Operation manual
For NG BIOSINGLE

Version 1.1

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

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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.

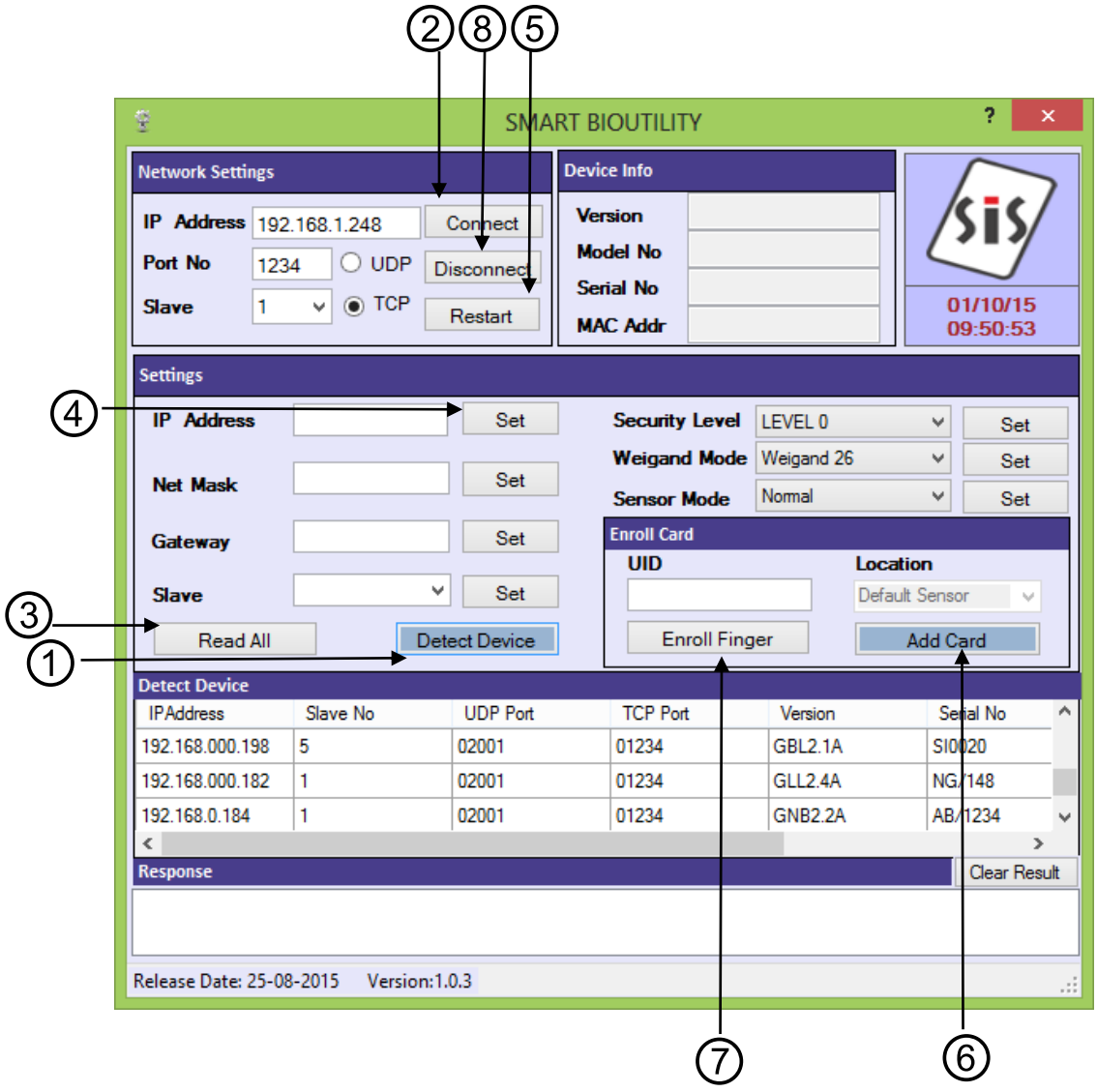
3. TECHNICAL SPECIFICATION

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:

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



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.

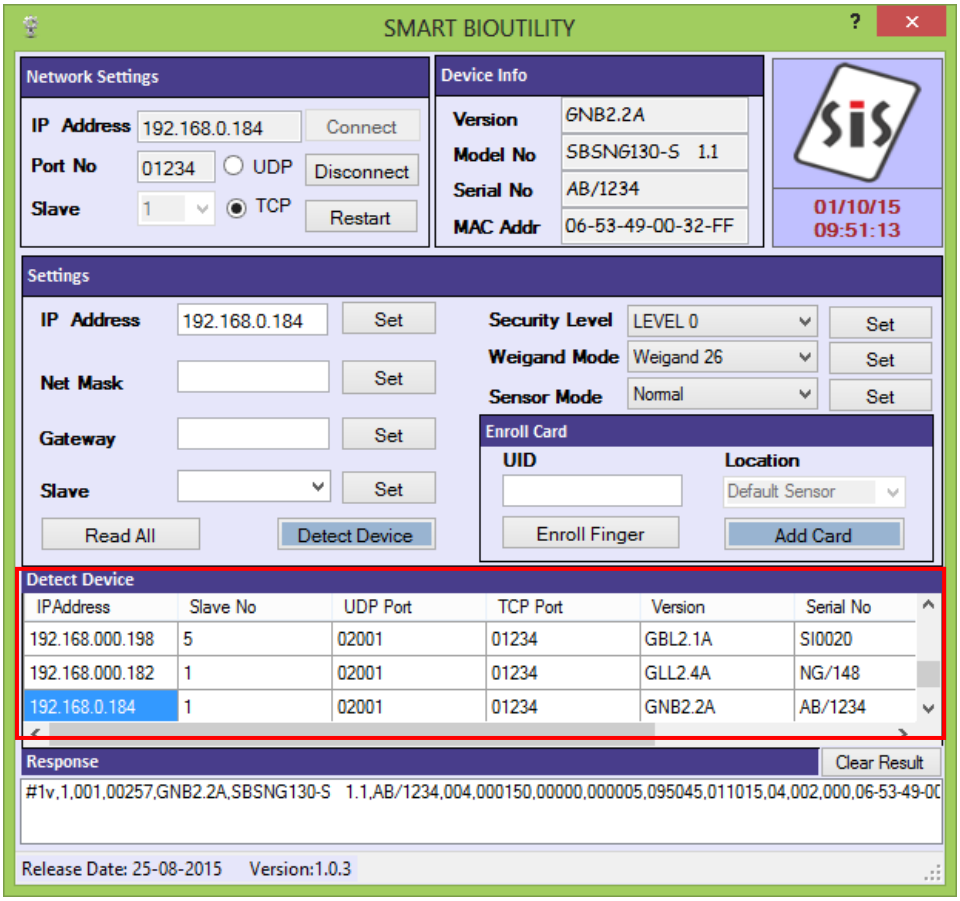
⑥ Add Card → Add Master Card and Delete Master Card

⑦ Enroll Finger → Add finger to given UID.

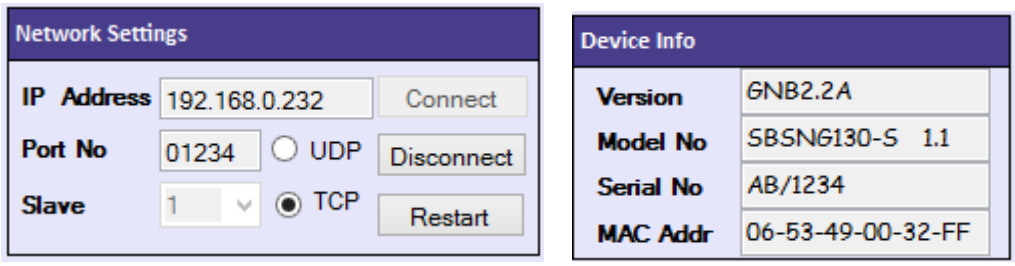
⑧ Disconnect → Disconnect the device.

f. Click on 

button to detect device when it connected in LAN or to PC using TCP cable.

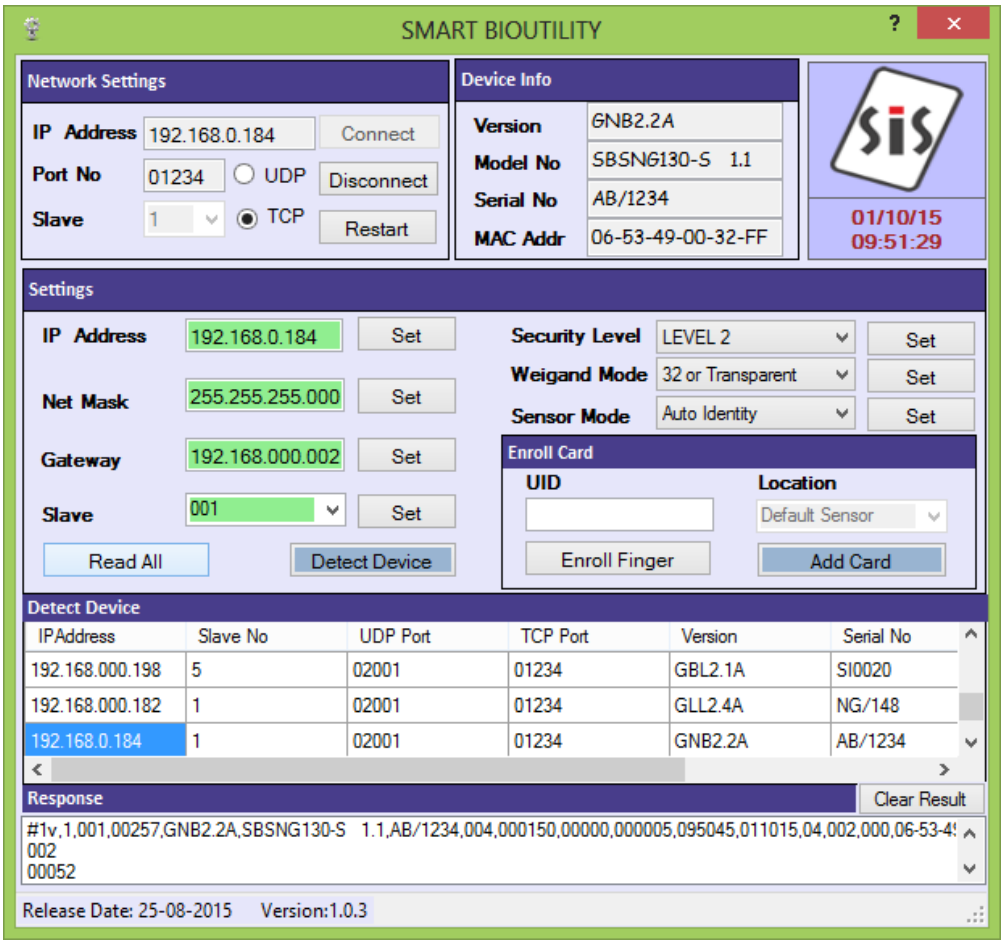


g. Then select that device as shown in below screen from *Detect Device*, and click on Connect button, it will show *Device Info* as shown below.

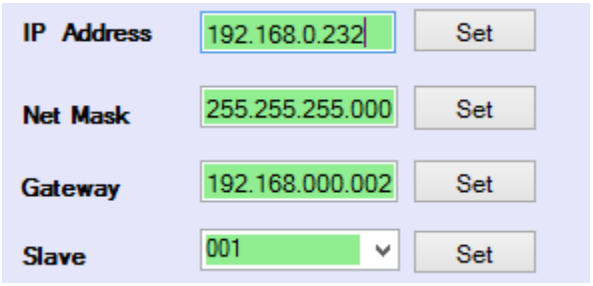


h. Click on Read All button, it will show the current setting of device

i. Now you can see IP details of that controller in *settings*.

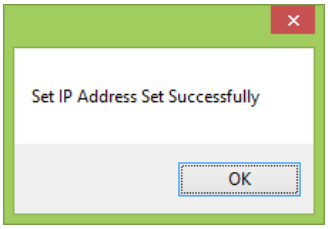


j. To change those settings do the changes in *as per need.*

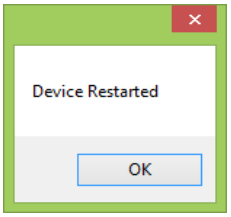


k. After entering settings check that click Set of each setting. So that only those parameters get set in that device.

l. Now click on Set button. For IP address change it will show following message.



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



5. Press Detect Device 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

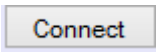
IPAddress	Slave No	UDP Port	TCP Port	Version	Serial No
192.168.0.232	1	02001	01234	GNB2.2A	AB/1234
192.168.000.198	5	02001	01234	GBL2.1A	SI0020
192.168.000.182	1	02001	01234	GLL2.4A	NG/148

4.2. ADD & DELETE Master Addition in device

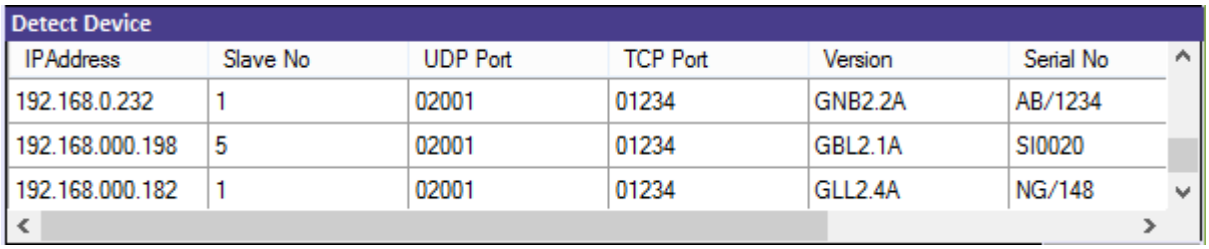
a. After power ON, Red LED will blink continuously with single beep till you do not add master card. After adding master card, device will stop to blink & beep.

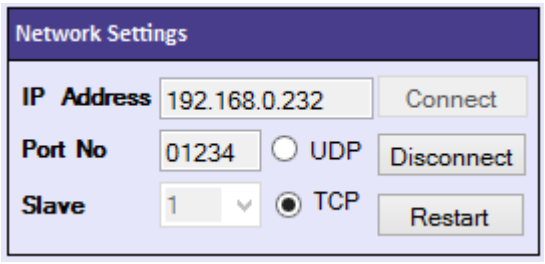
b. To add master card first you need run SI smartBIOUTILITY:

c. Press 

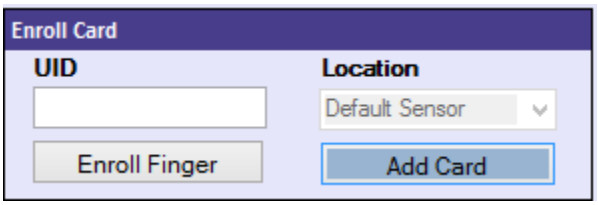
button & select controller from *Device detect* field click on 

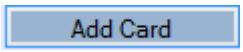
button. It is connected by TCP.



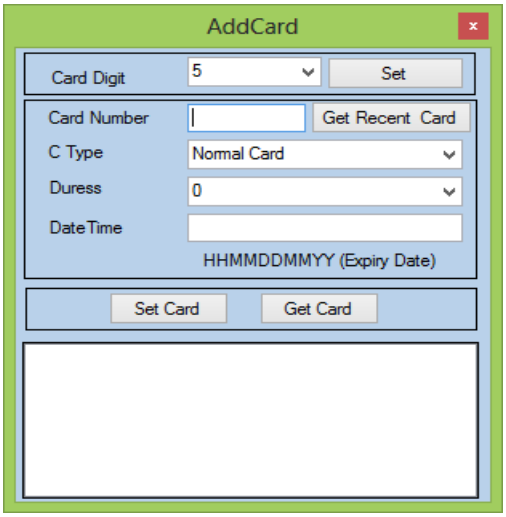


d. In Enroll card field as shown below, Master card Add/Delete can be performed.

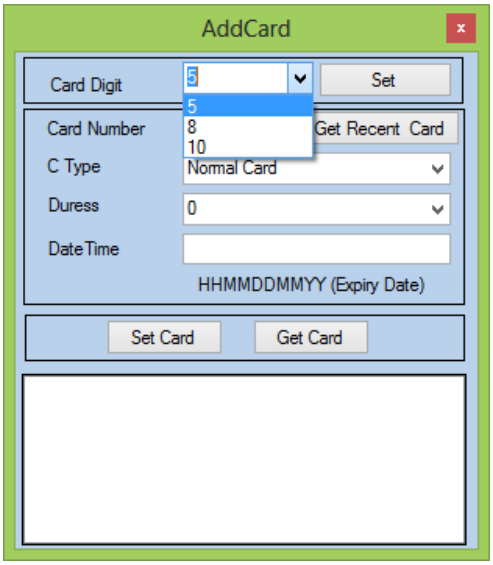


e. Now click on 

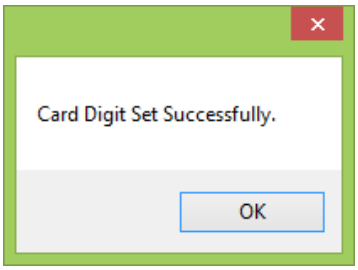
button, following window will open.



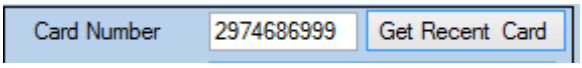
f. Card Digit Setting → Card digit can be set 5, 8 and 10, select the card digit as per requirement and click on Set button to set card digit in device.



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

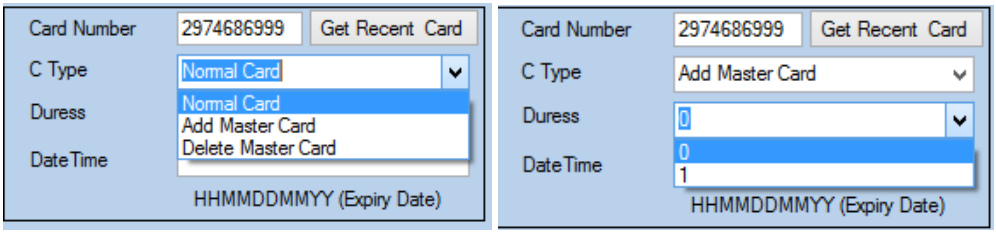


h. Add card in device →Show the card on device and click on Get Recent Card it will show the recently swiped card Number as shown below or it can be entered Manually.

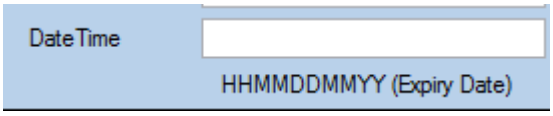


i. Make Card → As per image shown below C Type show the Type of card which you want to make, Card can be Normal card, Master Card , Or Delete Master Card

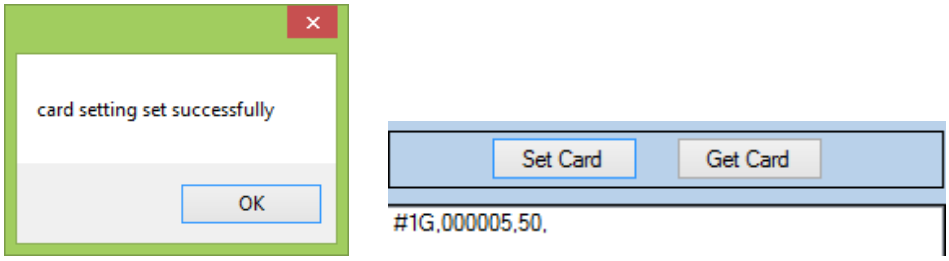
j. Duress card → If card which is added as Duress then select 1 from the selection other wise 0 is default value



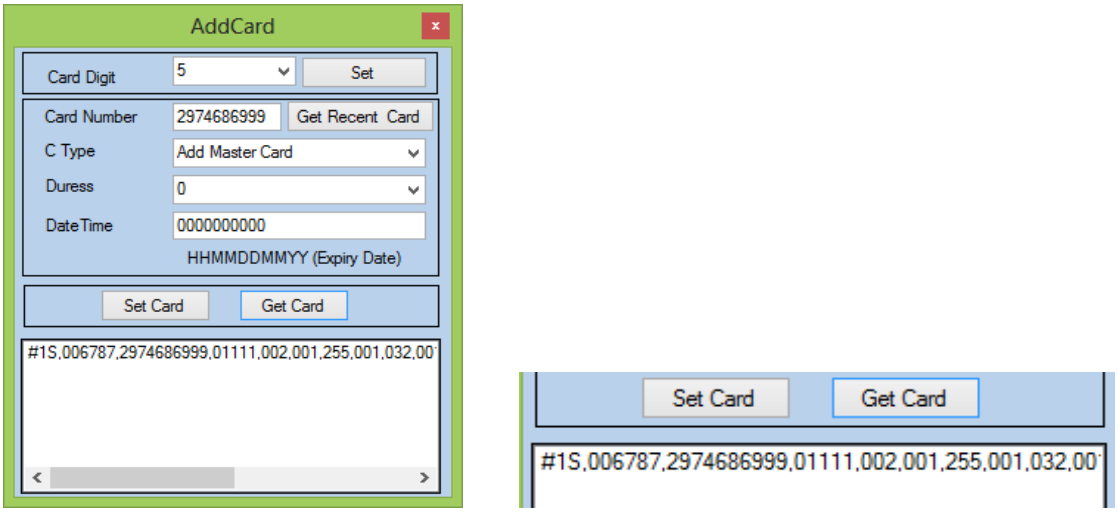
k. Expiry date to card→ Here for card we can add expiry date also which is in format HHMMDDMMYY for e.g. 1259090915 mean card will expire on **09-sep-15** after time **12.59.**



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

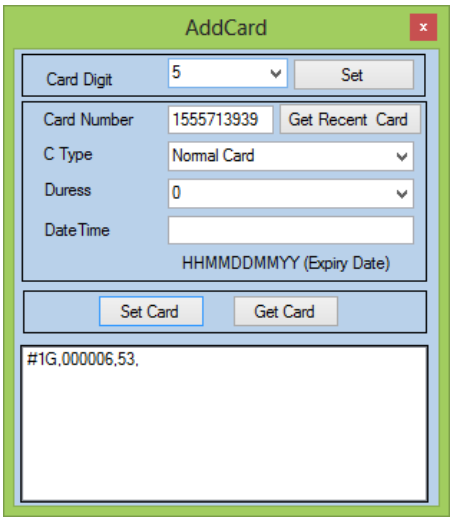


m. Get Card→ enter the card number in Card Number Field and click on Get Card button, it will show the details of card from device.

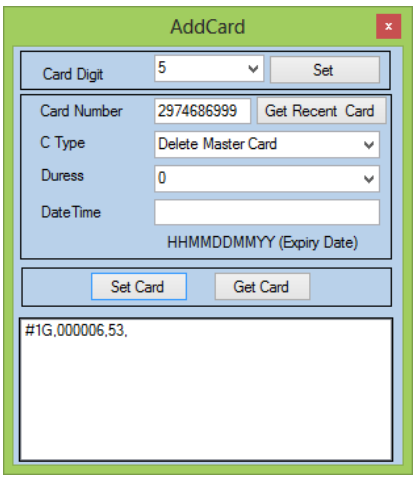


n. Add Master Card function→ After making card as Master Card when that master card shown on Device the LED will turn to "**Blue**" and beep for 5 time, this indicate after showing Master card device allow to add one Normal card with finger within 5 beeps, if finger is added in device then LED terns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

o. Similarly Normal card /can be added as shown



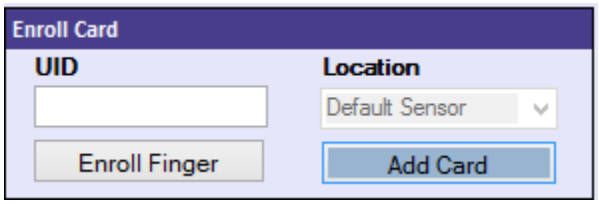
p. Delete Master card→ Enter Master Card Number or get it by Get Recent Card after that card is shown on device as recent card, select "Delete Master Card" in CType and click on Set Card button. That card will work as Delete Master card after showing it on device the LED will blow "**Yellow**" and beep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



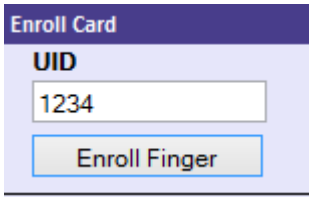
4.3. Enroll Finger in device

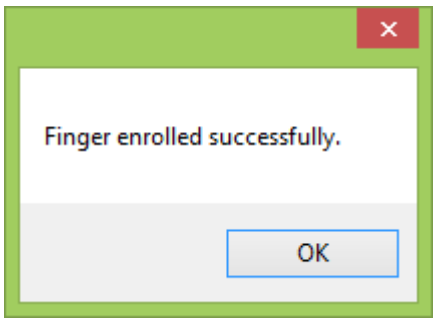
a. Connect device as per procedure.

b. Enroll Finger →By this we can add Finger in device, Enter the card number in UID field and click on Enroll Finger button

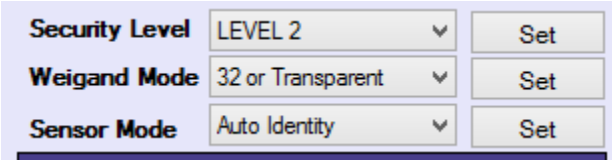


c. After clicking Enroll Finger button device LED will turn to "**Blue**" and started beeping for 5 times, this indicate after clicking Enroll Finger device allow to add one finger on given UID within 5 beeps, if finger is added in device then LED terns to "**Green**".

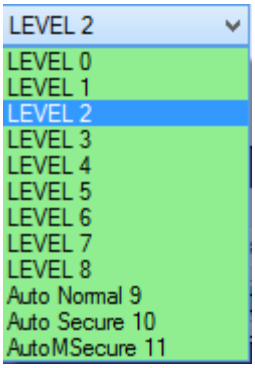




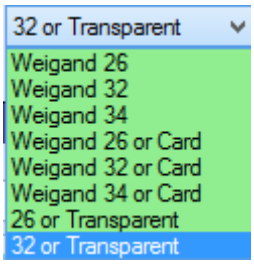
4.4. Set Sensor Mode, Security level, Weigand Mode



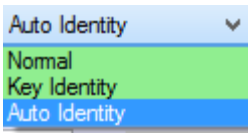
a. Security Level → Select Security level from LEVEL 0 to LEVEL 8 and Auto Normal 9, Auto Secure 10, AutoMSecure 11 as shown below and click on Set button to set the settings.



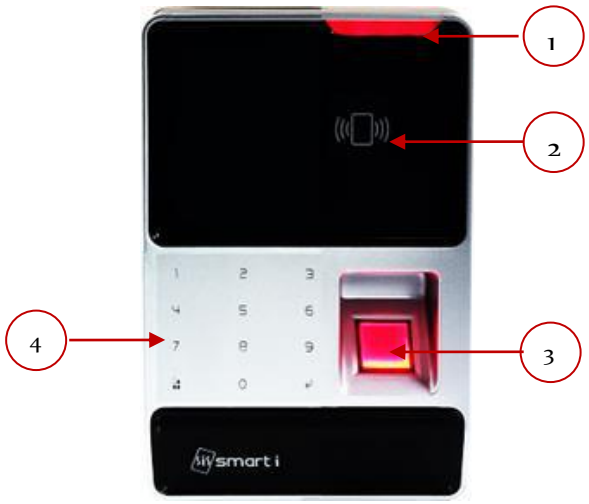
b. Weigand Mode → Select Weigand Mode from List and click on Set button to set the settings.



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



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

a. Show 'ADD MASTER CARD' in front of device to add finger.
b. LED starts to blink in blue & red color & buzzer start to give single beep.
c. 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.
d. 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.*

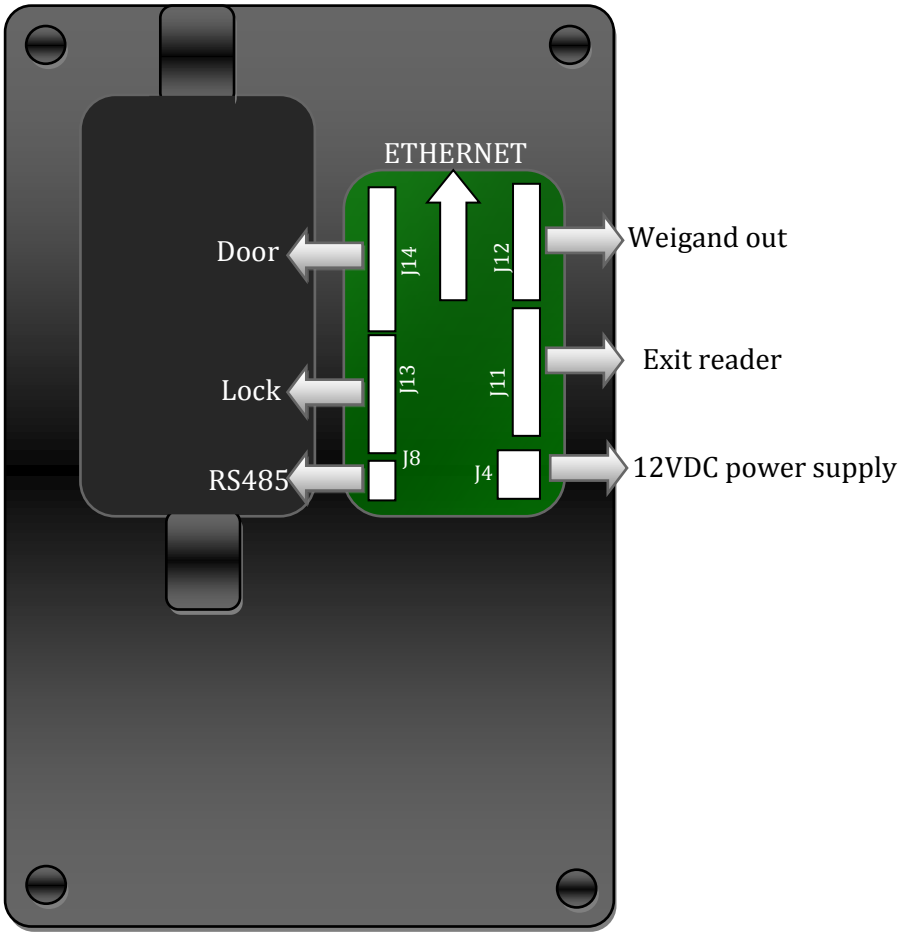
Card Deletion Using Master Card

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

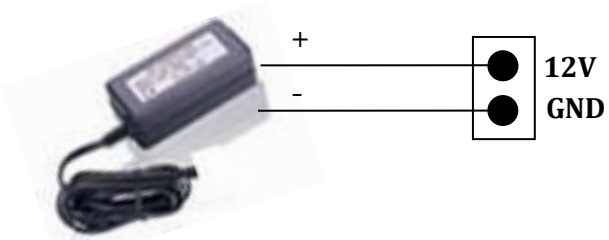
8. OPERATION

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

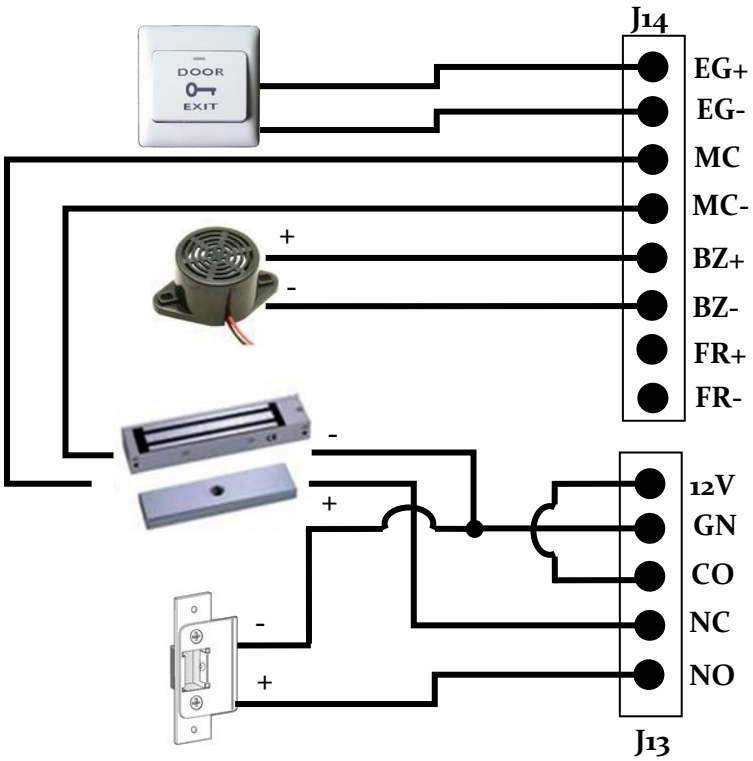


Power Supply connection:

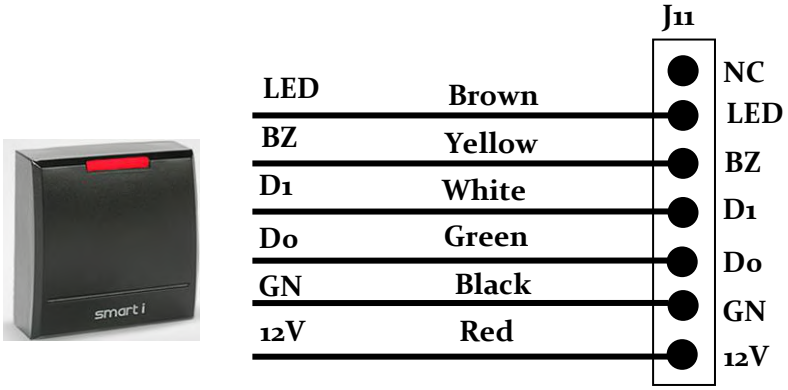


12DC power supply

Door connection:

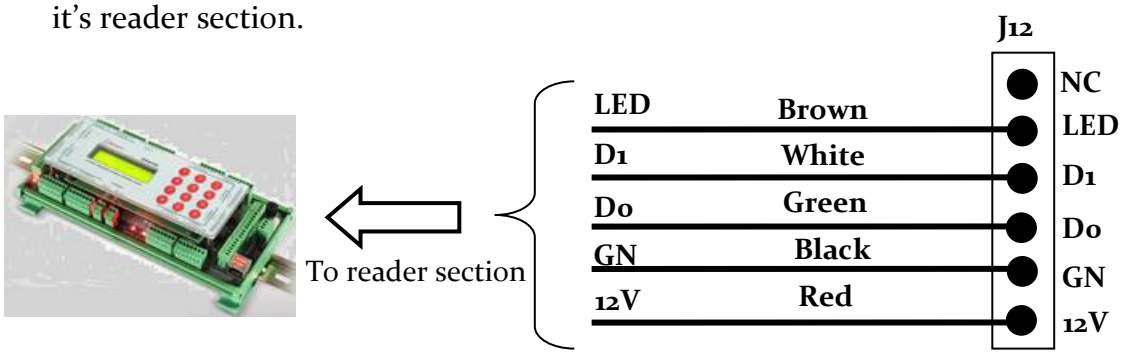


Exit reader connection:



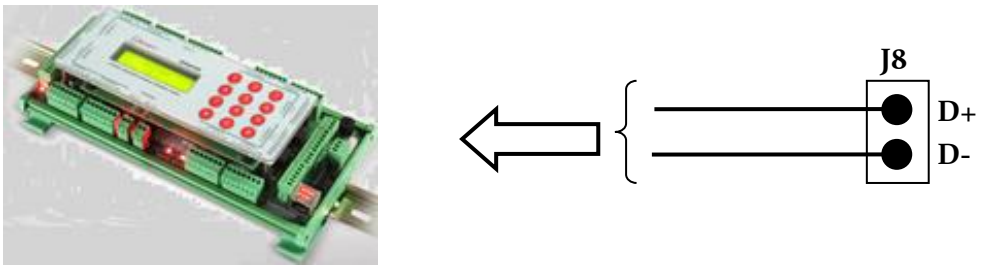
Weigand OUT connection:

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



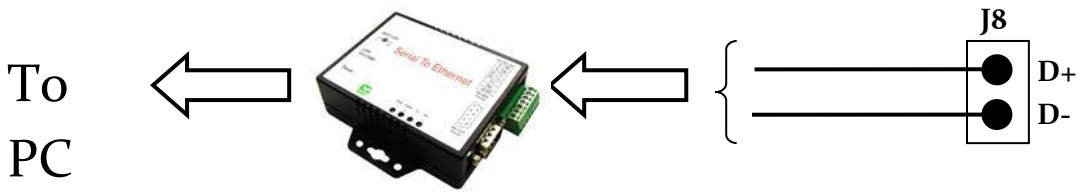
RS485 connection:

To controller for template management by TCP/IP comm.

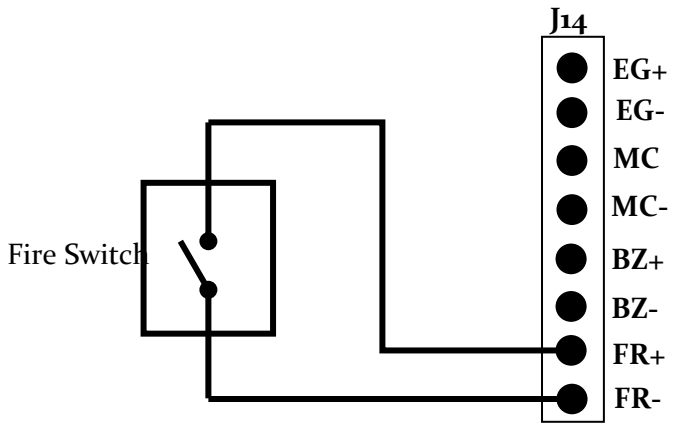


OR

To RS485 converter for serial communication.

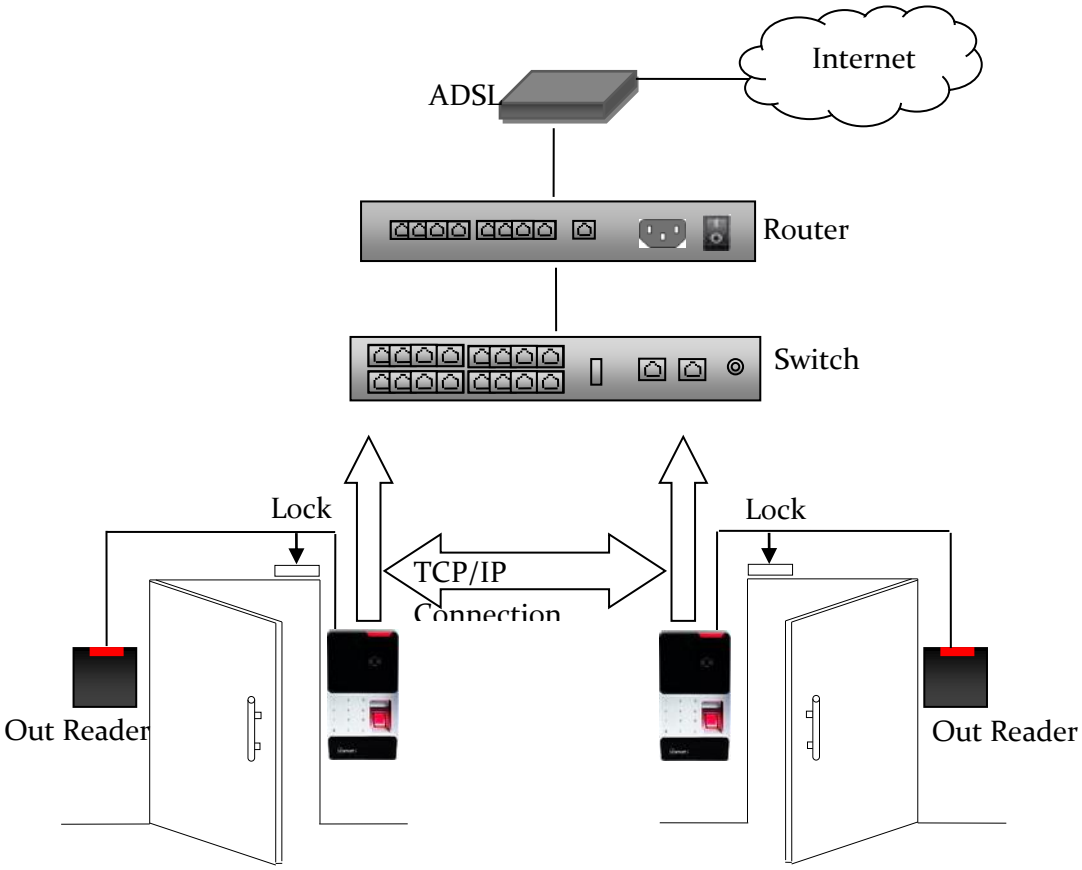


Fire Panel connection:

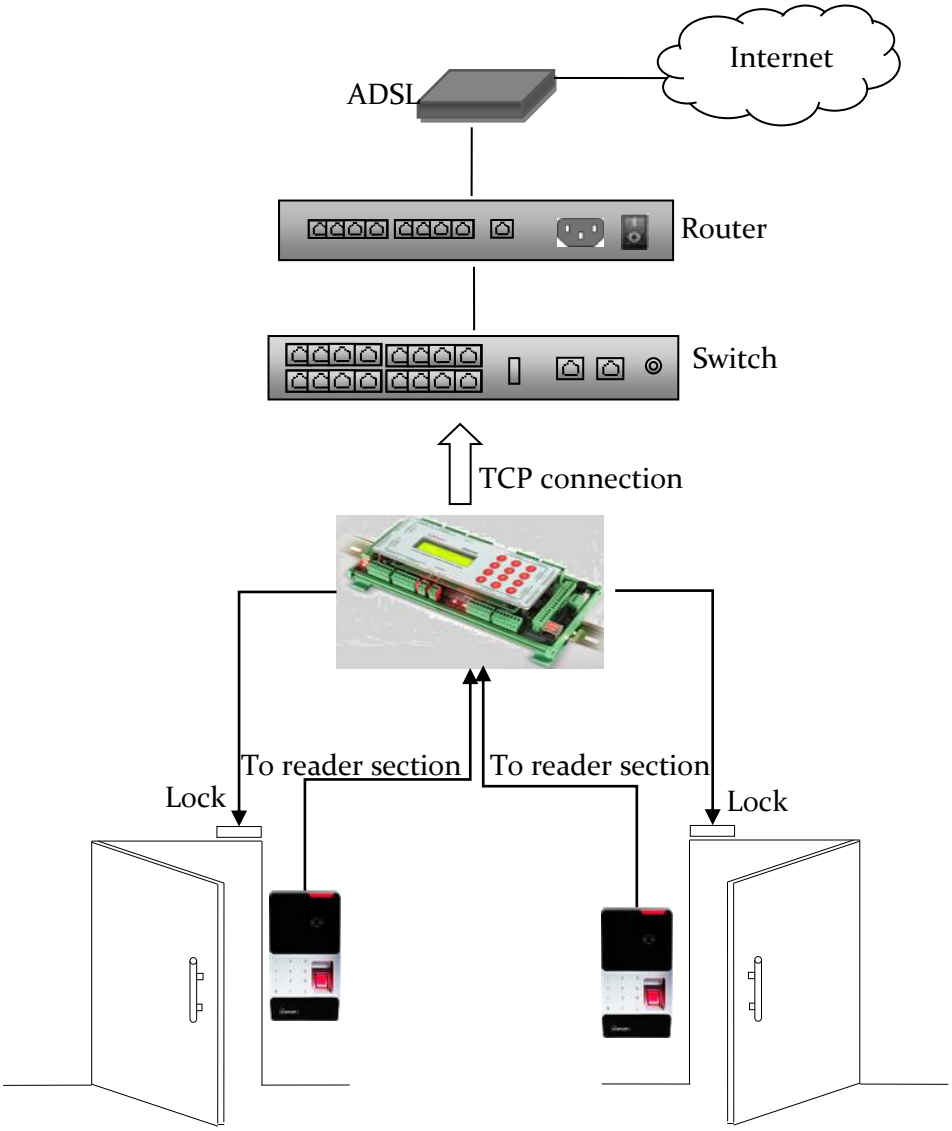


10.DEVICE CONFIGURATION

Bio-single NG as controller:



Bio-single NG as Reader:

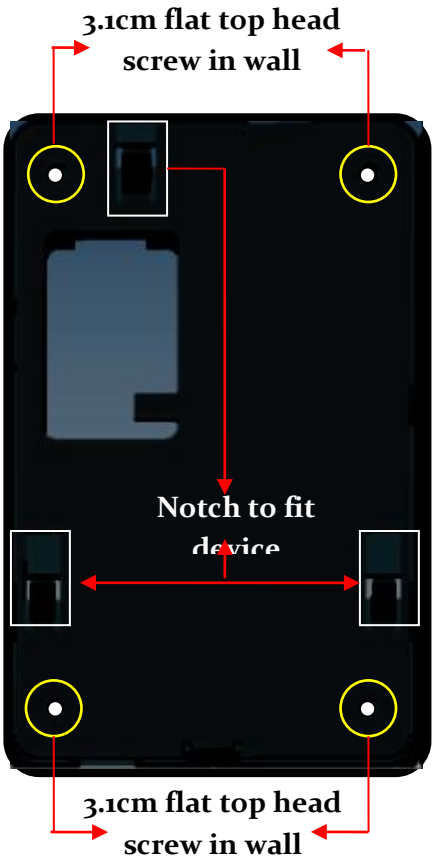


11.RECOMMENDED CABLE SPECIFICATION

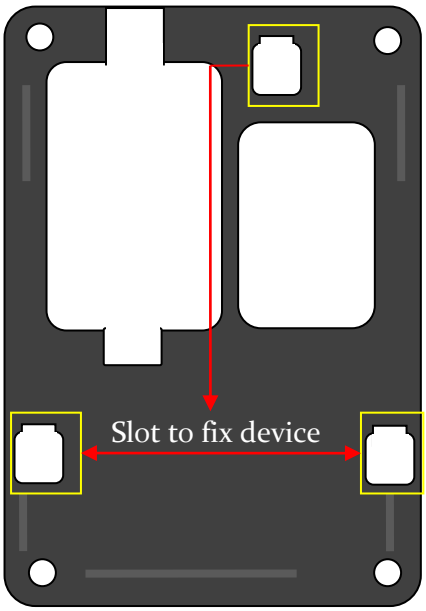
Type	Particular	Cable Spec	Distance
A	Reader (Weigand)	22AWG; 6 core; shielded Cable	Up to 25 meter
B	Egress switch, Magnetic contact	22 AWG;2 core; shielded Cable	Up to 10Ft.
C	Lock	16 AWG; 2 core; shielded Cable	Up to 10 Ft.
D	Unit to Power Supply	22AWG; 2 Core shielded Cable	Up to 10 Ft.
E	LAN Cable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

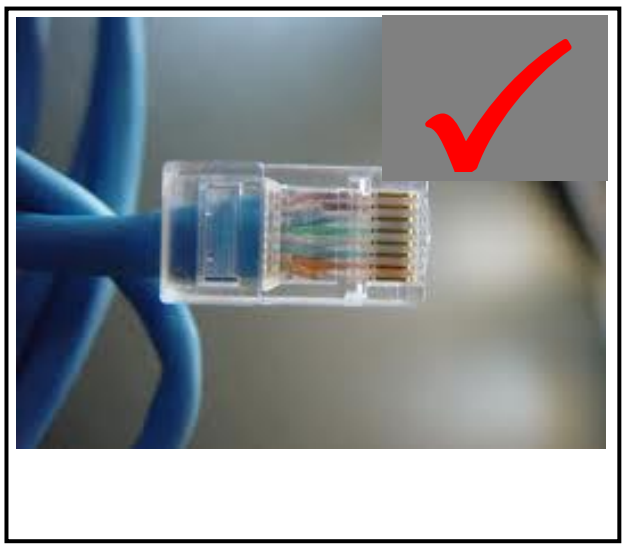


13.CONNECTING TO HOST COMPUTER USING

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)