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* 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.



Device Markings (Symbols)

Certain markings (symbols) can be found on the product and are defined as follows:

Symbol	Description
C€	CE marking: the device conforms to the requirements of applicable EC directives.
	Products must be disposed of at the end of their useful life according to local regulations.
C UL US	UL marking: conforms to the requirements of the UL certification.
F©	FCC marking: This device complies with FCC rules part 15, class B.
\triangle	For indoor use only
	Class III electrical appliance
Pb	Lead-free

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 Distect 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 1.3mm² 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 0.82mm² 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.

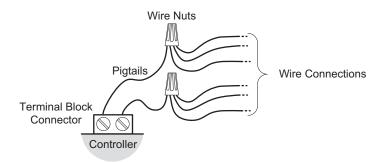


Figure 1: Using a Wire Nut and Pigtail to Wire the Controller

Dimensions

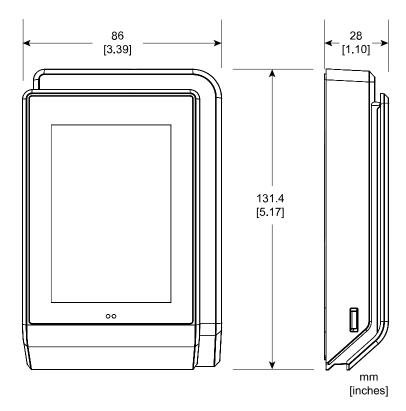


Figure 2: ECY-STAT Dimensions

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.



To prevent leakage and to avoid any deformation when fastening the backplate, it is recommended to use a single gang electrical gasket when installing the ECY-STAT on an uneven or warped surface.



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

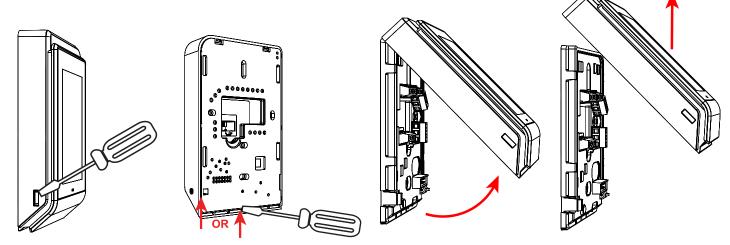


Table 1: ECY-STAT disassembly

ECY-STAT Assembly

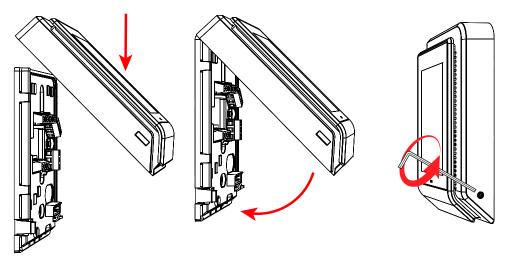


Table 2: ECY-STAT assembly

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:
 - Using an appropriately sized tool, press in the release tab on the side of the device.
 - On the other side, pry open the pressure tab 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. 6] for I/O designations.
- 4. Make sure that the mounting surface is flat and clean.
- 5. Screw the backplate onto the electrical junction box. Do not overtighten as this can cause a deformation of the backplate which may affect product performance.
- 6. Press the wires into their respective I/O connector and tighten their security screws. Gently push excess wiring back into the wall.
- 7. Reassemble the front cover and ensure it clips into place. To secure the device assembly, use a 1/16" (1.5 mm) Allen key or Hex head bit and turn the security screw counter-clockwise until it is flush with cover.



The security screw MUST be replaced correctly (flush with the device cover) to ensure proper functionality and safety.

Wall Mounting Installation Procedure

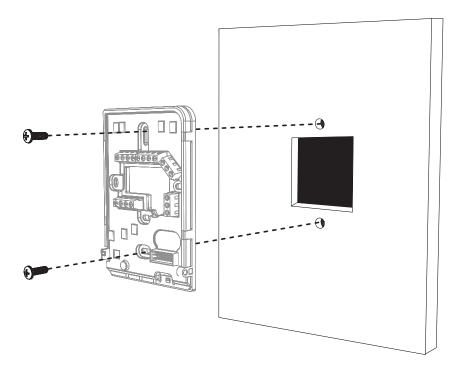


Figure 3: ECY-STAT back plate screw positions

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

- 1. Remove the front cover of the device:
 - Using an appropriately sized tool, press in the release tab on the side of the device.
 - On the other side, pry open the pressure tab 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. 6] 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, ensuring that it is level and properly secured. Do not overtighten as this can cause a deformation of the backplate which may affect product performance.
- 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 ensure it clips into place. To secure the device assembly, use a 1/16" (1.5 mm) Allen key or Hex head bit and turn the security screw counter-clockwise until it is flush with cover.



The security screw MUST be replaced correctly (flush with the device cover) to ensure proper functionality and safety.

I/O Identification

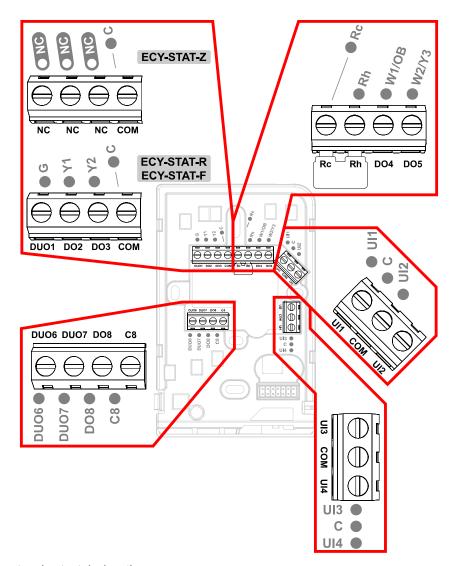


Figure 4: ECY-STAT input and output designations

Connector Inputs - All Models

Connector Label	Input Type	Description
С	Com	Common (1 for 2x UI)
UI1	UI1	Software configurable (eg. Supply Air Temp)
UI2	UI2	Software configurable (eg. Return Air Temp, Space Temp)
С	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 3: Connector Inputs - All Models

Connector Outputs – ECY-STAT-R

Connector Label	Output Type	Description
С	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)

Connector Label	Output Type	Description
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 4: Connector Outputs – ECY-STAT-R

Connector Outputs – ECY-STAT-F

Connector Label	Output Type	Description
С	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 5: Connector Outputs – ECY-STAT-F

Connector Outputs – ECY-STAT-Z

Connector Label	Output Type	Description
С	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 6: 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.

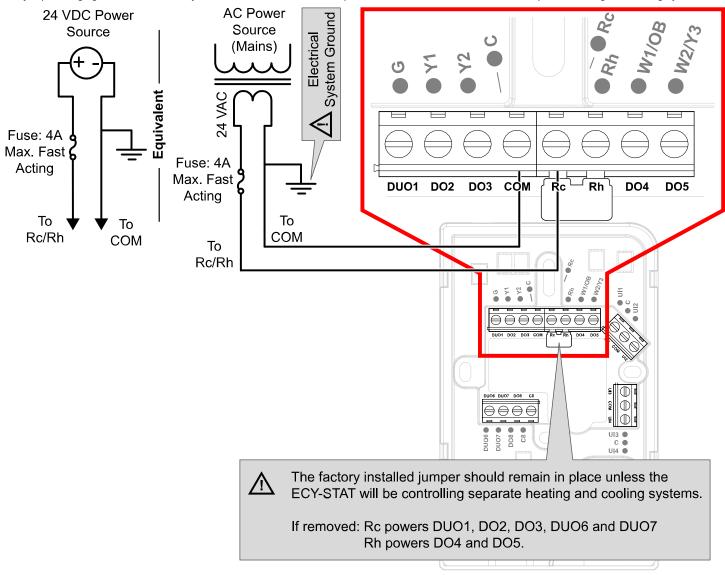


Figure 5: Power wiring with jumper installed

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.

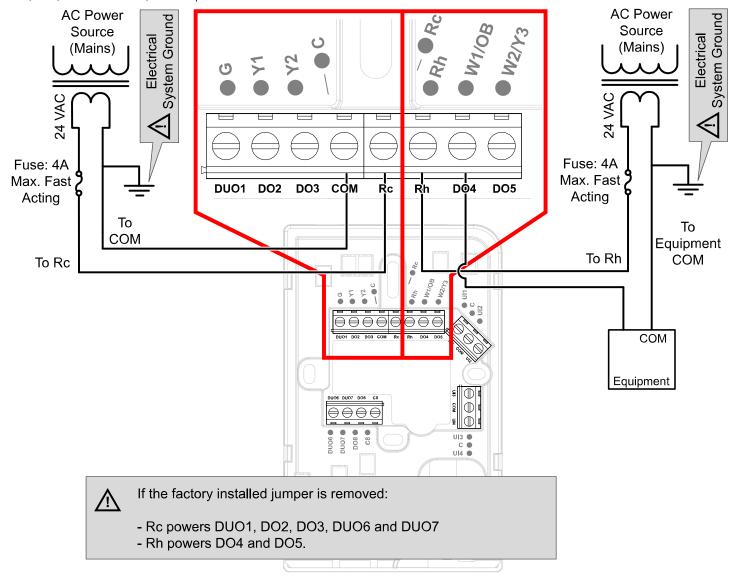
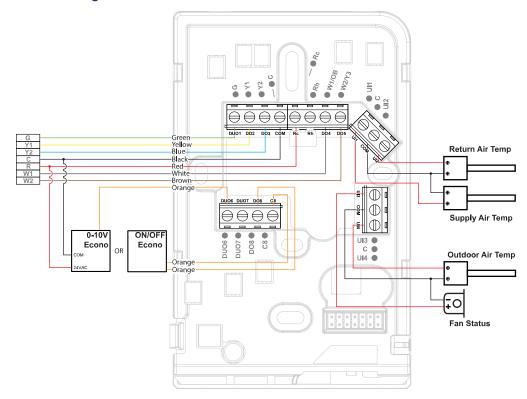


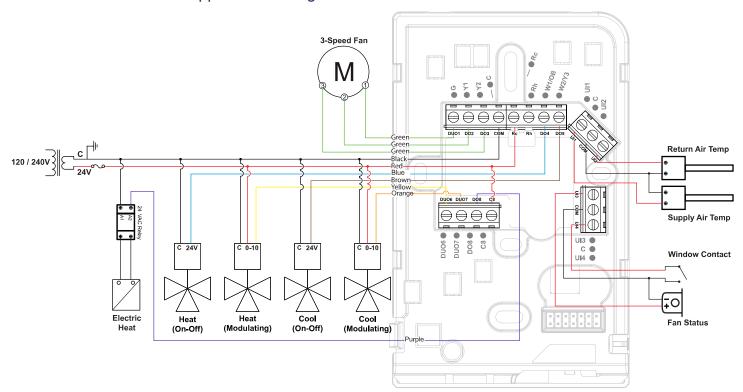
Figure 6: Power wiring with jumper removed

Preloaded Applications Wiring

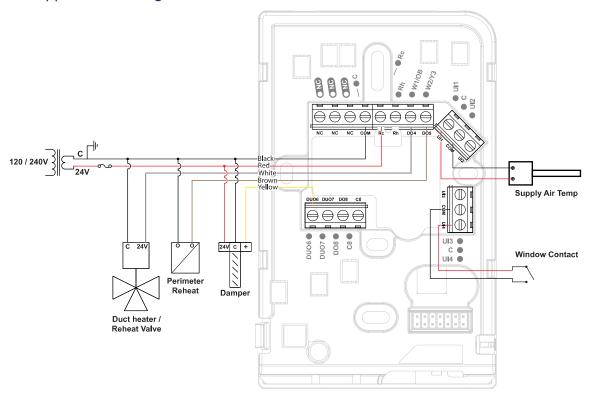
ECY-STAT-R Preloaded Application Wiring



ECY-STAT-F Preloaded Application Wiring



ECY-STAT-Z Preloaded Application Wiring



Input Wiring

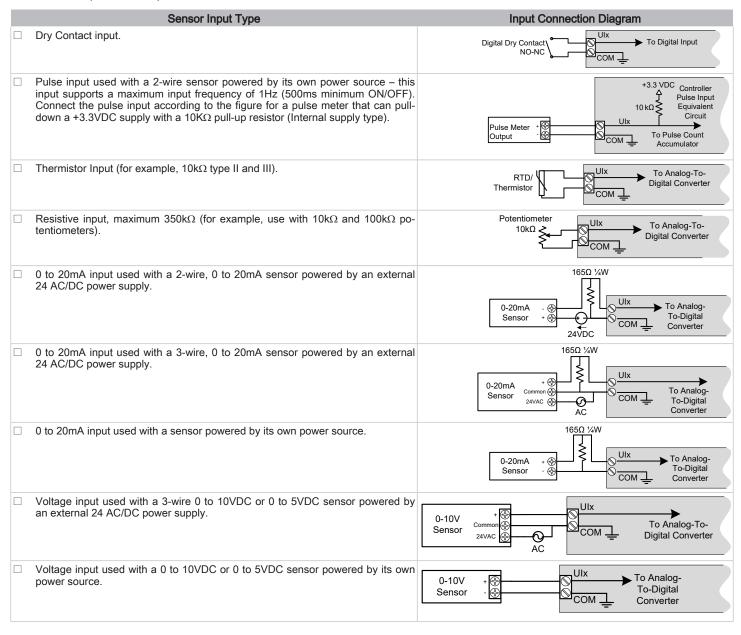
Input options must be properly configured in EC-gfxProgram to ensure correct input readings. The table below shows the controller's available universal input (UIx) wiring methods. For terminal block connector wiring best practices, see General Wiring Recommendations [pg. 2]. Inputs can be connected as follows:



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



- For a wire length less than 99' (30m) long, either a shielded or unshielded 18AWG wire may be used.
- ☐ For a wire length from 99' (30m) up to 200' (61m), a shielded 18AWG wire must be used.
- ☐ The shield of the wire should be grounded on both ends (on the end of the controller and the peripheral), and the shield length should be kept as short as possible.



Output Wiring

Output options must be properly configured in EC-gfxProgram 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. 2]. Outputs can be connected as follows.

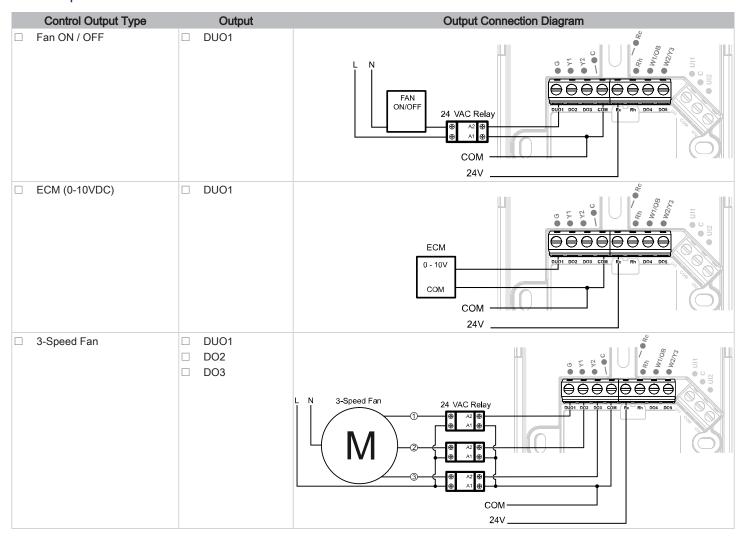


Before connecting an output device (actuator, relay, etc.) to the controller, refer to the datasheet and installation guide of the equipment manufacturer.

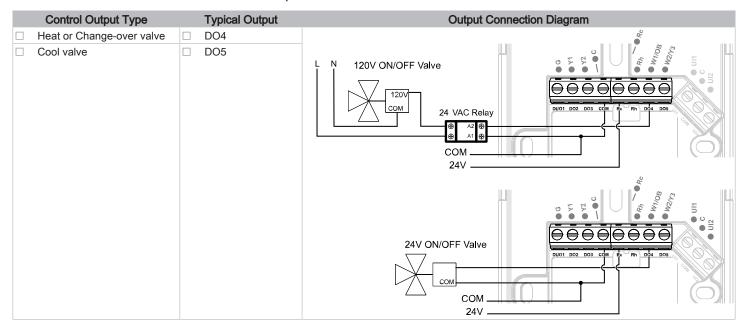


- □ For a wire length less than 99' (30m) long, either a shielded or unshielded 18AWG wire may be used.
- For a wire length from 99' (30m) up to 200' (61m), a shielded 18AWG wire must be used.
- ☐ The shield of the wire should be grounded on both ends (on the end of the controller and the peripheral), 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).

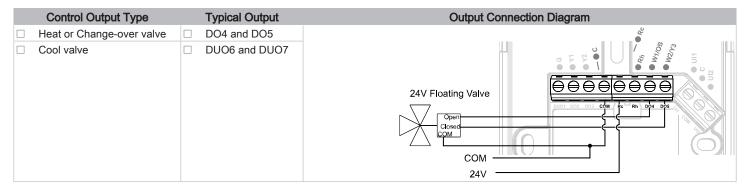
Fan Outputs



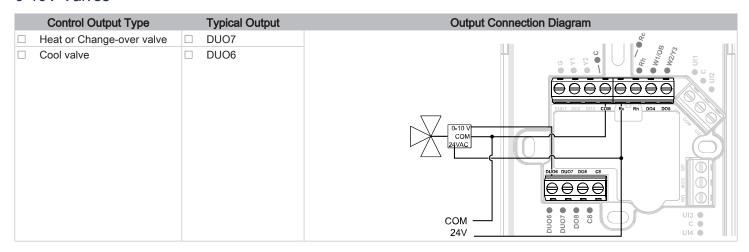
120/240V and 24V ON/OFF Valve Outputs



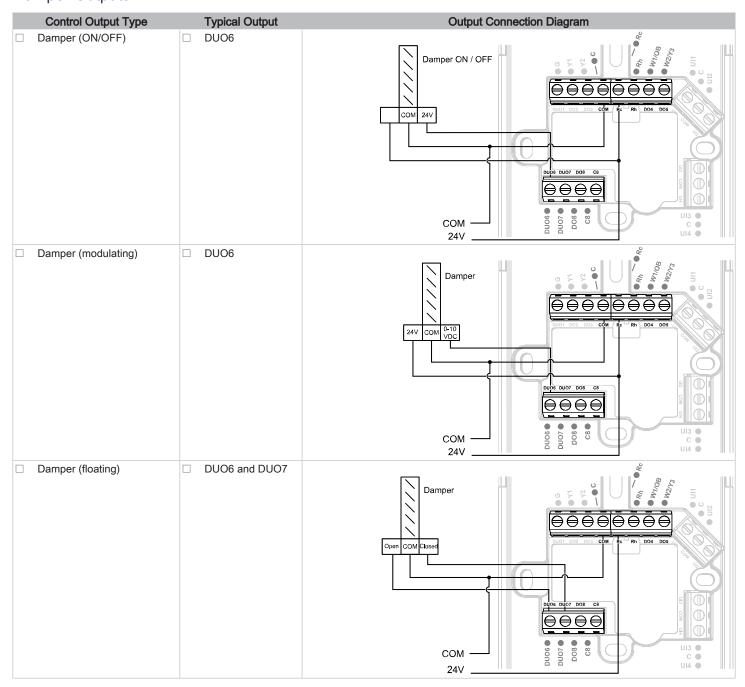
Floating Valves



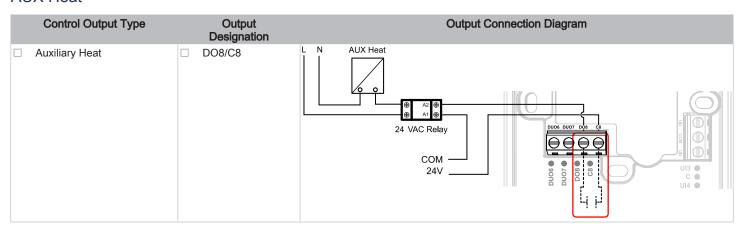
0-10V Valves



Damper Outputs



AUX Heat



Communications Wiring

The Eclypse <u>User Guide</u> 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 using WiFi), etc. It can be downloaded from our website. For optimal performance, use Distech Controls category 5e network cable or refer to the Eclypse <u>User Guide</u> 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.



To avoid network loops, it is not recommended to use both the Wired and Wireless connections on a single ECY-STAT, unless they are on separate networks.

Wireless Connection

Once the ECY-STAT had been powered up, a Wi-Fi network becomes available that allows you to connect to the controller's configuration Web interface with your PC.

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: **eclypse1234**



Since the BACnet transport layer is Based on UDP frame, caution should be taken regarding Wi-Fi communication, especially in noisy environment as BACnet packets may not be received properly by the device. BACnet parameters (timeout and number of retries) may have to be fine-tuned). For best practices, refer to the Distect Controls Network Guide.

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 Xpress Network Utility
- Using the controller's IP address in the Web browser

Using the Xpress Network Utility

The Xpress Network 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 subnetwork 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-gfxProgram to program the controller, or you can access the controller's configuration Web interface. See the XpressNetwork Utility User Guide for more information.

Using the Controller's IP Address in a Web Browser

Connect to a controller through its IP address as follows:

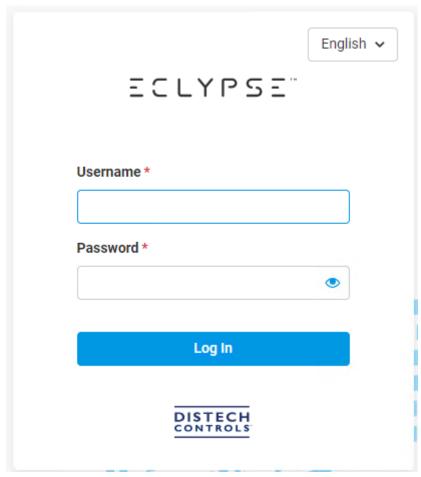
For a Wi-Fi Network Connection:

- 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 network IP address) and click go.
- 3. Login to the controller. Then set the controller's configuration parameters in 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.

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 <u>User Guide</u> 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 breech (only the password for this user account needs to be compromized).

Power Cycling / Rebooting and Factory Reset

Power Cycling or Rebooting the Controller

See Mounting Instructions [pg. 3] for the front cover removal procedure.

- 1. Separate the front cover from the back plate.
- 2. Replace the front cover on the back plate.

Factory Reset Procedure

Performing a factory reset will return the device to its factory default settings. User accounts (user names and passwords) will also be reset to the factory default settings and the controller's license and HTTPS security certificates will be cleared.



Always backup the controller's license through the controller's Web interface before performing a factory reset. Once the controller reboots, you will have to reinstall the license through the controller's Web interface.

To backup and install the license, see System Settings. Click **Export To PC** to backup the controller's license to your PC. Click **Import From PC** to restore the controller's license file from your PC.

After you use the factory reset switch, the controller's HTTPS security certificates will be regenerated. If you use HTTPS to connect to the controller, you will no longer be able to connect to the controller from any PC that was used in the past to connect to the controller unless you delete the old HTTPS security certificate from these PCs. See Removing a Certificate.

Once the factory reset procedure is started, it cannot be cancelled.

Factory Reset Switch Location

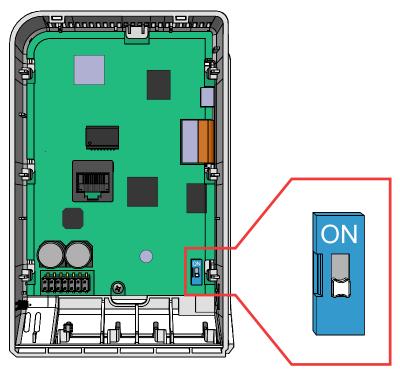


Figure 7: ECY-STAT inside front cover - factory reset switch location

To reset the controller to its factory default settings:

See Mounting Instructions [pg. 3] for the front cover removal procedure.

- 1. Separate the front cover from the back plate.
- 2. Place the reset switch, which is located at the bottom right of the front cover of the controller, in the ON position.
- 3. Replace the front cover on the back plate.
- 4. When you see the prompt on the ECY-STAT screen's, separate the front cover from the back plate, and return the reset switch back to the OFF position.
- 5. Replace the front cover on the back plate.
- 6. When the reset is completed, the Eclypse logo is shown on the ECY-STAT's screen.

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.

FCC Statement



Changes or modifications not expressly approved by Distech Controls could void the user's authority to operate the equipment.

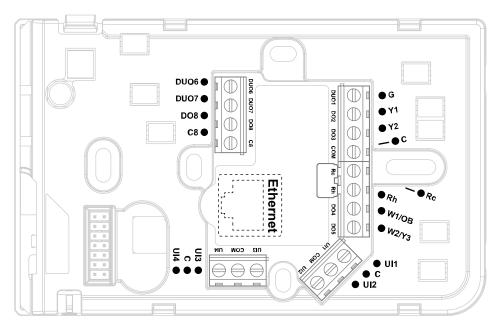


This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment

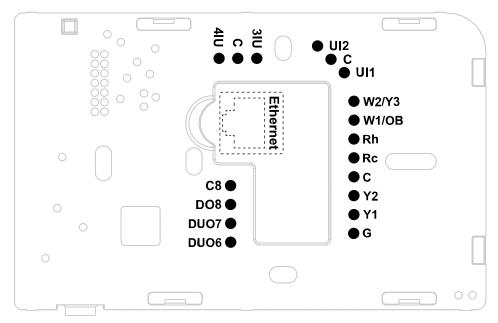
	generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 or more 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.
	This device complies with Part 15 of the FCC rules and with Industry Canada's license exempt RSS. Operation is subject to the following two conditions:
	☐ This device may not cause harmful interference, and
	☐ This device must accept any interference received, including interference that may cause undesired operation of the device.
mp	olementary Information
	device is designed for type 1 action

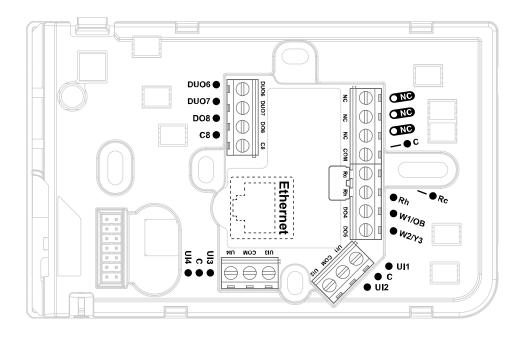
This device is designed for type 1.b action
This device presents an A class software
This device provides micro-interruptions
The EMC immunity test has been passed using 24 VAC
The Ball Pressure Test temperature is 167°F (75°C)
The SELV/PELV does not exceed 42 VDC
All traveling cables permanently installed present an X type anchor.
All cables must be able to operate above 176°F (80°C)
This product is not repairable. If the device is physically malfunctioning or requires repair, it must be returned to Distech Controls.
Pollution Degree 2
Material Group III b : 100 ≤ CTI < 175

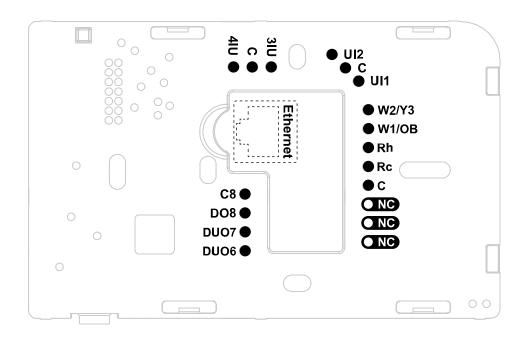
ECY-STAT Templates











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