

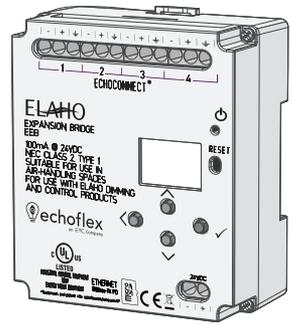
Echoflex Solutions Installation Guide

Elaho Expansion Bridge

Overview

The Elaho Expansion Bridge provides:

- control from the Unison Paradigm architectural control system of the Elaho system; allowing Paradigm control of Elaho presets, zones, space combine, and space lockout
- the ability to combine up to four individual Elaho segments (systems) into a larger system, enabling more control stations, responsive controls, and power and data controllers to be utilized within the Elaho system
- network connectivity to an Elaho system from the ElahoAccess App by connecting to a third-party wireless access point



Features

The Expansion Bridge is capable of supporting up to four individual Elaho segments, each supporting an Elaho power supply allowing for up to 16 power and data controllers and up to 16 Elaho stations or responsive controls. Expansion Bridge integration enables Elaho segments to share spaces, presets, and zones.



Note: *The Expansion Bridge does not add additional spaces, presets, or zones to the Elaho system totals.*

The Expansion Bridge features an onboard Ethernet port (RJ45 style receptacle) for connection to Paradigm architectural control systems and connection to an Ethernet Wi-Fi network for configuration using the Wi-Fi features of the ElahoAccess App.

The four-button user interface and display allow on board IP address configuration and connection status, as well as menu navigation for application firmware version and update and restore default settings.

The Expansion Bridge is designed for installation on DIN rail.



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Accessory Kits

Echoflex Solutions offers a Low Voltage DIN rail Cover Kit (part number 7186A1218) that allows installation of the Expansion Bridge to any standard 4" (10.16 cm) junction box (provided by others). Contact Echoflex Solutions for details.

Specification



Note: *Installation must follow all national and local codes for electrical equipment.*

For use with Echoflex Solutions dimming and relay products.

Ambient Environment

For indoor, commercial controls use only. Supports plenum rating.

- Operating temperature 0-50°C, 5-95% non-condensing humidity.

Compliance

- UL/cUL Listed to UL 508, UL 916 and CSA C22.2 No. 14; additionally rated for plenum spaces under UL 2043
- CE compliant with EN55103:2009 for professional lighting control
- WEEE and RoHS compliant
- FCC compliant for conducted and radiated emissions

Electrical Requirements

The Expansion Bridge requires external power provided to the unit by an external 24 VDC (Class 2) power supply to the provided input connector or Power over Ethernet (PoE 802.3af) to the RJ45 receptacle on the unit. When both 24 VDC auxiliary power and PoE are present, auxiliary power will be the preferred input.



Note: *NEC Class 2 product are to be wired in accordance with NEC Article 725 and local jurisdiction requirements. All power and control wiring should be installed and terminated by a qualified installer and should follow standard wiring installation practices.*

24 VDC

This connection is provided on a two-position terminal, labeled 24 VDC, and accepts 16 AWG (1.5 mm²) wires (typically black and red wire pair).

Power over Ethernet

This RJ45 connection is provided on the bottom left edge of the device.

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EchoConnect and Ethernet Requirements

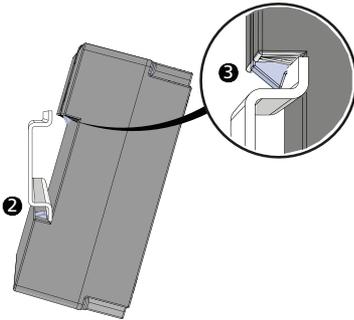
The Expansion Bridge requires EchoConnect, Belden 8471 (or equivalent) plus one ESD ground wire, supporting data and control to each attached EchoConnect station bus. Termination is available for up to four EchoConnect segments. Reference [Electrical Requirements](#) for more information about powering the Expansion Bridge.

The Expansion Bridge is also designed for communication over Ethernet with a Paradigm architectural control system or wireless system for connection to the ElahoAccess App.

Ethernet connects to the provided RJ45 receptacle and complies with the EIA/TIA standard. A network switch (if desired) and wireless access point are required (not provided).

Installation

Install to DIN rail



1. Ensure the section of DIN rail to be used is mounted securely according to the manufacturer's requirements. (DIN rail is provided by others.)
2. Hook the bottom of the Expansion Bridge under the lower DIN rail edge as shown.
3. Pivot the bridge up and depress until the top clip on the unit seats completely onto the DIN rail.

*The structural support for the DIN rail has been removed from this graphic for clarity of the installation procedure.

Connect Wiring

EchoConnect

EchoConnect terminations require Belden 8471 (or equivalent 24-12 AWG wire), plus one 14 AWG (2.5 mm²) ESD ground wire between each segment of EchoConnect station bus and the Expansion Bridge.



1. Ensure the Elaho station power supplies on the connected segments are powered off.
2. Strip 5/16" (8 mm) of insulation from the end of the Belden 8471 (or equivalent) wires and one ESD ground wire.
3. Loosen the three screw terminals on the EchoConnect segment.

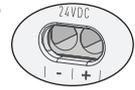
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4. Insert the black wire (typical) into the negative (-) terminal and tighten the screw firmly onto the wire.
5. Insert the white wire (typical) into the positive (+) terminal and tighten the screw firmly onto the wire.
6. Insert the ESD ground wire into the last terminal (identified with a ground symbol) and tighten the screw firmly onto the wire.
7. Repeat for any additional segments.

24 VDC

24 VDC is required to power the interface. Two terminals are provided and accept 16 AWG (1.5 mm²) wires.



1. Strip 5/16" (8 mm) of insulation from the bare end of each wire.
2. Loosen the two screw terminals on the 24 VDC terminals.
3. Insert the negative (or common) wire (black wire typical) into the negative (-) terminal and tighten the screw firmly onto the wire.
4. Insert the positive (+) wire (red wire typical) into the positive (+) terminal and tighten the screw firmly onto the wire.

Ethernet

An RJ45 receptacle provided for Ethernet connection is located on the bottom of the interface. This connection complies with the EIA/TIA standard.

Power Up

Once the Expansion Bridge is connected to the EchoConnect station bus and power is applied, the power LED will indicate steady blue and the display will power on.

User Interface

Display and Buttons

On initial power up, the display will show Expansion Bridge (which is the device name), its default IP address (10.101.19.101), and "Connected to: *Processor Name*" displays when the device is connected to a Paradigm system, alternatively "Not Connected" displays when no active connection is found.

The display automatically sleeps after two minutes of inactivity and wakes again with any button press.

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Navigation Buttons

Buttons are provided to navigate the Expansion Bridge menu and edit selected fields.

- \wedge (up) and \vee (down) navigate the menu, or when a parameter selection is made, press (or press and hold) to increase / decrease the value
- $<$ (back) navigates to the previous menu selection
- \checkmark (enter) commits a selection or edit

Reset Power

Using a ballpoint pen, press the **[Reset]** button to reset the Expansion Bridge.

Menu

When the Expansion Bridge is connected to the EchoConnect bus, its connection status displays as "E: \checkmark " on the bottom of the display (for each connected segment) when in the main menu.

About

The "About" menu provides read-only information regarding the currently installed software on the Expansion Bridge. Pressing the \checkmark (enter) button navigates to the next screen, then returns to the main menu.

Setup

IP Settings

Configure the network interface for the Expansion Bridge from the IP Settings menu.

Automatic Mode

When Automatic IP mode is selected, all other IP address fields are disabled. In "Automatic" IP mode, the Expansion Bridge will receive an IP Address when its Ethernet interface is connected to a network with a DHCP Server. A reboot is required after changing the IP address mode.

Manual Mode

When Manual IP mode is selected, the following settings are configurable:

- IP Address: by default, the address is 10.101.19.101
- Subnet: by default, the subnet mask is 255.255.0.0.

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- Gateway: by default, this is blank. A gateway address is only required when the Expansion Bridge is used on a routed network. In this case, this address should match the IP Address of the router or gateway. When not used on a routed network, leave this setting at its default.

Use the ✓ button to select an option, and the Λ and v navigation buttons to set each octet of the selection. A reboot is required after changing the IP address.

Logging Options

Send event messages to a logging server by enabling Syslog and identifying the Syslog server IP address.

Syslog Enabled / Disabled

Select Syslog Enabled to send messages to the configured Syslog server. Navigate to the Logging Options menu, the selected menu item will be Syslog Enabled/Disabled.

Press the ✓ button to toggle the setting between Enabled and Disabled until your desired setting is displayed. Press v to navigate to Syslog Address or press the < button to exit the menu.

Syslog Address

Configure the IP address to receive Syslog event messages. This defaults to 10.101.50.60, the default IP address for ETC's Net3 Conductor. Navigate to Syslog Address found in the Logging Options menu. The first octet of the IP address is selected for edit.

Use the Λ and v buttons to change the value, and press ✓ to set the selection. Press the < button to exit the menu. A reboot is required after changing the Syslog IP Address.

File Operations

The File Operations menu provides access to restore the Expansion Bridge to its factory defaults and update the device firmware.

Restore Defaults

To restore the Expansion Bridge to its factory defaults, returning the unit to Automatic IP addressing mode, Use the navigation buttons to navigate and select "Restore Defaults" from the menu. A message will prompt confirmation of the Restore Defaults action. Select "Ok". The unit will reboot.

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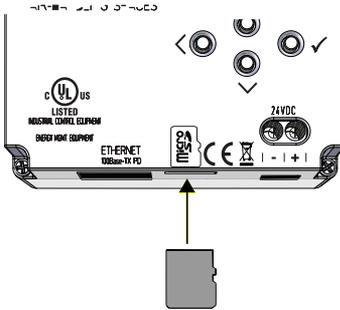
Update Firmware

1. To update the Expansion Bridge firmware, you must first prepare a compatible microSD card with the firmware update file. The firmware update file, labeled eeb_fw.efw, must reside on the root of the media.



Note: *Compatible cards include SDHC microSD media up to 32GB, formatted to FAT32. SDXC is not compatible.*

2. Insert the compatible microSD media into the card slot receptacle on the bottom of the Expansion Bridge.



Note: *The microSD card must be installed into the card slot with notched edge directed right.*

3. Use the navigation buttons to navigate and select "Update Firmware" from the menu. A message will prompt, "Insert Media and do not remove until complete. Reboot Now."
4. Press the ✓(enter) button to begin the firmware update process. The unit will update and reboot when the process is complete.
5. Use the navigation buttons to navigate to the "About" menu to confirm the new installed firmware version.

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Configuration

Configuration of the Expansion Bridge is accomplished using the ElahoAccess App or Unison Paradigm LightDesigner software. Reference the integrated help system for the configuration tool for details about configurable device parameters and actions available.

Remove the Bridge from DIN rail

If for any reason you need to remove the Expansion Bridge from the DIN rail, follow these instructions.

1. Power off Elaho station power supplies on all connected Elaho segments.
2. If 24 VDC is still present, power off the auxiliary power source.
3. Disconnect all wiring and cap off as necessary.
4. Insert a flat blade screwdriver into the clip on top of the bridge, slide it straight up, then pivot the top of the bridge off of the DIN rail.