DigiJupiter

Face Recognition
with temperature detection
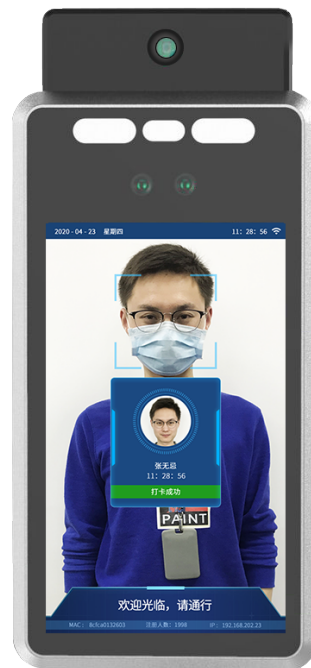# DJS-F10

Technical Specification V1.1

Content

1. Product Overview

1.1 Introduction

This face recognition **DJS-F10** uses professional face recognition algorithms, with strong face recognition performance, fast recognition speed, long distance, non-contact, supports the advantages of wearing mask recognition, supports 1: 1 and 1: N face comparison and search, supports reminders without wearing masks, supports ID card readers, fingerprint readers, IC card readers, QR code readers. The expansion of various peripheral devices such as card readers, gate heads, and door magnets. It can truly realize efficient and fully automatic non-inductive recognition and passage in crowded places, and can be widely used in office buildings, communities, schools, factories, etc. related scenarios.
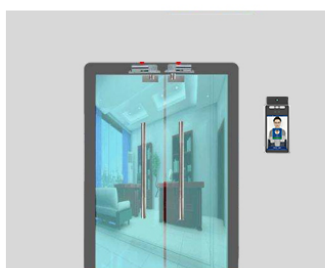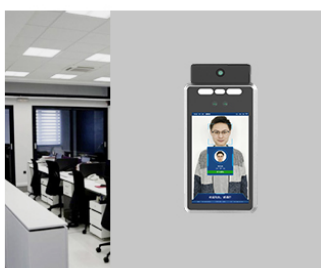
| Face recognition and check- in without a mask | Face recognition and check- in with a mask |

1.2 Application scenario

Face recognition access control

Face attendance

Face recognition barrier
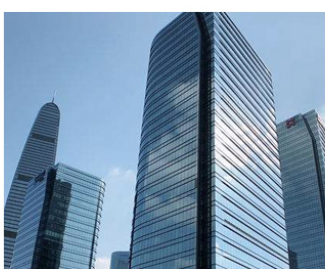
Office building

Community

School

1.3 Multi-mode selection

Mode 1: Face recognition permission verification

Enter personnel information in the management platform ⟶ (access control point) face recognition to verify identity ⟶ judge access control authority

If the face recognition authentication fails, there is no access control; the management platform records access control data corresponding to the personnel.

Mode 2: Mask reminder mode

In mode one, click on the "mask detection attribute" in the management platform, you can realize the voice reminder for the person without the mask, without affecting face recognition and check in.

It is suitable for the entry and exit of designated personnel, such as factories, schools, office buildings, residential areas, etc., Satisfy the internal personnel face recognition requirements for entry ban.

2. Features

2.1 Strong face recognition performance

This face recognition DJS-F10 is built with face recognition algorithms, with high accuracy and fast speed. It also supports accurate recognition in the case of side faces, semi-occlusion, and blur. Especially in epidemic situations, it can detect whether to wear a mask first, send out a voice reminder for not wearing a mask, and then perform face recognition for the person who has worn a mask.

The relevant parameters are as follows:

Face recognition:
- Face recognition accuracy: 99.99% (1: 1, FRR 1%)
- Living body detection accuracy: 0.01% (false recognition rate)
- Living detection distance: 0.5-1.2 meters
- Recognition speed: <300ms (20000 face database)
- Intelligent recognition: support 1: 1 face comparison, support 1: N face search
  Mask recognition:
- Face recognition rate:> 92% (20000 human database)
- Reminder: Without mask reminder

2.2 Maximum 50000 face database

Based on the 20,000 face database, the recognition speed of this face recognition terminal is less than 300 MS, and supports expansion to 50000 face database, which fully meets the needs of face recognition passage scenarios.

2.3 120DB ultrawide dynamic

This face recognition **DJS-F10** adopts 2 million pixels living body recognition binocular camera, built-in fill light, 120DB ultra-wide dynamic, no fear of backlight and dark light environment.

2.4 Online / Offline mode can be switched

The DJS-F10 supports both online and offline modes, and the DJS-F10 administrator can switch the identification mode according to the actual situation. In offline mode, face recognition can be achieved without internet connection.

2.5 Support multiple peripheral expansion

Support various peripheral expansion such as ID card reader, fingerprint reader, IC card reader, QR code reader, gate, door sensor, etc.

2.6 Built-in high-performance ISP

The built-in high-performance ISP can restore the scene details under different optical conditions and ensure the image quality.

2.7 Rich interface, worry-free installation

It has a full specification tail wire to meet the needs of most scenarios. It has a relay to control the door opening, including power supply, USB, RJ45, lock control and RS232 / UART (multiple interfaces, optional)

PUSH
NO/NC
GND
12V+

DC12V

RJ45

USB

UART/
RS232

2.8 Exquisite appearance, three bases are optional

7-inch aluminum alloy shell, exquisite atmosphere, wear-resistant and anti-corrosion, provides three types of bases, wall-mounted, upright and desktop, and the **DJS-F10** supports an adjustable angle of 60 degrees to meet the installation needs of different scenarios.

Upright   Wall-mounted   Desktop

2.9 Network background management system

Equipped with a powerful network management system, real-time recording whether to wear a mask, identification time and other information, built-in real-time monitoring, personnel management, equipment management, attendance management, data statistics and access rules and other functional modules to help managers quickly master data for unified remote management.

3 Technical Parameters

3.1 Technical parameters

Basic parameters	
SoC	High-performance AI SoC (4-core A7 + NPU + DSP)
Memory	1GB DDR3
Storage	EMMC 8GB
Identification requirements	
Recognition height	1.2~2.2m，adjustable angle
Recognition distance	0.5~1.2m
Face angle	30 degrees left and right, 30 degrees up and down
Face recognition	
Face recognition accuracy	99.99%（1:1，FRR 1%)
Living body detection	support
Recognition speed	<300ms（20000 face library）
Face Library	default 20000, maximum 50000
1: 1 face comparison	support
1: N face search	support
Recognition distance	0.5m~1.2m
Operating temperature	-10~60℃
Screen	
Size	7 inch LCD screen
Resolution	600*1024
Camera	
Resolution	2 million pixels
Genre	120DB wide dynamic binocular camera
Fill light	built-in fill light, no fear of backlight, dark light environment
Interface	
Power supply	DC 12V
Internet	1 RJ45 10M / 100M adaptive Ethernet port
USB	1 USB 2.0 interface
Lock control	1 channel lock control signal

Optional	1 interface, optional RS232 / UART
Function	
Mask recognition	support
No mask reminder	support
ISP image processing	support
Coordination	no need to cooperate to stand still and close
UI interface settings	support
Remote device upgrade	support
Deployment method	LAN use
Electrical parameters	
Voltage	DC 12V
Electric current	500mA
Power	15W
Storage temperature	-25~60℃

3.2 Other parameters

| Style	Host weight	Accessories weight	Total weight (including packaging and three brackets)
Upright		Column bracket: 250g	
Wall-mounted	900g	Wall bracket: 130g	1900g
Desktop		Desktop stand: 200g	
Other parameters			
Product Size		120*259*35mm	
Single package size		450*170*125mm	
Outer box size		530*510*320mm	
Packing situation		4 sets/box ; total weight 9.2 Kg	

4 Physical Dimension

4.1 Product size chart

Upright

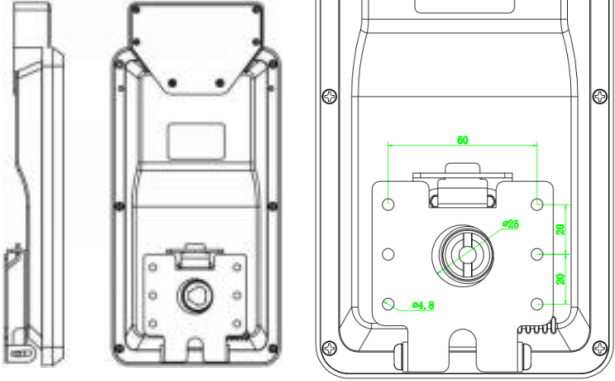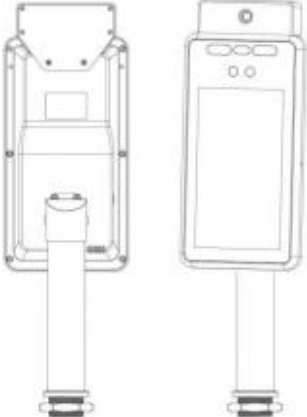下料长度178.5±0.3
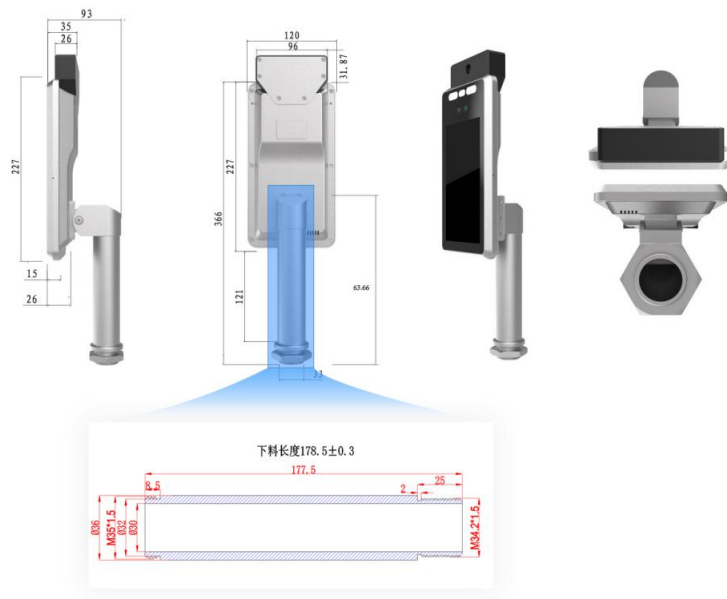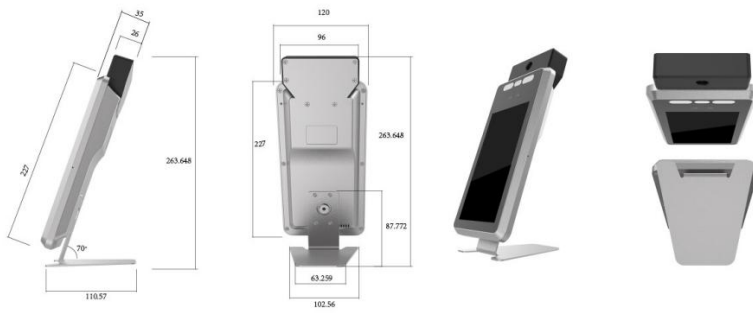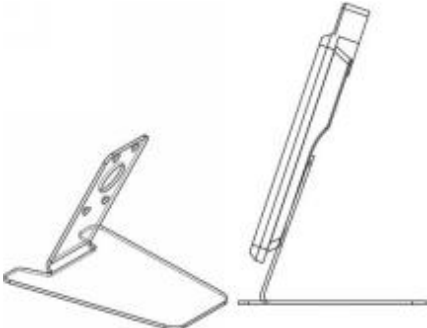
Wall-mounted

Desktop
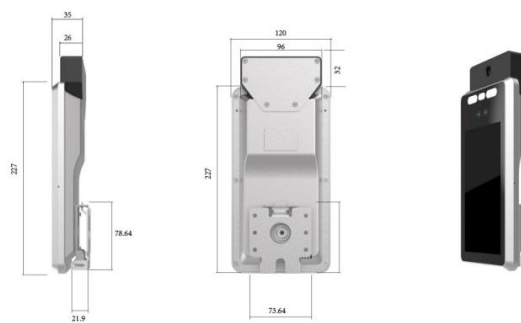
5 Installation method

5.1 Installation method

Installation Method	Picture Display	Remarks
Wall-mounted		Wall-mounted installation, can be fixed on the wall by installing the back plate
Upright		Upright installation, suitable for fixed equipment such as channel gate
Desktop		Desktop placement, can be moved at will, the scope of application is wider

5.2 Device installation

Note: The power controller needs to be connected to 220V, and other accessories can be connected with a network cable

PUSH
NO\NC
GND
12V Output
D0
D1

Face Recognition Terminal

D1
D0
BELL
BELL
OPEN
CON
PUSH
GND
12V

Swipe card access

Doorbell

PUSH

Door lock switch

NO
NC
COM
12V
GND
PUSH
CONTROL+
CONTROL-

Door lock controller

Electromagnetic lock
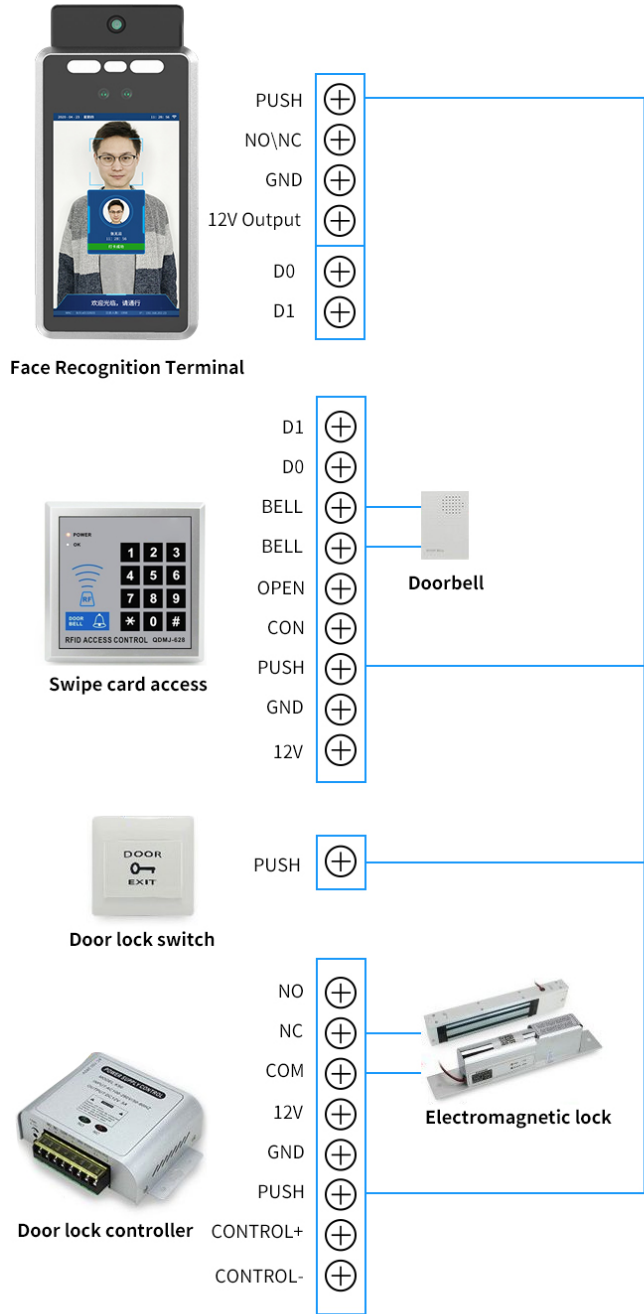
6 Interface Definition

6.1 Interface definition

The full-spec tail cable meets the needs of most scenarios, with relay control to open the door, including power supply, USB, RJ45, lock control, RS232 / UART (*)

* RS232 / UART multiplex an interface, optional

Line group		Function group	Line sequence	Terminal name
A	4 pin	Lock control signal	1	PUSH_OUT
			2	LOCK_NONC_12V
			3	GND
			4	12V OUT
B	5.5mm Round socket	power supply	1	12V in
			2	GND
C	RJ45	Ethernet	1	Ethernet
D	TypeA USB socket	USB Host	1	5V
			2	DN
			3	DP
			4	GND
E	2 pin	Optional RS232 / UART	1	D0 / TX
			2	D1 / RX

7 Electrical Performance

7.1 Electrical performance

Project Definition		Minimal	Typical	Maximum
Power Parameters	**Voltage**	--	12V	--
	Electric Current	--	--	2000mA
	Total Power	--	--	15W
Electrical Parameters	**Lock Control Signal Current**	--	--	500mA
Environment	**Relative Humidity**	--	--	80%
	Face Recognition Operating Temperature	-10℃	--	+60℃
	Storage temperature	-25℃	--	+60℃

8 Precautions

8.1 Precautions

1. After the DJS-F10 is turned on, it takes about 15 minutes to heat up the machine to reach the thermal equilibrium state before use.

2. Do not use the DJS-F10 outdoors, the machine does not have waterproof function.

3. During the installation and use of the DJS-F10, please strictly abide by the electrical safety regulations in the area of use.

4. Do not disassemble and repair the DJS-F10 by yourself, otherwise it will affect the equipment warranty.

5. Avoid extreme environments such as extreme high temperature (or low temperature), high humidity, vibration, radiation, chemical corrosion, etc. during installation and use.

9 Diagram