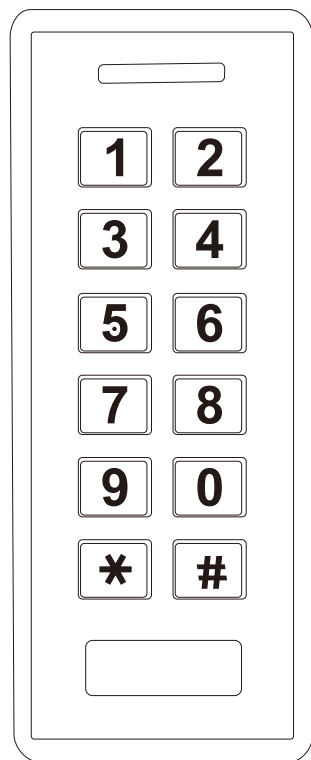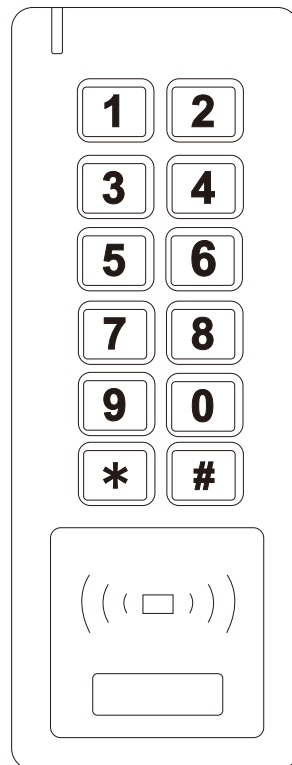# Keypad Reader

ABS   Metal

User Manual

1. Introduction

It is a Wiegand output keypad, with integrated proximity reader. It can read 125KHz EM & HID Cards and 13.56MHz Mifare Card. Because of waterproof, it can be mounted either indoor or outdoor in harsh environments.

Features:
Waterproof, conforms to IP66
Programmable Wiegand output: 26~58 bits
Programmable Keypad Transmission: 4bits, 8bits or virtual card number format
Card type: HID Card, EM Card & Mifare Card
Reading range: 3~8cm
External LED Control & External Buzzer Control

Specification：

Model	ABS Keypad	Metal Keypad
Frequency	125KHz & 13.56MHz	
Card Type	125KHz -EM & HID Cards/Fobs 13.56MHz - Mifare Cards/Fobs(ISO 14443A Compatible)	
Read Range	3~6 cm	
Standby Current	≤35mA	
Operating Voltage	9~18V DC	
Wiegand Output Format	Wiegand 26~58 bits output (Factory default: 26bits for EM card, 34bits for Mifare card, Auto output for HID card)	
Keypad Transmission Format	4bits(factory default) 8bits or virtual card number format can be set	
Operating Temperature	-40℃~60℃	
Operating Humidity	0% RH ~ 95% RH	
Physical	ABS	Zinc-Alloy
Color	Black/Ivory	Silver
Index of Protection	IP66	
Dimension	L122 x W50 x D21 mm	L148 x W56 x D22.5 mm
Net Weight	155g	275g
Shipment Weight	210g	330g

2. Installation

• Drill 2 holes (A, C) on the wall for the screws and one hole (B) for the cable
• Knock the rubber bungs to the holes (A, C)
• Fix the back cover on the wall with 2 screws
• Thread the cable though the cable hole (B)
• Attach the unit to the back cover

Wall

Φ3.2mm
Φ5X4mm
Φ9mm

9.5mm
41.5mm
70mm
9.5mm

A
B
C

Step3   Step2   Step1
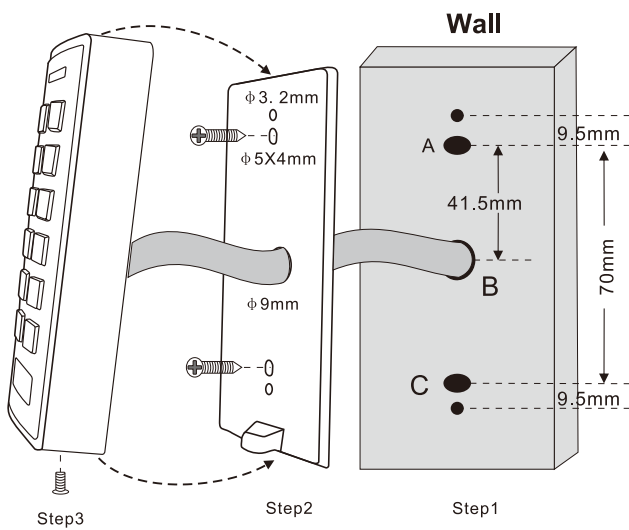
Wiring

Color	Function	Notes
Red	Power +	9-18V DC Power Input
Black	GND	Ground
Green	D0	Wiegand Data 0 Output
White	D1	Wiegand Data 1 Output
Brown	LED	Green LED Light Control
Yellow	Buzzer	Buzzer Control

Packing list：

No	Name	Quantity
1	Keypad Reader	1
2	Manual	1
3	Wall Fixing Plugs	2
4	Self Tapping Screws	2

Connection Diagram

Red — +12V
Black — GND
Green — D0
White — D1
Brown — LED
Yellow — BZ

Keypad Reader   Access Controller
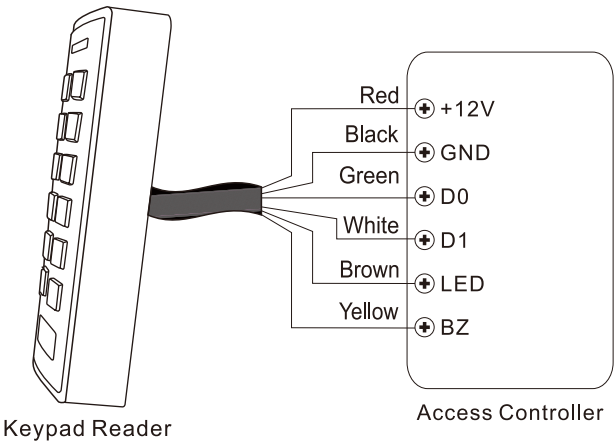
3. Programming

Change the configure settings according to your application (optional). Multiple configuration settings can be changed at one time: enter program mode, change desired settings, then exit program mode.

Set Master Code

The 4-6 digits Master Code is used to prevent unauthorized access to the system. To interface with the keypad reader, the manager will need a Master Code (factory default code: 123456), we highly recommend immediately updating it and recording the New Master Code.

Note: When enter program mode, please press * for 5 seconds, and then press Master Code #.

Programming Step	Keystroke Combination
1. Enter Program Mode	* **(Master Code) #**
2. Update Master Code	0（New Master Code）# （Repeat New Master Code）#
3. Exit	*

Set Wiegand output format for EM Card

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Format Setting	1 (26~44) # (Factory default is 26bits)
3. Exit	*

Set Wiegand output format for HID Card

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Format Setting	2 (0) # (Auto output, factory default) 2 (26~37) #
3. Exit	*

Set Wiegand output format for Mifare Card

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Format Setting	3 (0) # (Auto output) 3 (26~44, 56, 58) # (Factory default is 34bits)
3. Exit	*

Set PIN output format

The keypad reader can be set to 4bits(factory default), 8 bits, or virtual card number format

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Format Setting Virtual Card Number 4Bits 8Bits	4 (0) # 4 (4) # 4 (8) #
3. Exit	*

Set Audible and Visual Response

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. LED Always ON LED Always OFF OR 2. Enable Sound Disable Sound OR Keypad Backlit Always ON Keypad Backlit Automatic OFF	5 (1) # (Factory default) 5 (2) # 5 (3) # (Factory default) 5 (4) # 5 (5) # (Factory default) 5 (6) # Automatic OFF after 20 seconds, it will go ON by pressing any key (this key isn't taken into consideration)
3. Exit	*

Reset to Factory Default:

There are two methods to reset the device to factory default.
Method 1:
* (Master Code) # 5(0) #

Method 2 (This way is suitable for users forget the Master Code):
Power off, connect Yellow cable and GND cable, and then power on, hold it for 5 seconds, there will be a long beep, means reset to factory default successfully.

4. Data Signal

The below table shows the wave form of pulse width time (the duration of a pulse) and pulse interval time (the time between pulses) of the Wiegand data output from the readers.
(Example 1010)

Pulse Times	
Description	Typical Time
Pulse Width Time	42 µs
Pulse Interval Time	2 ms
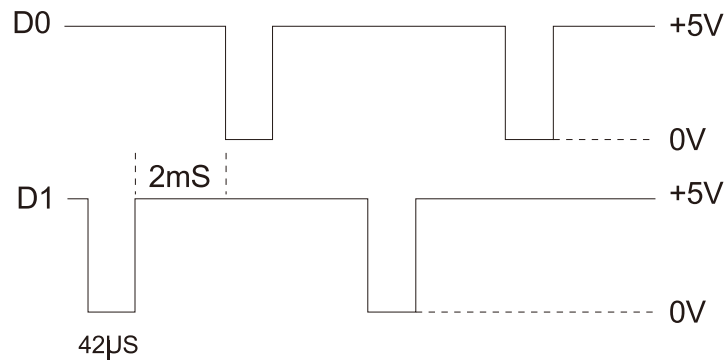
5. Keypad Transmission Format

The default keypad transmission format is 4bits, 8 bits or virtual card number format can be set.

Virtual Card Number
The reader will transmit the PIN data when it receives the last key (#) after PIN code Example:
PIN code: 999999 Press 999999 #, then the output format will be: 0000999999

4 bits
The reader will transmit the PIN data after every key is pressed:

1 (0001), 2 (0010), 3 (0011)
4 (0100), 5 (0101), 6 (0110)
7 (0111), 8 (1000), 9 (1001)
* (1010), 0 (0000), # (1011)
4 (0100), 5 (0101), 6 (0110)
7 (0111), 8 (1000), 9 (1001)
* (1010), 0 (0000), # (1011)

8 bits
The reader will transmit the PIN data after every key is pressed:

1 (1110 0001), 2 (1101 0010), 3 (1100 0011)
4 (1011 0100), 5 (1010 0101), 6 (1001 0110)
7 (1000 0111), 8 (0111 1000), 9 (0110 1001)
* (0101 1010), 0 (1111 0000), # (0100 1011)

FCC warning:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

IC warning

- English:
This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.
- French:
L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes :
1) L'appareil ne doit pas produire de brouillage;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.