



# Continuum™

## b3887 Terminal Controllers

The Andover Continuum b3887 is a native BACnet controller that communicates on an RS-485 field bus as a Master device using the MS/TP BACnet protocol. With its unique mix of three Universal inputs, one Smart Sensor/room sensor input, four Triac outputs, and one relay output, the b3887 is designed to be a general purpose terminal controller for low-cost heat pump, fan coil, or AC unit control. Use the b3887 for direct control of fans, staged heating and cooling and monitoring of room temperature, outside air temperature, return air temperature, or occupancy status.

The b3887 is compact so it can be installed in tight locations with three mounting screws; and its removable terminal connectors allow for easy servicing.

While the standard b3887 version uses 24 VAC input power, the b3887-L model accepts incoming line voltage at 115 or 230 VAC, has an onboard transformer, and the same versatile I/O configuration.

Similar to all b3 controllers, the b3887 features Flash 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 b3887 can communicate with other BACnet devices on the MS/TP network, in strict accordance with ANSI/ASHRAE standard 135-2004, and is listed with the BACnet Testing Labs (BTL) as BACnet Advanced Application Controller (B-AAC). By connection to the Continuum b4920 or bCX1 controller, the b3887'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 Continuum controllers (BACnet or Infinet) or third-party BACnet/IP devices. All Andover Continuum devices, both BACnet and Infinet, are fully compatible with the Continuum CyberStation front-end software, a fully native BACnet Operator Workstation (B-OWS) application.

### INCREASED RELIABILITY WITH FLASH MEMORY

The b3887'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 addition, the Flash memory allows for easy upgrades of your operating system via software downloads, eliminating the need to swap out proms.

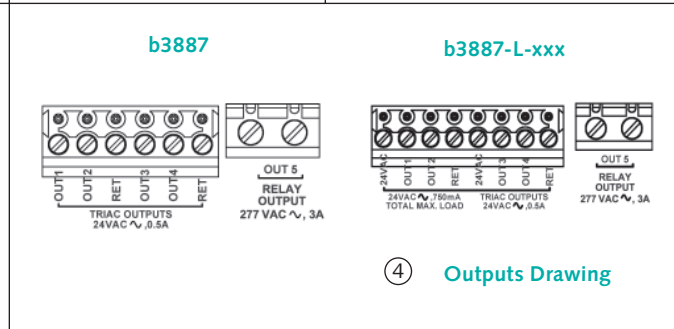
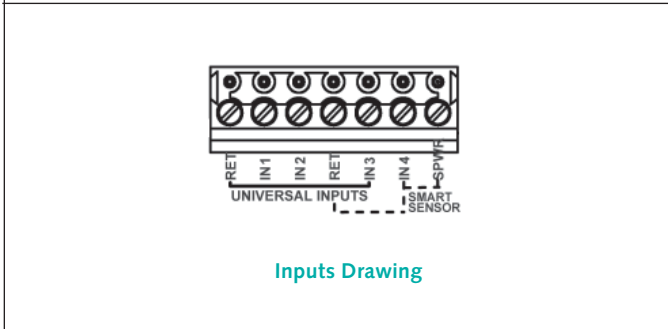
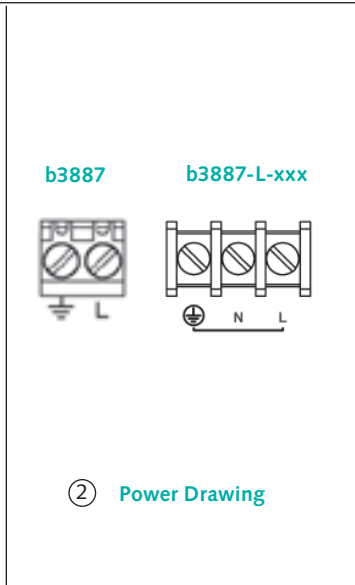
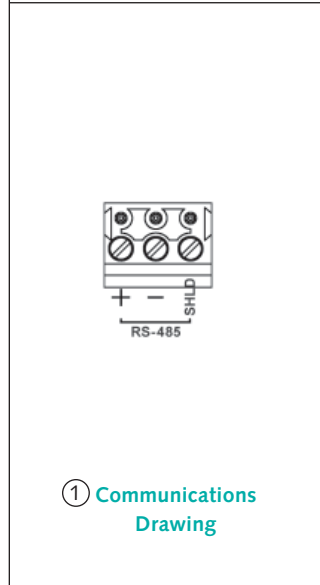
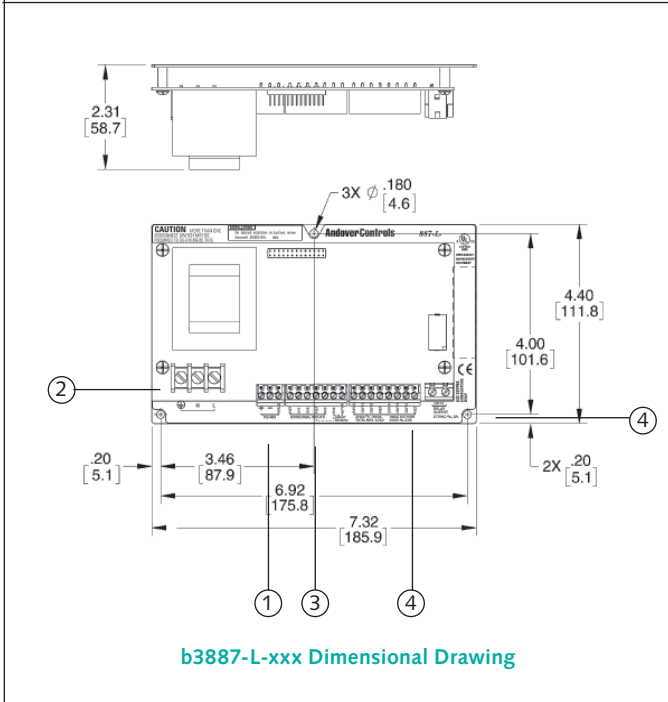
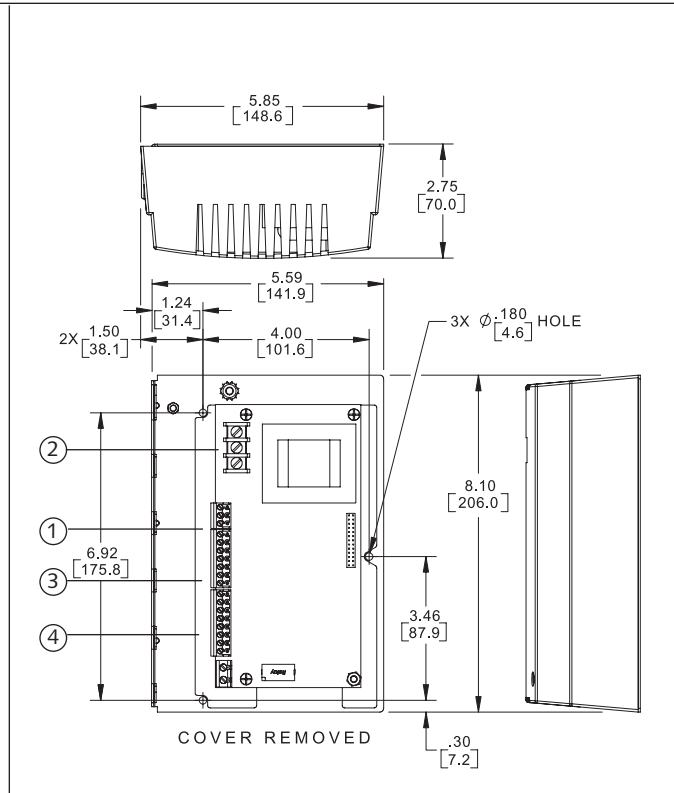
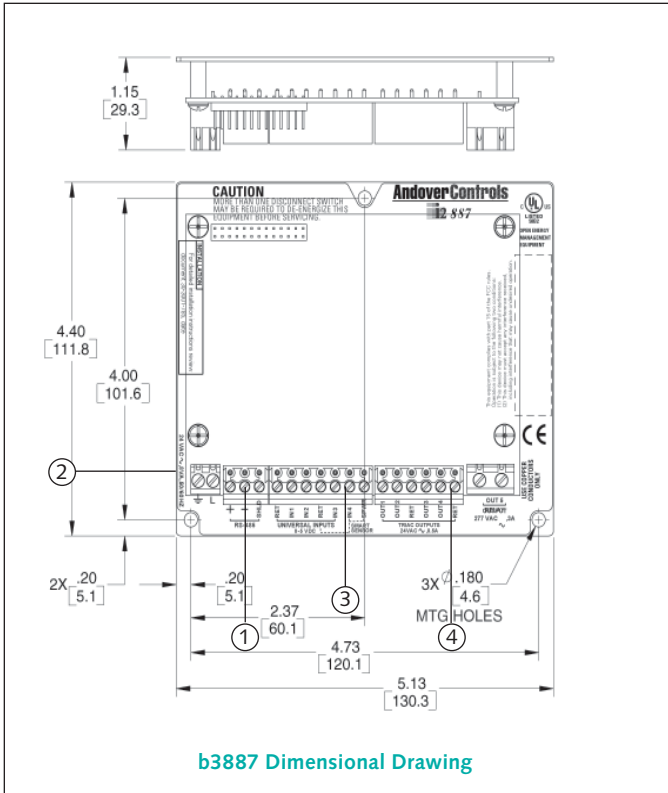
The input configuration on the b3887 consists of three full range Universal inputs that accept voltage (0-5VDC), digital (on/off), counter signals (up to 4Hz), or temperature signals. The b3887 also offers a fourth input to support the Continuum Smart Sensor, or any standard room temperature sensor.

*(continued on back page)*

- 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 Fan Coil and Heat Pump Control
- Three Universal Inputs and One Smart Sensor/Room Sensor Input
- Four Form A Triac Outputs, One Form A Relay, 277 VAC @3A
- Non-Volatile Flash Memory Provides Utmost Reliability — Stores Both Application Program and Operating System
- Removable Terminal Blocks for Easy Serviceability
- Flash Memory Allows Easy On-Line Software Updates
- View and Modify Information with Optional Andover Continuum Smart Sensor Display
- Local On-Board Service Port
- BTL Listed B-AAC Controller with Local Trends



# b3887 Terminal Controllers



# SPECIFICATIONS

## b3887 Terminal Controllers

### ELECTRICAL

#### Power

b3887: 24 VAC, +10% -15%,  
50/60 Hz or b3887-L-xxx: 115/230  
VAC, +10% -15%, 50/60 Hz

#### Power Consumption

b3887: 10 VA  
b3887-L-xxx: 32 VA  
b3887-L-xxx-C 32 VA

#### Overload Protection

Fused with 1 amp fuse. MOV protected

#### Software Real-Time Clock

Synchronized through MS/TP via  
BACnet

### MECHANICAL

#### Operating Environment

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

#### Size

b3887: 4.40"H x 5.13"W x 1.15"D  
(111H x 130W x 30D) mm  
b3887-L-xxx: 4.40"H x 7.32"  
W x 2.31"D (111H x 186W x 59D) mm

#### Weight

b3887: 0.5 lbs. (0.23 kg)  
b3887-L-xxx: 1.9 lbs. (0.86 kg)  
b3887-L-xxx-C: 2.63 lbs. (1.19 kg)

#### Enclosure Type

UL Open class, IP 10. Flammability  
rating of UL94-5V  
b3887-L-xxx-C  
UL Close class, IP20  
Flamibility rating of UL-94-5V

#### Mounting

Panel mount

### 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; BACnet  
repeater module allows extension to  
longer distances

#### Bus Media

Twisted, shielded pair, low capacitance  
cable

#### BACnet Device Profile

B-AAC, BACnet Advanced Application  
Controller

#### BTL Listed

B-AAC with Local Trends



### INPUTS/OUTPUTS

#### Inputs

3 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

#### 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

4 single pole single throw (SPST) Form  
A Triacs (any two consecutive outputs  
can be configured as one Tri-state  
Form K)  
1 Form A Relay, 277 VAC @3A

#### Triac Output Rating

Maximum 0.3A, 24VAC, ±2000V  
transients (Tested according to  
EN61000-4-4)

Minimum: 30 mA AC

Each Triac is ground referenced, DC  
loads not permitted

#### Output Accuracy

0.1 sec. for pulse width modulation

### CONNECTIONS

#### Power

2-position fixed screw terminal  
connector  
(b3887-L: 3-position fixed)

#### Communications

3-position removable screw terminal  
connector

#### Inputs/Smart Sensor

7-position removable screw terminal  
connector

#### Outputs

6-position removable screw terminal  
connector (b3887-L: 8-position)

#### Relay

2-position fixed screw

#### Service Port

4-position connector

### USER LEDS/SWITCHES

#### Status Indicator LEDS

CPU CPU Active

### GENERAL

#### Memory

512K SRAM, 1MB FLASH

#### Processor

Motorola 32-bit Coldfire

### USER LEDS/SWITCHES

b3887: Power: 24 VAC  
b3887-L-115: Power: 115 VAC  
b3887-L-230: Power: 230 VAC  
b3887-L-115-C: Power: 115 VAC-  
Closed Class

b3887-L-230-C: Power: 230 VAC-  
Closed Class

Note: b3887-L models provide onboard  
24 VAC @750 mA for external loads.

### AGENCY LISTINGS

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

## OUTPUTS

The b3887 contains five digital outputs — four Form A Triac-based outputs plus one Form A relay output, capable of switching line voltage.

These outputs can be used separately for on/off or pulsed control of lighting, heat, and fan units can be configured into Form K Tri-state outputs (2-max) for bi-directional control of dampers and valves. (Note: Any two consecutive Triac outputs can be configured as a Form K output.) All Triac outputs are ground referenced and rated for AC loads only.

## SOFTWARE CAPABILITIES

The dynamic memory of the b3887 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 b3887 using the Continuum CyberStation®. Programs are then stored in, and executed by, the b3887.

Programming multiple b3887s is inherently easy with Plain English. A complete copy of one b3887's programs can be loaded directly into other b3887s without changing any point names or programs. In addition, channel assignments for the b3887 are similar to other Continuum devices such as the b3851 for easy program conversion.

## SMART SENSOR INTERFACE

The b3887 provides a built-in connection for Andover Continuum's 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.

Copyright © 2005, TAC

All brand names, trademarks and registered trademarks are the property of their respective owners. Information contained within this document is subject to change without notice. All rights reserved.

SDS-B3887  
10/05



[www.tac.com](http://www.tac.com)

