

# ECLYPSE Connected Thermostat



## Product Description

The ECLYPSE Connected Thermostat (ECY-STAT) is geared towards new or existing rooftop unit, heatpump unit, fancoil unit and other zone control applications. It features a touchscreen interface, multiple connectivity options (both wired IP and Wi-Fi) for system communication, and *Bluetooth*<sup>®</sup> low energy (BLE) for mobile connectivity.

## General Installation Requirements

For proper installation and subsequent operation of the device, pay special attention to the following recommendations:

- Allow for proper clearance around the device's enclosure and wiring terminals to provide easy access for hardware configuration and maintenance.
- Orient the device with the ventilation slots towards the top to permit proper heat dissipation.
- The device is designed to operate under the following environmental conditions:
  - Operating temperature from 32°F to 104°F (0°C to 40°C)
  - Storage temperature from -4°F to 122°F (-20°C to 50°C)
  - Relative humidity from 0% to 90%, non-condensing.
- Upon unpacking, inspect the contents of the carton for shipping damages. **Do not install a damaged device.**
- Ensure proper ventilation of the device and avoid areas where corroding, deteriorating or explosive vapors, fumes or gases may be present.
- Do not install the device in a location with direct airflow to ensure correct temperature regulation.
- If the device is used and/or installed in a manner not specified by Distech Controls, the functionality and the protection provided by the device may be impaired.
- SELV (Separated Extra Low Voltage) inputs/outputs must be connected to other SELV equipment inputs/outputs.



Any type of modification to any Distech Controls product will void the product's warranty



Take reasonable precautions to prevent electrostatic discharge to the device when installing, servicing or during operation. Discharge accumulated static electricity by touching one's hand to a well-grounded object before working with the device.

## General Wiring Recommendations

- Comply with all network and power supply guidelines outlined in the [Network Guide](#).
- Use the screws, wall anchors, and wire nuts included for wall mounting and wiring.
- All wiring must comply with electrical wiring diagrams as well as national and local electrical codes.
- For an easier installation, a flat style Cat5e cable with a low profile connector is recommended. See Distech Controls Field Device product offerings for more information.

- To connect the wiring to a device, use the terminal connectors. Use a small flat screwdriver to tighten the terminal connector screws once the wires have been inserted (strip length: 0.25" (6 mm), maximum tightening torque 0,4 Nm (3.45 in-lb)).
- Always use unshielded cabling with a minimum Category 5 (CAT5) cable for ethernet communications.
- Keep wiring separate according to their function and purpose to avoid any ambient noise transmission to other wires. Use strapping to keep these wires separated. For example, keep power, hazardous voltage, SELV, PELV, network, and input wiring separate from each other.
- Do not connect the universal inputs, analog/digital outputs or common terminals to earth or chassis ground (unless stated otherwise).
- Keep input and output wiring in conduits, trays or close to the building frame if possible.
- When connecting one wire to a controller's terminal block clamping cage (pole), the wire must be between 22 and 16 gauge (0.33 and 1.3mm<sup>2</sup> cross-sectional area). When connecting two wires to a controller's terminal block clamping cage, both wires must be the same thickness, both wires must be between 22 and 18 gauge (0.33 and 0.82mm<sup>2</sup> cross-sectional area), and both wires must be the same type (solid or stranded). Twist the wires together and insert them into the controller's terminal block clamping cage. For any other wiring combination (mixed wire thickness, mixed solid and stranded conductors, more than three wires, wire thickness is out of range), twist the wires together and use a wire nut and a pig tail to connect to the controller's terminal block connector as show below.



All wiring recommendations must be followed as incorrect wiring, or a short circuit can permanently damage the device.

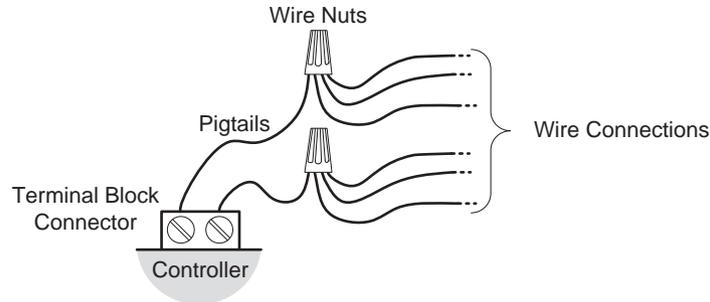


Figure 1: Using a Wire Nut and Pigtail to Wire the Controller

## Dimensions

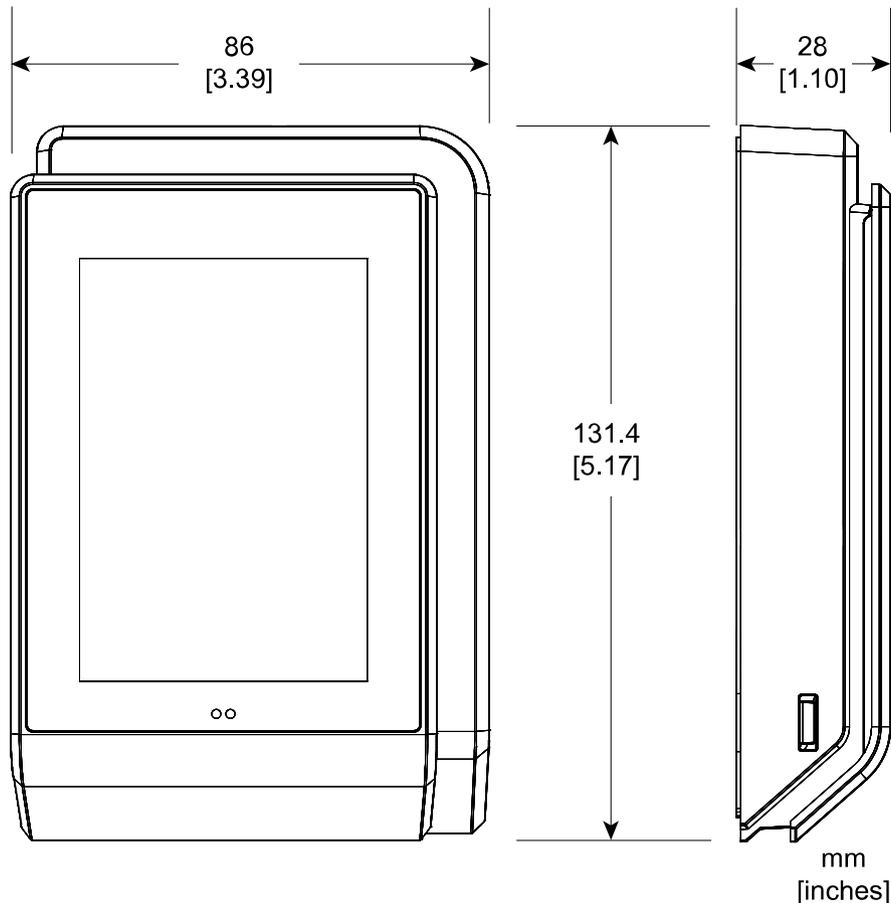


Figure 2: ECY-STAT Dimensions

# Mounting Instructions

The ECY-STAT has been specially designed for easy installation. However, certain conditions apply when choosing a suitable location for the device:

- Install the device in a location of average temperature and approximately 1.5 m (5 ft) above the floor
- The device should be installed approximately 15cm (6") from a corner to provide sufficient access to the faceplate release tabs.
- The device should not be installed on an exterior wall.
- The device should not be installed near a heat source.
- The device should not be installed near an air discharge grill.
- The device should not be installed in a place where it can be affected by the sun or direct air currents.
- Install the device in an area that provides proper device ventilation. Nothing must restrain air circulation to the device.



The ECY-STAT has not been designed for outdoor use.

Mounting hardware is provided with the device for installation on drywall or on an electrical junction box.

## ECY-STAT Disassembly

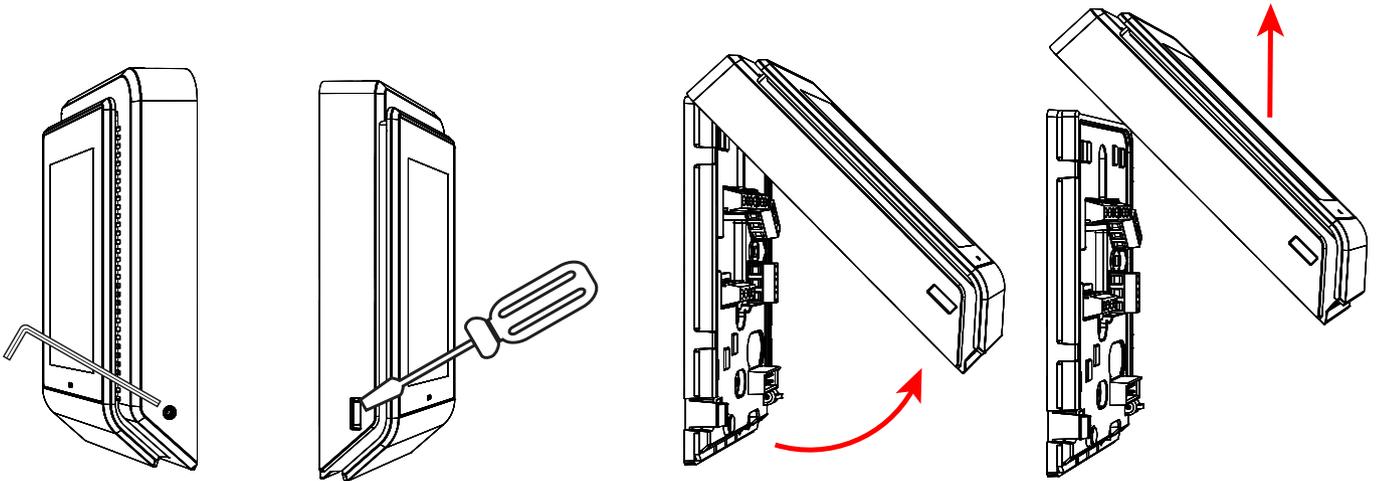


Table 1: ECY-STAT disassembly

## Electrical Junction Box Installation Procedure

The ECY-STAT can be mounted in most American, European or Asian style electrical junction box using screws.

1. Remove the front cover of the device:
  - Remove the security screw
  - Using an appropriately sized tool, press in the release tab on the side of the device and pull the front cover out from the bottom.
2. Pull all cables 15cm (6") out of the wall and insert them through the central hole of the backplate.
3. Ensure that all wires are well and securely placed. See [I/O Identification \[pg. 5\]](#) for I/O designations.
4. Make sure that the mounting surface is flat and clean.
5. Screw the backplate onto the electrical junction box.
6. Press the wires into their respective I/O connector and tighten their security screws. Gently push excess wiring back into the wall.
7. Reattach the front cover and make sure it clips into place, then tighten the security screw to secure the device assembly.

## Wall Mounting Installation Procedure

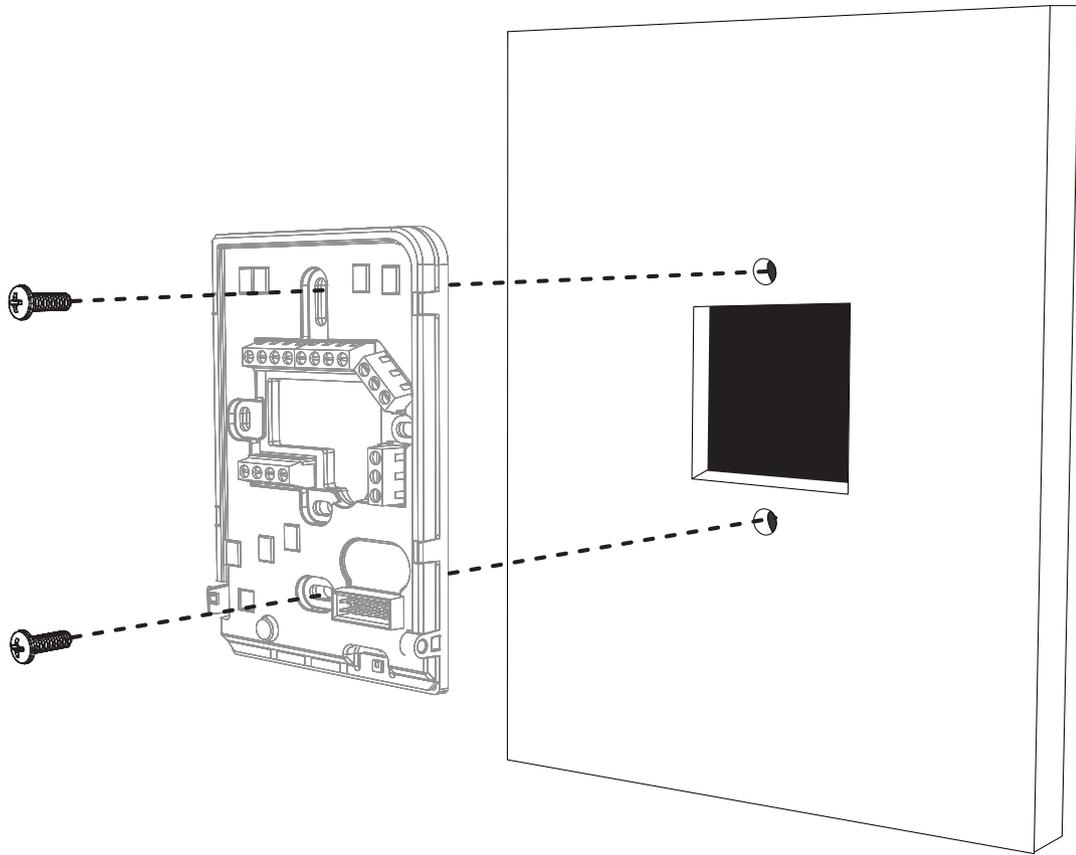


Figure 3: ECY-STAT back plate screw positions

The ECY-STAT can be mounted on drywall using the supplied screws.

1. Remove the front cover of the device:
  - Remove the security screw
  - Using an appropriately sized tool, press in the release tab on the side of the device and pull the front cover out from the bottom. See Figure 3 for security screw and release tab locations.
2. Pull all cables 15cm (6") out of the wall and insert them through the central hole of the backplate.
3. Ensure that all wires are well and securely placed. See [I/O Identification \[pg. 5\]](#) for I/O designations.
4. Align the backplate with the wall and mark the location of the mounting holes on the wall. Make sure to orient the proper end of the backplate facing upwards.
5. Remove the backplate and drill holes in the wall if necessary.
6. Install anchors in the wall if necessary.
7. Make sure that the mounting surface is flat and clean.
8. Screw the backplate onto the wall. **Do not overtighten.**
9. Press the wires into their respective I/O connector and tighten their security screws. Gently push excess wiring back into the wall.
10. Reattach the front cover and make sure it clips into place, then tighten the security screw to secure the device assembly.

# I/O Identification

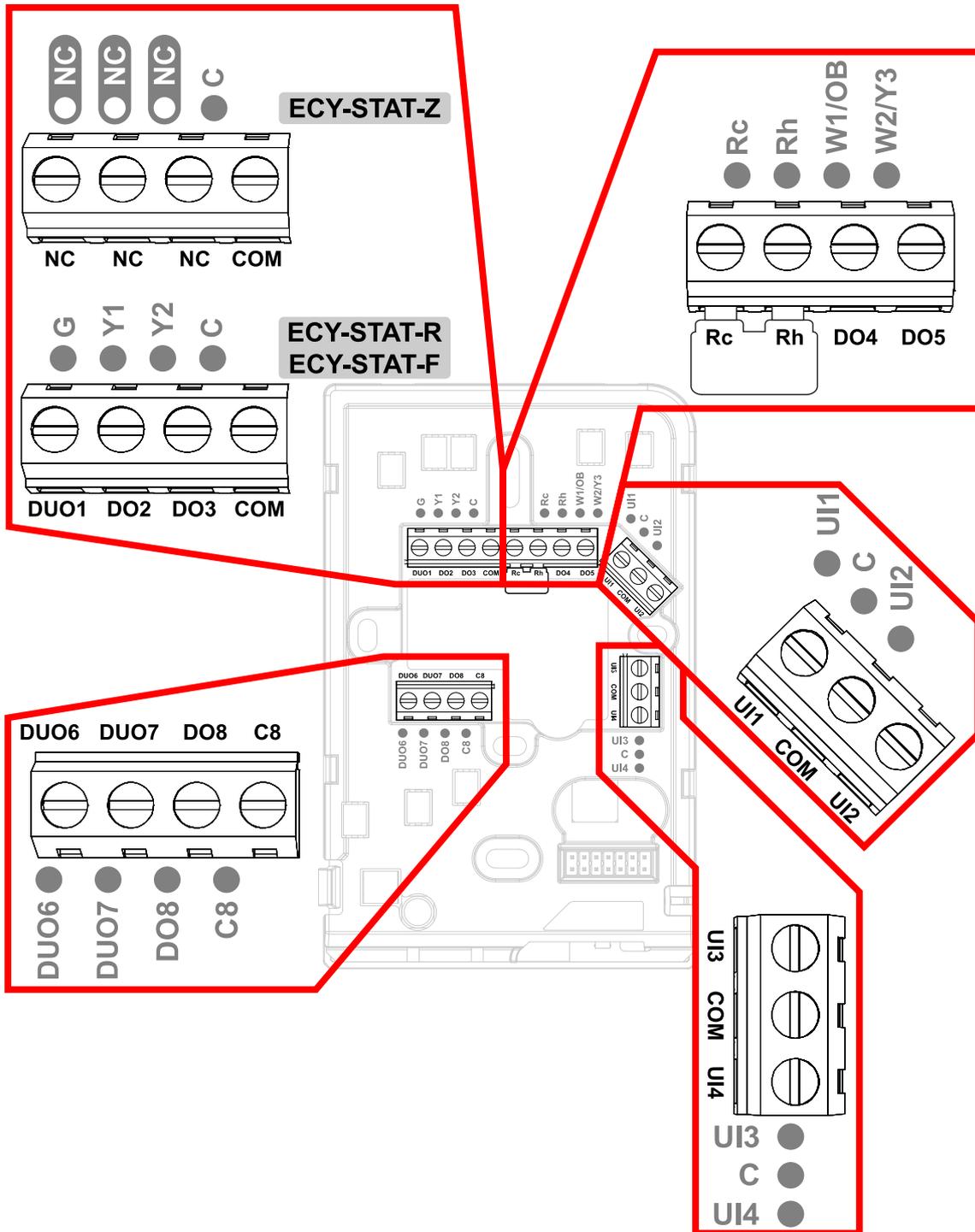


Figure 4: ECY-STAT input and output designations

## Connector Inputs – All Models

Connector Label	Input Type	Description
C	Com	Common (1 for 2x UI)
UI1	UI1	Software configurable (eg. Supply Air Temp)
UI2	UI2	Software configurable (eg. Return Air Temp, Space Temp)
C	Com	Common (1 for 2x UI)
UI3	UI3	Software configurable (eg. Outdoor Air Temp)
UI4	UI4	Software configurable (eg. Filter DPS, Airflow, Fan Status)

Table 2: Connector Inputs – All Models

## Connector Outputs – ECY-STAT-R

Connector Label	Output Type	Description
C	Com	Common
Rc	24VAC	24v Cooling (default jumper installed with Rc)
G	DUO1	Fan ON-OFF - 0-10V
Y1	DO2	Cool 1 ON/OFF
Y2	DO3	Cool 2 ON/OFF
DO8/C8	DO8	AUX Heat (ON-OFF)
Rh	24VAC	24v Heating (default jumper installed with Rh)
W1/OB	DO4	Heat 1 ON/OFF - OB Valve
W2/Y3	DO5	Heat 2 ON/OFF - Cool 3 ON/OFF
DUO6	DUO6	Econo - ON/OFF - 0-10V
DUO7	DUO7	Bypass damper / Humid / deHum - ON/OFF - 0-10V

Table 3: Connector Outputs – ECY-STAT-R

## Connector Outputs – ECY-STAT-F

Connector Label	Output Type	Description
C	Com	Common
Rc	24VAC	24v Cooling (default jumper installed with Rc)
G	DUO1	Fan ON/OFF - FAN (Low) - ECM (0-10V)
Y1	DO2	FAN (Med)
Y2	DO3	FAN (High)
DO8/C8	DO8	AUX Heat (ON-OFF)
Rh	24VAC	24v Heating (default jumper installed with Rh)
W1/OB	DO4	Cool/Heat (ON/OFF) - Cool/Heat (float open)
W2/Y3	DO5	Cool/Heat (ON/OFF) - Cool/Heat (float closed)
DUO6	DUO6	Cool (0-10V) - Heat (0-10V) - OA Damper - Cool/Heat (float open)
DUO7	DUO7	Cool/Heat (float closed)

Table 4: Connector Outputs – ECY-STAT-F

## Connector Outputs – ECY-STAT-Z

Connector Label	Output Type	Description
C	Com	Common
Rc	24VAC	24v Cooling (default jumper installed with Rc)
G	DUO1	NC
Y1	DO2	NC
Y2	DO3	NC
DO8/C8	DO8	Aux Heat (ON/OFF)
Rh	24VAC	24v Heating (default jumper installed with Rh)
W1/OB	DO4	Heat (ON/OFF) - Heat (float open) - Damper (float open)
W2/Y3	DO5	Heat (ON/OFF) - Heat (float closed) - Damper (float closed)
DUO6	DUO6	Heat/Cool (0-10V) - OA Damper - Heat (float open) - Damper (float open)
DUO7	DUO7	Heat/Cool (0-10V) - OA Damper - Heat (float closed) - Damper (float closed)

Table 5: Connector Outputs – ECY-STAT-Z

# Power Wiring

**Voltage:** \_\_\_\_\_ 24VAC/DC; ± 15%, Class 2

For terminal block connector wiring best practices, see General Wiring Recommendations.



This is a Class 2 Product. Use a Class 2 transformer only (rated at least 16VA at 24VAC) for each ECY-STAT.

The ECY-STAT can be powered off of the equipment transformer provided that it receives a minimum of 24VAC.

If sufficient power cannot be provided to the ECY-STAT from the equipment transformer, a separate transformer rated at 16 VA minimum must be used for each ECY-STAT. Choose a transformer that can supply both the needs of the ECY-STAT (16VA) and any other 24VAC loads such as connected sensors and actuators: add up the maximum power consumption of all 24VAC loads and multiply this sum by 1.3. If the resulting total [16VA + (1.3 × 24VAC loads)] is higher than the equipment transformer can handle, use a separate transformer.

Use an external fuse on the 24VAC side (secondary side) of the transformer, as shown in the figure below, to protect against power line spikes and miswiring.

Maintain consistent polarity when connecting controllers and devices to the transformer. One terminal on the secondary side of the transformer must be connected to the building's ground. Ensure that the 24V COM terminals of all power supplies are connected to the grounded transformer secondary connection.

## Power Wiring with Jumper Installed

The jumper bridging Rc and Rh is factory installed and should remain in place unless there is a need to control separate heating and cooling systems.

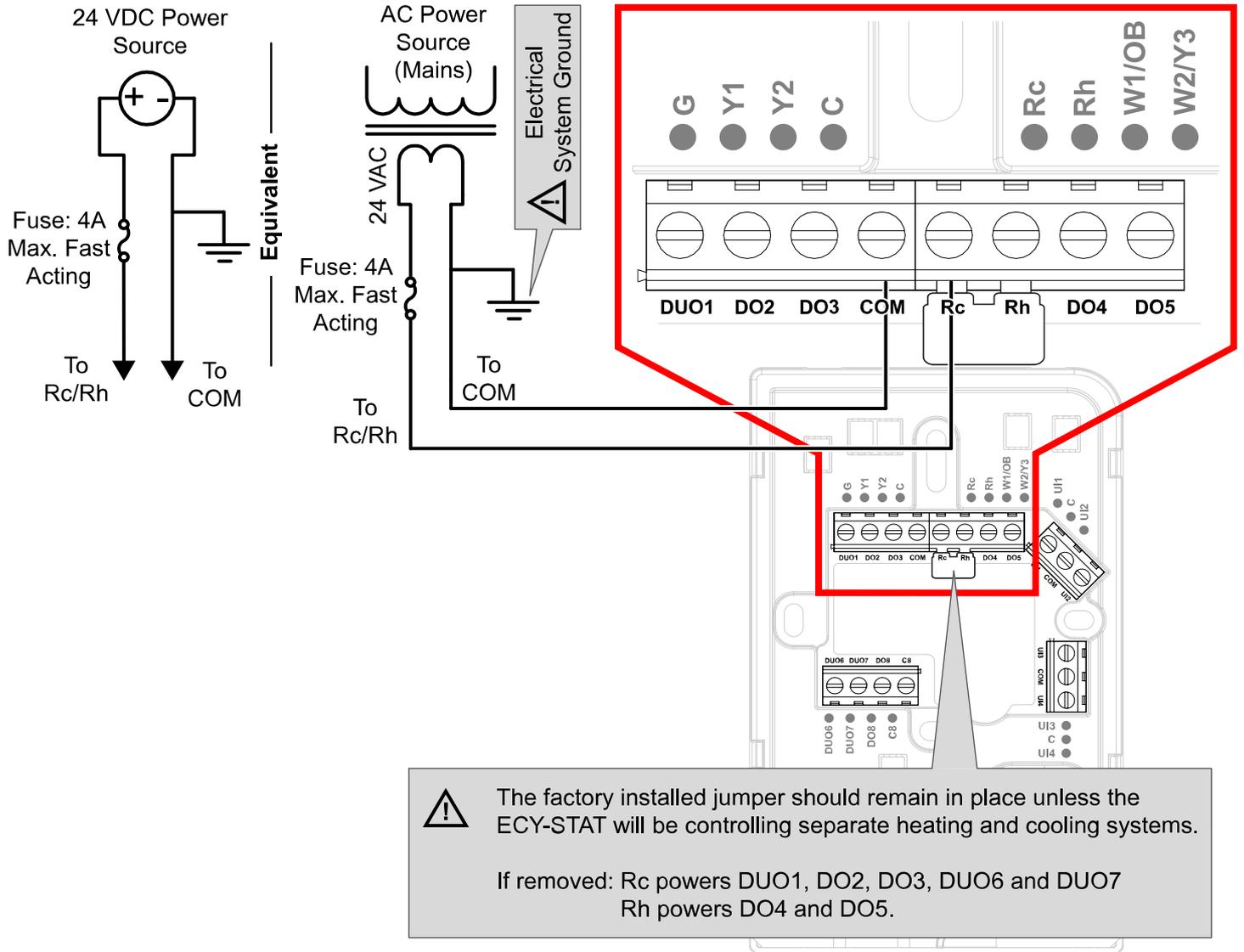


Figure 5: Power wiring with jumper installed

## Power Wiring with Jumper Removed

If there is a need to control separate heating and cooling systems, remove the jumper bridging Rc and Rh. Once removed, Rc powers outputs DUO1, DO2, DO3, DUO6 and DUO7, while Rh powers DO4 and DO5.

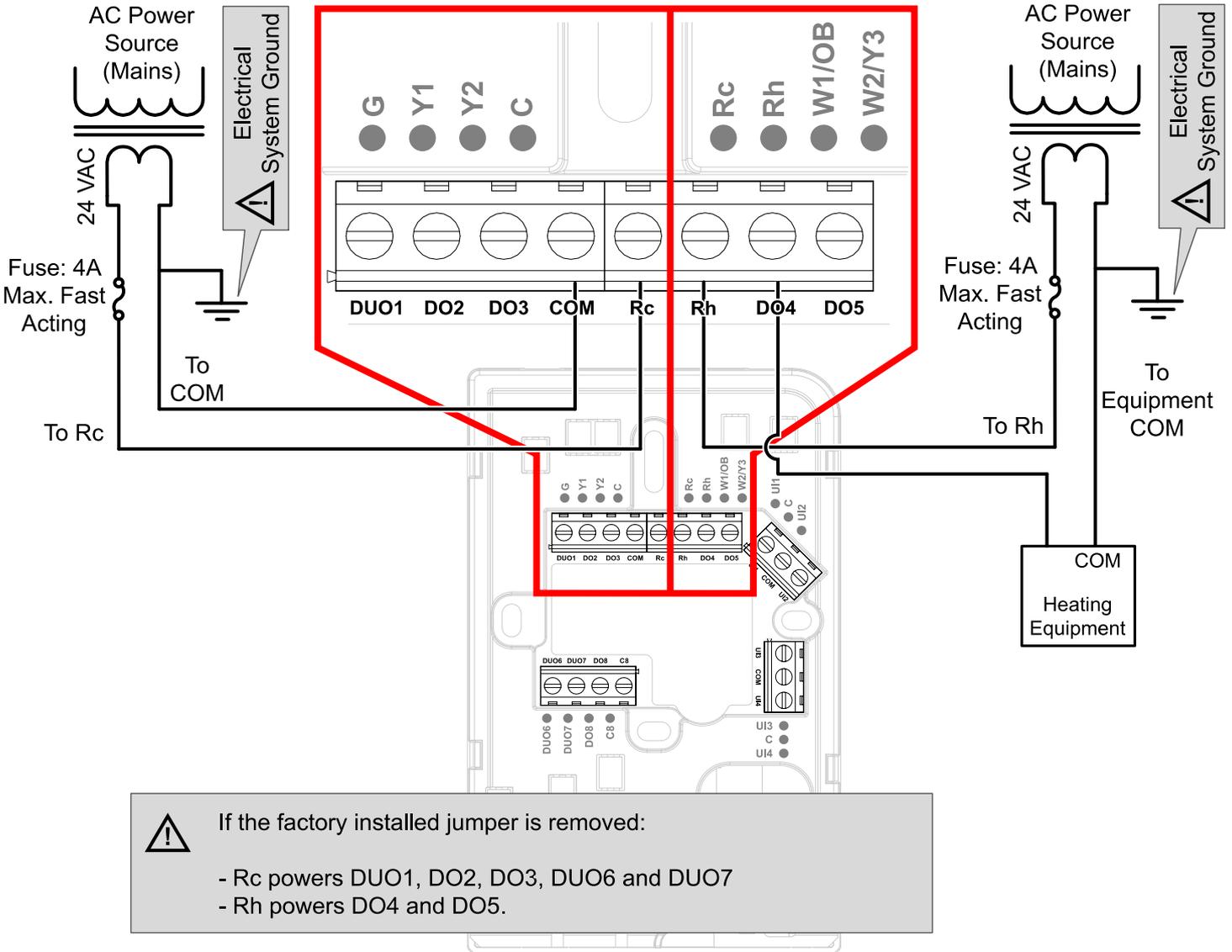
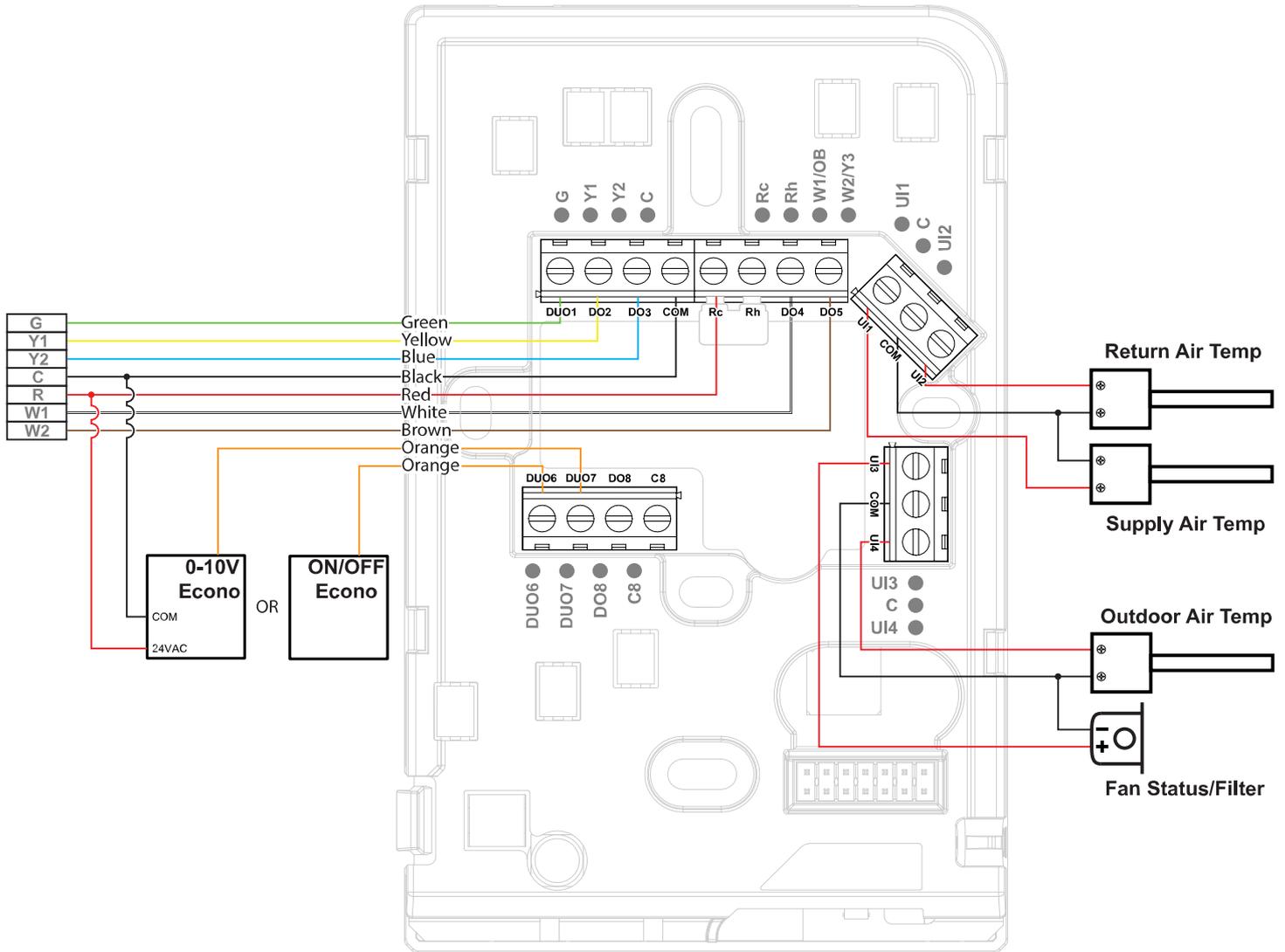


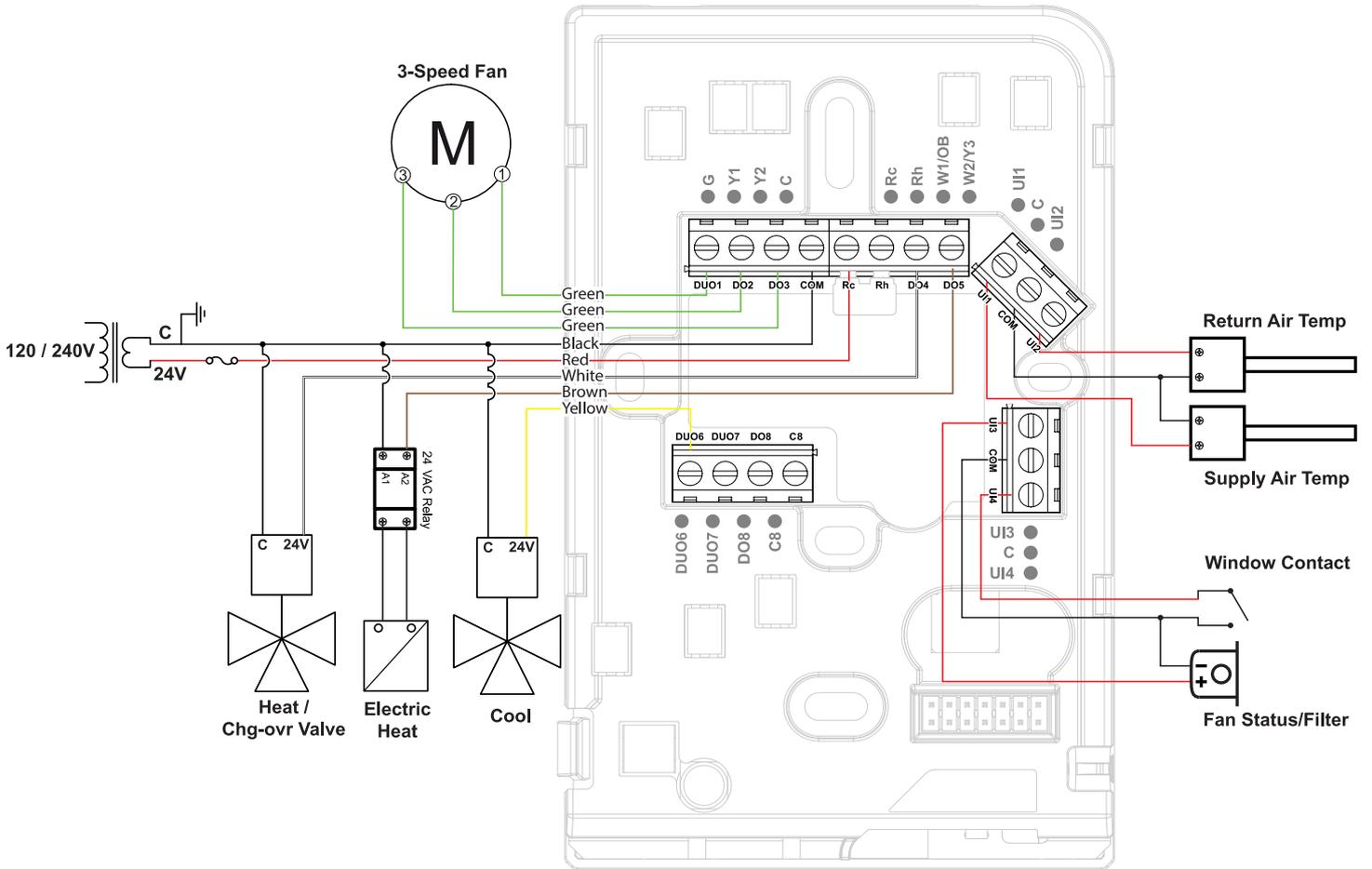
Figure 6: Power wiring with jumper removed

# Preloaded Applications Wiring

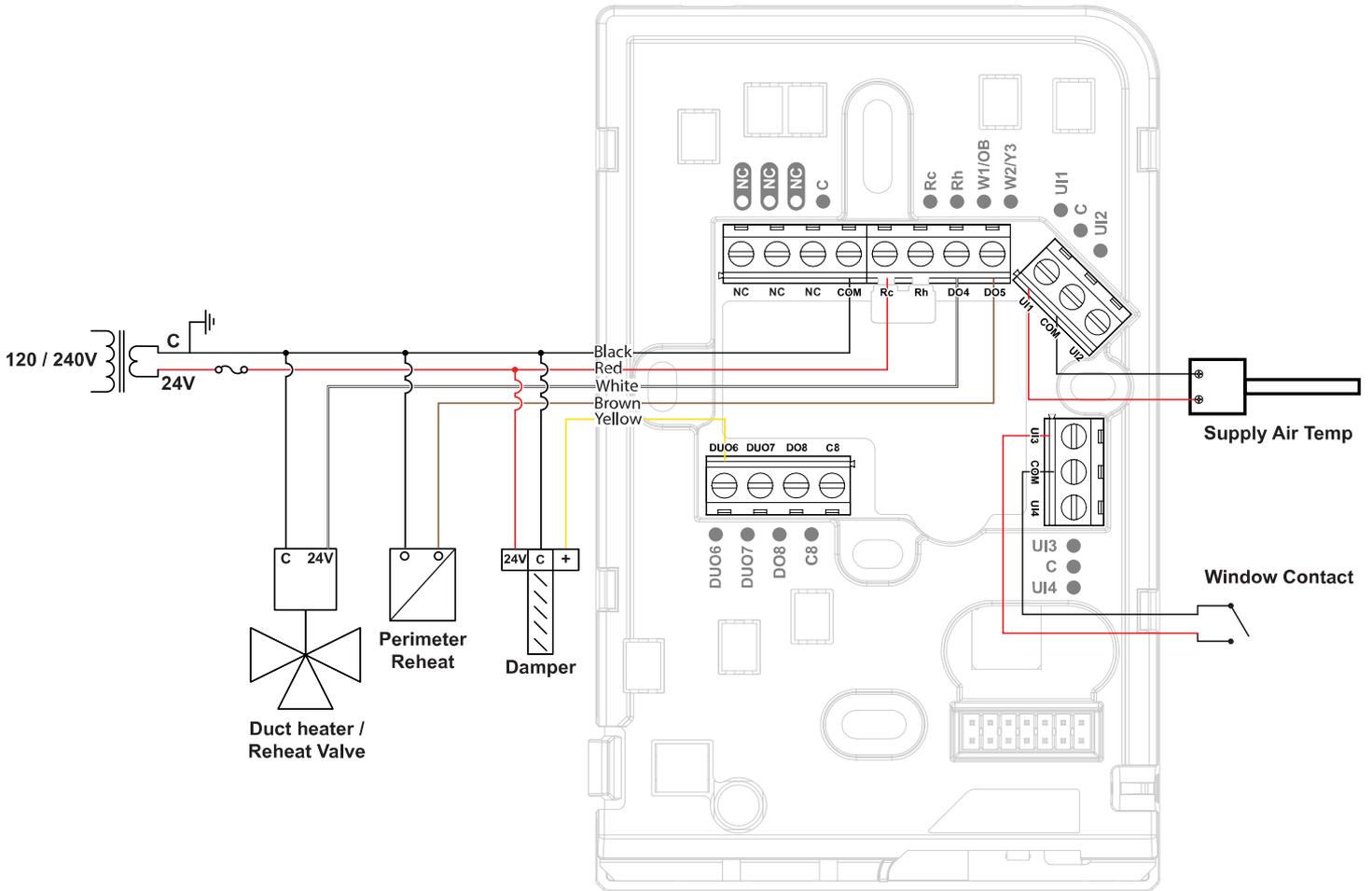
## ECY-STAT-R Preloaded Application Wiring



# ECY-STAT-F Preloaded Application Wiring



# ECY-STAT-Z Preloaded Application Wiring



# Input Wiring

Input options must be properly configured in EC-*gfx*Program to ensure correct input readings. The table below shows the controller's available universal input (UIx) wiring methods. For terminal block connector wiring best practices, see General Wiring Recommendations. Inputs can be connected as follows.



Before connecting a sensor to the controller, refer to the installation guide of the equipment manufacturer.



- For a wire length less than 75' (23m), either a shielded or unshielded 18AWG wire may be used.
- For a wire up to 200' (61m) long, a shielded 18AWG wire is recommended.
- The shield of the wire should be grounded on the controller side only and the shield length should be kept as short as possible.

Sensor Input Type	Input Connection Diagram
<input type="checkbox"/> Dry Contact input.	
<input type="checkbox"/> Pulse input used with a 2-wire sensor powered by its own power source – this input supports a maximum input frequency of 1Hz (500ms minimum ON/OFF). Connect the pulse input according to the figure for a pulse meter that can pull-down a +3.3VDC supply with a 10KΩ pull-up resistor (Internal supply type).	
<input type="checkbox"/> Thermistor Input (for example, 10kΩ type II and III).	
<input type="checkbox"/> Resistive input, maximum 350kΩ (for example, use with 10kΩ and 100kΩ potentiometers).	
<input type="checkbox"/> 0 to 20mA input used with a 2-wire, 0 to 20mA sensor powered by an external 24 AC/DC power supply.	
<input type="checkbox"/> 0 to 20mA input used with a 3-wire, 0 to 20mA sensor powered by an external 24 AC/DC power supply.	
<input type="checkbox"/> 0 to 20mA input used with a sensor powered by its own power source.	
<input type="checkbox"/> Voltage input used with a 3-wire 0 to 10VDC or 0 to 5VDC sensor powered by an external 24 AC/DC power supply.	
<input type="checkbox"/> Voltage input used with a 0 to 10VDC or 0 to 5VDC sensor powered by its own power source.	

# Output Wiring

Output options must be properly configured in EC-*gfx*Program to ensure correct output values. The table below shows the controller's available output wiring methods. For terminal block connector wiring best practices, see [General Wiring Recommendations \[pg. 1\]](#). Outputs can be connected as follows.



Before connecting an output device (actuator, relay, etc.) to the controller, refer to the datasheet and installation guide of the equipment manufacturer.



- For a wire length less than 75' (23m) long, either a shielded or unshielded 18AWG wire may be used.
- For a wire length up to 200' (61m) long, a shielded 18AWG wire is recommended.
- The shield of the wire should be grounded on the controller side and the shield length should be kept as short as possible.
- For digital outputs (DOx), select appropriately sized wiring suitable to the current load.
- External power cannot be applied to any digital outputs (DOx) with the exception of DO8/C8 (24V).

## Fan Outputs

Control Output Type	Output	Output Connection Diagram
<input type="checkbox"/> Fan ON / OFF	<input type="checkbox"/> DUO1	
<input type="checkbox"/> ECM (0-10VDC)	<input type="checkbox"/> DUO1	
<input type="checkbox"/> 3-Speed Fan	<input type="checkbox"/> DUO1 <input type="checkbox"/> DO2 <input type="checkbox"/> DO3	



# Damper Outputs

Control Output Type	Typical Output	Output Connection Diagram
<input type="checkbox"/> Damper (ON/OFF)	<input type="checkbox"/> DUO6	
<input type="checkbox"/> Damper (modulating)	<input type="checkbox"/> DUO6	
<input type="checkbox"/> Damper (floating)	<input type="checkbox"/> DUO6 and DUO7	

# AUX Heat

Control Output Type	Output Designation	Output Connection Diagram
<input type="checkbox"/> Auxiliary Heat	<input type="checkbox"/> DO8/C8	

# Communications Wiring

The [ECLYPSE User Guide](#) provides extensive information and requirements to implement a BACnet IP network. It contains information about network topology, wire length restrictions, cable type, device IP addressing, radio path planning (when the ECLYPSE Wi-Fi Adapter is connected to the controller), etc. It can be downloaded from our website. For optimal performance, use Distech Controls category 5e network cable or refer to the [ECLYPSE User Guide](#) for cable specifications.

Distech Controls IP devices are uniquely identified on the network by their MAC address. This identifier is printed on a label located on the inside of the device and on its shipping box. Get a printed copy of the building's floor plan. During device installation, peel the MAC address stickers off of the shipping box and put it on the floor plan where the device has been installed. This MAC address is used as part of the device's factory-default Wi-Fi access point name and its network hostname.

## Wired Connection

Connect the communication network ethernet cable to the back of the device.



It is not recommended to use the Wired-IP port when the ECY-STAT is configured for Wi-Fi Client mode.

## Wireless Connection

The ECY-STAT can be configured to operate in Wi-Fi Hotspot or Wi-Fi client modes, and can connect wirelessly to a compatible controller or router through a Wi-Fi Access Point or Hotspot.

On your PC's wireless networks, look for an access point named **ECLYPSE-XXYYZZ** where **XXYYZZ** are the last 6 hexadecimal characters of the controller's MAC address (see above). The default password for the wireless network is: **eclipse1234**

# Configuring the Controller

Any of the following methods can be used to connect to the controller's interface in order to configure it:

- Using the *XpressNetwork* Utility
- Using the controller's factory-default Hostname in the Web browser
- Using the controller's IP address in the Web browser

## Using the *XpressNetwork* Utility

The *XpressNetwork* Utility is a software application that runs on a PC that allows you to discover all ECY Series controllers connected to an IP network's subnet or Wi-Fi network and to perform a range of operations on many controllers at once: you can set each controller's Hostname and IP address, launch *EC-gfx*Program to program the controller, or you can access the controller's configuration Web interface. See the [XpressNetwork Utility User Guide](#) for more information.

*XpressNetwork* Companion mobile app can be installed on your smartphone and it works with the QR code marked on the controller's faceplate which encodes the controller's MAC address and host ID. By scanning the QR code, the app records this information to which you assign a hostname. Once the QR codes for all controllers have been read in, the app's information is transferred to the *XpressNetwork* Utility where it is used to populate the relevant data fields. See the [XpressNetwork Utility User Guide](#) for more information.



Figure 7: Typical QR Code

## Using the Controller's Factory-default Hostname in a Web Browser

Controllers have a factory-default hostname that you can use instead of an IP address to connect to it. The hostname can be used in a Web browser's address bar or in the *EC-gfx*Program's **Connect to** screen. When installing the latest version of *EC-gfx*Program and your PC does not have the Bonjour service installed, a link to install the Bonjour service is provided. The Bonjour service must be installed on your PC to allow your PC to discover controllers by their hostname.

If your PC is unable to resolve the controller's hostname, you must connect your PC to the controller through Ethernet or Wi-Fi so that your PC only sees the controller network. For example, in this case, your PC must be disconnected from all other networks such as a corporate network or the Internet. If necessary, temporarily disconnect your PC's network cable from its Ethernet port.

The controller's factory-default hostname is **eclipse-xxxxxx.local** where **xxxxxx** is the last 6 characters of the MAC address printed on a sticker located on the side of the controller. See above.

For example, the sticker on the side of a controller shows that its MAC address is 76:a5:04:cd:4a:d1. Connect to the controller's Web interface as follows:

1. Open your Web browser.
2. In the Web browser's address bar, type **https://eclipse-cd4ad1.local** and click go.
3. Login to the controller. Then set the controller's configuration parameters in the controller's configuration Web interface. See Connecting to the Controller's Configuration Web Interface.

## Using the Controller's IP Address in a Web Browser

Connect to a controller through its IP address as follows:

For a Wi-Fi Network Connection:

1. Open your Web browser.
2. In the Web browser's address bar, type **https://192.168.0.1** (the controller's factory-default wireless hotspot IP address) and click go.
3. Login to the controller. Then set the controller's configuration parameters in the controller's configuration Web interface. See [Connecting to the Controller's Configuration Web Interface](#).

**For an Ethernet Network Connection:** You must know the controller's current IP address (from the DHCP server for example).

1. Open your Web browser.
2. In the Web browser's address bar, enter the controller's IP address and click go.
3. Login to the controller. Then set the controller's configuration parameters in the controller's configuration Web interface. See [Connecting to the Controller's Configuration Web Interface](#).

## Connecting to the Controller's Configuration Web Interface



At the first connection to an ECLYPSE Controller you will be forced to change the password to a strong password for the admin account to protect access to the controller.

In Network Settings, configure the controller's network parameters so that they are compatible with your network. See the [ECLYPSE User Guide](#) for more information about network settings and how to secure the controller. It is important to create new user accounts with strong passwords to protect the controller from unauthorized access. Remove the factory default admin account as this is a commonly known security breach (only the password for this user account needs to be compromised).

## Maintenance and Cleaning

Gently clean the device with a soft, lint-free cloth slightly moistened with a solution of mild liquid dish soap and warm water or disinfect the device with a soft cloth slightly moistened with a 70% isopropyl alcohol.

Do not directly spray any liquid or disinfecting solution on the device. Do not clean with any other chemicals products.

## Disposal

The Waste Electrical and Electronic Equipment (WEEE) Directive set out regulations for the recycling and disposal of products. The WEEE2002/96/EG Directive applies to standalone products, for example, products that can function entirely on their own and are not a part of another system or piece of equipment.

For this reason Distech Controls products are exempt from the WEEE Directive. Nevertheless, Distech Controls products are marked with the WEEE symbol , indicating devices are not to be thrown away in municipal waste.

Products must be disposed of at the end of their useful life according to local regulations and the WEEE Directive.

Specifications subject to change without notice.

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