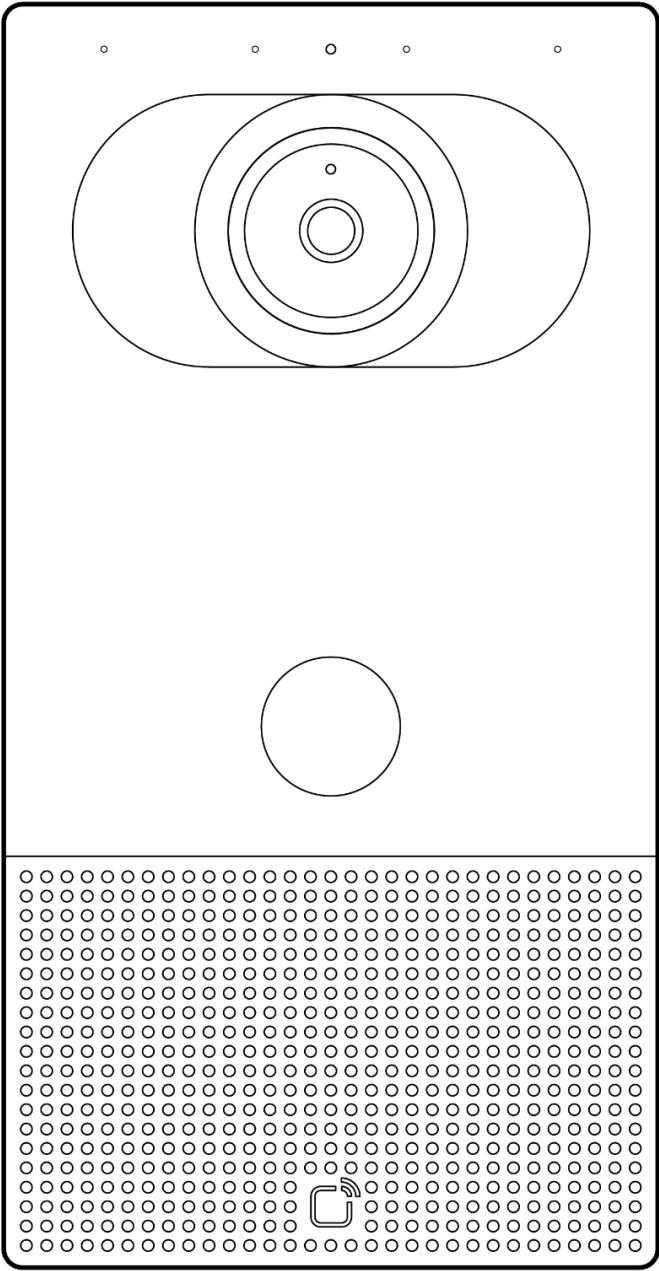# **TD53** Video Intercom

Document
Document Details

Version
V1.1 (20241024)
(V1.0 published 20241022)
Document ID: TD53 Install Guide

Firmware
Firmware version can be verified on Verkada
Command command.verkada.com.

Product Models
This install guide pertains to models TD53-HW.

Introduction
Technical Specifications

|	
Sensor Resolution	5MP (2688 x 1944)
Lens Type	Fixed
Image Sensor	1/2.8" Progressive CMOS
Focal Length	2.12mm
Iris	Fixed
Aperture	F2.0
Field of View	Horizontal: 130° Vertical: 100° Diagonal: 160°
IR Range	15m / 50ft
Onboard Storage	512GB
Audio Streaming	Two-way, full duplex with echo cancellation and noise suppression
Audio Output	5W speaker ; 90dB SPL at 1m / 3.3ft
Audio Input	4 omnidirectional digital MEMs microphones
Inputs / Outputs	3x dry inputs 2x dry relays, 30VDC @ 1A (resistive load) 1x RS-485 port
Dimensions	229mm (L) x 118mm (W) x 33mm (H) 9.0in (L) x 4.7in(W) x 1.3in (H)
Weight	1.0kg/2.2lb
Tamper Detection	Accelerometer
Resistance Rating	IK08, IP66
Operating Specs	Power: 11.5W (IEEE 802.3af PoE) ; Extended Temperature Range: 25.5W (IEEE 802.3at PoE+) Temperature: −20°C − 50°C / −4°F − 122°F, PoE 802.3af ; −40°C − 50°C / −40°F − 122°F, PoE 802.3at Humidity: 93%
Compliance	FCC Part 15B Class B, ICES-003 Class B, CE, UKCA, RCM, UL/IEC 62368-1, CSA NO22.2 62368-1, UL 294, ULC-60839-11-1 Outdoor
Connectivity	Ethernet: 10/100/1000Mbps RJ-45 cable connector for Network/PoE connection
Included Accessories	Flush mount plate, surface mount box, T10 screwdriver, mounting hardware kit, grommet punch
Additional Accessories (Optional)	Conduit mount box, angle mount box, trim plate, rain hood, PoE over 2-wire converter
Supported Credential Technologies	Low Frequency (125 kHz): HID Prox II 26-Bit (H10301), 37−Bit Wiegand HID H10304, 37−Bit Wiegand HID H10302, HID 35−Bit Corporate 1000 High Frequency (13.56 MHz): MiFare / DESFire (CSN) Mobile NFC (13.56 MHz): Apple Wallet and Android NFC Bluetooth Low Energy (2.4GHz)

Introduction
What's in the box
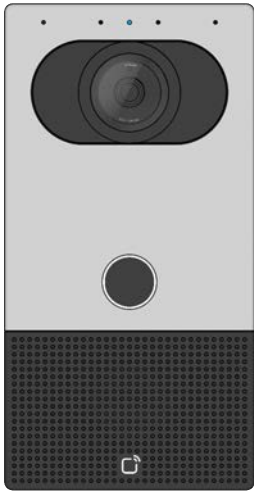
Video Intercom
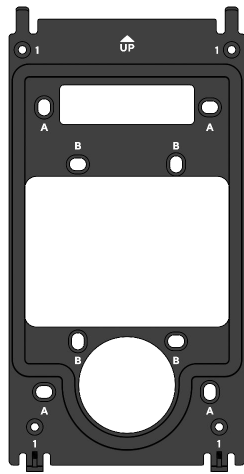
Mount Plate
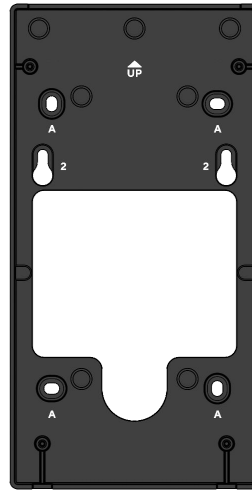
Surface Mount Box

**Junction Box Screws
#6-32** (4 pcs)
Length: 25.4mm **Drive:** #2 Phillips
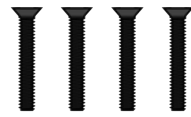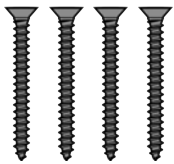
**Junction Box Screws
#8-32** (4 pcs)
Length: 25.4mm **Drive:** #2 Phillips

**Mount Plate Screws
M3x6mm** (4 pcs)
Length: 6mm **Drive:** T10

Wall Screws (4 pcs)
Length: 1.5" **Drive:** #2 Phillips
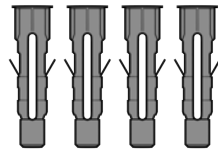
Wall Anchors (4 pcs)
Length: 25mm

Grommet Punch

Grommets (3 pcs)
(Attached to device)

T10 Security Torx Screwdriver

Terminal Block
(Attached to device)

What you'll need

- A smartphone or laptop
- A #2 Phillips head and power drill
- 1/4 inch (6mm) drill bit for wall anchors
- 5/64 inch (2mm) drill bit for pilot holes
- A Cat5e or Cat6 Ethernet cable with a 0.2-0.25 inch diameter (5-6.5mm)
- A level

Overview (1/2)

Status LED

Camera

Call Button

Speaker

Scan Area
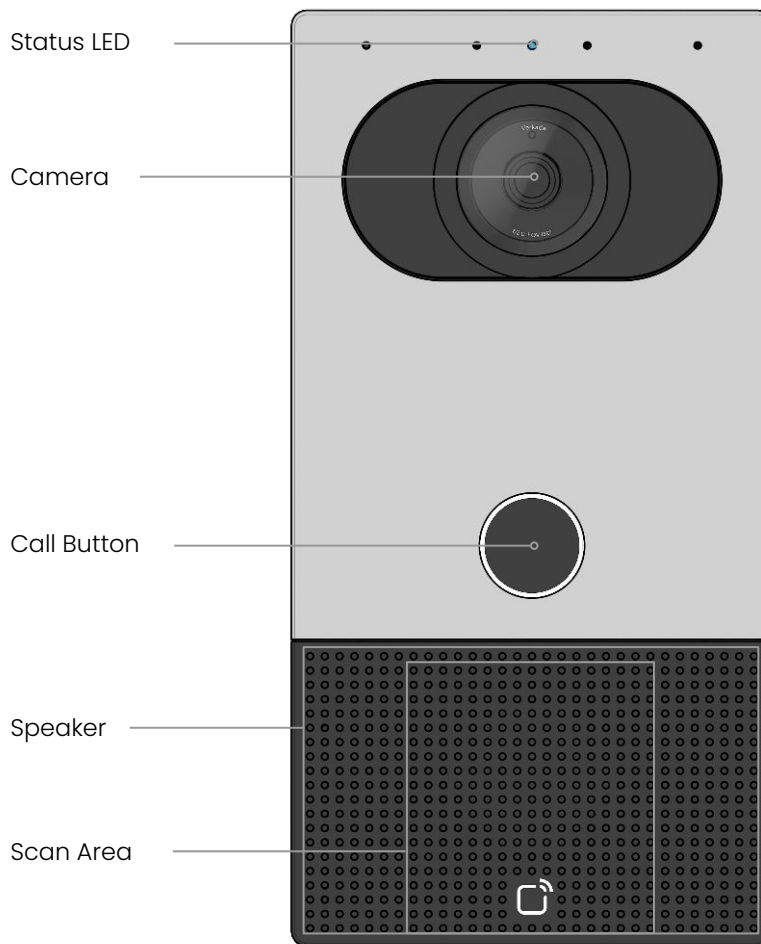
Status LED Behaviors

● **Solid Orange**
Intercom is on and booting up.

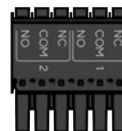☀ **Flashing Orange**
Intercom is updating firmware.

● **Solid Blue**
Intercom is running and online.

☀ **Flashing Blue**
Intercom is running and offline.

Call Button LED Behavior

Solid White
Intercom is powered

Solid Green
Access granted

Solid Red
Access denied

Spinning Blue
Calling

Solid Blue
Call Connected

Overview (2/2)

I/O Connector
Input / Output

PoE In
Ethernet (RJ45)

Output Relay 1	Normally Closed	
	Common	
	Normally Open	
Output Relay 2	Normally Closed	
	Common	
	Normally Open	

I/O Terminal Block
Front

RS-485	RS-485 A	
	RS-485 B	
GND	Ground	
Inputs 1-3	Input 1	
	Input 2	
	Input 3	

I/O Terminal Block
Back
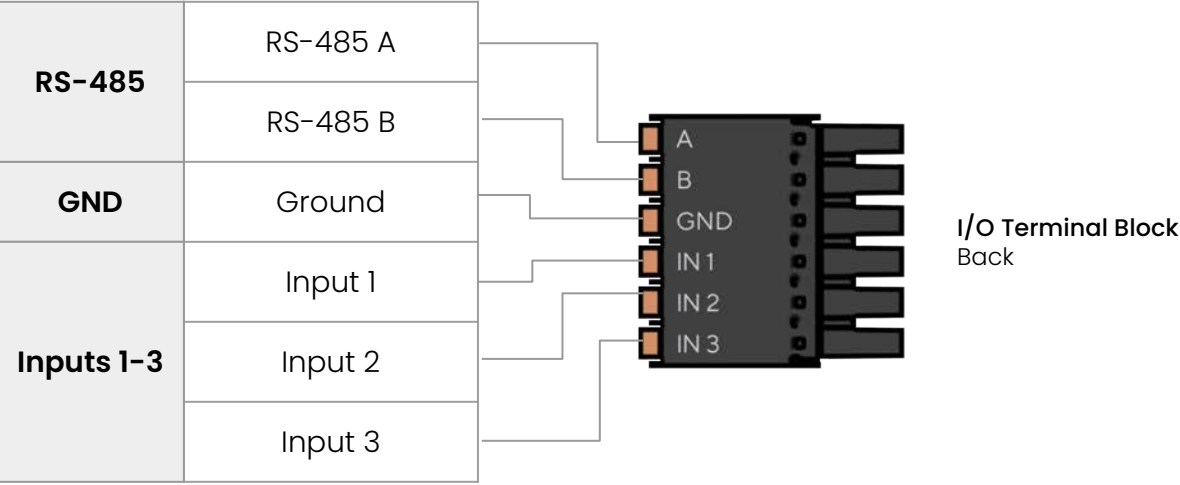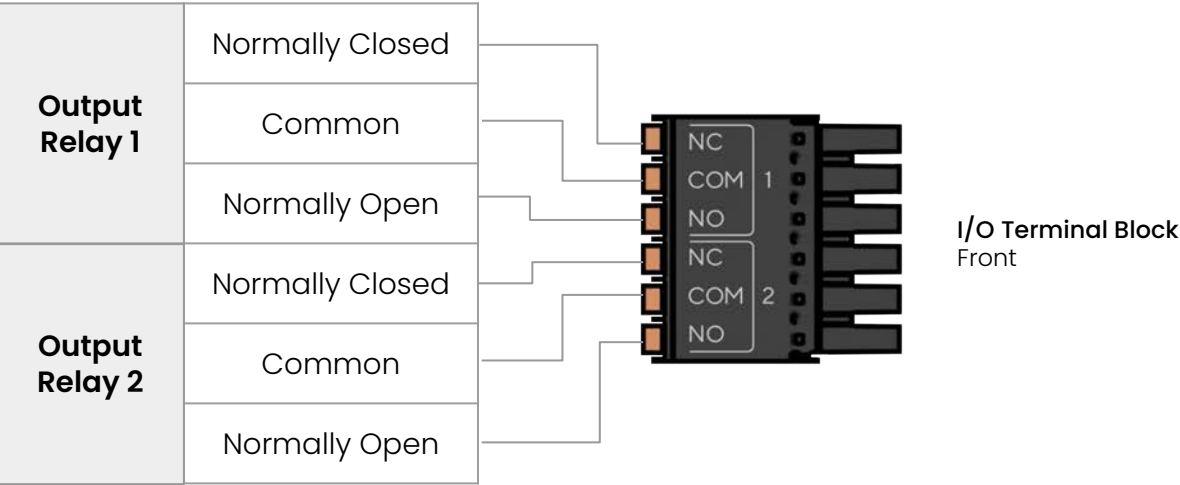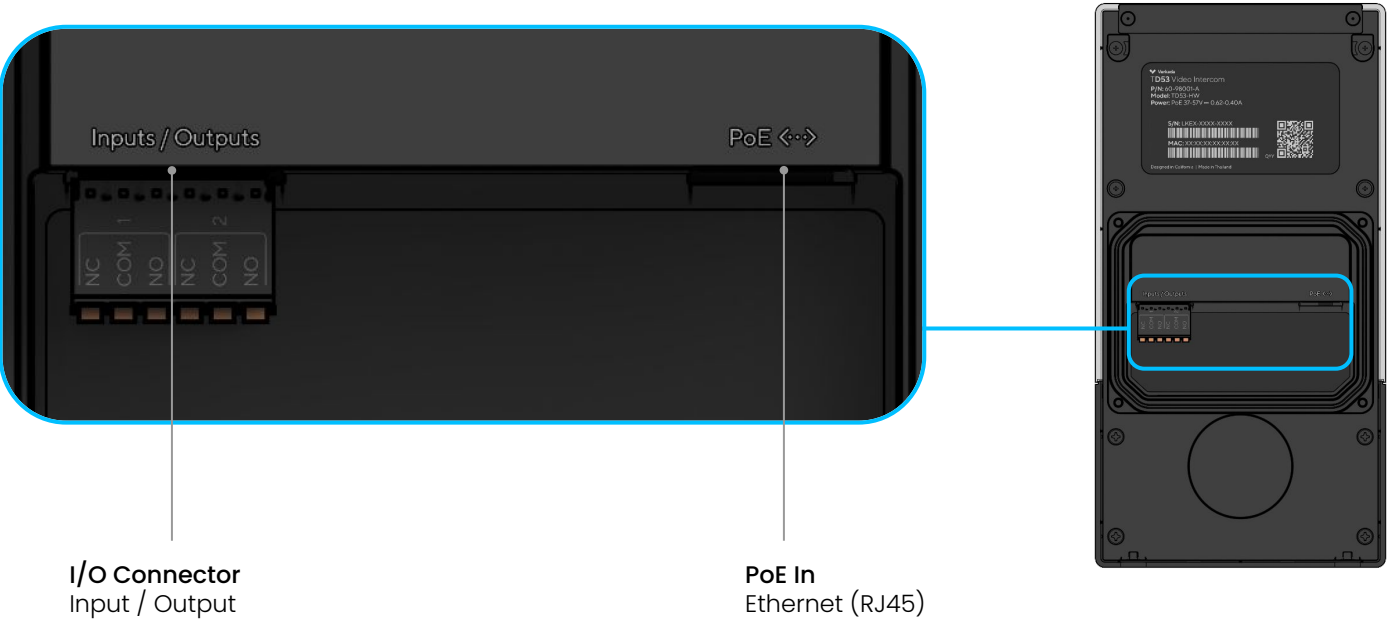
Preparation
Connect Device

Note: This step can be done after mounting, although registering the product first will ensure it is in working order prior to mounting.

Connect the TD53 to your network using the Ethernet port located behind the cable door on the device.

For easy registration and setup, scan the QR code on the product.

If you prefer to manually register your product, please proceed to:
verkada.com/start

Enter the serial number printed on the back of the device, the packaging, or the order number.

Preparation
Mounting Options

The Video Intercom can be mounted in either the Sub Flush Mounting configuration or the Surface Mounting configuration, using the Surface Mount Box. The following pages outline both installation options.

Use the Sub Flush Mounting configuration for a lower profile installation where the intercom cable bay can sit inside the wall.

Use the Surface Mounting configuration when installation conditions prohibit the intercom cable bay from sitting inside the wall.

Sub Flush Mounting   **Surface Mounting**
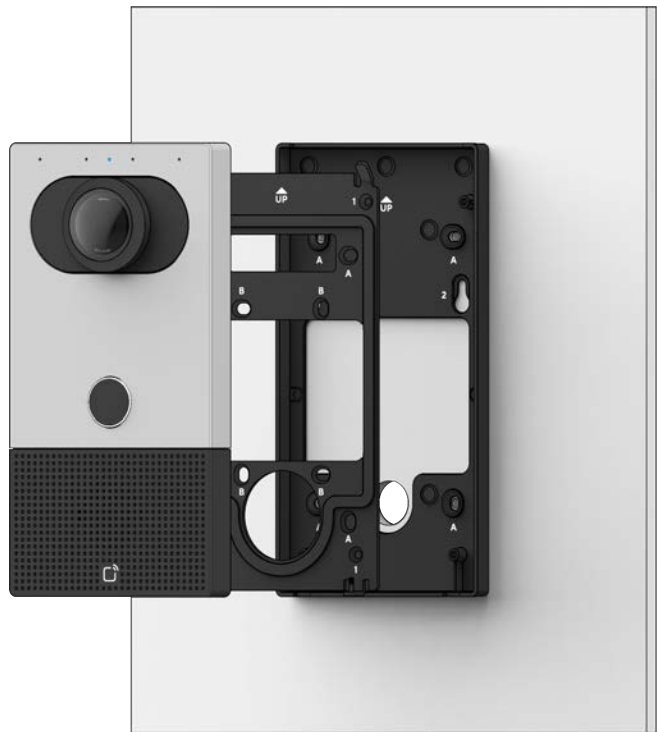
Sub Flush Mounting (1/4)

The mount plate has hole patterns for the following mounting conditions:

A Direct wall mounting
B 2-gang junction box mounting

Use the **(A)** pattern to mount directly on to the wall, or **(B)** for 2-gang junction box.

Note: Do not use holes marked "1" in the sub-flush configuration.
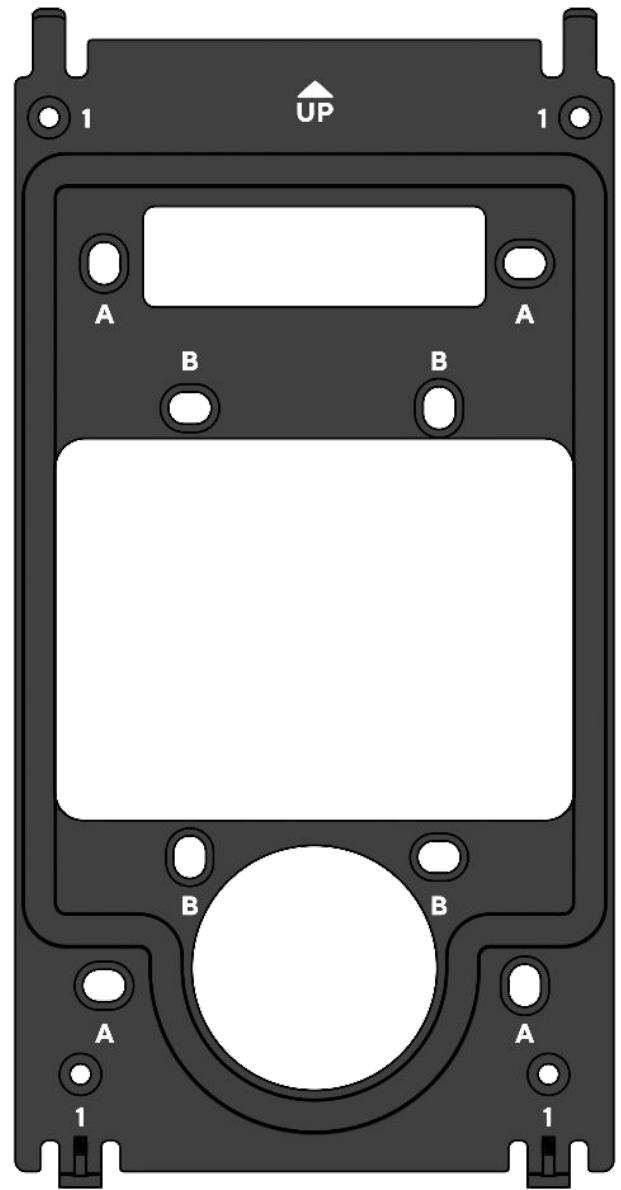
Sub Flush Mounting (2/4)

Option 1: Direct Wall Mounting

Use the mount plate as a template to mark mounting holes **(A)** and the center cutout.

Drill 5/64 inch (2mm) pilot holes.

If using wall anchors, drill 1/4" (6mm) pilot holes.
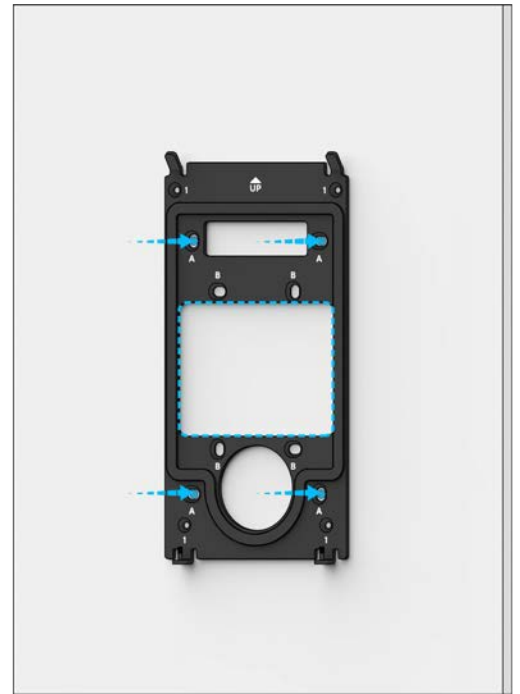
Use the wall screws to secure the mount plate onto the wall.

Ensure that the 'UP'-arrow on the mount plate is pointing up.

Note: The hardware in the Install Kit is appropriate for common install scenarios. In uncommon or specialized install cases, please determine the suitable hardware needed.
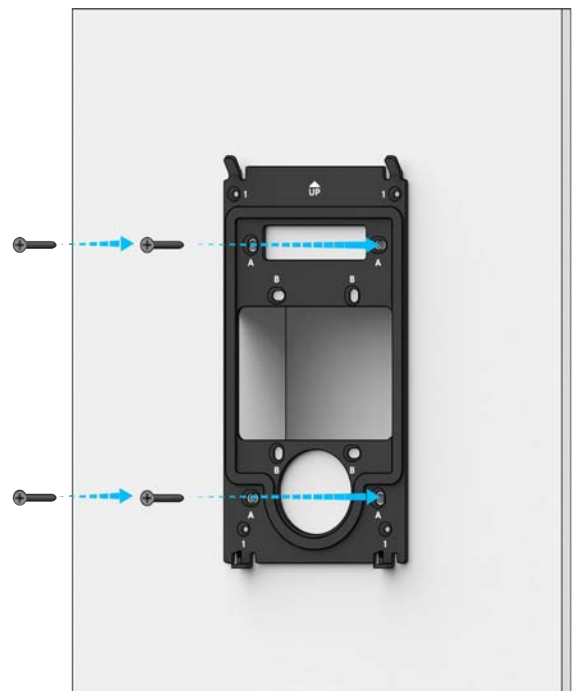
Sub Flush Mounting (3/4)

Option 1: Direct Wall Mounting

Route the building-side cable through the hole in the center of the mount plate.

Sub Flush Mounting (4/4)

Option 2: 2-Gang Box Mounting

For 2-gang box mounting, align the mount plate holes **(B)** with the junction box threads.
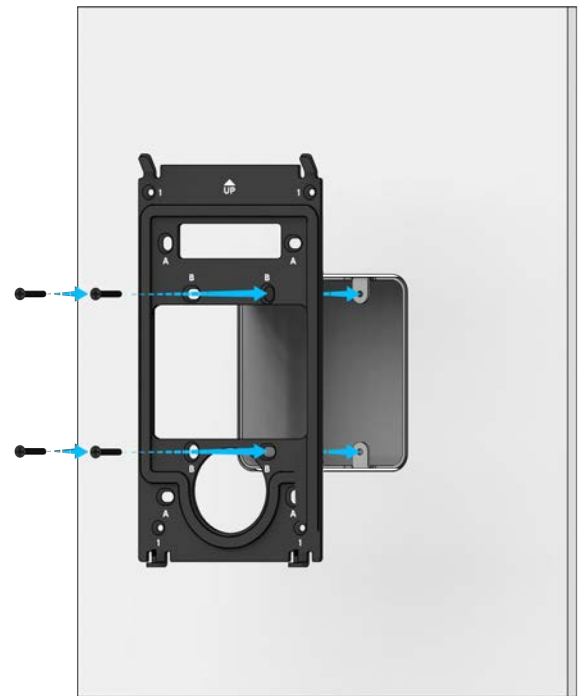
Route the building-side cable through the hole in the center of the mount plate.

Use the junction box screws to install the mount plate onto the junction box. Ensure that the up arrow on the mount plate is pointing up.

Note: The hardware in the Install Kit is appropriate for common install scenarios. In uncommon or specialized install cases, please determine the suitable hardware needed.

Installation
Surface Mounting (1/3)

The surface mount box has hole patterns for the following mounting conditions:

A Direct wall mounting

Use the **(A)** pattern to mount directly on to the wall

Note: Do not use holes marked "2" in the surface mounting configuration.

Surface Mounting (2/3)

Use the surface mount box as a template to mark mounting holes **(A)** and the cable hole location.

Drill 5/64 inch (2mm) pilot holes.

If using wall anchors, drill 1/4" (6mm) pilot holes.

For the cable, drill a 7/8" (22mm) hole when possible.

Use the wall screws to secure the surface mount box onto the wall.

Ensure that the 'UP'-arrow on the mount plate is pointing up.

Note: The hardware in the Install Kit is appropriate for common install scenarios. In uncommon or specialized install cases, please determine the suitable hardware needed.
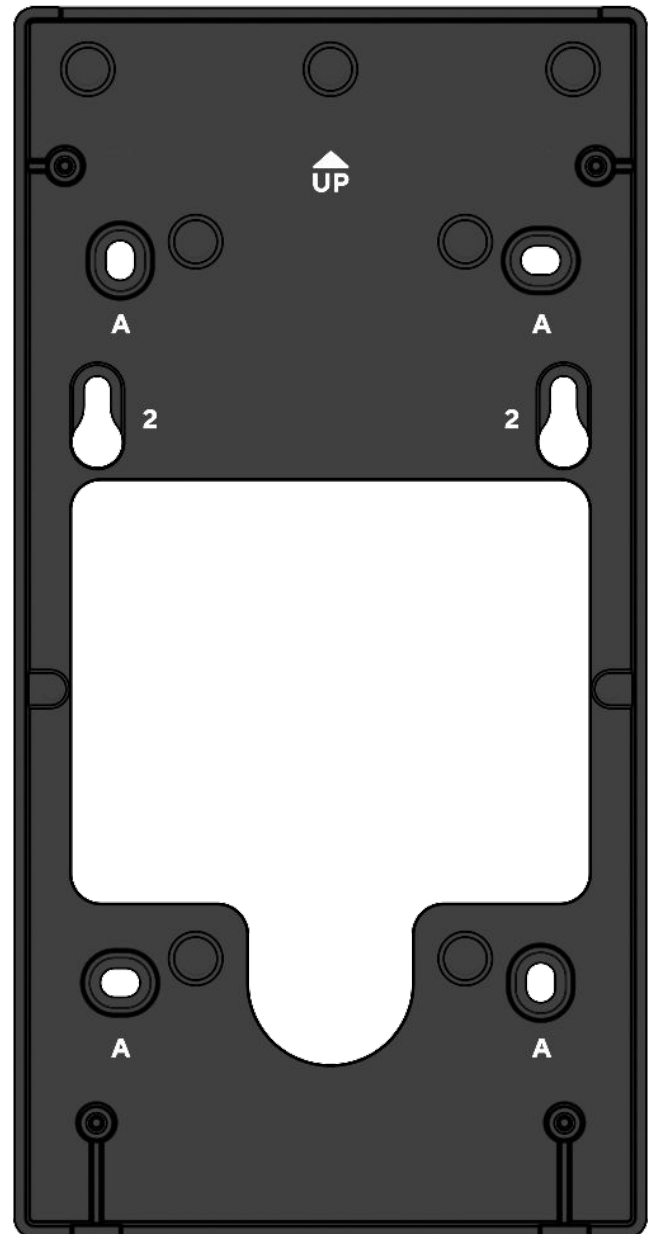
Surface Mounting (3/3)

Route the building-side cable through the hole.

Attach the mount plate to the surface mount box with the included mount plate screws using the T10 Security Torx Screwdriver.

Note: The cable should pass through the rectangular opening of Mount Plate, NOT the circular opening.
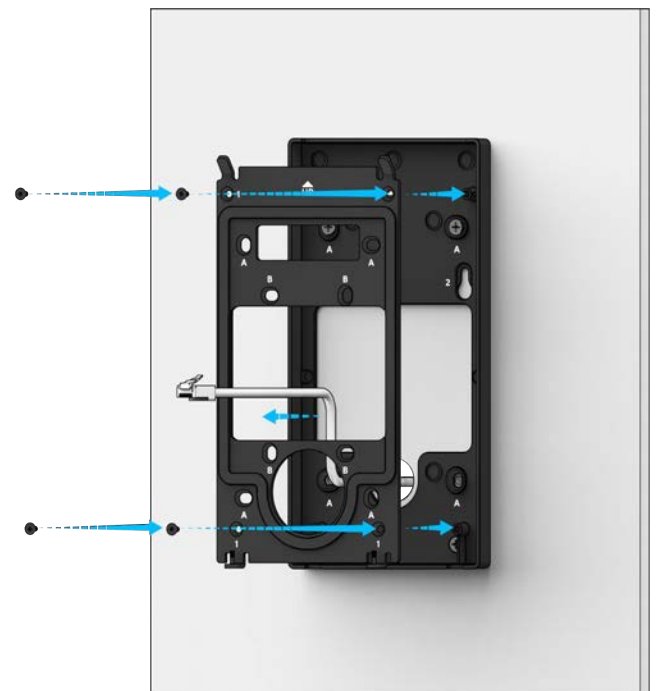
Wiring (1/3)

On the intercom, loosen the four T10 Security Torx screws on the cable bay door.

Remove the cable bay door to access the Ethernet and I/O ports.

Use the label on the interior of the cable bay door to choose which grommets to remove for wiring.

The **left grommet** is for the PoE cable.
The **right grommet** is for low voltage cable.
The **center grommet** can be used for either PoE or low voltage cables.
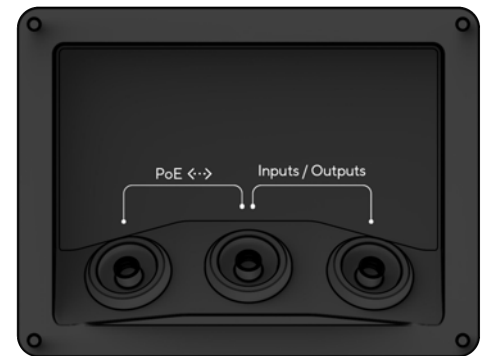
Remove the center of the grommet by pulling firmly on the cylindrical tab.
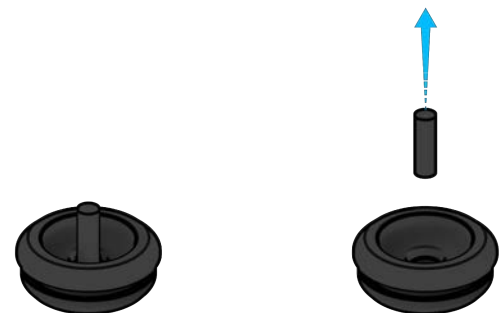
Use the grommet punch from the Install Kit to route the connector head through the grommet.
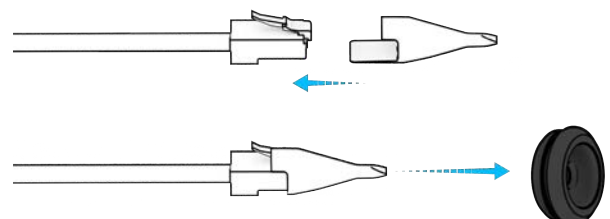
Wiring (2/3)

Route all the wires through the grommets and corresponding grommet holes.
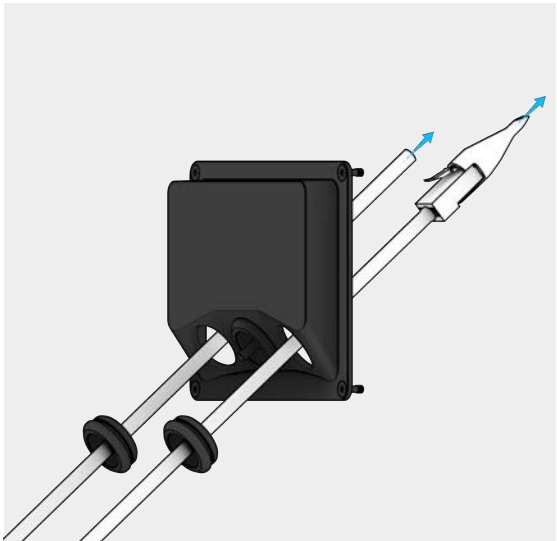
Remove the I/O terminal block for easier access to wiring.
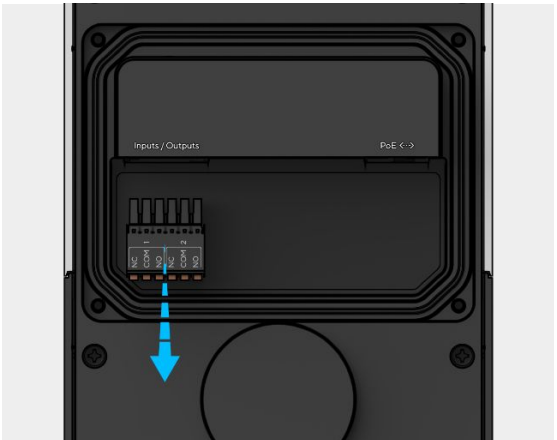
Attach the wires according to the labelling on the I/O terminal block.

Relay 1			Relay 2		
NC	COM	NO	NC	COM	NO
IN 3	IN 2	IN 1	GND	B	A
Inputs 1–3			**GND**	**RS–485**	
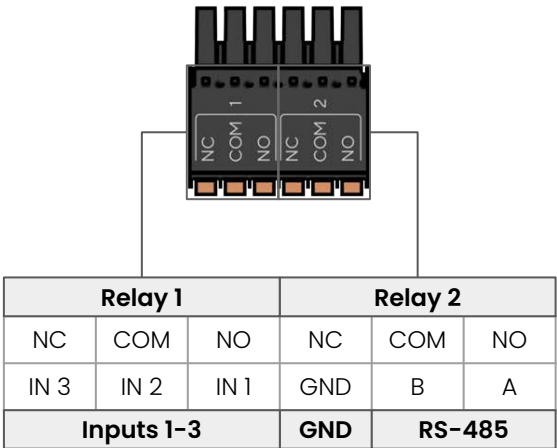
Wiring (3/3)

Plug in the RJ-45 and the I/O terminal block.
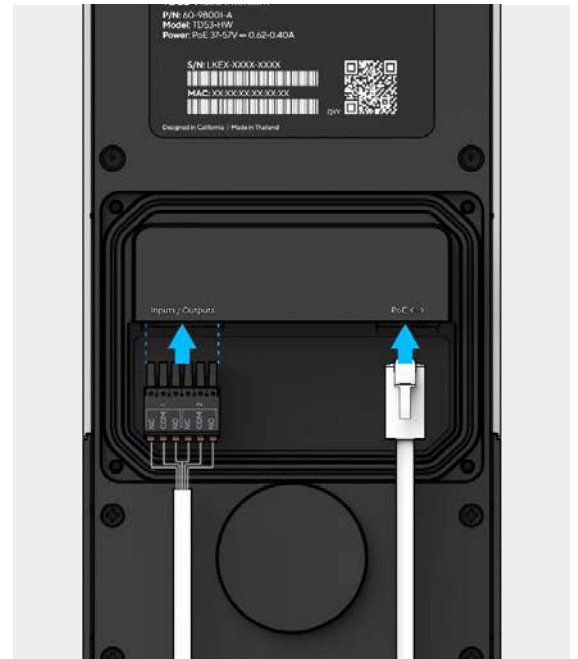
Press the grommets back into the grommet holes on the cable bay door.

Make sure the grommet is fully seated to ensure proper sealing.

Note: The tail of the grommet should be facing away from the device after installation for proper sealing.
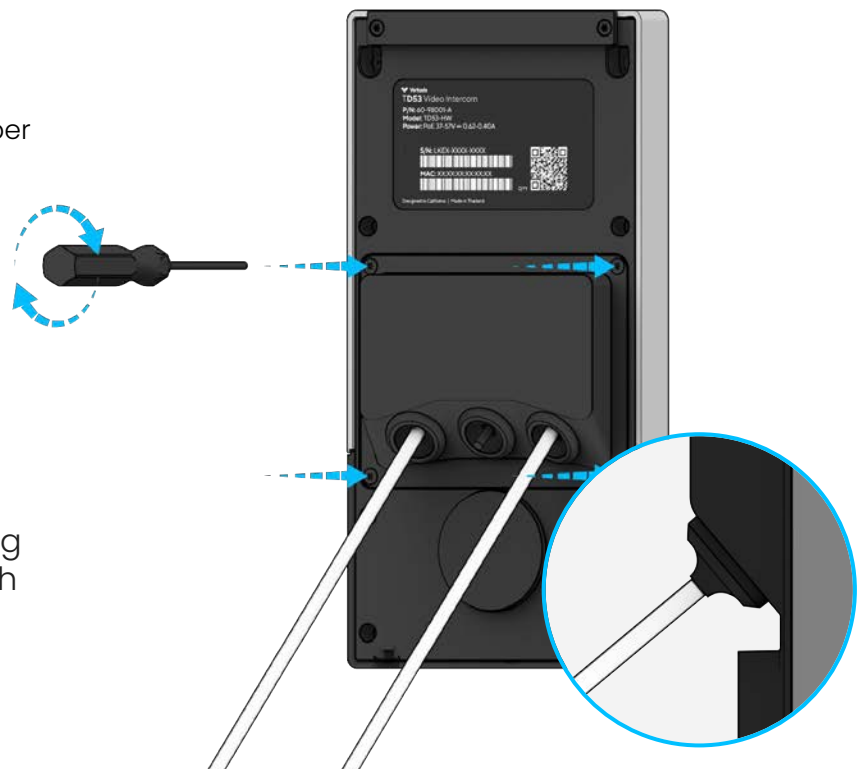
Secure the cable bay door by tightening the four T10 Security Torx screws at each corner.

Secure

Guide the Intercom onto the two hooks on the top edge of the mount plate.

Gently swing the bottom edge of the intercom down, against the mount plate.

Secure the Intercom by tightening the two T10 Security Torx screws at the bottom of the mount plate using the T10 Security Torx Screwdriver.

Connecting a Door (1/2)

Option 1: Connect as an access controller
The device can be setup as Fail Safe or Fail Secure with an external power source.
Note: For ULC 60839-11-1 installations, release timing shall not be less than 3s.
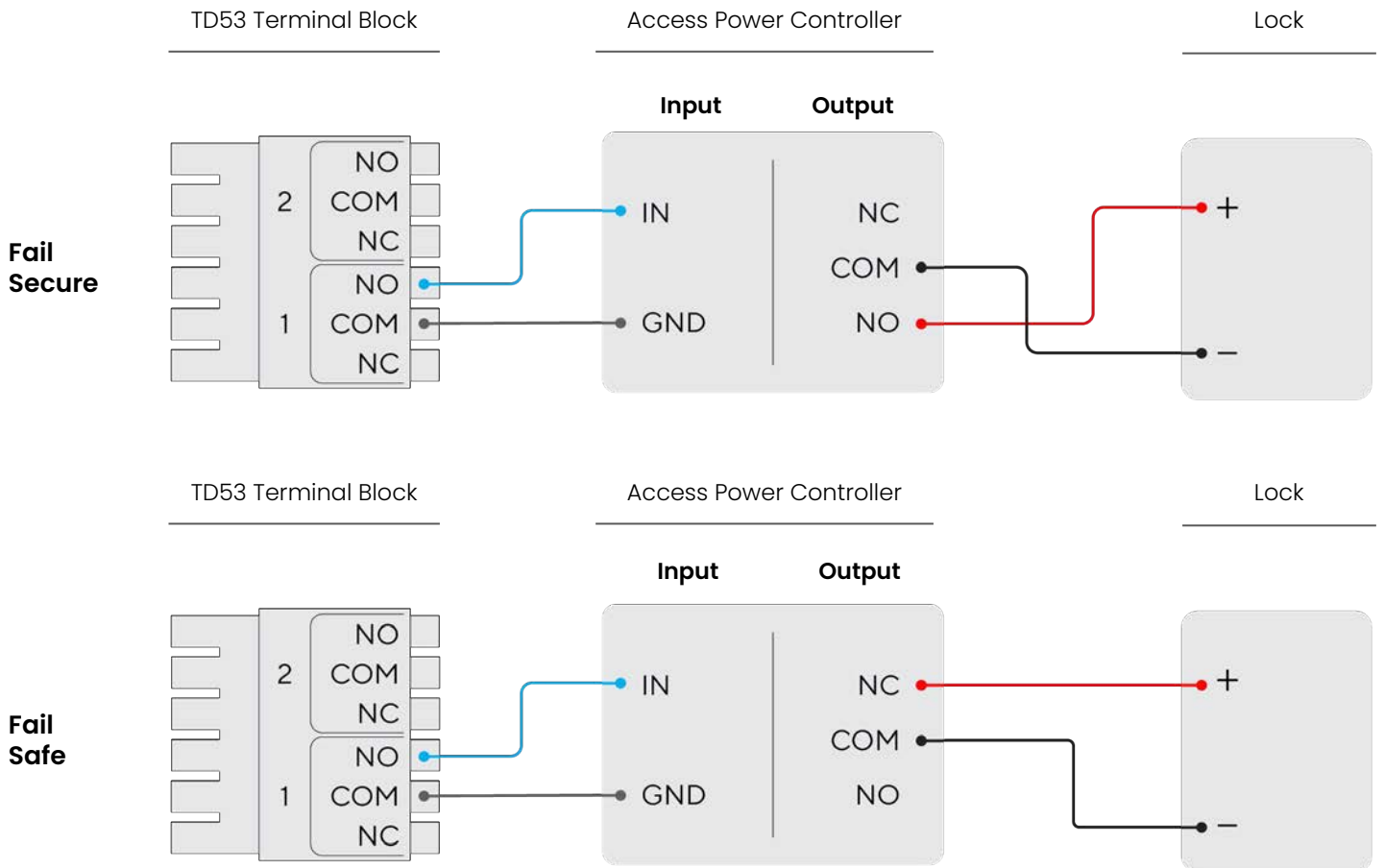
Connect to DPI and REX
The device can be set up with a DPI and REX wired directly to the intercom.

REX must connect to IN 2

DPI must connect to IN 1.
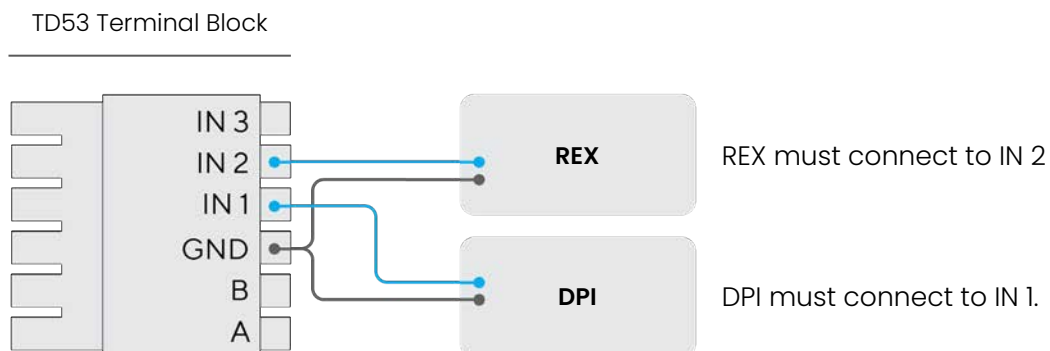
Connecting a Door (2/2)

Option 2: Connect as an external badge reader
The device can be setup as a standalone badge reader with an external Access Control Unit. Wire the terminal block to the ACU as shown below.

TD53 Terminal Block   Access Control Unit

IN 3
IN 2
IN 1
GND
B
A

+
−
Reader Input
A
B

TD53 Compliance 1/2

FCC Statement	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
	(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
	This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
	These limits are designed to provide reasonable protection against harmful interference in a residential installation.
	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 guarantee that interference will not occur in a particular installation.
	If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
	• Reorient or relocate the receiving antenna. • Increase the separation between the equipment and receiver. • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help.
	FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
	This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
	Radiation Exposure Statement: The product comply with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual.
	The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.
IC Statement	This device complies with ISED's licence-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
	Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence.
	L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.
	Radiation Exposure Statement: The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual.
	The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.
	Déclaration d'exposition aux radiations: Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé.
	Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel.
	La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

IEC 62368-1	The device is only to be connected to PoE networks without routing to outside plants.
IEC 60825-1	Attempts to disassemble or repair the sealed areas of the device while powered on could result in hazardous exposure to infrared laser emissions that are not visible. CLASS 1 LASER PRODUCT
UL 294	Attack Level: Level I Endurance Level: Level I Line Security Level: Level I Standby Power Level: Level I The following functions were not subject to the requirements of UL294: - Video, audio, and intercom performance - PoE+ functionality (extended temperature range) - IK08 and IP66 ratings - Compliance to IEEE 802.3 This device accepts PoE type A or B. Use only UL listed class 2 power supply. Certification testing completed using PHIHONG TECHNOLOGY CO LTD Model POE60U-BTB (Verkada ACC-POE-60WHS) File E127643. PoE supply is for indoor use only. Power source for dry relay contacts shall be UL listed and having class 2 power limited output. Locations and wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70 Article 725.121, Power Sources for Class 2 and Class 3 Circuits. Category 5e cabling is the minimum performance category recommended. The performance category utilized should match the transmission speed required at the installation site. Minimum conductor gauge permitted between the PSE or power injector and the PD shall be AWG 26 ($0.13mm^2$) for patch cords; 24 AWG ($0.21mm^2$) for horizontal or riser cable. Electronic authorization details - Mobile device operating system requirements: Apple iOS 16.0 or later, Google Android 3.1.6 or later - Mobile app requirements: Verkada Pass App 4.7.13 or later - User verification method: User ID and password - Credential details: authentication/digital signature keys received from wireless electronic credential
CAN/ULC 60839-11-1	Environmental Level: Outdoor Grade assignment: Grade I

Appendix
Support

Thank you for purchasing this Verkada product. If for any reason you're experiencing issues or need assistance, please contact our 24/7 Technical Support Team immediately.

Sincerely,
The Verkada Team
verkada.com/support