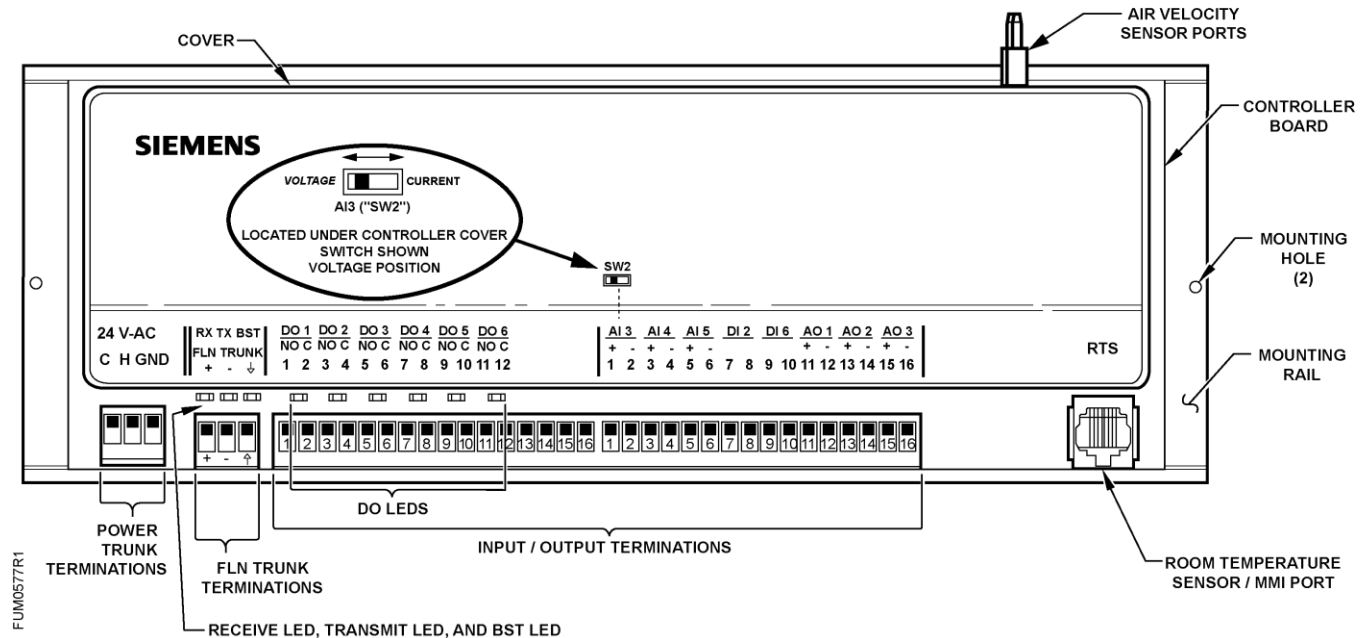


# TEC VAV with 0-10V AO Heat Modulation and CO2 Monitoring Controller



Generic Controller I/O Layout. See *Wiring Diagram* for application specific details.

## Control Applications

2843, 2845, 2847

## Product Description

These instructions explain how to field install or replace a Siemens TEC VAV with 0-10V AO Heat Modulation and CO2 Monitoring.

## Product Numbers

Siemens TEC VAV with 0-10V AO Heat Modulation and CO2 Monitoring 540-865EN

Shipping carton includes a controller assembly, a mounting rail, and two self-tapping/drilling screws.

Item No. 540-1031. Rev. DA


	<b>⚠ CAUTION</b>
	<p><b>Keep the unit in its static-proof bag until installation.</b></p> <p>Otherwise you run the risk of damage to the printed circuit board from electrostatic discharge.</p>


## Accessories

Low cost temporary temperature sensor, 10K thermistor with RJ11, that enables space control if the permanent room or duct sensor is not installed (pack of 25). 540-658P25

Duct Temperature Sensor, NTC 100K Ω Type 2, 3" Probe for Commissioning Only QAM1035.008P50

## Warning/Caution Notation

	<b>⚠ WARNING</b>
	Personal injury/loss of life may occur if you do not follow the procedures as specified.

	<b>⚠ CAUTION</b>
	Equipment damage or loss of data may occur if you do not follow the procedures as specified.

## Expected Installation Time

New controller installation	10 Minutes
Replacement (old controller has removable terminal blocks)	6 Minutes
Replacement (old controller does not have removable terminal blocks)	16 Minutes



**NOTE:**  
 You may require additional time for database work at the field panel.

## Required Tools and Materials

- Small flat-blade screwdriver (1/8-inch blade width)
- Cabling and connectors
- Cordless drill/driver set

## Prerequisites

- Wiring conforms to NEC and local codes and regulations. For further information see the *Wiring Guidelines Manual*.
- Room temperature sensor installed (optional).
- 24 Vac Class 2 power available.
- Supply power to the unit is OFF.
- Any application specific hardware or devices installed.



**NOTE:**  
 If the controller is being installed on a box with 1 or more stages of electric heat, the 550-809 MOV with pre-terminated spade connectors must be installed across the manufacturer-supplied airflow switch. MOVs can be installed at the time the controller is factory mounted; coordinate with the box manufacturer prior to order placement. For field installation, see *Metal Oxide Varistor Kit Installation Instructions* (540-986).

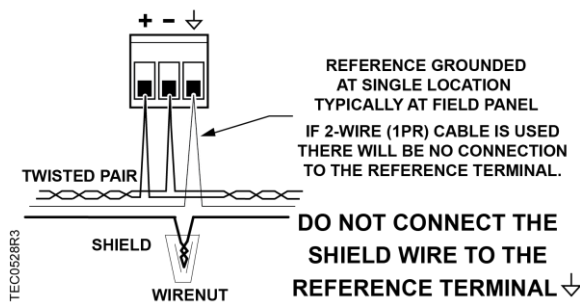
## Installation Instructions



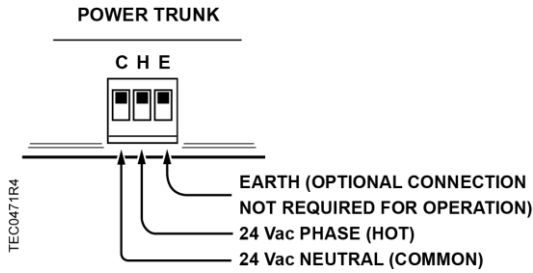
**NOTE:**  
 All wiring must conform to national and local codes and regulations (NEC, CE, etc.).

1. Secure the mounting rail in the controller's desired location.
2. Place the ESD wrist strap on your wrist and attach it to a good earth ground.
3. Remove the controller from the static proof bag and snap it into place on the mounting rail.
4. Connect the FLN.

3-WIRE FLN TRUNK

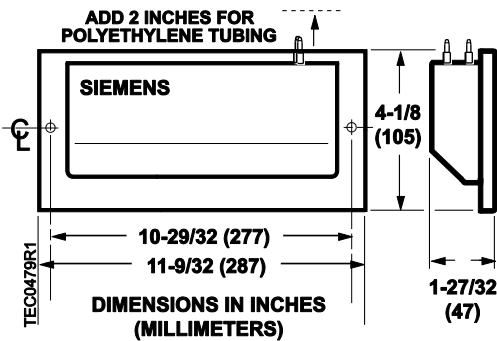


5. Connect the point wiring (see *Wiring Diagrams*).
6. Plug the room temperature sensor cable into the RTS port.
7. Connect the power trunk. DO NOT apply power to the controller without first consulting the specialist.



**NOTE:**  
 As a standard grounding procedure, ensure that a ground wire is connected directly from neutral of the 24Vac secondary (the side that connects to the "C" terminal of the TEC) to earth.

The installation is complete.



## Wiring Diagram

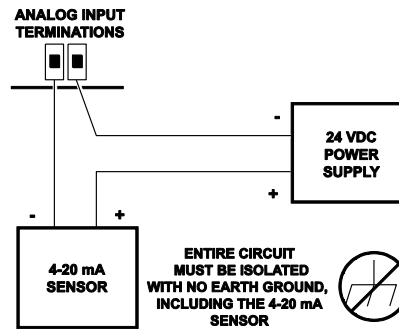


### CAUTION

The controller's DOs control 24 Vac loads only. The maximum rating is 12 VA for each DO. An external interposing relay is required for any of the following:

- VA requirements higher than the maximum
- 110 or 220 Vac requirements
- DC power requirements
- Separate transformers used to power the load.

(for example part number 540-147, Terminal Equipment Controller Relay Module)



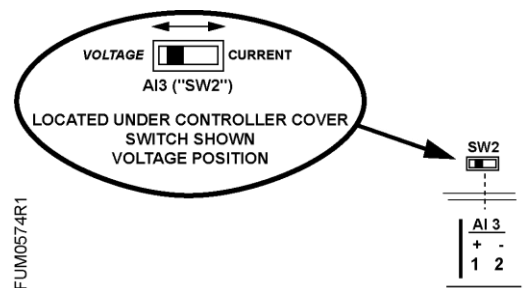
### CAUTION:

Each 4-20A sensor requires a SEPARATE, dedicated power limited 24 VDC power supply. DO NOT use the same transformer to power both the sensor and controller.

### Wiring Requirements for 4–20 mA Sensors.

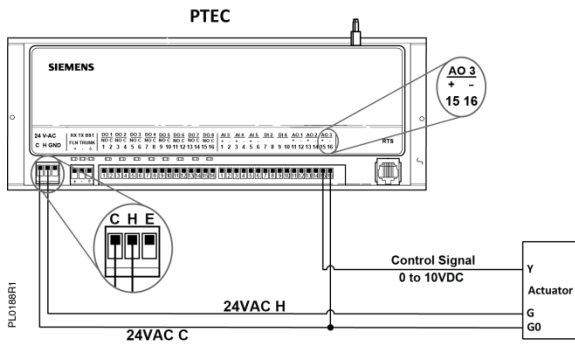


**NOTE:**  
 If the voltage/current switch is set to current and a 4 to 20mA sensor is connected to AI, then special wiring requirements must be followed.



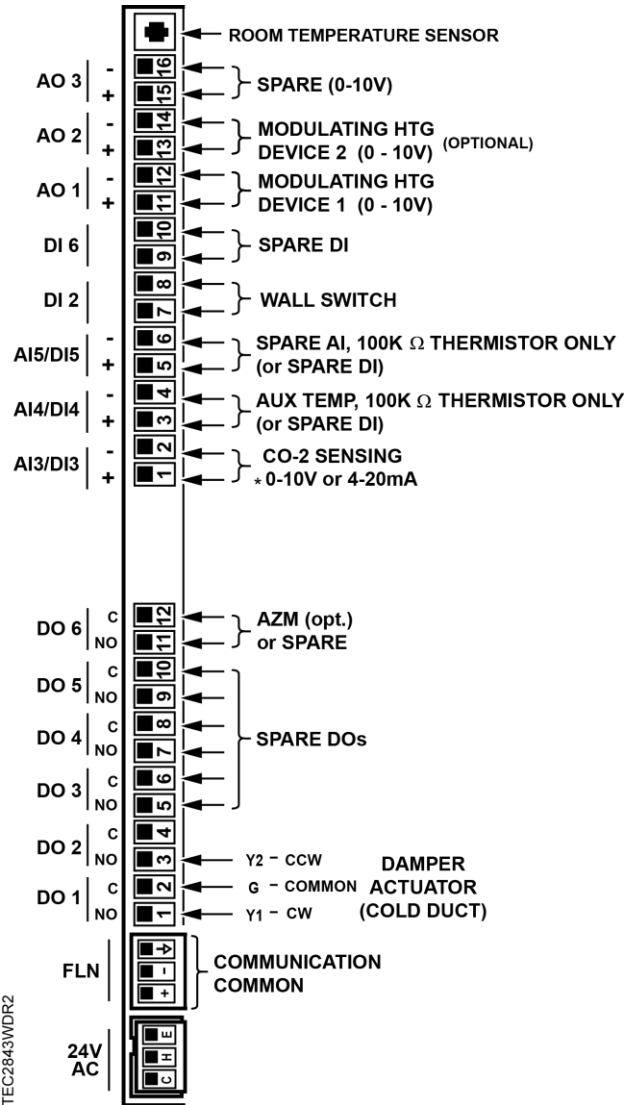


**NOTE:**  
 When wiring any actuator that uses a 0 to 10V control signal and ties AC neutral to DC common, an additional wire **must** connect the actuator AC neutral to the DC common of the PTEC/TEC AO being used to control the actuator.



**24 Vac Modulating Control.**

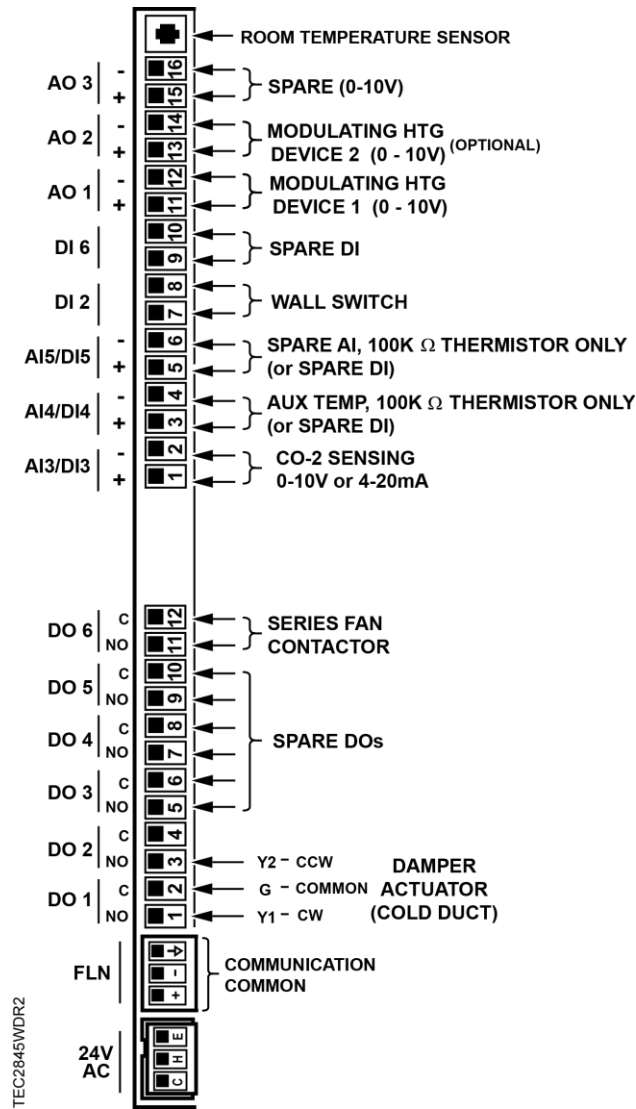
Actuator Symbol	TEC Connection	Function	Terminal Connection	Standard Color
1	H	Supply (SP)	G	Red
2	C	Neutral (SN)	G0	Black
8	AO3 – 15 (+)	0 to 10V input signal	Y	Gray
--	C to AO3 16 (-)	Common jumper	--	--



TEC2843WDR2

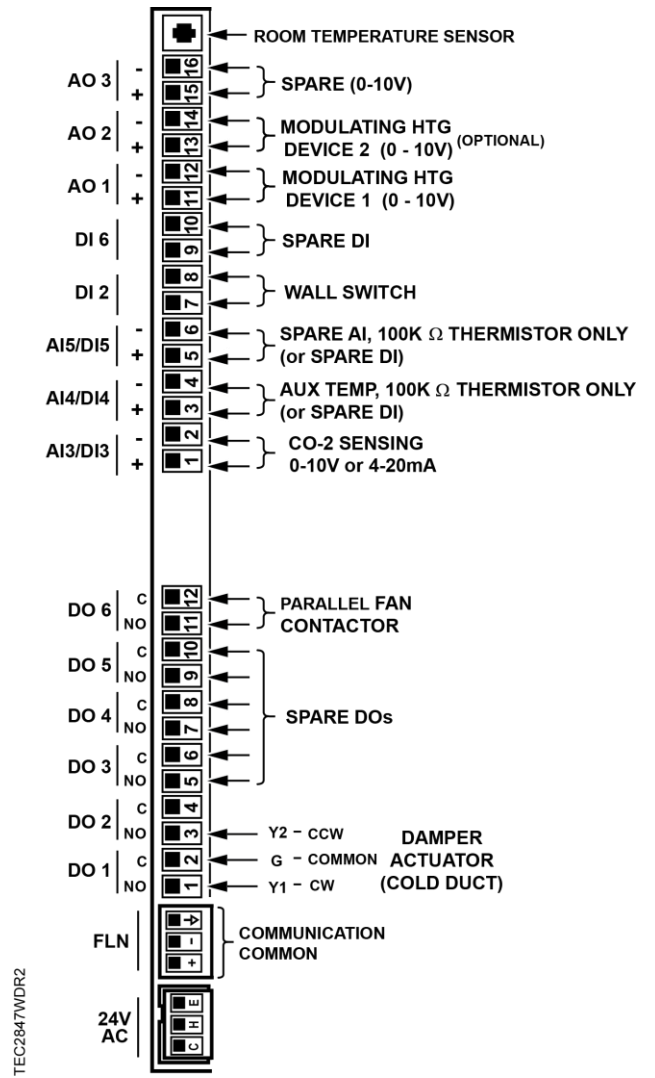
\* AI 3 is switch selectable for voltage or current (on controller board under cover).

**Application 2843 -- VAV with 0-10V AO Heat Modulation and CO2 Monitoring.**



\* AI 3 is switch selectable for voltage or current (on controller board under cover).

**Application 2845 - VAV Series Fan with 0-10V AO Heat Modulation and CO2 Monitoring.**



\* AI 3 is switch selectable for voltage or current (on controller board under cover).

**Application 2847 -- VAV Parallel Fan with 0-10V AO Heat Modulation and CO2 Monitoring.**

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