Continuum
BACnet Family™

b3 887 Series Terminal Controllers

The *Continuum* b3887 is a native BACnet Advanced Application Controller (B-AAC) 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 135-2001**. By connection to the Andover b4920 device, 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 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 additon, the Flash memory allows for easy upgrades of your operating system via software downloads, eliminating the need to swap out proms.
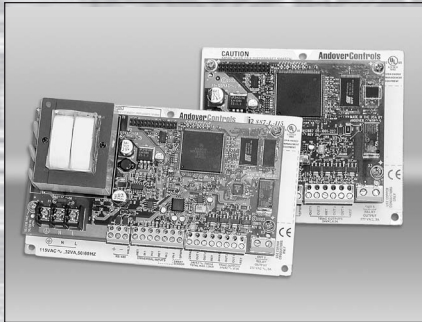
- **Native BACnet MS/TP Communications for Interoperability to Third-Party Systems**

- **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 *Smart Sensor* Display**

- **Local On-Board Service Port**

Andover Controls
WE'RE BUILDING SMART

NATIVE

BACnet

INPUTS

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 Andover *Smart Sensor*, or any standard room temperature sensor.
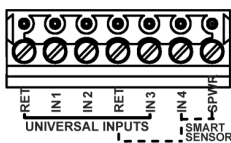
OUTPUTS

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 Controls *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.
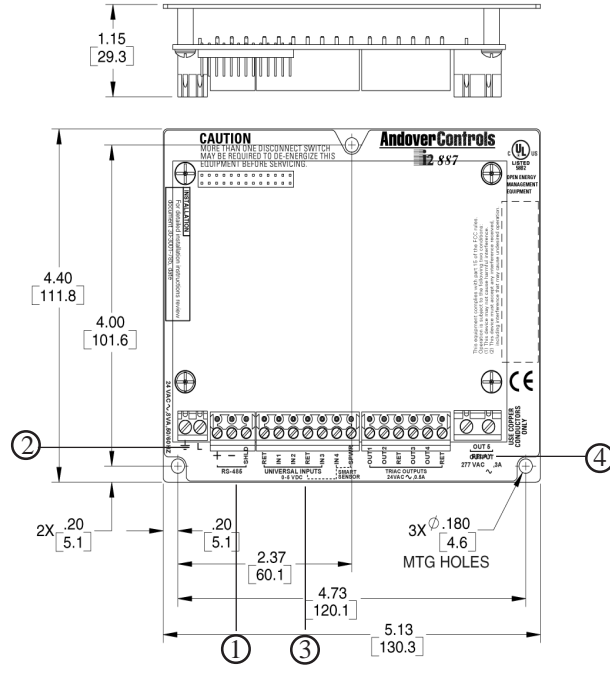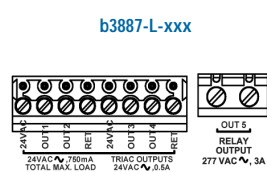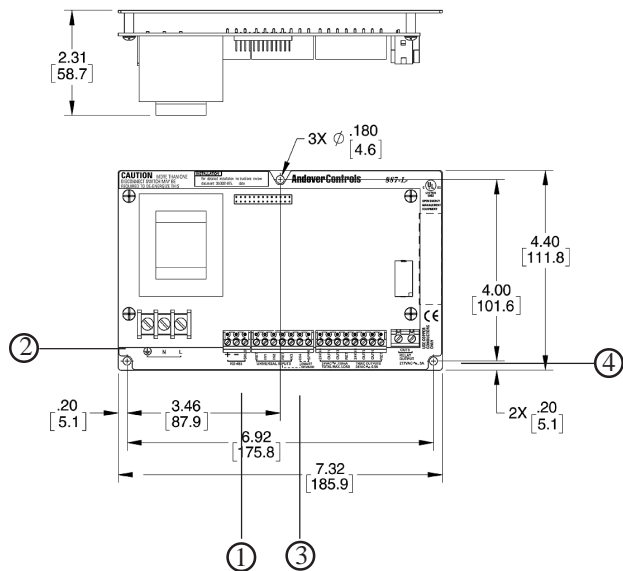
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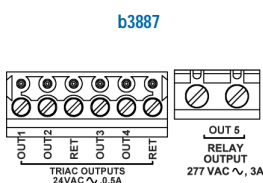
b3887 Dimensional Drawing

b3887-L-xxx Dimensional Drawing

③ Inputs Drawing

④ Outputs Drawing
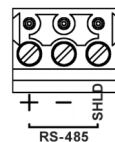
① Communications Drawing
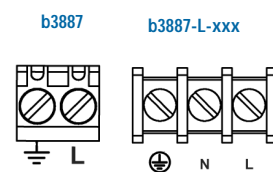
② Power Drawing

ELECTRICAL

Power:	b3887: 24 VAC, +10% -15%, 50/60 Hz b3887-L-xxx: 115/230 VAC, +10% -15%, 50/60 Hz
Power Consumption:	b3887: 10 VA b3887-L-xxx: 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)
Enclosure Type:	UL Open class
Mounting:	Panel mount

COMMUNICATIONS

Communications Interface:	RS-485, BACnet MS/TP
Communications Speed:	9600, 19.2K, 38.4K, 76.8K baud*
BACnet Device Profile:	B-AAC, BACnet Advanced Application Controller
Bus Length:	4,000 ft. (1,220m) standard; BACnet repeater module allows extension to longer distances.
Bus Media:	Twisted, shielded pair, low capacitance cable

Note: Baud rates REQUIRE Continuum V1.62 version (or later) of software

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

INPUTS/OUTPUTS (CONTINUED)

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.
Relay Output Rating:	277 VAC, 3 amp
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 removeable screw terminal connector
Inputs/Smart Sensor:	7-position removeable screw terminal connector
Outputs:	6-position removeable screw terminal connector (b3887-L: 8-position)
Relay:	2-position fixed screw terminal connector
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

Note: The b3887 series controllers REQUIRES Continuum V1.6 version (or later) of software

MODEL TYPES

b3887:	Power: 24 VAC
b3887-L-115:	Power: 115 VAC
b3887-L-230:	Power: 230 VAC

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

CE   c UL us LISTED 58B2 OPEN ENERGY MANAGEMENT EQUIPMENT

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 Infinet devices such as the b3851 for easy program conversion.

SMART SENSOR INTERFACE

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

Andover Controls
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