

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 2.4.5.2 Roof Top Unit



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.
- 4 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

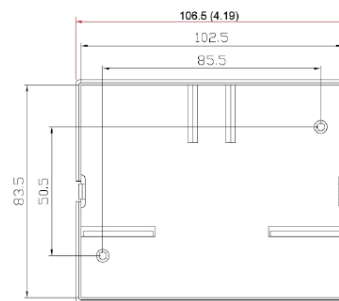
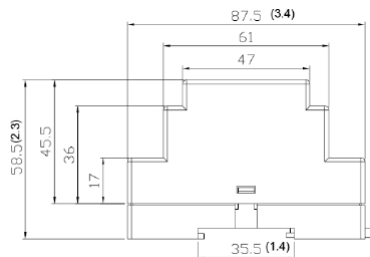
- a) Thermistor 10kΩ Type 2 (recommended), Type 3
- b) Thermistor custom translation table on each UI
- c) Potentiometer with custom translation table on each UI

Outputs

- 5 triac digital outputs
- 2 analog 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
- Analog Universal 0-10VDC adjustable, linear 0 or 12VDC digital, 20 mA max at 30° C, and 16 bit resolution

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 2.4.5.2 is designed for roof top unit equipment. The software profile has up to two (2) stages of cooling and two (2) stages of heating, variable speed fan control, economizer, and CO₂ control.

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) Supply Fan Status
- 4) Supply Fan Start/Stop
- 5) Up to two (2) Cooling stages
- 6) 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