BACnet

b3867 Terminal Controllers

The Andover Continuum™ b3867 is a native BACnet controller that communicates on an RS-485 field bus as a Master device using the MS/TP BACnet protocol.

Schneider Electric

BACnet b3867 Terminal Controllers
Features

PRODUCT AT A GLANCE

- Native BACnet MS/TP Communications for Interoperability to Third-Party Systems

- Supports 18 BACnet Object Types including Trends, Schedules, Calendars, and Loops

- Compact Terminal Controller Provides Low-cost DDC Control of Package Units,Heat Pumps, Unit Ventilators

- Universal Inputs with Form A, Form K, and Analog Outputs for Flexible Control Options

- Non-Volatile Flash Memory Provides Utmost Reliability — Stores Both Application Program and Operating System

- Flash Memory Allows Easy On-Line Software Updates

- Local Extended Storage of Log Data

- On-Board Service Port

- Modular, Sleek Design SimplifiesInstallation in Small Areas

- View and Modify Information with Optional Andover Smart Sensor Display

- BTL Listed B-AAC Controller with Local Trends

The b3867 provides cost-effective DDC control of package units, heat pumps, unit ventilators, and other terminal unit applications. Its versatile mix of I/O — Universal inputs, Triac outputs, plus an interface to Andover's Continuum Smart Sensor room temperature sensor with programmable keypad — allows for flexible control solutions. The b3867 also features two analog outputs to control reheat valves, dampers, lighting ballasts, etc. And because the b3867 is enclosed in a sleek, modular casing, it can be mounted in a small area — perfect for retrofit applications.

The b3867 features Flash memory, increased user memory, and a fast (32-bit) processor for faster scan times, with plenty of additional memory available for data logging of your critical data.

As a native BACnet controller, the b3867 can communicate with other BACnet devices on the MS/TP network, in strict accordance with ANSI/ASHRAE standard 135-2004, and are listed with the BACnet Testing Labs (BTL) as BACnet Advanced Application Controllers. (B-AAC). By connection to the Andover Continuum b4920 or bCX1 controller, the b3867's and other MS/TP devices can share and gather data from the wider Ethernet/IP network of controllers. Among those Ethernet controllers can be Andover Continuum controllers (BACnet or Andover Continuum Infinet) or third-party BACnet/IP devices. All Andover Continuum devices, both BACnet and Andover Continuum Infinet, are fully compatible with the Andover Continuum CyberStation front-end software, a fully native BACnet Operator Workstation (B-OWS) application.

Increased Reliability with Flash Memory

The b3867's non-volatile Flash memory stores your operating system and application programs, so that in the event of a power loss, your application will be restored when power is returned. In additon, the Flash memory allows for easy upgrades of your operating system via software downloads, eliminating the need to swap out proms. The b3867 includes an on-board battery to safeguard your runtime data — protecting all point data and log data from being lost if power is removed.

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BACnet b3867 Terminal Controllers
Features (continued)

Inputs

The input configuration on the b3867 consists of four full range Universal inputs that accept voltage (0-5VDC), digital (on/off), counter signals (up to 4Hz), or temperature signals. The b3867 also offers a fifth input to support the Andover Smart Sensor, or any standard room temperature sensor.

Outputs

The b3867 contains five Form A Triac-based outputs. Each Triac is ground referenced. These outputs can be used separately for on/off or pulsed control of lighting, heat, and fan units or be configured into Form K Tri-state outputs (2-max) for bi-directional control of dampers and valves, with a free Triac output remaining.

(Note: Any two consecutive Triac outputs can be configured as a Form K output.) Outputs are rated for AC loads only. The b3867 also offers two (0-10V) analog outputs.

Software Capabilities

The dynamic memory of the b3867 can be allocated for any combination of programs, scheduling, alarming, and data logging using the powerful Andover Plain English programming language. Our object-oriented Plain English language with intuitive keywords provides an easy method to tailor the controller to meet your exact requirements. Programs are entered into the b3867 using the Andover Continuum CyberStation™. Programs are then stored and executed by the b3867.

Programming multiple b3867s is inherently easy with Plain English. A complete copy of one b3867's programs can be loaded directly into other b3867s without changing any point names or programs.

Smart Sensor Interface

The b3867 provides a built-in connection for Andover Continuum Smart Sensor. The Smart Sensor provides a 2-character LED display and a 6-button programmable keypad that enables operators and occupants to change setpoints, balance VAV boxes, monitor occupancy status, and turn equipment on and off. An enhanced version of the Smart Sensor is also available with a 4-digit custom LCD that provides the following icons: PM, %, °, Setpoint, Cool, Heat, CFM, Fan, OA, and SP.

Dimensional Drawings

① Power and Communications Drawing

② Inputs Drawing

③ Outputs/Smart Sensor Drawing
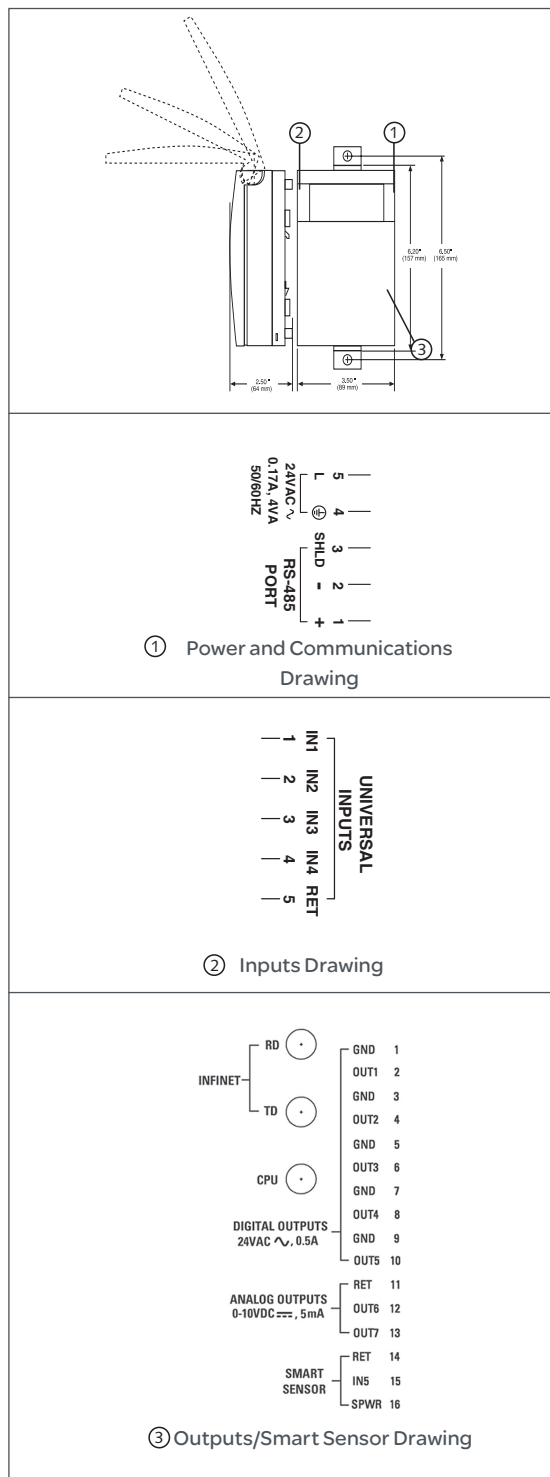
BACnet b3867 Terminal Controllers Specifications

b3867 Terminal Controllers

Electrical

Power
24 VAC, +10% -15%, 50/60 Hz

Power Consumption
4 VA

Overload Protection
Fused with 2 amp fuse. MOV protected

Software Real-Time Clock
Synchronized through MS/TP

Mechanical

Operating Environment
32°–120°F (0–49°C),
10–95% RH (non-condensing)

Size
6.20″ H x 3.50″ W x 2.50″ D
(157H x 89W x 64) mm

Weight
0.64 lbs. (0.29 kg)

Enclosure Type
UL Open class, IP 10.
Flammability rating of UL94-5V

Battery

Battery Backup
Replaceable, non-rechargeable,
lithium battery. Provides 5 years typical
accumulated power failure backup
of RAM memory.

Communications

Communications Interface
RS-485, BACnet MS/TP

Communications Speed
9600, 19.2K, 38.4K, 76.8K baud

Bus Length
4,000 ft. (1,220m) standard;
Andover Continuum Infinet repeater
module allows extension to
longer distances.

Bus Media
Twisted, shielded pair,
low capacitance cable

**Andover Continuum Infinet
Device Profile**
Advanced Application Controller

BTL Listed
B-AAC with Local Trends

Inputs/Outputs

Inputs
4 Universal inputs: Voltage (0-5.115 VDC);
Temperature -30°F to 230°F (-34°C to
110°C), Digital (on/off), Counter (up to 4Hz
at 50% duty cycle, 125 ms min. pulse
width). Current input (0 - 20 mA) using
external 250 ohm resistor
1 Smart Sensor Temperature Input
(32°F to 105°F) (0°C to 41°C)

Input Voltage Range
0-5.115 volts DC

Input Impedance
10K ohm to 5.120V or 5M ohm
with pull-up resistor disabled

Input Protection
24 VAC or 24 VDC temporarily on
any single channel, ±1000V transients
(Tested according to EN61000-4-4)

Input Resolution
5.0 mV

Input Accuracy
±15mV (±0.56°C from -23°C to +66°C or
±1°F from -10°F to +150°F)

Outputs
5 single pole single throw (SPST)
Form A Triacs (Any two consecutive
outputs can be configured as one
Tri-State Form K). 2 analog outputs (0-10V)

Output Rating
For SPST: Maximum 0.5A, 24VAC,
±2000V transients (Tested according to
EN61000-4-4) Minimum: 20 mA AC
Each Triac is ground referenced,
DC loads not permitted.

For 0-10V: 5 mA maximum, 2K ohm
minimum impedance, ±1000V transients
(Tested according to EN61000-4-4)

Output Accuracy
For SPST: 0.1 sec. for pulse
width modulation
For 0-10V: 50 mV resolution/100mV accuracy

BACnet b3867 Terminal Controllers
Specifications (continued)

b3867 Terminal Controllers

Connections

Power/Communications

5-position removeable screw
terminal connector

Inputs

5-position removeable screw
terminal connector

Outputs/Smart Sensor

16-position removeable screw
terminal connector

Service Port

4-position shrouded connector

Uwer LEDs/Switches

Status Indicator LEDs

CPU   CPU Active

TD   Transmit Data

RD   Receive Data

Switches

RESET

Input Pull-up Resistor Switch (per input)

General

Memory

128K SRAM, 1MB FLASH

Processor

Motorola 32-bit Coldfire

Agency Listings

UL/CUL 916, FCC CFR 47 Part 15,
ICES-003, EN55022, AS/NZS 3548,
and VCCI Class A, CE

Options

UL864, Smoke Control System Equipment,
UUKL (i2867-S)

Wireless BACnet b3867 version (b3867-WL)