SIEMENS

Technical Specification Sheet
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ATEC Base VAV Controller & VAV Reheat Controller

The ATEC Base VAV and VAV Reheat Controllers, with integral damper actuator, provide high performance direct digital control (DDC) of pressure-independent, variable-air-volume zone-level routines. The ATEC can either operate stand-alone or be networked to perform complex HVAC control, monitoring and energy management functions. It is designed to reside on any Siemens control system.

Features

- Controller integrated with actuator for ease of installation.
- PID control of HVAC systems minimizes offset and maintains tighter setpoint control.
- Unique control algorithms for specific applications.
- ATEC Base VAV Actuator requires only 5 VA, an advantage when sizing electrical capacity.
- Plenum rated controller.
- Setpoints and control parameters assigned and changed locally or remotely.
- Electrically Erasable Programmable Read Only Memory (EEPROM) used for storing setpoints and control parameters—no battery backup required.
- Return from power failure without operator intervention.
- No calibration required, thereby reducing maintenance costs.
- Automated fault detection and diagnostics procedure for ease of startup/commissioning and troubleshooting.

Applications

ATEC Base VAV Controller

- VAV Cooling Only (Application 2520)
- VAV Cooling or Heating (Application 2521)
- Slave Mode (Application 2486)

ATEC VAV with Reheat Controller

- VAV Cooling Only (Application 2500)
- VAV Cooling or Heating (Application 2501)
- VAV with Electric Reheat or Baseboard Radiation (Application 2522)
- VAV with Hot Water Reheat (Application 2523)
- VAV Series Fan Powered with Electric Reheat (Application 2524)
- VAV Parallel Fan Powered with Electric Reheat (Application 2526)
- 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 setpoints in cfm (lps), room temperature setpoints and other parameters. The controller is designed for operation and modification without vendor assistance.

Hardware

Controller Board

The Actuating Terminal Equipment Controller (ATEC) VAV with Reheat and the Base VAV consists of an electronic controller, a differential pressure sensor 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 controller assembly, with integral actuator, is mounted directly on the terminal box damper shaft.

The ATEC VAV with Reheat has two AI (100K Ω thermistor) or DI inputs and two Triac type digital outputs. The ATEC Base VAV controller has no additional input/outputs.

In addition to controlling the integrated damper actuator, both controllers interface with the following external devices (purchased separately):

- Room temperature sensor with optional setpoint dial and night override button
- Service and commissioning tools
- Building Automation System from Siemens Industry, Inc.

Room Sensor/Room Unit

The room sensor connection to the controller board consists of a quick-connect RJ-11 jack. This streamlines installation and reduces controller start-up time.

Differential Pressure Sensor

The differential pressure sensor 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 (lps) by the controller.

Differential Pressure Sensor Specifications

Temperature Range	32°F to 122°F (0°C to 50°C)
Measurement Range	0 to 5200 fpm (0 to 26 m/s)

ATEC Base VAV and VAV with Reheat Specifications

Dimensions	5-9/16" H x 2-15/16" W x 4-3/16" D
Weight	approx. 1.26 lbs (.572 kg)

Power Requirements	
Operating Range	24 Vac +/-20%, 50 or 60 Hz
Power Consumption	5 VA max. (12 VA per DO, 40 VA max.)

Inputs	
Analog (VAV with Reheat)	2 100K Ω thermistor or digital
Analog (Base VAV)	None

Outputs	
2 Triacs, 12 VA each (VAV with Reheat)	Requires 24 Vac source to allow switching; phase or neutral
Triacs – external (Base VAV)	None
2 Triacs (both)	Integral damper actuator

Ambient Conditions	
Shipping & Storage Temperature	-13°F to 158°F (-25°C to 70°C)
Operating Temperature	32°F to 122°F (0°C to 50°C)
Humidity Range	5% to 95% rh (non-condensing)

Agency Listings	
UL Listing	UL 916, PAZX
cUL Listed	Canadian Standards C22.2 No. 205, PAZX7
FCC Compliance	FCC Part 15, Class B

CE	EN60730-1/14 Light Industrial Immunity CISPR 22 Class "B"
RCM	AS/NZS 61000-6-3

Actuator Specifications

Actuator Torque	
550-400N/550-405N	44 lb-in. (5Nm)

Actuator Run Time for 90°	
GDE	90 sec. at 60 Hz (108 sec. at 50 Hz)

Angle of Rotation	
Nominal	90°
Maximum	95°

Actuator Shaft Size and Length	
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

Transformer Requirements and Recommended Voltages	
Type	Class 2, SELV, PELV
Voltages	24 Vac, 50/60 Hz

Product Ordering Information

Description	Product Part Number
ATEC Base VAV Controller	550-400N
ATEC VAV with Reheat Controller	550-405N

Document Information

Technical Specification Sheets/Technical Instructions	Document Part Number
Room Temperature Sensors – Series 2200	149-601/149-820
Room Temperature Sensors – Series 2300	149-600/149-321
Duct Temperature Sensor	149-134P25
Analog Sensors – 100K Ohm Thermistor	149-262/149-982
Siemens Valves	**Document Part Number**
599 Series Zone Valves 2-Way, 3-Way Zone Valve Electric	154-034
599 Series Zone Valves and Actuators – Modulating, On/Off Spring Return, 2-Position Control	154-063

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