FINGERTEC®
One finger solves it all

Redefine Security

FingerTec® M2/R2 SERIES

Fingerprint Access Control & Time Attendance System

HARDWARE USER MANUAL

DISCLAIMER

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FINGERTEC WORLDWIDE LTD

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support@fingertec.com

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INTRODUCTION TO FINGERTEC® M2/R2 READER

The FingerTec® M2/R2 fingerprint readers are dual function readers. They can be used as time attendance recorder and at the same time function to control door access. Storage capacities of both readers are 1600/3000 fingerprint templates and 50,000/120,000 transactions logs, suitable for every office environment. One user could enroll up to 10 fingerprints but 2 fingerprints are recommended for every user to maximize the number of users in one reader.

Fingerprint enrolment of every user shall be done once and these templates are downloadable into FingerTec® TCMS V2 software for backup and they are transferable to other FingerTec® readers for verification.

Every time a registered user gets verified at the FingerTec® M2/R2, date and time of the transaction is stored as a transaction log. These logs can be downloaded to FingerTec® TCMS V2 software which is bundled with the package, for reports and further analysis. Download process can be done via TCP/IP connection, USB flash disk, R232 and RS485 connections.

Specifications	Model	
Model	**M2** 	**R2** 
Surface finishing	Zinc alloy	ABS
Functions	Access Control & Time Attendance System	
FP template capacity	1600/3000	
Transaction log	50000/120000	
Connections	TCP/IP, RS232, RS485, USB flash disk, Wiegand input/output	
Subnet mask & Gate way	Available	
Card reader	Not available	RFID reader
Card capacity	Not available	65335 cards users
Sensor	Optical sensor with silicon coating	
Software available	**Language available :** English, Arabic, Chinese Simplified, Chinese Traditional, French, German, Indonesian, Malay, Russian, Farsi, Portuguese, Spanish, Thai and Vietnamese.	

Complete Package - FingerTec® M2/R2 Model

ITEM	M2	R2
Fingerprint reader	√	√
Screwdriver 	√	√
USB extension 	√	√
TCP/IP cables (The lengths of the cable are 1m and 1.5m) 	√	√
TCP/IP joint 	√	√
Door accessories cable 	√	√
RS232 cable 	√	√
RS485 and Wiegand cable 	√	√
Power supply cable 	√	√

ITEM		M2	R2
Software CD		√	√
RFID card (5 pieces)		X	√
USB Flash Disk		Note	Buy at http://accessory.fingertec.com
AdapTec AC		√	√

Materials provided with FingerTec® M2/R2 Model

FingerTec® M2/R2 Model	
Quick Start Guide	√
Hardware User Manual	√
Software User Manual	√
Video Guide for Hardware	√
Video Guide for TCMS V2	√
Sample of enrollment form	√

Basic Features of FingerTec® M2/R2 Model

1 L.E.D. Display

2 LCD Display

3 USB Port

4 Keypad

5 Fingerprint Sensor

M2 Model

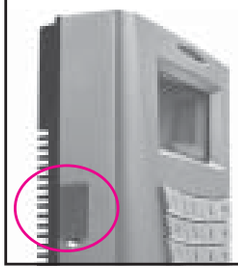
R2 Model

Note

RFID card induction area

Note

USB Port for data transfer. Available in both models.



Number pad (0-9)

Escape/Cancel

Scroll Up/Check-In

Scroll Down/Check-Out

Doorbell

OK

Menu Function

1 L.E.D Display

The L.E.D display has two lights.

Green	The reader is in standby mode or to indicate that user has been successfully verified.
Red	To indicate that user verification has failed.

2 LCD Screen

Screen that displays instructions and status of the reader.

3 USB Port

To upload/download users information, password, fingerprint and transaction logs via USB flash disk.

4 Keypad

Keys of 0-9, a Power on and off button, an OK button, an Escape/ Cancel button, a Scroll up/Check-In button, a Scroll Down/ Check-Out button, a doorbell button and a menu button.

Note

RFID card induction area is only available in FingerTec® R2.

5 Fingerprint Sensor

For user to place fingerprint for identification/verification.

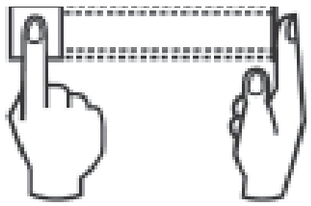
FingerTec® fingerprint reader provides 3 types of enrollment method:

- **Fingerprint Enrollment**
  User enrolls his fingerprint template into a reader and the template will be used for future verifications.
- **Password Enrollment**
  For user who has difficulty to enroll his fingerprint due to poor fingerprint quality, he is recommended to enroll password. Password enrollment is also suitable for visitors and temporary workers.
- **Fingerprint and Password Enrollment**
  Under this option, a user can enroll both fingerprint and password at the same time. The user can either use fingerprint or password to report attendance or to gain access.

USING THE FINGERPRINT READER

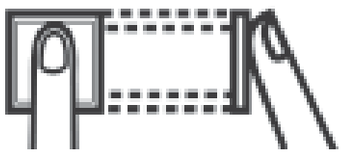
This chapter will guide on how to use the FingerTec® fingerprint reader effectively. To get a good reading every time, a fingerprint enrollment for the first time must be done properly.

What you should do

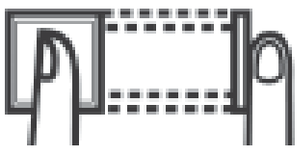


Place finger flat on the fingerprint sensor. Make sure the finger's midpoint is placed at the center of the fingerprint sensor.

What you should NOT do

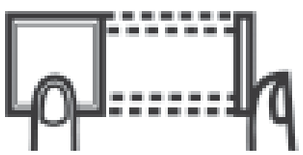


UPRIGHT



ASKEW

OFF CENTER



PART

TIPS FOR BEST FINGERPRINT ENROLLMENT

There are 5 tips to get good fingerprint enrollment:

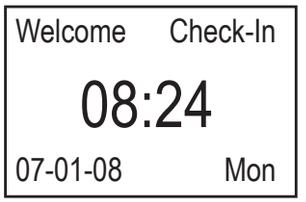
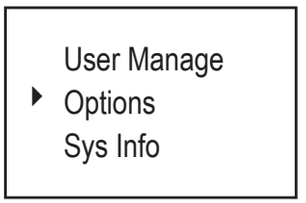
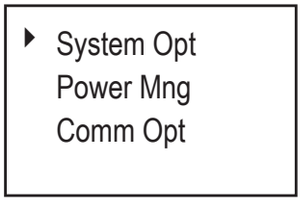
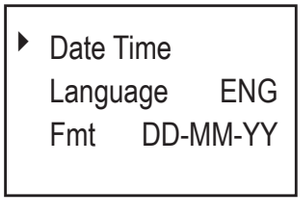
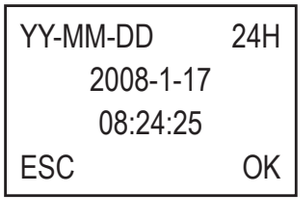
- **Use INDEX finger**
  Index finger is smaller than thumb and it can be comfortably placed on the sensor. The use of thumb is not recommended because the center points might not be placed properly on the sensor, hence cannot be read by the sensor due to its larger size.
- **Make sure the finger is not wet, too dry, injured or dirty**
  The finger needs to be slightly moist to enable the sensor to read the minutiae points on the fingerprint.
- **Place the center points of your finger at the center of the sensor**
  The center points of a finger is an area where there is a swirl and the center points must be properly placed on the sensor during enrollment.
- **Don't press hard at the sensor, just place your finger on the sensor**
  The sensor is reading minutiae points of your finger and placing a finger properly on the sensor will prompt the sensor to read those points. Pressing your finger hard on the sensor is not necessary.
- **Don't do enrollment under bright light or direct sunlight**
  It is important to note that bright light or sunlight could interfere with the reading of the sensor. Avoid placing the reader under direct sunlight or bright light to avoid difficulty in enrollment and future verification.

INITIAL SET UP OF THE FINGERTEC® FINGERPRINT READER

Date/Time Adjustment

When first installing the FingerTec® fingerprint reader, it is important to set the correct date and time.

Follow the steps below to access the Date/Time adjustment menu:

When you see this	Do this
	MENU Press once
	▼ Press once OK Press once
	OK Press once
	OK Press once
	Use the keypad to key in the year, month and date. Scroll down more to change the day, hour, minute and seconds OK Press once

Enrollment

To assist in fingerprint enrollment, we have designed a form for the administrator to use to keep track of the enrollment detail or you can design your own form to suit to your company's requirements.

User Enrollment Template Form for FingerTec® Reader

Reader ID:_____

No.	User ID	Employee No.	Name	Department	IC No.	No. of Fingers Enrolled	Date Registered	Note	Signature

Enrollment of Supervisor/Administrator

Once the FingerTec® fingerprint reader is switched on, a display on the screen will appear. First, to enroll a supervisor or an administrator, who is the in-charge person to administer the fingerprint templates and the transaction data in the FingerTec® reader. Choose trustworthy people for this particular role.

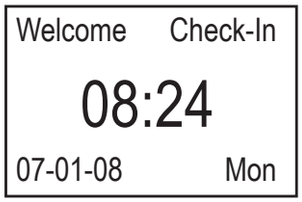
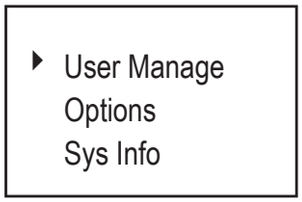
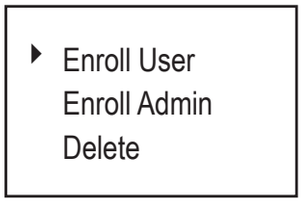
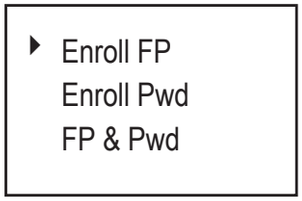
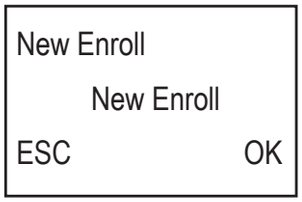
When you see this	Do this
Welcome Check-In 08:24 07-01-08 Mon	MENU Press once
▸ User Manage Options Sys Info	OK Press once
Enroll User ▸ Enroll Admin Delete	▼ Press once OK Press once
▸ Enroll FP Enroll Pwd FP & Pwd	OK Press once
Admin Accredit Supervisor ESC OK	OK Press once to confirm or ESC Press once to cancel operation
Enroll FP New Enroll ESC OK	OK Press once to confirm or ESC Press once to cancel operation
New Enroll User ID 00001 ESC OK	Press 1 on the keypad for ID 00001 OK Press once to confirm or ESC Press once to cancel operation

When you see this	Do this
New Enroll 00001 Place Finger... ESC/Exil	Place the center point of fingerprint properly on the sensor. Place fingerprint 3 times during enrollment. Read page 11 for tips on fingerprint scanning technique.
	
New Enroll 00001-0 ESC OK [Save]	This shows templates has been successfully captured; and "-0" means that the first fingerprint template is recorded. OK Press once to confirm or ESC Press once to cancel operation
New Enroll Continue? ESC OK [Save]	ESC Press once to add backup fingerprint for enrolled user ID. or OK Press once to add new user
Backup Enroll 00002-1 Place Finger... ESC/Exil	Place the center of your fingerprint properly at the sensor. Place the fingerprint 3 times in order for the reader to capture the fingerprint templates.
Backup Enroll User ID 00001-1 ESC OK [Save]	This shows templates has been successfully captured; the "-1" means template of the second finger is captured good. OK Press once to confirm or ESC Press once to cancel operation

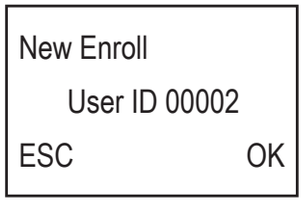
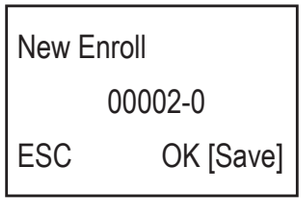
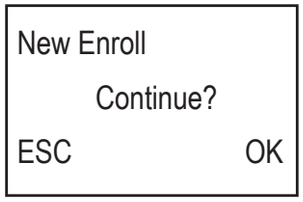
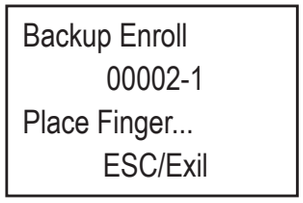
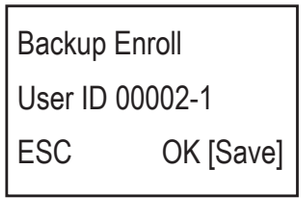
Congratulations! A supervisor has been enrolled in the system. As a supervisor, he can manage the FingerTec® fingerprint reader by adding users, deleting users and various other functions through the keypad.

Enrollment of Normal User

A normal user is only allowed to use FingerTec® reader for identity verification, and he does not have any other authorities to access the system. To add a nomal user, follow the steps below:

When you see this	Do this
	MENU Press once
	OK Press once
	OK Press once
	OK Press once
	OK Press once to confirm or ESC Press once to cancel operation

To enroll more users, repeat the same steps above.

When you see this	Do this
	Press number 2 on the keypad for ID 00002 OK Press once to confirm or ESC Press once to cancel operation
	Place the center point of your fingerprint properly at the sensor. You need to place your fingerprint 3 times for your reader to capture your fingerprint template.
	This shows template has been successfully captured; the "-0" means template of first finger is captured good. OK Press once to confirm or ESC Press once to cancel operation
	ESC Press once to add backup fingerprint for enrolled user ID. or OK Press once to add new user.
	Place center point of fingerprint properly at the sensor. Place the fingerprint 3 times for your reader to capture your fingerprint template.
	This shows template has been successfully captured; the "-1" means template of first finger is captured good. OK Press once to comfirm ESC Press once to go back

Fingerprint Verification

FingerTec® reader supports 2 types of fingerprint verification method. User can choose either method to verify his fingerprint at the FingerTec® reader. 2 types of fingerprint verification methods are:

- 1 to Many (1:N) fingerprint matching
- 1 to 1 (1:1) fingerprint matching

1 to Many (1:N) Fingerprint Matching

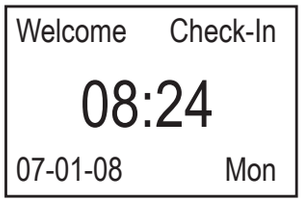
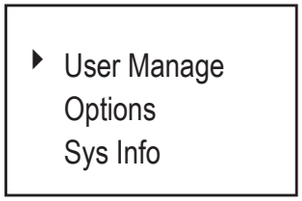
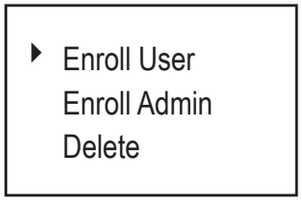
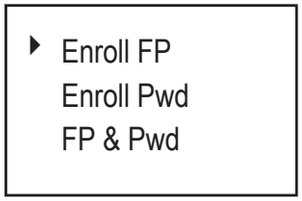
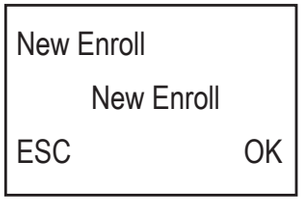
When you see this	Do this
Welcome Check-In 08:24 07-01-08 Mon	Place the enrolled finger properly on the fingerprint sensor.
FP Verify Remove finger	Wait a second before removing the finger from the fingerprint sensor.
FP Verify User ID 00001 Verified	FingerTec® reader verifies that the user ID is 00001.
FP Verify Please Try Agn.	If a finger failed to be verified by the FingerTec® reader, it will prompt the user to try again.

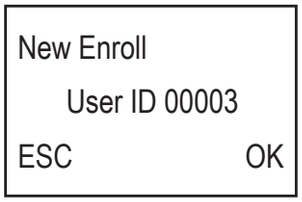
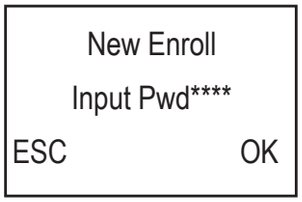
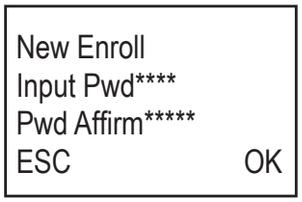
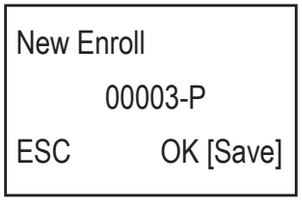
1 to 1 (1:1) Fingerprint Matching

When you see this	Do this
Welcome Check-In 08:24 07-01-08 Mon	Key in the user ID as defined when enrolling a finger on the FingerTec® fingerprint reader. For example 1 for 00001.
1:1 FP Verify User ID 00001 ESC OK[Pwd]	Place the enrolled finger properly on the fingerprint sensor.
1:1 FP Verify User ID 00001 Verified	The FingerTec® fingerprint sensor verifies that the user ID is 00001.
1:1 FP Verify User ID 00001 Please Try Agn.	If a finger failed to be verified by the FingerTec® reader, it will prompt the user to try again.

Password Enrollment

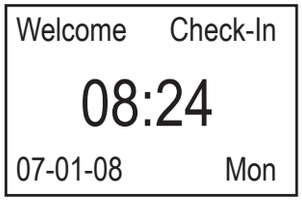
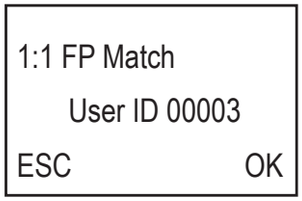
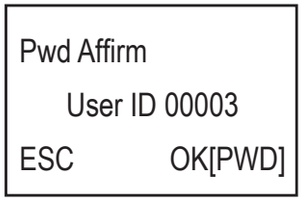
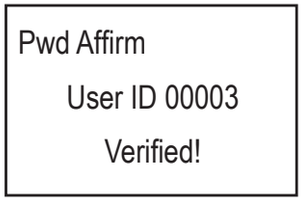
For user who cannot enroll his fingerprint, he can choose to use passwords. Follow the steps below:

When you see this	Do this
	MENU Press once
	OK Press once
	OK Press once
	▼ Press once OK Press once
	OK Press once to confirm or ESC Press once to cancel operation

When you see this	Do this
	Press number 3 on the keypad for ID number 00003 OK Press once to confirm or ESC Press once to cancel operation
	Key in the password Maximum 5 characters in length OK Press once to confirm
	Retype the password for confirmation and OK Press once to confirm
	The "-P" shown means that password has been successfully recorded. OK Press once to confirm or ESC Press once to cancel operation

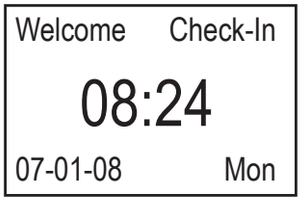
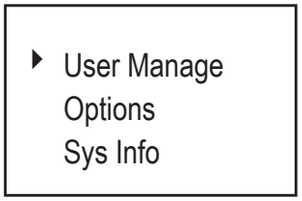
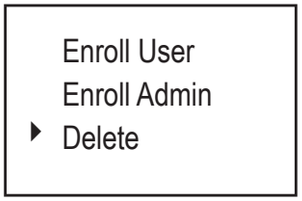
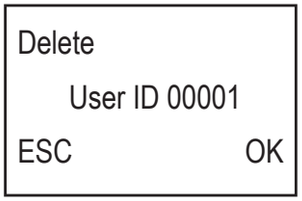
Password Verification

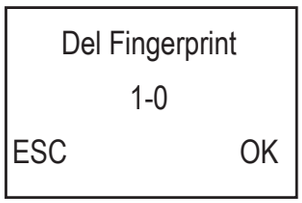
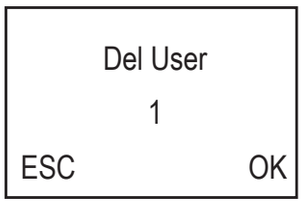
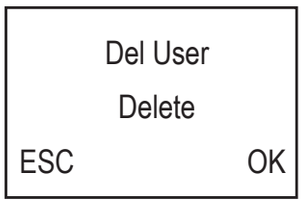
User with password enrollment can always use password to report attendance or gain access from the FingerTec® readers.

When you see this	Do this
	Key in the user ID by using keypad
	Press OK to confirm that it is the correct ID. OK Press once to confirm
	Key in the matching password by using keypads OK Press once to confirm
	The FingerTec® fingerprint reader verifies that user ID user ID is 00003

Deleting Users

The FingerTec® system also allows deletion of user from the system. This is important as employees come and go. Therefore, for those who had left the company, their fingerprint templates or records must be deleted from the system to avoid any misuse of the system. Only an administrator or a supervisor has the rights to delete user. Follow the steps below to delete any user:

When you see this	Do this
	MENU Press once
	OK Press once
	▼ Press 2 times OK Press once
	OK Key in user ID Press once

When you see this	Do this
	OK Press once to confirm or ESC Press once to cancel operation
	OK Press once to confirm or ESC Press once to cancel operation
	OK Press once to confirm or ESC Press once to cancel operation

User will be deleted from the reader following the above steps.

Note Remember to key in the correct User ID for deletion.

HARDWARE

FINGERTEC® R2 WITH RFID CARD

Enrollment of RFID Card In FingerTec® R2 Model

FingerTec® R2 supports enrollment of RFID card. User can use RFID card only to report his attendance in the reader. The reader provides 3 extra enrollment methods, which include:

- RFID card only
- RFID card + fingerprint
- RFID card + password

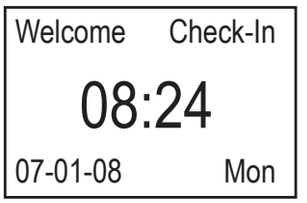
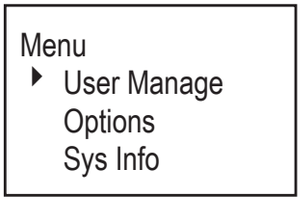
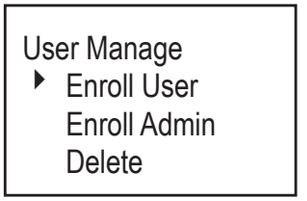
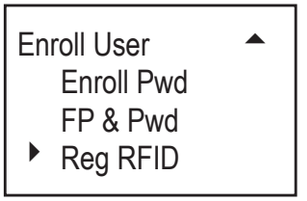
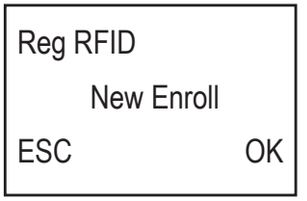
Each RFID card has a unique Card ID. During enrollment, this Card ID will be read from an RFID card, and it will be matched with a User ID supported by the reader.

RFID card only

Each RFID card user must register his RFID card to FingerTec® R2 , regardless of whether he is using RFID card only or he combines the Card ID with fingerprint, or with password.

RFID card users who do not enroll their fingerprints or password into a reader will only be able to use RFID card to report for time attendance when the reader is configured to read card only.

To configure the reader to read RFID card ONLY follow the steps below:

When you see this	Do this
	MENU Press once
	OK Press once
	OK Press once
	Press 3 times OK Press once
	OK Press once

When you see this	Do this
New Enroll User ID 00001 ESC OK	Keyin ID OK Press once to confirm
New Enroll Show the card User ID 00001 ESC OK	Place card at the induction area (the keypad area). The card ID will be read by the reader.
New Enroll CARD:9067337 User ID 00001 ESC OK	The card ID and the user ID will be shown on the display. OK Press once to confirm or ESC Press once to cancel operation
New Enroll 00001-C ESC OK	OK Press once to confirm
New Enroll Continue? ESC OK	ESC Press 5 times to return to the main menu

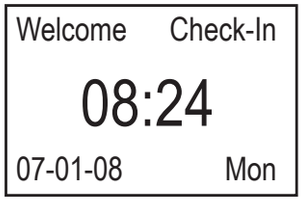
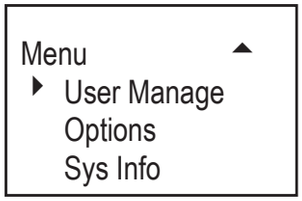
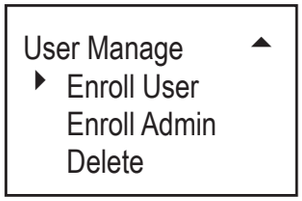
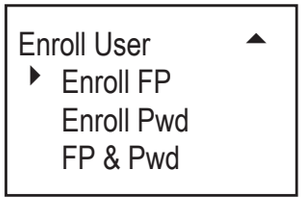
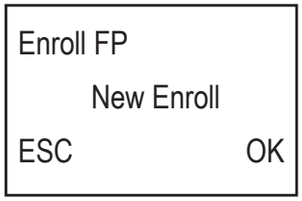
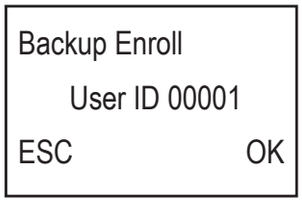
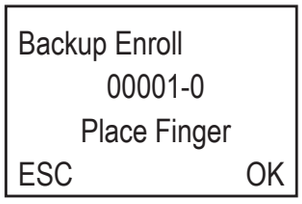
RFID card + Fingerprint

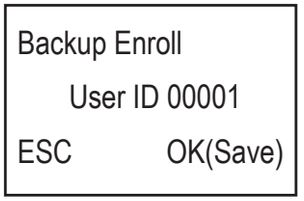
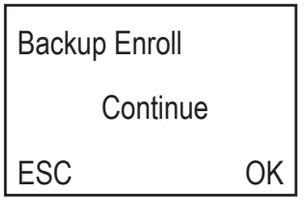
Users must register their RFID cards to the reader before they can use the card and fingerprint to report for time attendance.

Before a reader could read any RFID card, it must be configured correctly to accept RFID card information. Follow the steps below to do reader configuration.

When you see this	Do this
Welcome Check-In 08:24 07-01-08 Mon	MENU Press once
Menu User Manage ▸ Options Sys Info	▼ Press once OK Press once
Options Comm Opt Log Opt ▸ Access Options	▼ Press 4 times OK Press once
Enroll User Enroll Pwd FP & Pwd ▸ Reg RFID	▼ Press 10 times OK Press once
Group VerType ▸ 1 FP/PW/RF 2 FP/PW/RF 3 FP/PW/RF	OK Press once ▼ Press to choose FP/PW/RF OK Press once ESC Press once
Group VerType Save? ESC OK(Save)	OK Press once ESC Press 3 times to return to the main menu

User needs to enroll his fingerprint to enable him to use the card with fingerprint

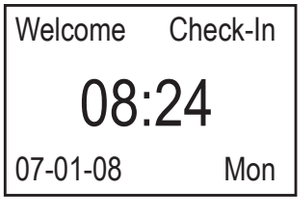
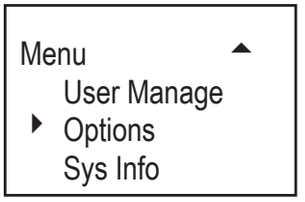
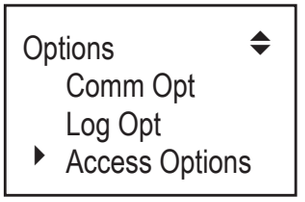
When you see this	Do this
	MENU Press once
	OK Press once
	OK Press once
	OK Press once
	ESC Press once
	Key in user ID that has been enrolled with RFID card OK Press once to confirm
	Place center of the fingerprint properly at the sensor. You need to place the fingerprint 3 times for the reader to capture the fingerprint template.

When you see this	Do this
	This shows template has been successfully captured. OK Press once to comfirm or ESC Press once to cancel operation
	ESC Press 5 times to return to the main menu

RFID card + password

User must register his RFID cards with the reader before he can use the RFID card with password to report time attendance.

Configure the reader to request for a password.

When you see this	Do this
	MENU Press once
	▼ Press once OK Press once
	▼ Press 4 times OK Press once

When you see this	Do this
Access Options ▲ Duress Options Alarm CNT 0 ▸ Group VerType	▼ Press 10 times OK Press once
Group VerType ▸ 1 FP/PW/RF 2 FP/PW/RF 3 FP/PW/RF	OK Press once ▼ Press to choose FP/PW/RF OK Press once ESC Press once
Group VerType Save? ESC OK(Save)	OK Press once ESC Press 3 times to return to the main men

User needs to enroll his password to enable him to use the card with password.

When you see this	Do this
Welcome Check-In 08:24 07-01-08 Mon	MENU Press once
Menu ▲ ▸ User Manage Options Sys Info	OK Press once
User Manage ▲ ▸ Enroll User Enroll Admin Delete	OK Press once

When you see this	Do this
Enroll User ▲ Enroll FP ▸ Enroll Pwd FP & Pwd	▼ Press once OK Press once
Enroll FP New Enroll ESC OK	ESC Press once
Backup Enroll Input Pwd 00002 ESC OK	Key-in user ID enrolled with RFID card OK Press once
Backup Enroll Input Pwd xxxx ESC OK	Key-in password, maximum 5 numeric numbers OK Press once
Backup Enroll Input Pwd xxxx Pwd Affirm xxxx	Re-enter password to confirm
Backup Enroll 00001-0 ESC OK(Save)	OK Press once to confirm or ESC Press once to cancel operation
Backup Enroll Continue? ESC OK	ESC Press 5 times to return to main menu

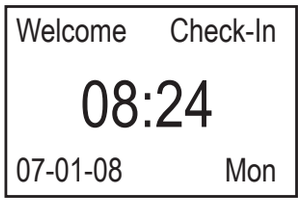
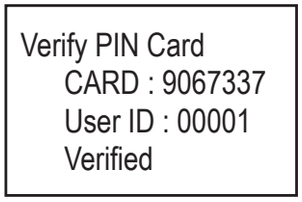
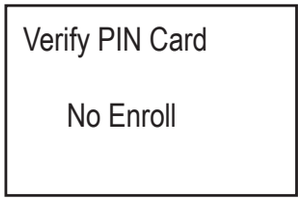
Verification With RFID Card In R2 Model

RFID card user can do verifications at R2 model by using the following combinations:

- RFID card only
- RFID card with fingerprint
- RFID card with password

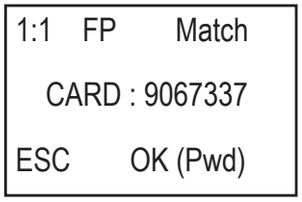
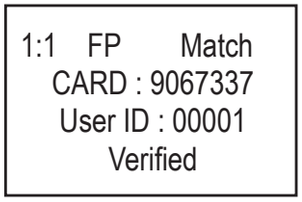
RFID Card Only

To enable this operation, configure option "Card Only" in Advance Option to "Yes".

When you see this	Do this
	Place RFID card at the induction area.
	The Card ID and the User ID will be prompted and you will hear "Thank You".
	If verification is failed, the screen will show "No Enroll" and you will hear "Invalid ID".

Card & Fingerprint

To enable this operation, configure option "Card Only" in Advance Option to "No".

When you see this	Do this
	Place card at the induction area. Card ID will be displayed. Place finger on the scanner to capture the fingerprint.
	User ID will be prompted and you will hear "Thank You"
	If verification is failed, you will hear "Please Try Again".

Card & Password

To enable this operation, configure option “Card Only” in Advance Option to “No”.

When you see this	Do this
1:1 FP Match CARD : 9067387 ESC OK (Pwd)	Place card at the induction area. OK Press once
1:1 FP Match CARD : 9067387 User ID : 00002 Input Pwd : xxxxx	User ID is displayed OK Press once to confirm and enter your password
Pwd Affirm CARD : 9067387 User ID : 00002 Verified	You will hear “Thank You” if password is correctly entered.
Pwd Affirm CARD : 9067387 User ID : 00002 Error Pwd	You will hear “Incorrect password” if password is wrongly entered.

SOFTWARE

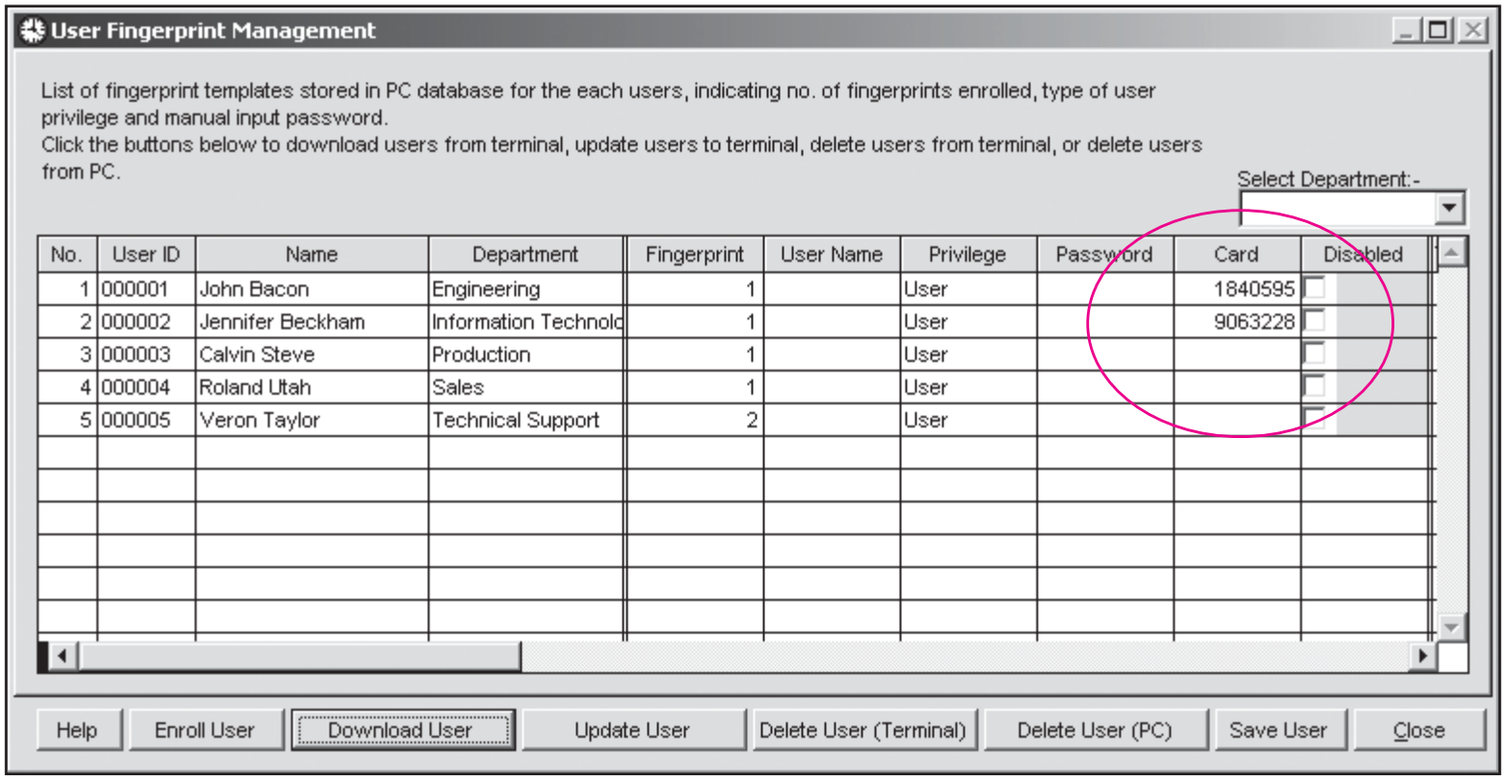
FINGERTEC® R2 WITH RFID CARD

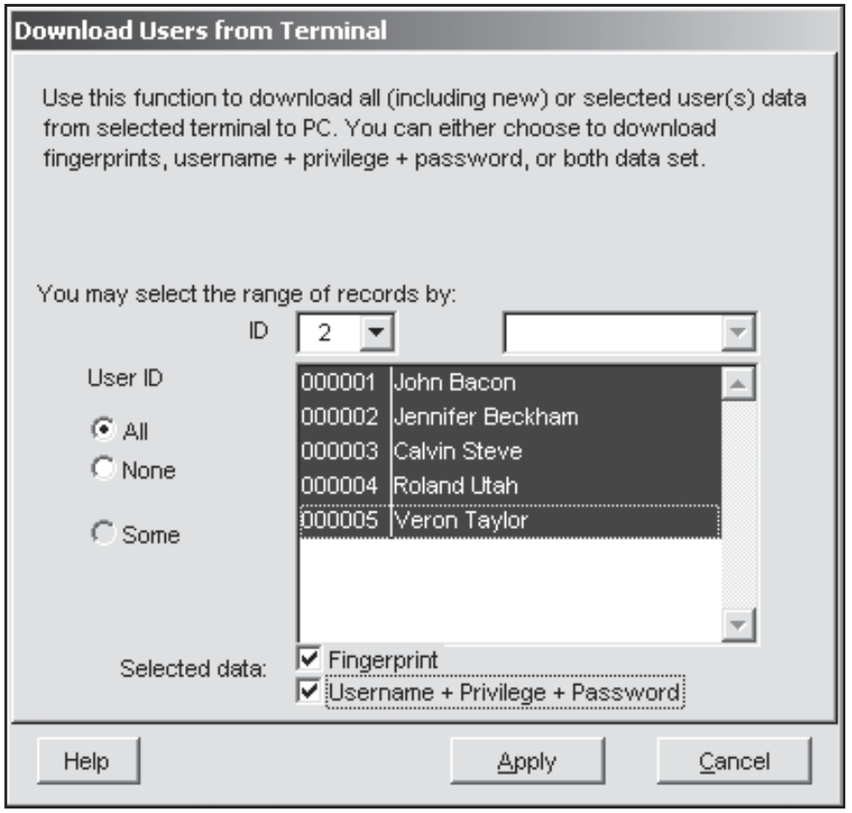
FingerTec® R2 model is using software with additional functions in Fingerprint Management.

The management allows the RFID card number to be enrolled into FingerTec® R2 model. The technique of saving and transferring of RFID card number is similar to those of fingerprint and password.

Fingerprint Management

The above diagram is showing the Fingerprint Management page with a new column known as card. This column stores and displays RFID card numbers that have been enrolled for the users. Only users that have enrolled with RFID cards will have information on the Card column in TCMS V2.

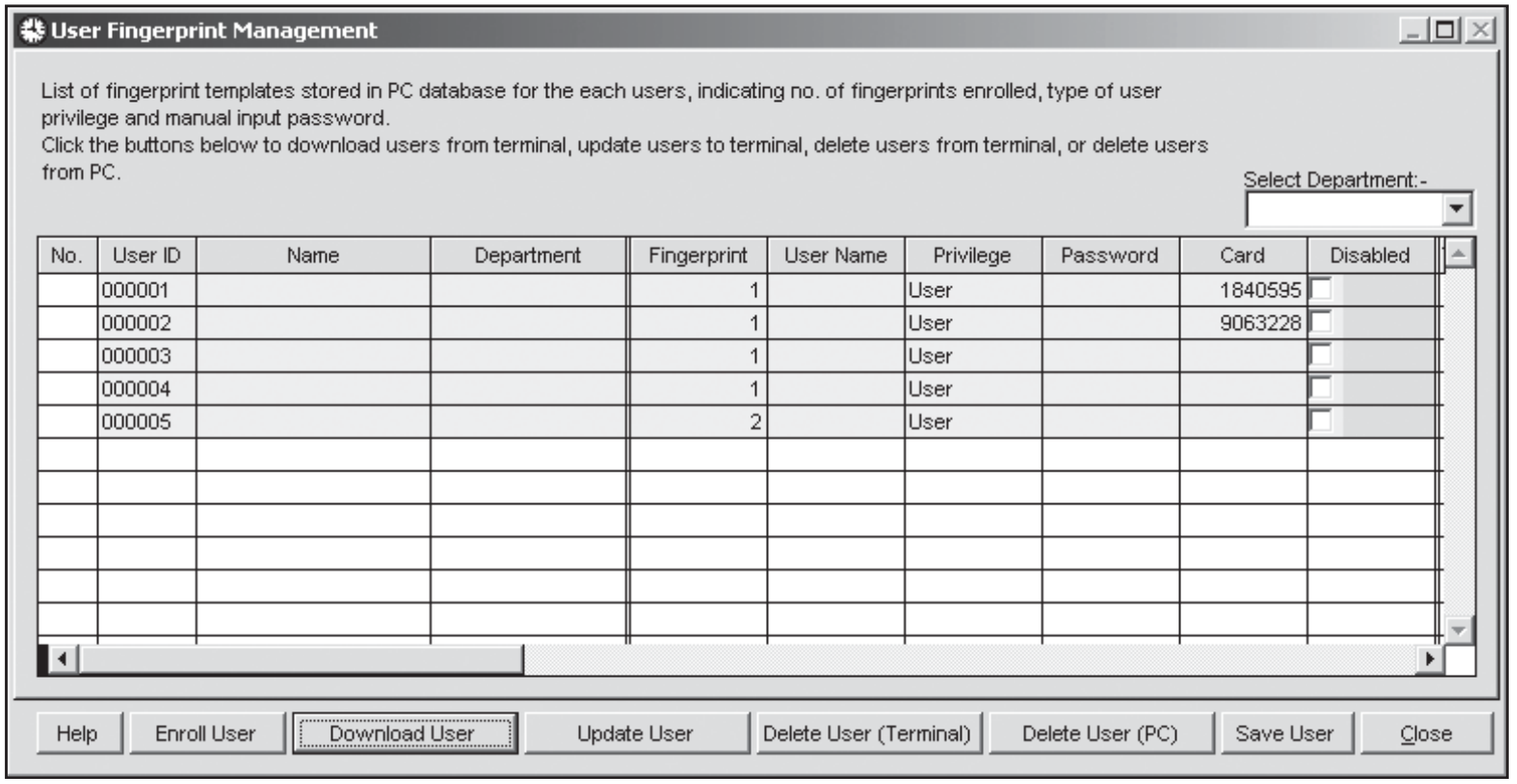




Download of RFID Card Users From Reader

Press the Download User button in Fingerprint Management page to start the download process. First, select the reader ID to download users from. You may select the users enrolled with RFID card to be downloaded into software. You can also choose "ALL" to download all users enrolled in the reader, by fingerprints, passwords or RFID cards.

Please include "Fingerprint" and "Username + Privilege + Password" before you start any download process. The new downloaded users will appear in light blue color. Please enter their details i.e. name, department, username for future reference.

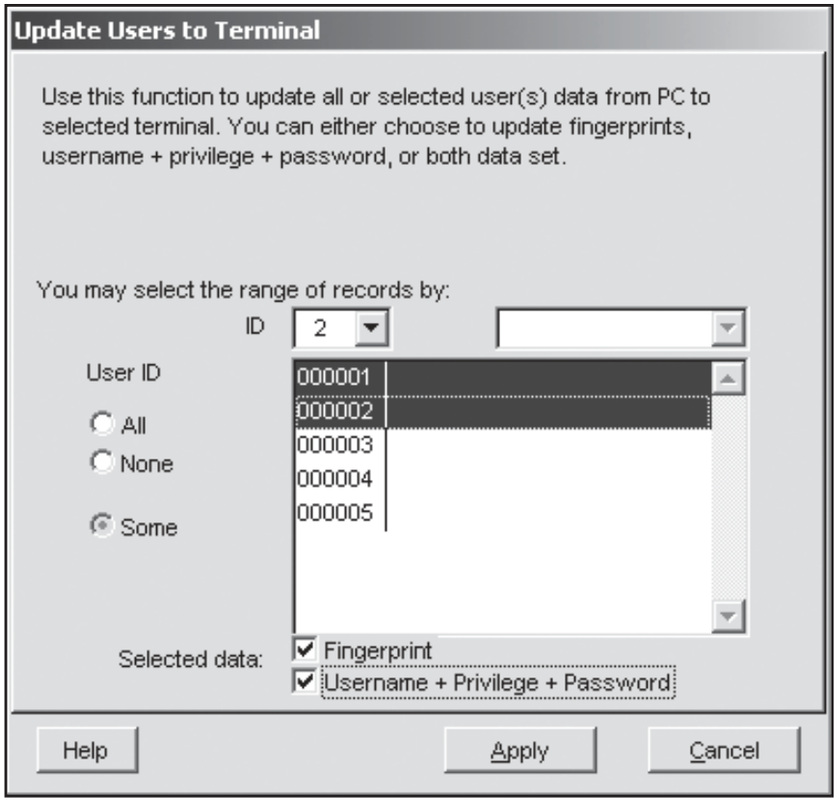


Press Save User button to save the users and their data.

Update of RFID Card Users to Reader

Press Update User in Fingerprint Management page to start any update process.

Select the reader ID to update users to. Select the user enrolled with RFID card to update to other R2, or to other R2 readers that support RFID card users. Choose "ALL" to update all users to all R2 readers, by fingerprints, passwords or RFID cards.



Please include “Fingerprint” and “Username + Privilege + Password” before an update process begins.

TYPES OF VERIFICATION METHOD

R2 model supports four types of verification method, which include fingerprint, password, PIN (User ID) and RFID card. User can opt to use multi verification method to increase security level. However, the fingerprint template capacity for this model is limited to 3,000 and the RFID card is up to 65335. Any combinations of verification methods would reduce user capacity of the R2 reader.

Please follow the steps below to configure the multi verification methods.

When you see this	Do this
Welcome Check-In 08:24 07-01-08 Mon	MENU Press once
Menu User Manage ▸ Options Pen Drive Mng	▼ Press once OK Press once
Options Comm Opt Log Opt ▸ Access Options	▼ Press once OK Press once
Access Options Duress Options Alarm CNT 0 ▸ Group VerType	▼ Press 10 times OK Press once
Group VerType ▸ 1 FP/PW/RF 2 FP/PW/RF 3 FP/PW/RF	OK Press once ▼ Press to choose the multi verification method
Group VerType Save ? ESC OK(Save)	OK Press once ESC Press once OK Press once ESC Press 3 times to

R2 model supports the following combinations of verification.

Type of verifications	Operations
FP / PW / RF	Reader verifies users via fingerprint, password or RFID card.
FP	Reader verifies users via fingerprint only.
PIN	Reader verifies users via User ID only.
PW	Reader verifies users via password only.
RF	Reader verifies users via RFID card only.
FP / PW	Reader verifies users either via fingerprint or password.
FP / RF	Reader verifies users either via fingerprint or RFID card.
PW / RF	Reader verifies users either via password or RFID card.
PIN & FP	Reader verifies users via 1:1 fingerprint matching only.
FP & PW	Reader verifies users via fingerprint with password only.
FP & RF	Reader verifies users via fingerprint with RFID card only.
PW & RF	Reader verifies users via password with RFID card only.
FP & PW & RF	Reader verifies users via fingerprint + password + RFID card.
PIN & FP & PW	Reader verifies users via User ID + fingerprint + password.
FP & RF / PIN	Reader verifies users either via fingerprint + RFID card or 1:1 fingerprint matching.

There are 5 groups available that their verification combinations could be configured. Every user is assigned into a group and he shall follow the verification methods chosen for the group. Please make sure that users chosen for a particular group have been enrolled properly to enable them to get verified. Use management software to configure and to assign users into a group. Please refer to management software manual for more details.

BRIEF INTRODUCTION TO ACCESS OPTIONS

Access option function setting is the settings of user's accessibility to certain doors. It is known as Time Zone. A combination of time zones is known as Group Time Zone. There are a total of 50 time zones available in FingerTec® R2 model. Below are some examples of Time Zone configurations and combinations of Time Zones.

Time zone	SUN	MON	TUE	WED	THU	FRI	SAT
1	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00

Table 1.1 Time Zone 1

Time Zone 1: Constant access time for a period of one week

Table 1.1 is showing the time zone 1 detailed schedule where users are only allowed access from **9am to 6pm from Monday to Sunday.**

Time zone	SUN	MON	TUE	WED	THU	FRI	SAT
2	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00
3	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00	09:00-18:00

Table 1.2 Time Zones 2 & 3

Time Zone 2: Variation in access for a period of one week
Table 1.2 is showing the time zone 2 where users are allowed to access from 8am to 12pm from Monday to Friday but denied any access on the weekends.

Time Zone 3: Variation in access for a period of one week

Table 1.2 also is showing the time zone 3 where users are allowed to access from 2pm to 6pm from Monday to Friday but denied any access on the weekends.

The Time Zone 2 and Time Zone 3 belongs to the same group of employee, therefore they can be grouped together in Group Time Zone, for example Group Time Zone 1.

There are a total of 5 Group Time Zones available for use.

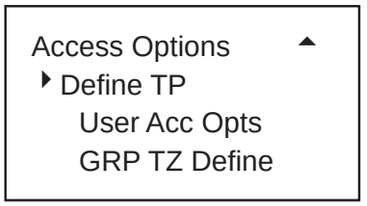
Every new registered user belongs to Time Zone 1. Default grouping combination is Group 1 and default Group Time Zone 1.

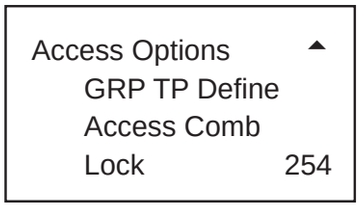
Group time zone	Time zones		
1	2	3	
2			
3			
4			
5			

Table 1.3 Group Time Zones

Under a condition where Group 1 and Time Zone 1 are in factory default status, new registered user defaults in unlocking status. If the grouping of that user does not include in grouping combination setting, then user can only record time attendance but cannot unlock the door.

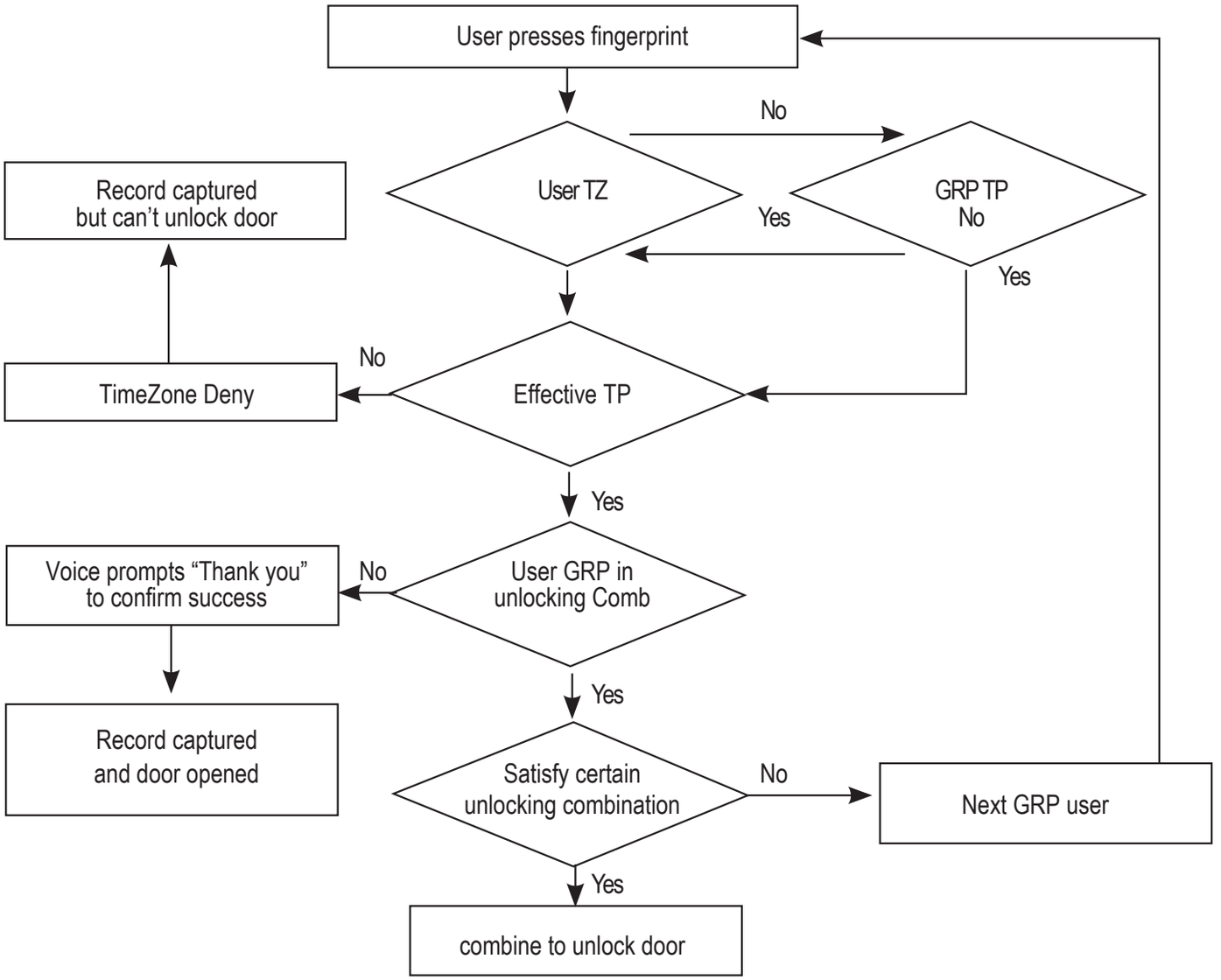
"Access Options" has 5 main functions:





Define TP	To define time zones unit in Access Option.
User Acc Opts	To process correlative setting according to user's requirement.
GRP TP Define	To define group time zones, a group can support up to 3 different time zones.
Access Comb	To define different Time Zone combinations, and each combination is composed of different groups.
Lock	To control time to open electronic lock. The value 250 represents (5 sec), 200 (4 sec), 150 (3 sec), 100 (2 sec) and 50 (1 sec).

VERIFICATION FLOW OF ACCESS OPTIONS



If a user verifies his fingerprint and he is the user assigned in the time zone, the system will check whether the user is included in the user group of unlocking combination. If yes, he has to satisfy certain unlocking combination for the door to be unlocked. If he does not satisfy the unlocking combination required, he will be denied access and he needs to be verified again.

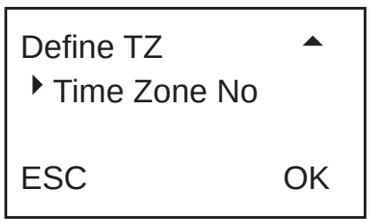
If the user is in the time zone but not included in the effective time zone, he will be denied entry but the data of his fingerprint will be recorded as data for time & attendance.

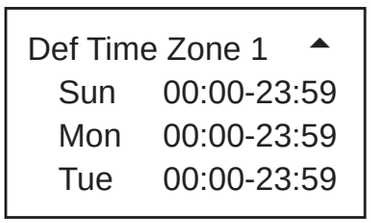
If the user is included in the time zone but not included in the user group for unlocking combination, the user's data will only be recorded as time & attendance data and he will be denied access.

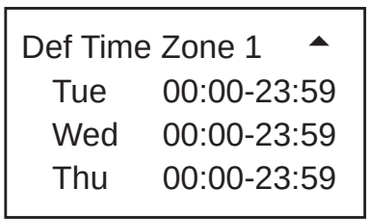
FUNCTION DESCRIPTION DEFINITION OF TIME ZONE

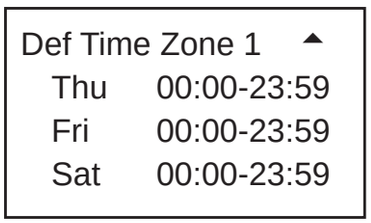
Time Zone	Range of time specified for access options. The system can define a maximum of 50 time zones. Each user can set a maximum of 3 time zones.
Time Region	A certain period of time with a format of HH:MM – HH:MM, operates in 24 hours format and accurate to the minutes. For each time zone, 7 time regions can be set.

- **Enter "Define TZ" and screen displays as follows:**
  Press "OK" to enter settings of time zone 1 and the screen will display as follow:







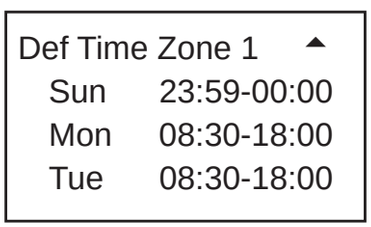


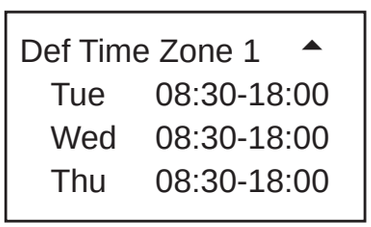
  Definition of time zone 1 above is all-day open, i.e. factory default status.

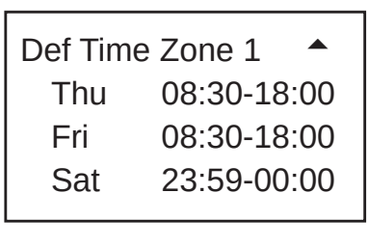
- **For example:**

  Users are allowed to access from 08:30-18:00 during work time from Monday to Friday. Saturdays and Sundays are off day in which the users are not allowed any entry.

  Users are allowed to redefine the time zones depending to their practical requirements.



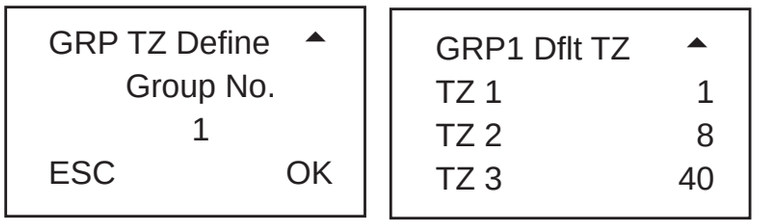




DEFINITION OF GROUPING FUNCTION

Grouping function can segregate users into group and combine different groups into different unlocking combinations. The function provides convenience to grouping management of Access Options. The grouping function can combine as many unlocking combinations as possible from the five groups. New registered user default belongs to Group 1 but the users in Group 1 can be relocated into another group.

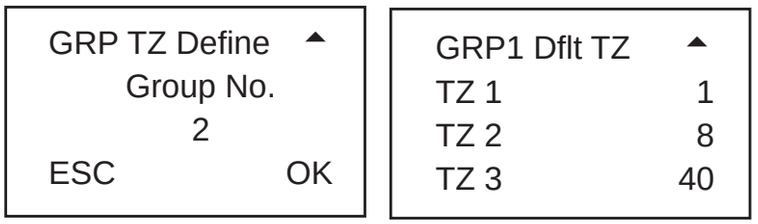
- **Enter "GRP 1 TZ Define" and screen displays as follows:**



There are 3 time zones in GRP TZ Define. Relationship amongst these 3 time zones is "OR". Group 1 is effective in time zone 1, 8 and 40.

Press OK to enter

- **Enter "GRP 2 Dflt TZ" and screen displays as follows:**



Setting of time zone of group 2:

From the diagram shown above, Group 2 is effective in time zone 2, 10 and 38.

Press OK to enter

USER ACCESS OPTIONS

User Access Options is to process correlative setting according to user's requirements.

- **Enter Access Options menu to check user's Access Options status.**
  User Access Options include user grouping setting, use group time zone and user time zone

Grouping	divides registered users into several groups making it managable.
Use group time zone	is whether the user uses default time zone of the belonged group.
User time zone	is for user to set user's unlocking time, and select number of time zone already being set.

Note

Relationships between Use Group Time Zone and User Time Zone **Yes** and **No** in **"Use Group Time Zone"** only have impact on the following user time zone:

- If **use group time zone** is **"Yes"**, then user time zone will automatically be assigned the value of serial number of time zone of belonged group (group time zone should be set in advance).
- If **User Time Zone** is changed, then **use group time zone** automatically be changed to **"No"**.

- **Example of settings:**

  The following example is to set user 00001 and 00002 to group 1 and group 2, respectively.

  * Enter setting interface of serial number 00001, and screen displays as the following:

  Press "OK" to enter setting menu of use group time zone. Press "▲" and " ▼" keys and select "Yes". The screen will display as the followings:

User Acc Opts ▲	User 00001 Opt ▲	User 00001 Opt ▲
Enroll ID: 00001	Belong to GRP 2	TZ 1 1
ESC OK	Use GRP TZs No	TZ 2 40
	TZ 1 1	TZ 3 48

User of serial number 00001:

User's belonged grouping is "1", it uses time zone of group 1 (serial number of user time zone is serial number of group time zone).

- **User 00001 is effective in time zone1, 8 and 48.**

* Enter setting the interface of serial number 00002, and screen will display as the followings: Press OK to enter.

  If serial number of user time zone is 1 or 20, then use group time zone automatically change to "No".

User Acc Opts ▲	User 00002 Opt ▲	User 00002 Opt ▲
Enroll ID: 00002	Belong to GRP 2	TZ 1 1
ESC OK	Use GRP TZs No	TZ 2 20
	TZ 1 1	TZ 3

User of serial number 00002:

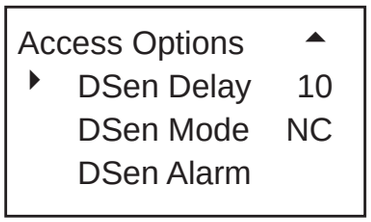
The user belongs to Group 2, he does not belong to any Group Time Zone but his effective time zones are 1 and 20.

When he wants to use group time zone, select “Yes”. In user time zone, serial number of group time zone will be automatically assigned the value if serial number of group time zone. In contrary, if a user wants to use user time zone, just directly modify the serial number in user time zone and use group time zone will automatically change to “No”.

ACCESS COMB

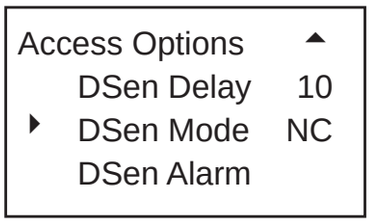
In order to allow user to use different time zone groups, please set the followings accordingly:

- Comb1 value set to 1
- Comb2 value set to 2
- Comb3 value set to 3
- Comb4 value set to 4
- Comb5 value set to 5



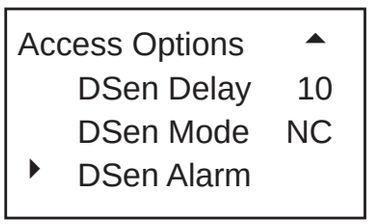
DSEN. DELAY (Door sensor delay)

DSen. Delay can be configured to alert users if a door is not closing well after a time period and the input is in second format. Door sensor must be installed prior to activation of this option.



DSEN. MODE (Door sensor mode)

DSen Mode to configure the time for internal buzzer to alert user if door is not closing well. You must install door sensor to activate this option.



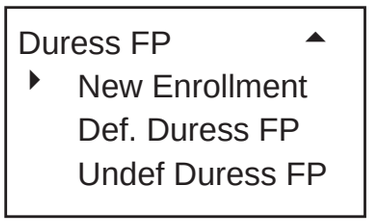
DSEN. ALARM (Door sensor alarm)

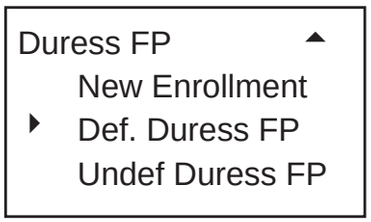
DSen. Alarm can be configured to alert users if a door is not closing well after a time period.

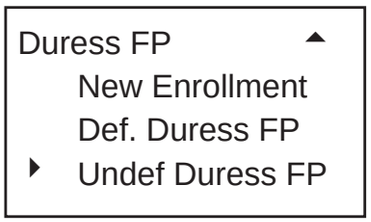
DURESS OPTIONS

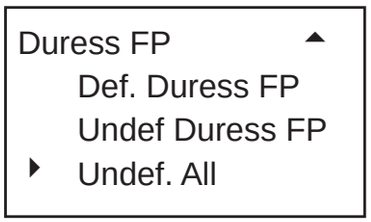
The FingerTec® M2/R2 will trigger the alarm system after a duress fingerprint is verified successfully.

MANAGEMENT OF DURESS FINGERPRINT

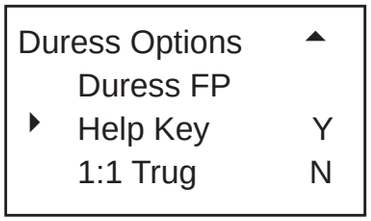








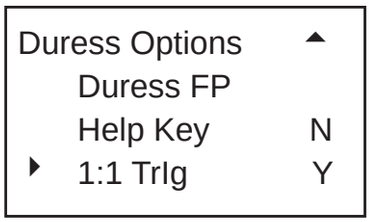
Enrollment of Duress Finger	Allow enrollment of new fingerprint as duress fingerprints. Procedure for enrolling duress fingerprint is the same as normal enrollment.
Define Duress Finger	Define fingerprints to become duress fingerprint. User could use the same fingerprint for normal activity to become duress fingerprints. Recommended to define backup finger as duress finger. **Note** Do not use duress finger to clock in or out. Duress finger is only used in M2/R2 to send signal to alarm system.
Undefined Duress Finger	To delete duress fingerprint. User is still able to use the particular fingerprint to clock in and out.
Delete all	To delete all duress fingerprints in the reader.

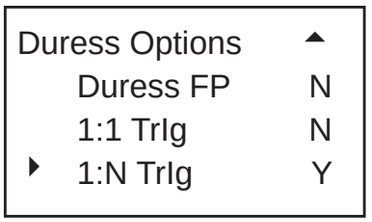


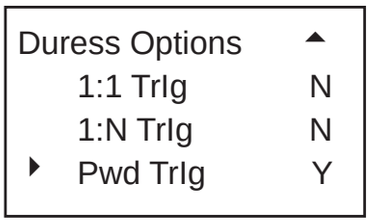
Help Key

You may choose to change the Help Key to "Yes". Please hold down " ▼ " key for 3 seconds followed by the duress fingerprints verification. Success in duress fingerprint verification could trigger the alarm system.

Trigger Method



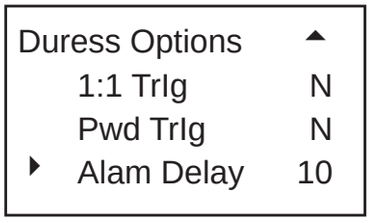




There are 3 types of trigger method, which are:

1:1 Trigger	To trigger alarm by using 1:1 fingerprint verification. Use 1:N matching or password verification during normal operation to avoid conflict.
1:N Trigger	To trigger alarm by using 1:N fingerprint verification. Use 1:1 matching or password verification during normal operation to avoid conflict.
Password Trigger	To trigger alarm by using password verification. Use fingerprint verification during normal operation to avoid conflict.

You may choose only one method or all methods.



Alarm Delay

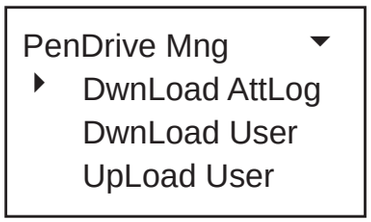
The timer could be configured to set off the alarm after successful verification on fingerprint. The time range is from 0 to 255 seconds.

FingerTec® M2/R2 models are provided with output for alarm system. Two types of signal could be used:

- **NO (Normally Open)**
- **NC (Normally Close)**

Consult your installer for more details. Email to **support@fingertec.com** for more information.

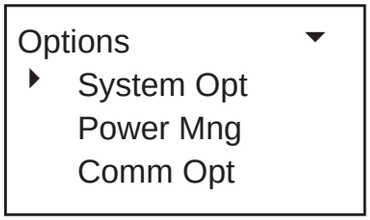
PEN DRIVE MANAGEMENT



If M2/R2 is installed far from a PC or encountering cabling problem that is causing disruption of data download, user can transfer data via USB flash disk (Pen Drive). The functions in the USB Flash disk include:

DwnLoad AttLog	to download transaction logs into USB flash disk and transfer into TCMS V2.
DwnLoad User	to download users into USB flash disk and transfer into TCMS V2.
Upload User	to copy users from TCMS V2 and transfer to reader.
Upload Firmware	to update the firmware version of reader. You need to get the firmware update file from your resellers and copy into USB flash disk.

SYSTEM OPTION

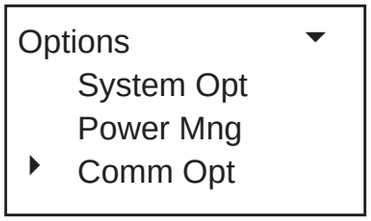


System option enables user to configure the following areas:

- Date & Time Setting
- Date & Time Format
- Languages
- Advance Options

Reset Opts	to restore all settings back to original factory settings
Del Attlogs	to clear all attendance log stored in reader
Clear all Data	to clear all user data (i.e user name, ID number)
Clr Admin Pri	to clear administrator's privilege
Show Score	to show the quality of image captured during verification, the maximum is 50
Match Thr	to configure sensitivity of the optical sensor for 1:N matching
1:1 Thr	to configure sensitivity of optical sensor for 1:1 matching

COMMUNICATION OPTION

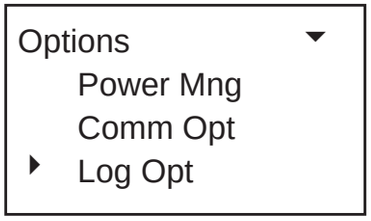


This is to configure communication settings of M2/R2 readers. User can choose the type of communication (TCP/IP, RS232 or RS458). Improper settings will cause connection to computer to fail.

Those options are:

Baud rate	to adjust baud rate of connection with RS232 or RS485
Dev num	the number of reader in an installed environment
IP Addr	to configure the IP address of reader
Net speed	to adjust the speed connection of Ethernet
Netmask	to configure netmask to suit reader into local area network.
Gateway	to configure gateway to suit reader into local area network.
Ethernet	to enable or disable Ethernet as communication method
RS 232	to enable or disable RS232 as communication method
RS 485	to enable or disable RS485 as communication method
COMM key	communication key between reader and software, always set to "0"

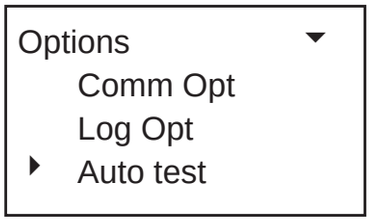
LOG OPTION



If reader has capacity storage limit of a maximum 120,000 transaction logs and to ensure that all transactions are intact in the reader, user can adjust the warning level of transaction storage to for example 40,000 or 45,000. When the transaction storage reaches the warning level, reader will alert users with a beep.

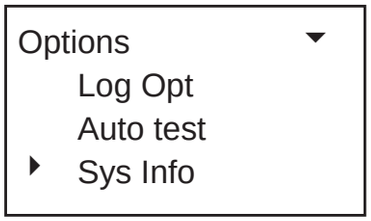
Alm SuperLog	to instruct reader to alert user if the transaction storage of administrator login is less than as configured, default is 99.
Alm AttLog	to instruct reader to alert user if the transaction storage is less than as configured, default is 99.
ReCheck Min	to instruct reader to update clocking times of all user in a time interval, default is 10 minutes.

AUTO TEST



This option allows M2/R2 resellers/technician to run test to the reader to identify any error. Please do not run test without guidance/supervision from M2/R2 resellers/technicians.

SYSTEM INFO



User may check the information stored in the reader under this option.

The information includes:

User Cnt	to show total of users in reader	
FP Cnt	to show total of fingerprints templates in reader	
Att Log	to show total of attendance log in reader	
Admin Cnt	to show total of administrators in reader	
Pwd Usr	to show total of password users in reader	
Super Logs	this item is used by FingerTec® technicians for testing purpose	
Free Space Inf	to show empty spaces which are available in reader	
Dev Info	**FPCnt (100)**	to show the number of fingerprints templates stored in reader
	AttLog (10k)	to show the amount of attendance log could bestored in reader
	Super Logs	for testing purpose
	Manu time	manufacturing time of reader
	Serial Num	serial number of reader
	Manufacturer	name of manufacturer
	Device name	name of reader
	Alg Version	to show the algorithm version use by the reader
	Firmware ver	to show the firmware version use by the reader

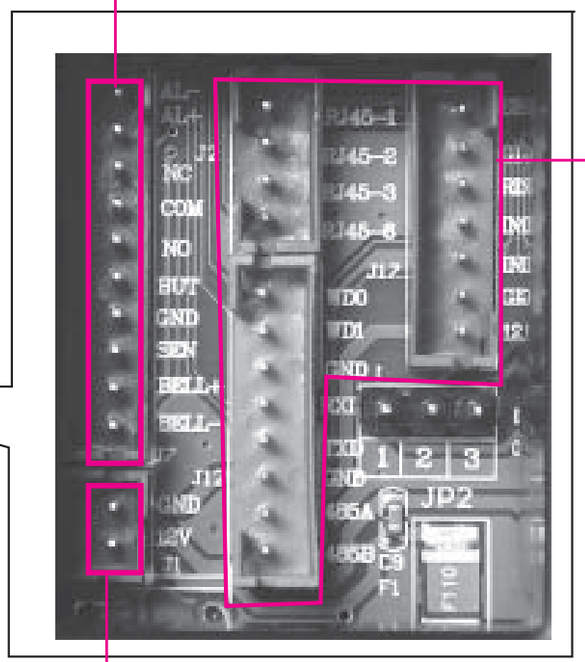
5 • INSTALLATION & COMMUNICATIONS

Note

This Chapter is meant for qualified installer only. The installation of FingerTec® M2/R2 reader shall be handled by a well-trained installer. If you are not a qualified installer, you can ignore this Chapter or this Chapter serves as reference for all types of connections available for the FingerTec® M2/R2 reader only.

CONNECTIONS AVAILABLE

Back of Reader

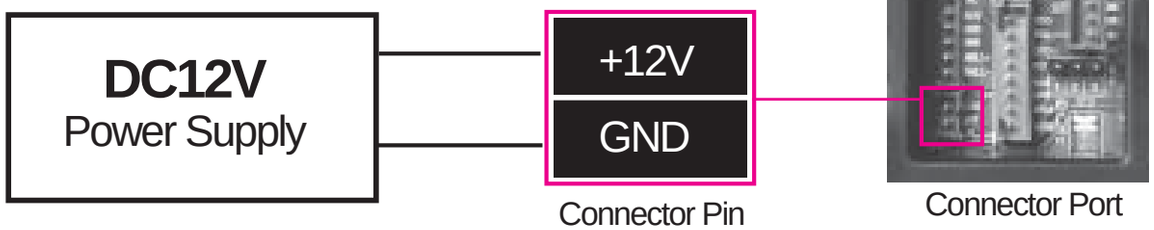


- **Access Control Connection**
  To link FingerTec® M2/R2 with door lock systems and alarm system.

- **Communication Connection**
  TCP/IP Connection
  To provide TCP/IP communication to computer via LAN cable.
  RS232 Connection
  To provide RS232 communication to computer via RS232 cable.
  RS485 Single Connection
  To provide RS485 communication to computer via RS485 cable.
  RS485 Network Connection
  To provide RS485 communication to computer via RS485 network.

- **Power Supply Connection**
  To provide DC12V to FingerTec® M2/R2 to operate.

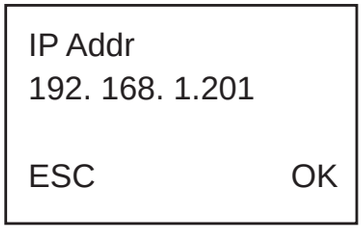
POWER SUPPLY CONNECTION

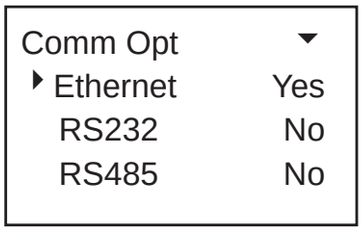


1. Connect 12V DC power supply to FingerTec® M2/R2 reader.
2. Turn on the power supply, the FingerTec® M2/R2 reader will start.

COMMUNICATION CONNECTION

FingerTec® M2/R2 model be connected to computer by four ways:





TCP/IP Connection

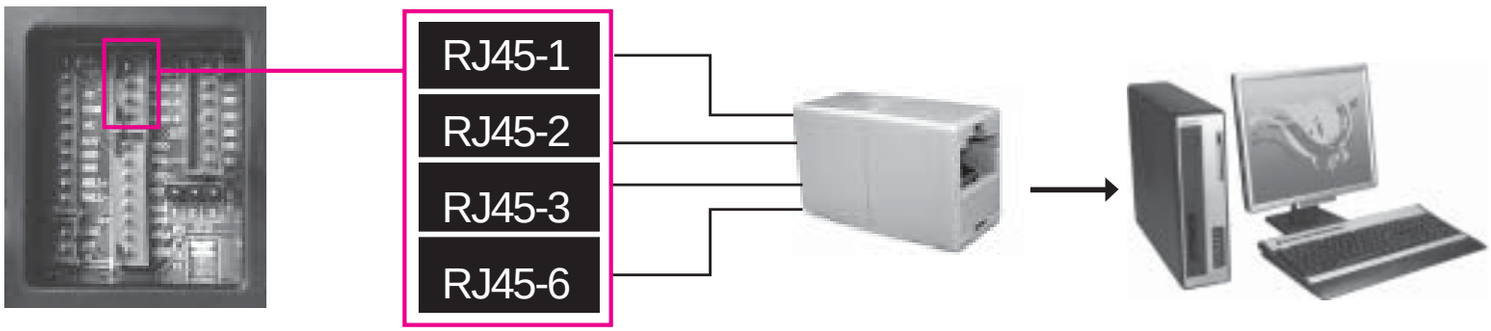
1. Setup the IP address by network configuration
   The machine default IP address is 192.168.1.201; this is a legal and available IP address in many LAN environment. If the host IP address is 192.168.1.X and it is in the same network region, then this IP can be used directly. If not, please make sure that you have changed the IP address accordingly.

2. Setup of Ethernet.
   Access Menu select "Options" > "Comm. Opt" > "Ethernet", select "Yes" to enable Ethernet function.

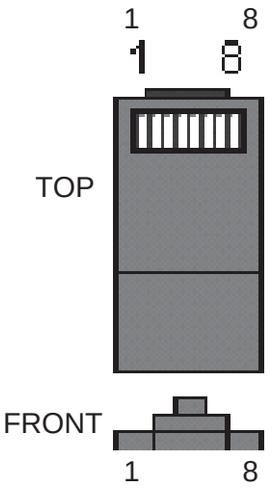
Note

When RS232/RS485/Ethernet is enabled, only the Ethernet function will be enabled while the RS232/RS485 will be disabled.

3. Turn the power off.
4. Plug the network plug to the Ethernet interface.
5. Turn the power on.



Ethernet 10/100Base-T Crossover Cable



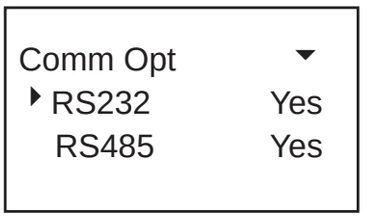
This cable can be used to cascade hubs, or for connecting two Ethernet stations back-to-back without a hub. It works with both 10Base-T and 100Base-TX.

Joint 1 Pin		Joint 2 Pin	
TX+	1 — 3		RX+
TX-	2 — 6		RX-
RX+	3 — 1		TX+
RX-	6 — 2		TX-

Ethernet 10/100Base-T Straight Thru Cable

This cable will work with both 10Base-T and 100Base-TX and is used to connect a network interface card to a hub or network outlet. These cables are sometimes called “whips”.

Connector Pin		Cable Color		Connector	
TX+	1	White/Orange	1		TX+
TX-	2	Orange	2		TX-
RX+	3	White/Green	3		RX+
	4	Blue	4		
	5	White/Blue	5		
RX-	6	Green	6		RX-
	7	White/Brown	7		
	8	Brown	8		



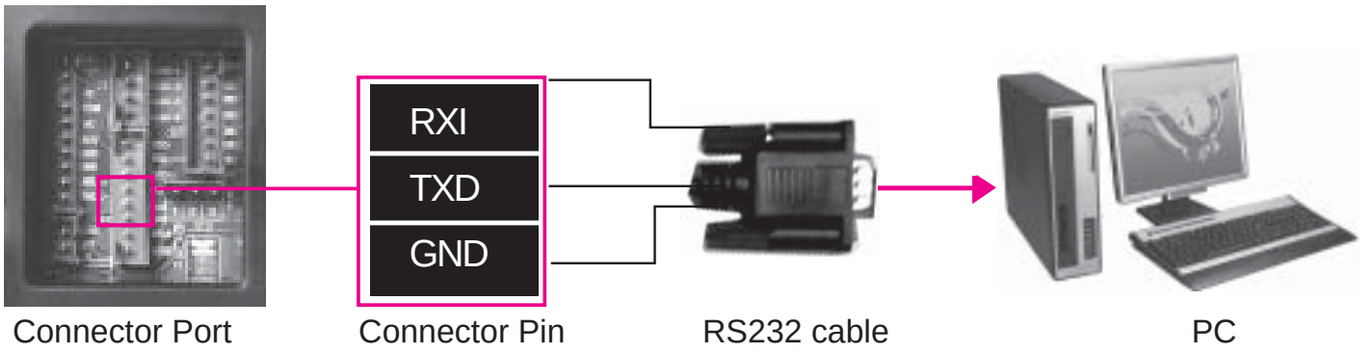
RS232 Connection

1. Setup of RS232
   Access to Menu, select “Options” > “Comm. Opt” > “RS232”, select “Yes” to enable RS232 function.

Note

When RS232 function is enabled, the Ethernet will be disabled.

2. Turn off the reader.
3. Plug the RS232 cable to the RS232 port of the PC.
4. Plug the RS232 other end to the RS232 joint.
5. Turn the power on.



RS485 Single Connection

Comm Opt	
RS232	Yes
▸ RS485	Yes

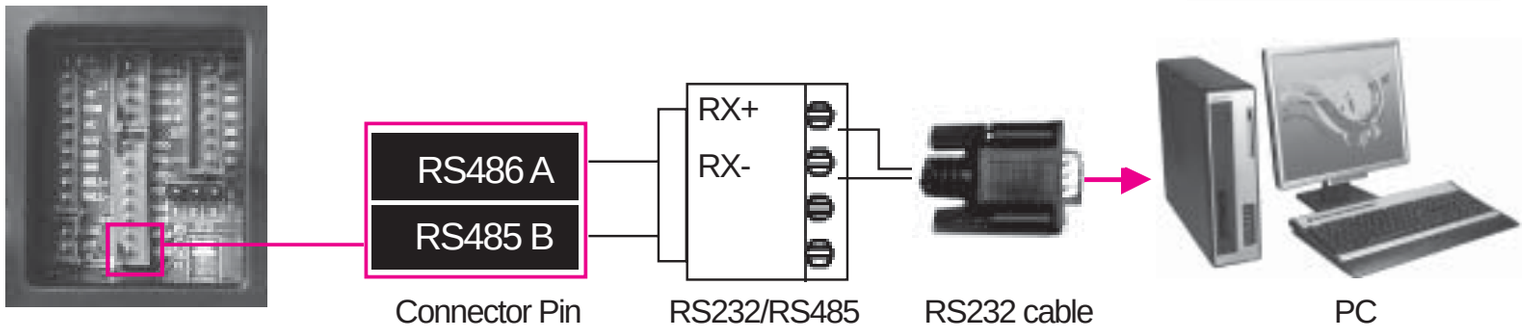
1. Setup of RS485
   Access Menu, select “Options” > “Comm. Opt” > “RS485”, select “Yes” to enable RS485 function.
2. Turn off the reader.
3. Plug the RS485 cable extender to the connector. Connect another end of the cable to the RS232/485 data converter.
4. Connect the RS485 data converter to the RS232 port of PC.
5. Turn the power on.

Note

When RS485 function is enabled, the Ethernet will be disabled.

Note

The RS232/ 485 converter is an optional component.



RS485 Network Connection

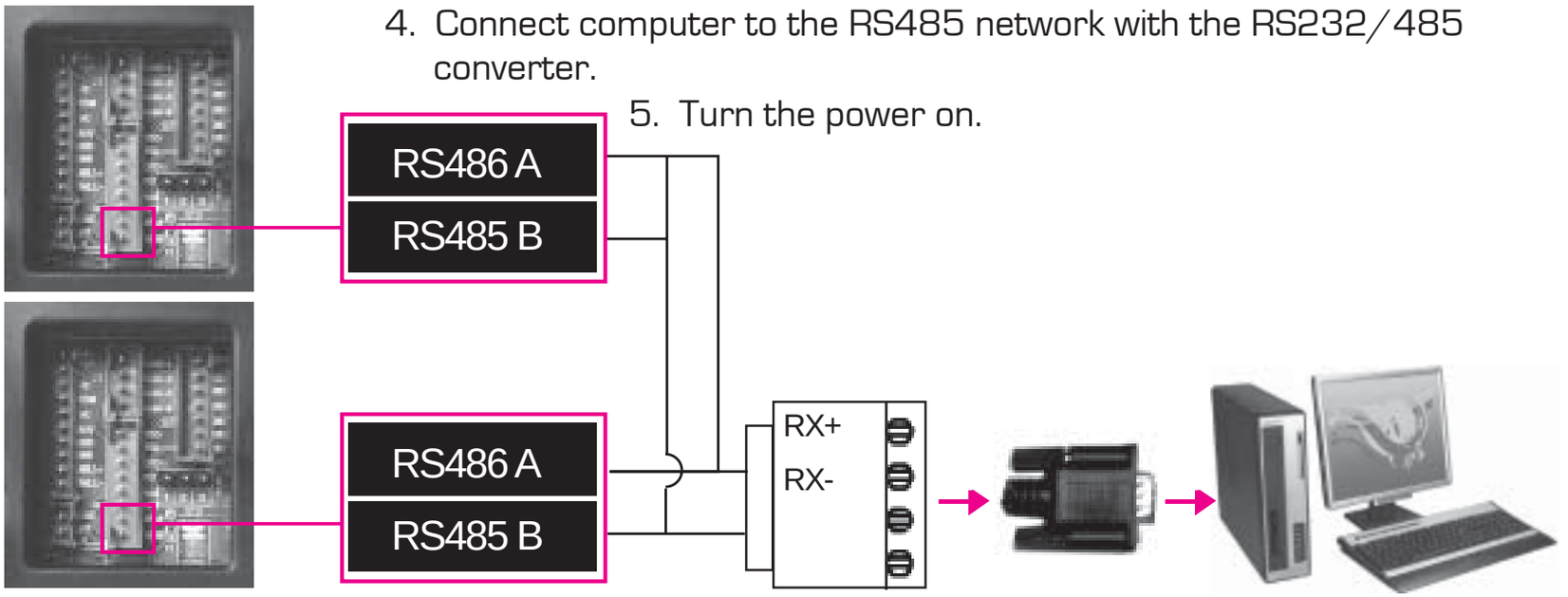
Comm Opt	
RS232	Yes
▸ RS485	Yes

1. Setup of RS485
   Access Menu, select “Options” > “Comm. Opt” > “RS485”, select “Yes” to enable RS485 function.

Note

When the RS485 function is enabled, the Ethernet will be disabled.

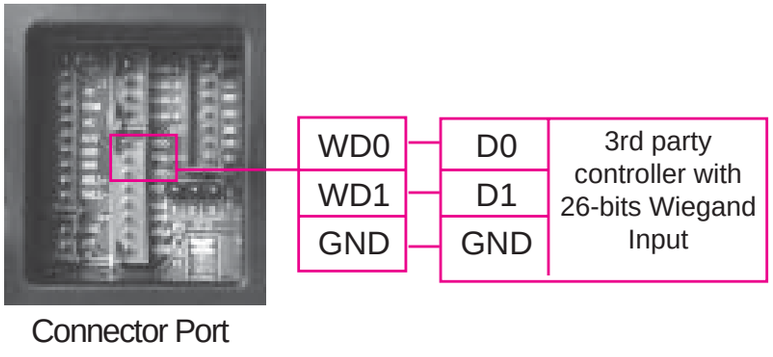
2. Turn off the reader.
3. Plug the RS485 cable extender to the RS232/485 port on the Power Controller, and another end of the cable to the RS232/485 network.
4. Connect computer to the RS485 network with the RS232/485 converter.
5. Turn the power on.



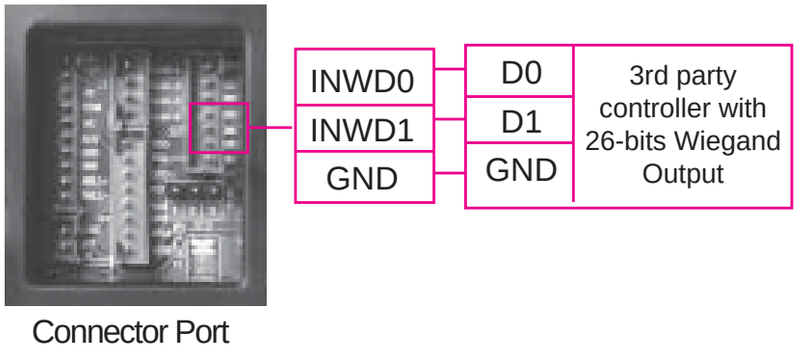
Wiegand 26-bit Input & Output

FingerTec® model M2/R2 are preset with Wiegand 26-bit Input and Output format, which enables integration with 3rd party controller for a complete access control system of preference.

3rd party controller with Wiegand 26-bit Input:



3rd party controller with Wiegand 26-bit Output:

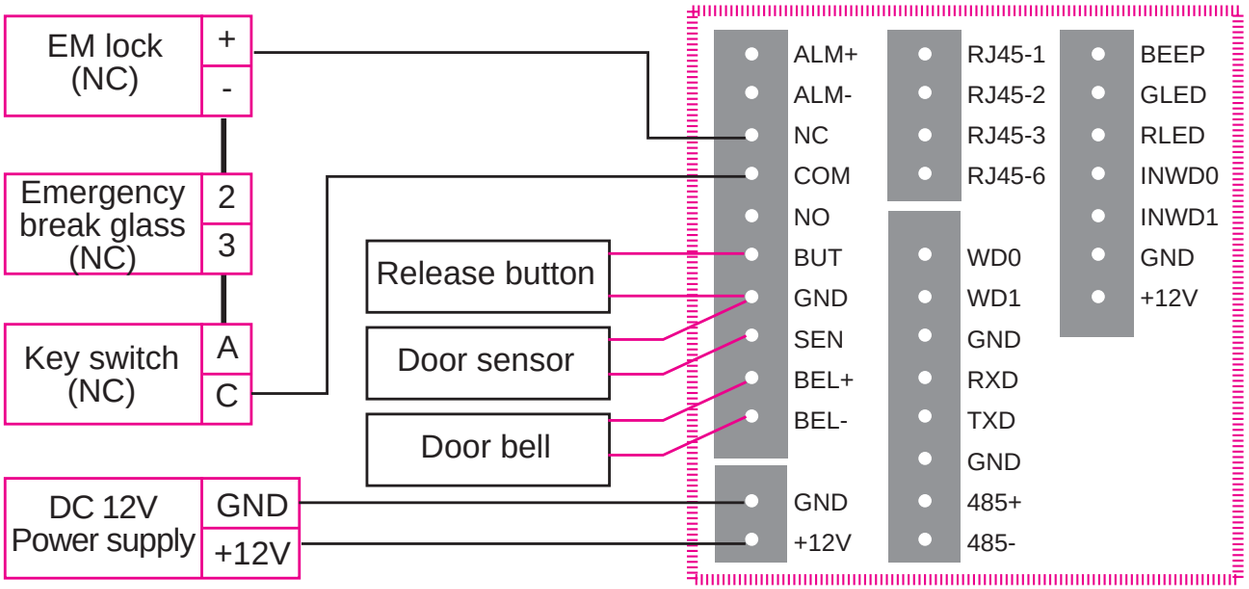


DOOR LOCK CONNECTION

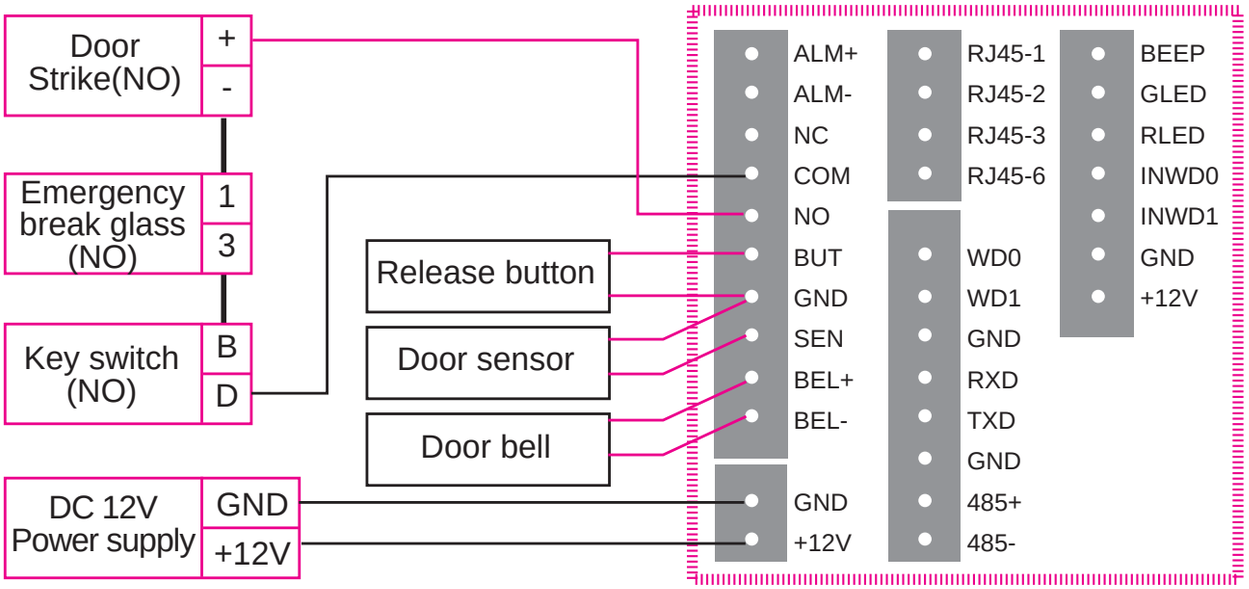
All door lock accessories are linked to the connector pins at the back of FingerTec® model M2 /R2. Please read carefully before you start to connect door accessories to the FingerTec® M2/ R2.

FingerTec® M2/R2 output an EM output (DC12V) to control door lock system. Attention: M2 /R2 do not act as dry contacts for independent door lock system; it needs power supply to control them.

For NC (normally closed) door lock system:



For NO (normally open) door lock system:



Note

Please refer to AdapTec AC Installer Manual if you are using AdapTec AC with FingerTec® model M2/R2.

1 Where is the ON/OFF button for FingerTec® M2/R2?

The FingerTec® M2/R2 models are not equipped with any ON/OFF button. Once the power supply is turned on, the reader will be turned on and if the power supply is turned off, the reader follows.

2 I cannot connect the FingerTec® reader to the PC. Every time I try, the software prompts "Unable to connect" message. What should I do?

Please check communication settings in Menu > Option > Comm. Opt. Please see more details in page 46, Connection to Computer.

3 The FingerTec® reader has difficulty recognizing my fingerprint. It takes many tries before I am verified. What should I do?

Please make sure that your finger is not too oily or too dirty because the oil and dirt will cover the minutiae points of the fingerprints, thus making reading difficult. Make sure the FingerTec® reader is not facing direct sunlight because it will disturb the reading of the sensor. To deal with light interference, cover the reading area when you want to verify your fingerprint. If this occurred often, kindly ask for re-registration.

4 Alarm goes off every time when I place finger on the sensor. Why did such thing occur and what should I do?

The finger you used was defined as a duress finger. Once a duress finger is verified, it will trigger the FingerTec® reader to activate the alarm. To undefine your finger as a duress finger, follow these steps: Menu > Option > Access options > Duress Option > Duress FP > Undef Duress FP > Enter your user ID

5 When the FingerTec® reader is turned on, the red LED is blinking all the time. Is there any problem with the reader?

There is nothing wrong with the FingerTec® reader. The red LED blinks to indicate FingerTec® reader is on standby. When a fingerprint is verified, the LED will turn green to indicate successful verification.

6 The FingerTec® reader is accidentally turned off by a staff. Would we lose all the transaction data and fingerprints in that FingerTec® reader?

All transaction data and fingerprints in the FingerTec® reader is safe in the event of power shutdown because all the information is stored in the memory of the reader. This information can only be deleted via software or it can be manually purged in Advance option.

7 The door sensor is connected to the FingerTec® reader. How could I activate the door sensor function?

You can activate the door sensor option by following these steps: Menu > Option > Access option > Dsen Mode > NC/NO. To configure the timer of the door sensor:Menu > Option > Access Option > Dsen Delay > Enter value

8 I did not want to use the door sensor with FingerTec® reader but when I removed the door sensor, the FingerTec® reader was triggered and the alarm went off. What should I do to completely remove the door sensor?

You must disable the door sensor option in FingerTec® reader by following these steps: Menu > Option > Access Option > Dsen mode > NONE

9 During enrollment I heard "duplicate finger". Why was that?

The "duplicate finger" voice message is to alert user if the enrolling finger is found to have existed in the FingerTec® reader. User must use other finger to enroll.

10 I waved my RFID card to a FingerTec® reader but it did not respond. What could be the reason?

Please make sure that your RFID card is registered to the FingerTec® reader, before you use it. Please also make sure that your user ID is assigned into the verification group that supports RFID card.