TVT500 Facial Recognition Terminal for Temperature Measurement

Instruction Manual

Perfect Prime

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CONTENTS

INTRODUCTION

Please read the Product Manual carefully before using the product, and keep it handy for future reference.

STATEMENT

- This is the English version manual for the Facial Recognition Access Control products.

- The facial recognition terminal for temperature measurement measures the current human surface temperature only, there maybe slight variation from the actual temperature.

- The product or APP described in the Document may be adjusted or updated without prior notice.

- For best performance, install in a windless indoor environment.

- For best performance, power on the device 15 minutes before use.

- For questions, documentation updates, please contact our after-sales service department.

3. SAFETY PRECAUTIONS

Warning

Be sure to strictly follow all national and local electrical safety rules when installing and using the device.

Please use an AC adapter produced by a reputable manufacturer. The power supply requires that an AC adapter of DC12V±30% should be adopted, and the rated power shall be greater than or equal to the maximum power of the device.

Do not connect multiple terminals to one AC adapter. If the AC adapter is overloaded, excess heat may be generated or a fire may be caused.

Be sure to disconnect the power supply before wiring, disassembly or assembly. Performing these activities while power is connection is strictly prohibited.

Please power off the face recognition terminal, unplug the power cord and contact the dealer or service center immediately if it smokes, smells or makes a noise.

If the device does not work properly, please contact the point of purchase or the nearest service center. Do not disassemble or modify the device in any way. We (the Company) will not assume any responsibility for any problem caused by unauthorized modification or repair.

It is forbidden to restore factory defaults because this operation may get the APP uninstalled and the core file damaged or lost, thus putting the device out of order. For any type of device damage caused by this behavior, the Company reserves the right to terminate free warranty.

Warning

The following is about how to correctly use the product and prevent hazard and avoid property losses. Please be sure to follow the instructions.

Please operate the face recognition terminal within specified temperature and humidity range (normal operating temperature: "+20℃ to +35℃").

Please check the power source before operating the product.

Please protect the product against violent knocks and from falling.

Do not install the product in a dusty, humid or area of high-electro-magnetic radiation.

Do not allow the device to get wet

Please cover the device to prevent dust contamination when not in use for long periods.

Do not disassemble the product without permission.

1. Product Introduction

The face recognition terminal for temperature measurement is an access control product that provides face recognition and infrared array thermal imaging technologies. Powered by Android, the product is non-contact, high accuracy, high security and good stability.

2. Product Features

- Supports face detection and recognition
- Supports mask detection
- Supports body temperature detection
- Supports one-click installation and deployment of web services
- Supports recognition distance configuration

3. Product Parameters

See Appendix *Technical Parameters*

1. Installation Environment

- Please install the device indoors, at least 2 meters away from a light source and at least 3 meters away from a window or doorway.

- Keep the product away from backlighting, sunlight through the window, refracted/reflected sunlight through the window, and indoor lighting at short distance.

- Please use the product in a windless, indoor environment, in order to ensure accuracy of temperature measurement.

- Face recognition accuracy is improved when lighting on the subject's face is sufficient.

- The recommended installation height is 1.4m, but the height can be adjusted according to the actual situation.
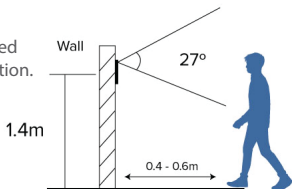
2. Wall Mounted Installation

Step 1: Hole punching in the wall: Select a location for hole punching in the wall according to the size of the hanging plate and then make a hole.

**Step 2:** Hanging plate fixing: Fix the hanging plate to the wall with screws.

Step 3: Face recognition device fixing: Fix the face recognition terminal for temperature measurement to the hanging plate.

3. Vertical Installation

Installation on a passage gate: Make a round hole at the installation site in the passage gate:

35MM. The figure below shows a reference drawing of the hole location.
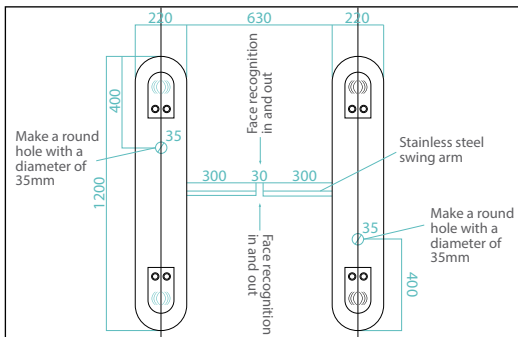
Reference drawing of vertical installation

Gate type installation

Optional Length

Column Installation

Desktop Installation

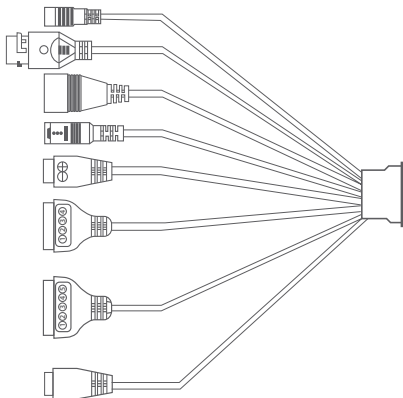## 1. Wiring Terminals

DC 12V Power Supply

Ethernet Port

USB Port

Restart Button

Relay

Wiegand Input

Wiegand Input
and Relay

HDMI Out

2. Wiring Instructions

SN	Content	Instruction
1	DC12V Power Supply	The standard power supply is DC12V/2A
2	USB Port	The USB port is to connect a mouse, for easy device control
3	Ethernet Interface	Used for data transmission between the device and server
4	Restart Interface	The device will be restarted when the restart button is pressed
5	Relay Interface	NO means normally open COM is a common port
6	Wiegand Input Signal	WGD1 WGD0 GND 12V
7	Wiegand Output and Relay Signal	NC means normally closed Reserved Wiegand D0 Wiegand D1 GND

7. MANAGEMENT SOFTWARE INSTALLATION

Runtime Environment

The management software can only be used on X86 computers. The configuration requirements are as follows:

Operating system: windows 7/10 64-bit

CPU: Intel i5 or higher

Memory: 4G or higher

Hard disk: 1TB or higher (there should be one system partition at least one storage partition in the hard disk)

The following rules should be complied with before installing the management software:

- The computer cannot be connected to multiple networks at the same time. If it is a laptop, the wireless network card shall be disabled while a wired network shall be adopted;
- There is a fixed IP address in the computer;
- The firewall or antivirus software has been disabled;
- It is recommended to use Google Chrome 7.0 or higher;

Once connected to the internet the device will display an IP address on the top left.

The top right indicates the devices serial number
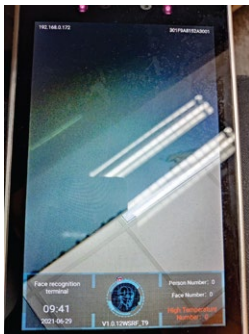
One the center bottom we have the version number of the software, dates on the left and number of tracked personnel on the right.

*To use this device, connect a mouse to the USB port. Please note once connected, the left click on the mouse is to select and the right click acts as a back button, which will go back to the previous "page".

Scrolling the cursor along the top will drop down a menu to access android settings.

Scrolling the cursor along the bottom of the screen will pop up a menu to access the main screen of the android platform to access files and web browser.

9.1. Settings Menu

This is a list of settings based on the android operating system.
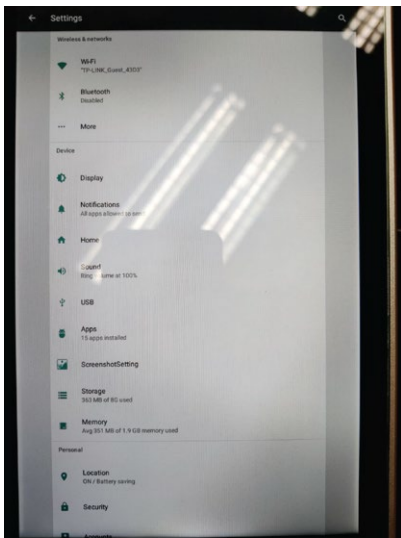
9.2. Main Menu

Double-click the upper left corner(on the IP address), a password box will pop up, enter the password (default password 123456), and click OK to enter the Main Menu.
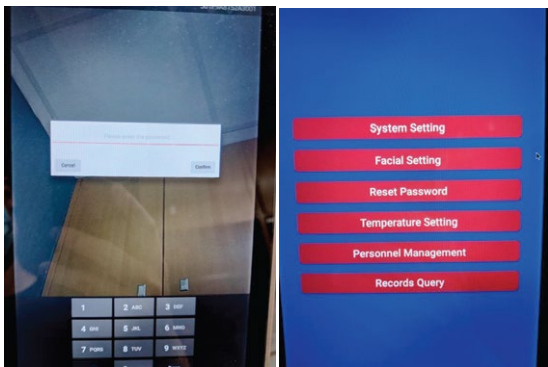
Once entered you will be able to change the settings for several different features.

9.3. Facial Settings
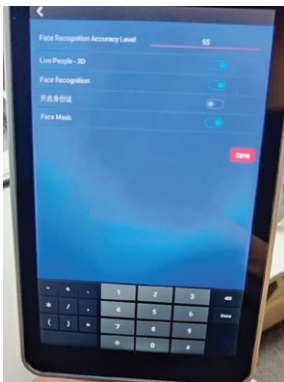
1. Face Recognition Accuracy Level

This setting determines the accuracy level of face detection. The factory default value is threshold: 55-60, if nonrecognition occurs, the threshold can be modified to improve the accuracy.

2. Live People - 3D

Default to use live algorithm and is not used by user. Click the button to switch it off.

3. Face recognition
The user can switch between face recognition and capture mode (takes a photo).

4. Personnel ID Card
The device can be paired with an ID card reader so that in addition to scanning and detecting a personnel's face it can also pair the detection with ID card. Once installed the device needs to be restarted. This option should be turned off when not paired with an ID card reader.

5. Face Mask
This function enables the device to detect the temperature of personnel even if they have face mask on.

Note: All changes to the setting need to be saved by clicking Save button

9.4. Reset Password
1. Enter current password
2. Enter new password
3. Repeat new password
4. Press Save

9.5. Temperature Setting

1. **High Temperature Setting**
   Set a temperature threshold so that when a person with a temperature above this point is detected an alarm is sounded. The factory default setting is 37.3.

2. **Device Name**
   Device name setting: Enter a custom name for your device.

3. **Temperature Measuring**
   This settings enables the temperature detection feature of the device.

4. **Relay Mode**
   This is the mode to control the switch value of the external device. The factory default is normally signal turn-on mode. If the user needs to turn off the signal mode, it can be switched by pressing the button. After the modification is completed, click Save the modification.

5. **Display °C or °F**
   This setting changes the temperature to be displaying in °C or °F

6. **Temperature Compensation**
   Temperature compensation setting is for adjusting the temperature accuracy in situation where the detected temperature may be higher or lower than normal due to external factors.

9.6. Personnel management

This is where user can add personnel identification

1. Click on new on the top right hand corner.

2. Enter name of personnel on the next screen and press next.

3. The device will automatically take a photo of the personnel once it detects a face. There is option to retake or confirm if satisfied.

4. Click complete on the bottom to finish.

5. You can confirm its saved successfully by going into the Personnel Management screen and checking of the record is there.

6. There is a delete button on the records if user wishes to delete or a Delete all button on the bottom right to delete all records. Note: Once deleted, data cannot be retrieved.

9.7.Records Query

This setting shows all the records recorded by the device

1. Click the All Records button to switch to view only the high temperature records.

2. Click delete button to delete the corresponding staff

3. Click the delete all button to clear all personnel records.

4. Record export

Insert a USB drive in the face recognition machine, click the export button, and a dialog box of "whether to delete all" pops up. If cancel, all the records will be exported and won't be deleted. If confirmed, all the records will be exported, and all the records on the device side will be cleared.

Tips: When the self-authorized face recognition machine is offline, all the facial information can't be input and synchronized with the PC-side management software. Instead, all the personnel information needs to be entered by the PC software.

10.1 Hardware

CPU	RK3288, quad-core ARM-A17, 1.8GHz
Memory	RAM DDR 2GB (4G is optional)
Storage	Storage ROM 8GB
Operating system	Android 7.1.2
Display	8-inch liquid crystal display, resolution: 1280*800@60HZ
Material	Aluminum alloy

10.2 Performance

Identification height	1.2-2.2 meters
Identification distance	0.5-3 meters
Body temperature measurement distance	0.5 meters
Identification technology	Support mask identification + infrared array thermal imaging temperature measurement
Face angle	30 degrees left and right, 30 degrees up and down
Identification time	20ms of detection and tracking, and 300ms of feature extraction
Status display	Name and temperature broadcast and display, custom information broadcast and display, and three-primary-color status ligh

10.3 Main control board interface

EDP output	1-channel EDP output supports up to 1920X1080 output
HDMI output 1	1, HDMI2.0 supports up to 4K@60HZ output
Network interface	1 RJ45 10M / 100M adaptive Ethernet port
Touch screen interface	1-channel ETP input
Headphone/MIC interface	1, built-in headphone audio output base (GB: GND,MIC,R,L)
WIFI (optional)	1-channel WIFI signal, support 2.4G/5G WiFi, support Wi-Fi 802.11b/g/n protocol
	GSM)/4G(LTE-TDD/LTE-FDD/TD-SCD-MA/EDGE/GPRS/GSM)
3G/4G (optional)	Scalable 1-channel 3G (WCDMA, EVDO, CDMA, GSM)/4G
	(LTE-TDD/LTE-FDD/TD-SCDMA/EDGE/GPRS/G-SM) signal
SD card interface	Maximum expansion to 64GB TF card
USB2.0 interface	4 USB interface bases (1 external, 3 built-in, 3 HOST USB and 1 OTG USB)
Output at the time of connection	1-channel opening output signal
Wiegand interface	1-channel Wiegand output supports Wiegand 26-bit and 34-bit adaptive transmission

10.4 Camera parameters

Camera	Binocular MIPI B/W, HDR 2 million pixel camera, automatic exposure, automatic white balance, and automatic backlight optimization
Sensor	1/2.7" industrial-grade binocular high-definition wide-dynamic-range image sensor
Frame rate	Maximum 30 frames in black, white and color, no ghosting
Infrared light spectrum	850nm
Effective pixels	1920*1080/1920*1080
Lens	M12(f=3.6MM)/ M12(f=3.6MM)
Pixel size	3.0um X3.0um/3.0um X3.0um
Minimum illumination	≥0.01LUX at F1.2/≥0.1LUX at F1.2
Signal to noise ratio	≥41dB
Wide dynamic range	≥96dB/≥105dB
Interface type	USB2.0
Video coding	H.265 Main Profile coding/H.264 BP/MP/HP coding/MJPEG coding
Image resolution	**Main stream** 640X480@ 30fps /800X600@ 30fps /1280X720@ 30fps/1280X1024@ 30fps/1920X1080@ 30fps /1600X1200@ 15fps /2048X1536@ 15fps **Secondary stream** 640X480@ 30fps /800X600@ 20fps /1280X720@ 5fps/1280X1024@ 5fps/1920X1080@5fps /1600X1200@ 5fps /2048X1536@ 3fps

10.5 Human temperaturet measurement parameters	Use the infrared thermal imaging module imported from Germany
Thermal imaging resolution	4 x 4 array
Thermal imaging perspective (FOV)	27º
Temperature measurement range	30-45°C
Temperature measurement distance	0.5m
Temperature measurement accuracy	±0.5°C ideal indoor laboratory environment

10.6 Card reading parameters (optional for external connection)	
Identification card type	Read M1IC card serial number and ID card serial number
RF operating frequency	13.56MHZ
Operating effective distance	<3cm
Reading rate	15 times/second

10.7 General parameters

Working temperature	+20℃ - +35℃
Working humidity	10-90% relative humidity, no condensation
Power supply	DC12V/3A
Equipment power consumption	≤25W
Equipment size	250*142*22mm (height*width*thickness)
Equipment weight	1.2 kg (depending on configuration)

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