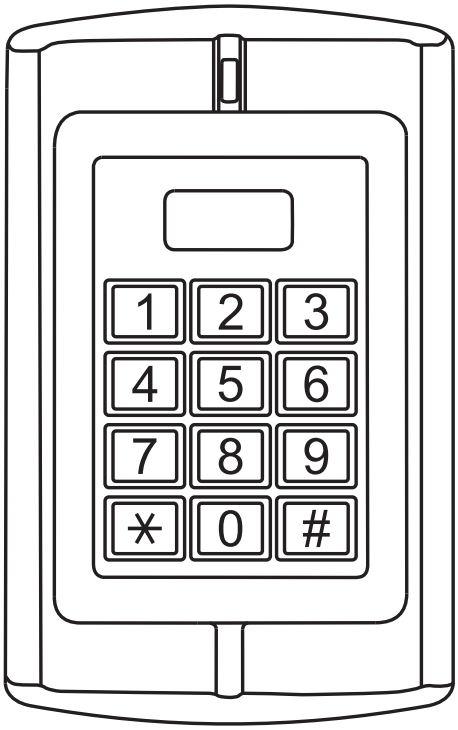
W3-H Waterproof Keypad/Reader/Controller



User Manual

1. Packing list

Name	Quantity	Remark
Digital Keypad W3-H	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
Manager Card	2	Manager Add Card & Manager Delete Card

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

2. Description

The W3-H is a single door multifunction access control with HID 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-H is waterproof and conforms to IP65.

The W3-H supports up to 2,000 users in either a Card, 4~8 digits PIN, or a Card + PIN option and additional 10 groups Duress PIN/Card. The built-in card reader supports HID 125KHz frequency cards/tags. The W3-H has many extra features including Duress PIN/card, block enrollment, Wiegand 26~37 bits interface, and backlight keypad…etc.

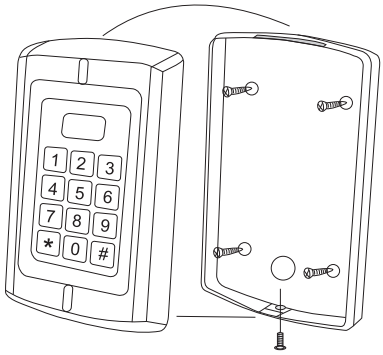
These features make W3-H an ideal choice for door access not only for small shops and do mestic households but also for commercial and industrial applications such as factories, warehouses, laboratories, banks and prisons.

3. Features

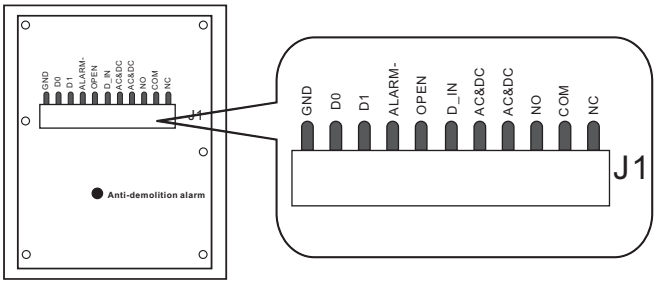
> Waterproof, conforms to IP65
> Strong zinc alloy electroplated anti-vandal case
> Full programming from the keypad
> One programmable relay output, NO, NC, COM
> 2,000 users, supports Card, PIN or Card, Card + PIN
> 10 groups Duress PIN/Card
> Card interface: HID 125KHz Card
> Can be used as a standalone keypad, PIN length 4~8 digits
> Pulse mode, Toggle mode
> Wiegand 26~37 input & output
> Adjustable door output time, alarm time, door open time
> Card block enrollment
> With Manager Cards for adding or deleting card user easily
> Backlight keypad
> Built in light dependent resistor (LDR) for anti tamper
> Built in buzzer
> Red, yellow and green LED display the working status
> 12~24V DC/12~18V AC
> Two-year warranty

4. Installation

> Remove the back cover from the keypad using the supplied security screwdriver
> Drill 4 holes on the wall for the screws and 1 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-H



PCB Connect Diagram

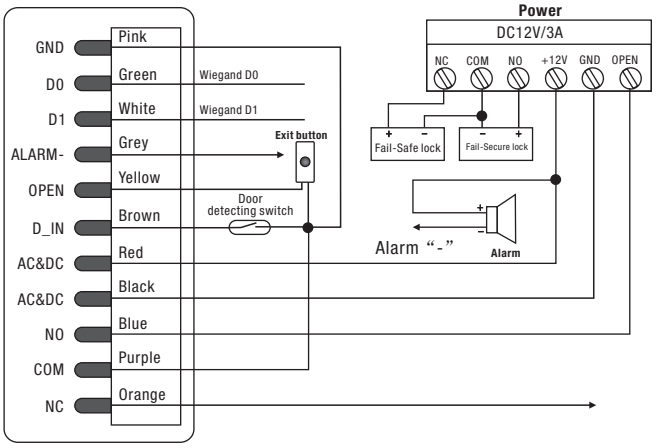
5. Specifications

Operating Voltage	12~24V DC/12~18V AC
User Capacity	2,000 (Additional10 groups Duress PIN/Card)
Keypad	12 keys: 3 X 4 digits
Card Type	HID 125KHz card
Card Reading Distance	3~6 cm
Active Current	⩾65mA
Idle Current	⩾35mA
Lock Output Load	Max 2A
Alarm Output Load	Max 20A
Operating Temperature	-20~50℃
Operating Humidity	10%~90% RH
Environment	Conforms to IP65
Adjustable Door Relay Time	1~99 seconds
Adjustable Alarm Time	0~3 minutes
Wiegand Interface	Wiegand 26~37 input & output
Wiring Connections	Electric Lock, Exit Button, DOTL, External Alarm
Dimensions	L128 X W82 X H28mm
Net Weight	600 g
Gross Weight	700 g

6. Wiring

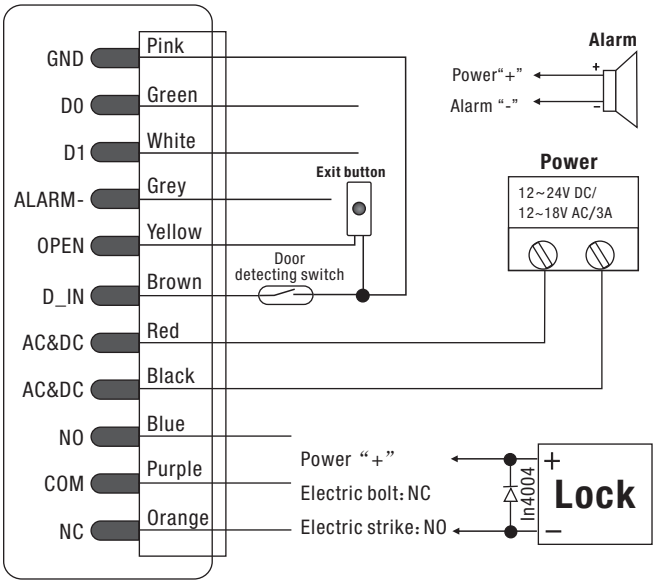
Colour	Function	Description
Green	D0	Wiegand Output D0
White	D1	Wiegand Output D1
Grey	Alarm -	Alarm Negative
Yellow	OPEN	Request to Exit Button
Brown	D_IN	Door Contact
Red	12~24V DC/12~18V AC	12~24V DC/12~18V AC Regulated Power Input
Black	12~24V DC/12~18V AC	12~24V DC/12~18V AC Regulated Power Input
Blue	NO	Relay NO
Purple	COM	Relay COM
Orange	NC	Relay NC
Pink	GND	W3-H Negative

Connection Giagram



W3-H

Special Power Supply



Common 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. Anti Tamper Alarm

The W3-H 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.

8. To Reset to Factory Default

To reset to factory default, power off, press [*], hold it and power on, release it until hear two beeps and the LED shines in orange, then read any two HID cards, the LED will turn in red, means reset to factory default setting successfully. Of the two HID cards read, the first one is Manager Add Card, the second one is Manager Delete Card.

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

9. 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.

10. Sound and Light Indication

Operation Status	Red Light	Green Light	Yellow Light	Buzzer
Power on	Bright	-	-	Short Ring
Stand by	Bright	-	-	-
Press keypad	-	-	-	Short Ring
Operation successful	-	Bright	-	Short Ring
Operation failed	-	-	-	3 Short Ring
Enter into programming mode	-	-	Bright	Short Ring
In the programming mode	-	-	-	-
Exit from the programming mode	Bright	-	-	Short Ring
Open the door	-	Bright	-	Short Ring
Alarm	Bright	-	-	Alarm

11. W3-H Detailed Programming Guide

11.1 User Settings

To enter the programming mode	[*] [Master code] [#] 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] [#] The master code is any 6 digits
Setting the working mode: set valid card only users set valid card **and** PIN users set valid card **or** PIN users	 [3] [0] [#] Entry by Card only [3] [1] [#] Entry by Card **and** PIN together [3] [2] [#] Entry by either Card **or** PIN (default)
To set a user in either card or PIN mode ([3] [2] [#]) (Default setting)	
To add a **PIN** user	[1] [User ID number] [#] [PIN] [#] The ID number is any number between 1~ 2000. The PIN is any 4~8 digits between 0000 ~99999999 with the exception of 1234 which is reserved. Users can be added continuously without exiting from programming mode as follows: [1] [User ID No 1] [#] [PIN] [#] [User ID No 2] [#] [PIN] [#]
To delete a **PIN** user	[2] [User ID number] [#] 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)*	[*] [ID number #] [Old PIN #] [New PIN #] [New PIN #]
To add a **card** user (Method 1)This is a fastest way to add cards using ID number auto generation	[1] [Read Card] [#] Cards can be added continuously without exitingprogramming mode
To add a card user (Method 2)This is the optional way to add cards using User ID Allocation. In this method a User ID is allocatedto a card. Only one user ID can be allocated to a single card	[1] [ID number] [#] [Card] [#]

To add a **card** user (Method 3) Add a **series cards** users - **Block Enrollment**	5 ID number # The 1st Card number # Card quantity # Note that cards must be consecutive, and card quantity is between 1~2000 Maximum 2,000 cards can be enrolled at a stretch within 2 minutes
To delete **card** user by card (Note users can be deleted continuously without exiting from programming mode)	2 Read Card #
To delete a card user by user ID (This option can be used when a user has lost their card)	2 User ID #
To delete a card user by card number (Users can be deleted continuously without exiting from programming mode)	2 Card number #
To set a card and PIN user in card and PIN mode (3 1 #)	
To Add a **card** and **PIN** user (The PIN is any 4~8 digits between 0000 ~ 99999999 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	2 Read card # or 2 User ID #
To set a card user in card 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 set card users by Manager card	
To add Card User by Manager Add Card	Manager add card Read User card Manager add card Cards can be added continuously
To delete Card User by Manager Delete Card	Manager delete card Read User Card Manager delete card Cards can be deleted continuously

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 (Door relay time setting)	4 1~99 # The door relay time is between 1~99 seconds, the factory default setting is 5 seconds.
Toggle mode	
Toggle mode	4 0 #

11.3 Door Detection, Alarm, Sound and Light 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 open by force, 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	6 0 # (Factory default)
To enable door open detection	6 1 #
Alarm output time	
To set the alarm output time (0~3 minutes). Factory default is 1 minute	9 0~3 #
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, depending on the option selected below.	

Normal status: No keypad lockout or alarm	7 0 # (Factory default)
Keypad Lockout	7 1 #
Alarm Output	7 2 #
Light and Sound Setting	
To set keypad backlight	7 4 # To disable keypad backlight 7 5 # To enable keypad backlight(Factory default)
To set LED	7 6 # To disable the red LED 7 7 # To enable the red LED(Factory default)
To set keypad tone	7 8 # To disable the keypad tone 7 9 # To enable the keypad tone(Factory default)
To remove the alarm	
To remove the Door Forced Open warning	Read Valid Card **or** Master Code #
To remove the Door Open Too Long warning	Close the door or Read Valid Card or Master Code #

12. Duress User Settings

There are 10 groups Duress PIN/card available. When input Duress PIN/card, the door will open, at the same time, the output alarm operates.(Note:all the setting are under programming mode)	
To set Duress PIN user	
To add a PIN user	8 User ID number # PIN # (The ID number is any number between 2001~2010)
To delete a PIN user	2 User ID number #
To set Duress card user	
To add a card user	8 User ID number # card # (The ID number is any number between 2001~2010)
To delete a card user	2 User ID number #
Note: ① User ID number must be any 4digits between 2001~2010 ② Duress PIN/card must be unique, should be distinguished from common PIN and card (When the Duress PIN/card is the same with common PIN and card, they will become invalid in Duress, and worked as common user function)	

13. Wiegand Mode Setting

W3-H supports Wiegand 26~37, both input and output. It can be used as a reader or controller.	
To set Wiegand format:	9 26~37 # **(Default setting: Wiegand 26)**

14. Interconnecting Two Devices

14.1 W3-H operating as a Wiegand Output Reader

In this mode the W3-H supports a Wiegand 26~37 bit output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26~37 bit input.
See figure 1.

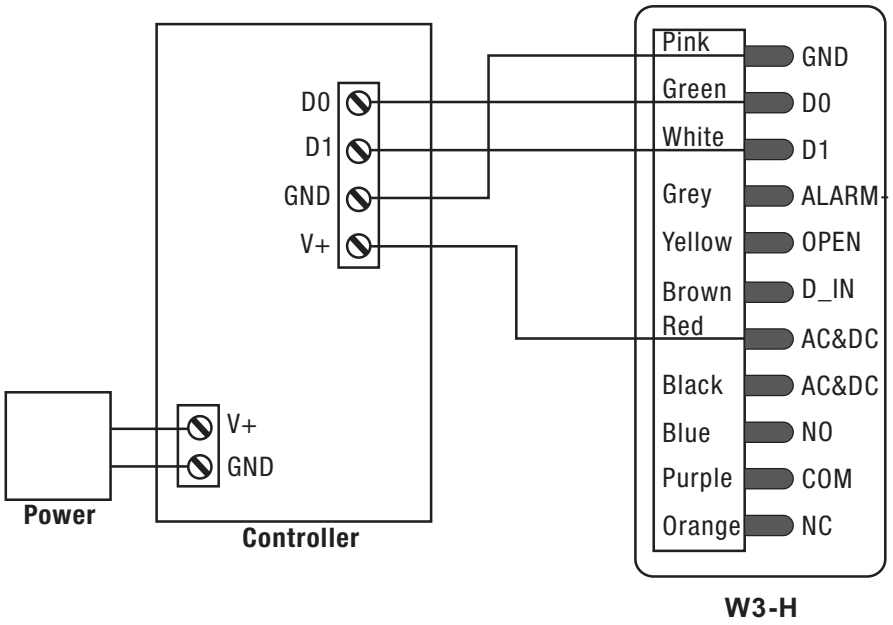


Figure 1

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 (any 4~8 digits between 0000~99999999)
E**xample:** PIN code:111111
Press 111111 #, then the output format will be: 0000111111
(*Note: if press an invalid PIN (any 4~8 digits), the data will be also transmitted.)*

2: Proximity Card Transmission
The Reader will transmit the card data when it reads the Card.
Format: Card Number
(*Note: No matter the card is valid or invalid, the data will be transmitted)*

14.2 W3-H operating as a Controller

In this mode the W3-H supports a Wiegand 26~37 bit input so an external Wiegand device with a 26~37 bit output can be connected to the Wiegand input terminals on the W3-H. Either an ID card reader (125KHz) or an IC card reader (13.56MHz) can be connected to the W3-H. Cards are required to be added at the external reader, except where an external HID reader is used, in this case cards can be added at either reader or controller. See figure 2.

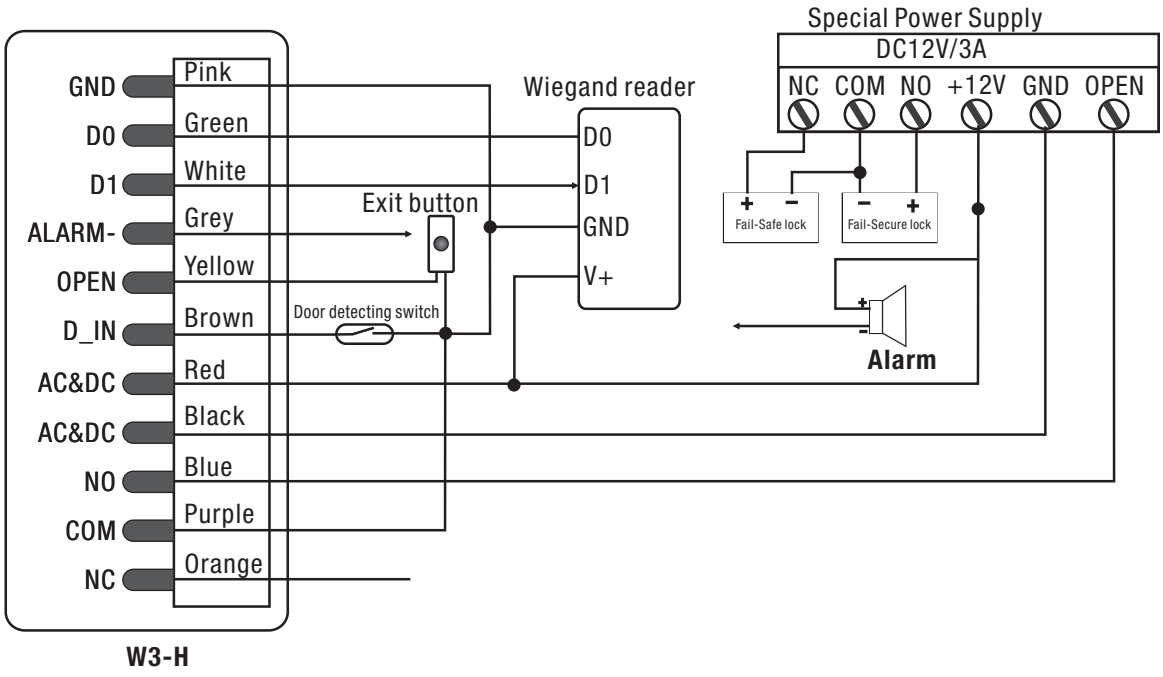


Figure 2

W3-H Quick Reference Programming Guide

To enter the programming mode	* Master code # 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 # The master code can be 6 digits long
To add a **PIN** user	1 User ID number # PIN # The ID number is any number between 1~2,000. The PIN is any 4~8 digits between 0000 ~ 99999999 with the exception of 1234 which is reserved. Users can be added continuously without exiting programming mode
To add a **Card** user	1 Read Card # 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 2 Read Card # for a card user
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