

iA1000 QUICK START GUIDE

CONTENTS

■ iA1000 : Iris & Face Recognition System

01. Packing list

- what's in the box

02. iA1000 Model Line-up

03. Hardware Information

04. Electrical connections

- Wiring overview
- Power supply
- External Power Supply
- Output Relay
- GPIO & Audio Line Out wiring
- Serial wiring
- Wiegand wiring
- Ethernet connection

05. iA1000 Installation

06. Specification

07. Card Reader Settings

08. Technical Support



Iris / Face
Fusion



Counter
measures



Intuitive LCD
User Interface



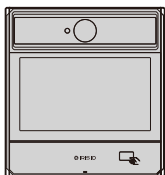
Large
Capture Volume



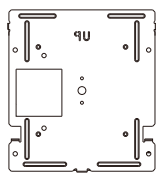
Advanced
Security

Packing List

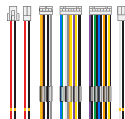
What's in the Box



iA1000



Surface Mount Bracket



Cable



L wrench



QR_Guide

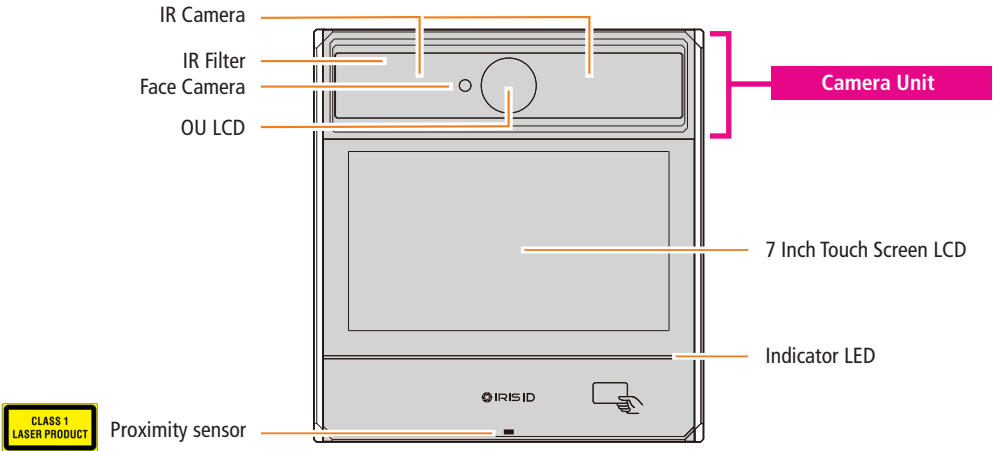
iA1000 Model Line-up

(Model Name example)

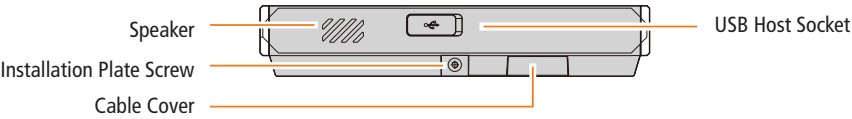
Model	PoE	Wi-Fi	Bluetooth	MiFARE / DESFIRE	PROX
iA1000	✓				
iA1000-x	✓	✓			
iA1000-x	✓				
iA1000-xx	✓	✓	✓		
iA1000-xxx	✓	✓	✓	✓	
iA1000-xxx	✓	✓		✓	✓

Hardware Information

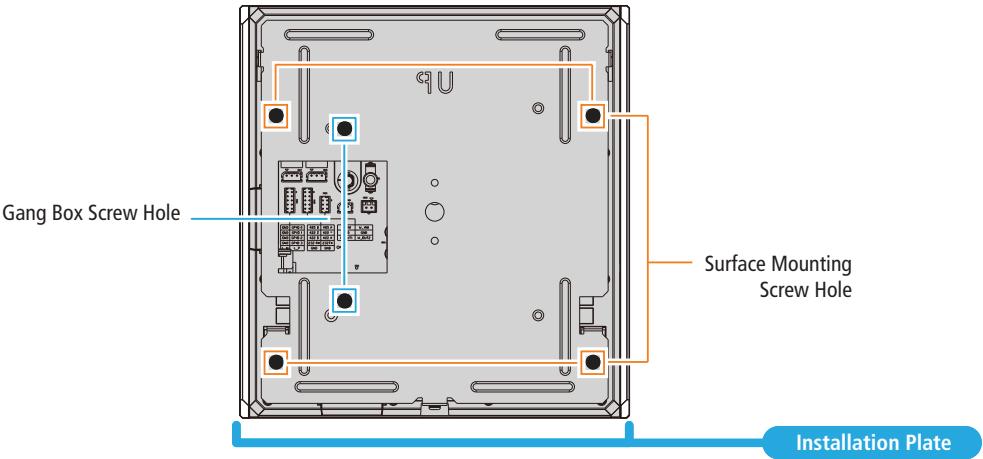
Front View



Bottom View



Rear View



Electrical connections

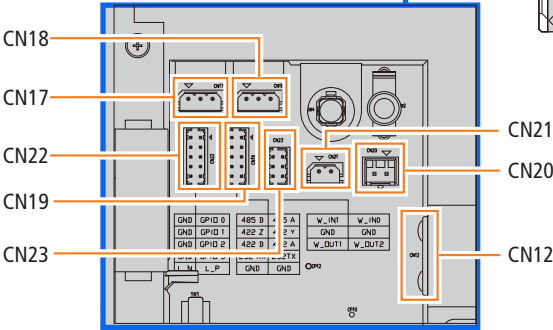
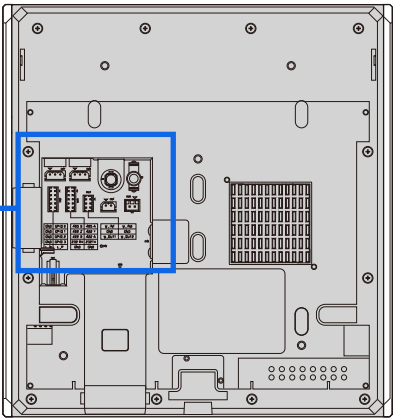
Wiring overview



Before proceeding, make sure that the person in charge of installation and connections is properly connected to earth, in order to prevent Electrostatic Discharges (ESD).

Note that all connections of the iA1000 connector described hereafter are of SELV (Safety Electrical Low Voltage) type.

Connector Layout



CN17 : Relay

1	2	3
---	---	---

NO	COM	NC
----	-----	----

CN18 : Relay

1	2	3
---	---	---

NO	COM	NC
----	-----	----

CN22 : GPIO & Line OUT

2	1
4	3
6	5
8	7
10	9

GND	GPIO0
GND	GPIO0
GND	GPIO0
GND	GPIO0
Line Out N	Line Out P

CN19 : Serial

2	1
4	3
6	5
8	7
10	9

RS484 B	RS485 A
RS422 Z	RS422 Y
RS422 B	RS422 A
RS232 RXD	RS232 TXD
GND	GND

CN23 : Wiegand

2	1
4	3
6	5

Wiegand IN D1	Wiegand IN D0
GND	GND
Wiegand Out D1	Wiegand Out D0

CN21 : Output Power

1	2
---	---

External DC 12V	GND
-----------------	-----

CN20 : Input Power

2	1
---	---

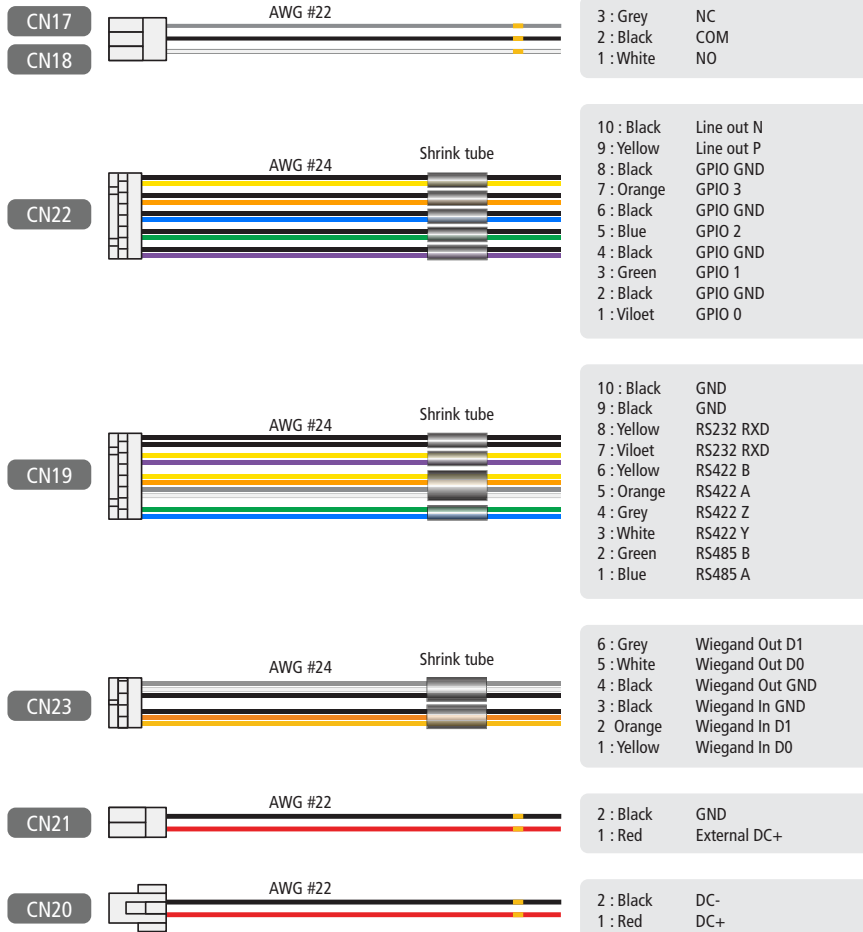
DC-	DC+
-----	-----

CN12 : Ethernet

RJ45

Electrical connections

Connector Cabling Layout



Electrical connections

Power Supply

1	Red	Power Supply 12-24V DC	In
2	Black	Power Ground	In

The power supply

- Must comply with IEC 60950-1 standard marked Class 2, Limited Power source (LPS)
- 12V to 24V DC (regulated and filtered) 2.5 Amp min at 12V.
- If sharing power between devices, each unit must receive 2.5A (e.g. two units would require a 12VDC, 5A supply).

iA1000 recommends using a 24V power supply and AWG16 gauge cable. The voltage measured on the product block connector must be equal to 12V-24V (-10% / +10%). The voltage drop due to the cable shall be taken into account. The table below shows as an example the maximum distance between power supply and one (1) unique device, depending on cable gauge and power supply rating.

Gauge AWG	Section (mm ²)	Maximum distance (meters) Vs power source rating		
		12V +/-10%	12V +/-5%	24V +/-10%
16	1.31	9m	20m	50m
18	0.82	6m	12m	50m
20	0.52	3m	8m	50m
22	0.32	2m	5m	30m



If several connectors are powered by the same cable, make sure to select a wire gauge that complies with maximum voltage drop, cable length, and power source minimum voltage rating.

External Power Supply

1	Red	The Output Power Supply 12V DC	Out
2	Black	Power Ground	Out

The External power supply

- Maximum 0.5 Amp when power supply is 2.5A @ 12V DC.
- Maximum 1 Amp when power supply is 2.5A @ 24V DC.



If the external device connected to the external power connector consumes more power than the specification, the iA1000 may be rebooted.

Electrical connections

Output Relay

1	White	Relay_NO	Contact relay (normally open)
2	Black	Relay_COM	Contact relay common
3	Grey	Relay_NC	Contact relay (normally closed)

Nominal characteristics of relay

Load characteristics:

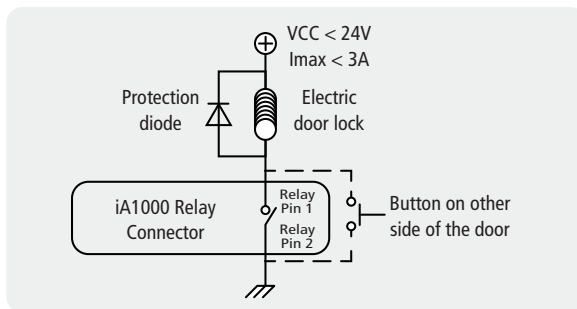
- 3 A max @ 24 VDC (according to the safety extra low voltage requirements independently of the power supply)
- Resistive load or inductive load; see warning information here after for inductive load.



Inductive load management requires a parallel diode for a better contact lifetime.

When the power is not turned on, not only the NO terminal but also the NC terminal is open.

Example of connection for electrical door locks



GPIO & Audio Line Out wiring

1	Violet	GPIO 0	In or Out	Digital Input (5V) / Digital Output (5V – 5mA max)
2	Black	GPIO 0 GND	Ground	Ground for GPIO 0
3	Green	GPIO 1	In or Out	Digital Input (5V) / Digital Output (5V – 5mA max)
4	Black	GPIO 1 GND	Ground	Ground for GPIO 1
5	Blue	GPIO 2	In or Out	Digital Input (5V) / Digital Output (5V – 5mA max)
6	Black	GPIO 2 GND	Ground	Ground for GPIO 2
7	Orange	GPIO 3	In or Out	Digital Input (5V) / Digital Output (5V – 5mA max)
8	Black	GPIO 3 GND	Ground	Ground for GPIO 3
9	Yellow	Line out P	Analog out	Analog Audio out Positive
10	Black	Line out N	Analog out	Analog Audio out Negative

Electrical connections

Serial wiring

1	Blue	RS485 A	In/Out	RS485 Rx/Tx non inverting signal
2	Green	RS485 B	In/Out	RS485 Rx/Tx inverting signal
3	White	RS422 Y	Out	RS422 Tx+ output Signal
4	Grey	RS422 Z	Out	RS422 Tx- output Signal
5	Orange	RS422 A	In	RS422 Rx+ output Signal
6	Yellow	RS422 B	In	RS422 Rx- output Signal
7	Violet	RS232 TXD	Out	RS232 Tx output Signal
8	Yellow	RS232 RXD	In	RS232 Rx output Signal
9	Black	GND	Ground	Ground for Serial Interface
10	Black	GND	Ground	Ground for Serial Interface

RS485 implementation is limited to half-duplex communication. So only Tx+, Tx- and ground reference signals are necessary.
Depending on the RS485 network, an impedance adaptation may be required.
For farthest terminal, a 120-Ohms resistor termination be added between TX+ and TX-.
RS232 interface is a full duplex communication.

Wiegand wiring

1	Yellow	WIEGAND IN D0	In	Wiegand IN D0 (Output type required: Open drain or 5V+/-5%)
2	Orange	WIEGAND IN D1	In	Wiegand IN D1 (Output type required: Open drain or 5V+/-5%)
3	Black	WIEGAND IN GND	Ground	Ground for Wiegand In
4	Black	WIEGAND OUT GND	Ground	Ground for Wiegand Out
5	White	WIEGAND OUT D0	Out	Wiegand OUT D0 (5V TTL)
6	Grey	WIEGAND OUT D1	Out	Wiegand OUT D1 (5V TTL)

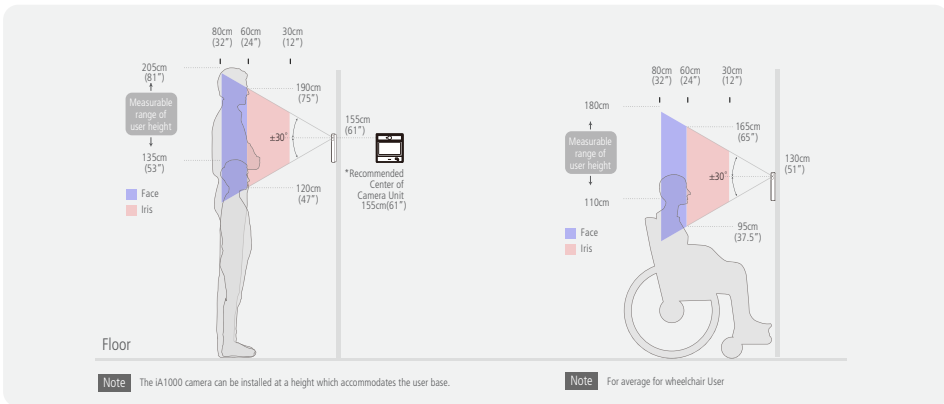
Ethernet connection

Use a category 5e shielding cable or better. It is strongly recommended to insert a repeater unit every 90 m.

RJ45 plug pinout is compliant with 10/100/1000 base T, IEEE802.3 Specification. Product is compliant also with MDI or MDI-X.

iA1000 Installation

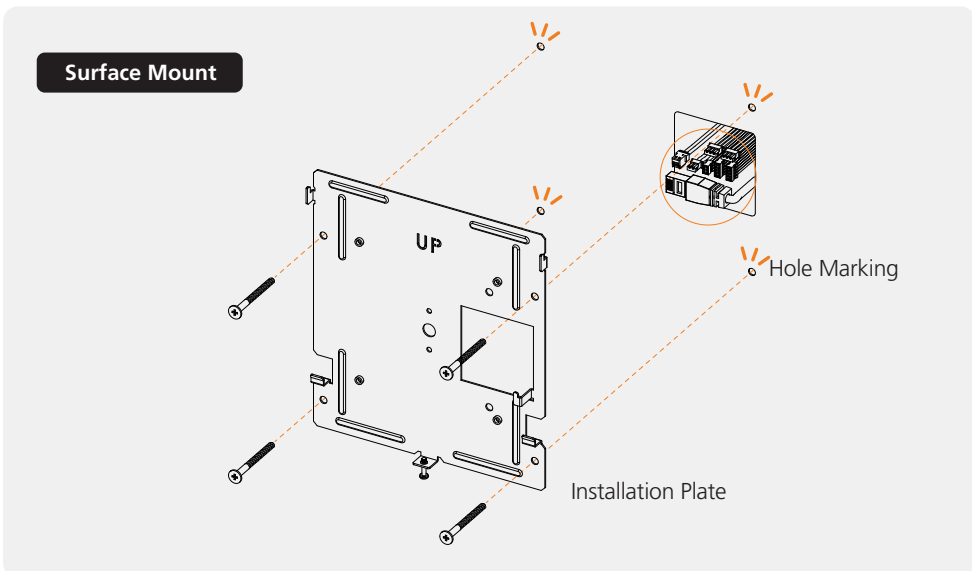
iA1000 Mounting Solutions



Surface Mounting

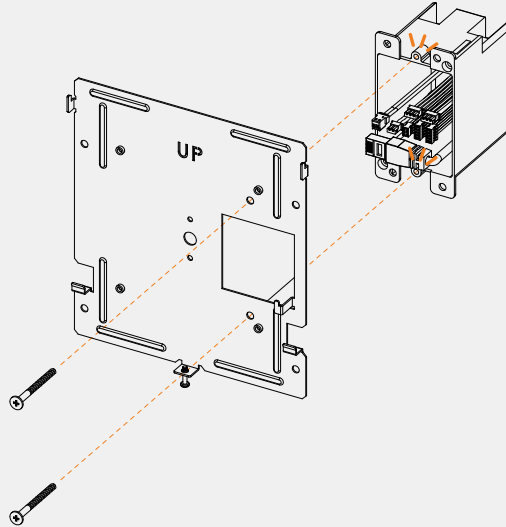
Review the following procedure for instruction on how to surface mount your iA1000 unit.

- 1 Place the installation plate on the desired wall and screw into wall. Feed any needed wiring through the installation plate hole (i.e.: Power, Ethernet, etc). Attach the installation plate to the wall surface using the appropriate fastener and anchors for the wall material. Another option is to mount and fasten the installation plate to a previously installed electrical gang box.

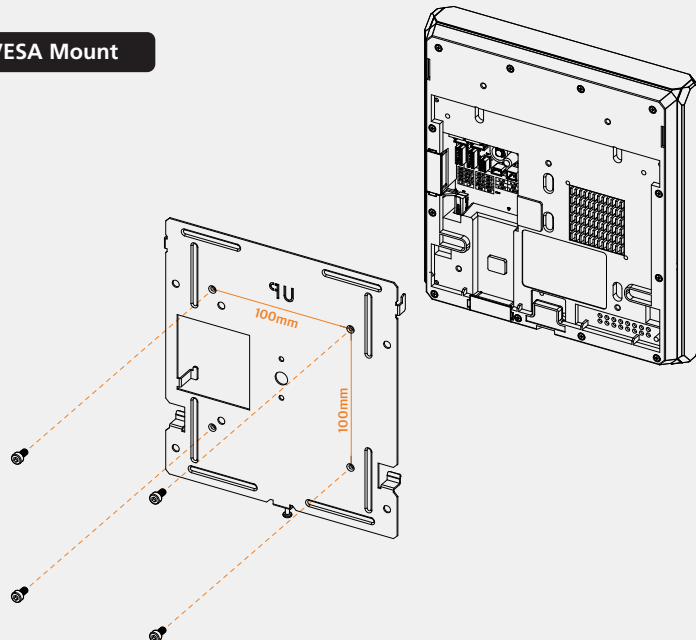


iA1000 Installation

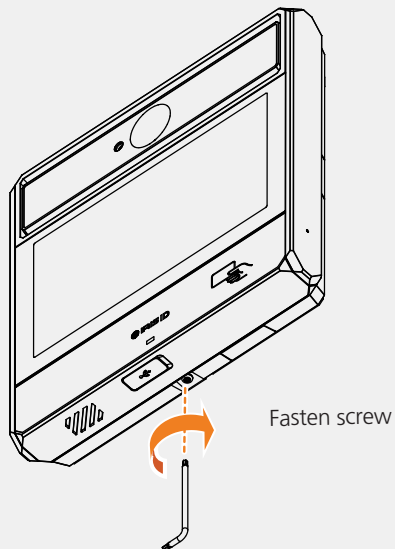
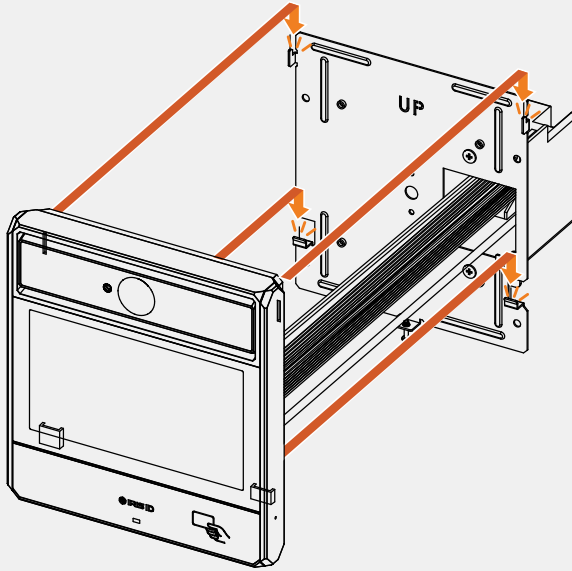
Gang Box Mount



VESA Mount



iA1000 Installation



Specification

I Features

Dimensions (W x H x D)	18.8cm x 19.9cm x 3.4cm (7.4" x 7.8" x 1.3")
Weight	1.8lbs (810g)
Type	Walk-up
Power Input	12 - 24 VDC auto - +/- 500 mv ripple voltage industry standard / Max : TBD
Display	Main Display : 7" LCD / OU Display : 1.54" Circular LCD Screen in OU Parts
User Interface	Self-guidance with displayed images on LCD
OS	Linux OS
Operation	Iris, Face, Pin, Card (And, Or, Fusion)
User Capacity	Up to 100,000 users
Transactions	Number of transaction logs on device DB: 1M (Iris) / 100,000 (Face)
Encryption	User DB, No encryption in Log DB, AES256
Security	Secure Booting, S/W authentication
Matching Speed	Less than 1 sec
Tilt	Motorized/Auto, Range: -30° ~ +30°
Iris Camera	2 x 5MP B/W CMOS image sensor
Face Camera	13MP Color CMOS image Sensor
Operating Range	Iris Camera: 30 ~ 60cm (12~24") / Face Camera: 30~80cm max (12~32")
Languages	Support multiple languages and characters simultaneously / Default : English & Korean
Algorithm	IrisCapture / DualEyeInfo™ / Countermeasure / Face Matching / Lens Detection
Real Time Clock	Rechargeable battery
Connectivity	Ethernet or Wi-Fi (optional) / Bluetooth (BLE) (optional) / Relay Supported External 3rd Party Commercial Wireless Modem(4G, LTE) via USB
Proximity detection	ToF Sensor
Card Reader	Supported HID iClass Card (optional) / Mifare/Desfire Card Reader (optional) HID Proxy Card Reader (optional)
Relay	2 Dry contact for Door
Wiegand	Wiegand In/Out (flexible up to 200 bits and pass through to the access panels)
POE	IEEE802.3at compliant, 12V 30W (Mandatory)
Serial	RS232 / RS485(OSDP) / RS422
Indicator	Multi Color LED for power and user guiding
Certifications	FCC, CE, KC, UKCA, UL294, IATA, KISA, Eye safety
Temperature	Operating: 0 ~ 45°C (32 ~ 113°F) / Storage: -20 ~ 90°C (-4 ~ 194°F)

iA1000 : Card Reader Settings



- 1 **Settings > External Device > Card Reader**
: Change the button from On to Off.

Technical Support

Additional information and technical assistance is available on the Iris ID Systems support web site at www.irisid.com. Click on Support & Service then Technical Support.

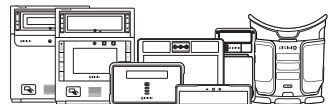


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