

Impera

Installation and Setup Guide

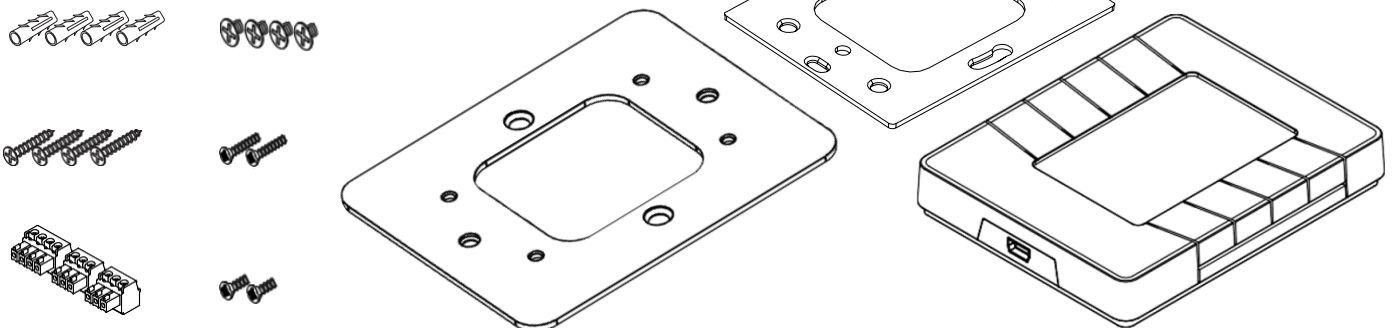


Uniform
AV Control Pad

INSTALLATION CONSIDERATIONS

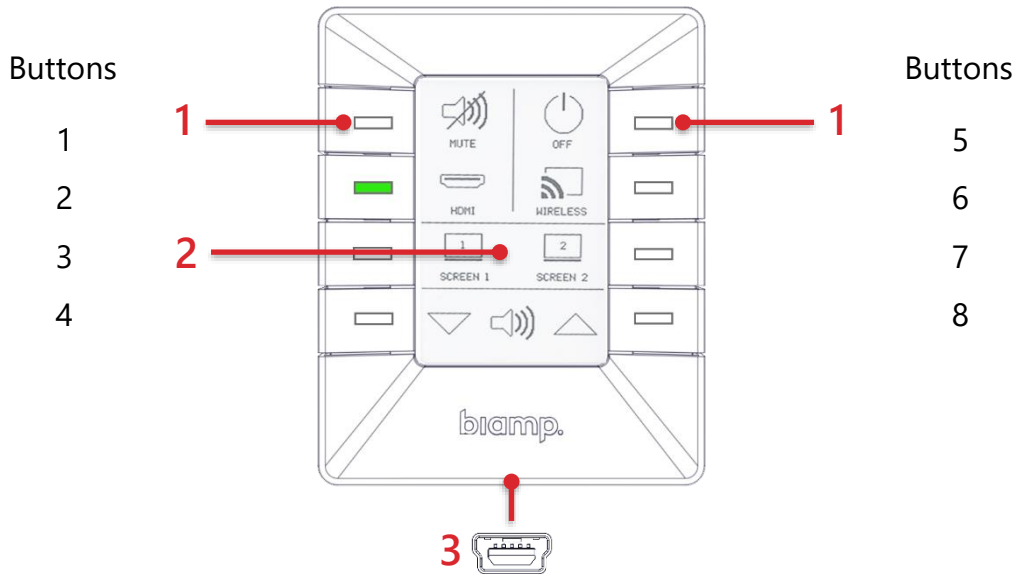
- Intended for wall mounting on vertical surfaces. Uses an e-ink display.
- I/O, RS-232/IR terminal connections, and LAN port are located on the back of the unit.
- The controller is PoE powered: Use an IEE802.3-compliant PoE power supply or switch. PoE injector not included.
- The e-ink display, button functions, and LED indicators are configured using Biamp Project Designer Software available on Biamp.com

INCLUDED IN THE BOX



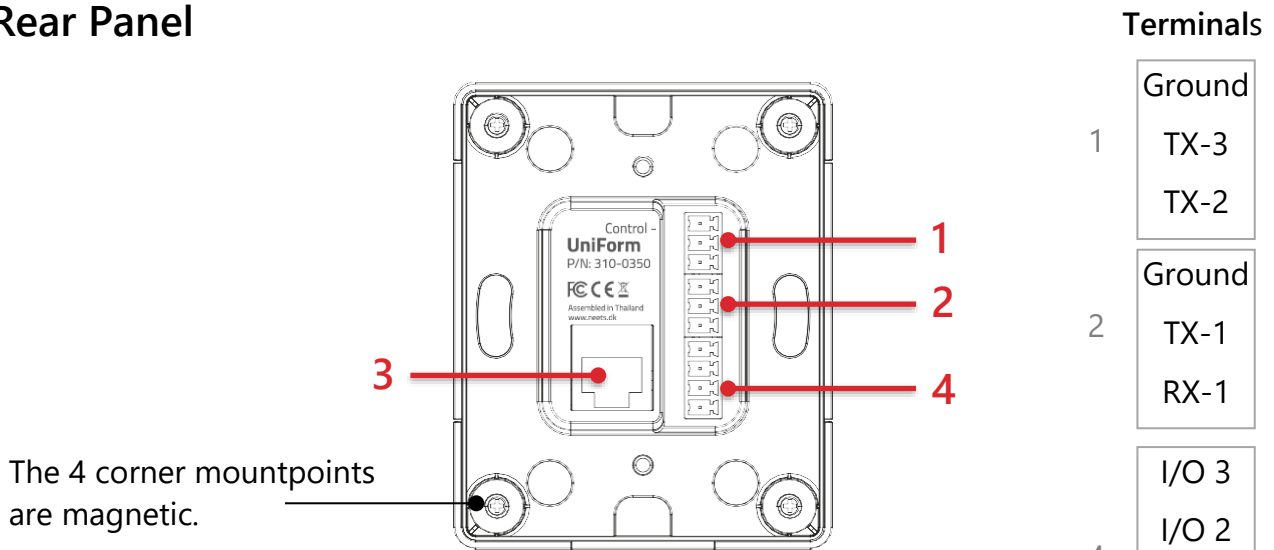
Device Layout

Front Panel



1. Programmable push buttons with LED status lights
2. Programmable e-ink display
3. Mini USB 5 P. For configuration updates only.

Rear Panel



Terminals

1	Ground
	TX-3
	TX-2
2	Ground
	TX-1
	RX-1
4	I/O 3
	I/O 2
	I/O 1
	Ground

1. 2 RS-232 or IR ports, unidirectional
2. 1 RS-232 bidirectional port or IR unidirectional
3. 1 RJ-45 Network (LAN) port with PoE functionality
4. 3 Digital input/output ports

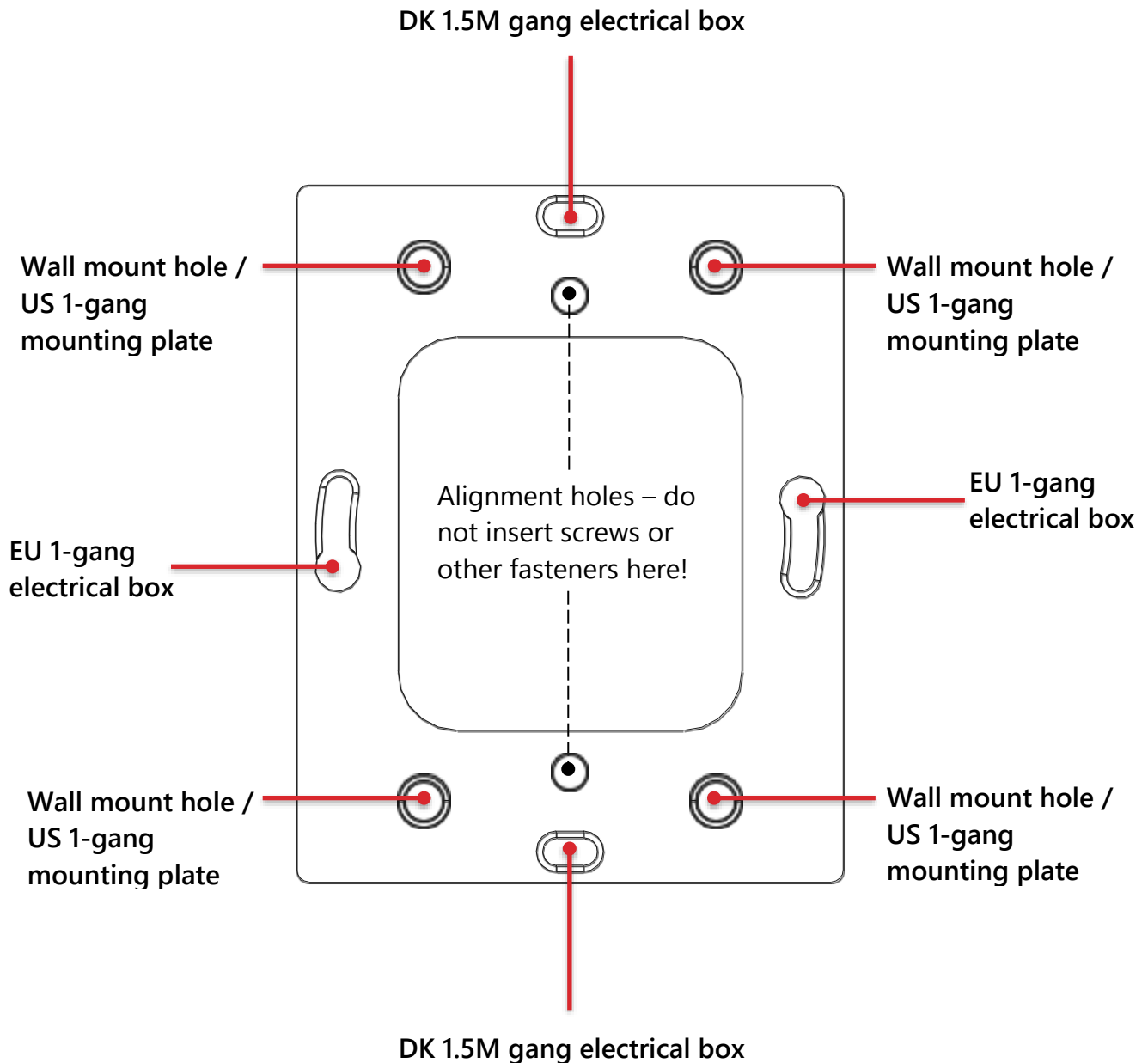
Standard Mounting Plate

All Impera Uniforms come with a mounting plate that fastens either **directly to a wall**, to a **US 1-gang mounting plate**, or to a **1-gang box** compliant with the following standards.

- EU 1 standards
- DK 1.5M (LK FUGA Air only)

See page 4 for the US 1-gang box mounting plate.

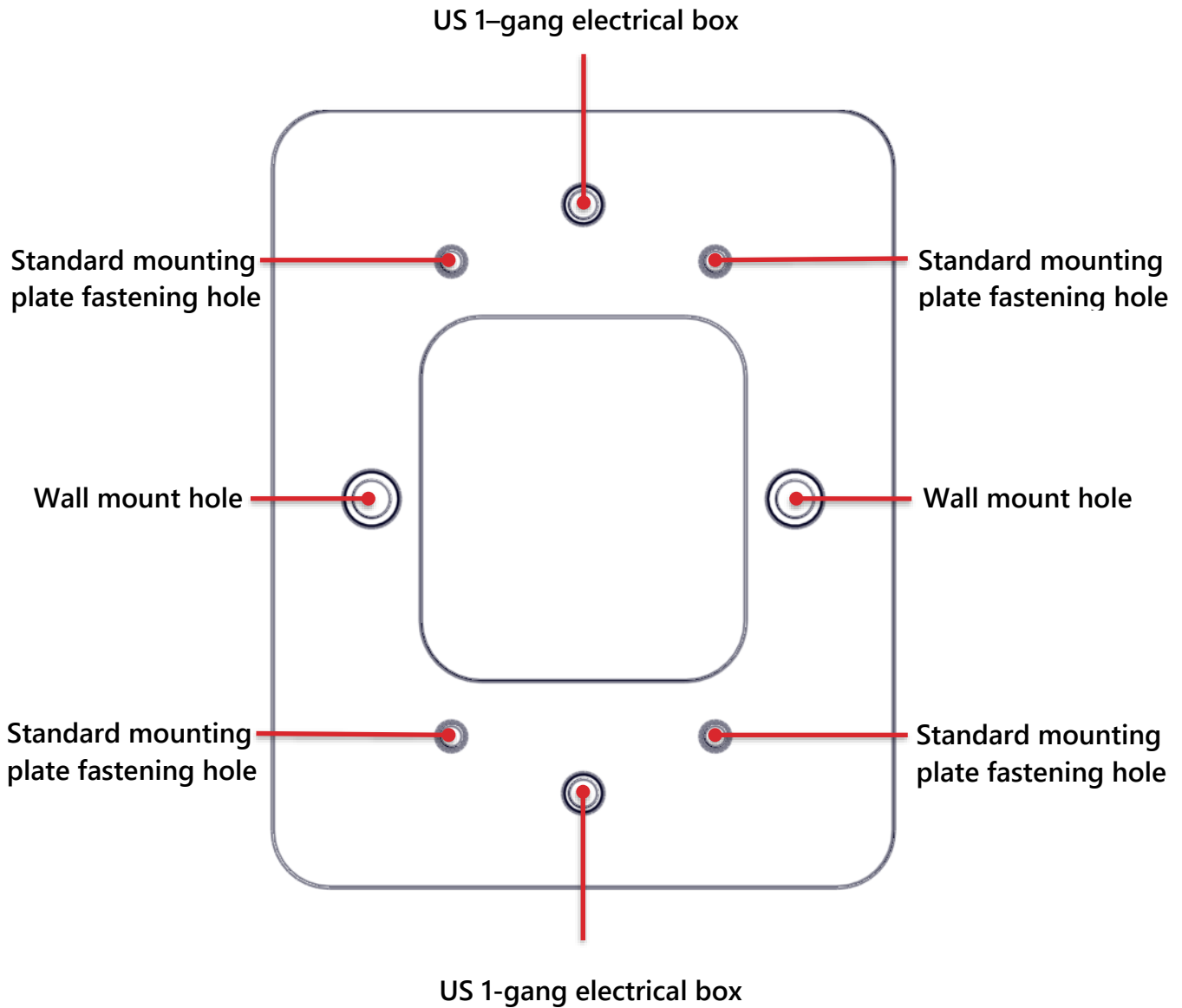
The controller attaches magnetically to this plate.



US 1-Gang Mounting Plate

For fastening to a US-1 compliant gang box.

The Standard mounting plate may be fastened to this plate.



Installation

Installation Overview

Perform the procedures described in this chapter to install the controller on a vertical surface.

- ✓ **Check the Recommended Heights** on page 6.

- ✓ **Attach a mounting plate to a 1-gang box or the wall.**
 - Option 1: Mount the standard plate to an EU 1-gang box, page 7.
 - Option 2: Mount the standard plate to a DK 1.5M gang box, page 8.
 - Option 3: Mount the standard plate directly onto the wall, page 9.
 - Option 4: Mount a US plate to a US 1-gang box, page 10.

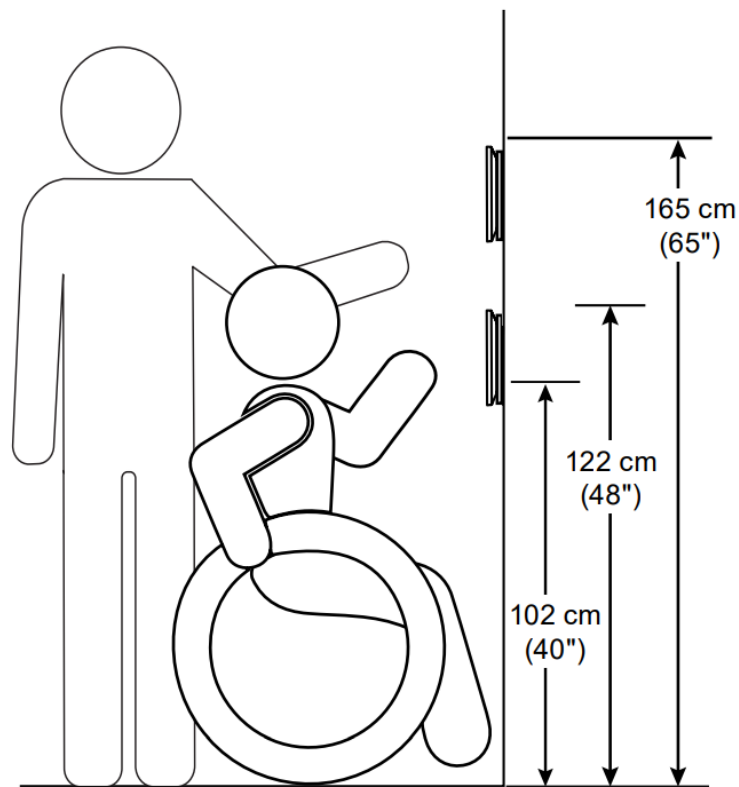
- ✓ **Connect the controller**, page 11.
 - To a PoE source using the LAN port
 - To any terminal connections for the AV system

An overview of the Controller connector ports starts on page 16.

- ✓ **Attach the controller to the mounting plate**, page 12.

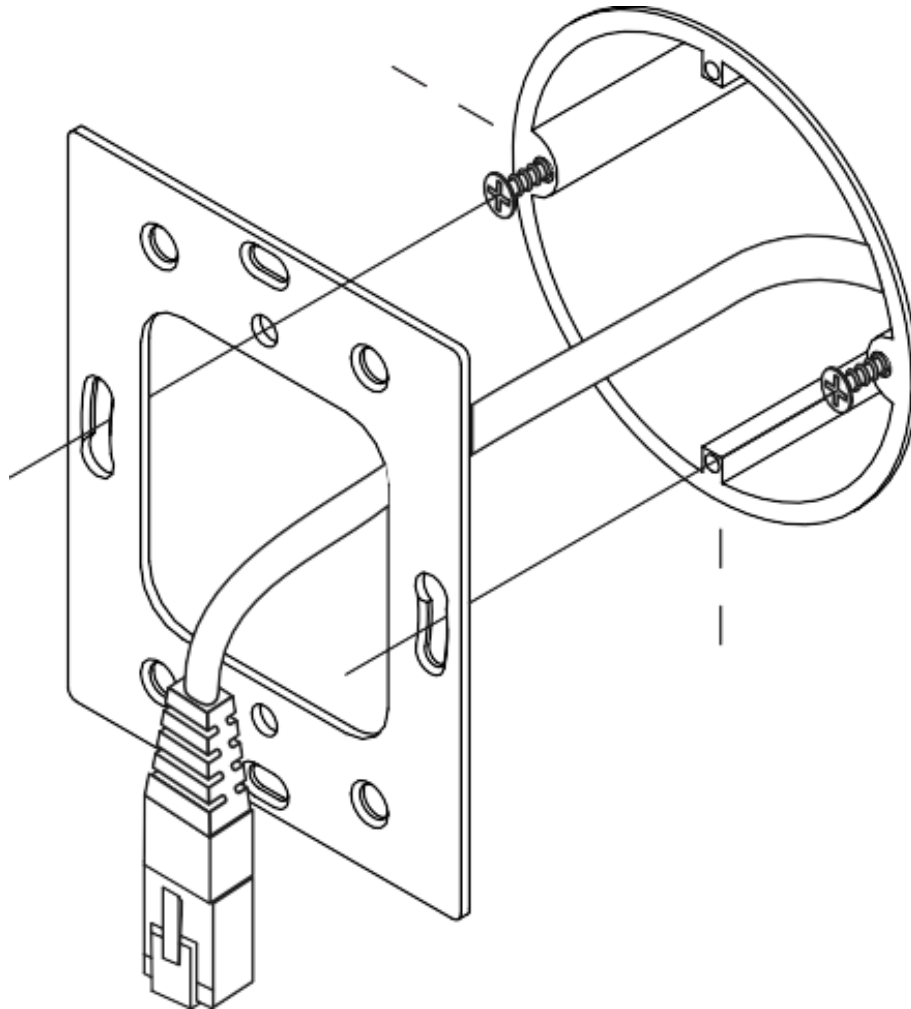
Recommended Heights

The controller is designed to be mounted on a wall in a vertical orientation between 145 and 102 centimeters (65 to 40 inches) above the floor depending on the height of your typical users.



Option 1: EU 1-Gang Box

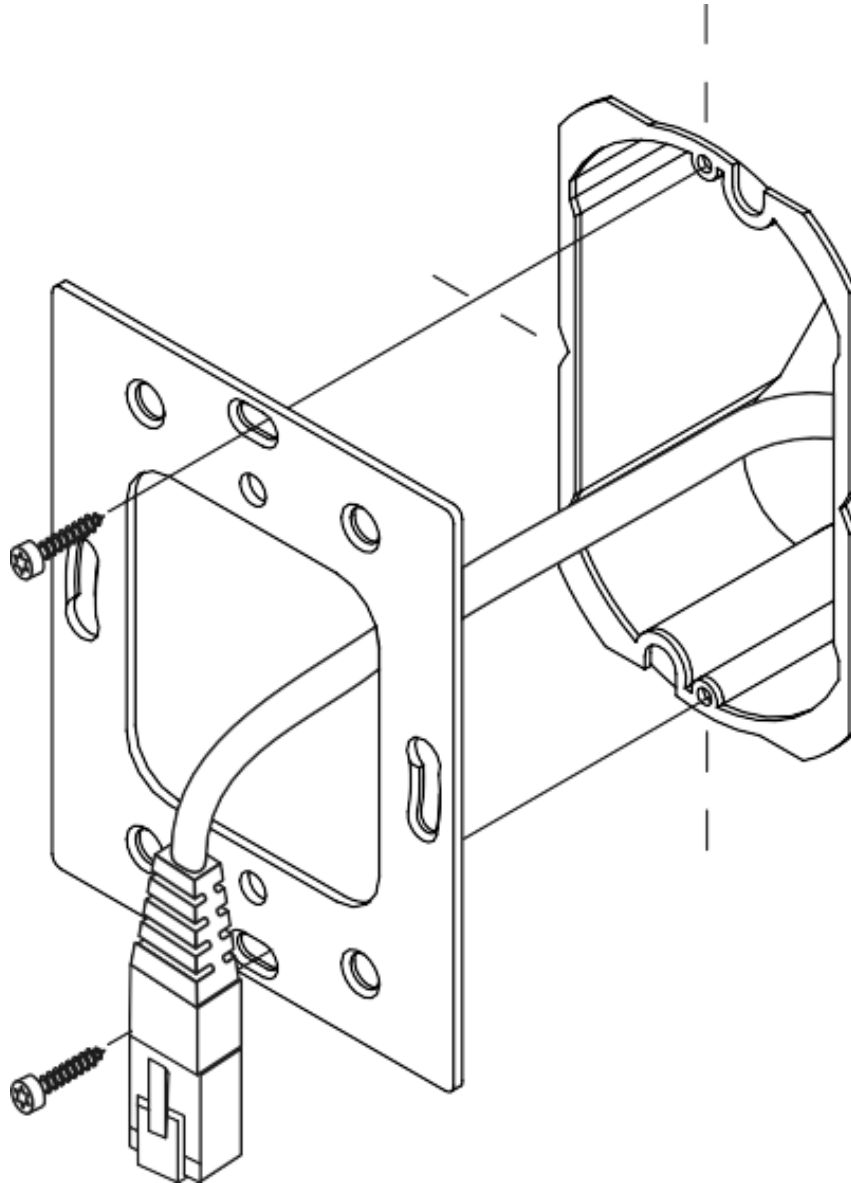
Mount the included plate on an EU 1-gang box



1. Verify the wall is even enough so the standard mounting plate sits flat against it.
2. Position the plate on the electrical box.
3. Use two of the included screws to secure the mounting plate to the gang box.
4. Advance to the Connect the Controller procedure on page 11.

Option 2: DK 1.5M Gang Box

Mount the standard plate on a DK 1.5M gang box, LK FUGA Air only!

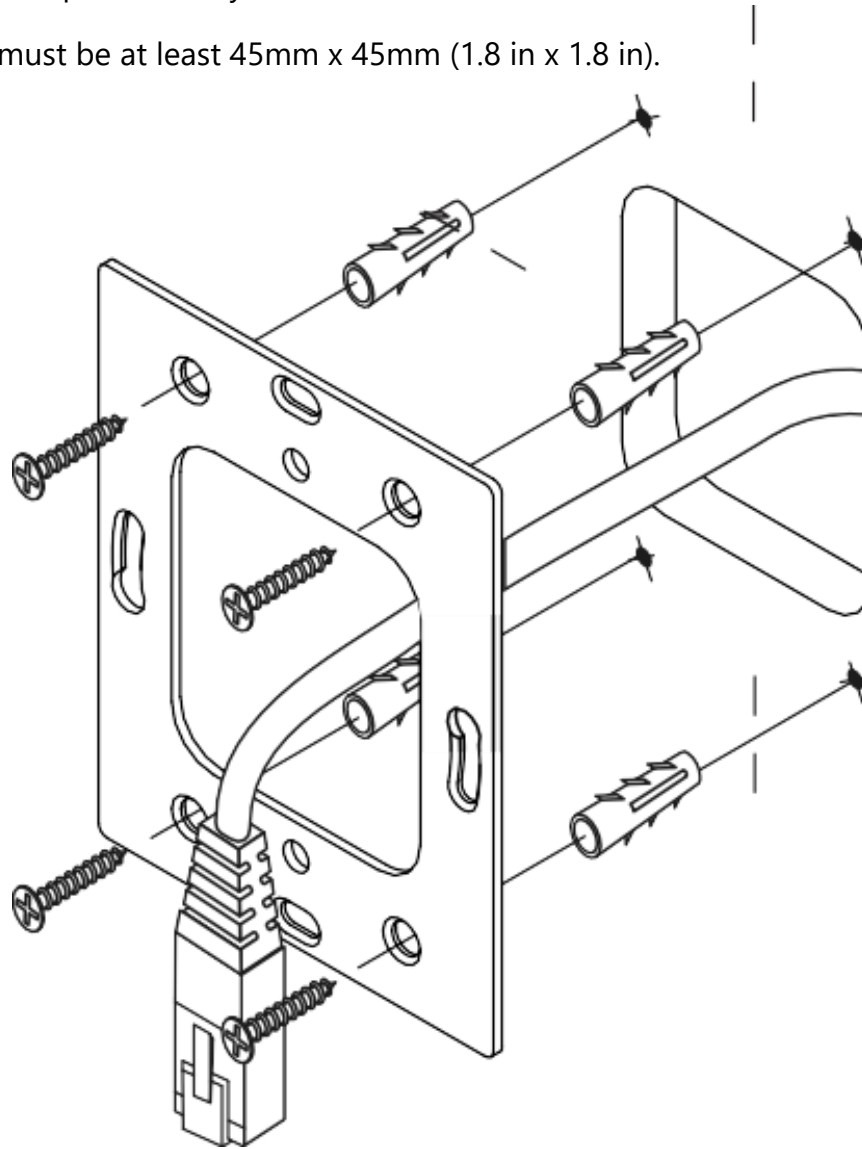


1. Verify the wall is even enough so the mounting plate sits flat against it.
2. Position the plate on the electrical box.
3. Use two of the screws to secure the mounting plate to the gang box.
4. Advance to the Connect the Controller procedure on page 11.

Option 3: Mount Directly on the Wall

Mount the standard plate directly to a vertical wall surface.

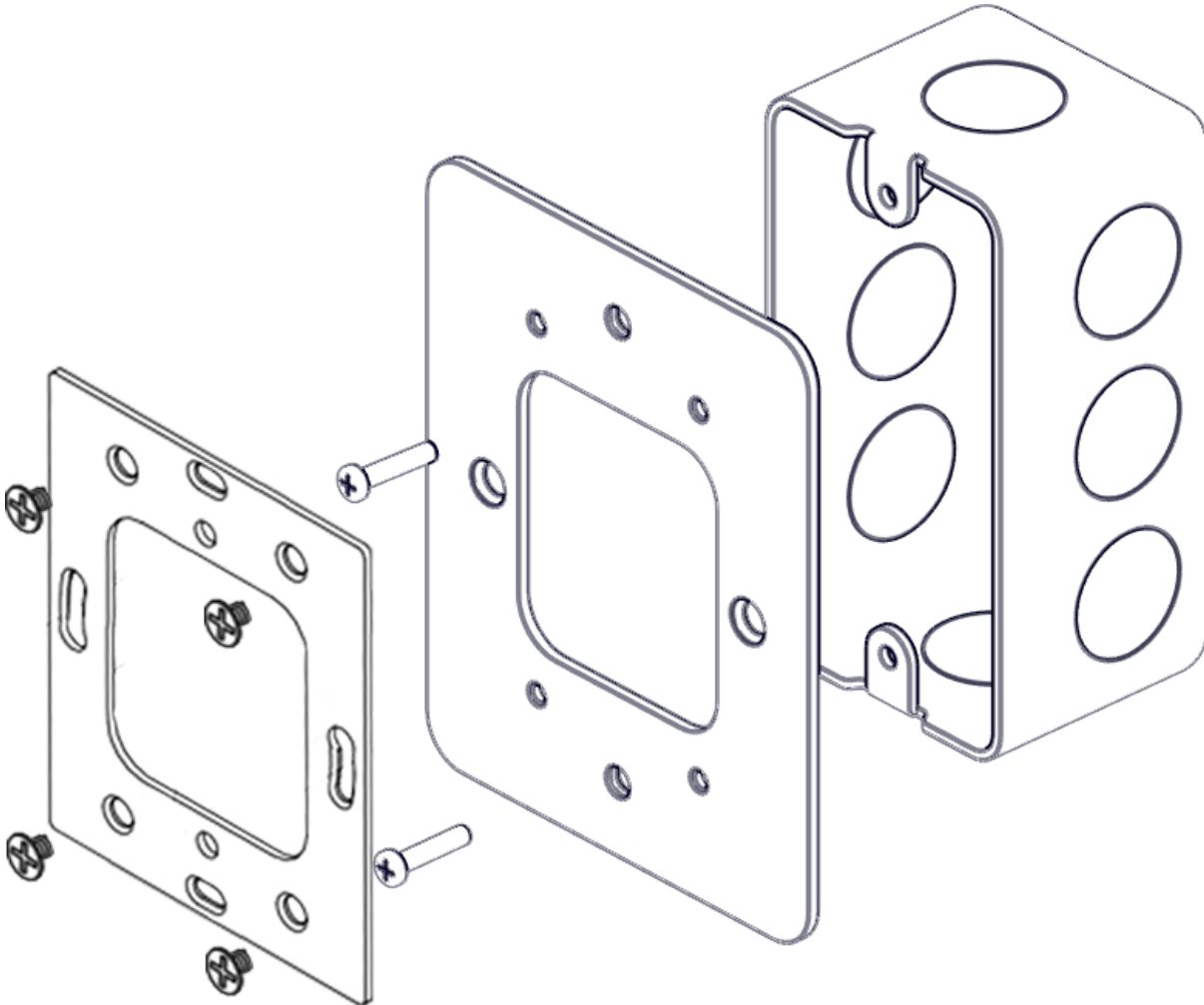
The wall cutout must be at least 45mm x 45mm (1.8 in x 1.8 in).



1. Verify the wall is even enough so the mounting plate sits flat against it.
2. Place the plate against the wall on the mounting site. Verify the plate is level.
3. Mark the center of the plate's 4 Wall Mount holes.
4. Remove the plate.
5. Drill the holes and insert any required wall plugs.
6. Use the 4 included screws or another appropriate fastener type to secure the mounting plate to the wall.
7. Advance to the Connect the Controller procedure on page 11.

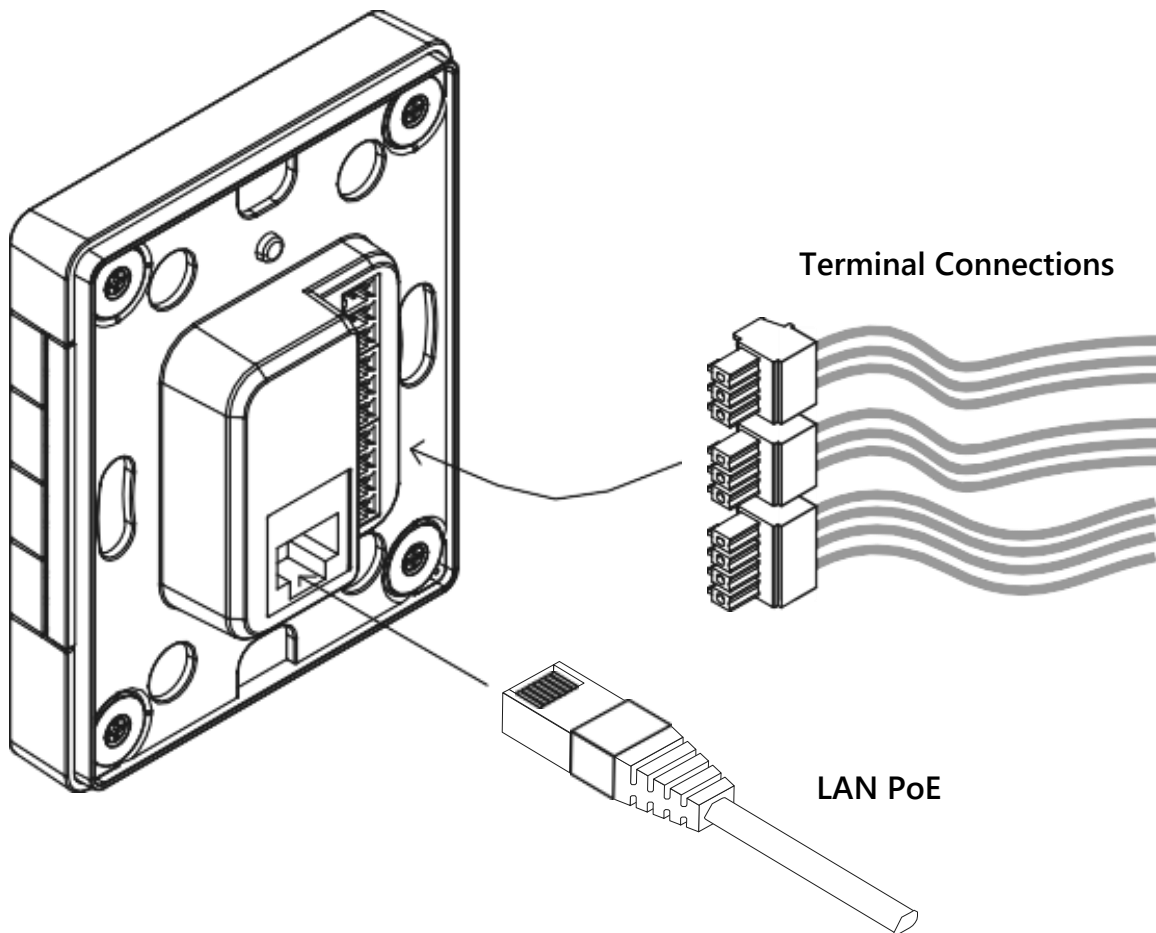
Option 4: Mount to a US 1-Gang Box

Mount the US plate on a US 1-gang box.



1. Verify the wall is even enough so the mounting plate sits flat against it.
2. Position the US 1-gang mounting plate on the electrical box.
3. Use two of the included screws to secure the mounting plate to the gang box.
4. Position the standard mounting plate on the US 1-gang mounting plate.
5. Use four of the included screws to secure the standard mounting plate to the US 1-gang mounting plate.
6. Advance to the Connect the Controller procedure on page 11.

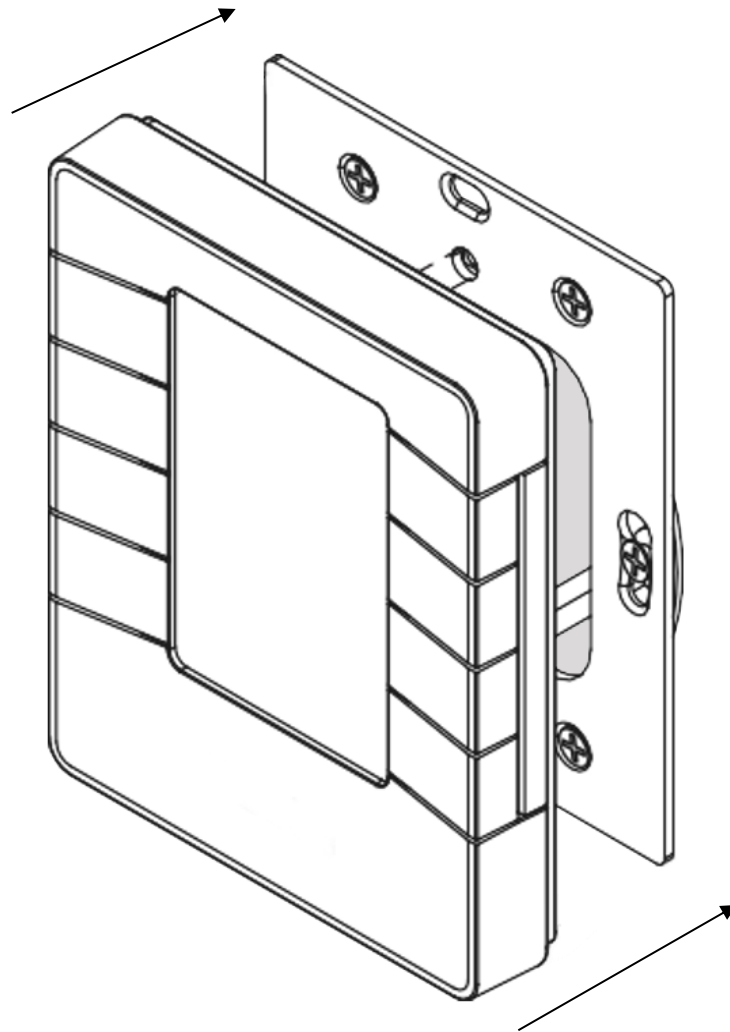
Connect the Controller



1. Connect the Power over Ethernet (PoE) cable to the controller's RJ-45 Network (LAN) port. This is required to power the controller and to enable all LAN functions.
 - **Reminder** Use an IEE802.3-compliant PoE power supply or switch. PoE injector not included.
 - During a normal power-up cycle, the e-ink display of a factory-configured controller shows a "LOADING..." message, and the top-left LED will blink white on and off.
 - The port's LED indicator visual outputs are described on page 19.
2. Make any required system terminal connections with the controller.
 - See the Ports appendix for details on port functionality. Page 16.

Attach the Controller

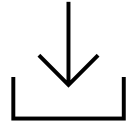
Attach the controller to the installed mounting plate using the four magnets on the back of the control body.



1. Position the controller on the plate.
 - a. The magnets will adhere the controller to the mounting plate.
2. Check the alignment of the controller and adjust it by hand as needed.

Detaching: To detach the controller, use both hands to grasp the controller on each side. Pull it straight out from the wall, exercising caution to protect the connected LAN ethernet cable and any terminal connections.

Controller Setup



Download Biamp Project Designer Software

Project Designer provides drag-and-drop functionality for configuring the controller's graphical user interface (GUI) and hardware functions. See the next page for specifics.

Project Designer also provides the following:

- An extensive driver library for incorporating Biamp and third-party devices in the AV system.
- Automated generation of project documentation.

Download Site

The software can be downloaded from Biamp.com.

- Click here: [Biamp Project Designer](#)

Support Articles

Technical support articles for Project Designer can be found on Biamp's Cornerstone knowledgebase support site.

- Click Here: [Biamp Control - Biamp Cornerstone](#)

Training

An online course covering Optimized Control Design for Impera systems can be registered for on Biamp's training website.

- Click here: [Biamp Training - InPerson and Online Training, Certification Courses](#)
 - Look under the "Impera Learning Path" section.

Configure the Controller

1. Use the Biamp Project Designer software to create a configuration file for the controller and the AV system it will control.

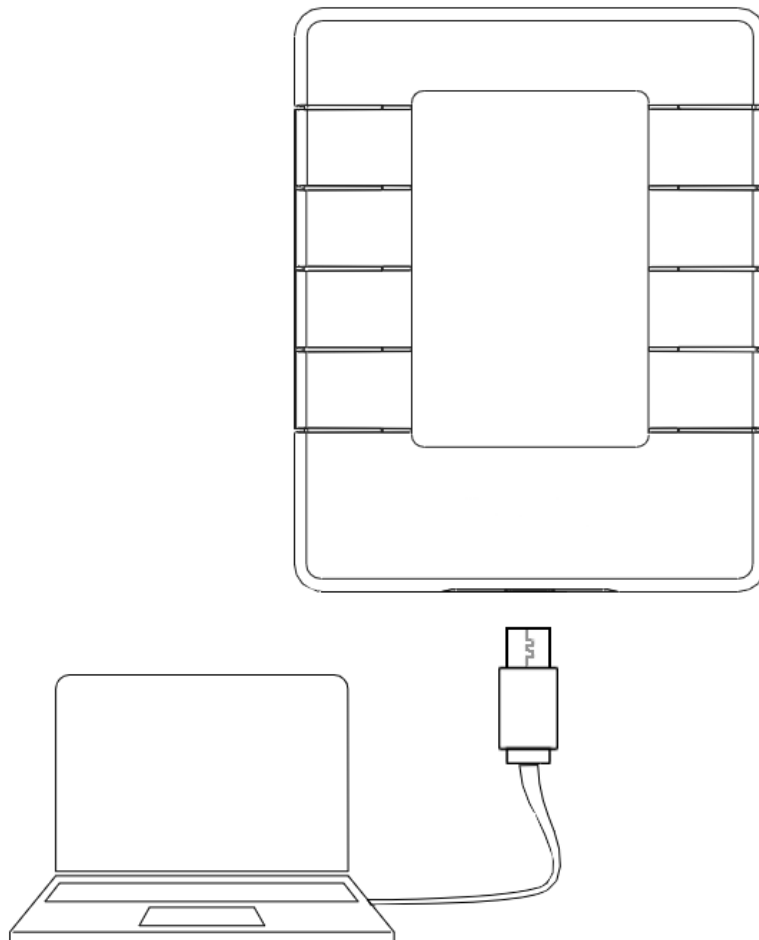
Controller Configuration

- Set up the graphical user interface on the controller e-ink display.
- Assign functions to the hardware buttons.
- Assign any indication signal outputs to the LED indicators on the buttons.

System Configuration

- Configure connected AV devices.

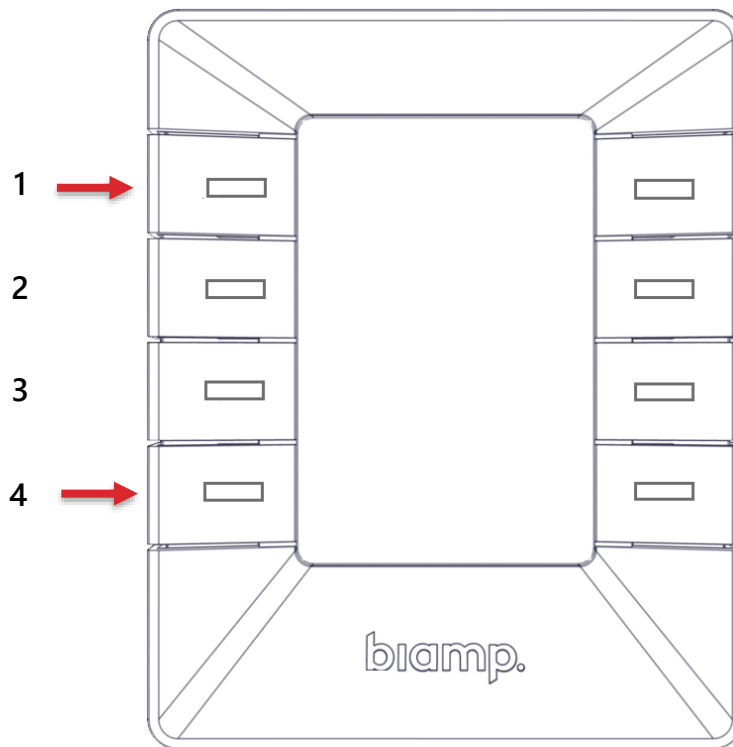
2. Upload the Project configuration file to the controller through the Controller's mini-USB port.



Operations Notes

Restoring to Factory Settings

This deletes the uploaded configuration file and network settings, restoring the controller to its original factory settings. This does not affect the firmware of the controller.

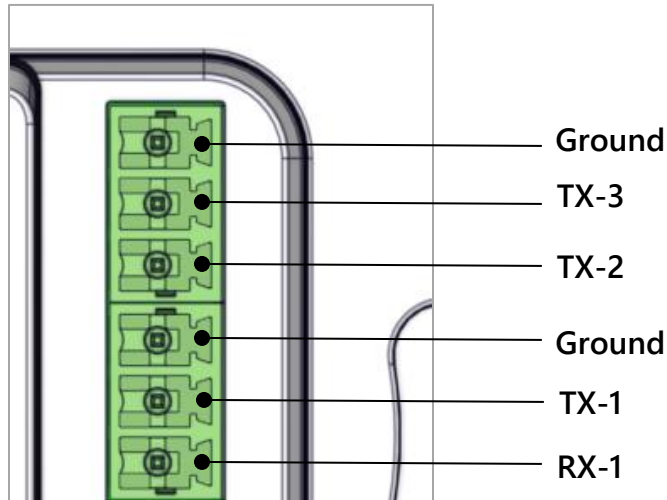


1. Remove all PoE/USB power.
2. Press and hold buttons 1 and 4 and apply power.
 - Continue holding the buttons while each of the LED indicators flash until LEDs 1, 2, and 3 begin flashing red.
3. After the reboot completes, LED indicators 1, 2, and 3 will continue flashing red. The unit has been reset to its factory settings.

Appendix: Ports Functions

RS232 / IR Ports

The TX and RX terminals can be configured as either RS-232 or IR emitter ports using the Biamp Project Designer software.

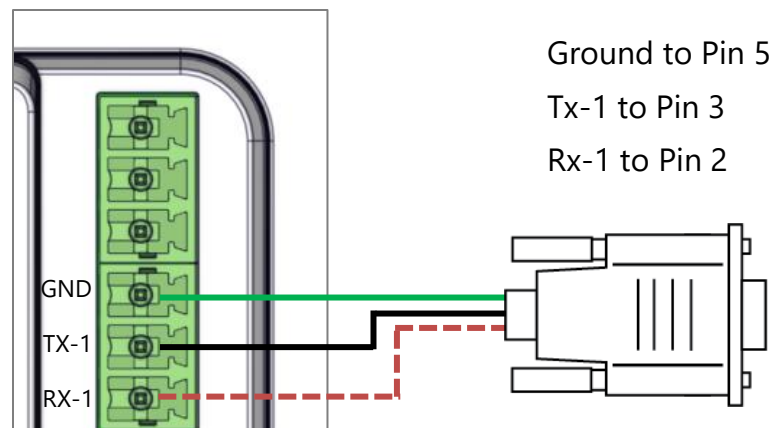


One-Way Communications: The TX-3 and TX-2 terminals are unidirectional transmit ports.

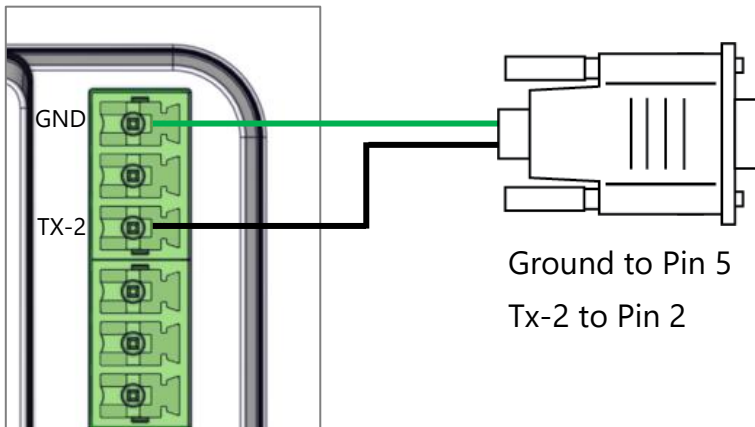
Two-Way Communications: The TX-1 and RX-1 terminals make up a bidirectional transmit and receive port. This port can be connected to devices requiring a reply function such as projectors.

Connection Configurations

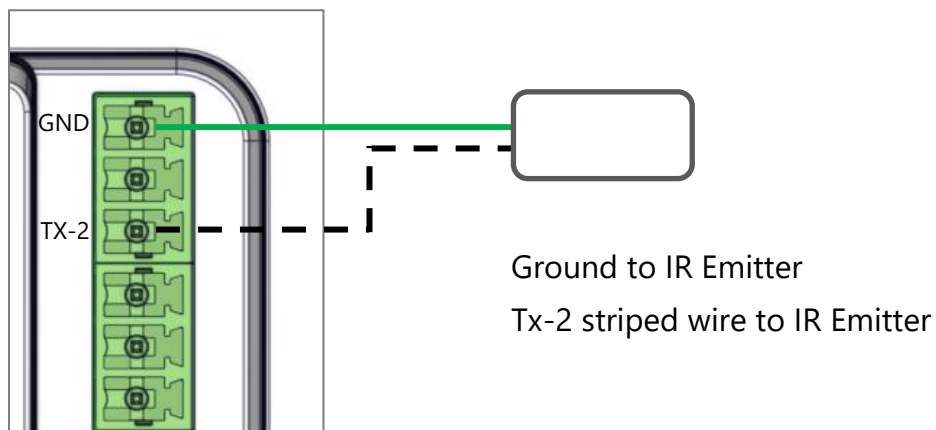
Bidirectional RS232 communications example.



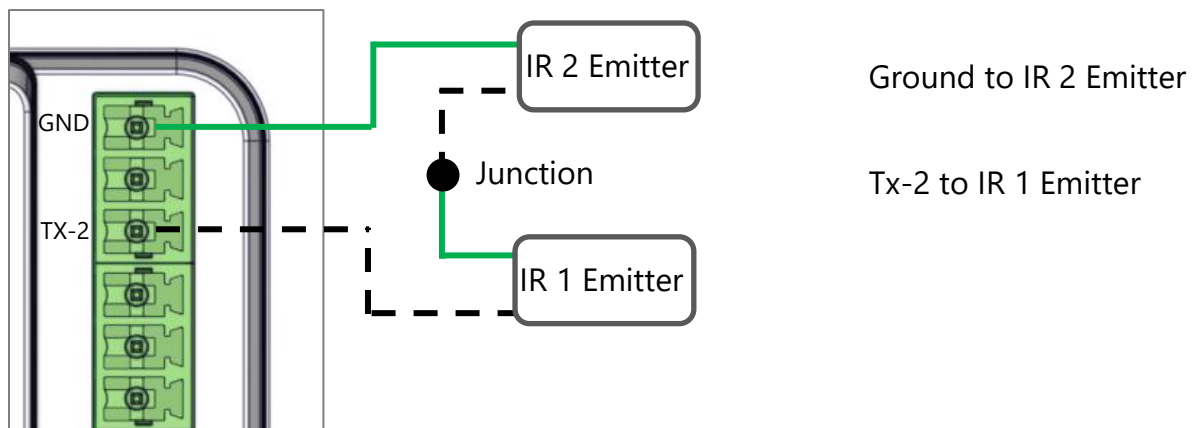
RS-232 as a unidirectional transmit port.



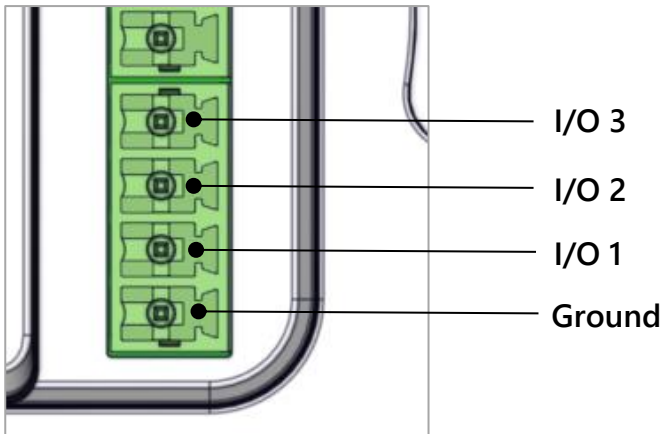
Single IR Port unidirectional transmit



Dual IR Port



Input / Output Ports (I/O)



The controller has 3 general ports each of which can be configured as either output or input. Each of these I/O ports is available for connection to devices such as:

- A PIR movement sensor
- A keyboard lock
- Relays
- Other compatible uses

Potential: These ports are not potential-free. External relays may be needed to prevent ground loops depending on the application.

Outputs:

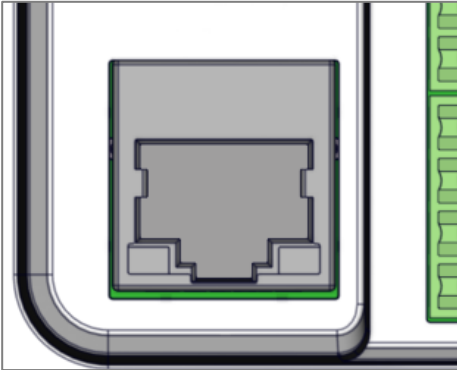
- When used as outputs, the I/O ports are active low.
- When activated, the I/O ports are tied to GND through a FET transistor.
 - Also known as an open drain or collector function.
- Each I/O can draw up to 24VDC/500mA.

Inputs: When used as inputs, the applied voltage must be below 1 VDC to be accepted as LOW, and above 4 VDC (but below 24 VDC) to be accepted as HIGH. The inputs are default HIGH and must be connected to a ground to change state.

Ethernet Port (LAN)

RJ-45 Network (LAN) connector with PoE functionality. Used for:

- Power over Ethernet
- Configuring and controlling third-party devices over a network.



Port LED indicators: The yellow LED indicates the link status and the green LED the link speed.

LED Color	Light Off	Light On	Light Blinking
Yellow	No Link	Link	Activity
Green	10 Mbit	100 Mbit	

Power over Ethernet (PoE)

This port provides power over Ethernet to the controller.

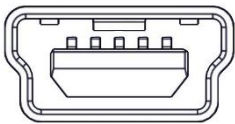
Powering the controller requires one of the following

- A PoE-enabled switch compliant with an IEE802.3
- A PoE power injector compliant with IEE802.3

LAN Networking Features

- **DHCP client** – Obtain a network IP address from a DHCP server
- **HTTPS client** – Control third-party devices through HTTPS
- **IGMP v2** – Filter out unneeded multicast network traffic
- **NTP client** – Obtain a real-time from an NTP server
- **SMTP client** – Send emails through an SMTP server
- **Telnet client** – Controls third-party devices through Telnet
- **TCP server** – Filter out unneeded multicast network traffic
- **TCP client** – Filter out unneeded multicast network traffic
- **UDP server** – Controlled by third-party devices through UDP protocol
- **UDP client** – Control third-party devices using UDP protocol

Mini USB 5P



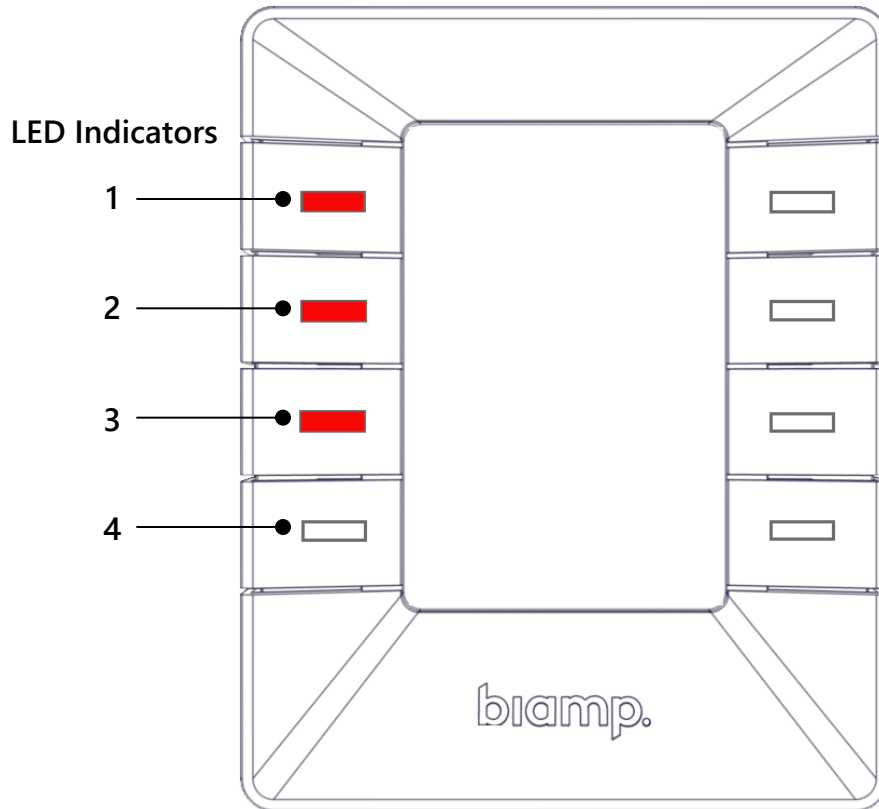
The mini USB port is only used for uploading configuration files to the controller. It cannot be used as a connection point to devices controlled by the controller.

Power:

- The controller can be powered using this port while uploading a configuration file.
- Uploads can also be safely performed using this port while the controller is connected to a LAN ethernet cable that is supplying power.

Appendix: Error and Restore Indicators





The LEDs embedded in buttons 1 – 4 on the front left side of the controller flash error codes in the event of a system fault or a reset to the factory default settings.











Continued on the next page





LED Pattern	Error
1. Flashing 2. Flashing 3. Flashing 4. Off	No Biamp Project Designer configuration file has been found on the controller or the controller is unable to start the configuration file.
Solutions	
<ul style="list-style-type: none"> • Attempt to upload the project to the controller again. • Alternatively, there may be a problem with the uploaded project. Attempt to upload an empty project to see if the controller works with it. 	

LED Pattern	Error
1. Flashing 2. Flashing 3. Off 4. Off	An unexpected error has occurred.
Solutions	
<ul style="list-style-type: none"> • Power cycle: Turn off power to the controller for a minimum of 20 seconds. Then repower the controller. • If the power cycle option fails, you may restore the controller to its factory settings. See the Restoring factory settings indicator description on page 24. 	

LED Pattern	Error
1.  Off 2.  Flashing 3.  Flashing 4.  Off	No contact with the Biamp extension unit.
Solutions	
<ul style="list-style-type: none"> • Verify that the serial number used in Project Designer matches the Biamp extension unit. • Check the network or RS-232 connection from the Controller to the Biamp extension unit. 	

LED Pattern	Error
1.  Off 2.  Flashing 3.  Flashing 4.  Flashing	The wrong firmware version is loaded in the Biamp extension unit.
Solution	
<ul style="list-style-type: none"> • Upgrade the Biamp extension unit's firmware. Connect the unit to a PC running Project Designer and follow the instructions. 	

LED Pattern	Error
1.  Off 2.  Off 3.  Flashing 4.  Off	Serial number error.
Solutions	
<ul style="list-style-type: none"> Return the controller to Biamp or your audio / visual dealer for replacement or repair. 	

LED Pattern	Restore Operation
1.  Flashing 2.  Off 3.  Off 4.  Flashing	The controller is resetting to the factory settings.
Solution	
<ul style="list-style-type: none"> This should only be done to return functionality to the Controller in the event it locks up and displays the "unexpected error" indication. To initiate the restore operation, push buttons 1 and 4 while the controller is powered. 	

LED Patterns		Error
Off The programmed Off button is flashing once per second .	Or if no Off button is programmed and all indicators are flashing once per second: 1. Flashing 5. 2. Flashing 6. 3. Flashing 7. 4. Flashing 8.	Unable to connect to TCP device.
Solution		
<ul style="list-style-type: none"> • Verify the TCP device in the configuration project file is active and responding on the specified IP 		

LED Patterns		Error
Off The programmed Off button is flashing 4 times per second .	Or if no Off button is programmed and all indicators are flashing 4 times per second: 1. Flashing 5. 2. Flashing 6. 3. Flashing 7. 4. Flashing 8.	Incorrect password on a configured LAN device.
Solution		
<ul style="list-style-type: none"> • Verify the password is entered correctly in Project Designer for all LAN devices that require a password. 		

Appendix: Additional Safety and Compliance

The logos and legends on this page have been included in this manual due to the small size of the device.

- Please see the label on the back of the device for the other logos and legends.
- Biamp’s universal safety and compliance statements and marks are available in the Safety, Compliance, and Warranty Guide included with this device.

Logos and Legends



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.



File Number: E305194

CAN ICES-3 (A)/NMB-3(A)





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Safety & Compliance: biamp.com/compliance