David-Link

W-988

USER'S MANUAL
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FCC WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantees that interference will not occur in a particular installation. Residential installation of this equipment may cause harmful interference in which case user is encouraged to correct the interference at his or her own expense.

CAUTION:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
1 GENERAL INFORMATION

1.0 Notification

Do not attempt to service the terminal yourself. Opening the terminal will void your 1-year manufacturer's limited warranty. Please always follow the instructions in this user's manual.

1. Do not place the terminal in direct sunlight. Bright light may significantly affect fingerprint reads. The terminal is designed for indoor use within a temperature range of 32-104° F (0-40° C). Keep the terminal away from heat sources.

2. This terminal is intended to be used as employee Time & Attendance System. Do not use this terminal for other purpose such as access control system. The terminal warranty does not cover defects or damages arising from improper installation, improper storage, abuse, ordinary wear-and-tear or unauthorized service.

3. Please save your data and records in USB thumb drive or in your computer periodically. David-Link is not responsible for any lost data and records from the terminal and software.

1.1 System Overview

W-988 is a Time & Attendance system designed for small to medium size businesses with up to 300 employees. W-988 verifies an employee’s identity based on individual’s matching fingerprint. Your business will also reduce costly payroll and data entry errors caused by the old time card system and accounting staff’s calculations by hand.

1.2 Main Features

- User friendly menu interface

- DL Time Management Software included

- Standalone device

- Easy USB downloads for data and records

- Fingerprint/password/proximity card (optional) punch

- Variable security threshold

- Fingerprint capacity: 3,000

- Transaction storage: 50,000 log records

- Communication: RS485, TCP/IP, USB
- Verification: 1:1 or 1:N
- FAR < 0.0001%
- FRR < 1%
- Matching speed: <1 second
- Language: English, Chinese, Japanese, Spanish
- Operating voltage: DC 9V
- Operating temperature: 32 ~ 104 °F
- Backup battery (optional)
- Door access control available upon request
- 1 year limited Manufacturer Warranty Included

1.3 Equipment

W-988 package includes:

- 1x W-988 Terminal
- 1x User’s Manual
- 5x Proximity Badges (W-988P and W-988PB)
- 1x Software CD
- 1x AC/DC Adapter
- 1x Wall Mounting Kit
- 1x USB Flash Drive
2 SYSTEM SUMMARY

2.1 System Configuration

2.1.1 Model Selection

Three levels are available in David-Link Model W-988. Please see the table below for comparison:

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-988</td>
<td>David-Link Biometric Time &amp; Attendance System</td>
</tr>
<tr>
<td>W-988P</td>
<td>David-Link Biometric Time &amp; Attendance System with Additional Proximity Badge Verification Method</td>
</tr>
<tr>
<td>W-988PB</td>
<td>David-Link Biometric Time &amp; Attendance System with Additional Proximity Badge Verification Method and Built-in Backup Battery</td>
</tr>
</tbody>
</table>

2.1.2 Terminal Communication Ports

![Diagram of terminal communications ports]

Bottom of Terminal

<table>
<thead>
<tr>
<th>Port</th>
<th>Connect by</th>
<th>Connect to</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>Power Supply</td>
<td>Outlet</td>
</tr>
<tr>
<td>COM 1</td>
<td>RS 232 RS485</td>
<td>PC</td>
</tr>
<tr>
<td>COM 2</td>
<td>TCP/IP</td>
<td>PC or Router</td>
</tr>
<tr>
<td>USB Serial</td>
<td>USB Cable</td>
<td>PC</td>
</tr>
</tbody>
</table>
2.1.3 Keypad Function

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>ESC</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>6</td>
<td>MENU</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
<td></td>
<td>▲</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>OK</td>
<td></td>
<td>▼</td>
</tr>
</tbody>
</table>

ESC  Back to the last page  
MENU Enter Setting mode  
OK Confirm setting  
▲ Move up  
▼ Move down  
0-9 Number key  
• Power ON/OFF (press and hold)

2.1.4 External Overview
2.2 Menu Tree Chart
6. Information

1. Storage Detail
   1. User Reg
   2. Manager Reg
   3. Finger Reg
   4. PW Reg
   5. ID Card

2. Record Detail
   1. User Rec
   2. Admin Rec
   3. View User Rec
   4. View Admin Rec
   5. Delete All Rec
3. System Detail
   1. Manufacture
   2. Device Name
   3. Release Time
   4. Serial Number
   5. Engine Version
   6. Software Version
3 GETTING STARTED

3.1 Start-up

Press the power button [●] to turn on the terminal. The Start-up window will appear as the following:

Welcome Please Press Finger

10:12:33
2009-12-18

Press and hold the power button [●] for 2 seconds to turn off the terminal.

3.2 Fingerprint Enrollment

**Tips:** It is recommended that you enroll at least 2 fingerprints in the terminal in the event that if one of the fingerprints is injured or damaged, you can always punch in/out using the other finger. Each user can enroll 1 to 10 fingerprints in the terminal.

W-988 will require an user to press each finger 3 times to successfully enroll the user. Place your finger in the middle of the sensor. To ensure better fingerprint reads, each time press the finger flat and firmly on the center of the sensor surface and cover as much of the sensor surface as possible.

3.2.1 Correct Finger Positioning:
Place finger flat on the center of sensor surface
3.2.2 Incorrect Finger Positioning:

- **Vertical**
- **Offset**
- **Inclined**
- **Lower**

3.2.3 More Tips for Fingerprint Reads

<table>
<thead>
<tr>
<th>Issue</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dirty or Dry Finger</td>
<td>Clean finger with moisturizing soap or wipe (alcohol-free wipes preferably).</td>
</tr>
<tr>
<td>Not enough pressure</td>
<td>User should place finger firmly and flat on the sensor surface.</td>
</tr>
<tr>
<td>How to select finger?</td>
<td>It is recommended that you enroll the index or middle finger. We also recommend you to enroll your fingerprints using the left hand fingers as their fingerprints are usually less worn or damaged than the right hand fingerprints.</td>
</tr>
</tbody>
</table>
3.3 Register

### Register User/Admin by Fingerprint

1) Press [MENU], select “Register”, press [OK], select “User”, press [OK]. Five enrollment methods are displayed, select “Enroll FP”, press [OK]. The following appears:

![Reg Finger](image)

ID 00000001
ESC-ESC SET-OK

2) The terminal automatically suggests an available User ID number to you in sequence. Input the desired User ID number (range is 1 to 65534) and press [OK]. The following appears:

![Place Finger!](image)

First time
3) You will be prompted to press your finger (3) times for better collection of your fingerprint data. If the test is successful in all three times, the following appears:

Reg Finger
ID 00000001
Enroll OK

4) Press [OK] to enroll a new user or press [ESC] to exit.

3.3.2 Register User/Admin by Password

1) Press [MENU], select “Register”, press [OK], select “User”, press [OK]. Five enrollment methods are displayed, select “Enroll Password”, press [OK]. The following appears:

Reg Password
ID 00000001
ESC-ESC SET-OK

2) The terminal automatically suggests an available User ID number to you in sequence. Input the desired User ID number (range is 1 to 65534) and press [OK]. The following appears:

Reg Password
ID 00000001
PWDIN ********
ESC-ESC SET-OK

3) You will be required to input a set of password combination with up to 8 digits twice and press[OK]. The following appears:

Reg Password
ID 00000001
Enroll OK

4) Press [OK] to enroll a new user or press [ESC] to exit.
3.3.3 Register User/Admin by Proximity Card (Function Available in Model W-988P and W-988PB)

1) Press [MENU], select “Register”, press [OK], select “User”, press [OK]. Five enrollment methods are displayed, select “Enroll ID Card”, press [OK]. The following screen is displayed:

   Reg ID Card
   ID 00000001
   ESC-ESC SET-OK

2) The terminal automatically suggests an available User ID number to you in sequence. Input the desired User ID number (range is 1 to 65534) and press [OK]. The following appears:

   In Card No.
   Scan Card...
   ESC-ESC SET-OK

3) Place your ID card in front of the terminal (the sensor is located above the fingerprint sensor surface) and press [OK].
   *Your ID card does not have to be in direct contact with the terminal. The sensor can detect the ID card within a distance range of 2" to 6" in front of the terminal.

4) Press [OK] to enroll a new user or press [ESC] to exit.
3.4 Delete user

1) Press [MENU], select “Delete”, press [OK], the following appears:

```
Delete
ID  00000001
ESC-ESC  SET-OK
```

2) Input the User ID, press [OK] to confirm. Follow the prompts to delete user. **Note:** Each time an user is deleted, the terminal deletes only 1 fingerprint or password. If an user is registered with multiple fingerprints, the Delete process has to be repeated until all registered fingerprints and passwords are deleted. For example, if an user with 2 registered fingerprints is to be deleted, during the first Delete process, an user's first registered fingerprint will be deleted. The following appears for confirmation of deleting first registered fingerprint and Press [OK]:

```
Delete
00000001-0
Sure Delete?
ESC-ESC  SET-OK
```

After pressing [OK], the second registered fingerprint is automatically shown as the following for the confirmation of deleting second registered fingerprint:

```
Delete
ID  00000001-1
ESC-ESC  SET-OK
```

Continue to press [OK] until all registered fingerprints are deleted.
3.5 Set Time and Date

1) Select “Date Time”, press [OK]. The following appears:

```
2009-12-05
01:18:44
THU
ESC-ESC Con-OK
```

2) To change date & time, input the correct date, press [▲/▼], enter the time and press [OK].

**Note: The time and date can be updated by pressing [Time Sync] in [Download] menu when connecting with Time Management Software.**

3.6 Set Communication

3.6.1 USB download

1) Press [MENU], select “Data Download”, press [OK], the following appears:

```
1. USB Download
2. RS232 Dwnld
3. RS485 Dwnld Yes
4. Ethernet Dwnld
```

2) Press [1] to select USB download (make sure the USB thumb drive is already plugged into the terminal), one of the following windows appears:

```
1. All Logs & Del
2. All Logs
3. All EnrollData
```
<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Logs &amp; Del</td>
</tr>
<tr>
<td>All Logs</td>
</tr>
<tr>
<td>All Enroll Data</td>
</tr>
</tbody>
</table>

3) Select Glog, All Glog or All enroll Data and the USB thumb drive will download the records directly from the terminal, the following appears:

Glog

Working!

(Note: do not remove USB drive while downloading)

The following communication methods are used to connect with David-Link Time Management Software.

3.6.2 RS232 download
Not Available

3.6.3 RS485 download
2) Enter baud rate and press [OK].

3.6.4 Ethernet download
1) Press [4] to select Ethernet download, the following appears:
2) Configure the Ethernet setting according to your computer network setting.

3) There are 2 ways to connect the terminal with David-Link Time Management Software using Ethernet connection. It is recommended that you follow the setting below:

<table>
<thead>
<tr>
<th>Terminal-to-PC Connection</th>
<th>Plug network cable into COM2 port on the bottom of the terminal and the appropriate Ethernet port on your computer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal-to-Hub Connection</td>
<td>Plug network cable into COM2 port on the bottom of the terminal and the appropriate hub in your network.</td>
</tr>
</tbody>
</table>

**Terminal-to-PC Connection:**
(a) On your computer, go to "Local Area Connection", right click and select "Properties", Click on "Internet Protocol Version 4 (TCP/IPv4)" and select "Properties". It is recommended to input the IP address as **192.168.1.200** and leave everything else as it is.
(b) On your terminal, Set IP Address as **192.168.1.201** and leave everything else as it is.
(c) To test the connection, plug network cable into COM2 port on the bottom of the terminal and the appropriate Ethernet port on your computer. On your computer, Ping the terminal by inputting `ping 192.168.1.201 -t` (For Microsoft® Windows XP, Windows VISTA, and Windows 7, you can ping the terminal by inputting the above information in the *Search* box once you click *Start* menu). If connection is made, the following appears:
d) Open your David-Link Time Management Software (DLTMS), select "Download", click on "Setting" and input the appropriate Device ID and IP address stored in the terminal (make sure the appropriate terminal is selected).

**Terminal-to-Hub Connection**

(a) On your computer, double-click on "Local Area Connection" and select "Details" to check your network IP Address.
(b) On your terminal, input the IP Address as the following:

\[
\text{XXX . XXX . X . YYY}
\]

<table>
<thead>
<tr>
<th>IP Address</th>
<th>Terminal IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXX . XXX . X.</td>
<td>The first 3 sets of IP Address to be stored in the terminal should be identical as the first 3 sets of IP Address in your network.</td>
</tr>
<tr>
<td>YYY</td>
<td>The last set of IP Address to be stored in the terminal should be a 3-digit unique value. It strongly recommended that the last set of IP address to be stored in the terminal should be at least 201 and up.</td>
</tr>
</tbody>
</table>

(c) To test the connection, plug network cable into COM2 port on the bottom of the terminal and the appropriate hub in your network. On your computer, Ping the terminal by inputting `ping your terminal IP address -t` (For Microsoft® Windows XP, Windows VISTA, and Windows 7, you can ping the terminal by inputting the
above information in the Search box once you click Start). If connection is made, the following appears:

d) Open your David-Link Time Management Software (DLTMS), select "Download", click on "Setting" and input the appropriate Device ID and IP address stored in the terminal (make sure the appropriate terminal is selected).

4) Press [Esc] to exit and [Ok] to save changes.
4 Advanced Setting

4.1 Device Setting

1) Press [**MENU**], select “Advanced Setting”, press [**OK**].
2) Select “Device Setting”, the following appears:

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Admin Qnty</td>
<td>7. Auto Off</td>
</tr>
<tr>
<td>3. Language</td>
<td>8. Pkey Use</td>
</tr>
<tr>
<td>5. Volume</td>
<td>10. Default Setting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Default Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Machine ID</td>
<td>Machine ID is needed when connecting to the computer. When multiple terminals are in the same network, Machine ID has to be different from one another.</td>
<td>1</td>
</tr>
<tr>
<td>2. Admin Qnty</td>
<td>Number of administrators allowed to register in the terminal (1 ~ 10).</td>
<td>5</td>
</tr>
<tr>
<td>4. Voice Out</td>
<td>Turn on/off the sound from the terminal</td>
<td>YES</td>
</tr>
<tr>
<td>5. Volume</td>
<td>Set Terminal Volume (1 ~ 10).</td>
<td>8</td>
</tr>
<tr>
<td>6. Contrast</td>
<td>LCD contrast setting (1 ~ 63)</td>
<td>53</td>
</tr>
<tr>
<td>7. Auto Off</td>
<td>Automatically turn off the terminal when there is no activity detected within # minutes (1~255).</td>
<td>NO</td>
</tr>
<tr>
<td>8. Pkey Use</td>
<td>Turn On/Off the use of power button. [•]</td>
<td>YES</td>
</tr>
<tr>
<td>9. Verify</td>
<td>Verify user by fingerprint, ID card, and/or password. Select from: <strong>F/P/C</strong>: fingerprint, password, or ID card verification. <strong>C+P</strong>: both ID card and password verification (available in Model W-988P and W-988PB). <strong>F+P</strong>: both fingerprint and password verification. <strong>F+C</strong>: both fingerprint and ID card verification (available in Model W-988P and W-988PB). <strong>C</strong>: ID Card verification (available in Model W-988P and W-988PB). <strong>P</strong>: Password verification.</td>
<td>F/P/C</td>
</tr>
<tr>
<td>10. Default Setting</td>
<td>Restore device to factory default settings, and all current settings will be lost. Please save your data and records before pressing this button.</td>
<td></td>
</tr>
</tbody>
</table>

3) Press [Esc] to exit and [Ok] to save changes.
4.2 Record Setting
1) Press [MENU], select “Advan Setting”, press [OK].
2) Select “Record Setting”, the following appears:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ARec Wm</td>
<td>NO</td>
</tr>
<tr>
<td>2.</td>
<td>URec Wm</td>
<td>1000</td>
</tr>
<tr>
<td>3.</td>
<td>Reverify</td>
<td>NO</td>
</tr>
</tbody>
</table>

3) Press [1] or [2] to set the warning when the terminal's memory capacity can only save # more log records before the memory is full. (Enter the number of log records to remind you of the terminal's memory capacity approaching to its limit). [1]: number of Administrator's records for reminder warning; [2]: number of User's records for reminder warning.
4) Press [3] to set number of minutes before an user's another punch is accepted by the terminal. This function serves the purpose to avoid duplicate punches (Enter # of minutes from 1-255).

4.3 Lock Control (Additional Access Control Box Required)
Not Available

*Note: This product is intended for use as a Time & Attendance System. Installing this product as an access control system will void the warranty. David-Link is not responsible for any damage or defect caused by misusing this terminal as an access control system. Please contact us for information about access control system.*
5 Information

5.1 Storage Detail

1) Press [MENU], select “Information”, press [OK].
2) Select “Storage Detail”, the following appears:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>User Reg</td>
</tr>
<tr>
<td>2</td>
<td>Manager Reg</td>
</tr>
<tr>
<td>3</td>
<td>Finger Reg</td>
</tr>
<tr>
<td>4</td>
<td>PW Reg</td>
</tr>
<tr>
<td>5</td>
<td>ID Card</td>
</tr>
</tbody>
</table>

View number of users registered in the terminal
View number of Administrators registered in the terminal
View number of fingerprints enrolled in the terminal
View number of password combinations stored in the terminal
View number of ID cards registered in the terminal

5.2 Record Detail

1) Press [MENU], select “Information”, press [OK].
2) Press “Record Detail”, the following appears:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>User Rec</td>
</tr>
<tr>
<td>2</td>
<td>Admin Rec</td>
</tr>
<tr>
<td>3</td>
<td>View User Rec</td>
</tr>
<tr>
<td>4</td>
<td>View Admin Rec</td>
</tr>
<tr>
<td>5</td>
<td>Delete All Rec</td>
</tr>
</tbody>
</table>

View number of record entries in the terminal
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>User Rec View number of user's log records saved in the terminal.</td>
</tr>
<tr>
<td>2.</td>
<td>Admin Rec View number of administrator's log records saved in the terminal.</td>
</tr>
<tr>
<td>3.</td>
<td>View User Rec To view a specific user's log records, input the user's ID number and press [OK] to view.</td>
</tr>
<tr>
<td>4.</td>
<td>View Admin Rec To view a specific administrator's log records, input the administrator's ID number and press [OK] to view.</td>
</tr>
<tr>
<td>5.</td>
<td>Delete All Rec* Delete all log records in the terminal</td>
</tr>
</tbody>
</table>

*David-Link is not responsible for any lost data and record. Please make sure you save all your data and records in a safe place. Log records cannot be recovered after you delete all log records saved in the terminal.*

### 5.3 System Detail

1) Press [MENU], select “Information”, press [OK].
2) Select “System Detail”, the following appears:

   1. Manufacture
   2. Device Name
   3. Release Time
   4. Serial Number
   5. Engine Version
   6. Software Version

Here, you can find our company information and contact method within the [Manufacturer] function. Please also find your [Serial Number], [Firmware Version] and [Software Version] here when we ask for the information.

3) Press [ESC] to exit.
6 Troubleshooting

6.1 Q. & A.

Q: **Fingerprint cannot be verified.**
A: Possible Causes:
1) Fingerprint is damaged or smooth;
2) Finger is dry.

Q: **What is the standard warranty on biometric time clocks?**
A: The standard warranty on a biometric time clock is a period of 1 year from the date of original purchase from David-Link or an Authorized David-Link Reseller. However, there are things that the warranty does not cover. Please read the Certificate of Warranty carefully for the parts that the warranty does not cover.

Q: **How do I remove an Admin User?**
A: Only an Admin user can add/remove an user on the device.

Q: **Device cannot be turned on. Is it a defective product?**
A: Please make sure the power adaptor is plugged into the outlet and the device. If the device still cannot be turned on after the power adaptor is correctly plugged, please contact David-Link Technical Support Team at 888.755.9418.

Q: **How do I get replacement parts such as ribbon cassettes or backup batteries?**
A: Please visit our website: www.davidlinkusa.com or contact us at 1.888.755.9418 to get information about ordering replacement parts.

6.2 Fingerprint Privacy:

1. The W-988 merely captures points of the fingerprint but not the actual fingerprint image.
2. The fingerprint points cannot be used to create a fingerprint image.
3. David-Link will not be liable for any direct or the indirect damages resulting from the use or inability to use our equipment.
4. If you have a question about privacy concerning the use of our equipment you should have your employer contact David-Link.