

# Echoflex Solutions Installation Guide

## Elaho Integration Interface

---

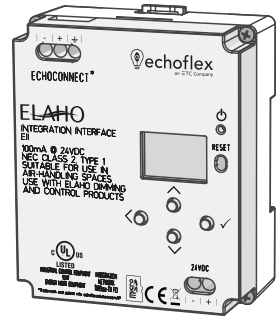
### Overview

The Elaho Integration Interface provides seamless integration between the Elaho control system and a third party AV system for simultaneous lighting control with audio and video presets.

The Integration Interface provides simple bidirectional communication of User Datagram Protocol (UDP) string commands for control and status of presets, sequences, and zones in Elaho spaces.

Supports the following control and status strings:

- Preset Activate
- Space Off
- Sequence Activate
- Sequence Deactivate
- Zone Intensity



### Features

The Integration Interface features an onboard Ethernet port (RJ45 style receptacle) for connection to the integration network. The four-button user interface and display allow onboard setup of subscriber address, IP address, UDP port, and device security settings, as well as standard menu settings for firmware update, and restore to default settings.

The Integration Interface is designed for installation on DIN rail.

### Accessory Kits

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



# Echoflex Solutions Installation Guide

## Integration Interface

---

### 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; additionally rated for plenum spaces under UL 2043
- RoHS compliant

#### **Electrical Requirements**

The Integration Interface 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 mm<sup>2</sup>) wires (typically black and red wire pair).

#### **Power over Ethernet**

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

#### **Control Wiring Requirements**

The Integration Interface requires EchoConnect, Belden 8471 (or equivalent) plus one ESD ground wire, supporting data and control to the attached EchoConnect station bus. Reference [Electrical Requirements](#) for more information about powering the interface.

The Integration Interface is designed for communication to an integration network supporting UDP string commands. Connect the integration network to the provided RJ45 receptacle.

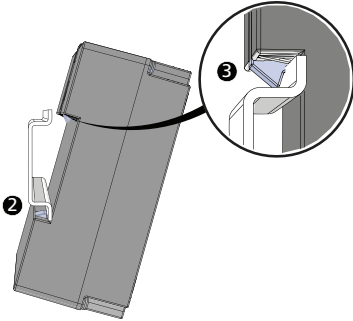
# Echoflex Solutions Installation Guide

## Integration Interface

---

### 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 Integration Interface 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.

#### Remove the Interface from DIN rail

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

1. Disconnect all wiring and cap off as necessary.
2. 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.

### Connect Wiring

#### EchoConnect

EchoConnect terminations require Belden 8471 (or equivalent 24-12 AWG wire), plus one 14 AWG (2.5 mm<sup>2</sup>) ESD ground wire between the segment of EchoConnect station bus and the Integration Interface.



1. Ensure the Elaho station power supply on the connected segment is 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.
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.

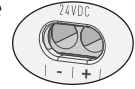
# Echoflex Solutions Installation Guide

## Integration Interface

---

### 24 VDC

24 VDC is required to power the interface. Two terminals are provided and accept 16 AWG (1.5 mm<sup>2</sup>) 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. Connect to the Integration Network.



**Note:** *The Integration Network may differ from any Echoflex Solutions lighting network.*

---

### Power Up

Once the Integration Interface 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 Integration Interface (which is the device name), its default IP address (10.101.19.201), its UDP Receive Port number, and Subscriber security setting.

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

### Navigation Buttons

Buttons are provided to navigate the Integration Interface 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

# Echoflex Solutions Installation Guide

## Integration Interface

---

### Reset Power

Using a ballpoint pen, press the **[Reset]** button to reset the Integration Interface.

### Menu

When the Integration Interface is connected to the bus, its connection status displays as "E:✓" on the bottom of the display when in the main menu.

### About

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

### Setup

#### IP Settings

Configure the network interface for the Integration Interface 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 Integration Interface 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 10.101.19.201
- Subnet: by default, the subnet mask is 255.255.0.0.
- Gateway: by default, this is blank. A gateway address is only required when the Integration Interface 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.

# Echoflex Solutions Installation Guide

## Integration Interface

---

### Interface Config

#### **UDP Port**

The UDP Port number the Integration Interface opens to receive string commands. This defaults to 04703.

Use the ✓ button to select a digit, then use the Λ and V navigation buttons to change the value of the selection. Press the ✓ button to select the next numeral. A reboot is required after changing the UDP Port.

#### **Subscriptions**

Up to two subscribers may be configured to automatically receive a full system sync at startup and updates as system state changes. Subscriber IP address, Port, and End of Message {EOM} character settings are required. EOM settings should be coordinated with the device communicating with the interface; options include carriage return (CR), line feed (LF), carriage return + line feed (CR+LF), line feed + carriage return (LF+CR), and null. CR is the default EOM setting. The last setting in the menu toggles the interface off or on (Disabled/Enabled). Disabled is the default setting; all settings are maintained, but the interface stops sending to that device. If the interface is set to "Subscribers Only", messages from a disabled subscriber will also be ignored.

Use the ✓ button to select an option, and the Λ and V navigation buttons to set each octet of the selection. When setting the EOM and Disabled/Enabled settings, use the ✓ to toggle through the available settings until the desired character is displayed.

#### **Options**

The Interface Config menu also includes an *Options* setting to configure whether only subscriber IP addresses may send string messages. When Subscribers Only is enabled, messages from other IP addresses will be ignored.

Press the ✓ button to toggle the setting between Subscribers Only and All Incoming until your desired setting is displayed. The default setting allows Subscribers Only.

#### **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.

# Echoflex Solutions Installation Guide

## Integration Interface

---

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. Change the default IP address to match a logging server on the Integration Network. 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**

### **Restore Defaults**

To restore the Integration Interface to its factory defaults, returning the unit to Automatic IP addressing mode, the UDP Port number to 04703, clear all Subscribers, reset to Subscribers Only, and Syslog IP Address to 10.101.50.60. 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.

### **Update Firmware**

1. To update the Integration Interface 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 Integration Interface.
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.

# Echoflex Solutions Installation Guide

## Integration Interface

---

### Supported UDP String Commands

---



**Note:** When reviewing the supported commands and responses below, please note the following:

- All command strings must start with E\$, and all responses start with E>
  - The End of Message {EOM} character by default is a carriage return (shown as CR). Other options are available, review the [Subscriptions](#) menu for details
  - Parameters listed with ( ) in the sample commands display the ranges that are compatible for the command
  - Level values are set on a 0-255 scale
  - Timing for Elaho devices are communicated in decimal second values. The accepted range is 0-25.4 seconds. Any numeric value outside of that range will direct output products to use internal default timings.
  - White space must separate individual command parameters.
- 

#### Set Commands

E\$pst act: spc\_num(1-16), pst\_num(1-64), time{EOM}

- For example **E\$pst act: 2, 12, 3.5**{EOM}

E\$off: spc\_num(1-16), time{EOM}

E\$seq act: spc\_num(1-16), seq\_num(1-4){EOM}

E\$seq dact: spc\_num(1-16), seq\_num(1-4){EOM}

E\$zone int: spc\_num(1-16), zn\_num(1-16), level(0-255), time{EOM}

#### Get Commands

E\$pst get: spc\_num(1-16){EOM}

E\$off get: spc\_num(1-16){EOM}

E\$seq get: spc\_num(1-16){EOM}

E\$sync get: spc\_num(0-16){EOM}

- A sync command for space 0 means all spaces.

E\$zone int get: spc\_num(1-16){EOM}

#### Help Command

E\$help{EOM}

- Sending this command prompts the interface to return a list of available commands to the requesting IP address and UDP Port.