0 # |
| To enable door open detection | 6 1 # |

| **Keypad Lockout & Alarm Output options.**<br>If there are 10 invalid cards or 10 incorrect PIN numbers in a 10 minute period, 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(Factory default setting) | 7 0 # |
| Keypad Lockout | 7 1 # |
| Alarm Output | 7 2 # |
| **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 # |

## 11.4 Anti-duress User Settings

| There are 10 groups Anti-duress PIN/card available. When input Anti-duress PIN/card, the door will open, at the same time, the output alarm operates. | |
|---|---|
| **To set Anti-duress PIN user** | |
| To add a PIN user | 8 User ID number # PIN # |
| To delete a PIN user | The operating is the same as deleting common PIN user |
| **To set Anti-duress card user** | |
| To add a card user (Method1)<br>User ID number auto generation. | 8 Read card1, Read card 2, … #<br>(card can be added continuously) |
| To add a card user (Method2)<br>User ID number allocation. | 8 User ID number# card1,<br>User ID number # card2,…#<br>(The ID number is between 1501~1510) |
| To add a card user (Method3)<br>User ID number allocation. | 8 8digits or 10digits card number #,<br>8digits or 10digits card number #...#<br>(The ID number is between 1501~1510) |
| To add a card user (Method4)<br>User ID number allocation. | 8 User ID number#<br>8digits or 10digits card number #,<br>User ID number #<br>8digits or 10digits card number #,…#<br>(The ID number is between 1501~1510) |

| | |
|---|---|
| To delete a card user | The operating is the same as deleting common card user |
| Note:<br>① User ID number is between 1501~1510<br>② Anti-duress PIN/card must be unique, should be distinguished from common PIN and card (When the Anti-duress PIN/card is the same with common PIN and card, they will become invalid in Anti-duress and worked as common user function) | |

## 12. Wiegand Mode Setting

| | |
|---|---|
| To set Wiegand 26 format | 9 0 # **(Default setting: Wiegand 26)** |
| To set Wiegand 34 format | 9 1 # |

## 13. Keypad Output Format Setting

| | |
|---|---|
| Keypad output format in 4 bit | 9 2 # |
| Keypad output format in 10bits virtual card number | 9 3 # |

## 14. Interconnecting Two Devices

**14.1 W3-M operating as a Wiegand Output Reader**

In this mode the W3-M supports a Wiegand 26 bits and 34 bits output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26 or 34 bits input. See figure 1.

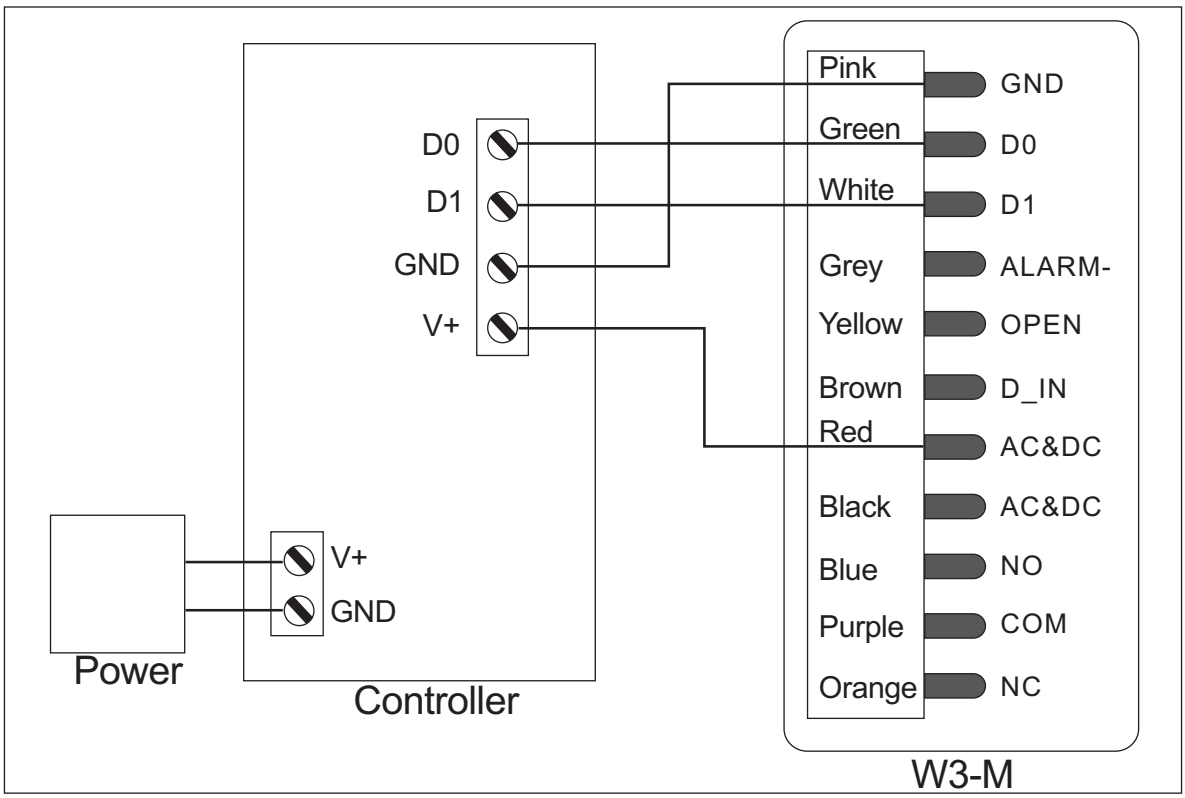



figure 1

**Transmission Format:**

- **1: Keypad Transmission**

The Reader will transmit the PIN data when it receives the last key (#) press after PIN code.

**Format**: PIN Code

( PIN code is any 4~6 digits between 0000~999999)

**For example:**

1)Wiegand 26output:

PIN code: 5678

Press 5678 #, then the output format will be: 00005678

2)Wiegand 34output:

PIN code: 5678

Press 5678 #, then the output format will be: 0000005678

- **2: Proximity Card Transmission**

The Reader will transmit the card data when it reads the Card.

**Format**: Card Numbe

(***Note***: No matter the card or PIN is valid or invalid, the data will be transmitted)

### 14.2 W3-M operating as a Controller

In this mode the W3-M supports a Wiegand 26/34 bit input so an external Wiegand device with a 26/34 bit output can be connected to the Wiegand input terminals on the W3-M. Either an ID card reader (125 KHz) or an IC card reader (13.56MHz) can be connected to the W3-M. Cards are required to be added at the external reader, except where an external Mifare reader is used, in this case cards can be added at either reader or controller.

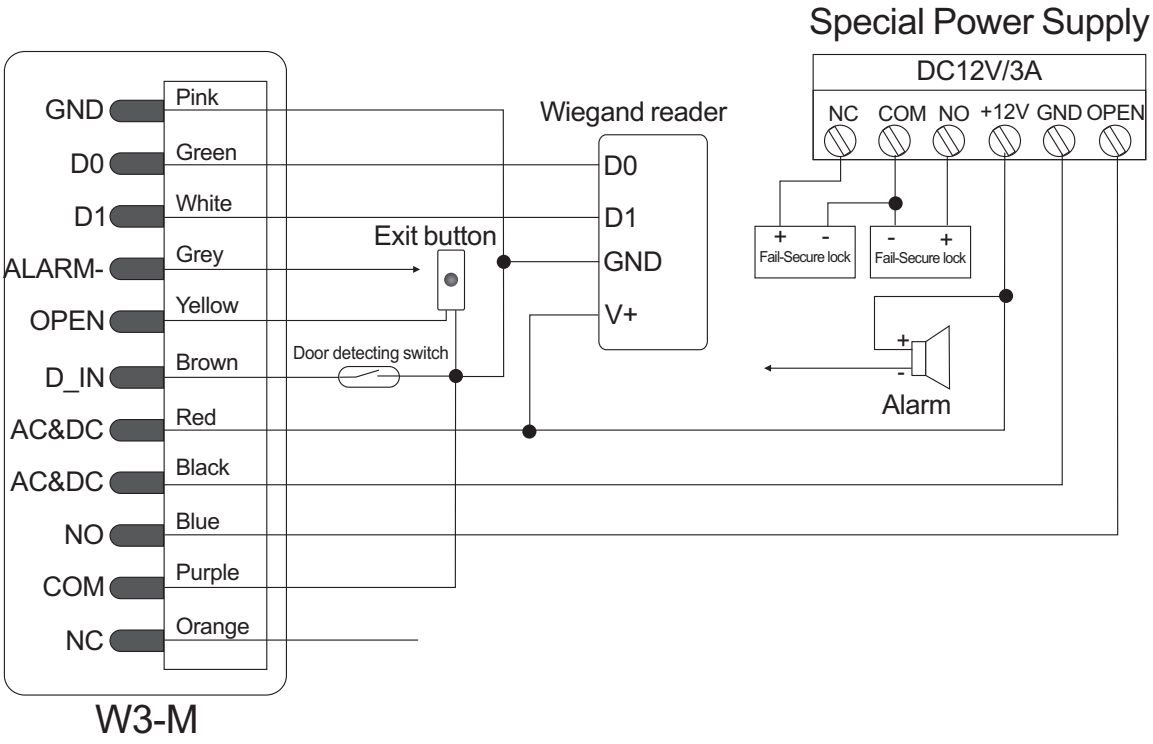



figure 2

# W3-M Quick Reference Programming Guide

| | |
|---|---|
| To enter the programming mode | * Master code #<br>888888 is the default factory master code |
| To exit from the programming mode | * |
| ***Note that to undertake the following programming the master user must be logged in*** | |
| To change the master code | 0 New code # New code #<br>The master code is any 6~8 digits |
| To add a **PIN** user | 1 User ID number # PIN #<br>The ID number is any number between 1~1500. The PIN is any 4~6 digits between 0000 ~ 999999 with the exception of 1234 which is reserved.<br>Users can be added continuously without exitingprogramming mode |
| To add a **card** user | 1 Read Card #<br>Cards can be added continuously without exiting from programming mode |
| To delete a **PIN** or a **card** user | 2 User ID number #for a PIN user or<br>2 Read Card # for a card user<br>Users can be deleted continuously without exiting from programming mode |
| ***To Unlock the door*** | |
| To unlock the door for a PIN user | Enter the PIN then press # |
| To unlock the door for a card user | Present the card |