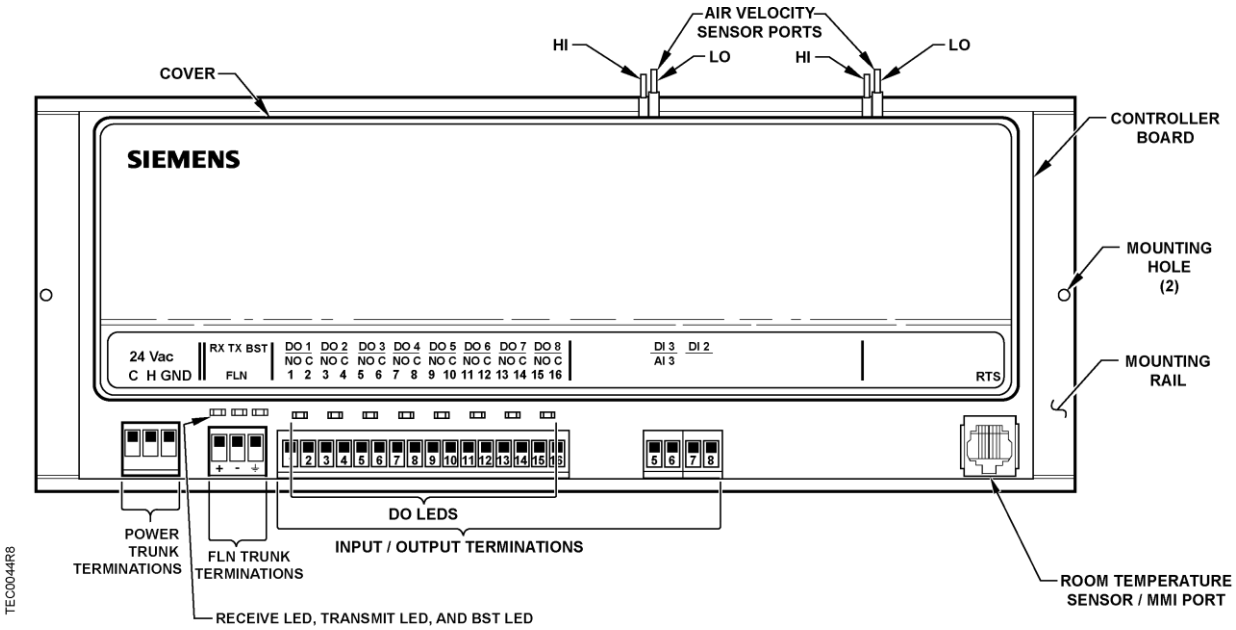
SIEMENS

Installation Instructions
Document No. 540-1022
October 26, 2016

TEC Dual Duct – Two Air Velocity Sensors Controller



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

Control Applications

2237 and 2238

2267 through 2269

Product Description

These instructions explain how to field install or replace a TEC Dual Duct Controller - Two Air Velocity Sensors.

Product Numbers

TEC Dual Duct Controller - Two Air Velocity Sensors	540-506N
TEC Dual Duct Controller - Two Air Velocity Sensors with Autozero Module	540-507N

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

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

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

Large Equipment Controllers Enclosure (Long board and ATEC controllers.)	550-002
RJ11 (6 wire) RTS cable in 25 ft, 50 ft, or 100 ft (7.6 m, 15.2 m, 30.48 m)	588-100 series
Autozero Module (included with 540-507N)	540-380

Warning/Caution Notation

⚠ WARNING

Personal injury/loss of life may occur if you do not follow the procedures as specified.

⚠ CAUTION

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

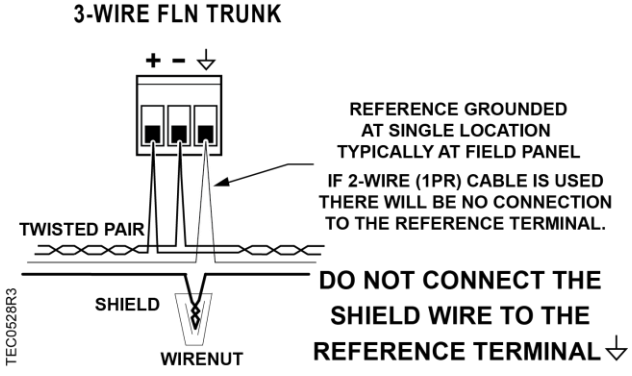
- Wiring conforms to NEC and local codes and regulations. For further information see the *Wiring Guidelines Manual*.
- Room temperature sensor installed (optional).
- 24 Vac Class 2 power available.
- Supply power to the unit is OFF.
- Any application specific hardware or devices installed.
- Air velocity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

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

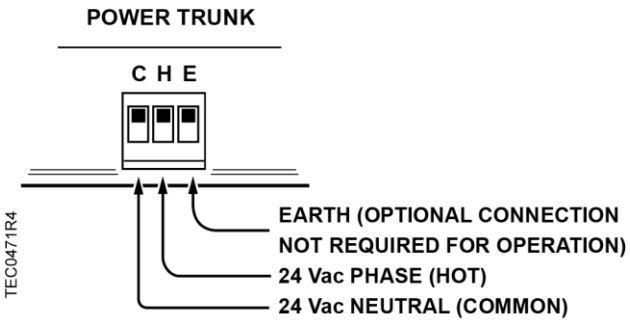
NOTE:
All wiring must conform to national and local codes and regulations (NEC, CE, etc.).

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.



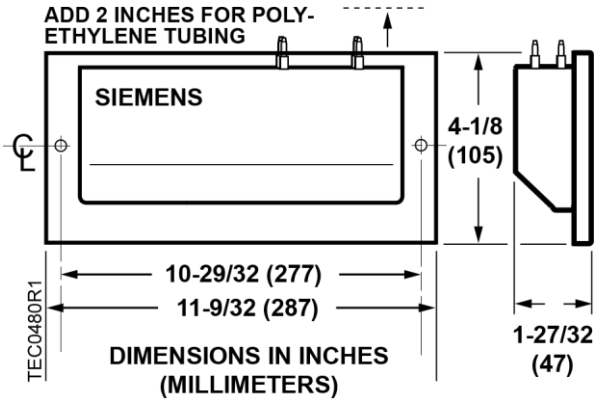
5. Connect the point wiring (see *Wiring Diagrams*).

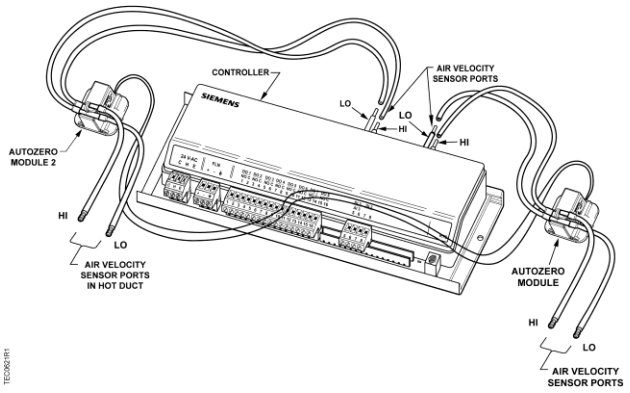
6. Plug the room temperature sensor cable into the RTS port.
7. Connect the power trunk. DO NOT apply power to the controller without first consulting the specialist.



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.



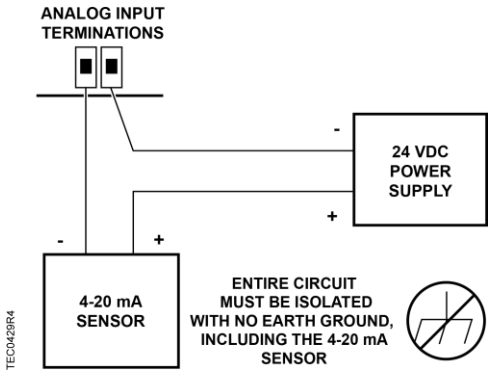


Wiring Diagrams

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:

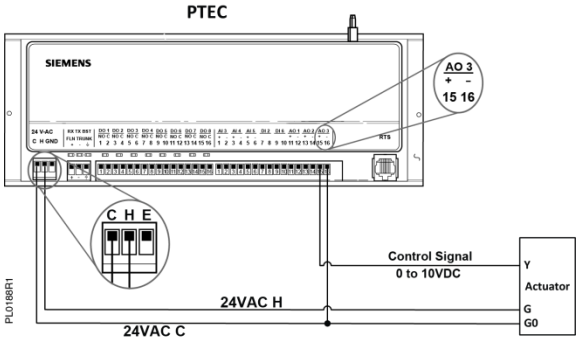
- VA requirements higher than the maximum
- 110 or 220 Vac requirements
- DC power requirements
- Separate transformers used to power the load.
(for example part number 540-147, Terminal Equipment Controller Relay Module)



Wiring for AI with a 4 to 20 mA Sensor.

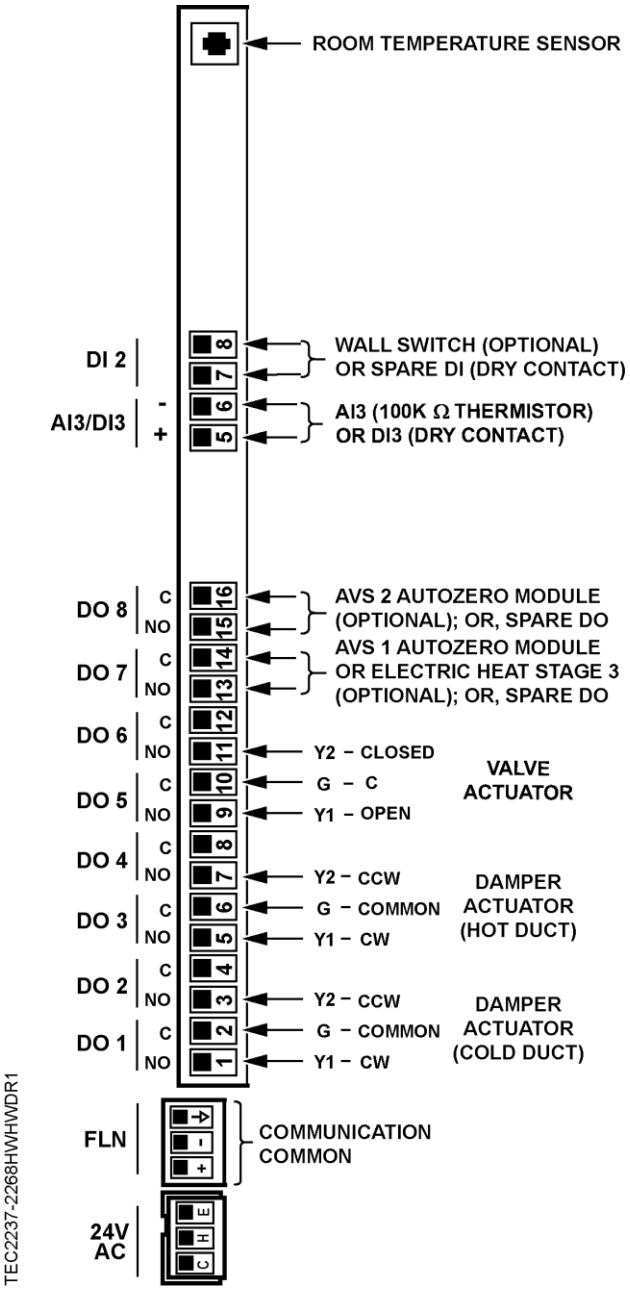
NOTE:
If the voltage/current switch is set to current and a 4 to 20mA sensor is connected to an AI, then special wiring requirements must be followed.

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.

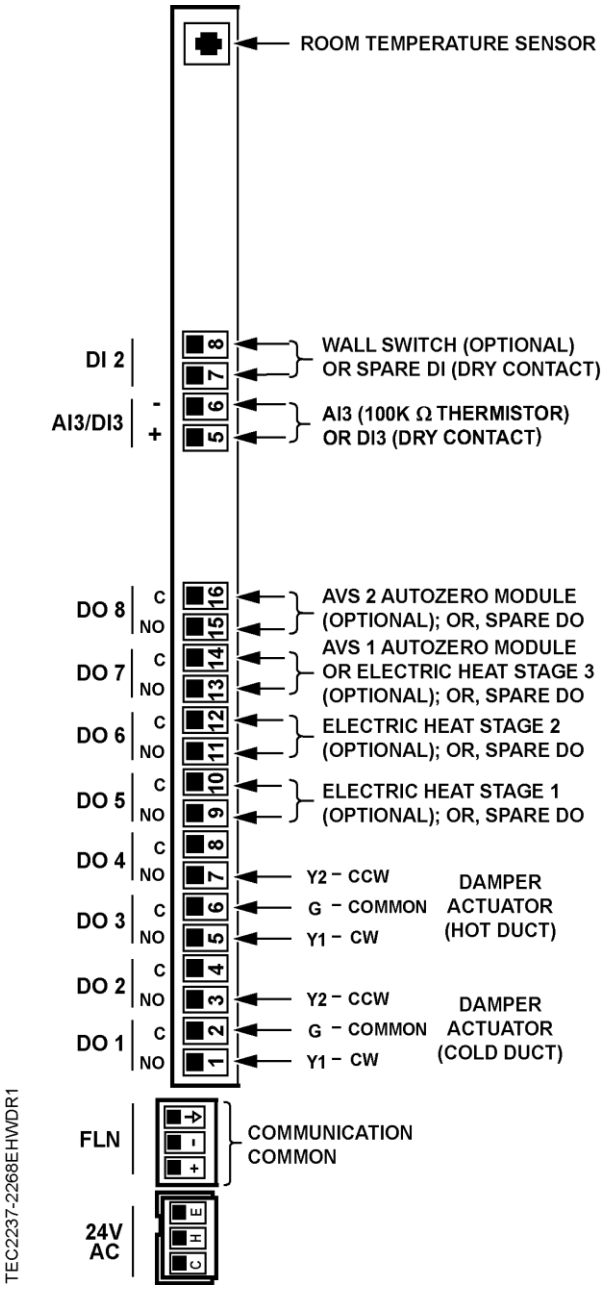


24 Vac Modulating Control.

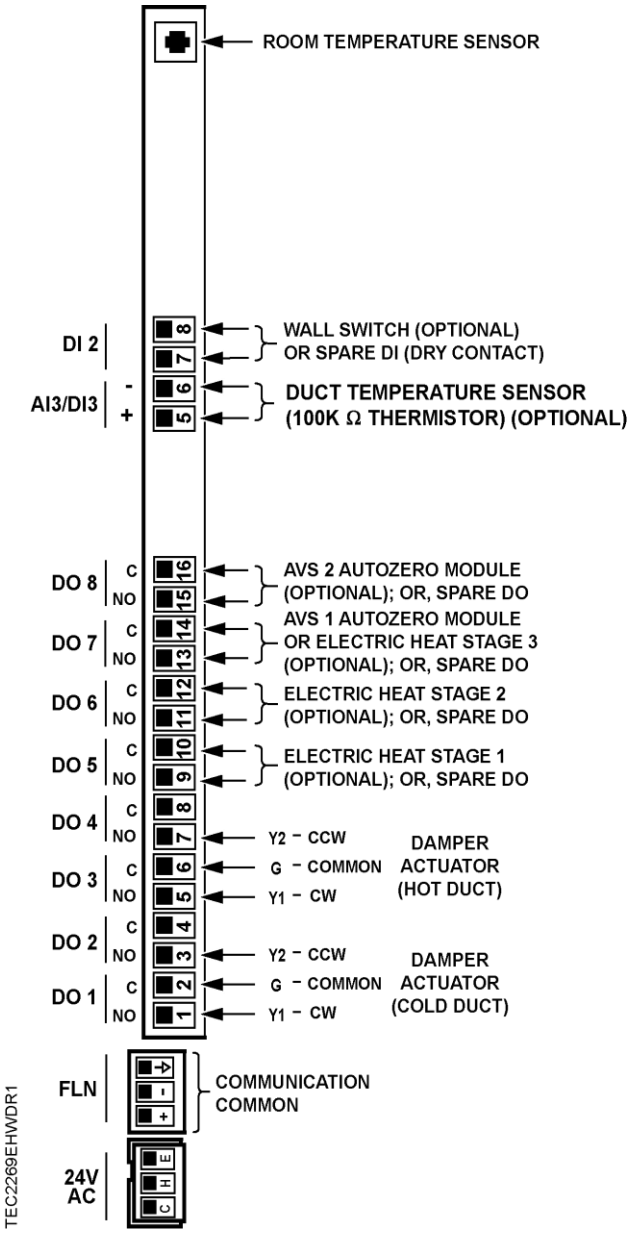
Actuator Symbol	TEC Connection	Function	Terminal Connection	Standard Color
1	H	Supply (SP)	G	Red
2	C	Neutral (SN)	G0	Black
8	AO3 – 15 (+)	0 to 10V input signal	Y	Gray
--	C to AO3 16 (-)	Common jumper	--	--



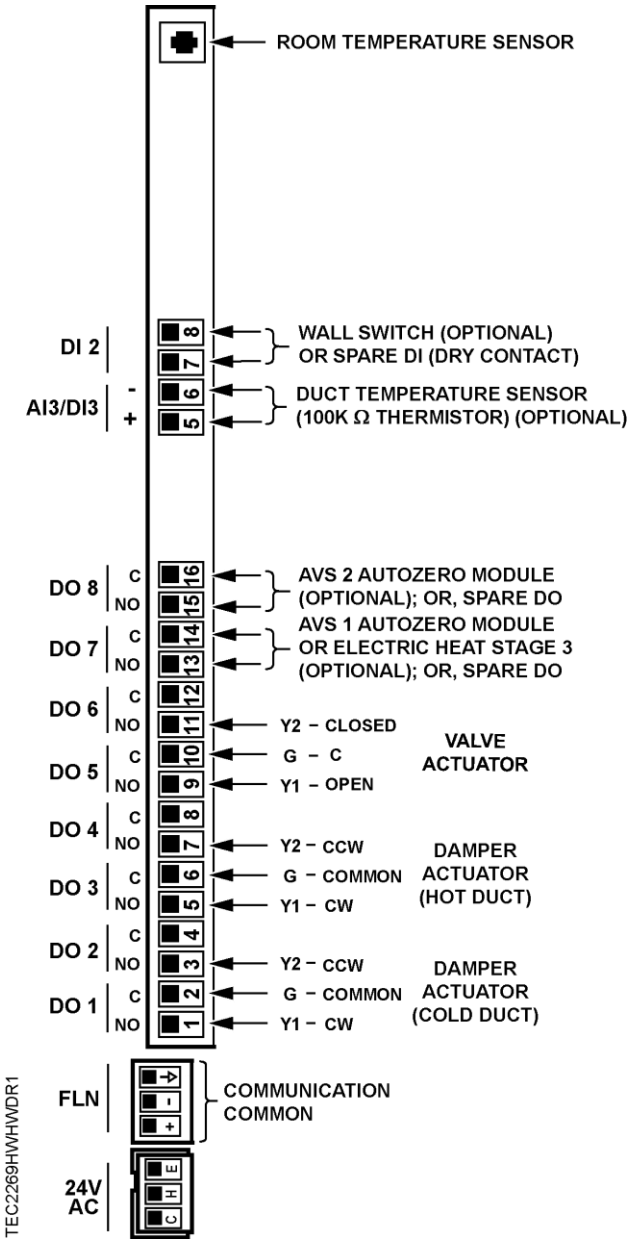
Applications 2237, 2238, 2267, and 2268 with Hot Water Reheat.



Applications 2237, 2238, 2267, and 2268 with Electric Auxiliary Reheat.



Application 2269 – Variable Air Volume with Changeover with Electric Auxiliary Reheat.



Application 2269 – Variable Air Volume with Changeover with Hot Water Reheat.

Cyber security disclaimer

Products, solutions and services from Siemens include security functions to ensure the secure operation of building automation and control, fire safety, security management, and physical security systems. The security functions on these products, solutions and services are important components of a comprehensive security concept.

Drafting, implementing and managing a comprehensive and up-to-date security concept, customized to individual needs, is nevertheless necessary, and may result in additional plant- or site-specific preventive measures to ensure secure operation of your site regarding building automation and control, fire safety, security management, and physical security. These measures may include, for example, separating networks, physically protecting system components, user training, multi-level defensive measures, etc. For additional information on security as part of building technology and our product, solution and service offerings, please contact your Siemens sales representative or project department. We strongly recommend to always comply with our security advisories on the latest security threats, patches and other related measures. http://www.siemens.com/cert/en/cert-security-advisories.htm

Siemens Industry, Inc.
Building Technologies Division
1000 Deerfield Parkway
Buffalo Grove, IL 60089-4513
USA
Tel. 1 + 847-215-1000

Your feedback is important to us. If you have comments about this document, please send them to SBT_technical.editor.us.sbt@siemens.com.