Andover Continuum™ Infinet II

i2850 Series

The i2850, i2851, and i2853 controllers provide cost-effective DDC control of individual terminal units (e.g. VAV boxes, fan-powered induction units, unit ventilators, heat pumps).

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Andover Continuum Infinet II i2850 Series Terminal Controllers Features

The i2850 Series is a perfect fit for your VAV applications where external damper actuators are used. And because all i2850 Series controllers feature a built-in expansion port for additional I/O, these controllers are perfect for your more demanding control applications.

Choose the i2850 Series controller with the input configuration that matches your application:

- The i2850 has four full range universal inputs plus a fifth input for an on-board air flow sensor for VAV airflow measurement.
- The i2851 contains four universal inputs as well, but does not have the on-board air flow sensor and is perfect for applications not requiring airflow measurement, such as heat pumps and fan coils.
- The i2853 is for dual-duct VAV applications. It contains two onboard airflow sensors and four universal inputs.

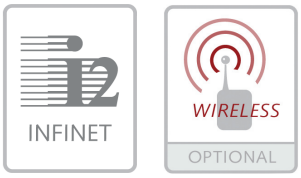
All three models feature an additional room sensor input, which supports Andover Continuum Smart Sensor, or any standard room temperature sensor; plus three Form A relays and one Form K Tri-state relay output.

Similar to all i2 controllers, the i2850 Series 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.

The i2850 Series communicates with the entire Andover Continuum Infinet RS-485 field bus (i.e. both Andover Continuum Infinet and Andover Continuum Infinet II controllers) and is compatible with both the Andover Continuum CyberStation and Infinity SX 8000 front-ends. Up to 254 Andover Continuum Infinet devices can be networked to any Andover Continuum network controller.

PRODUCT AT A GLANCE

- Compact Terminal Controllers Provide VAV Control for a Broad Range of Applications
- Compatible with Both Andover Continuum and Infinity Systems
- Expandable I/O Meets Additional Point Count Needs
- Universal Inputs with Form A and Form K 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
- On-Board Airflow Sensor
- Optional Display/Keypad Provides Easy Operator Interface (Mounted Separately)
- View and Modify Information with Optional Andover Continuum Smart Sensor Display
- Local On-Board Service Port



Andover Continuum Infinet II i2850 Series Terminal Controllers Features (continued)

Increased Reliability with Flash Memory

The i2850'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 i2850 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.

Inputs

The input configuration on the i2850 Series consists of four full range universal inputs that accept voltage (0-5VDC), digital (on/off), counter signals (up to 4Hz), or temperature signals. The i2850 features one on-board air flow sensor; the i2853 provides two. All models offer an additional input to support the Andover Continuum Smart Sensor, or any standard room temperature sensor.

Outputs

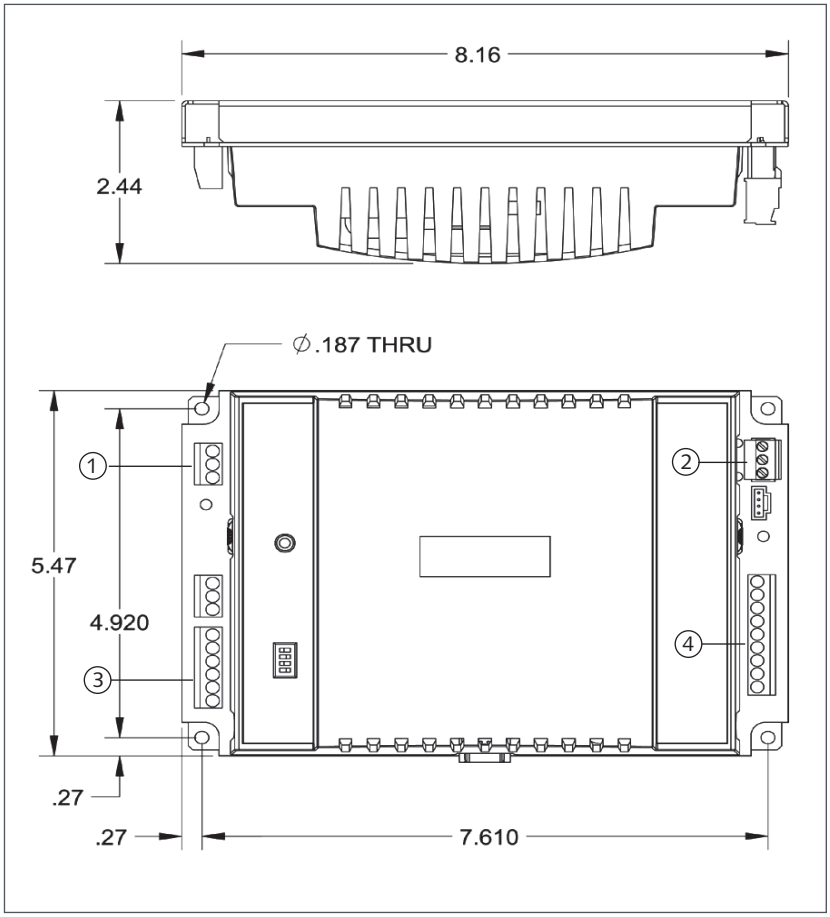
The i2850 Series contains three Form A relay outputs and one Form K Tri-state output. Each relay is rated for 24 VAC/VDC, 3 amp. These outputs can be used separately for on/off or pulsed control of lighting, heat, and fan units. The pre-configured Form K Tri-state output can be used for bi-directional control of dampers and valves.

(Note: Any two consecutive Form A outputs can be configured to form an additional Form K output.)

I/O Expansion

The i2850 Series contains an I/O expansion port for the addition of up to two xP expansion modules directly on the bottom of the controller. The i2 family of modules includes the xPDI8, xPUI4, xPDO2, xPDO4, xPAO2, and xPAO4. In addition, the I/O bus supports the xP Display Module, which allows the user to view and change point values.

Dimensional Drawings



Andover Continuum Infinet II i2850 Series Terminal Controllers Features (continued)

Software Capabilities

The dynamic memory of the i2850 Series can be allocated for any combination of programs, scheduling, alarming, and data logging using the powerful Andover Continuum 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 i2850 Series using the Andover Continuum CyberStation, Infinity SX 8000 Workstation, or local user terminal. Programs are then stored in, and executed by, the i2850 Series controllers.

Programming multiple i2850 Series controllers is inherently easy with Plain English. A complete copy of one i2850 controller's programs can be loaded directly into other i2850 controllers without changing any point names or programs.

Smart Sensor Interface

The i2850 Series 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.

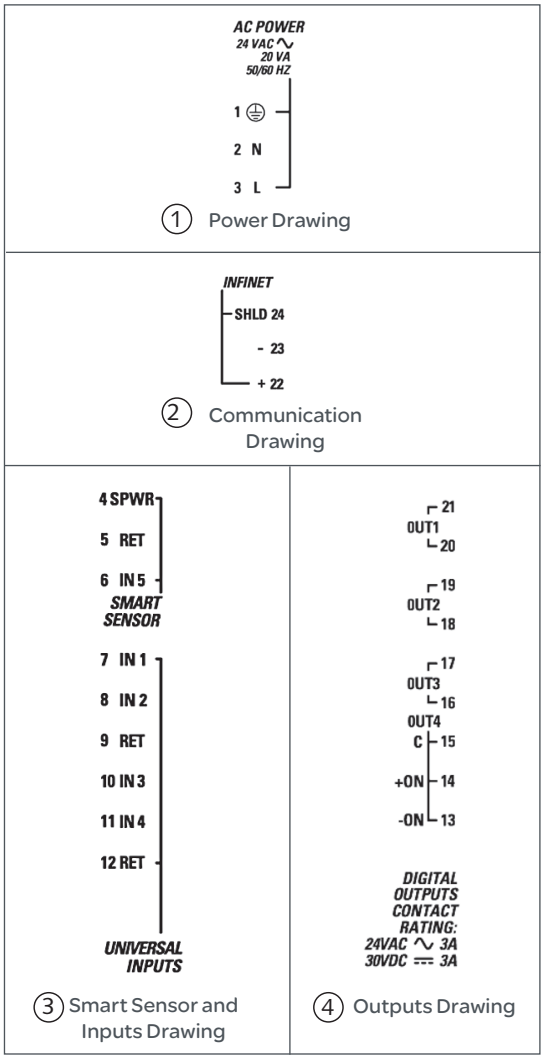
Local Display

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.

Optional Wireless Andover Continuum Infinet

The i2850 Series Andover Continuum Infinet controllers can also communicate using a wireless mesh network. Simply plug Andover Continuum Wireless Adapters into the service ports of these controllers with wireless compatible firmware to create a wireless mesh network that sends and receives Andover Continuum Infinet messages.

Dimensional Drawings



1 Power Drawing

2 Communication Drawing

3 Smart Sensor and Inputs Drawing

4 Outputs Drawing

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Andover Continuum Infinet II i2850 Series Terminal Controllers Specifications

i2850 Series Terminal Controllers

Electrical

Power
24 VAC, +10% -15%, 50/60 Hz
Power Consumption
20 VA
Overload Protection
Fused with 2 amp fuse. MOV protected.
Software Real-Time Clock
Synchronized through Andover Continuum Infinet by network controller

Mechanical

Operating Environment
32°–120°F (0–49°C),
10–95% RH (non-condensing)
Size
5.47˝ H x 8.16˝ W x 2.44˝ D
(139H x 207W x 62) mm
Weight
1.08 lbs. (.50 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

Communications

Communications Interface
Through Andover Continuum Infinet RS-485 field bus to network controller
Communications Speed
1200 to 19.2K baud
Bus Length
4,000 ft. (1,220m) standard for Andover Continuum Infinet, i2 Infilink module allows extension to longer distances and is required after every group of 32 units on the network.
Bus Media
Andover Continuum Infinet: twisted, shielded pair, low capacitance cable
RS-485 port for implementing Wireless Infinet II connection, including:
Standard service port, four-position shrouded connector
Comm. Error Checking
International Standard CRC 16
Compatibility
Andover Continuum Cyberstation and Infinity SX 8000 systems

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). Supervised Alarm (single or double resistor). 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)
Airflow sensor (0 to 2” W.C.)
(i2850- qty 1; i2853-qty 2)
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)
Airflow Input

Range:	0 to 2” W.C. (0-500 Pa)
Resolution:	0.005” W.C. (1.25 Pa) @ 23° C (73° F)
Accuracy:	±0.025” W.C. (6.25 Pa) @23°C (73°F)

Andover Continuum Infinet II i2850 Series Terminal Controllers Specifications (continued)

i2850 Series Terminal Controllers

Outputs

3 single pole single throw (SPST) Form A relays

1 Form K Tri-state relay output (Any two consecutive Form A 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

Expansion Bus

Interfaces to optional xP I/O Expansion Modules

Connections

Power

3-position fixed screw terminal connector

Inputs

6-position fixed screw terminal connector

Outputs

9-position fixed screw terminal connector

Smart Sensor

3-position fixed screw terminal connector

Communications

3-position removable screw terminal connector

Expansion Port

6-position shrouded 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) (Digital only)
EXPANSION PORT PWR	Power Status

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, Class A, CE

Options

UL864, Smoke Control System Equipment, UUKL (i2850-S, i2851-S, i2853-S)

Models

i2850

Infinet II i2850 Terminal Controller

i2850-S

Infinet II i2850 Terminal Controller with Smoke-Control option

i2850-WL

Wireless Infinet II i2850 Terminal Controller

i2851

Infinet II i2851 Terminal Controller

i2851-S

Infinet II i2851 Terminal Controller with Smoke-Control option

i2851-WL

Wireless Infinet II i2851 Terminal Controller

i2853

Infinet II i2853 Terminal Controller

i2853-S

Infinet II i2853 Terminal Controller with Smoke-Control option

i2853-WL

Wireless Infinet II i2853 Terminal Controller

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