

FEATURES

- Controls-in-a-Box™ is based on an open protocol microprocessor and designed to control a variety of HVAC applications.
- It has a feature rich network interface.
- All controller features are adjustable by a freely-available plug-in software tool.
- Its devices can operate stand-alone or as a networked solution.
- When monitored by Controls-in-a-Box™ software, web-based control and monitoring is enabled; along with available trend scheduling and alarm storage.
- The hardware can be expanded with a variety of add-on features.
- Open protocol guidelines are strictly observed. Controls-in-a-Box is interoperable with other open protocol controllers and devices.
- The hardware is built to the highest quality standards and is backed by a one-year warranty.
- All hardware is built in the USA using eco-friendly, lead-free technology and is RoHS compliant.

Controls-in-a-Box™ Controller Specification

Model 2.2.4.0 Variable Air Volume



UL916

Made in USA

HARDWARE

Processor: 8 bits, 80MHz

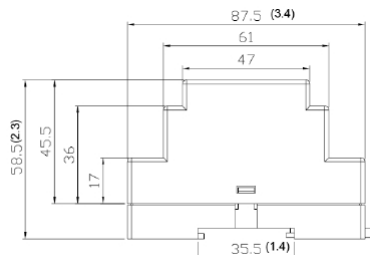
Memory: 48k application memory

Transceiver: FTT-10; 78kbps free topology, polarity free

Indicator light: Multi-color LED, power, status, service

Communication jack: RJ11; power, hand-held

The hardware has been certified to the UL916 Energy Management Equipment standard and CSA C22.2#205 Issue 1983/06/01 (R2009) Signal Equipment standard



Inputs

- 2 resistive sensor inputs.
- 2 universal inputs.
- Input resolution is 20 bits.
- Universal inputs (UI) are software configurable.

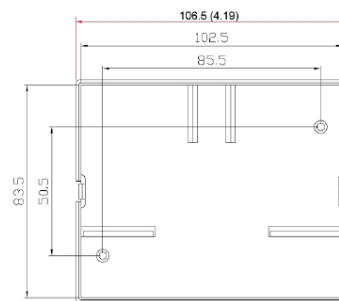
Voltage is 0-10VDC

Current is 0-20mA

Digital is a dry contact

Resistive sensors

- a) Thermistor 10kΩ Type 2 (recommended), Type 3
- b) Thermistor custom translation table on each UI
- c) Potentiometer with custom translation table on each UI



Outputs

- 4 triac digital outputs
- Triac outputs can source 24AC or route external AC power depending on power jumper setting.
- Digital Triac rated for 1A at 24VAC with external power supply

LED Color Codes

- Green = Powered on and configured
- Red = Flashing, powered on and unaddressed
- OFF, no color = No power

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APPLICATION

Model 2.2.4.0 is designed for variable air volume equipment. The software profile has up to two (2) stages of heating, fan control, humidity, and CO₂.

SOFTWARE

The programming plug-in provides a graphical user interface for configuration and monitoring, I/O customization, communication parameters and control sequences. The plug-in is to be executed within the network management tool for Windows.

User interface features:

- Administrative User Levels
- Alarming and email notification
- Device Monitoring
- Trending
- Scheduling

Changeable network variable types:

- Ten (10) PID loops
- Input, output properties and network update throttling

Optional Software Points:

- 1) Room Temperature
- 2) Discharge Air Temperature
- 3) CO₂ Sensor
- 4) Humidity Sensor
- 5) Fan Start/Stop
- 6) Damper Actuator
- 7) Up to two (2) Heating stages

ENVIRONMENTAL

Operating Temperature 0 to 70° C (32 to 158° F)
Operating Humidity 0 to 90% non-condensing
Storage Temperature -20 to 70° C (-4 to -158° F)

POWER

Consumption: 6VA plus peripherals
Max Consumption: 30VA
Supply Voltage: 24VAC; 50/60Hz; Class II
Fuse: 1.85A auto-reset fuse

ENCLOSURE

Installation: Mounts on 35mm DIN-rail
Color: Black
Material: ABS
Connectors: Pluggable, 10 position

NETWORK

Controls-in-a-Box™ is built to operate on network channels connected with 22/2 flexible, twisted pair wire. Network update throttling is incorporated and can be adjusted by the plug-in. Networks can be built using IP backbones and routers