FING**e**RTEC
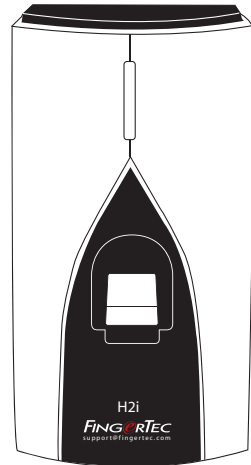
H2i
Simple Fingerprint Door Access &
Time Attendance System

User Guide

CONTENTS

1 • GETTING STARTED

Viewing the User Guide in the Internet

The User Guide is available in the package when you purchase FingerTec H2i. The user guide is also published online at fingertec.com and user.fingertec.com. Choose the language you prefer to view the User Guide.

Included Accessories
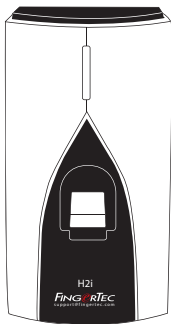
H2i terminal
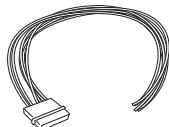
Door Accessories Cable
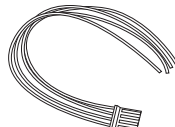
RS485 Wiegand Output Cable

Diod
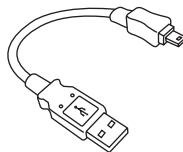
USB Extension

Power Supply Cable

A Packet of Bolts
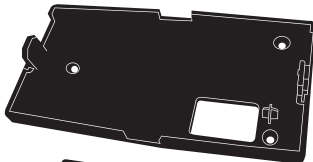
Back Plate (Thick)
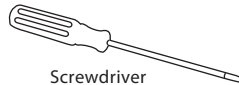
Screwdriver
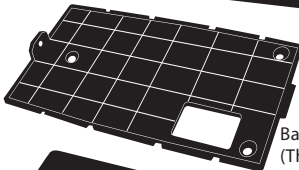
Back Plate (Thin)
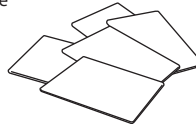
RFID Card (5 pieces)
*for H2i RFID
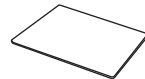
MIFARE Card (1 pieces)
*for H2i MIFARE
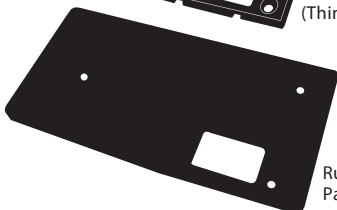
Rubber Padding
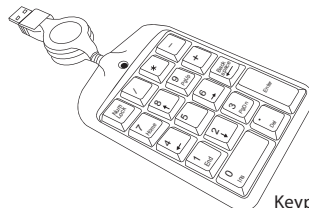
Keypad

Included Printed Materials
• FingerTec Comprehensive DVD
• Quick Start Guide
• Pamphlet
• User Enrollment Template Form
• Warranty Card

Activating H2i
Connect all the cables correctly at their specific points and turn on the power supply. The H2i terminal does not have an on/off button.

Registering H2i
Make sure that you register your H2i's warranty with us at www.fingertec.com/ver2/english/e_main.html#

2 • BASICS

Introduction to H2i

FingerTec H2i is a simple master terminal, functioning as a time attendance and door access device and it can be used as a time attendance recorder as well. The H2i has a simple and sleek design as it comes without a keypad or any form of a display screen. It communicates with its users mainly through its voice commands, as well as its dual color LED light. To perform administrative functions on the terminal, an administrator card is needed. However, the H2i also has the option of using a numeric USB keypad as an administrative tool. As usual, more advanced management of FingerTec H2i can be done via the included software in the package.

H2i Overview

Front of Terminal

Bottom of Terminal
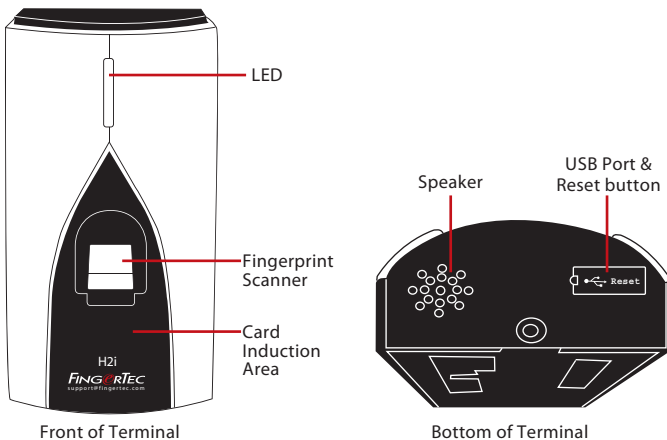
Item	Function
LED	Indicating status of terminal and result of verification **Green** – Terminal is in standby mode, or verify users successfully. **Red** – Terminal has failed to verify user.
Fingerprint sensor	To scan finger for confirmation of identity.
Card induction area	Area that reads cards.
Speaker	For terminal voice emission.
Reset button	To restart the terminal as and when required.
USB port	To connect a USB extension for data download into a USB flash disk (pen drive). To connect a USB Keypad to input numerical commands into the terminal (optional).

Bottom of Terminal   Keypad
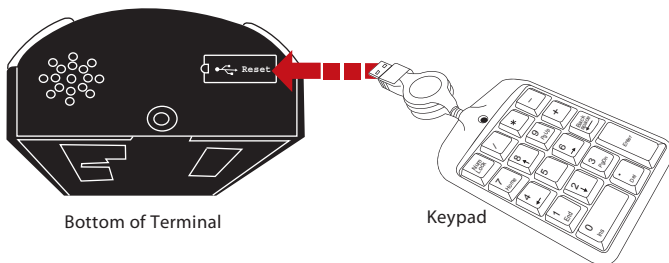
Connect the external USB keypad to the bottom (USB port) of the H2i to insert a specific user ID number during enrollment or deletion. You can also use the keypad to input commands to reset settings of the H2i back to its default factory settings. Refer to page 19 for details.

The external USB keypad is an optional item, and is included in the package.

Security Features

Security features help protect the information in the H2i from being accessed by unauthorized individual(s).

ADMINISTRATOR CARD

Registration of an administrator card to the system is important to control access into H2i. After registration of the administration card is done, nobody can do enrollment, deletion or resetting on the H2i without the administration card.

TAMPER SWITCH

H2i comes with a tamper switch located at the rear of the terminal. During installation, the tamper switch is compressed against a wall. Any attempt to dismantle the H2i will trigger an alarm

Restarting and Resetting H2i

If something isn't working right, try to restart or reset the terminal.

RESTARTING H2i

Use a thin probe to push the reset button hidden at the bottom of the terminal. The terminal will restart by itself and all the memory is retained during this operation.

RESETTING TO DEFAULT FACTORY SETTINGS WITH AN ADMINISTRATOR CARD

To reset the H2i back to its default factory settings, you must first have the administrator card with you.

Green LED light blinks > Wave Administrator card 5 times at the induction area > 🔊 "Restore to default settings. Please wave your administrator card to confirm" > Wave the administrator card to induction area to confirm > 🔊 "The operation is successful". The system will return to verification mode.

Remarks: All settings of the H2i will be reset to the default settings. The IP address will be reset to 192.168.1.1, and the terminal ID will be reset to 1 after the process. The administrator card information will be deleted from the memory and you will need to reenroll it. However, user information and transaction logs will still remain in the memory.

RESETTING TO DEFAULT FACTORY SETTINGS WITHOUT AN ADMINISTRATOR CARD

Green LED light blinks > Detach the terminal from the wall > Release tamper switch > This might trigger a connected alarm > Wait 30 sec > press and release the tamper switch 3 times > The terminal will emit 3 beep sounds > the terminal will then reset to its default factory settings

Remarks: All contents of the terminal will be deleted including the administrator card, user information and transaction logs. All settings will return to the default settings. The IP address will return to 192.168.1.1, and terminal ID will return to 1 after the process.

3 • CONNECTION – SYNCING TERMINALS

Installations

FingerTec terminals offer several connections for power and communications. Installations of FingerTec time attendance terminals are simple than installation for door access functions.

Mount On Wall

Back Plate

4 feet / 1.2 meter
(recommended)
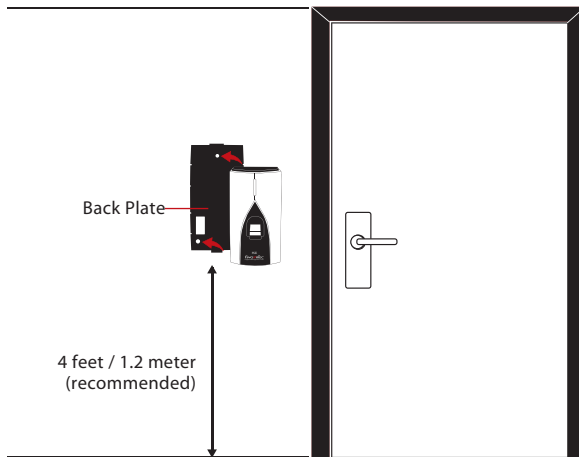
Attach the back plate on the wall securely and attach the terminal to the back plate when mounting it on the wall.

Communications

Connection points for power and communication are available on top of the terminals. Refer to the following diagrams for the terminals you require.

POWER SUPPLYPORT

| +12V |
| GND |

DC12V
Power Supply

RS485 CONNECTION PORT

1. RS485 Single Connection

| RX+ | 485A |
| RX- | 485B |

RS485 Data
Converter

2. RS485 Network Connection

RX+	485A
RX-	485B
	485A
	485B

RS485 Data
Converter

ACCESS CONNECTION PORT

| GND |
| BUT |
| SEN |
| NO |
| COM |
| NC |

For NC or NO
door lock
system

Back of Terminal

WIEGAND INPUT CONNECTION PORT

| +12V |
| IWD1 |
| IWD0 |
| RLED |
| GLED |
| BEEP |
| GND |

3rd party
controller with
26 bits wiegand
output

WIEGAND OUTPUT CONNECTION PORT

| WD0 |
| WD1 |

3rd party
controller with
26 bits wiegand
intput

TCP/IP PORT
(Ethernet Connection)

TCP/IP

FOR NC (NORMALLY CLOSE) DOOR LOCK SYSTEM

POWER SUPPLY PORT

| DC12V Power Supply | +12V |
| | GND |

ACCESS CONNECTION PORT

		485-
		485+
EM lock (NC)	+	GND
	-	
		Release button → BUT
Emergency break glass (NC)	2	Door sensor → SEN
	3	NO
Key switch (NC)	A	COM
	C	NC
		AL-
		AL+

Optional to use with Diode

| GND |
| BUT |
| NO1 |
| COM1 |
| NC1 |
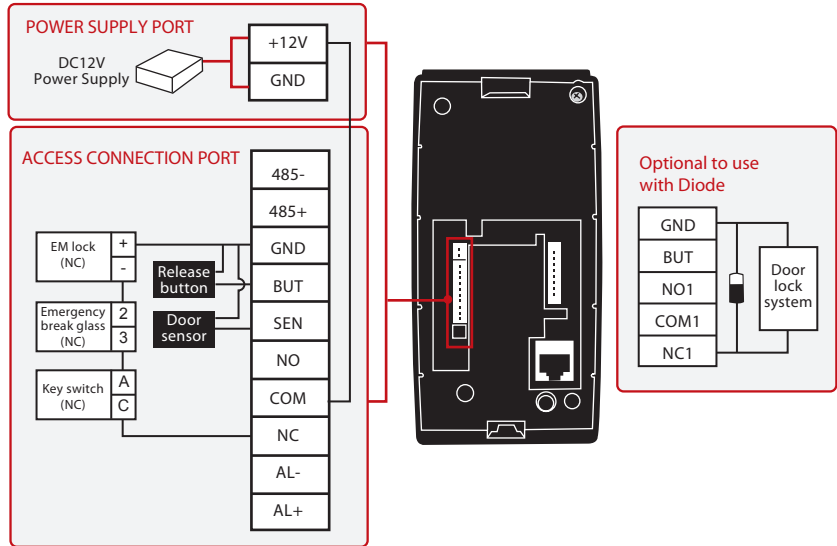
Door lock system

FOR NO (NORMALLY OPEN)DOOR LOCK SYSTEM

POWER SUPPLY PORT

| DC12V Power Supply | +12V |
| | GND |

ACCESS CONNECTION PORT

		485-
		485+
EM lock (NO)	+	GND
	-	
		Release button → BUT
Emergency break glass (NO)	1	Door sensor → SEN
	3	NO
Key switch (NO)	B	COM
	D	NC
		AL-
		AL+

Optional to use with Diode

| GND |
| BUT |
| NO1 |
| COM1 |
| NC1 |

Door lock system
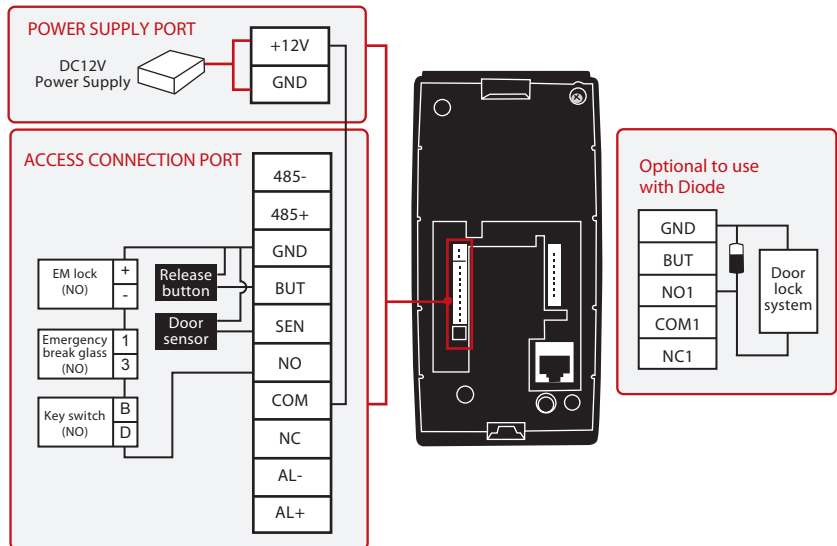
Please refer to AdapTec AC Installer Manual if you are using AdapTec AC.

NOTE

Descriptions of Available Connections

USB PORT
Linking with USB flash disk for remote data transfer.

```
        1        8
      [////////]
TOP
FRONT   [=======]
        1        8
```

TCP/IP PORT
Connect with a CAT 5 cable for LAN connection, one end to terminal's port and another end to the computer's TCP/IP Port.

TCP/IP for Single Connection
Linking the terminal to a single computer using TCP/IP requires Ethernet 10/100Base-T Crossover Cable. The cable can be used to cascade hubs or to connect Ethernet stations back-to-back without a hub. It works with both 10Base-T and 100Base-TX.
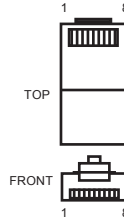
JOINT 1 PIN		JOINT 2 PIN	
TX+	1	3	RX+
TX-	2	6	RX-
RX+	3	1	TX+
RX-	6	2	TX-

TCP/IP for Network Connection
Linking the terminals to multiple computers using TCP/IP requires Ethernet 10/100Base-T Straight Thru Cable or "whips". The cable works with both 10Base-T and 100Base-TX, connecting a network interface card to a hub or network outlet.

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	

POWER SUPPLY PORT
Insert the Power Adapter point to this port for power.

RS485/WIEGAND INPUT CONNECTION PORT
RS485 Single Connection: Connection to a single computer using RS485 wire.
RS485 Network Connection: Connection to multiple computers using Daisy Chain connection.
Wiegand Output: Connecting with third party connector or terminal(s).

ACCESS CONNECTION
Linking the terminal to door lock system.

BELL PORT
Linking the terminal to doorbell.

NOTE Link all cables to the correct connection point(s) before attempting to connect the terminals to software.

Ingress Online Activation
Ingress is a genuine software by FingerTec. Every FingerTec access control model comes bundled with a unique license key. To start using the terminal with Ingress, you must connect the terminal to Ingress and perform online activation. Ingress reads the serial number of your terminal and sends it for verification at the FingerTec server via Internet.

In case you do not have an Internet connection, you would need to do offline activation. Please send the serial number and models of your terminals to your local resellers or support@fingertec.com to request for a product key and activation key.

# Installation and Setup of Ingress
Install Ingress in a PC that fulifills Ingress' minimum requirements. Refer to http://www.fingertec.com/customer/download/postsales/SUM-Ingress-E.pdf for the Ingress user guide online. Setup Wizard will require you to do online activation before connection establish between Ingress and terminals.

Connecting Terminal to Ingress
THE FIRST TIME CONNECTION

When connecting the Terminal to the Ingress for the first time, you must use TCP/IP to form the connection. The Ingress allows you to configure the communication settings and the door lock settings. An IP address is important, as it is a unique address of the terminal in the LAN network. Without an IP address, locating the specific terminal is not possible.

Identify the number of your terminal to differentiate between one another. The default IP address of the Terminal is 192.168.1.201, with the default terminal ID number being 1. The terminal ID can only be changed after you connect it to the Ingress. Remember, each Device ID must be paired with different IP addresses, to indicate that it is different terminal. Refer to page 23 to learn inserting IP/Subnet mask / Gateway / Device ID.
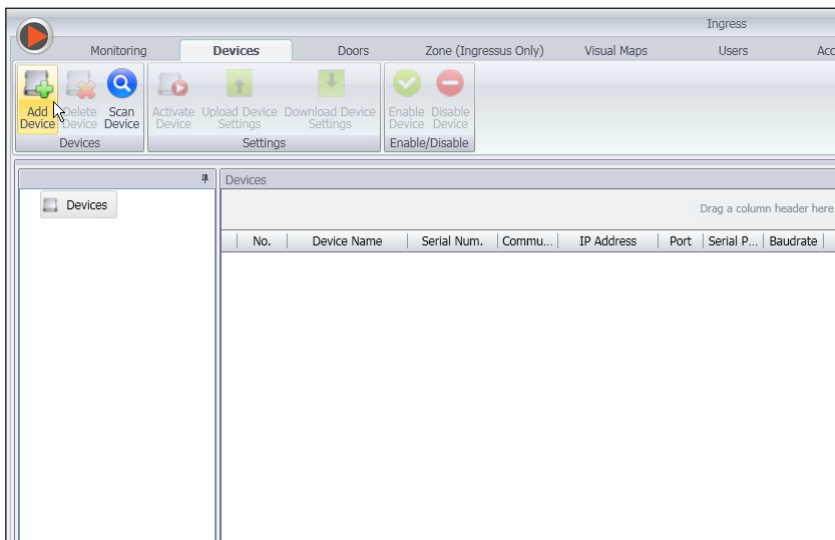
At the Devices Tab, user can either choose to add device via Add Device (to individually add) or Scan Device to add multiple terminals at one go. For single terminal, after filling in the relevant information, click Add and Continue to proceed by adding another terminal or Add to add only one terminal.
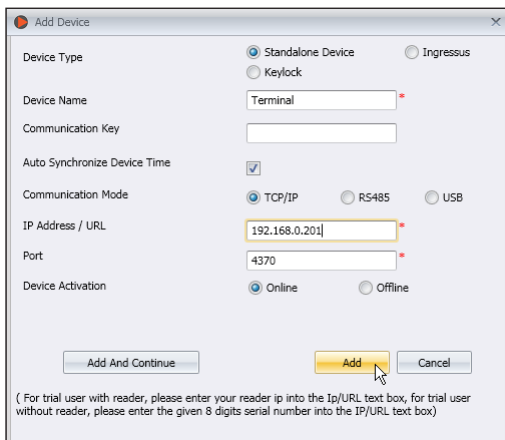
To add multiple devices at one go, click Scan Device and Scan. IP Address range can be set to search for devices. The bigger the range of IP address, the longer time needed to scan for devices. Devices found will be displayed on the screen. Select the preferred devices and click Add Selected Device to add them and a window containing the settings of the terminals will pop up. Click Add to proceed.
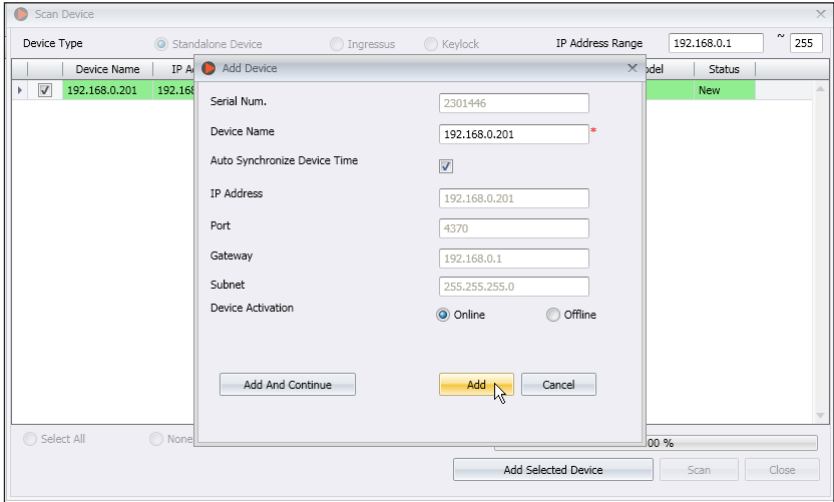
Once the device has been added, a pop up window will appear indicating that the device has been successfully added. Click Ok to proceed.
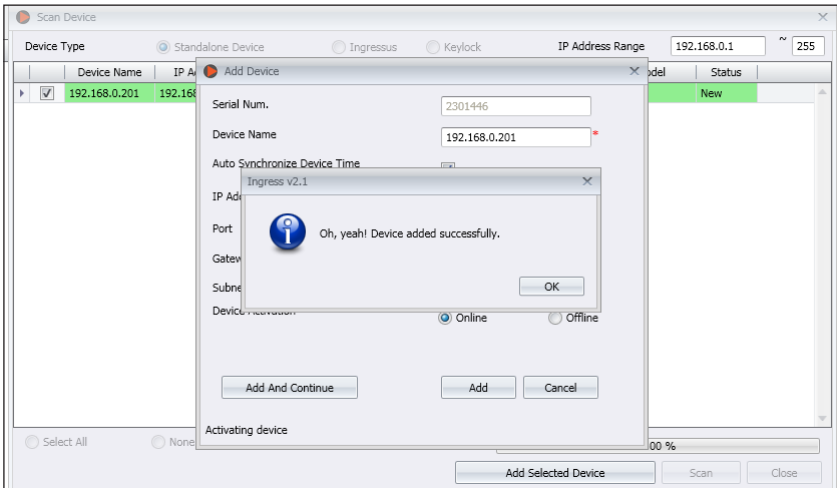
HOW TO CHANGE IP ADDRESS

Terminal does not have a keypad thus to change the IP address users can do it via Ingress software. Steps to change IP address via Ingress are as below. Go to Doors tab and click on Add Door.
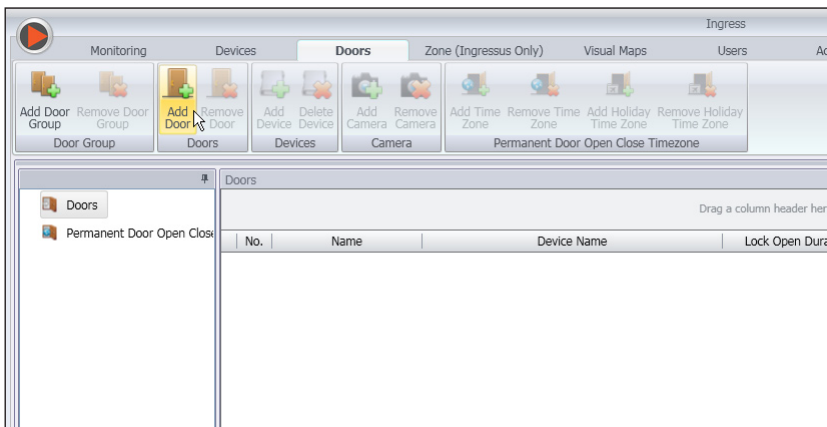
Once the door is added, click on Add Device at the Doors tab. Check/Tick the terminal(s) to be added to the specific door. Click OK. Double click on the device. At the Network tab, click Edit. Change the desired IP address at the IP Address / URL column. When done, click Save to confirm the changes made.
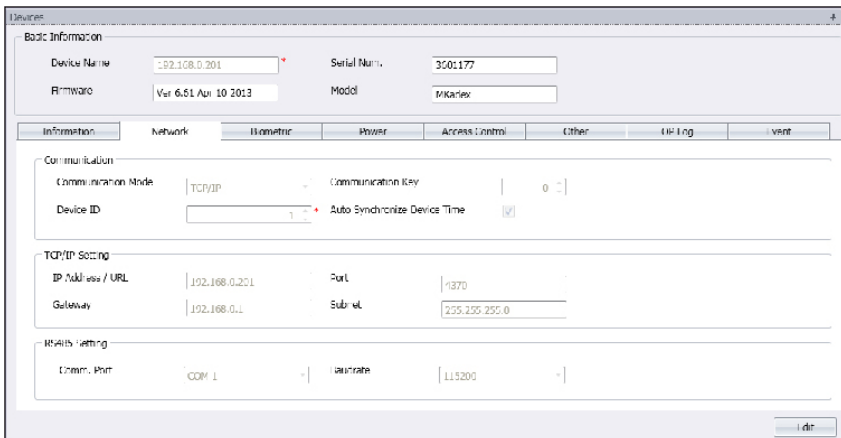
Once done, a popup window will appear indicating the update is successful. Click OK to proceed. The Ingress software has to be synced with all relevant devices in order for the changes to take effect. A small window will appear at the bottom left corner of the screen once any changes are made.

Click on the underlined blue sentence to sync the terminals. Any changes made will appear in the Synchronize Device Settings window. Check/Tick the changes needed to be synced to the terminals. Click Start Synchronize once the selections are made. Another popup window will appear, displaying the changes made at the particular doors affected. Click Start Synchronize once everything is confirmed.
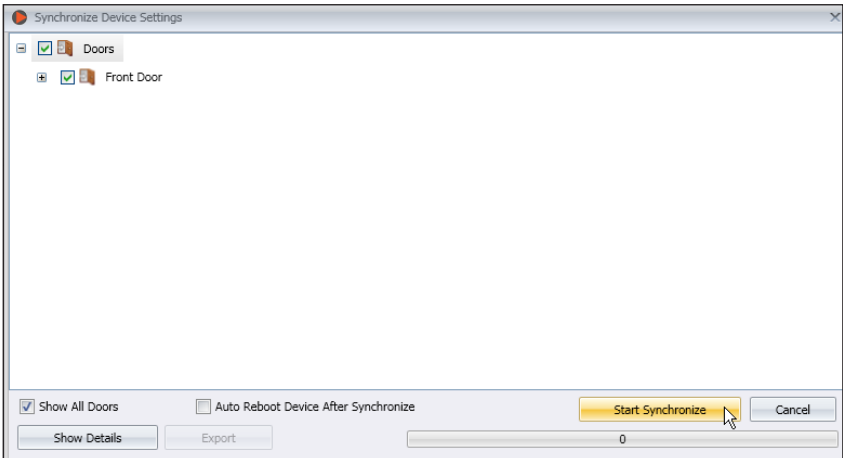
Once synchronization is complete, click Close to proceed. Go to Other tab and click on Reboot Device. A window will pop up, seeking confirmation on whether to restart the device. Click Yes and the IP address for the terminal has been successfully changed.
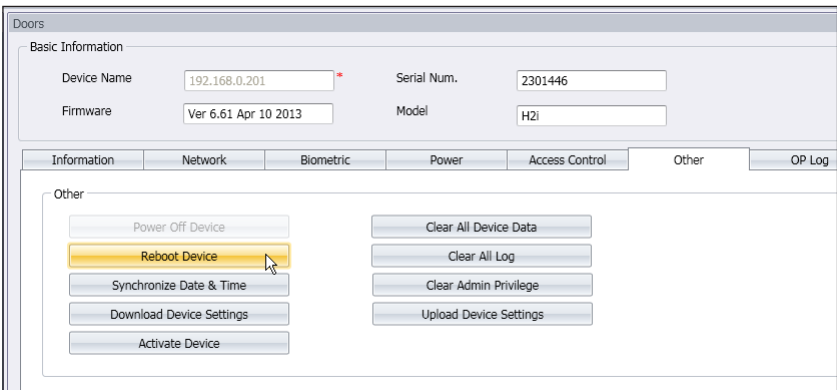
Using USB to Download Data

The USB flash disk feafure is useful in cases where the terminal is installed far from a PC or there is a connection problem. To determine the type of USB compatible with the terminal, please refer to this link at fingertec.com/newsletter/HL_74.html.

USING USB FLASH DISK (PEN DRIVE)

USB flash disk can be used in the H2i for these operations:

• Downloading/uploading user information (user ID, fingerprints, cards etc)

• Downloading transaction logs

• Updating firmware

We highly recommend you to contact support@fingertec.com for this operation **NOTE**

The H2i comes with a USB extension. This extension is intended for security purpose, for without it, no USB flash disk can be inserted into the terminal to access its data. To carry out any of the above operations, you must first plug the USB extension into the port in the terminal and then insert the USB flash disk into the other end of the extension. Listen to the command from the terminal. The terminal will name each operation in sequence as shown below. You need to wave administrator card at the induction area to confirm the relevant command.

1. To download transaction logs from terminal to USB flash disk
Green LED blinks > 🔊 "Download transaction logs". Please wave your administrator card for confirmation > Wave administrator card at the card induction area to confirm > 🔊 "The operation is successful"

2. To download users from terminal into USB flash disk
Green LED blinks > 🔊 "Download users". Please wave your administrator card for confirmation > Wave administrator card at the card induction area to confirm > 🔊 "The operation is successful"

3. To upload users from USB flash disk into terminal
Green LED blinks > 🔊 "Upload users". Please wave your administrator card for confirmation. Wave administrator card at the card induction area to confirm > 🔊 "The operation is successful"

4. To upload firmware from USB flash disk into terminal
Green LED blinks > 🔊 "Upload firmware". Please wave your administrator card for confirmation > Wave administrator card at the card induction area to confirm > 🔊 "The operation is successful"

4 • MANAGING USER

Administrator and Administrator Card

Enrollment of an Administrator Card is required before any other operations could take place in a terminal. Once an Administrator Card is available, an administrator can perform these 3 major functions.

1. Unlock a terminal for enrollment or/and deletion of users with fingerprints or cards

2. Download data from a terminal with a USB flash disk

3. Reset the terminal to its default factory settings

An administrator card cannot be used to report attendance or gain access; it is solely used for the above operations. To gain access or to report attendance, an administrator must enroll his/her fingerprint into a terminal.

◀ᴺ "The terminal is providing users with vocal instructions". Follow the instructions carefully.

Registration of Administrator Card

Power up terminal > Red LED blinks > ◀ᴺ "Please register the administrator card" > Wave card at the card induction area > Terminal reads card and beeps once > ◀ᴺ "Registration is successfu" > System returns to verification mode > The Green LED blinks > Terminal is in stand by mode.

Remark: If the green LED blinks when you power on the terminal, it means that the terminal has already been enrolled with an Administrator card. Find the administrator card to proceed or you need to reset the terminal in order to enroll with a new administrator card.

Enrolling Cards Users

Green LED blinks > Wave administrator card at the card induction area > ◀ᴺ "Register user". Please press your finger or wave your card > Wave card at the card induction area > Terminal reads card and creates a new user ID > ◀ᴺ e.g: "User number 2" ◀ᴺ "Registration is successful". Register, Please press your finger (Remark: Ignore this voice instruction if you do not intend to register a fingerprint in the terminal) > Wave administrator card an to induction area to end process > ◀ᴺ "System returns to verification mode".

Remarks:

1. Repeat steps above to enroll new card users. The system will automatically assign a user ID starting from number 2. By default, User ID 1 is for an administrator card.

2. If you would like to enroll fingerprint for the user after card registration, continue with the steps below after you hear ◀ᴺ "Registration is successful". Register, please press your finger
◀ᴺ "Registration is successful". Register, please press your finger > Press finger on scanner for first capture > ◀ᴺ "Please press your finger again" > Lift the finger and press again on scanner for second capture > ◀ᴺ "Please press your finger for the last time" > Lift the finger and press again on scanner for third capture > ◀ᴺ "Registration is successful". Register, please press your finger > Repeat enrollment

with other fingerprint if you want to enroll more fingerprint for the same user > Wave the administrator card at the induction area to end process > 🔊 "System returns to verification mode"

It is recommended to enroll 2 fingerprints for each user but the system allows you to enroll up to 10 fingerprints for a user.

Enrolling Fingerprint Users

Green LED blinks > Wave the administrator card at the card induction area > 🔊 "Register user". Please press your finger or wave your card > Press finger on scanner for first capture 🔊 "Please press your finger again" > Lift the finger and press again on scanner for second capture > 🔊 "Please press your finger for the last time" > Lift the finger and press again on scanner for third capture > 🔊 e.g: "User Number 3" > 🔊 "Registration is successful. Register, please press your finger or wave your card" > Repeat enrollment with other fingerprint if you want to enroll more fingerprint for the same user > Wave a new card to the induction area if you want to enroll card for the same user > Wave administrator card to induction area to end process > 🔊 "System returns to verification mode"

Verifying Card, Fingerprint or Both for Attendance or Access

Please check that you have configured the correct verification method(s) i.e. Fingerprint only, Card only, Fingerprint or Card, Fingerprint and Card in the terminal through the Ingress software.

FINGERPRINT ONLY

Green LED blinks > Press your finger on scanner > 🔊 "Beep once" > 🔊 "Thank you" > Green LED blinks > Verification is successful > Attendance record is captured and access is granted

Remark: If the terminal's red LED blinks with an instruction that says "Please press your finger again", it could mean two things. The fingerprint might not be registered with the system yet or you did not place the fingerprint properly on the scanner. Please place your finger carefully on the sensor with the center points positioned at the center of the scanner. If the terminal consistently does not verify you, it probably means that your finger has not been enrolled yet. Contact the administrator to enroll.

CARD ONLY

Green LED blinks > Wave card at the card induction area > 🔊 "Beep once" > 🔊 "Thank you" > Green LED blinks > Verification is successful > Attendance record is captured and access is granted.

Remark: If the terminal's red LED blinking coupled with two short beeps ,the card you are using has not been registered to the system yet. Please contact an administrator for card enrollment.

FINGERPRINT OR CARD

Refer to the above explanation.

FINGERPRINT AND CARD

Green LED blinks > Wave card at the card induction area > Terminal reads card and beeps once > 🔊 "Please press your finger" > Press finger to scan fingerprint > 🔊 "Beep once" > 🔊 "Thank you" > Green LED blinks > Verification is successful > Attendance record is captured and access is granted.

Remark: If the terminal's red LED blinking coupled with two short beeps, neither the card nor the finger that you are using been registered to the system yet. Please contact an administrator for card enrollment.

Deleting Card User or Fingerprint User

Green LED blinks > Wave administrator card 3 times to the card induction area > 🔊 "Delete User. Please press your finger or wave your card" > To delete a card, you need to wave the card at the induction area and to delete a fingerprint, please place the particular fingerprint on the scanner > 🔊 "Beeps once" > 🔊 "The user ID of the card or the fingerprint, for example user ID 2" > 🔊 "Delete User. Please press your finger or wave your card" > The user has been deleted > Repeat steps above to delete the other users > Wave administrator card to end process > 🔊 "System returns to verification mode"

Remark:
1. Each user is entitled to have one card only. Therefore, when the card user is deleted, the user ID is completely deleted from the terminal.
2. Each user can enroll a maximum of 10 fingerprints under one user ID. A user has an option either to delete particular fingerprints or all fingerprints from a terminal. Place the particular finger you want to delete on the scanner for the system to delete it. Repeat the steps to delete all fingerprints.

Operations with USB Numeric Keyboard

H2i terminal is packaged with a USB Numeric keyboard to manage users. Plug one end of the USB numeric keyboard to the USB extension and another end into the H2i for activation.

The following commands can be programmed into the terminal via the USB keyboard:

1. Enrolling new user by user ID
2. Deleting user by user ID
3. Resetting the terminal to default factory settings
4. Deleting all users in the terminal
5. Changing keyboard activation password
6. Configuring TCP/IP setting

Using the USB Numeric Keyboard

ASSIGNING KEYBOARD PASSWORD

Assign a password when you are using the keyboard for the first time. This is important to avoid unauthorized access into the terminal via keyboard.

Plug keyboard to H2i > The LED of keyboard lit up > The Green LED of H2i blinks > Wave administrator card to the card induction area> 🔊 "Please press the keyboard" > Press button 8 > Press ENTER > Press button 8 > Press ENTER > 🔊 "Please set password" > Press keyboard to insert a new password, 4 to 6 digits, for example 123456 > Press ENTER > 🔊 "The operation is successful. System returns to verification mode"

Once the password has been created, use the keyboard to control H2i. With the keyboard, you do not need to use the administrator card to control H2i. Keep the password secure.

TO CHANGE THE KEYBOARD PASSWORD

Plug keyboard to H2i > The LED of keyboard lit up > The Green LED of H2i blinks > Insert your password > 🔊 "Password confirmation is successful" > Press button 8 > Press ENTER > Press button 8 > Press ENTER > 🔊 "Please set password" > Insert a new password, 4 to 6 digits, for example 456789 > Press ENTER > 🔊 "The operation is successful. System returns to verification mode"

Enrolling Users

You can enroll users with fingerprints or cards without using an administrator card. Use the keyboard to carry out enrollment operation in the terminal.

Plug keyboard to the terminal > The LED of keyboard lit up > The Green LED blinks > Insert password via keyboard > 🔊 "Password confirmation is successful" > Press button 1 > Press ENTER > 🔊 "Register User. Please input user number" > Insert user ID using keyboard > System repeats the number inserted for example, 🔊 "User number 12345. Register User. Please press your finger or wave your card" > Refer to **Enrolling Card User** Or **Enrolling Fingerprint User** for details of enrollment steps.

Deleting Users

You can delete users from terminal without using an administrator card, but by using a keyboard. You can delete users by inserting their user IDs, or delete all users in the system.

To delete particular user: Plug keyboard to terminal > The LED of keyboard lit up > The Green LED blinks > Insert keyboard password > 🔊 "Password confirmation is successful" > Press button 2 > Press ENTER > Delete User. Please input User ID > Insert user number using keyboard> Press ENTER > 🔊 "System repeats the number

inserted for example user ID 12345" > 🔊 "Deletion is successful. Delete User. Please input user number" > Repeat to insert user ID to delete > (undetermined steps) > 🔊 "The system returns to verification mode"

To delete all users including the user for an administrator card: Plug keyboard to terminal > The LED of keyboard lit up > Insert keyboard password > 🔊 "Password confirmation is successful" > Press button 9 > Press ENTER > Press button 9 > Press ENTER > 🔊 "Delete All Users. The operation is successful. The system returns to verification stage. Please register the administrator card".

After the operation, the H2i will be completely empty. You must re-enroll administrator card into the terminal to start over.

Configuring IP address, Subnet Mask and Gateway by using USB numeric keypad

In case you are going to install multiple H2i in an environment, setting up IP address to every H2i becomes troublesome. Now you may consider using the USB numeric keypad to ease the job.

Plug keyboard to the terminal > The LED of keyboard lit up > The Green LED blinks > Insert password via keyboard > 🔊 "Password confirmation is successful" > Press button 4 > Press ENTER > 🔊 "Please enter the IP address" > Insert IP address using keyboard, example 198.168.1.2 > Press ENTER> 🔊 "key operation is successful > 🔊 "Please enter the Subnet Mask" > Insert Subnet mask using keyboard, example 255.255.255.0 > Press ENTER > * "key operation is successful > 🔊 "Please enter the Gateway" > Insert Gateway using keyboard, example 192.168.1.1 > Press ENTER > 🔊 "key operation is successful" > 🔊 "Please enter the Device ID > Insert Device ID using keyboard, example 2 > Press ENTER > 🔊 "key operation is successful" > 🔊 "System returns to verification mode"

Restoring The Terminal to Default Factory Setting

Plug keyboard to terminal> The LED of keyboard lit up > insert keyboard password > 🔊 "Password confirmation is successful" > Press button 3 > Press ENTER > Press button 3 > Press ENTER > 🔊 "Restore to default settings. The operation is successful" > The system returns to verification mode.

5 • OTHER RESOURCES

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