Ness

CORPORATION

Waterproof
Keypad/Reader/Controller
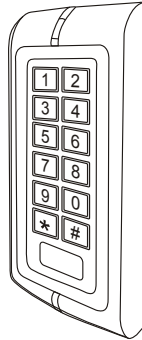
W1-B

User manual

NESS
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Quality
ISO 9001
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MADE IN **AUSTRALIA**

2 YEARS WARRANTY

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N55 CE

INSTALLATION & PROGRAMMING MANUAL

For products:
101-095 Ness W1-B Ultraprox Reader/Controller

1. Packing list

Name	Quantity	Remark
Digital Keypad W1/W3-B	1	
User Manual	1	
Screw driver	1	
Rubber bungs	4	6*27mm, used for fixing
Self Tapping Screws	4	3.5*27mm, used for fixing
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 W1/W3-B.

2. Description

(W1-B&W3-B are in the same function, only different in shape .)

W1/W3-B 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 W1/W3-B is waterproof and conforms to IP68.
The W1/W3-B supports up to 2500 users in either a Card, 4 digit PIN, or a Card + PIN option. The inbuilt card reader supports EM, 125KHZ frequency card/Tag. The W1/W3-B has m any extra features including block enrollment, wiegand 26 bits interface, and backlit keypad…etc.
These features make the W1/W3-B 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 IP68
- Strong Zinc Alloy Electroplated anti-vandal case
- Full programming from the keypad
- 2500 users, supports Card, PIN, Card + PIN
- Can be used as a stand alone keypad
- Programmable one relay output
- Backlight keypad
- Wiegand 26 input & output
- Adjustable Door Output time, Alarm time, Door Open time
- Block enrollment, can enroll maximum 2500 consecutive card within 3 minutes
- Very low power consumption (60Ma)
- Fast operating speed, <20ms with 2500 users
- 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
- 12VDC Operation
- Two- year warranty

4. Specifications

Operating Voltage	12VDC	Operating Humidity	5%~ 95% RH
User Capacity	2500	Environment	Conforms to IP68
Keypad	12 keys, 2 x 6 digits(W1-B)	Adjustable Door Relay time	0~99 seconds
	12 keys, 3 x 4 digits(W3-B)	Adjustable Alarm Time	0~3 minutes
Card Type	EM 125 KHZ card/Tag	Wiegand Interface	Wiegand 26 input & output
Card Reading Distance	3~6 cm	Wiring Connections	Electric Lock, Exit Button,
Active Current	<80mA		DOTL, External Alarm
Idle Current	≤40mA	Dimensions	L135 xW58 xH26 mm(W1-B)
Lock Output Load	Max 2A		L128 xW82 xH28 mm(W3-B)
Alarm Output Load	Max 20A	Net Weight	550 g
Operating Temperature	-25~60℃	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.
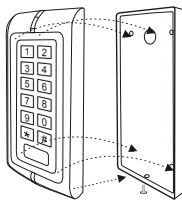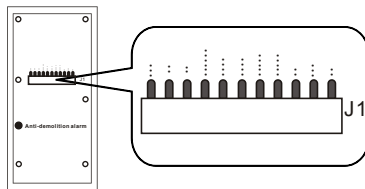
W1-B   PCB connect diagram

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	+12V DC	Power Input
Black	-12V DC	Power Input
Blue	NO	Relay NO
Purple	COM	Relay COM
Orange	NC	Relay NC
Pink	GND	W1/W3-B Negative

Connection Diagram

Common Power Supply

Power
12V

Pink
Green
White
Grey → Exit Button
Yellow
Brown
Red
Black
Blue
Purple
Orange

Door Switch

Fail-secure lock

Alarm-" "
Alarm

W1/W3-B
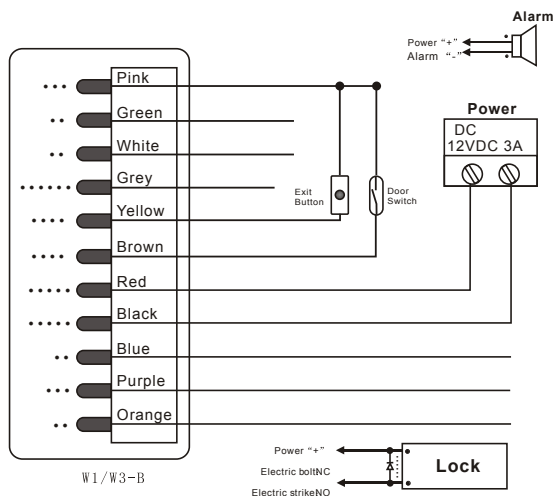
Special Power Supply
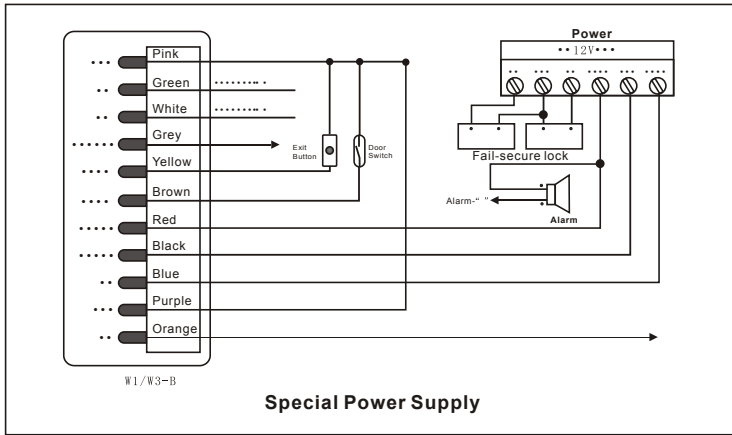
Notes:

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. 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 EM cards, the LED will turn in red, means reset to factory default setting successfully. Of the two EM 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.

8. Anti Tamper Alarm

The W1/W3-B 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.

9. Sound and Light indication

Operation Status	Red Light	Green Light	Blue 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	-	-	Bright	-
Exit from the programming mode	Bright	-	-	Short Ring
	-	-	-	-
Open the door	-	Bright	-	Short Ring
Alarm	Bright	-	-	Alarm

10. W1/W3-B Detailed Programming Guide

10.1 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	[3] [0] [#] Entry is by Card only
Set valid card **and** PIN users	[3] [1] [#] Entry is by Card **and** PIN together
Set valid card **or** PIN users	[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` `#`
	The ID number is any number between 1 ~ 2500. The PIN is any four digits between 0000 ~ 9999 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` `#` `UserID 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 (Note: This step must be done out of programming mode)	`*` `ID number #` `OldPIN #` `New PIN#` `New PIN #`
To add a **card** user (Method 1) This is a fast way to enter cards using ID number auto generation.	`1` `Read Card` `#` Cards can be added continuously without exiting programming mode
To add a **card** user (Method 2) This is the second way to enter cards using User ID Allocation. In this method a User ID is allocated to a card. Only one user ID can be allocated to a single card.	`1` `ID number` `#` `Card` `#`
To add **card** user (Method 3) Add a **series cards** users **Block Enrollment**	`5` `ID number` `#` `8 digits Card number` `#` `Card quantity` `#` Card quantity is between 1~2500. The 8 digits card number is the last 8 digits on the card. Maximum 2500 cards can be enrolled at a stretch within 3 minutes.
To delete **card** user by card number. 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 add and delete users in card and PIN mode ([3] [1] [#])	
To Add a **card** and **Pin** user (The PIN is any four digits between 0000 ~ 9999 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] [User ID] [#]
To add a 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 add and delete card users by Manager cards	
To add card user by Manager Add Card	[Manager add card] [Read card] [Manager add card] Cards can be added continuously.
To delete card User by Manager Delete Card	[Manager delete card] [Read 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 #

10.2 Door Relay, Door Open Detection, Alarm, Facility code Settings

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

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 forced open, or if the door is opened after 20 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 2 #

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 for 10 minutes, depending on the option selected below.

Normal status: No keypad lockout or alarm	7 0 #(Factory default setting)

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 #
To set the facility code	
To set the facility code of W1/W3-B (This operation might be required when W1/W3-B is acting as wiegand reader and connecting to	8 Facility code # Repeat Facility code # Facility Code can be any number between 1~255 (Default: 0)

11 Interconnecting Two Devices

11.1 W1/W3-B operating as a Wiegand Output Reader

In this mode the W1/W3-B supports a Wiegand 26 bit output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26 bit input. See figure 1.
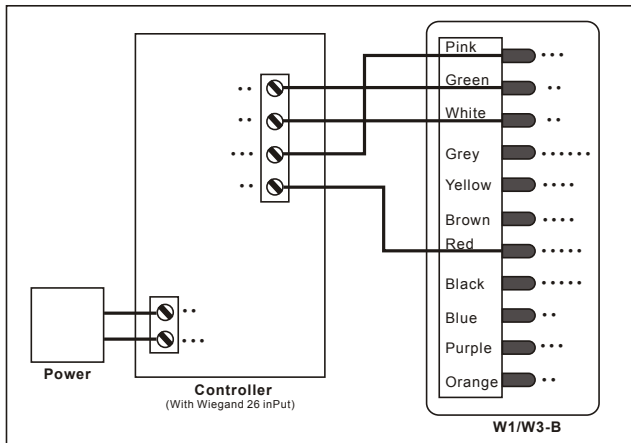
Transmission Format:

◆ 1: Keypad Transmission
The Reader will transmit the PIN data when it receives the last key (#) press after PIN code.

Format: Facility Code + PIN Code
(Facility code is any digits between 0~255, factory default is 0; Pin code is any 1~4 digits between 0~9999)
Example: Facility code: 1
          PIN code: 5678
Press 5678 #, then the output format will be: 00105678
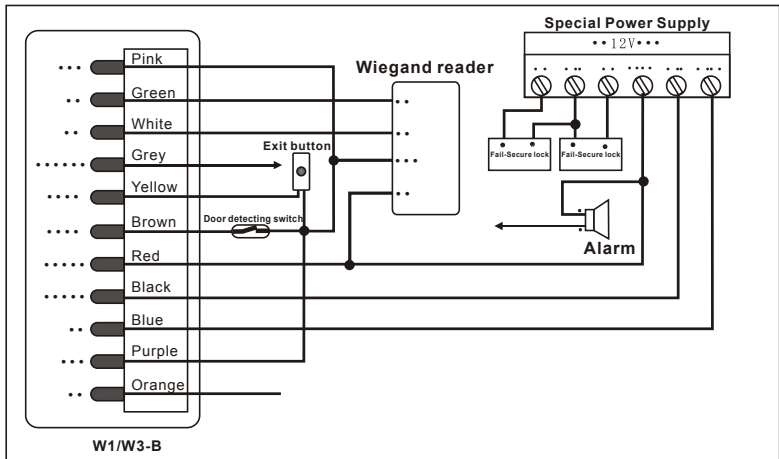
◆ 2: Proximity Card Transmission
The Reader will transmit the card data when it reads the Card.

Format: Card Number (the last 8 digits of Card Number)

Remarks: *No matter the card or pin is valid or invalid, the data will be transmitted*

11.2 W1/W3-B operating as a Controller

In this mode the W1/W3-B supports a Wiegand 26 bit input so an external Wiegand device with a 26 bit output can be connected to the Wiegand input terminals on the W1/W3-B. Either an ID card reader (125KHZ) or an IC card reader (13.56MHZ) can be connected to the W1/W3-B. Cards are required to be added at the external reader, except where an external EM reader is used, in this case cards can be added at either reader or controller. See figure 2.

W1/W3-B 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 is any 6 digits
To add a **PIN** user	⟦1⟧ ⟦User ID number⟧ ⟦#⟧ ⟦PIN⟧ ⟦#⟧ The ID number is any number between 1 ~ 2500. The PIN is any four digits between 0000 ~ 9999 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 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