SIEMENS

Technical Specification Sheet
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Siemens BACnet ATEC

The Siemens BACnet Actuating Terminal Equipment Controller (ATEC) provides high performance direct digital control (DDC) of pressure-independent, variable-air-volume zone-level routines. The BACnet ATEC can operate stand-alone or can be networked to perform complex HVAC control, monitoring and energy management functions and is designed to reside on any BACnet control system.

Features

- Controller integrated with actuator for ease of installation.
- PID control of HVAC systems to minimize offset and maintain tighter setpoint control.
- Communicates using BACnet MS/TP protocol for open communications on BACnet MS/TP networks.
- Siemens BACnet VAV Actuator requires only 5 VA, an advantage when sizing electrical capacity.
- Unique control algorithms for specific applications.
- All controllers support external temperature sensors such as room or duct temperature sensors QAA2030.
- Suitable for installation in plenum areas.
- 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.
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Applications

Operating independently, or as part of a BACnet System, the BACnet ATEC can control the following VAV pressure- independent zone applications:

- VAV Cooling Only (Application 2860)
- VAV Cooling or Heating (Application 2861)
- VAV with Electric Reheat or Baseboard Radiation (Application 2862)
- VAV with Hot Water Reheat (Application 2863)
- VAV Series Fan Powered with Electric Reheat (Application 2864)
- VAV Series Fan Powered with Hot Water Reheat (Application 2865)
- VAV Parallel Fan with Electric Reheating (Application 2866)
- VAV Parallel Fan with Hot Water Coil Reheating (Application No. 2867)
- Slave mode (Application 2897)

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, room temperature setpoints and other parameters. The controller is designed for operation and modification without vendor assistance.

Hardware

Controller

The Siemens BACnet Actuating Terminal Equipment Controller (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 unit connects to an RJ-11 jack on the controller. All other connections are removable terminal blocks.

The Siemens BACnet ATEC single-duct model can be connected to an external temperature sensor, and the full-featured model has 2 UI (universal inputs) and 3 DO (digital outputs).

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

- Room temperature sensor with LCD display, temperature setting, overdrive and ON/OFF buttons
- Service and commissioning tools
- Building Automation System from Siemens Industry, Inc.

Room Unit

The room unit communicates via a six-core cable with RJ11 plugs at both ends and a BACnet ATEC controller. The room unit 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 air-velocity measuring tube of the VAV end cabinet to measure differential pressure. The BACnet ATEC controller converts the measured value to actual airflow in m^3/h.

Differential Pressure Sensor Specifications

Measurement Range	0 to 500 Pa

ATEC Specifications

Dimensions	5-7/16”H × 2-15/16”W × 4”D (138 mm × 75 mm × 102 mm)
Weight	approx. 1.26 lbs (0.572 kg)

Power Requirements	
Operating voltage	24 Vac +/- 20%
Frequency	50 or 60 Hz
Power Consumption	5 VA max

Processor	
MCU	32-bit ARM Cortex-M3 MCU

Inputs	
2 Universal	10K Ω Thermistor, DI (Dry Contact), Voltage (0 – 10V), Current (4 – 20 mA)

Outputs	
3 Triacs, 12 VA each	Requires 24 Vac source to allow switching; phase or neutral

Ambient Conditions	
Storage Temperature	-25°C to +70°C
Operating Temperature	0°C to +50°C
Humidity Range	5 to 95% rh (non-condensing)

Actuator Specifications

Actuator Torque	
550-440/550-445	5Nm
550-441/550-446	10Nm

Actuator Run Time for 90°	
GDB	90 sec. at 60 Hz 108 sec. at 50 Hz
GLB	125 sec. at 60 Hz 150 sec. at 50 Hz

Angle of Rotation	
Nominal	90°
Maximum	95°

Actuator Shaft Size and Length	
Shaft Size	8 to 16 mm, round 6 to 13 mm, square
Minimum Shaft Length	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 Number
BACnet ATEC Model 0001, cooling only (GDB)	550-440
BACnet ATEC Model 0001, cooling only (GLB)	550-441
BACnet ATEC Model 2301, full feature (GDB)	550-445
BACnet ATEC Model 2301, full feature (GLB)	550-446
Room Unit	
ROOM UNIT - ATEC 550-44X, Display with Setpoint Override	QAA2281.FWSC
ROOM UNIT - ATEC 550-44X, Display with Setpoint Override, No Logo	QAA2281.FWNC
ROOM UNIT - ATEC 550-44X	QAA2281.EWSC
ROOM UNIT - ATEC 550-44X, No Logo	QAA2281.EWNC
LC ATEC RU Standard	QAA1181.FWSC
LC ATEC RU Upgraded	QAA1181.FWSC-C

Document Information

Documentation	Product Number
Siemens BACnet Actuator Owner's Manual	125-5050

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