

# **PFP-3700**

Fingerprint Attendance and Access Control Reader Hardware User Manual

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## 1, About this manual

This user manual will guide you through the installation of the PFP-3700 Attendance System and Access Control System. The manual also includes information to get you started with the device interface and its usage. You will also be guided to how you can interface the device to a computer.

## 2, Before You Get Started

#### 2.1. Package Checklist

This manual comes with the following items. Please approach the dealer or distributor if you do not have any of the following:

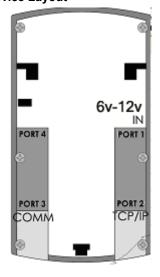
- PFP-3700 Attendance or Access Control Device
- Accessories Power adaptor, wall mount, screws and interface Cable (RJ45-dual RS232/485),
- CD containing the installer for Attendance System Software and a softcopy of the User manual (PDF format)
- User manual

## 2.2. System Requirements

The computer that interfaces with the device needs to fulfil the following requirements.

- Microsoft® Windows® 98SE/ME/2000/XP OS
- 800 MHz (or higher) Pentium® processor
- 128 MB RAM (minimum)
- 10MB hard disk space
- RS232 Com Port (Standalone Configuration)
- Ethernet RJ45 Port (Network Configuration)
- CD-ROM drive

## 2.3. Device Layout





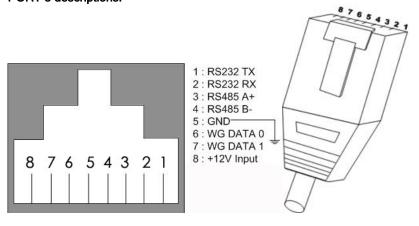
Power Supply (Two ports: one is 12V / 1A Via  $\bf PORT3$  port, and another is 5V /1A or 6A/1A Via power adapter  $\bf PORT1$ )

Note: New PFP-3700 (Since 30/8/2006) can support +6V or +12V input via PORT 1,but only the new device..

Wiegand 26 (Output via **PORT3** port as two lines: **DATA0** and **DATA1**) RS232 or RS485 (Output via the same **PORT3** port as five line: RS232 TX,RX GND,RS485 A+,B-)

10M Ethernet (Via another PORT2 port)

## PORT 3 descriptions:



## 2.4. Specifications

Product				
Dimensions (mm)	153MM x 85MM x38MM			
Sensor Size (mm)	22mm*20mm			
Image Resolution	500 dpi			
Image Quality	8-bit greyscale			
Module	<i>5</i> ,			
Embedded Processor	TI(54)			
Embedded Firmware	PONGEE Image Processing Software PONGEE Fingerprint Authentication			
Interface	RS232/485, Ethernet, Wiegand26, Bell			
	Button for Siren device			
Fingerprint Templates	Support 3200 fingers with Group ID			
Capacity	Recommended 300 Fingers without Group ID			
	(300 only by order, matching by Group ID)			
Image Scan Time	< 2 seconds			
Verification Speed	< 1.5 seconds			
False Acceptance Rate	< 0.0001 %			
False Rejection Rate	< 0.001 %			
Fingerprint template size	< 500 bytes			
Environment				
Operating Temperature	-5 to 60C			
Storage Temperature	-10 to 65C			
ESD tolerance	40 kV air discharge			
Power Consumption				
Voltage Supply	6V or 12V for Attendance & Access			
	Controller			
Sleep Mode	20 μA			
Imaging Mode	< 500 mA			
Software				
Driver Support	Windows 98 SE, ME, 2000 and XP			

#### 2.5. What's new

## 1. With Relay inside

When fingerprint passed, the Relay will output the Relay sign. Then you can use it to do more by yourself.

For example, to open the door or connect another machine.

#### 2. With door bell directly

New PFP-3700 will support to connect with the doorbell directly since 30/8/2006.

## 3. Support 1:n. match.

The new PFP-3700 can support 1:N matching, and 1:n matching. It means that when you press the **Group ID** number, the PFP-3700 will match the finger in one of the **Group** team. For example:

When you register the finger ID as 50 or 80, which is less then 100, it means that you no need to press the **Group ID** number, just press the finger directly, and then the PFP-3700 will search the finger in this **Group**, which ID is from 1 to 99.

Actually, it will not search out the correct finger in this Group (No1-No99) if the finger ID is more then 99.

If you register the finger ID as 260, it means that you should key the **Group ID** "2", and then press the finger, so the device will search the finger from 3rd **Group** (No. 200 - No. 299).

The same way, if you press the key as [2], but your finger ID is 304, so the device will not search out your finger, and you will identify failed.

If you register the finger ID as 1520, so it means that the Group ID is "15", so the device will match the finger between the ID from 1500 to 1599. It means that you should key [15], and then press the finger.

This solution can solve the big problem around the biometrics products: if there are lots of the finger templates, then the matching speed will be slow, and the ACCESS REAL RATE will be very safe.

## 3, Introducing

Thank you for purchasing our Attendance series/Access Control series. PFP-3700 Fingerprint Attendance System offers organizations a solution to provide accurate and efficient time and labour management. It incorporates our proprietary biometric technology to simplify logging of in/out records. PFP-3700 also provides multilevel authorisation control to secure record and log data.

PG-V388 Fingerprint Access Control System adds on to PFP-3700 to provide an integrated access control whereby fingerprint verification is the core part of the system.

The manual will be organized as follow:

- Installing PFP-3700 A guide on how to set up the device
- Using PFP-3700 A guide on how to use device
- Using the Menu A guide on how to access and use the menu
- **Menu Functions** All the information about the various functions and settings available in the device
- **Software Interface** Introduction to the basic software for the central controller of the devices
- · Abbreviations and Jargons

Some of the jargons and abbreviations used in the device and written in the user manual are explained. They are as followed:

Baud rate Speed of data transmission between the computer and

the device. Used for communication settings

**Device ID** The identification code to recognise individual device.

Used for device settings

Enrolment The process of registering a new user or manager to

the device record

General Log

Log that contains the in/out log records

(GLog) Identification

Act of identifying the user from the user records

**Log** A documentation of a process and event

Parity Even or odd quality of the number of 1's or 0's in a

binary code, often used to determine the integrity of data especially after transmission. Used for

communication settings

**Record** A documentation of the history of recent activities

RS232 A serial asynchronous serial line standard for stand-

alone data transfer

RS485 An serial line standard which specifies 2-wire, half-

duplex, differential line, multi-point communication.

Used to connect multiple device in a network

Supervisor

Log

Log that contain records of settings change time

User restricted to logging in/out of system

VerificationAct of validating the user from the user recordsUploadTo transfer data or fingerprint templates to device

**Read** To transfer data from device

**Record ID** The identification code to recognise individual users.

## 4, Installing

Here are some recommendations on how you can install the device in your organisation. The device installation guide will provide you with information on how to connect our PONGEE device in a stand-alone scenario (for single device) and in a network environment (for multiple devices). It will also provide additional information on setting up access control system.

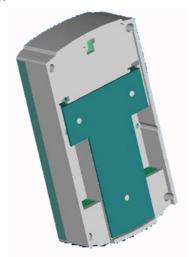
#### 4.1. Basic Installation

The product will require an installation space of 220 x 154 x40 mm.

The wall-mounting bracket should be fixed on the wall according to the given dimensions.

The bracket can be fixed on a flat surface using 4 3mm-screws. If you require the wires to be concealed, the bracket will have to be modified to accommodate internal wiring set up.





After the power supply and the rest of the wirings are connected, the device can be attached to the wall-mounting bracket by slotting the device to the connectors.

**Note:** There is a locking mechanism to secure the device to the bracket at the lower end of the bracket.

## 4.2. Power on the device

In this version, the device can be connected with the power adapter in two ways.

#### 6V/1A.

The adapter will be included in the whole package. This adapter can be used only for PORT 1.



#### • 12V/1A

The other way is with 12V/1A. This way is only for the wiegand 26 access controller.

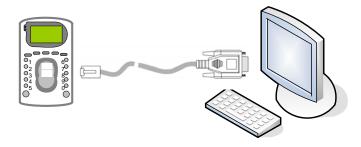
Actually, there is the power output from the access controller, So when you want to connect the PONGEE device to the access controller, it's very easy and useful to connect directly to the controller's power. This is only for PORT 3

Of cause, if you want to use the 6V/1A adapter, you can do it too.

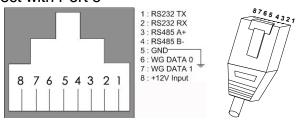
Note: If you use the 6V/1A adapter, and then connect the PFP-3700 with the access controller, you should connect wiegand 26 signals from PFP-3700 to the controller, and at the same time, you should connect the GND from PFP-3700 to the controller too. It's very important. (Because the Wiegand 26 signal should be in the same GND)

## 4.3. Stand-alone Configuration

The device can be connected directly to the computer via RS232/RS485, or Ethernet interface.



## To connect with Port 3



There are several limitations when using various interfaces.

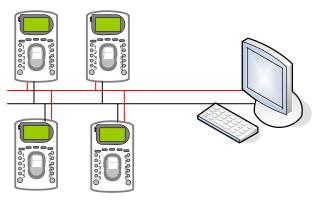
Type	Maximum covered distance
RS232	15 metres
RS485	1200 metres
Ethernet	Varies with different categories/grades of cable or HUB

If a greater coverage distance is required, additional boosters can be attached to the various configurations. Please look for your dealers or distributors for more information on the required cable accessories.

## 4.4. Network Configuration

If you require multiple devices to be connected together, you may connect the devices via RS485 or TCP/IP interface.

RS485 Configuration Network		
Central PC Interface	RS485 PCI board or RS232 to	
	RS485 adaptor	
Communication Interface	RS485 balanced line transmission	
	standards, half duplex operations	
Maximum No. of Devices	32 (including PC)	
Maximum covered	1200 metres	
distance		
Device Interface	RJ45 to RS232/485 port, use RS485	
	wirings for connections	
Transmission channel	Multi-drop line or party line	



TCP/IP Configurations Network					
Central PC Interface	10 Ethernet port				
Communication Protocol	TCP/IP				
Maximum No. of Devices	s N/A				
Maximum covered	Depends on transmission channel				
distance					
Device Interface	TCP/IP port				
Transmission channel	Internet, VPN, LAN, WAN				

## Connect with HUB

If a greater coverage distance or more devices are required, additional boosters can be attached to the RS485 configuration and additional network devices can be incorporated into the TCP/IP configuration. Please look for your dealers or distributors for more information on the required cable and networking accessories.

## 4.5. Access Control Configuration (Working with WG26 controller)

The following section is intended for customers who have purchased our wiegand 26 Access Control System.

This section will recommend some access control sample set-up for users. We will be suggesting two connection models that can be implemented with Access controller.

In our examples, we are using our Access controller with a 12 Volt Electromagnetic solenoid drop bolt (Fail-safe type). It is recommended that a backup power system (e.g. Uninterruptible Power Supply system, UPS) be implemented in all set-ups.

**Note:** The contents of the following sections are intended for informational purposes only. PONGEE shall in no event accept any liability for loss or damage suffered by any person or body due to information provided on the following sections. For users planning on using the Fail-Secure configuration, please check the fire safety regulation present in your region before proceeding.

#### 4.6. How to connect the PFP-3700 to the Access Controller?

Firstly, you should confirm the Wiegand 26 Port from PG-V388 and the controller.

Then, you should confirm if the Wiegand controller could support the 12V POWER output.

- a) If the controller can support 12V power output, you should connect the 12V power to the PFP-3700, and then connect them with the wiegand 26 as Wiegand 26 DATA0 and DATA1.
- b) If the controller can not support 12V power output, you should connect the 12V power adapter stand alone, and then connect the PG-V388's Wiegand26 to the controller, at the same time; you should connect the controller's Gnd to PFP-3700's Gnd.

• Single-Device Proposed Connectivity

#### Single-Device Scenario

Requirements

Access control on gate

- · Identification device only at entrance
- Push button exit mechanism
- Logs to track entry
- Central controlled

#### • Multiple-Device Proposed Connectivity

## Multiple-Device Scenario

Requirements

Access control on gate

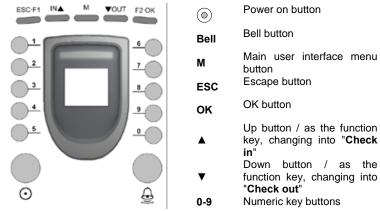
- Identification device at entrance and exit
- Logs to track entry
- Central controlled

## 5, Using the device

The device has an in-built user interface to facilitate settings, enrolment and device configurations operations.

The user interface is supported by the keypad, LCD panel, and buzzer.

## 5.1. The keypad

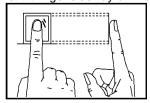


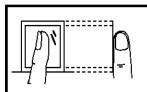
## 5.2. The correct way to press you fingerprint

These are some useful tips for using the fingerprint optical sensor.

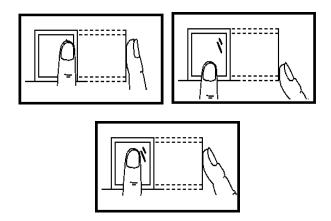
## Firstly, the fingerprint should be wet, not very dry,

- Place the finger in the centre of the sensor
- Press the finger fully on the sensor
- Do not tilt finger sideway on the sensor





- Do not place the finger on the side of the sensor
- Do not place the finger at the bottom of the sensor
- Do not only place the fingertip on the sensor



## 5.3. Password Logging Option

Alternatively, users can log into the device by keying in their password. This option is only applicable to users whose fingerprint is not good, and is enrolled with a password.

## 6, Using the MENU

PG-V388 offers a range of functions that allow the users to enrol and view logs. There are also functions to tailor the device to the user's needs. The functions are arranged in the main device menu and submenus.

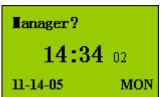
#### 6.1. Accessing the Menu

The menu can be accessed by pressing the MENU button on the keypad. If a manager record exists in the device, the device will then prompt for a Manager Verification before proceeding. This is a built-in security feature to protect device settings and in/out records.

Device will display the Manager Verification Screen. User can log into the menu using

- Fingerprint
- Or Password



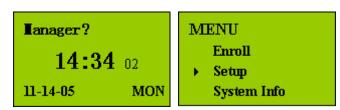


## 6.2. Menu Access - Fingerprint or Password

The device will match the user with the manager's fingerprint Device will display the MENU if the manager's finger is verified.

- Key in the manager's Record ID, then press OK button.
- Key in the valid password for the manager

•



## 6.3. Browsing the Menu

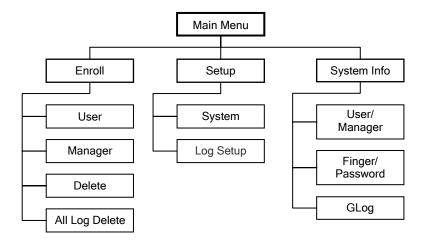
The menu has an interface to allow users to scroll and access submenus and options.

The interface also enables users to edit settings and delete records.

- Use ∇or ▲ buttons to scroll through the menu and switch through settings parameter.
- Use **OK** button to select or confirm settings
- Use ESC button to cancel or ignore settings
- Use **0-9** numerical keys to edit settings

## 7, Menu functions

The user interface menu is segmented into 3 sections to handle various functions. The menu layout can be viewed as followed:



Menu Functions					
Enroll	Functions for Enrolment and Record/Log				
	Management functions				
Setup	Functions for Device, Log and Communication				
•	Interface settings				
System	Tally of records and logs				
Info					

## 7.1. SETUP - Device Settings

The device provides user to with the following setting options

- ✓ System Setting the device configuration settings
- ✓ Log Setup Setting the threshold for the capacity of logs
  - Access the menu, and move cursor to Setup
  - Press the OK button to enter Setup submenu
  - Device will display the Setup menu
  - Move cursor to required option, press OK to enter option





#### 7.1.1. System Settings

System settings allow user to limit the number of managers, set device ID, set device language, set central computer access option and set auto-off/sleep option. To go to System settings, choose System from the Setup menu.

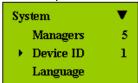
#### **Setting Managers Limit**

- Move cursor to Managers and press the OK button to select the option
- Use numerical keypad to set the number of managers allowed in the device



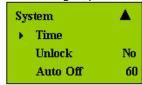
#### **Setting Device ID**

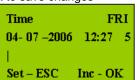
- Move cursor to Device ID and press the OK button to select the option
- Use numerical keypad to set the device ID. The ID needs to be unique for the device to support central computer access.



## **Setting the Time**

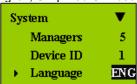
- Move cursor to Time and press the OK button to select the option
- Use the cursor to shift through the time parameter and use OK to increment or use the numerical keypad to key in the parameter changes
- After changing the required parameter, press the ESC to set the settings.
- To confirm the changes, press the OK to save changes





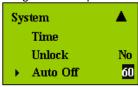
#### **Setting Menu Language**

- Move cursor to Language and press the OK button to select the option
- Use ▼or ▲ to select the required language.
- The device comes in English, Simplified Chinese and French.



#### **Setting Auto-off**

- · Move cursor to Auto Off and press the OK button to select the option
- Use ▼or ▲ to select No to turn off Auto-off feature or scroll through the idle time before the device goes to sleep mode



#### 7.1.2. Log Settings

Log Setup allow user to set warning indicator for the General Log and the Supervisor Log, and set option for re-verification.

To go to Log settings, choose Log Setup from the Setup menu.

- Move cursor to Log Setup and press the OK button to select the option.
- Use ▼or ▲ or the numerical keypad to select the number of remaining log capacity before the warning beeps sound off.
- Move cursor to Glog and press the OK button to select the option.
- Use 

  ▼ or 

  or the numerical keypad to select the number of remaining log capacity before the warning beeps sound off.



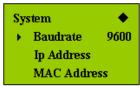
#### 7.1.3. Communications

Communication setting allow user to set the port settings for data transmission to the central computer.

Move cursor to Baud rate and press the OK button to select the option.

#### **Setting Baud Rate**

- Move cursor to Baud rate and press the OK button to select the option.
- Use ▼or ▲ or the numerical keypad to select the baud rate. You may set the baud rate to 9600bps, 19200bps or 38400bps.
- As the default setting, it's 19200.



#### 7.2. ENROLL - Enrolment

The device can provide user to with the following enrolment options Access the menu and move cursor to Enrol, then press the OK button to enter Enrol submenu

- User Enrol normal users
- Manager Enrol users with permission to enter menu settings
- **Delete** Remove user from records



#### 7.2.1. User Enrolment

User can enrol into device to set fingerprint or password for logging option. To go to User Enrolment settings, choose User from the Enroll menu.

## **Fingerprint Only**

- ✓ Move cursor to Finger and press the OK button to select the option
- ✓ Press the OK button for new enrolment. If you are adding a backup enrolment, press ESC for the BACKUP enrolment



- Key in allocated Record ID using the numerical pad or use the given Record ID and press OK
- Register the finger, device will prompt user to register finger 3 times



- Register the finger, device will prompt user to register finger 3 times
- ✓ If the fingerprint is existed in the device, the device will prompt users to try again in the following situation.



- User did not press finger properly
- User has previously enrolled in the device
- When enrolment is successful, device will indicate the registered record ID and enrolment type (O-fingerprint, P-password, OP-fingerprint and password).
- ✓ Press OK to save record or ignore enrolment.
- ✓ When success to save the enrolment, you can go on to register or exit.



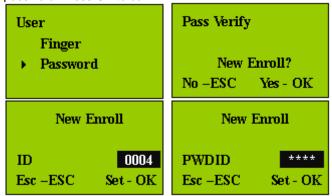
- ✓ To enrolled backup fingerprint, press ESC at the Finger menu
- ✓ Key in the existing Record ID that user need to add an extra fingerprint
- ✓ Follow the similar enrolment procedure to add a backup fingerprint





#### **Password Only**

- ✓ Move cursor to Password and press the OK button to select the option
- ✓ Press the OK button for new enrolment. If you are adding a backup enrolment, press ESC for the BACKUP enrolment
- ✓ Key in allocated Record ID using the numerical pad or use the given Record ID and press OK
- ✓ Register the password and press OK, device will prompt user to confirm the password. Press OK to confirm



- ✓ The device will prompt users to try again in the following situation:
  - User keys in a password of more than 4 digits
  - User keys in a different password for the password confirm
- ✓ When enrolment is successful, device will indicate the registered record ID and enrolment type (O-fingerprint, P-password, OP-fingerprint and password).
- ✓ Press OK to save record or ignore enrolment.



- $\checkmark$  To enrolled backup password, press ESC at the Finger menu
- ✓ Key in the existing Record ID that user need to add an extra password.
- ✓ To follow the similar enrolment procedure to add a backup password



## 7.2.2. Manager Enrolment

User can enrol to device with additional permission to access menu functions. To go to Manager Enrolment settings, choose Manager from the Enrol menu.



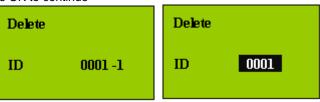
Please refer to User Enrolment for information on enrolment procedures

#### 7.2.3. User Deletion

User with sufficient permission will be able to remove user record from device. To delete user, choose Delete from the Enroll Menu.



- ✓ Key in the record ID of the user to be deleted and press the OK button
- ✓ The device will prompt users to try again if user keys in a invalid Record ID
- ✓ Device will display the Record ID to be deleted and enrolment type
- ✓ Press OK to continue





- ✓ Press Yes to confirm delete, or press ESC to cancel process
- Device will then display a record deleted screen to indicate successful delete.
- ✓ Press OK if you want to delete more users
- ✓ Press ESC to escape to the Enroll menu

#### 7.2.4. AllLog Delete

✓ Press MENU button, then move cursor to AllLog Delete menu, press ok,



- Press OK to delete all the log data, the device will need some time if there are many log data
- ✓ Press ESC to escape to the menu

## 7.3. SYSTEM INFO - Device System Information

Users may check the following tally of the logs and records in device.

- User/Manager
- Fingerprint/Password
- ▶ GLog
- ✓ Access the menu
- ✓ Move cursor to System Info
- ✓ Press the OK button to enter System Info submenu
- ✓ Device will display the System Information menu
- ✓ Move cursor to required option, press OK to enter option



If you move cursor to **User** option, presses OK, you will get how many **users** registered in the device. And Press OK again, you will get how many **managers** have existed in the device already.



✓ If you move cursor to Finger option, press OK you will get how many finger has been registered in the device, and press OK again, you will get how many password has existed in the device.

System Info	System Info
User 5	User 5
→ Finger 1	→ Password 1
GLog 0	GLog 0

If you move cursor to Glog option, press OK you will get how many LOG DATA RECORDS is there in the device.

