



ATEC Base VAV Controller & ATEC VAV Reheat Controller



Description

The new ATEC (Actuating Terminal Equipment Controller) Variable Air Volume Controllers provide direct digital control of pressure-independent, variable-air-volume zone-level routines. The ATEC controllers can operate stand-alone or can be networked to perform complex HVAC control, monitoring and energy management functions. The ATEC controllers are designed to reside on the Siemens Building Technologies APOGEE® Building Automation System.

Features

- Controller integrated with actuator for ease of installation;
- Automated checkout procedure for ease of startup/commissioning and troubleshooting;
- PID control of HVAC systems to minimize offset and maintain tighter set point control;
- HVAC diagnostic capability at the BLN level using the TBC Test Tool in CT 4.8;

- ATEC Base VAV Controller requires only 3.5 VA, an advantage when sizing electrical capacity;
- Suitable for installation in plenum areas;
- Set points and control parameters assigned and changed locally or remotely;
- Electrically Erasable Programmable Read Only Memory (EEPROM) used for storing set points and control parameters—no battery backup required;
- Return from power failure without operator intervention;
- Uses proven APOGEE Automation System DDC architecture;
- No calibration required, thereby reducing maintenance costs.

Applications

Operating independently, or as part of the APOGEE Building Automation System, the ATEC VAV Controller can control the following VAV pressure-independent zone applications.

ATEC Base VAV Controller:

- VAV Cooling Only (application 2520—similar to 2020 for the ATEC);
- VAV Cooling or Heating (application 2521—similar 2021).
- Slave Mode (application 2486)

ATEC VAV with Reheat Controller:

- VAV Cooling Only (application 2500—similar to 2020);
- VAV Cooling or Heating (application 2501—similar to 2021);

- VAV with Electric Reheat or Baseboard Radiation (application 2522—similar to 2022);
- VAV with Hot Water Reheat (only one reheat valve) (application 2523—similar to 2023 with one reheat valve);
- VAV Series Fan Powered with one stage of Electric Reheat (application 2524—similar to 2024 with one stage of electric reheat);
- VAV Parallel Fan Powered with one stage of Electric Reheat (application 2526—similar to 2026 with one stage of electric reheat);
- Slave Mode (application 2473).

Control algorithms are preprogrammed. The controller is ready to operate after selecting the application and assigning the unit's controller address. If desired, the operator may adjust the air volume set points in cfm (l/s), room temperature set points, and other parameters. The controller is designed for operation and modification without vendor assistance.

Hardware

Controller Board

The ATEC consists of an electronic controller, a differential pressure transducer, and a damper actuator assembly. This controller provides all wiring terminations for system and local communication and power. The cable from the room sensor (purchased separately) connects to an RJ-11 jack on the controller. All other connections are removable terminal blocks.

The ATEC Base VAV Controller has no external, wireable I/O. The ATEC VAV with Reheat Controller, however, has additional I/O: 2 AI/DIs and 2 DOs.

In addition to controlling the integrated damper actuator, the controller interfaces with the following external devices (purchased separately):

- Averaging air velocity sensor provided by VAV terminal unit manufacturers;
- Room temperature sensor with optional set point dial and night override button;
- Service and commissioning tools;
- APOGEE Building Automation System.

Room Sensor

The room sensor connection to the controller board consists of a quick-connect RJ-11 jack. This streamlines the installation and reduces the ATEC's

start-up time. See the Room Temperature Sensors Technical Specification Sheet, P/N 149-312P25, for more information.

Differential Pressure Sensor

The Differential Pressure Sensor (purchased separately) is easily connected to the box's air-velocity sensing elements to provide measurement of the differential pressure. The measured value is converted to actual airflow in cfm (l/s) by the ATEC controller.

Specifications

Controller & Actuator		
Power Requirements:	Base:	Reheat:
Power Source	24 Vac +/- 15%	24 Vac +/- 15%
Frequency	50/60 Hz	50/60 Hz
Power Consumption	3.5 VA	3.5 VA plus loads
Operating Temperature Range	+32°F to +122°F (0°C to +50°C)	
Storage Temperature Range	-20°F to +140°F (-29°C to +60°C)	
Humidity Range	10% to 95% non-condensing	
Regulatory Compliance	UL/CUL 916 PAZX/PAZX7 (Enclosed Energy Management) FCC Part 15, Class B CSA-Std. C22.2 No 205 CE Mark; C-Tick	
Dimensions	5-9/16" H x 2-15/16" W x 4-3/16" D (142 mm x 75 mm x 106 mm)	
Weight	1.26 lbs (.572 kg)	
Actuator Torque	44 lb.-in. (5Nm)	
Run time for 90° opening or closing at:		
50 Hz	108 sec.	
60 Hz	90 sec.	
Nom. Angle of Rotation	90°	
Max. Angle of Rotation	95°	
Actuator Shaft Size	3/8" to 5/8" (8 to 16 mm) Dia 1/4" to 1/2" (6 to 13 mm) Sq.	
Minimum Shaft Length	3/4" (20 mm)	

Transformer Requirements and Recommended Voltages

Type	Class 2, 24 VAC, 50/60 Hz, SELV, PELV
------	---------------------------------------

Ordering Information

Controllers	
Description	Product Number
ATEC Base VAV Controller	550-400
ATEC Base VAV Controller— 10 pack	550-400P10
1 AVS Air Velocity Sensor (0—5,664 FPM)	
1 RS Tool/10 K Ω Thermistor Room Sensor Module Connection Port	
ATEC VAV with Reheat Controller	550-405
ATEC VAV with Reheat Controller— 10 pack	550-405P10
2 AI/DI 100 K Ω Thermistor or Dry Contact	
2 DO 12 VA, 24Vac Triac	
1 AVS Air Velocity Sensor (0—5,664 FPM)	
1 RS Tool/10 K Ω Thermistor Room Sensor Module Connection Port	
Documentation	Product Number
ATEC Owner's Manual	125-3209
Room Temperature Sensors Technical Specification Sheet	149-312P25

Information in this document is based on specifications believed correct at the time of publication. The right is reserved to make changes as design improvements are introduced. APOGEE is a registered trademark of Siemens Building Technologies, Inc. © 2004 Siemens Building Technologies, Inc.