

Eclipse™ Connected VAV Controller

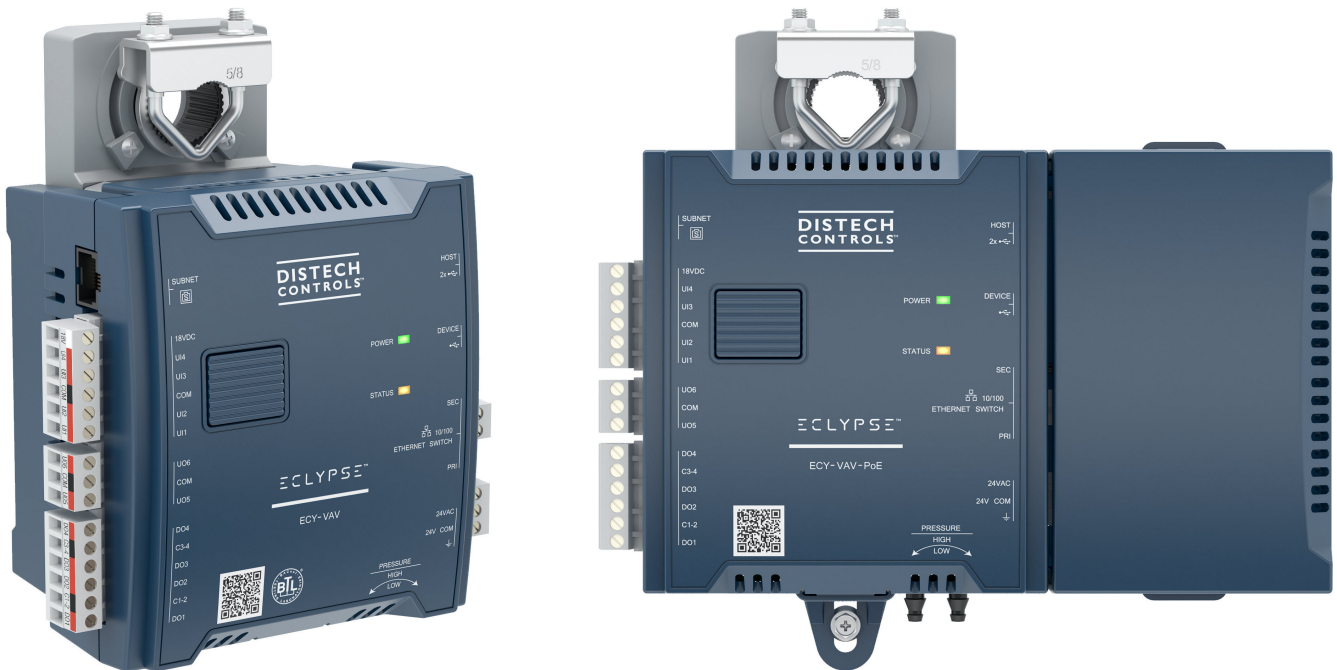


Figure 1: Eclipse ECY-VAV Controller (left) and Eclipse ECY-VAV-PoE Controller (right)

Product Description

This document describes the hardware installation procedures for the Eclipse Connected VAV Controller. The Eclipse Connected VAV Controller is designed to control any variable air volume (VAV) box. It supports BACnet/IP communication and is a listed BACnet Building Controller (B-BC). The Connected VAV Controller comes with an embedded web server that enables web-based VAV application configuration and a visualization interface. It also features embedded scheduling, alarming, and logging. Control logic and graphic user interface can be customized as required for the application.

The Eclipse Connected VAV Controller meets the requirements of VAV zone applications, including: Cooling with Reheat VAV Box & Perimeter Heating, Parallel Fan VAV Box, Series Fan VAV Box, and Room Pressurization.

This document describes the hardware installation procedures for the following controllers: ECY-VAV and ECY-VAV-PoE. The related terminal covers are also covered.

General Installation Requirements

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

- ☐ Upon unpacking the product, inspect the contents of the carton for shipping damages. **Do not install damaged modules.**
- ☐ Avoid areas where corroding, deteriorating or explosive vapors, fumes or gases may be present.
- ☐ Ensure the mounting surface can support the controller, DIN rail, and any user-supplied enclosure.
- ☐ When installed in an enclosure, select one that provides sufficient surface area to dissipate the heat generated by the controller and by any other devices installed in the enclosure. A metal enclosure is preferred. If necessary, provide active cooling for the enclosure.
- ☐ The controller's datasheet specifies the power consumption (amount of heat generated), the operating temperature range, and other environmental conditions the controller is designed to operate under.
- ☐ Ensure that all equipment is installed according to local, regional, and national regulations.
- ☐ If the controller is used and/or installed in a manner not specified by Distech Controls, the functionality and the protection provided by the controller may be impaired.



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



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

Device Markings (Symbols)

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

Symbol	Description
	CE marking: the device conforms to the requirements of applicable EC directives.
	UKCA marking: the device conforms to the requirements of applicable Great Britain regulations.
	Products must be disposed of at the end of their useful life according to local regulations.
	Read the Hardware Installation Guide for more information.
	For indoor use only.
	UL marking: conforms to the requirements of the UL certification.
	FCC marking: This device complies with FCC rules part 15, subpart B, class B.
	Warning Symbol: Significant information required. Refer to the Hardware Installation Guide.
	Alternating Current
	Direct Current

General Wiring Recommendations



Risk of Electric Shock: Turn off power before any kind of servicing to avoid electric shock.

- All wiring must comply with electrical wiring diagrams as well as national and local electrical codes.
- 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)).
- Comply with all network and power supply guidelines outlined in the [Network Guide](#).
- 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.
- Power cables must be between 18 and 14 gauge (0.82 to 2.1mm² cross-sectional area). When connecting one wire to a controller's terminal block clamping cage (pole), the wire must be between 22 and 14 gauge (0.33 and 2.1mm² 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 16 gauge (0.33 to 1.3mm² cross-sectional area), and both wires must be of the same type (solid or stranded). Twist the wires together and insert then 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.

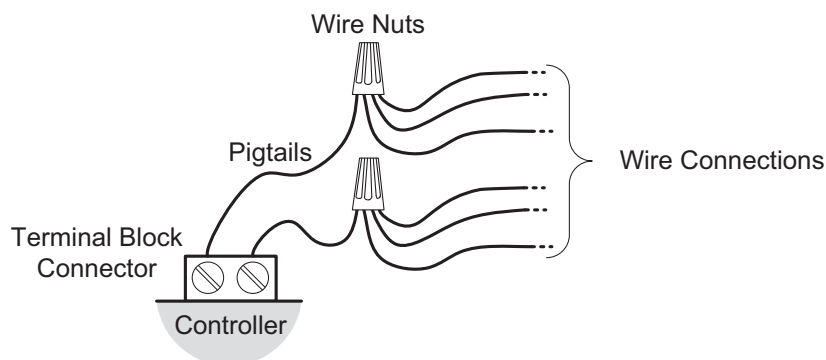


Figure 2: Using a Wire Nut and Pigtail to Wire the Controller

- Keep input and output wiring in conduits, trays or close to the building frame if possible.
- Always use unshielded cabling with a minimum Category 5 (CAT5) cable for ethernet communications.
- Do not connect the universal inputs, analog/digital outputs or common terminals to earth or chassis ground (unless stated otherwise and/or using shielded Ethernet cable).

Module Enclosure Dimensions

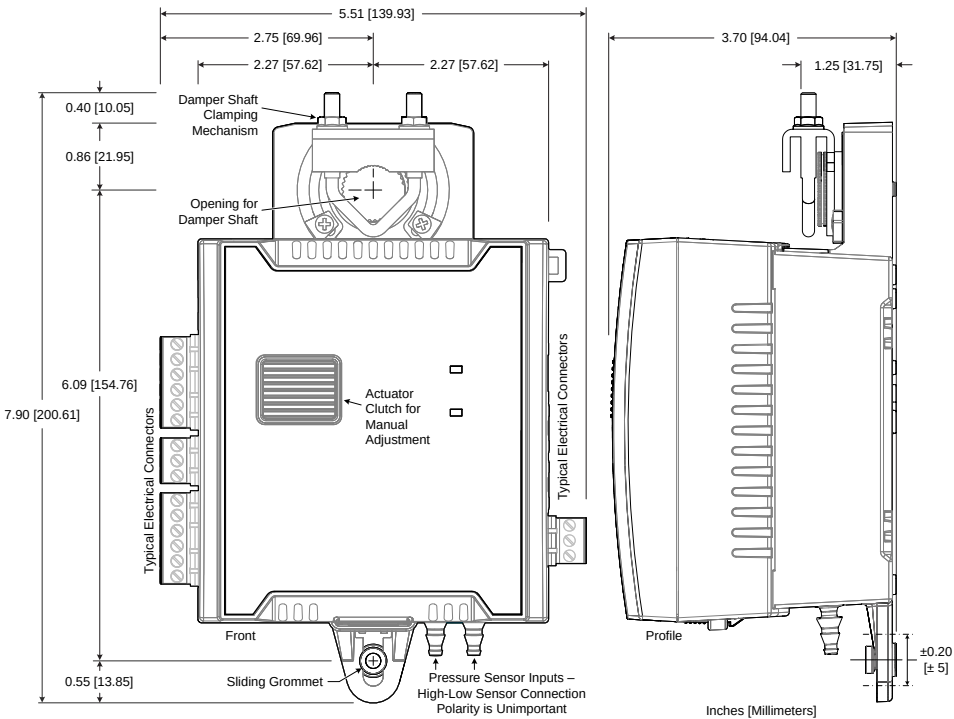


Figure 3: ECY-VAV Model Dimensions and Component Identification (Typical)

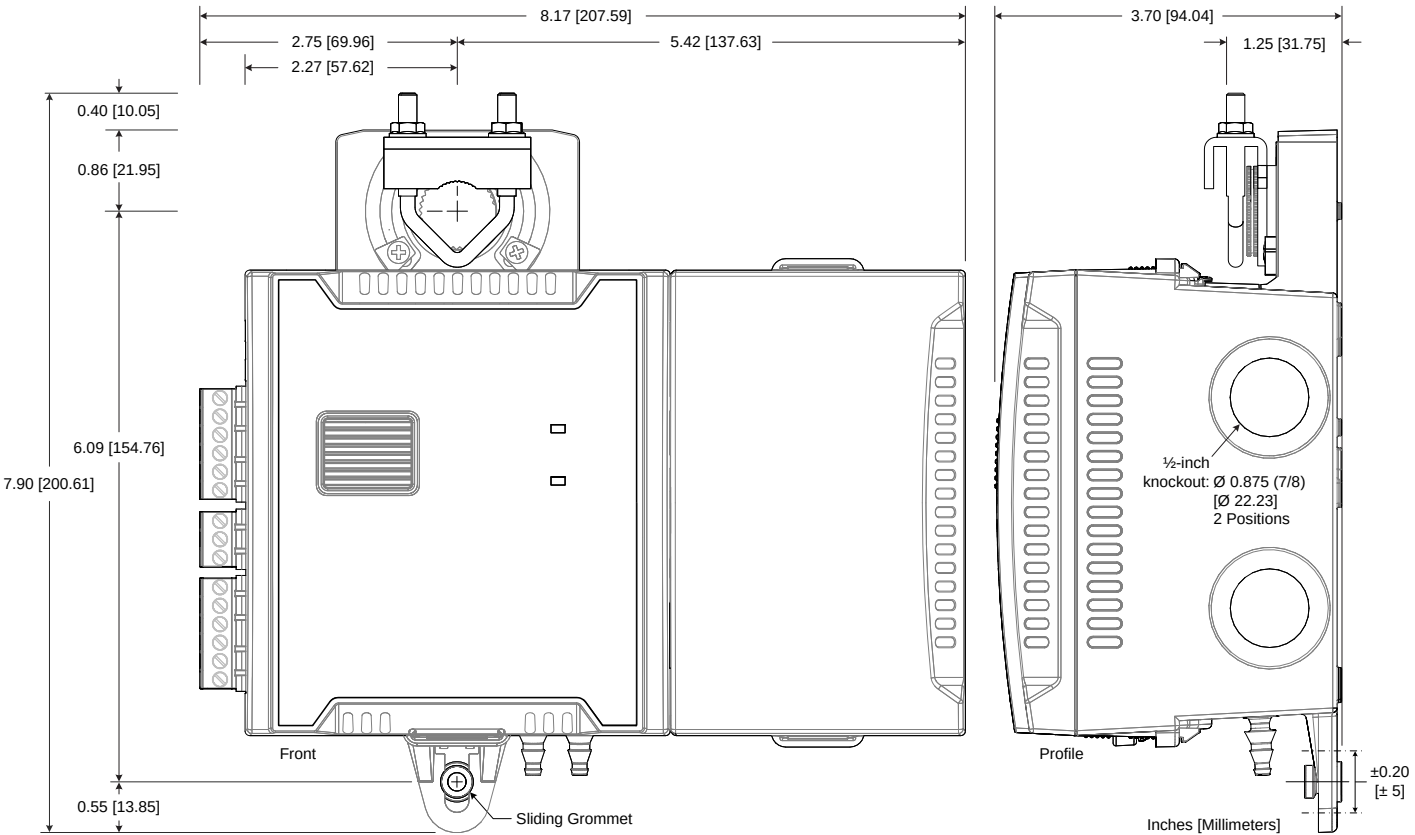


Figure 4: ECY-VAV-PoE Model Dimensions

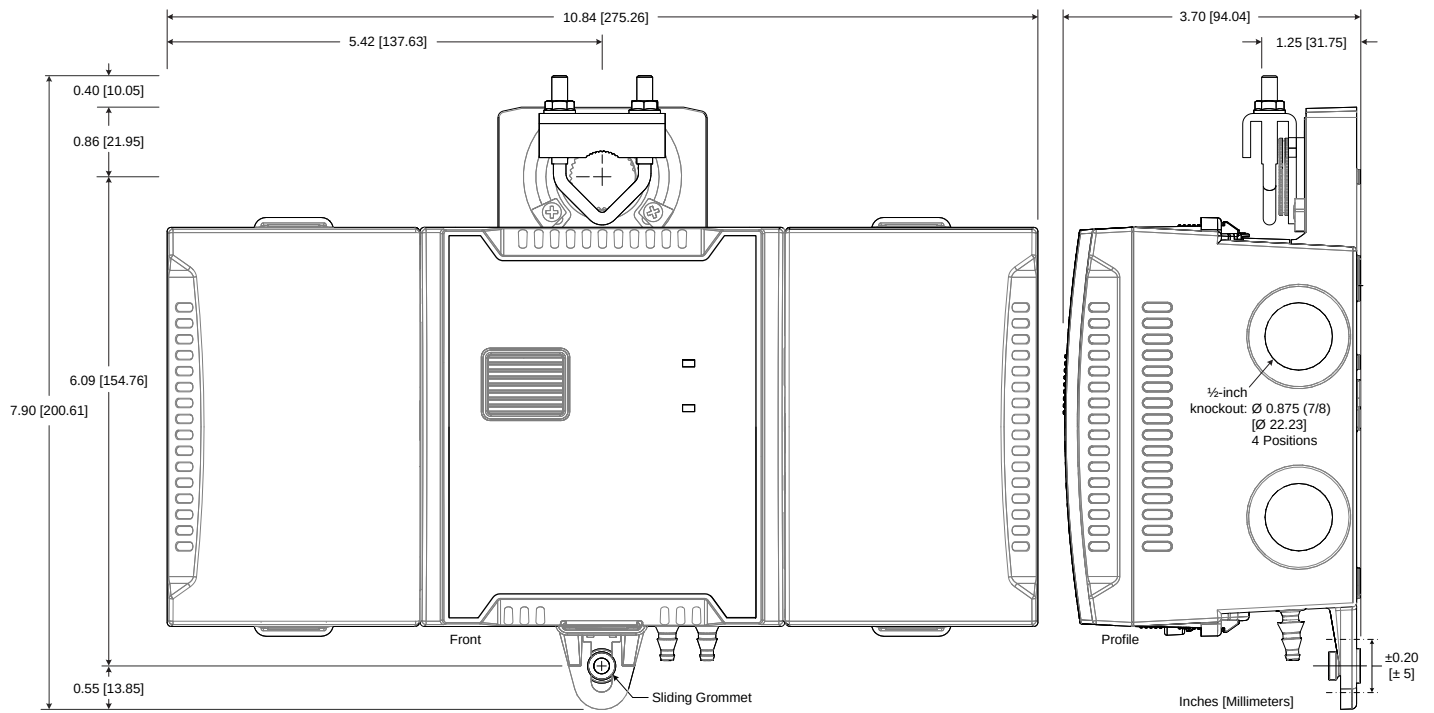


Figure 5: ECY-VAV Series Controllers with Terminal Covers Dimensions (Typical)

Configuration Jumper Location and Identification

Controllers have the following onsite configurable jumpers. Remove the ECY-VAV Series controller's cover to access these items.

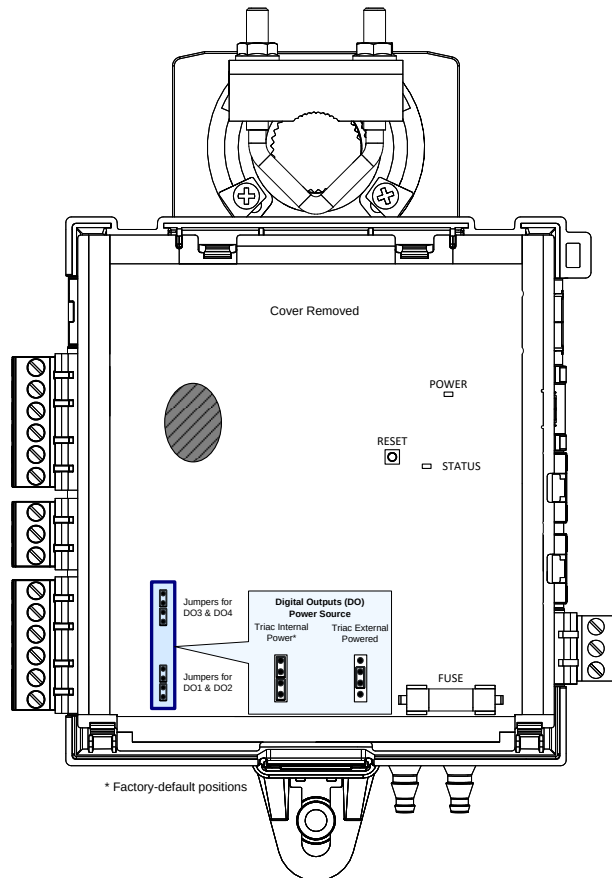


Figure 6: ECY-VAV Series Controller Jumper, Reset Button, and LED Indicator Locations.

The ECY-VAV-PoE Controller must be used with an **IEEE 802.3at** type 2 certified network switch that can supply 25.5 W at the powered device. Each of the switch's ports must be configured for static (hardware) power negotiation (that is, Data Link Layer Classification is not supported).

By default, the jumpers for this controller are set to the **IEEE 802.3at 25.5W** position (the factory default setting). With the **IEEE 802.3at** network switch, the amount of power supplied to the device is set to be automatically negotiated (**Auto** position).

Mounting Instructions

Each controller is specially designed for easy installation either directly on an air duct or in a panel by using the integrated mounting collar and the screw that is provided with the controller. This mounting arrangement opposes the torque applied to the damper shaft.

If you are installing an ECY-VAV-PoE Model or a controller with terminal covers, see [Mounting Procedure for Terminal Covers \[pg. 5\]](#). If you are installing an ECY-VAV Model, see [VAV Controller Mounting Procedure \[pg. 6\]](#).

Mounting Position

To prevent condensation on the VAV box's damper shaft from entering the controller's electronics, the controller's mounting orientation should be any position above the damper shaft (between 0 and 180°) so that any condensation from the damper shaft will fall away from the controller's electronics. Further countermeasures may be required in some installations. This is important in hot, humid climates where the VAV box is located near exterior doors or loading bays that may be blocked open or when the VAV box air supply is below 50°F (10°C).

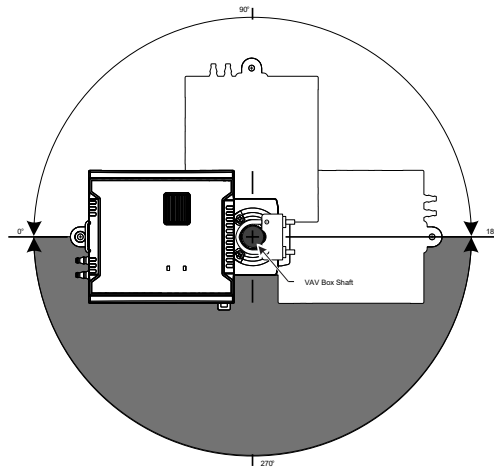


Figure 7: Recommended Mounting Position Angle Range

Mounting Procedure for Terminal Covers

Terminal covers can be added to any VAV controller to protect inadvertent contact with the controller's electrical connections.

- ☐ A terminal cover kit can be added to both sides of the controller.
- ☐ The ECY-VAV-PoE models come with a single terminal cover that has internal circuitry which must be installed on the side shown in Figure 4. A second terminal cover can be added to the other side of the ECY-VAV-PoE model controller; see Figure 5.

Controllers with terminal block covers can only be mounted on a flat surface that is sufficiently large to provide space around the installation. In this scenario, conductors must be made inaccessible and wiring must comply with local wiring regulations and methods appropriate for fixed equipment installation in a building (the use of cable conduits and trunking for example).

1. Separate the cover from the base of the terminal covers.
2. Attach the base of the terminal cover(s) to the underside of the VAV controller's body with the tabs shown in Figure 8 .
3. Install the VAV controller according to the next procedure, VAV Controller Mounting Procedure.

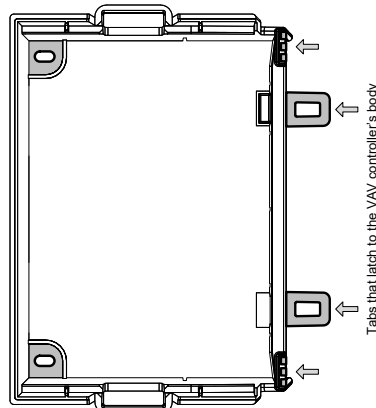


Figure 8: Terminal Cover Attachment Tabs

4. Connect and wire the controller according to the procedures shown later in this document.

VAV Controller Mounting Procedure

Mount the controller as follows:

1. The VAV controller comes with the sliding grommet pre-installed.
2. Orient the controller into position on to the damper shaft so that wiring connections are easily accessible. The controller must be fitted onto the shaft such that the base of the controller is parallel to the VAV box (perpendicular to the damper shaft). If the damper shaft has an external bushing that prevents the controller from being mounted flush to the side of the VAV box, use a spacer of the same thickness to compensate and to ensure the controller is at a right-angle to the shaft to prevent binding.
3. Screw the controller onto the VAV box through the controller's Sliding Grommet. The sliding grommet allows the controller to move back and forth when the VAV box's damper shaft is off center. Ensure to center the grommet along its travel range and ensure that the screw enters the VAV box at a right angle. Using a power screwdriver with a 6" extension (Figure 9), attach the controller to the VAV box with the 1" [25mm] screw provided with the controller (Figure 10) through the controller's sliding grommet as shown in Figure 12. Otherwise, mark the positions for the screw on the VAV box with a punch and then drill a hole into the VAV box. Then attach the controller to the VAV box with the 1" [25mm] screw provided with the controller.



Figure 9: Screwdriver Shaft Extension

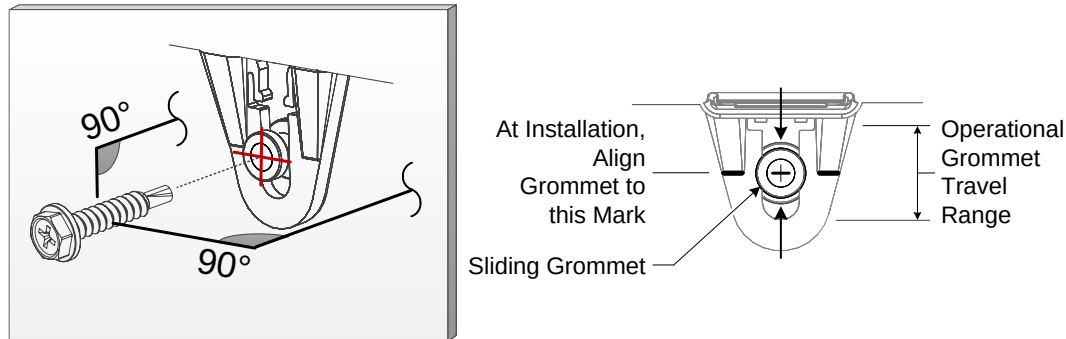


Figure 10: Supplied Mounting Hardware – Drive the screw at a right-angle to the VAV Box



Avoid over-tightening the screw so as to not strip the threads. Make sure the screw does not pierce too far into the VAV box and interfere with damper blade movement.

4. Find the damper position by the marking typically found on the end of the damper shaft.

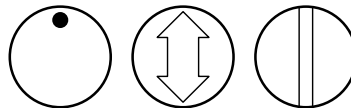


Figure 11: Typical Damper Shaft End Marking

5. Determine the direction required to close the damper: Clockwise (CW) or Counterclockwise (CCW). Turn the damper shaft with a pair of pliers to fully close the damper for 90° boxes or fully open the damper for 45° or 60° boxes
6. Press and hold down the *Actuator Clutch for Manual Adjustment* button (see Figure 3), and turn the controller's shaft coupler until it touches the mechanical end-stop to either the fully closed position (90° boxes) or the fully open position (45° and 60° boxes).
7. For 90° VAV boxes: If the damper closes CCW, turn the coupler to the CCW mechanical stop limit. If the damper closes CW, turn the coupler to the CW mechanical stop limit. The open mechanical stop is factory preset for 90° boxes.
For 45° and 60° VAV boxes: The mechanical stops must be set for both the fully closed and fully open damper positions. By installing the controller at the fully open position, the controller provides the open mechanical stop for 45° and 60° boxes. The closed damper seal provides the fully closed stop.
8. Tighten the U-Bolt clamp on to the damper shaft using an 5/16 in (8 mm) wrench or socket. Tighten the bolts between 100 and 130 lb-in (11 and 15 N-m).
9. Test for free damper shaft movement: Press and hold down the *Actuator Clutch For Manual Adjustment* button and manually turn the actuator coupling to be certain that the actuator can rotate from full closed to full open positions without binding.
10. Connect the VAV box's flow sensor tubing to the controller's *Pressure Sensor Inputs*. The connection is polarity free (high-low ports are interchangeable). Create a condensation trap in the pneumatic tubing by forming it into a vertical loop.
11. Finalize the installation by rotating the damper to the full open position.

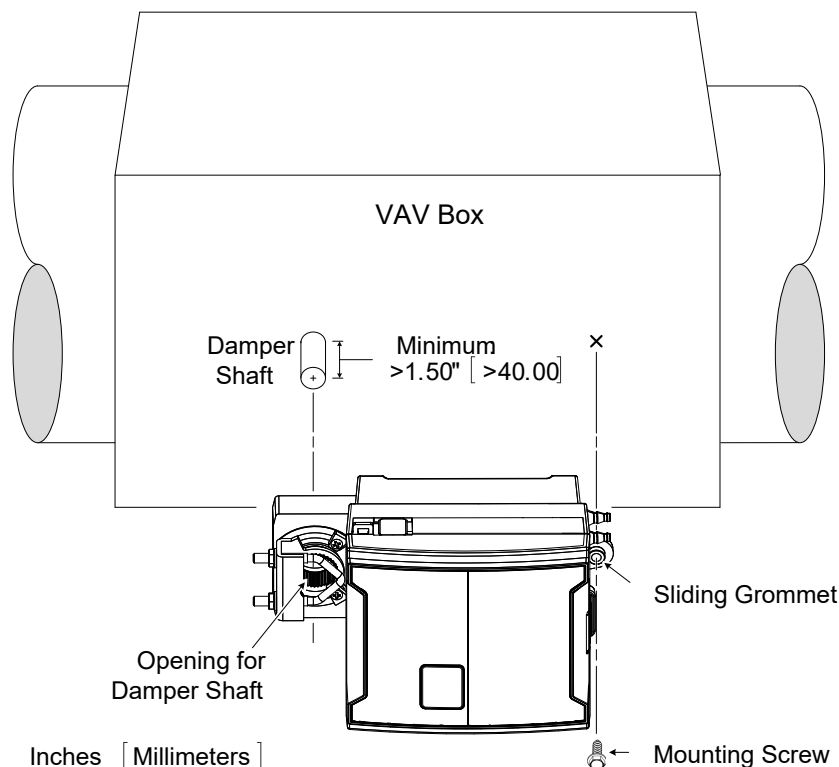


Figure 12: Standard Mounting Method: Mounting a controller on a damper shaft

Power Wiring (ECY-VAV Model)

Voltage: 24VAC/DC; $\pm 15\%$, Class 2

For terminal block connector wiring best practices, see [General Wiring Recommendations \[pg. 2\]](#).

See the **VAV-Smart Room Control Device Calculator** available for download from our website to determine the power requirements for each ECY-VAV model being installed.

ECY-VAV-PoE model controllers are powered by their network connection only. See [Communications Wiring \[pg. 12\]](#).



This is a Class 2 Product. Use a Class 2 transformer only (rated at 100VA or less at 24VAC) to power the controller(s).

When calculating a controller's power consumption to size the 24VAC transformer, you must also add the external loads the controller is going to supply, including the power consumption of any connected subnet modules (for example, for Allure EC-Smart-Vue sensors).

It is recommended to wire only one controller per 24VAC transformer.

If only one 24VAC transformer is available, determine the maximum number of daisy-chained VAVs that can be supplied on a single power cable supplied by a 100 VA transformer, according to the controller's expected power consumption including external loads, the cable's wire gauge, and the total cable length from the following table. Any installation condition that is outside of the parameters of the following graph should be avoided.

Daisy-chaining power to controllers is not permitted when a controller's expected power consumption including external loads is over 15VA. In this case the controller must be connected to the 24VAC transformer in a star topology. The transformer must be installed in close proximity to the controller according to the cable gauge and total load.

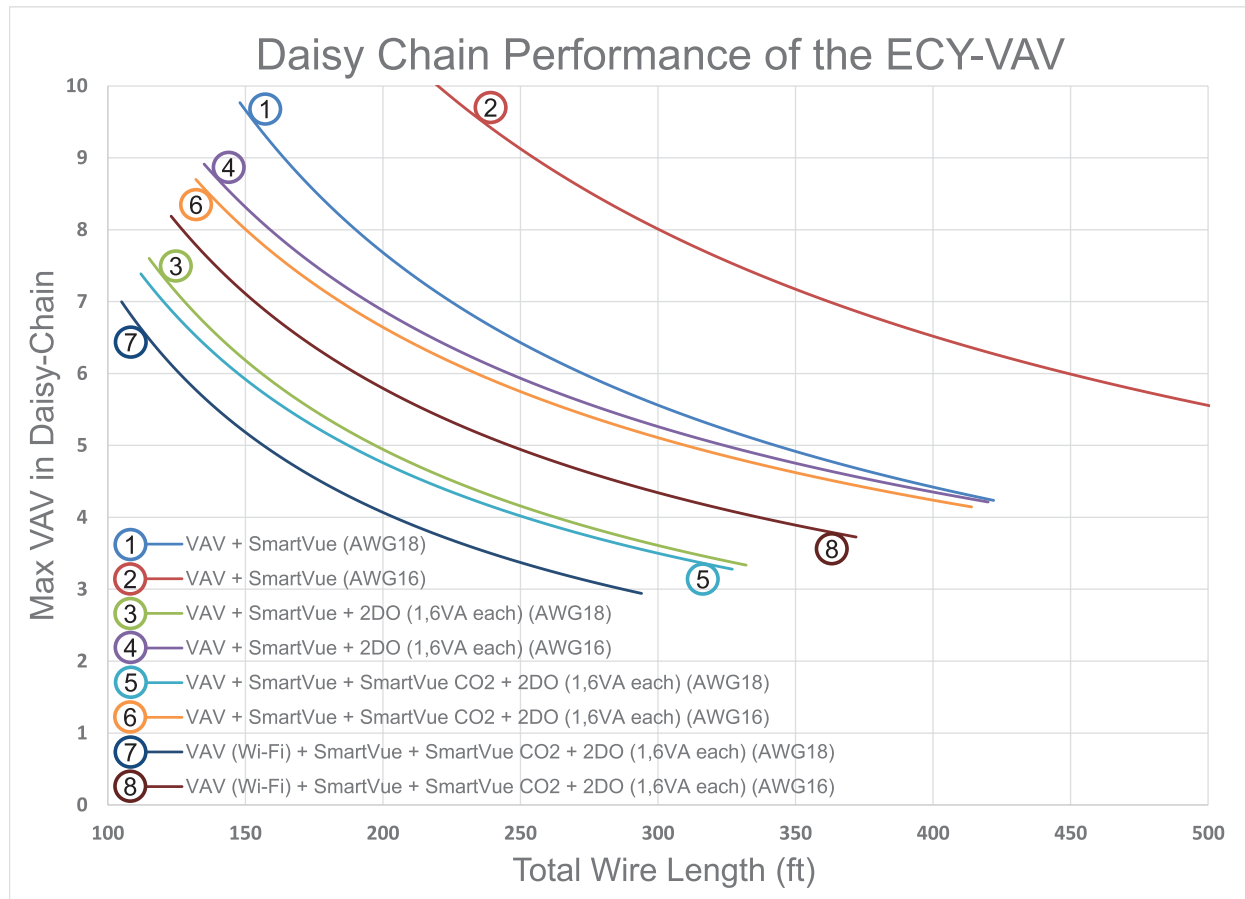


Figure 13: Maximum number of ECY-VAV devices on a daisy-chain at evenly spaced intervals



Laboratory testing conditions for the above graph are as follows:

- ☐ Distance between each VAV is evenly spaced along the entire wire length
- ☐ Transformer specification: 100VA (120/24VAC)
- ☐ Tested at room temperature with low voltage line conditions: 108VAC (50Hz)

Daisy-Chain Wiring

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

Maintain consistent polarity when connecting controllers and devices to the transformer. That is, the COM terminal of each controller and each peripheral should be connected to the same terminal on the secondary side of the transformer.



The COM terminals of the controller are internally wired to the ground terminal of the power supply connector. Connecting a peripheral or another controller to the same transformer without maintaining polarity between these devices will cause a short circuit.

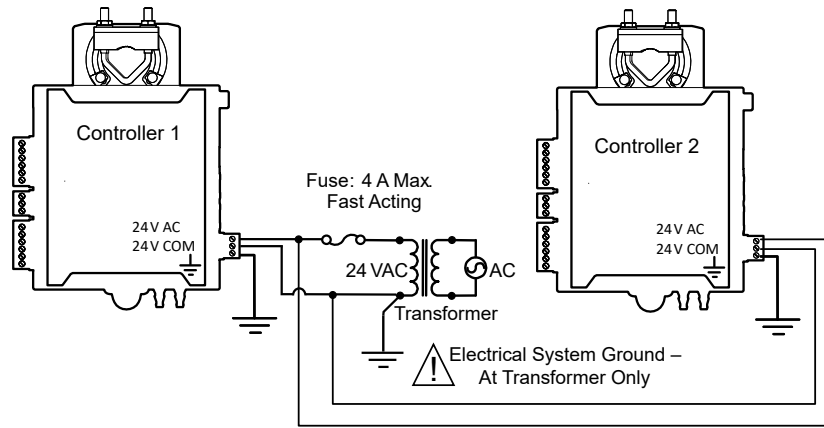


Figure 14: ECY-VAV Model Power Wiring

The following diagram shows the recommended wiring of the ECY-VAV Controller with and without a 3-wire peripheral. This configuration applies either to a daisy-chain configuration or configuration with separate transformers. Note that internally the COM terminals are no longer connected to the 24VAC COM terminal but rather to the ground ($\perp$) terminal.

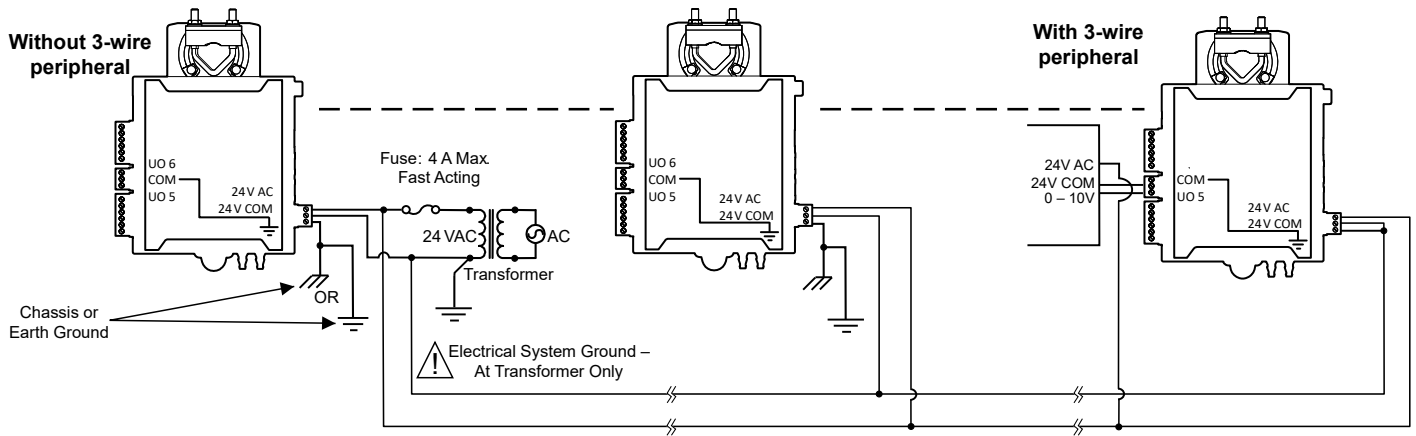


Figure 15: ECY-VAV Model Power Wiring With and Without 3-Wire Peripherals

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 designation. 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 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	ECY-VAV Input Designation	Input Connection Diagram
☐ Dry Contact input. ☐ Pulsed input.	☐ UIx ☐ DIx	
☐ 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 +5VDC supply with a 10KΩ pull-up resistor (Internal supply type).	☐ UIx ☐ DIx	
☐ RTD input (for example, 1000Ω). ☐ Thermistor Input (for example, 10kΩ type II and III).	☐ UIx	
☐ Resistive input, maximum 350kΩ (for example, use with 10kΩ and 100kΩ potentiometers).	☐ UIx	
☐ 0 to 20mA input used with a 2-wire, 0 to 20mA sensor powered by the controller's internal 18VDC power supply. ☐ An on-board 18VDC power supply can provide the necessary power for 20mA current loop sensor operation. ☐ Connect a 249Ω resistor between the UIx and COM terminals.	☐ UIx	
☐ 0 to 20mA input used with a 2-wire, 0 to 20mA sensor powered by an external 24 AC/DC power supply. ☐ Connect a 249Ω resistor between the UIx and COM terminals.	☐ UIx	
☐ 0 to 20mA input used with a 3-wire, 0 to 20mA sensor powered by an external 24 AC/DC power supply. ☐ Connect a 249Ω resistor between the UIx and COM terminals. When daisy-chaining two or more controllers on one transformer, wire the controller according to Figure 14.	☐ UIx	
☐ 0 to 20mA input used with a sensor powered by its own power source. ☐ Connect a 249Ω resistor between the UIx and COM terminals.	☐ UIx	
☐ Voltage input used with a 3-wire 0 to 10VDC or 0 to 5VDC sensor powered by an external 24 AC/DC power supply. When daisy-chaining two or more controllers on one transformer, wire the controller according to Figure 14.	☐ UIx	
☐ Voltage input used with a 0 to 10VDC or 0 to 5VDC sensor powered by its own power source.	☐ UIx	

Table 1: ECY-VAV Input Wiring

Output Wiring

Output options must be properly configured in EC-*gfx*Program to ensure correct output values. For terminal block connector wiring best practices, see [General Wiring Recommendations \[pg. 2\]](#).

Power may be available from ECY-VAV-PoE controllers to power external loads; see the table below.

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.
- ☐ Triac outputs are factory set for internal power.

Control Output Type	Output Designation	Output Connection Diagram
☐ Discrete 0 or 12VDC digital, Pulse, or PWM output controlling a 12VDC relay.	☐ UOx	
☐ 0 to 10VDC voltage output.	☐ UOx	
☐ 0 to 10VDC voltage output controlling an analog actuator that is powered by an external 24VAC power source. ☐ This output can source up to 20 mA	☐ UOx	
☐ 0 to 10VDC voltage output controlling an analog actuator that is powered by the ECY-VAV-PoE controller's power over Ethernet IEEE 802.3at certified switch. ☐ Power is taken from the controller's power input terminals (24VAC and 24V COM) to power external loads up to 15 Watts total maximum ² .	☐ UOx	
☐ 1 to 10VDC voltage output controlling dimmable lighting ballasts that require a current sink output (pull-down). ☐ This output can sink up to 5mA.	☐ UOx	
☐ Discrete digital, Pulse, or PWM output: 24VAC externally-powered triac controlling a relay ¹ . ☐ Set the jumper according to Figure 6.	☐ DOx	
☐ Discrete digital, Pulse, or PWM output: 24VAC internally-powered triac controlling a relay ^{1,2} . Set the jumper according to Figure 6.	☐ DOx	

Control Output Type	Output Designation	Output Connection Diagram
☐ 24VAC externally-powered triac output controlling a floating actuator ¹ . ☐ Set the jumper according to Figure 6.	☐ DOx	
☐ 24VAC internally-powered triac output controlling a floating actuator ^{1,2} . ☐ Set the jumper according to Figure 6.	☐ DOx	

1. Maximum output current for all triac outputs is 0.5A continuous or 1A @ 15% duty cycle for a 10-minute period.
2. The ECY-VAV-PoE model can source up to 15 Watts total maximum to external loads from the controller's power over Ethernet IEEE 802.3at certified switch.

Communications Wiring

The Eclipse 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 Eclipse 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 Eclipse User Guide for cable specifications.

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

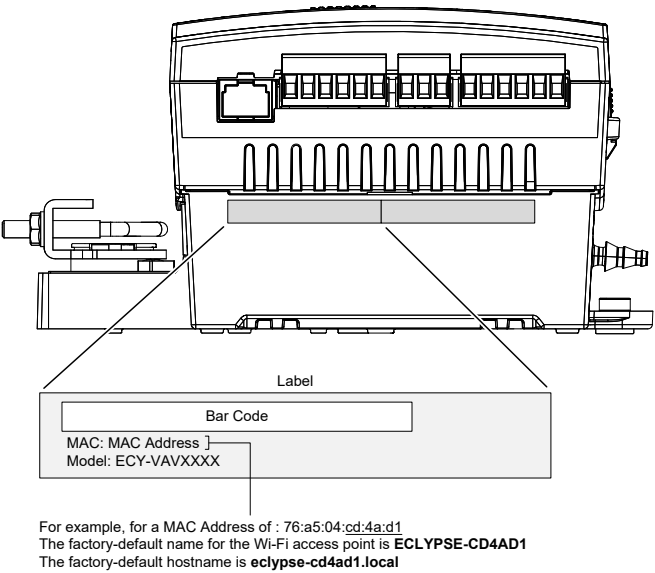


Figure 16: Finding the controllers MAC Address

There are two methods to connect to the controller: wired (Ethernet connection) or wireless (when the Eclipse Wi-Fi Adapter is connected to the controller).

Wired Connection

Network connections can be daisy-chained.

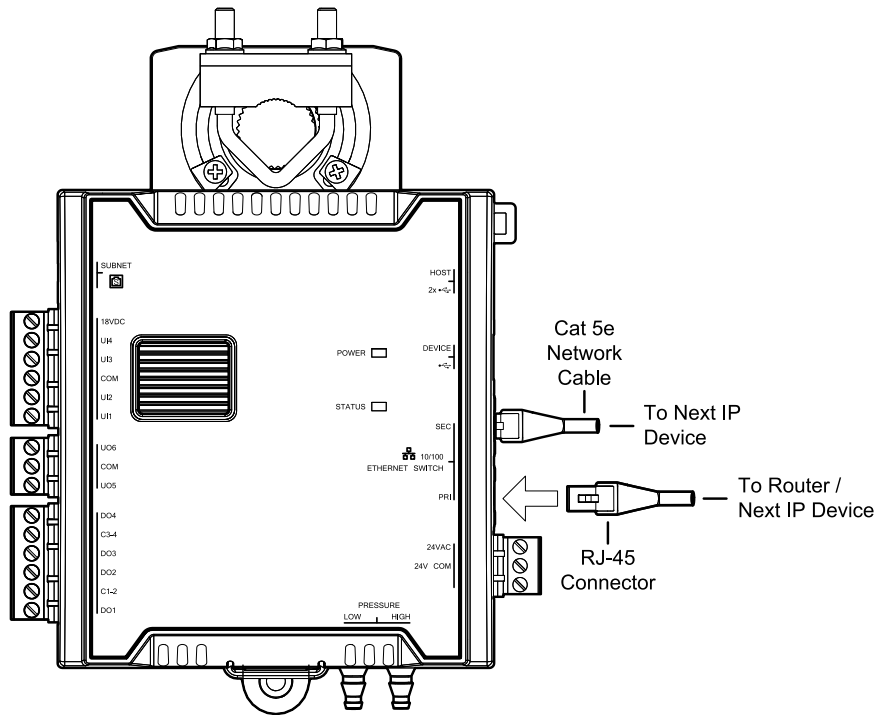


Figure 17: ECV-VAV Model Communications Wiring

ECV-VAV-PoE Model Wired Connection

The ECV-VAV-PoE model uses the network wiring to provide both data connection and the electrical power it needs to operate. The electrical power is provided by the connected network switch. This controller must be used with an IEEE 802.3at certified network switch that is configured such that its default power allocation mode will always provide the maximum available power to the ECV-VAV-PoE device without negotiation. You must administratively disable any other power negotiation protocols on the switch interface – see the switch's configuration guide for more information.

A network connection to this model cannot be daisy-chained; each controller must be directly connected to the Network PoE switch.

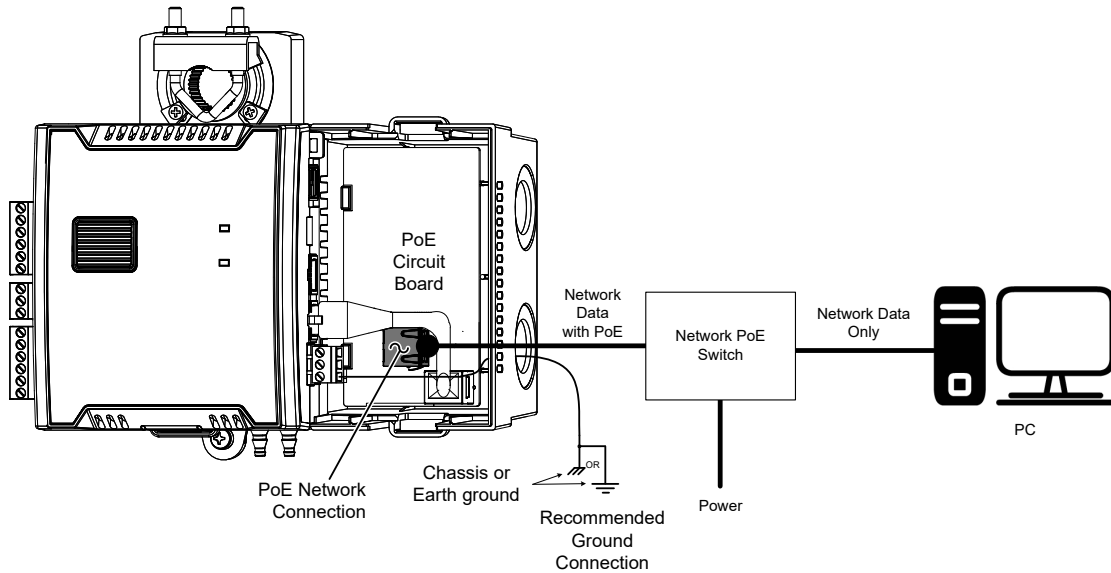


Figure 18: Providing Power and Network Connectivity to an ECV-VAV-PoE Model.

To remove power from an ECV-VAV-PoE controller, disconnect the “PoE Network Connection” shown in Figure 17.

Wireless Connection

Once the Eclipse Wi-Fi Adapter has been connected to the controller, a Wi-Fi hotspot 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: **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 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.

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 19: 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-gfxProgram's **Connect to** screen. When installing the latest version of EC-gfxProgram 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:

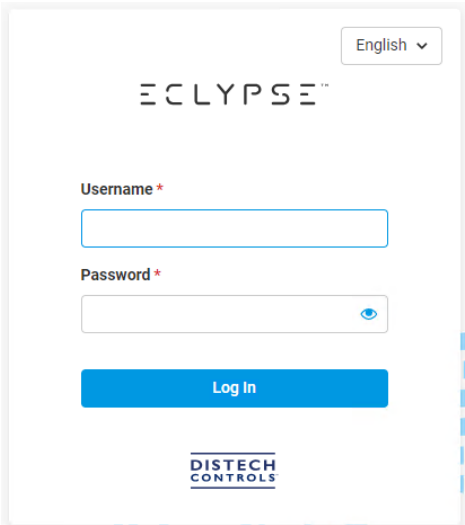
- ☐ For a Wi-Fi Network Connection:

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 Eclipse 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 Eclipse [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).

Subnet Wiring

Supported Allure Series communicating sensors are connected to the **SUBNET** port modular connector of the controller with a standard Category 5e Ethernet patch cable fitted with RJ-45 connectors.

The [Eclipse User Guide](#) provides extensive information and requirements for the connection of an Allure series communicating sensor. It contains information about network topology and length, cable type, setting the Subnet ID, etc. It can be downloaded from our website. See also the Hardware Installation Guide supplied with the Allure series communicating sensor.

M-Bus Communications Wiring

 For Eclipse Facilities controllers, ensure that you have at least a C1 Connectivity Pack to enable the M-Bus functionality. See the controller’s Spec Sheet for more details.

M-Bus communications are made by connecting meters directly in an M-Bus port.

The controller provides an M-Bus port when connected to an ECY-MBUS extension module via a USB connection.

The M-Bus port must be configured in EC-*gfx*Program prior to use. M-Bus meters are integrated into EC-*gfx*Program using the M-Bus device block.

Maximum M-Bus Device Wiring Length

The following information provides wiring limitations for M-Bus devices. The wiring length provided below was tested as a worst-case scenario with all meters being located at the end of the bus. If meters are more evenly spaced along the bus, then the maximum wiring length can possibly be increased.

Testing Conditions:

Current per slave/meter	1.5 mA
Max ΔV accepted on the bus	2 V
Cable capacity	110 nf/km

USB Connection:

M-Bus Meters	AWG 15			AWG 22		
	300 Bps	2400 Bps	9600 Bps	300 Bps	2400 Bps	9600 Bps
3	12000 m (39370 ft)	4500 m (14763 ft)	2400 m (7874 ft)	4000 m (13123 ft)	2200 m (7217 ft)	1150 m (3773 ft)

Table 2: Maximum Wiring Length from the Controller to the Last M-Bus Meter on USB connection

Using the Reset Button

The reset button is located under the controller's cover (see Figure 6). Depending on the amount of time the reset button is held down, different actions are taken by the controller. The STATUS LED will turn off after each time interval. See Figure 6 for status LED indicator location.

Hold Reset For	To
5 seconds	Restart / reboot the controller.
10 seconds	Reset both Ethernet and Wi-Fi IP addresses back to factory default settings.
20 seconds	Reset the controller to its factory default settings. User accounts (user names and passwords) will also be reset to the factory default settings and the controller license will be cleared. If FIPS has been enabled on the controller, this will turn FIPS off.



Always backup the controller's license through the controller's Web interface before you hold the controller's reset button for 20 seconds. Once the controller reboots, you will have to install the license through the controller's Web interface.

After you hold the controller's reset button for 20 seconds, 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.

Maintenance

Regular Maintenance

- Each controller requires minimal maintenance, but it is important to take note of the following:
- ☐ Clean the outside of the controller by polishing it with a soft dry cloth.
 - ☐ Using a torque limited screw driver set to 0.4 Nm (3.54 in-lb), retighten terminal connector screws annually to ensure the wires remain securely attached.

Disposal

The Waste Electrical and Electronic Equipment (WEEE) Directive sets 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.

North American Emissions Compliance

United States



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 and commercial 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.

Canada

This Class (B) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (B) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Specifications subject to change without notice.

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