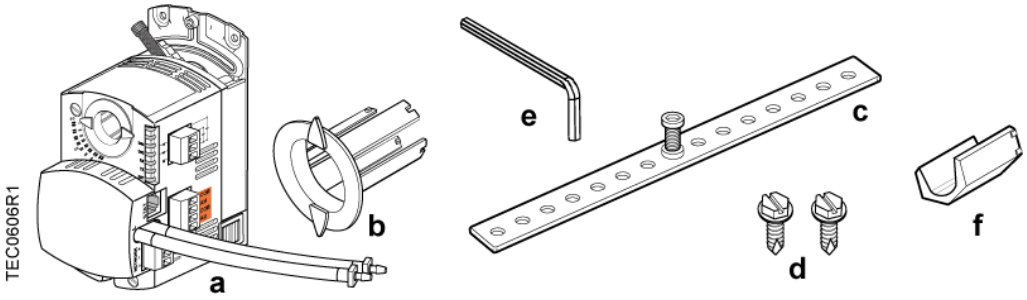
SIEMENS

Installation Instructions
Document No. 540-1036
June 18, 2015

ATEC Controller VAV with Reheat



Parts List

a. Actuator with pre-terminated tubing

b. Position indicator

c. Mounting bracket

d. Self-tapping mounting screws

e. 4 mm hex key

f. 3/8 inch shaft adapter (8 to 10 mm shafts)

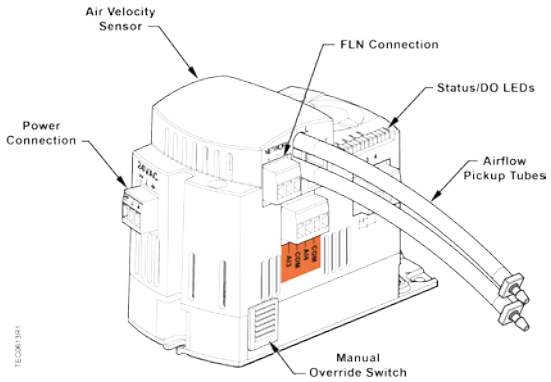
Control Applications

2500 and 2501

2522 through 2526

Product Description

These installation instructions describe direct-coupled mounting of the Actuating Terminal Equipment Controller (ATEC) VAV with Reheat. This is a combination TEC and OpenAir™ GDE131 Non-spring Return Rotary Electronic Damper Actuator.



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

Product Numbers

Actuating Terminal Equipment Controller (ATEC) VAV with Reheat (GLB) with Reheat/Fan/Spare DO	550-405N

Accessories

Low cost temporary temperature sensor, 10K Ω thermistor with RJ11 (1" long), 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

Parts for CE Compliance:

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

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

25 minutes

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

Required Tools and Equipment

- 4 mm hex wrench
- Small flat-blade screwdriver
- 1/4-inch hex drill/driver set
- Marker or pencil
- Torque wrench
- ESD wrist strap

Prerequisites

- Wiring conforms to NEC and local codes and regulations. For further information see the *Wiring Guidelines Manual* (125-3002).
- *(Optional)* Room temperature sensor installed.
- 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:
A low-cost temporary RTS (540-658P25) is available that plugs into the RTS port on the controller, providing temperature input and actual space control until a permanent RTS is installed.

Installation Instructions

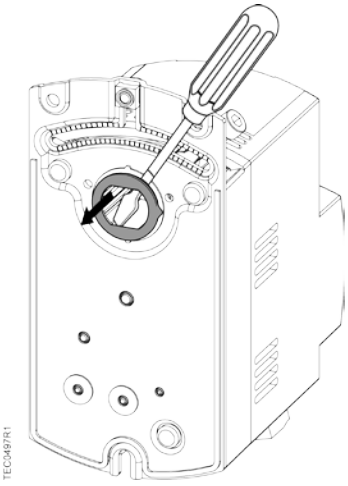
- Use earth ground isolating step-down Class 2 transformers. Do not use autotransformers.

Determine the supply transformer rating by summing total VA (3.5 VA per unit) of all actuators used. It is

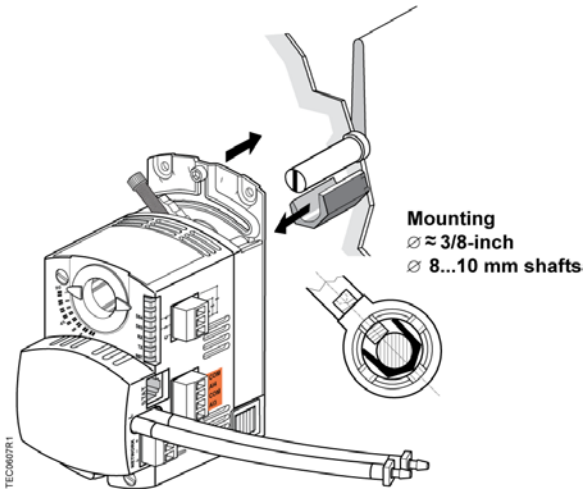
recommended that one transformer power no more than 10 actuators.

1. Determine the size of the damper shaft by doing one of the following:

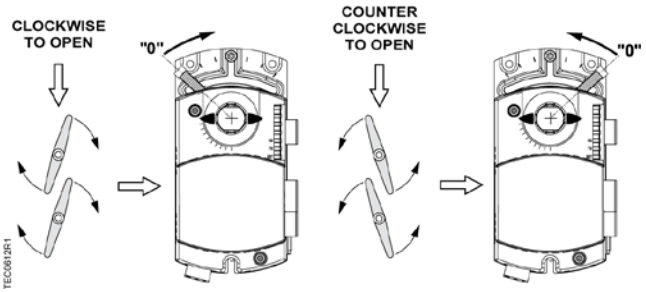
   - **If the damper shaft is 1/2-inch**, proceed to Step 2.
     NOTE: The actuator comes with a factory installed 1/2-inch damper shaft guide.
   - **If the damper shaft is 5/8-inch**,
   ⇨ remove the 1/2-inch shaft guide and proceed to Step 2.



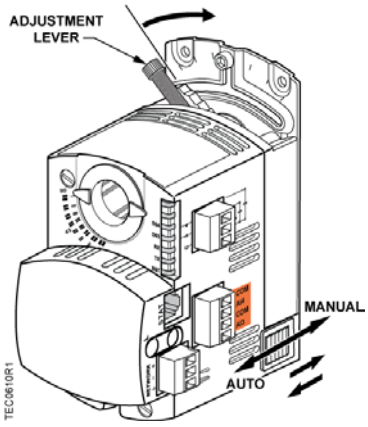
   - **If the damper shaft is 3/8 inch**,
   ⇨ remove the 1/2-inch shaft guide.
   ⇨ Use the 3/8-inch adapter, provided in the actuator packaging. Hold the shaft insert so that the raised tabs are inserted last when placing the insert into the back of the actuator. Proceed to Step 2.



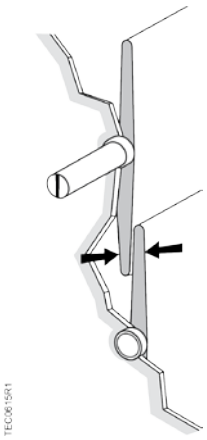
2. Determine the damper blade rotation, clockwise or counterclockwise to open.



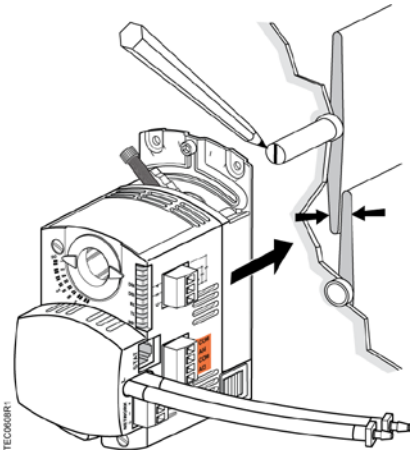
   ⇨ If the blades will rotate counterclockwise, slide the manual override switch to manual, and move the adjustment lever to the right. Return the switch to automatic.
   ⇨ If the blades will rotate clockwise, slide the manual override switch to manual, and move the adjustment lever to the left. Return the switch to automatic.



3. Close the damper blades.



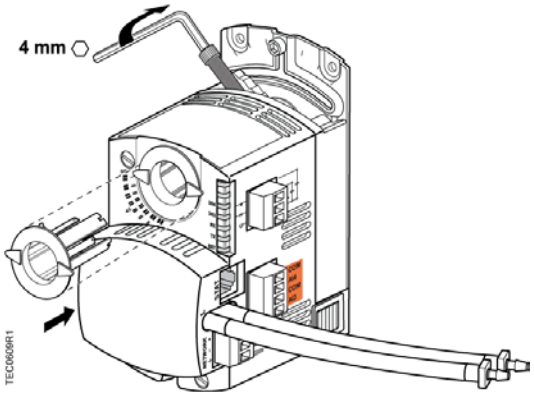
4. Mark the end of the damper shaft with a pencil/marker.



5. Tighten the set screw until the first thread can be seen in the shaft hole.

6. Using the pencil mark as a guide, mount the actuator on the damper haft.

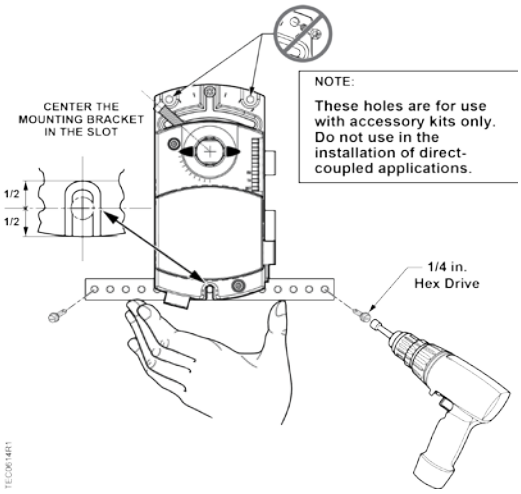
7. Install the position indicator.



8. Tighten the adjustment lever to the proper torque listed:

   - 70 +/- 5 inch-pounds for solid metal.
   - 37 +/- 2 inch-pounds for plastic graphite composite (hollow metal shafts require an insert to prevent shaft damage).

9. Attach the mounting bracket.
   NOTE: When installing the mounting bracket directly on the ductwork be sure to position the bracket such that the screws do not obstruct the damper blade movement inside the box.

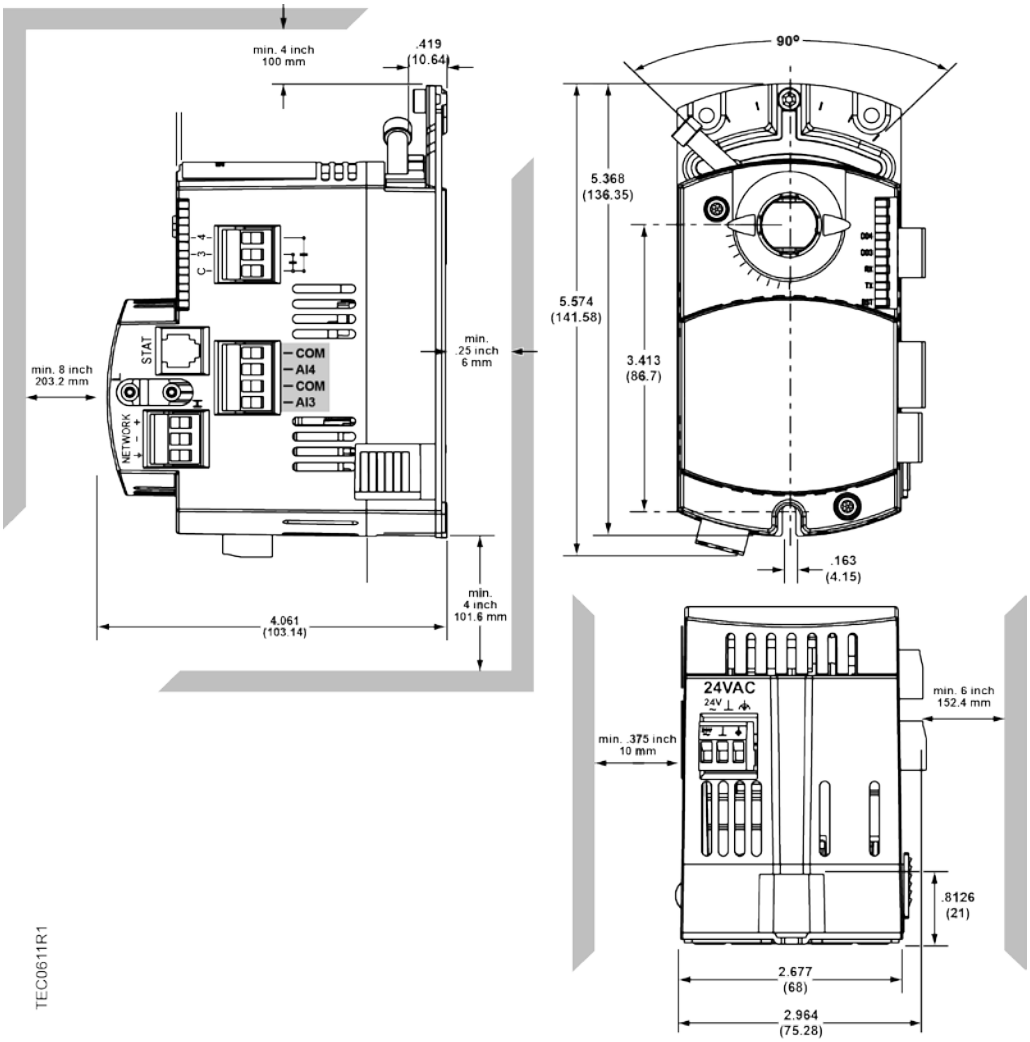


10. Connect the airflow tubing for the Differential Pressure Sensor.

    - RED connects to HIGH.
    - BLUE connects to LOW.

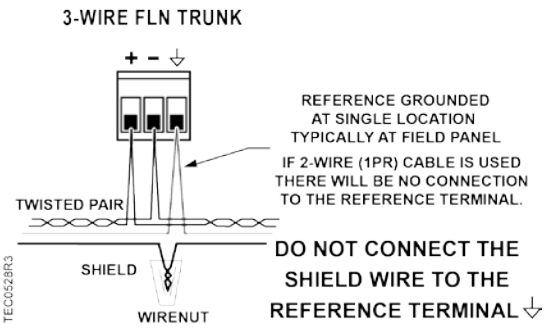
The installation is complete.

	⚠ **WARNING**
	Installations requiring CE Compliance — All wiring for CE rated actuators must be Separated Extra Low Voltage (SELV) or Protective Extra Low Voltage (PELV) per HD384-4-41. — Use safety-isolating transformers (Class III transformer) per EN 61558. They must be rated for 100% duty cycle. — Over current protection for supply lines is maximum 4A.



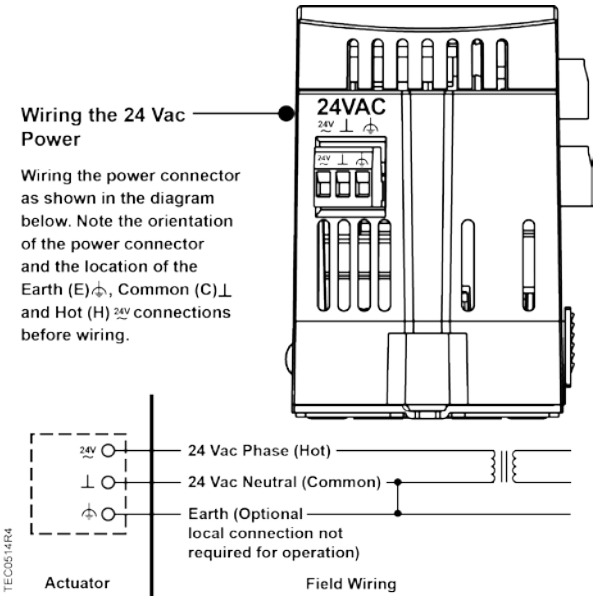
Wiring Instructions

1. Connect the FLN.



FLN Wiring.

2. Connect the power trunk. DO NOT apply power to the controller without first consulting the specialist. This ATEC is designed to work with 2-wire AC power (Neutral and Phase (hot) at 24 Vac +/-20%. Using the earth terminal is optional and, if used, it should be connected to the nearest earth ground (building steel, conduit or duct work (if earthed)).) The optional earth ground is connected near where the ATEC is mounted.

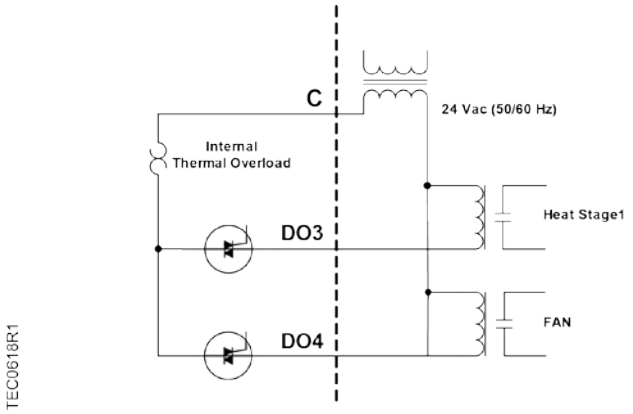


Power Wiring.

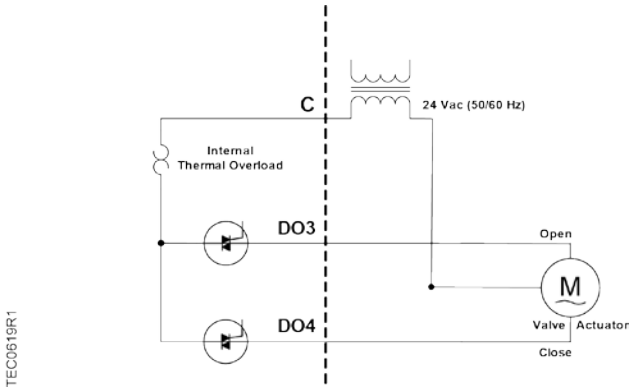
	⚠ CAUTION
	It is important that the neutral that supplies the TEC must be earth grounded at the source of the 24 Vac power. Possible erratic equipment operation or damage if neutral is not grounded.

Digital Outputs

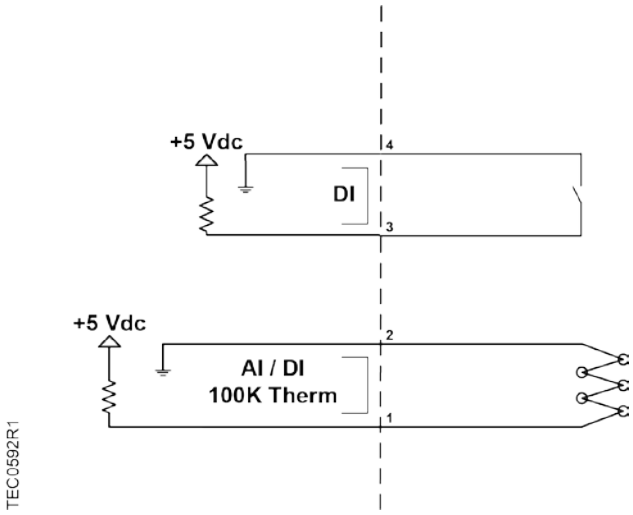
The digital outputs on the ATEC are Triac type outputs. 24 Vac must be applied to the “C” pin of the DO connector, the side view of the actuator shows output pin details. By providing Triac DOs, the application can switch either 24 Vac or Neutral depending on application needs. In a 24 Vac circuit, neutral is determined by which side of the transformer is earth grounded. If neither side is earth grounded (at the transformer) then the 24 Vac is considered a floating (isolated source).



ATEC with Electric Heat and Fan.



ATEC with Hot Water Reheat.

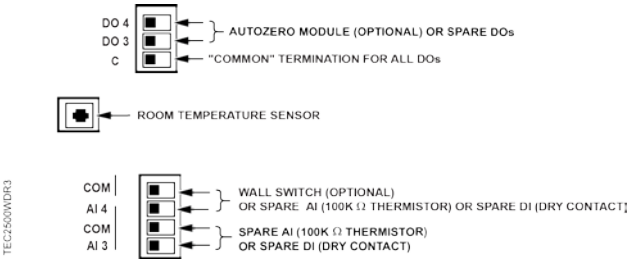


Wiring for AI / DI 100K Thermistor.

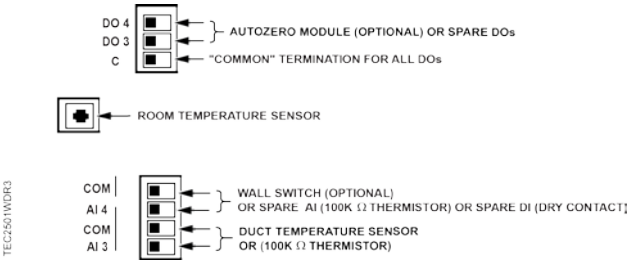
Wiring Diagram

NOTE:
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:

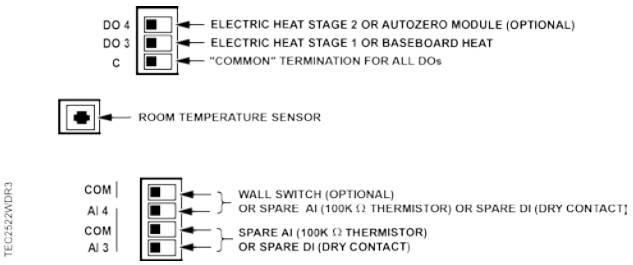
- VA requirements higher than the maximum
- 110 or 220 Vac requirements
- DC power requirements
- Separate transformers used to power the load
(for example part number 540-147, Terminal Equipment Controller Relay Module)



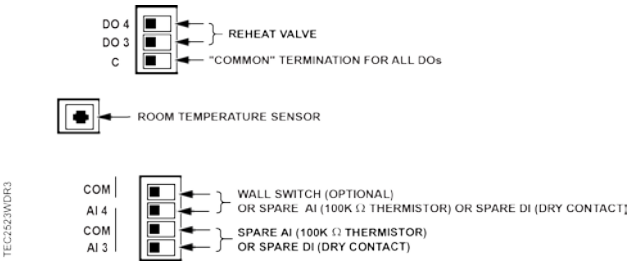
Application 2500 VAV with Reheat - Cooling Only Wiring Diagram.



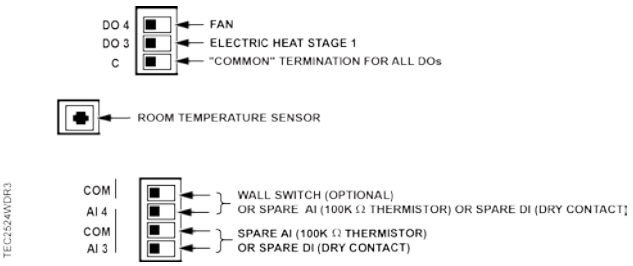
Application 2501 VAV with Reheat - Cooling or Heating Wiring Diagram.



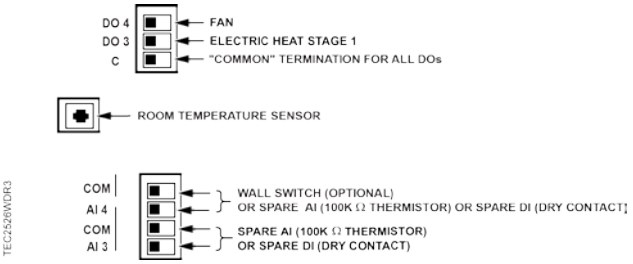
Application 2522 VAV with Electric Reheat or Baseboard Radiation Wiring Diagram.



Application 2523 VAV with Hot Water Reheat (Only One Reheat Valve) Wiring Diagram.



Application 2524 VAV Series Fan Powered with One Stage Electric Reheat Wiring Diagram.



Application 2526 VAV Parallel Fan Powered with One Stage Electric Reheat Wiring Diagram.

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