The Andover Continuum xP Expansion I/O Family provides a convenient and cost-effective means to add additional inputs, outputs, or a local display to the Andover Continuum Infinet™ II, ACX Series Access Controllers, and BACnet™ family of distributed controllers.
Andover Continuum xP Expansion I/O Family Features

Up to two modules, plus a local display, can be powered directly from any of the following controllers in the Andover Continuum Infinet II (i2) or BACnet (b3) families: i2/b3 920, i2/b3 810, i2/b3 814, i2/b3 850, i2/b3 851, or i2/b3 853.

The bCX1 Controller/Router models and the ACX Series Access Controllers can also be used to connect xP Expansion Modules (and Display) and are the only controllers that support the xPBA4 and xPBD4 module types. No external power supply is required to power the Module(s). Consult the xP Modules and Local Display Modules User Guide for valid configurations.

- **xPD18** – The xPD18 module allows the addition of 8 Digital Inputs in a small enclosure.
- **xPU14** – The xPU14 module allows the addition of 4 Universal Inputs. Each can be configured independently based on your needs for Digital, Temperature, Motion Sensor, or Pulse Counter Inputs, etc., providing built-in flexibility for your different application requirements.
- **xPA02/xPA04** – Both the xPA02 (2 Analog Outputs) and the xPA04 (4 Analog Outputs) allow the addition of Analog Outputs. Each output has individual manual override switches to select Manual, Off, or Auto for program control. When in Manual mode, each output also has a potentiometer to allow control of the override point.
- **xPDO2/xPDO4** – Both the xPDO2 (2 Digital Outputs) and the xPDO4 (4 Digital Outputs) allow the addition of Digital Outputs. Each output has individual manual override switches to select On, Off, or Auto for program control.
- **xPBA4/xPBD4** – Both the xPBA4 and the xPBD4 combine the functions of two xP Expansion modules. Similar to the xPU14, both allow the addition of 4 Universal Inputs. The xPBA4 allows the addition of 4 Analog Outputs (like the xPA04), and the xPBD4 allows for the addition of 4 Digital Outputs (like the xPDO4). (Note: The xPBA4 and xPBD4 Expansion Modules can only be connected to the bCX1 Controller/Routers and ACX Series Access Controllers.)
Local Display
The local display with keypad (xP Display) allows for the addition of a fully programmable local display module that can be mounted within 10 feet (3 meters) of the controller. Connected via a ribbon cable, the xP Display easily allows the Operator Interface to be mounted on the door of an enclosure or on a wall below or next to the controller.

Programming
Programming with the Expansion Modules points are treated in the same manner as the built-in I/O points on the controller. Once the points have been configured, they are available for graphics, Plain English™ programming, or for displaying data on the display.
Andover Continuum
xP Expansion I/O Family
Features (continued)

Expansion I/O Family

Installation
Modules can be connected to the bottom of the controller with the built-in expansion port connector or they may be connected remotely via a 3-foot (~1 m) or 10-foot (~3m) ribbon cable. A total of 10 feet of cable may be used for all Expansion Modules. Mounting and securing of the xP modules is provided through four mounting holes in the base plate.

Dimensional Drawings

Models
- xP-Display
  (includes 3 foot cable)
- xP-Display-10
  (includes 10 foot cable)

Power Consumption
70 mA

Display Properties
4 lines x 16 characters, backlit

Enclosure Type
IP54 Rating
**Andover Continuum**

**xP Expansion I/O Family**

**Specifications**

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### xP Expansion I/O

#### Electrical

**Power**

Up to two I/O modules and an xP-Display may be connected to a controller. All controllers provide a total of 180 mA of power, the bCX1 controller/router has 400 mA of power for the modules. Each modules power consumption is listed below. Reference installation sheet for valid combinations.

#### Mechanical

**Operating Environment**

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

**Size**

Module: 3.21˝ H x 7.10˝ W x 1.60˝ D (82H x 180 W x 41 D) mm

Display: 7.25˝ H x 5.00˝ W x 1.65˝ D (184H x 127 W x 42 D) mm

**Weight**

Module: 0.48 lb (0.22 kg)

Display: 1lb (0.45 kg)

**Enclosure Type**

Modules: UL Open class, IP 10. Flammability rating of UL94-5V

Display: IP54

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#### Communications

**Communications Interface**

Through built-in Expansion Port on controller

**Connections**

**Fixed Terminal Connectors**

Reference specific modules on previous page for terminal point assignments

**Input (top)**

6-pin shrouded connector

**Output (bottom)**

6-pin shrouded connector

**User LEDs/Switches**

Status Indicator LEDs

CPU Module is Active

**Switches**

RESET

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#### General

**xP Modules**

Consult the xP Module Installation Guide for the maximum number of inputs/outputs allowed on each controller.

**Agency Listings**

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

**xPDI8 (Digital Inputs)**

**Points**

8 Digital Inputs

**Power Consumption**

25 mA

**Voltage**

0-5 VDC, or contact closure

**Input Impedance**

10K ohm ref to +5VDC

**Frequency**

140Hz, 50% duty cycling, 3.57 ms pulse width min.

**Overvoltage Protection**

24 VAC/DC +/- 1500 V transients

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#### Cable Options

**xP-Mod-Cable-3**

3-foot (~1m) ribbon cable terminated

**xP-Mod-Cable-10**

10-foot (~3m) ribbon cable terminated

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### xP Expansion I/O

#### xPUI4/xPBA4/xPBD4
(Universal Inputs)

| Points | 4 Universal Inputs |
| Power Consumption | 50 mA (xPUI4)  
60 mA (xPBA4)  
125 mA (xPBD4) |
| Voltage | 0-5.115 VDC |
| Input Impedance | 10K ohm ref to +5VDC |
| Frequency | 4Hz, 50% duty cycling,  
125 ms pulse width min. (Inputs 1-3)  
140Hz, 50% duty cycling, 3.57 ms pulse width min. (Input 4) |
| Overvoltage Protection | 24 VAC/DC +/- 1500 V transients |

#### xPAO2/xPAO4/xPBA4
(Analog Outputs)

| Points | 2 Analog Outputs (xPAO2)  
4 Analog Outputs (xPAO4, xPBA4) |
| Power Consumption | 80 mA (xPAO2)  
120 mA (xPAO4)  
60 mA (xPBA4) |
| Output Rating | 0-10 VDC  
4-20mA per channel (xPAO2, xPAO4) |
| Output Resolution | 0.1V for 0-10V  
0.1mA for 4-20mA (xPAO2, xPAO4) |
| Overrides | yes – per output point. Software feedback of the switch position is provided, for display and alarming |
| Potentiometer | yes – per output point |

#### xPDO2/xPDO4/xPBD4
(Digital Outputs)

| Points | 2 Digital Outputs (xPDO2)  
4 Digital Outputs (xPDO4, xPBD4) |
| Type | 2 or 4 single pole single throw (SPST) Form C relays |
| Power Consumption | 60 mA (xPDO2)  
100 mA (xPDO4)  
125 mA (xPBD4) |
| Output Rating | Maximum 3A, 24 VAC/VDC,  
+/- 1500 V transients (tested according to EN61000-4-4) |
| Output Accuracy | 0.1 sec for pulse width modulation |
| Output Overrides | Each Output is equipped with a manual override switch. Software feedback of the switch position is provided, for display and alarming |