

Operation manual For NG BIOSINGLE

Version 1.1



SMART-I ELECTRONICS SYSTEMS PVT. LTD. (An ISO 9001:2008 certified company)

R&D, Training & Customer Support Center:

First Floor, Arihant Plaza Phase II, Village-Ovala, Ghodbander Road, Thane (W) 400607 |

Tel: + 91-22-6566 6555

Web site: www.smartisystems.com

PRESENCE : MUMBAI - DELHI - BANGALORE – KOLKATA - CHENNAI - AHMEDABAD – PUNE - HYDERABAD

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1. PRODUCT SELECTION

Particulars	Specifications
Model no.	SBSNG150 Series
Applications	Controller

2. INTRODUCTION

Smart-i introducing NG biosingle as weigand reader. This is TCP-IP based fingerprint device easy to installation & user friendly operations. This control fully access of single door in controller mode as well as when in reader mode. This is very useful for small industries to large organization for indoor outdoor uses.



3. TECHNICAL SPECIFICATION

A) Physical Specification:

Type	: ARM based Electronic device with biometric Interface for access & attendance.
Memory	: 8 MB flash
Operation voltage	12V DC/ 2A
Inbuilt card reader option	: Mifare, HID (I Class), HID Prox, EM Cards
Exit reader	: Mifare, HID (I Class), HID Prox, EM Cards
Bio-Optical sensor features	
Sensor technology	: Optical
Sensing area	: 16.0mm x 19.0mm
Image size(pixels)	: 272x320
Image resolution	: 500 dpi
No of fingers stored	: 950/4500
Communication port	: TCP / RS485
Inputs	: Door status, egress, fire & tamper
Outputs	: DOTL, Lock & alarm
LED/Buzzer	: Tricolor LED Bar / Multi Tone Buzzer o/p
Enclosure	:
Color / Weight	:
Dimension (L x H x D) in mm	:
Mounting	: Wall mounting

B) System features:

User Capacity	: 7500
Transaction capacity	: 25000
Slave no.	: 128
Admin user	: 8
Controller ID	: 10000
Time Zone	: 64
Access levels	: 128
Holiday	: 42 per reader
APB	: Reader wise setting
Expiry date	: Settable for Per user
Operation Modes	: Card only; Card+Finger; Finger only
Special features	
Master card for card addition	
Master card for card deletion	
Different LED indications for	: Power ON
	Valid card/ finger
	Master card shown
	Finger addition
	Error Indication
Buzzer for different beeps	: Valid card/ finger
	Finger addition
	Master card shown
	Error Indication

4. BEFORE INSTALLATION

4.1. smartBIOUTILITY configuration:

- Power ON device using 12V DC power supply.
- Then connect device to PC using TCP cable.
- After power ON, Red LED will blink continuously with single beep (it indicates no card in device)
- First you need to configure N/W setting in device as per your LAN settings.
- To set N/W setting run SI smartBIOUTILITY as shown below:

The screenshot shows the SMART BIOUTILITY software interface. The interface is divided into several sections:

- Network Settings:** Contains fields for IP Address (192.168.1.248), Port No (1234), and Slave (1). It includes buttons for Connect, Disconnect, and Restart. Callouts 2, 8, and 5 point to the Connect, Disconnect, and Restart buttons respectively.
- Device Info:** Displays Version, Model No, Serial No, and MAC Addr. A date and time stamp (01/10/15 09:50:53) is also shown.
- Settings:** Contains fields for IP Address, Net Mask, Gateway, and Slave, each with a Set button. Callout 4 points to the IP Address Set button. It also includes Security Level, Weigand Mode, and Sensor Mode dropdown menus with Set buttons.
- Enroll Card:** Contains fields for UID and Location, and buttons for Enroll Finger and Add Card. Callout 6 points to the Add Card button.
- Detect Device:** A table showing detected devices with columns for IP Address, Slave No, UDP Port, TCP Port, Version, and Serial No. Callout 7 points to the Version column.
- Response:** A text area for displaying responses, with a Clear Result button.

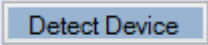
Additional callouts include:

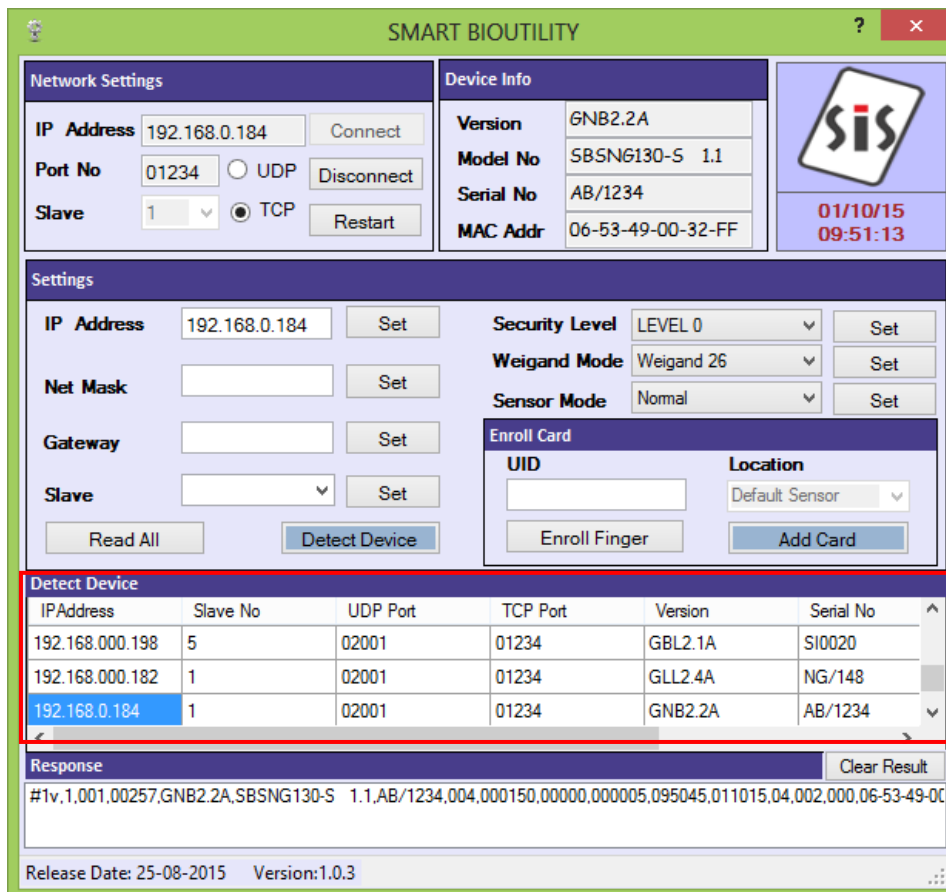
- Callout 1 pointing to the Detect Device button.
- Callout 3 pointing to the Read All button.

At the bottom of the window, it displays "Release Date: 25-08-2015 Version:1.0.3".

Useful buttons:

- ① Detect Device → To detect device in LAN
- ② Connect → Connect the device.
- ③ Read All → It will read all the details of controller
- ④ Set → Set the corresponding settings on the controller
- ⑤ Restart → To store all settings in device.
- ⑥ Add Card → Add Master Card and Delete Master Card
- ⑦ Enroll Finger → Add finger to given UID.
- ⑧ Disconnect → Disconnect the device.

- f. Click on  button to detect device when it connected in LAN or to PC using TCP cable.



The screenshot shows the SMART BIOUTILITY software interface. The 'Detect Device' button is highlighted in blue. Below the interface, a table shows the detected devices:

IPAddress	Slave No	UDP Port	TCP Port	Version	Serial No
192.168.0.198	5	02001	01234	GBL2.1A	SI0020
192.168.0.182	1	02001	01234	GLL2.4A	NG/148
192.168.0.184	1	02001	01234	GNB2.2A	AB/1234

The 'Response' field at the bottom shows the following data: #1v,1,001,00257,GNB2.2A,SBSNG130-S 1.1,AB/1234,004,000150,00000,000005,095045,011015,04,002,000,06-53-49-00

- g. Then select that device as shown in below screen from *Detect Device*, and click on **Connect** button, it will show *Device Info* as shown below.

Network Settings		Device Info	
IP Address	192.168.0.232 <input type="button" value="Connect"/>	Version	GNB2.2A
Port No	01234 <input type="radio"/> UDP <input type="button" value="Disconnect"/>	Model No	SBSNG130-S 1.1
Slave	1 <input checked="" type="radio"/> TCP <input type="button" value="Restart"/>	Serial No	AB/1234
		MAC Addr	06-53-49-00-32-FF

- h. Click on Read All button, it will show the current setting of device
 i. Now you can see IP details of that controller in *settings*.

The screenshot shows the SMART BIOUTILITY interface with the following sections:

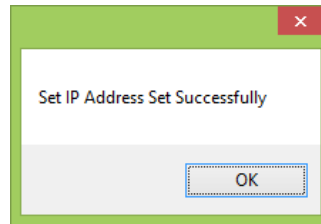
- Network Settings:** IP Address: 192.168.0.184, Port No: 01234, Slave: 1, TCP selected.
- Device Info:** Version: GNB2.2A, Model No: SBSNG130-S 1.1, Serial No: AB/1234, MAC Addr: 06-53-49-00-32-FF.
- Settings:** IP Address: 192.168.0.184, Net Mask: 255.255.255.000, Gateway: 192.168.000.002, Slave: 001, Security Level: LEVEL 2, Weigand Mode: 32 or Transparent, Sensor Mode: Auto Identity.
- Detect Device Table:**

IP Address	Slave No	UDP Port	TCP Port	Version	Serial No
192.168.000.198	5	02001	01234	GBL2.1A	SI0020
192.168.000.182	1	02001	01234	GLL2.4A	NG/148
192.168.0.184	1	02001	01234	GNB2.2A	AB/1234
- Response:** #1v,1,001,00257,GNB2.2A,SBSNG130-S 1.1,AB/1234,004,000150,00000,000005,095045,011015,04,002,000,06-53-49-000052

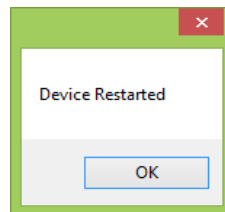
- j. To change those settings do the changes in *as per need*.

IP Address	192.168.0.232	<input type="button" value="Set"/>
Net Mask	255.255.255.000	<input type="button" value="Set"/>
Gateway	192.168.000.002	<input type="button" value="Set"/>
Slave	001	<input type="button" value="Set"/>

- k. After entering settings check that click of each setting. So that only those parameters get set in that device.
- l. Now click on button. For IP address change it will show following message.



- m. Press OK & After any changes please click on button. So new changes will be shown.



- 5. Press button, you will see the updated controller details in detect device field.
- 6. Same way other setting like Gateway, Net Mask and Slave ID can be changed.

Detect Device					
IPAddress	Slave No	UDP Port	TCP Port	Version	Serial No
192.168.0.232	1	02001	01234	GNB2.2A	AB/1234
192.168.000.198	5	02001	01234	GBL2.1A	SI0020
192.168.000.182	1	02001	01234	GLL2.4A	NG/148

4.2. ADD & DELETE Master Addition in device

- After power ON, Red LED will blink continuously with single beep till you do not add master card. After adding master card, device will stop to blink & beep.
- To add master card first you need run SI smartBIOUTILITY:
- Press **Detect Device** button & select controller from *Device detect* field click on **Connect** button. It is connected by TCP.

Detect Device					
IPAddress	Slave No	UDP Port	TCP Port	Version	Serial No
192.168.0.232	1	02001	01234	GNB2.2A	AB/1234
192.168.000.198	5	02001	01234	GBL2.1A	SI0020
192.168.000.182	1	02001	01234	GLL2.4A	NG/148

Network Settings

IP Address:

Port No: UDP

Slave: TCP

- In Enroll card field as shown below, Master card Add/Delete can be performed.

Enroll Card

UID:

Location:

- Now click on **Add Card** button, following window will open.

AddCard

Card Digit:


Card Number:

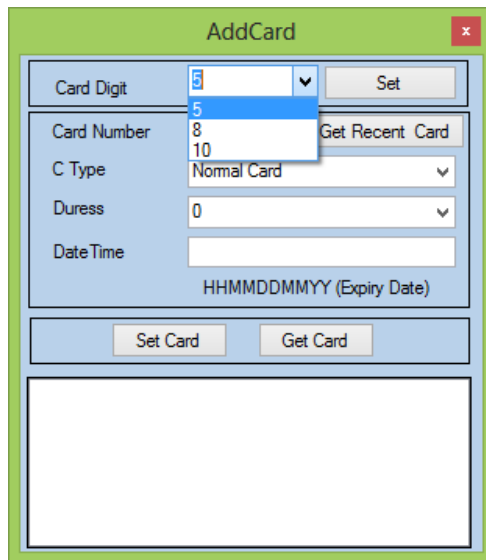
C Type:

Duress:

Date Time:

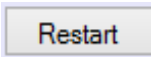
HHMMDDMMYY (Expiry Date)

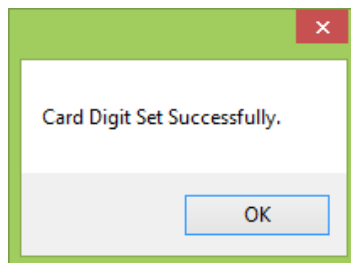
- f. Card Digit Setting → Card digit can be set 5, 8 and 10, select the card digit as per requirement and click on  button to set card digit in device.

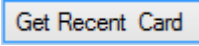


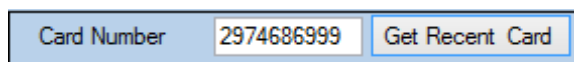
The 'AddCard' dialog box contains the following fields and buttons:

- Card Digit:** A dropdown menu with a 'Set' button next to it. The menu is open, showing options 5, 8, and 10.
- Card Number:** A text input field with a 'Get Recent Card' button next to it.
- C Type:** A dropdown menu with 'Normal Card' selected.
- Duress:** A dropdown menu with '0' selected.
- Date Time:** A text input field with the format 'HHMMDDMMYY (Expiry Date)' below it.
- Buttons:** 'Set Card' and 'Get Card' buttons are located at the bottom of the form area.

- g. After setting the card digit it give message of Card Digit Set Successfully. After this setting click on  button, for setting to be effective.



- h. Add card in device → Show the card on device and click on  it will show the recently swiped card Number as shown below or it can be entered Manually.



The 'Card Number' field contains the value '2974686999' and the 'Get Recent Card' button is highlighted.

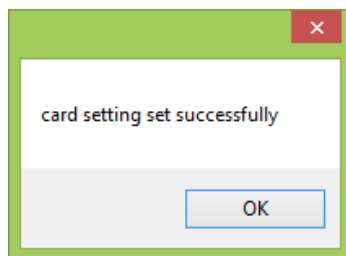
- i. Make Card → As per image shown below C Type show the Type of card which you want to make, Card can be Normal card, Master Card , Or Delete Master Card
- j. Duress card → If card which is added as Duress then select 1 from the selection other wise 0 is default value

Card Number	2974686999	Get Recent Card	Card Number	2974686999	Get Recent Card
C Type	Normal Card		C Type	Add Master Card	
Duress	Normal Card		Duress	0	
Date Time	Add Master Card		Date Time	0	
	Delete Master Card			1	
	HHMMDDMMYY (Expiry Date)			HHMMDDMMYY (Expiry Date)	

- k. Expiry date to card → Here for card we can add expiry date also which is in format HHMMDDMMYY for e.g. 1259090915 mean card will expire on **09-sep-15** after time **12.59**.

DateTime	<input type="text"/>
	HHMMDDMMYY (Expiry Date)

- l. Enter Card or Get It by Select select CType as “**ADD Master Card**” (As per requirement) , Duress as o (As per requirement), Date Time (As per requirement) and click on button to add card in device.it will show following messages and response.



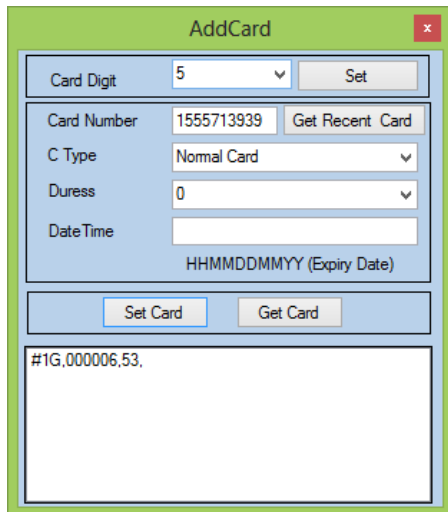
<input type="button" value="Set Card"/>	<input type="button" value="Get Card"/>
#1G.000005,50.	

- m. Get Card → enter the card number in Card Number Field and click on button, it will show the details of card from device.

AddCard		<input type="button" value="Set"/>
Card Digit	5	
Card Number	2974686999	Get Recent Card
C Type	Add Master Card	
Duress	0	
Date Time	0000000000	
	HHMMDDMMYY (Expiry Date)	
<input type="button" value="Set Card"/>	<input type="button" value="Get Card"/>	
#1S.006787,2974686999,01111,002,001,255,001,032,00		

<input type="button" value="Set Card"/>	<input type="button" value="Get Card"/>
#1S.006787,2974686999,01111,002,001,255,001,032,00	

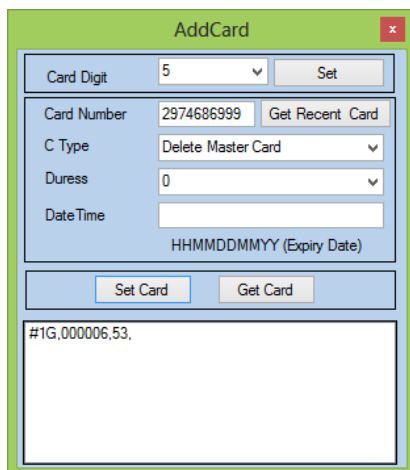
- n. Add Master Card function → After making card as Master Card when that master card shown on Device the LED will turn to **“Blue”** and beep for 5 time, this indicate after showing Master card device allow to add one Normal card with finger within 5 beeps, if finger is added in device then LED terns to **“Green”**.
- o. Similarly Normal card /can be added as shown



The screenshot shows the 'AddCard' window with the following fields and buttons:

- Card Digit: 5 (dropdown), Set button
- Card Number: 1555713939, Get Recent Card button
- C Type: Normal Card (dropdown)
- Duress: 0 (dropdown)
- Date Time: (empty), HHMMDDMMYY (Expiry Date)
- Buttons: Set Card, Get Card
- Text area: #1G.000006.53.

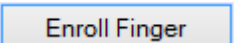
- p. Delete Master card → Enter Master Card Number or get it by **Get Recent Card** after that card is shown on device as recent card, select **“Delete Master Card”** in C Type and click on **Set Card** button. That card will work as Delete Master card after showing it on device the LED will blow **“Yellow”** and beep for 5 times this indicate after showing Delete Master card device allow to delete one Normal card within 5 beeps.

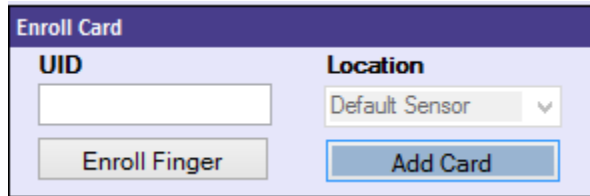


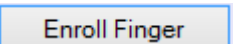
The screenshot shows the 'AddCard' window with the following fields and buttons:

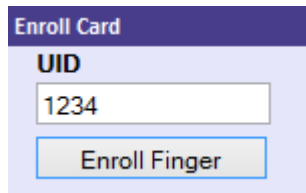
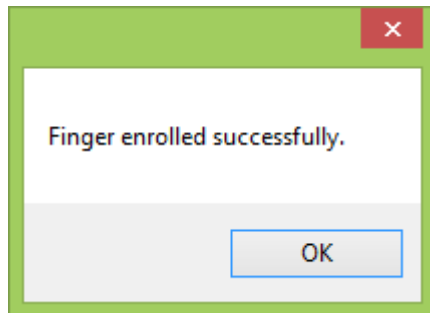
- Card Digit: 5 (dropdown), Set button
- Card Number: 2974686999, Get Recent Card button
- C Type: Delete Master Card (dropdown)
- Duress: 0 (dropdown)
- Date Time: (empty), HHMMDDMMYY (Expiry Date)
- Buttons: Set Card, Get Card
- Text area: #1G.000006.53.

4.3. Enroll Finger in device

- a. Connect device as per procedure.
- b. Enroll Finger → By this we can add Finger in device, Enter the card number in UID field and click on  button



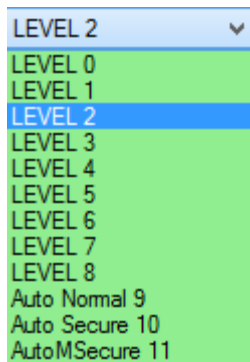
- c. After clicking Enroll Finger button device LED will turn to “**Blue**” and started beeping for 5 times, this indicate after clicking  device allow to add one finger on given UID within 5 beeps, if finger is added in device then LED terns to “**Green**”.

4.4. Set Sensor Mode, Security level, Weigand Mode

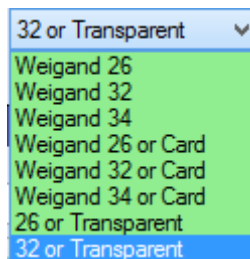
Security Level	LEVEL 2	Set
Weigand Mode	32 or Transparent	Set
Sensor Mode	Auto Identity	Set

- a. Security Level → Select Security level from LEVEL 0 to LEVEL 8 and Auto Normal 9, Auto Secure 10, AutoMSecure 11 as shown below and click on button to set the settings.



- LEVEL 2
- LEVEL 0
- LEVEL 1
- LEVEL 2
- LEVEL 3
- LEVEL 4
- LEVEL 5
- LEVEL 6
- LEVEL 7
- LEVEL 8
- Auto Normal 9
- Auto Secure 10
- AutoMSecure 11

- b. Weigand Mode → Select Weigand Mode from List and click on button to set the settings.



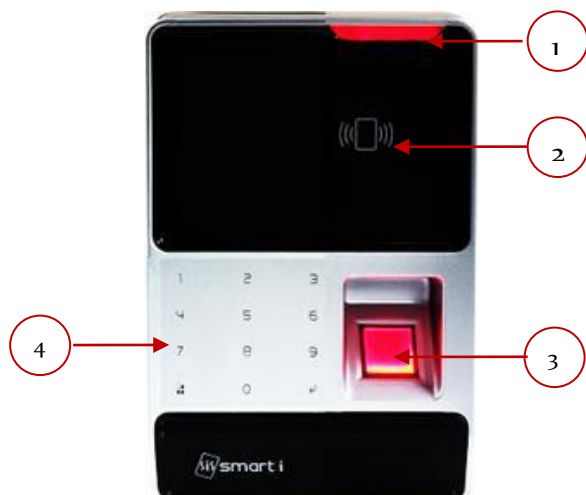
- 32 or Transparent
- Weigand 26
- Weigand 32
- Weigand 34
- Weigand 26 or Card
- Weigand 32 or Card
- Weigand 34 or Card
- 26 or Transparent
- 32 or Transparent

- c. Sensor Mode → Select Sensor Mode from List and click on button to set the settings.



- Auto Identity
- Normal
- Key Identity
- Auto Identity

7. DESCRIPTION OF KEYS & OTHER PARTS



- ① Multicolor LED indication
- ② Card reader
- ③ Biometric sensor
- ④ Keypad

Keypad functions:

Sr. No.	Function	Keys	Description
1.	Admin login	* 2 ↵ UID ↵ password ↵ * 2 ↵ show card ↵ password ↵	Default Admin user ID:11111 & password :12345 By admin login LED becomes blue.
2.	Admin logout	* 2 ↵	Auto logoff after 60sec. By admin logout LED becomes red.
3.	Add user/card	* 3 ↵ UID ↵ re-enter UID ↵ keep finger * 3 ↵ show card ↵ keep finger	After entering in menu LED becomes yellow. After entering UID or by showing card sensor get ON to sense finger. Keep finger after sensor get ON.
4.	Delete user/card	* 4 ↵ UID ↵ re-enter UID ↵ * 4 ↵ show card ↵	After entering in menu LED becomes yellow. If user or card is added then LED becomes green for 1 sec & device gives beeps. For invalid user or card, device gives one beep.
5.	search user/card	* 5 ↵ UID ↵ * 5 ↵ show card ↵	After entering in menu LED becomes yellow. If user or card is added then LED becomes green for 1 sec & device gives long single beep. For invalid user or card, device gives two beeps & LED blinks red for 1sec.

LED indications with beeps:

Sr. No.	Functions	LED colors	Beeps
1	ADD master card shown	Blink Blue & red	Five beeps
2	Finger added	Green	Two beeps
3	Finger timeout	Red	Single beep
4	Putting Same finger for enroll	Red	Single beep
5	Enroll fingers more then 8	Red	Two beeps
6	DELETE master card shown	Blink Yellow & red	Five beeps
7	Device Power ON	Red	Single beep
8	Valid user	Green	Long beep
9	Invalid user	Blue	Two beeps
10	Invalid finger	Red	Two beeps

User Card Addition Using Master Card

- Show 'ADD MASTER CARD' in front of device to add finger.
- LED starts to blink in blue & red color & buzzer start to give single beep.
- Now show the card to add finger. After showing card, sensor will get ON. Put your finger on sensor properly. Sensor captures your finger & get OFF. LED becomes green & then red with two beeps it means finger get added.
- Remove your finger.

Note:

-  *If the card was not shown within five beep completion then bio-single stop to blink. & then need to show master card again.*
-  *Per user you can add 8 fingers only.*

Card Deletion Using Master Card

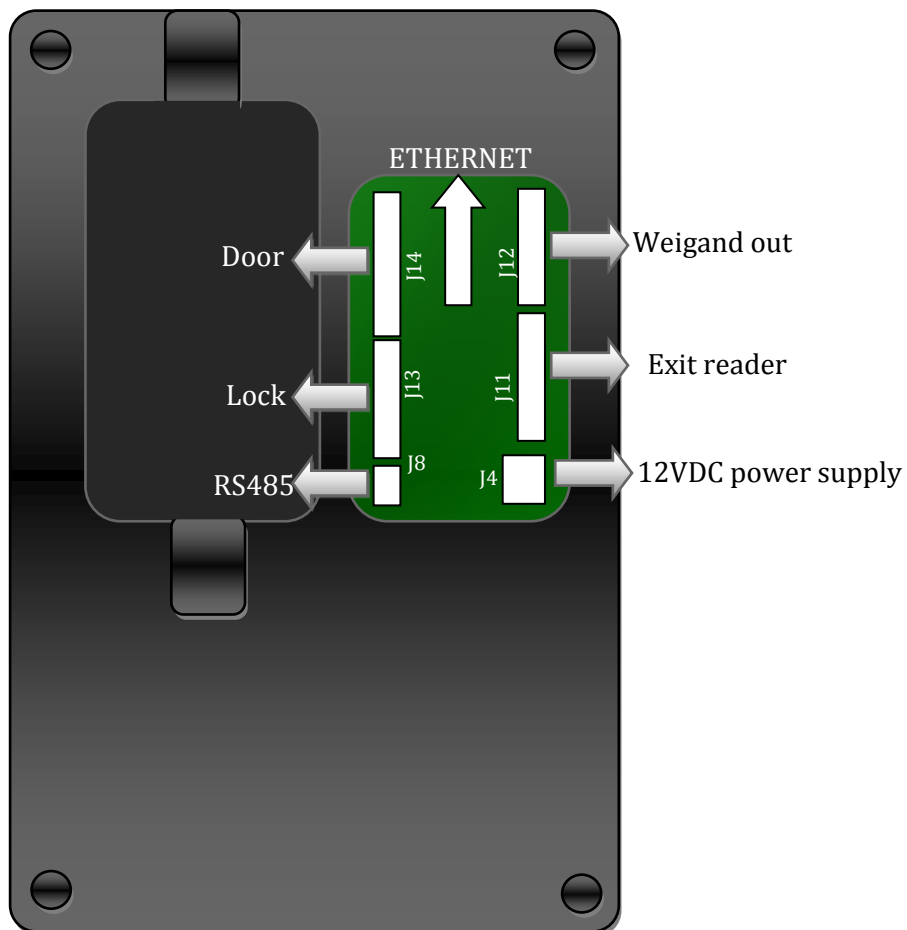
- Show 'DELETE MASTER CARD' to delete cards.
- LED starts to blink in violet & red color & buzzer start to give single beep.
- Now shows card which you want to delete.
- If device LED becomes green with beeps it means card get deleted.

8. OPERATION



- a. Show added card, LED blink blue for 1 sec.
- b. Sensor gets ON.
- c. Put your added finger within 10 secs to verify that finger.
- d. If finger matched then device LED becomes green & buzzer gives long beep.
- e. For invalid card swipes buzzer gives two beeps.

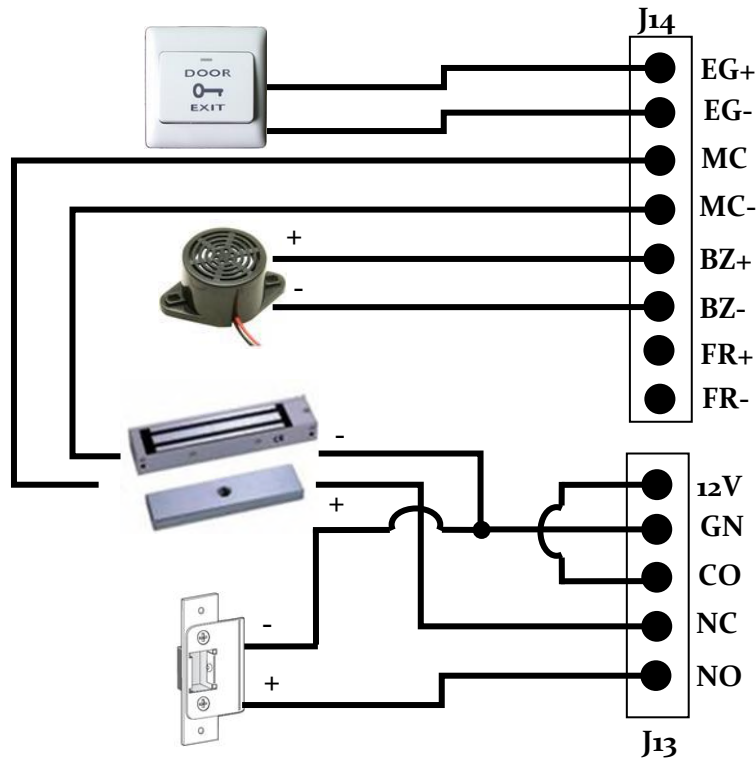
9. CONNECTION DETAILS



Power Supply connection:



Door connection:

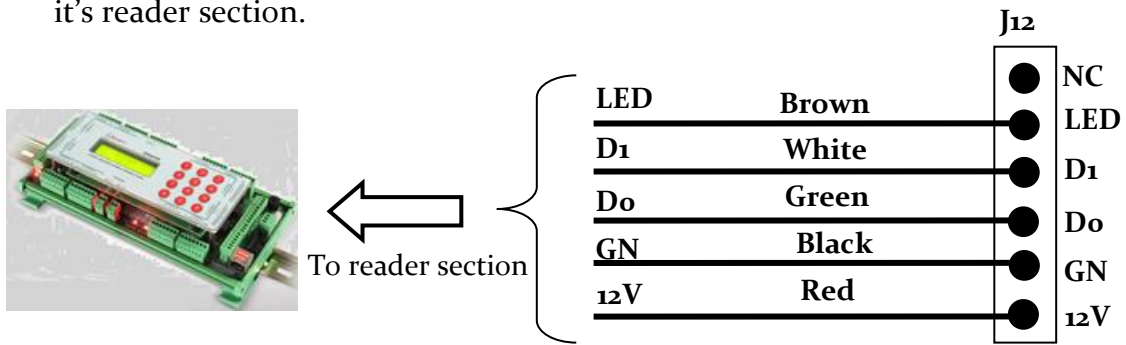


Exit reader connection:



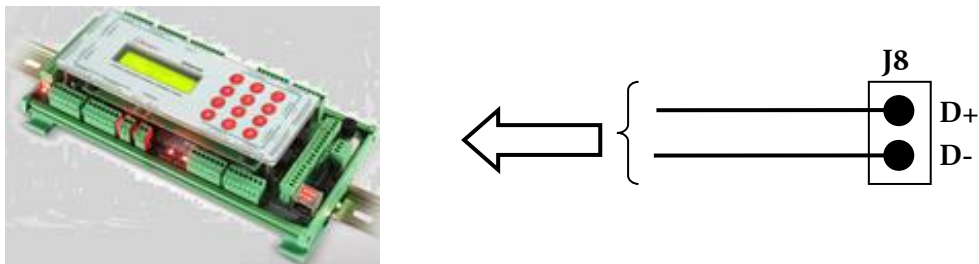
Weigand OUT connection:

In weigand out mode need to use this connection to connect with controller at it's reader section.



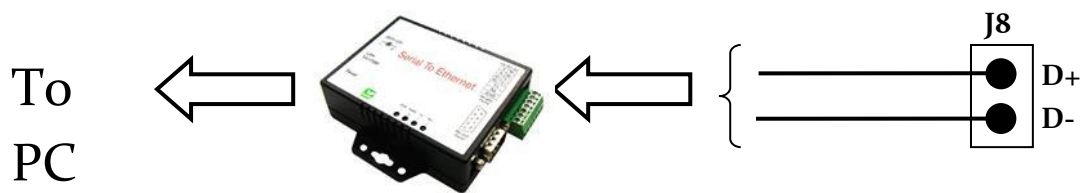
RS485 connection:

To controller for template management by TCP/IP comm.

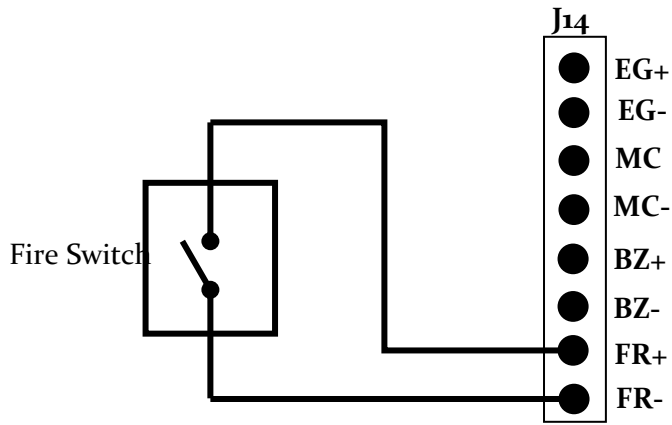


OR

To RS485 converter for serial communication.

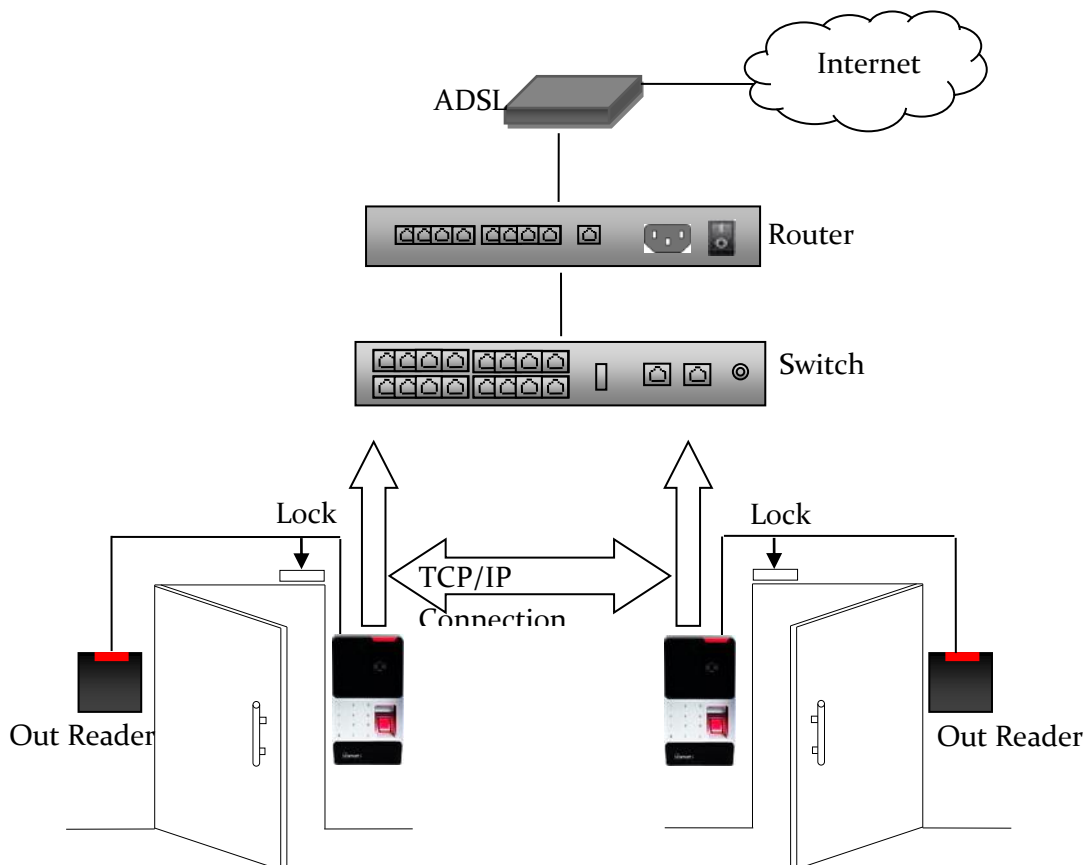


Fire Panel connection:

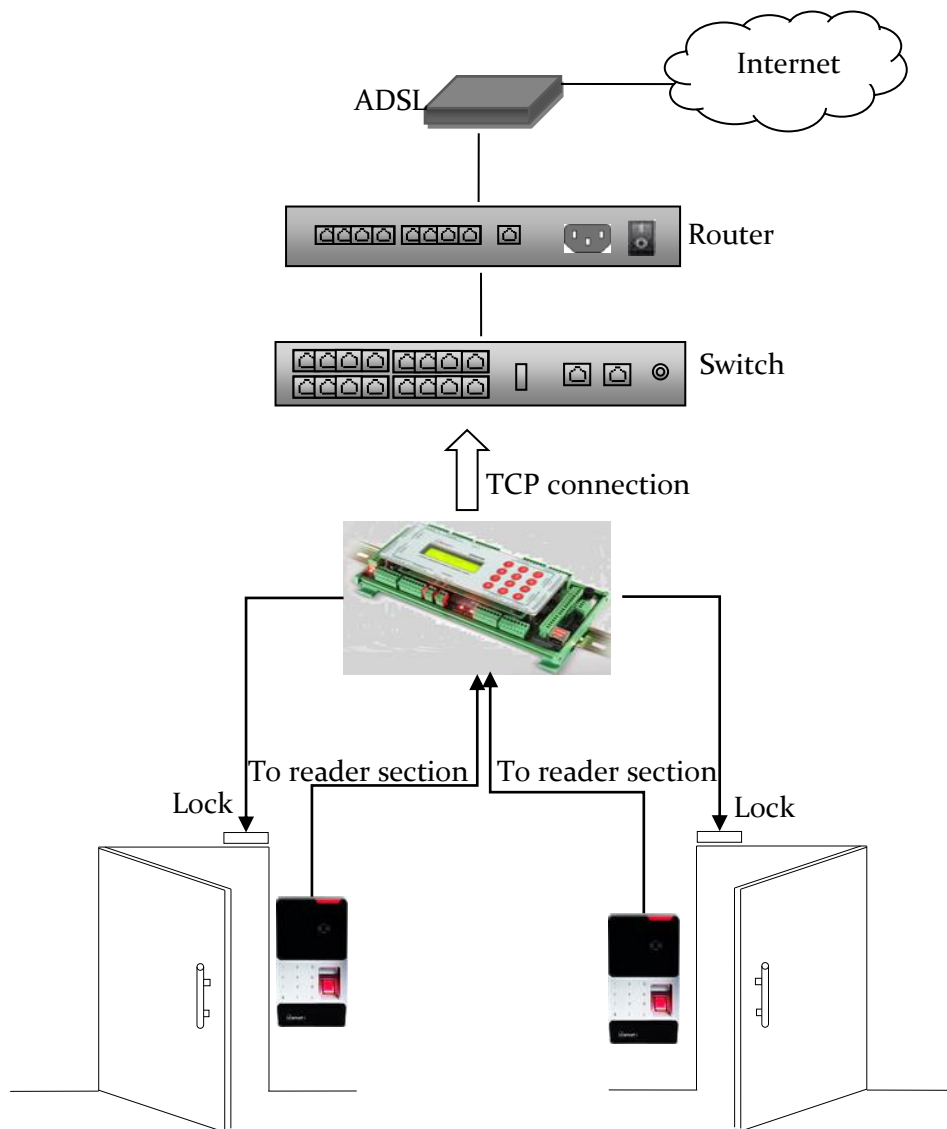


10.DEVICE CONFIGURATION

Bio-single NG as controller:



Bio-single NG as Reader:

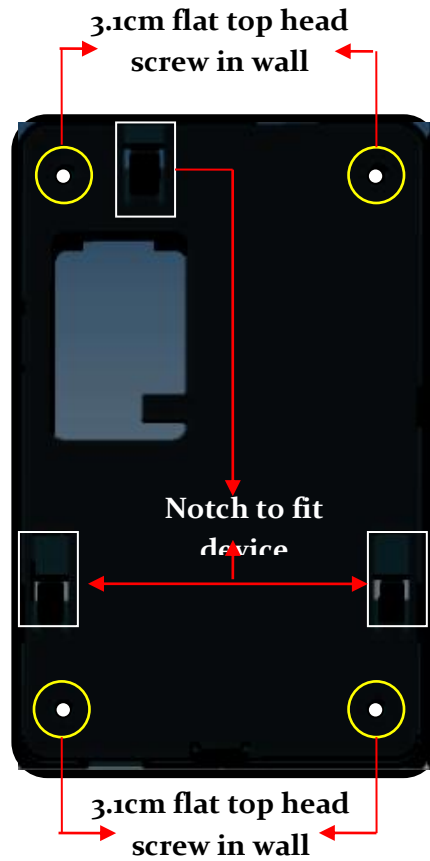


11.RECOMMENDED CABLE SPECIFICATION

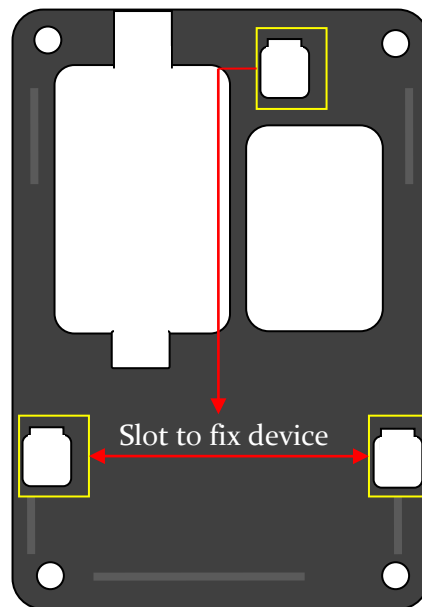
Type	Particular	Cable Spec	Distance
A	Reader (Weigand)	22AWG; 6 core; shielded Cable	Up to 25 meter
B	Egress switch, Magnetic contact	22 AWG; 2 core; shielded Cable	Up to 10Ft.
C	Lock	16 AWG; 2 core; shielded Cable	Up to 10 Ft.
D	Unit to Power Supply	22AWG; 2 Core shielded Cable	Up to 10 Ft.
E	LAN Cable	24AWG; CAT5 / CAT6 (4 pair)	Up to 100 meter

12. MOUNTING OF UNIT ON THE WALL

Fit the wall mounting plate on the wall as shown and screw the plate on the wall using the drill machine and 3.1cm screws as shown below:



1. Fit device on back plate by fixing the slots given at the back cover of device.

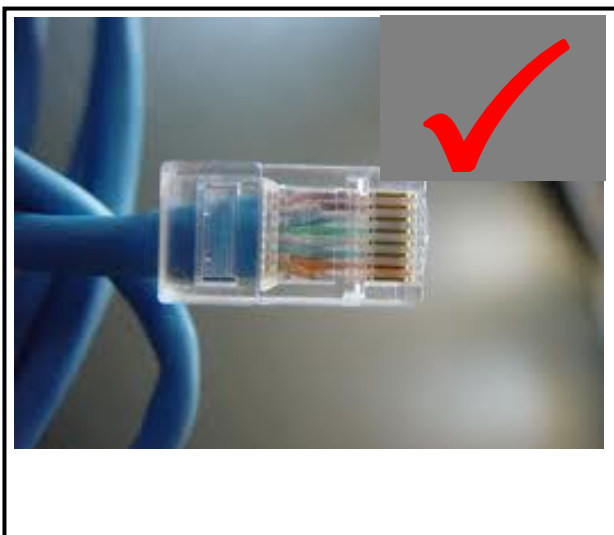


13.CONNECTING TO HOST COMPUTER USING

The NG Can be Connect to the computer by TCP/IP (Ethernet).

Note: Use proper manually crimp CAT5 cable, Refer bellow images,

Manually Cramped RJ-45 (CAT5)



ReadymadeRJ-45 (CAT6)

