

Siemens BACnet ASC Extended I/O Controller



The Siemens BACnet ASC Extended I/O Controller is designed to allow point expansion for other Siemens controllers and reside on any BACnet control system.

Features

- Communicates using BACnet MS/TP protocol for open communications on BACnet MS/TP networks
- BTL listed as B-ASC device
- PID control of HVAC systems to minimize offset
- Reports airflow in cfm (lps)
- 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
- Returns from power failure without operator intervention
- Meets low duct static pressure requirements
- No calibration required, thereby reducing maintenance costs
- P/N 550-491 includes a user-adjustable temperature offset for the room temperature reading when required for validation purposes.

Applications

Application 2596 – Extended I/O

Hardware

Controller Board

The BACnet ASC Extended I/O Controller consists of an electronic controller 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 is mounted on a plastic track that mounts directly on the terminal box. An optional enclosure (P/N 550-002) protects the controller assembly. A Pneumatic Transducer provides control of pneumatic damper and valve actuators.

The controller interfaces with the following external devices:

- Averaging air velocity sensors provided by VAV terminal unit manufacturers
- Floating control valve and damper actuators
- Temperature sensors (room, duct, immersion, and outside air)
- Service and commissioning tools
- Digital input devices (dry contacts from motion sensors, alarm contacts)
- Digital output devices (fan, stages of electric heat)

Room Sensor

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. See the *Room Temperature Sensors Technical Specification Sheet* (149-312P25), for more information.

Extended I/O Controller Specifications

Power Requirements	
Operating Range	
Power Consumption	19.2 to 27.6 Vac, 50 or 60 Hz 10 VA (plus 12 VA per DO)
Inputs	
Analog	1 room temperature sensor 1 setpoint (optional) 2 auxiliary temperature sensor
Digital	2 dry contacts
Outputs	
Controlled Temperature	8 DO 24 Vac optically isolated solid state switches @ 0.5 amp
Accuracy, Heating or Cooling	±1.5°F (0.9°C)
Dimensions	4-1/8" W x 11-1/4" L x 1-1/2" H (105 mm x 197 mm x 38 mm)
Weight	approx. 3 lbs. (1.35 kg)

Communications	
Remote	BACnet MS/TP (EIA 485), 9600 bps to 76800 bps FLN Trunk
Local	WinCIS
Ambient Conditions	
Storage Temperature	-40°F to 167°F (-40°C to 75°C)
Operating Temperature	32°F to 122°F (0°C to 50°C)
Humidity Range	0% to 92% (non-condensing)
Agency Listings	
UL Listing	UL 916, PAZX,
cUL Listed	Canadian Standards C22.2 No. 205-M1983, PAZX7
FCC Compliance	47 CFR Part 15

Product Ordering Information

Description	Product Part Numbers
BACnet Extended I/O Controller	550-491

Document Ordering Information

Specification Sheet/Application Bulletin	Document Part Number
Duct Temperature Sensor	149-134P25
Electronic Damper Actuator	155-188P25 (GDE 131.1P)
Siemens Valves and Electronic Actuators:	
Flowrite 599 Series – Valve and Actuator Assembly Selection	155-304P25
Powermite 599 Series – MT Series Terminal Unit Valve and Actuator Assembly Selection	155-306P25
Powermite 599 Series – MZ Series Zone Control Valve and Actuator Assembly Selection	155-307P25

BACnet Protocol Implementation Conformance Statement

Products

Product	Model Number	Protocol Revision	Software Version	Firmware Version
BACnet Extended I/O Controller (BTEC)	550-491	135-2001b	1.2	BI20 1.0

Date Tested: August 2005 – B-ASC

Vendor Information

Siemens Building Technologies
1000 Deerfield Parkway
Buffalo Grove, IL 60089
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Product Description

The controller is an integral part of Siemens controls system. The controller can operate stand-alone or can be networked to perform complex HVAC control, monitoring, and energy management functions. This controller communicates using BACnet MS/TP.

BACnet Standardized Device Profile

Product	Device Profile	Tested
BTEC	BACnet Application Specific Controller (B-ASC)	✓

Supported BIBBs

Product	Supported BIBBs	BIBB Name	Tested
BTEC	DS-RP-B	Data Sharing-ReadProperty-B	✓
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B	✓
	DS-WP-B	Data Sharing-WriteProperty-B	✓
	DM-DDB-B	Device Management-DynamicDeviceBinding-B	✓
	DM-DOB-B	Device Management-DynamicObjectBinding-B	✓
	DM-DDC-B	Device Management-DeviceCommunicationControl-B	✓

Standard Object Types Supported

Product	Object Type	Creatable	Deletable
BTEC	Analog Input	No	No
	Analog Output	No	No
	Binary Input	No	No
	Binary Output	No	No
	Device	No	No

Data Link Layer Options

Product	Data Link	Options
BTEC	MS/TP Master	9600, 19200, 38400, 76800
	MS/TP Slave	9600, 19200, 38400, 76800

Segmentation Capability

Product	Segmentation Type	Supported	Window Size (MS/TP product limited to 1)
BTEC	Able to transmit segmented messages	No	
	Able to receive segmented messages	No	

Device Address Binding

Product	Static Binding Supported
BTEC	Yes

Networking Options

Product	Static Binding Supported
BTEC	No

Character Sets

Product	Character Sets supported
BTEC	ANSI X3.4