

Continuum[®]

BA Cnet Family[™]



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

- **Powerful, Flexible System Controller for the Most Demanding Applications**

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

- **Local, Extended Storage of Log Data**

- **View and Modify Information with Optional *Smart Sensor* Display**

b3800 Series Local Controllers

The *Continuum* b3800 series controllers are native BACnet Advanced Application Controllers (B-AAC) that communicate on an RS-485 field bus as Master devices using the MS/TP BACnet protocol.

The b3800 series are designed for control of small Air Handling Units, Unit/Rooftop, and other mechanical plant equipment. Choose the b3800 series controller with the configuration that matches your application:

- The **b3800**, designed for stand-alone equipment control of Rooftop or Air Handling Units, features eight Universal Inputs, one Smart Sensor/Room Sensor input, plus eight program-controlled Digital Outputs.
- The **b3804**, designed for stand-alone equipment control of Rooftop or Air Handling Units, features eight Universal Inputs, one Smart Sensor/Room Sensor input, plus four program-controlled Digital Outputs and four Analog Outputs for direct control of devices requiring 0-10 volt control signals.

Both models feature an additional room sensor input, which supports Andover's *Smart Sensor*, or any standard room temperature sensor.

The b3800 series also features Flash memory, increased user memory, and a fast (32-bit) processor for faster scan times, with plenty of memory available for data logging of your critical data.

As a native BACnet controller, the b3800 series can communicate with other BACnet devices on the MS/TP network, in strict accordance with **ANSI/ASHRAE standard 135-2001**. By connecting to Andover's *Continuum* b4920 device, the b3800 series and other MS/TP devices can share data from the wider Ethernet/IP network of controllers.

INCREASED RELIABILITY WITH FLASH MEMORY

The b3800'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 b3800 controllers include an on-board battery to safeguard your runtime data — protecting all point data and log data from being lost if power is removed.

Andover Controls
WE'RE BUILDING SMART



INPUTS

The input configuration on the b3800 series consists of eight full range, 10-bit Universal inputs that accept voltage (0-5VDC), digital (on/off), counter signals (up to 4Hz), temperature signals, or supervised alarm circuits for security applications or broken wire detection. The b3800 series offers an additional input to support the Andover *Smart Sensor*, or any standard room temperature sensor.

OUTPUTS

The b3800 contains eight Form C relay outputs, each rated for 24 VAC/VDC, 3 amp, while the b3804 contains four Form C relay outputs and four analog outputs (0-10V, 4-20mA).

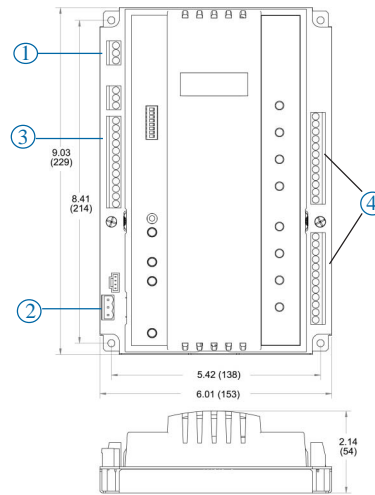
SOFTWARE CAPABILITIES

The dynamic memory of the b3800 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 b3800 using the *Continuum CyberStation*[®]. Programs are then stored and executed by the b3800 controllers.

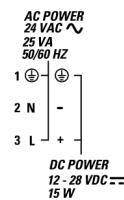
Programming multiple b3800 series controllers is inherently easy with *Plain English*. A complete copy of one b3800's programs can be loaded directly into other b3800s without changing any point names or programs.

SMART SENSOR INTERFACE

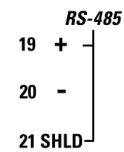
The b3800 provides a built-in connection for Andover's *Smart Sensor*. The *Smart Sensor* provides a 2-character LED display and a 6-button programmable keypad that enables operators and occupants to change setpoints, balance VAV boxes, monitor occupancy status, and turn equipment on and off. An enhanced 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.



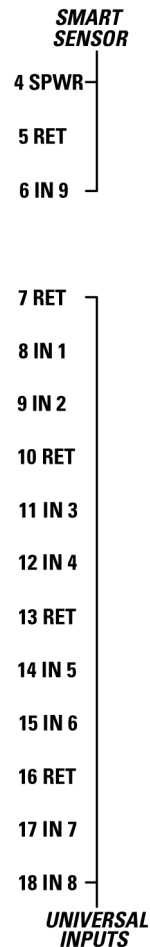
Dimensional Drawing



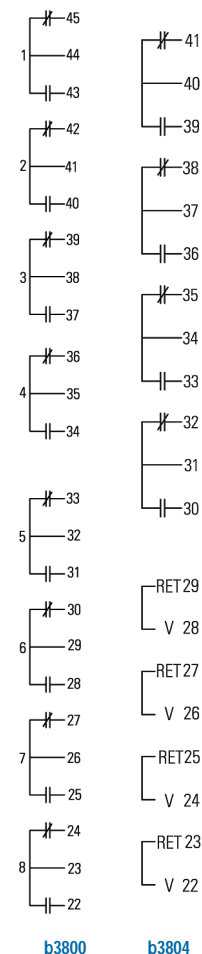
① Power Drawing



② Communications Drawing



③ Inputs/Smart Sensor Drawing



④ Outputs Drawings

SPECIFICATIONS

800 Series Local Controllers

ELECTRICAL

Power:	24VAC, 12-24VDC - auto sensing, +10% - 15%, 50/60 Hz
Power Consumption:	25 VA
Overload Protection:	Fused with 3 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:	9.03"H x 6.01"W x 2.14"D (229 H x 153 W x 54 D) mm
Weight:	1.34 lbs. (0.61 kg)
Enclosure Type:	UL Open class, IP 10. Flammability rating of UL94-5V
Mounting:	Panel mount

BATTERY

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

Communications Interface:	RS-485 BACnet, MS/TP 127 devices maximum
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 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:	8 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). Supervised Alarm (single or double resistor). Current input (0 - 20 mA) using external 250 ohm resistor 1 <i>Smart Sensor</i> 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 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)

INPUTS/OUTPUTS (CONTINUED)

Digital Outputs:	8 single pole single throw (SPST) Form C relays (4 Form C on b3804) (Any two consecutive Form C outputs can be configured as one Form K Tri-state)
Output Rating:	Maximum 3A, 24VAC/VDC, ±1500V transients (Tested according to EN61000-4-4)
Output Accuracy:	0.1 sec. for pulse width modulation
Analog Outputs:	4 analog outputs (b3804 only)
Output Rating:	0-10 VDC
Output Resolution:	0.1V for 0-10V

CONNECTIONS

Power:	3-position fixed screw terminal connector
Inputs:	12-position fixed screw terminal connector
Outputs:	b3800: 2- 12-position fixed screw terminal connector b3804: 1-12-position fixed screw terminal connector and 1- 8-position fixed screw terminal connector
Smart Sensor:	3-position fixed screw terminal connector
Communications:	3-position removable screw terminal connector
Service Port:	4-position shrouded connector

USER LEDS/SWITCHES

Status Indicator LEDS:	
CPU	CPU Active
TD	Transmit Data
RD	Receive Data
Output	Output Status (per output) (Digitals only)
Switches:	
RESET	
Input Pull-up Resistor Switch (per input)	

GENERAL

Memory:	128K SRAM, 1MB FLASH
Processor:	Motorola 32-bit Coldfire

Note: b3804 REQUIRES Continuum V1.6 version (or later) of software

AGENCY LISTINGS

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



OPTIONS

UL864, Smoke Control System Equipment, UUKL (b3800-S, b3804-S)

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