Model BC-2010 HID&EM
Keypad/Reader/Controller

User Manual

1.   Packing List

Name	Quantity	Remarks
Digital Keypad-BC-2010	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

Please ensure that all the above contents are correct. If any are missing please notify the supplier of the BC-2010.

2.   BC-2010 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 to 8 digits long
To add a PIN user.	`1` `User ID number` `#` `PIN` `#` The ID number is any number between 1 & 1500. 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 programming mode
To delete a PIN or a card user.	`2` `User ID number` `#` for a PIN user or `2` `Read Card or Card ID number` `#` for a card user Users can be deleted continuously without exiting programming mode
To unlock the door for a PIN user	Enter the `PIN` then press `#`
To unlock the door for a card user	Present the card

3.   Description

The BC-2010 is single door multifunction standalone 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 which is available in either a bright silver or matt silver finish. The BC-2010 supports up to 1500 users in either a Card, 4 digit PIN, or a Card + PIN option. The inbuilt card reader supports both HID and EM 125KHZ frequency cards. The BC-2010 has many extra features including lock output current short circuit protection, a Wiegand input and output interface, and a backlit keypad. These features make the BC-2010 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.
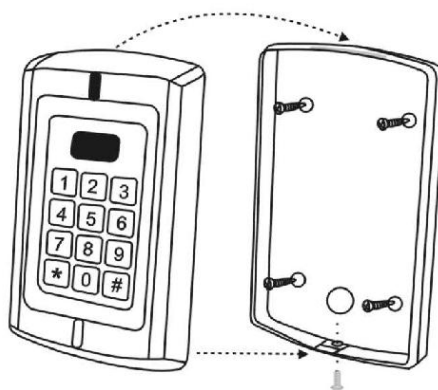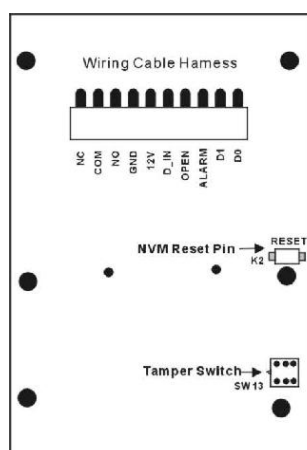
4.   Features

- Strong Zinc Alloy Electroplated anti-vandal case
- Full programming from the keypad
- 1500 uses, supports Card, PIN, Card + PIN
- Can be used as a stand alone keypad
- Support both 125KHZ HID card, 125KHZ EM card
- Card Block enrollment, can enroll 1500cards within 25 seconds
- Backlight keys
- Wiegand 26 input for the connection of an external reader
- External readers can be any make of card reader with a 26 bit output, i.e. HID, Mifare，EM and so on
- Wiegand 26 output for connection to a controller
- Dual BC-2010 units can interconnected
- One Relay output, NO, NC, COM
- Adjustable Door Output time, Alarm time, Door Open time
- Can delete card by 8 digit card number without present the card
- Very low power consumption (20Ma)
- Fast operating speed, <20ms with 1500 users
- Lock output current short circuit protection
- 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
- Five year warranty

5.   Specifications

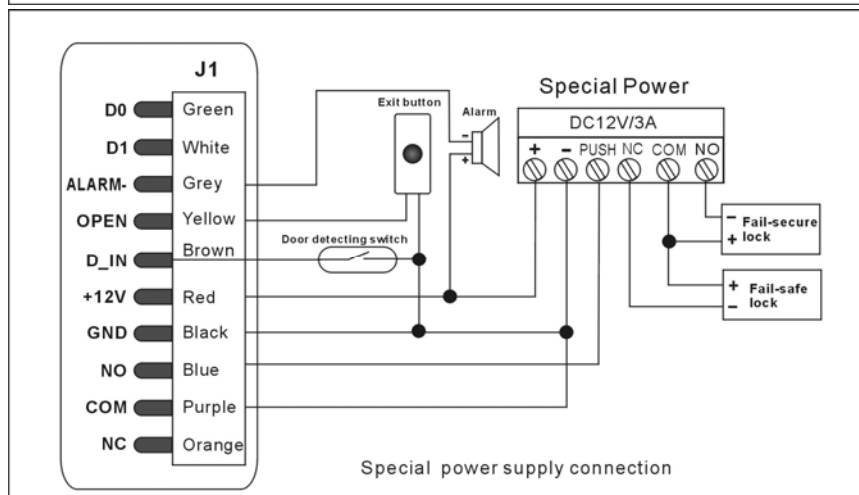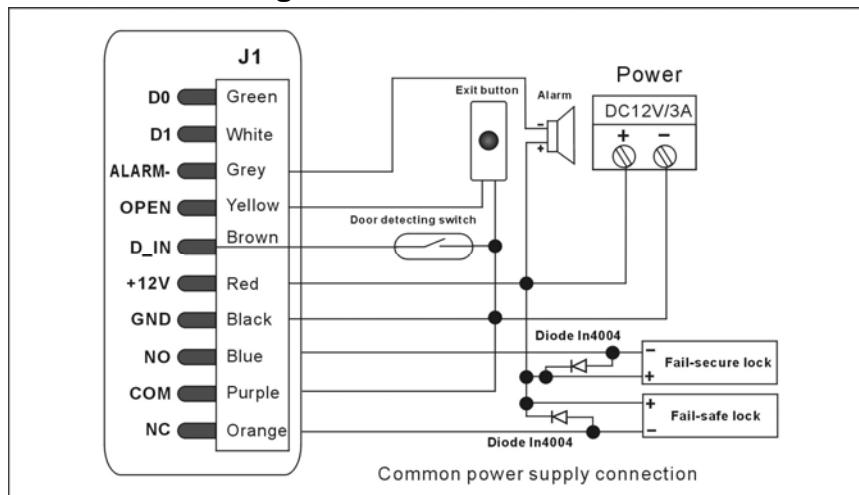|	
Operating Voltage	12V DC
User Capacity	1500
Keypad	12 keys, 3x 4 digits
Card Type	HID 125 KHZ card; EM 125KHZ card
Card Reading Distance	3 -7 cm
Active Current	＜80mA
Idle Current	＜50mA
Lock Output Load	Max 3A
Alarm Output Load	Max 20A
Operating Temperature	-20～60℃
Operating Humidity	5%- 95% RH
Adjustable Door Relay time	0 -99 seconds
Adjustable Alarm Time	0- 3 minutes
Wiegand Interface	Wiegand 26 bit
Wiring Connections	Electric Lock, Exit Button, DOTL, External Alarm
Dimensions	L128 x W82 x H28 mm
Net Weight	500 g
Gross Weight	700 g

6.   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
- Use the supplied rubber bungs to waterproof the screw holes
- Apply waterproof compound around the cable entry hole
- Attach the keypad to the back cover.

7.   Wiring

Colour	Function	Description
Green	D0	Wiegand Output D0 (or input from an external reader)
White	D1	Wiegand Output D1 (or input from an external reader)
Grey	Alarm -	Alarm Negative
Yellow	OPEN	Request to Exit Button
Brown	D-In	Door Contact
Red	12V +	12V + DC Regulated Power Input
Black	GND	0V DC Regulated Power Input
Blue	NO	Relay output NO
Purple	COM	Relay output COM
Orange	NC	Relay output NC

Connection Diagram

Notes: BC-2010 uses a standard 10 pin connector- J1.The diagrams above show the standard cable colour connections for wiring BC-2010 keypad to a lock when used in a standalone mode. The upper diagram shows a common power supply for both the keypad and lock, the under diagram shows a special power supplier for both the keypad and lock.

NO and COM: Fail-secure lock, when power on, the lock is opened.

NC and COM: Fail-safe lock, when power off, the lock is opened.

8.　　To Reset to Factory Default

To reset to factory default, power off the device, remove the keypad from the back cover, press the RESET key(K2) on the PCB, hold it and power on, keeping pressing it until hear three beeps, means reset to factory default successfully.
Note: Reset to factory default, the user's information is still retained.

9. Anti Tamper Alarm

The BC-2010 is built-in tamper switch. If the keypad is removed from the cover then the tamper alarm will operate.

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 Rings
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

11.　　BC-2010 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	`*` (Before exit from the programming mode, press `#` is to confirm the operation step.)
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 to 8 digits long
Setting the working mode: Set valid card only users Set valid card **and** PIN users Set valid card **or** PIN users	 `3` `0` `#` Entry is by card only `3` `1` `#` Entry is by card **and** PIN together `3` `2` `#` Entry is by either card **or** PIN (default)
To add a user in either card or PIN mode, i.e. in the `3` `2` `#` mode. (Default setting)	

To add a **Pin** user	`1` `User ID number` `#` `PIN` `#`
	
	 The ID number is any number between 1 & 1500. 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 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 an easy way to enter the individual 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 alternative way to enter the individual card 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 a **series cards** users – **Block Enrollment**	`5` `ID number` `#` `8 digits Card number` `#` `Card quantity` `#` Card quantity is between 1-1500. Of the 8 digits card number, for HID card, they are the 3 digits of a facility code and 5 digits of a serial number; for EM card, they are the last 8 digits on the card.

To delete a **card** user by card. Note users can be deleted continuously without exiting 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** by card number(8 digits)	8 Input 8 digits Card number # Cards can be deleted continuously without exiting programming mode

To add a **card and PIN** user 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 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 #

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11.2 Door Settings

Relay Output Delay Time	
To set door relay strike time	`4` `0~99` `#` `*`
	0-99 is to set the door relay time 0-99 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)	`6` `0` `#`
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 for 10 minutes, depending on the option selected below.	
Normal status: No keypad lockout or alarm (factory default)	`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 #`

12. Interconnecting Two Devices

12.1 BC-2010 operating as a Wiegand Output Reader

In this mode the BC-2010 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.
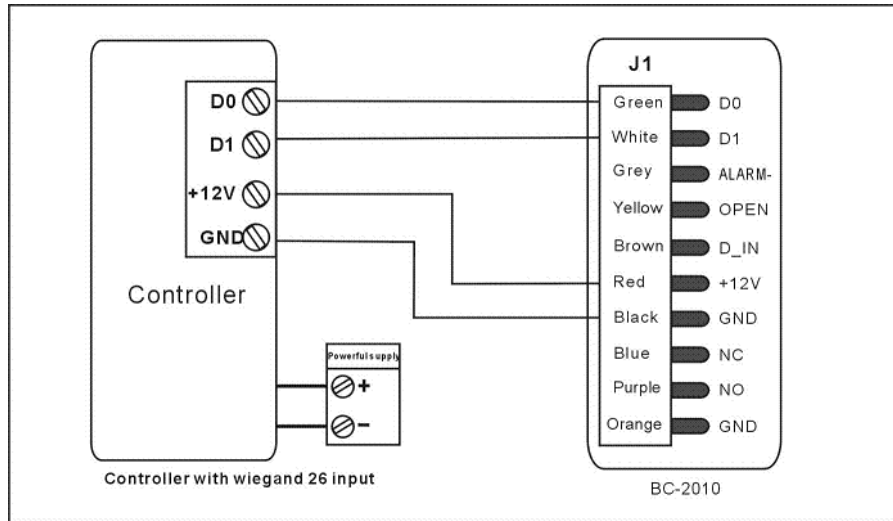

Figure 1

12.2 BC-2010 operating as a Controller

In this mode the BC-2010 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 BC-2010. Either an ID card reader (125 KHZ) or an IC card reader (13.56MHZ) can be connected to the BC-2010. 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. See figure 2.
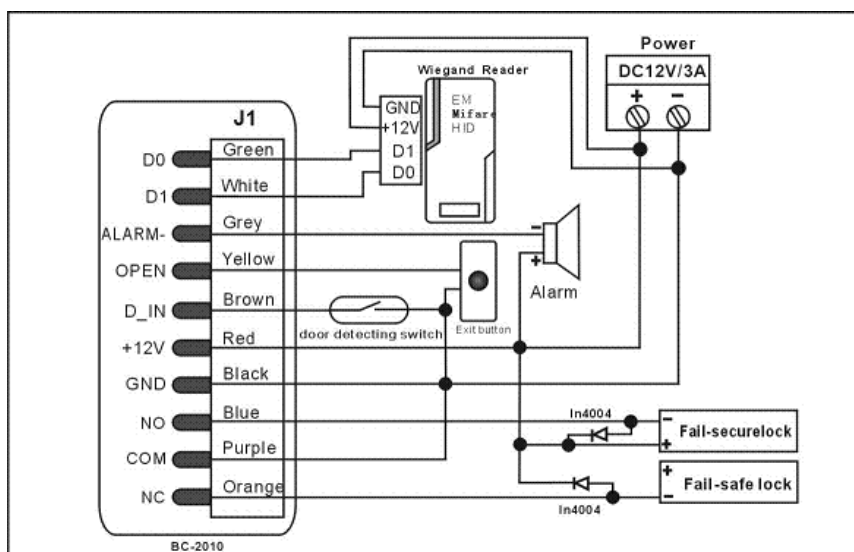

Figure 2

12.3   Two BC-2010 units interconnected for a single door

In this mode two BC-2010 units are used for a single door, one for entry and the other for exit. Either device acts as the controller and reader at the same time. Users can be enrolled on either of the devices. In this mode the user capacity for one door can be up to 3000. The setting of the two BC-2010 units must be the same including the master code. See figure 3.
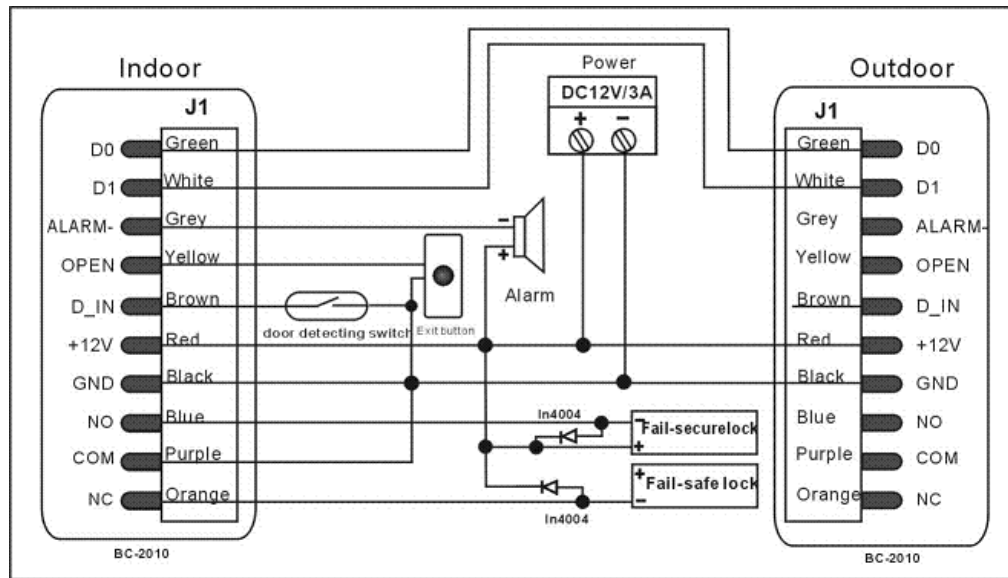

Figure 3

FCC WARNING

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE 2: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.