

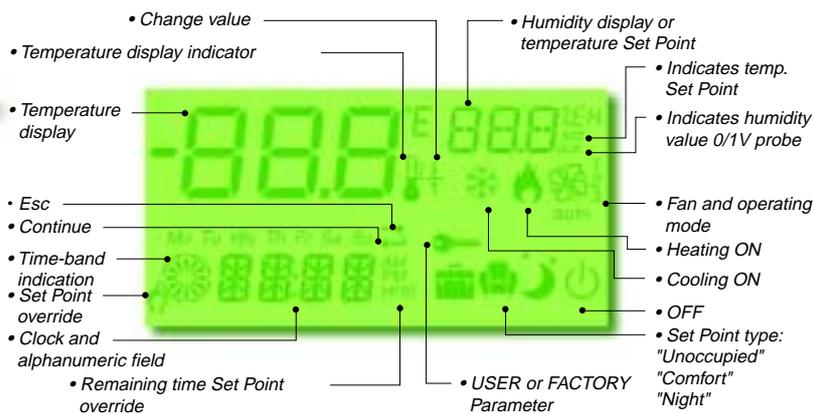


aria

Innovative HVAC Controller

Up to 2 Cool, 3 Heat, Humidify, Dehumidify

CAREL
Technology & Evolution



aria

Power to the OEM for: Ceiling Mount Air-Conditioners, Roof Top Air Handlers, Integrated Small Building Controls, VAV & Multi-Zone Systems, Heat Pumps & Split Systems

Comprehensive Display/Keypads

aria is the Carel controller for the HVAC industry that is both powerful and easy to use. The graphic LCD display indicates the operating mode, the time, the Set Point and the data in real time.

There are models available with a back-lit display to make the characters easier to read. Some models are fitted with internal humidity sensor, a real time clock and a serial card for remote communication to a monitoring system (BMS) or any other Carel pLAN compatible controller. A hardware key is available to simplify the configuration of the controller.

The large UP and DOWN buttons are used to increase or decrease the Set Point or navigate through parameters.

The six side buttons are used to set the clock, the Set Point, the operating mode, the fan mode and reset alarms.

The user can program three different Set Points: comfort, unoccupied, night-time. Using the clock card option, the user can also set up to seven daily programs with up to six time bands per day.

High Capacity Relay Control Boards

Three power boards are available, which can be configured to manage:

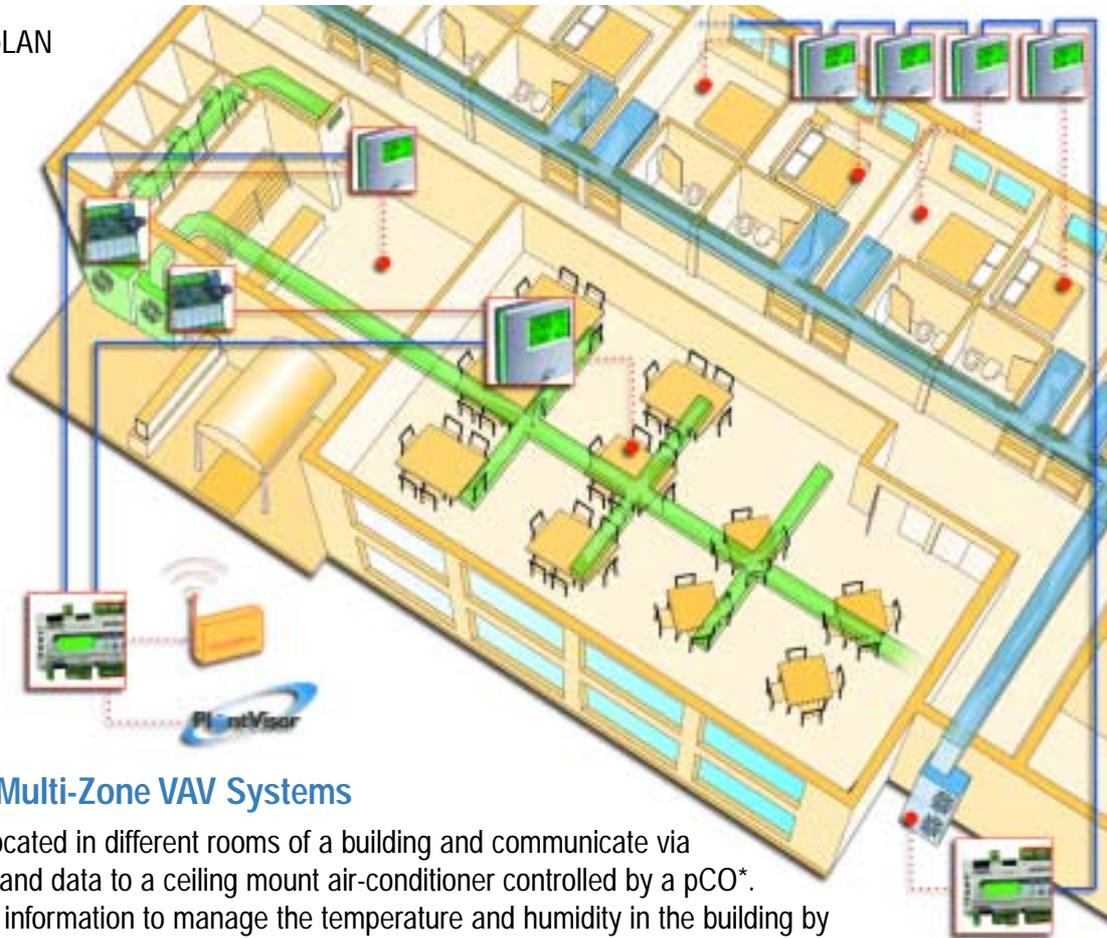
- fans – continuous or on demand;
- up to two cooling steps;
- up to three heating steps;
- a humidifier;
- dehumidification by cooling/reheat;
- heat pump operation with auxiliary heaters;
- split systems with three-speed fans;
- damper control for VAV systems;
- compressor rotation;
- alarm relays.

Installation is greatly simplified: only a 2 wire cable is needed to connect the **aria** terminal (located in the room) to its power board, which is located in the air-conditioner or fan-coil.

The three digital inputs on the power boards can be configured for a series of functions, including: cooling/heating selection, remote ON/OFF, defrost termination, alarm control (generic, filter, low pressure, fan overload, etc.). An additional analog input can be used for automatic defrost control, energy saving or Set Point compensation. Parameters can be password-protected to prevent unauthorized access.

Integration into pLAN networks

Models capable of pLAN communication can interface with any other compatible Carel controller with up to 32 controllers per network.



Example No. 1: Multi-Zone VAV Systems

aria terminals are located in different rooms of a building and communicate via pLAN the Set Point and data to a ceiling mount air-conditioner controlled by a pCO*. The pCO* uses this information to manage the temperature and humidity in the building by meeting each room's demand.

In multi-zone systems, the **aria** terminal is connected to a TAZONE* card for damper control.

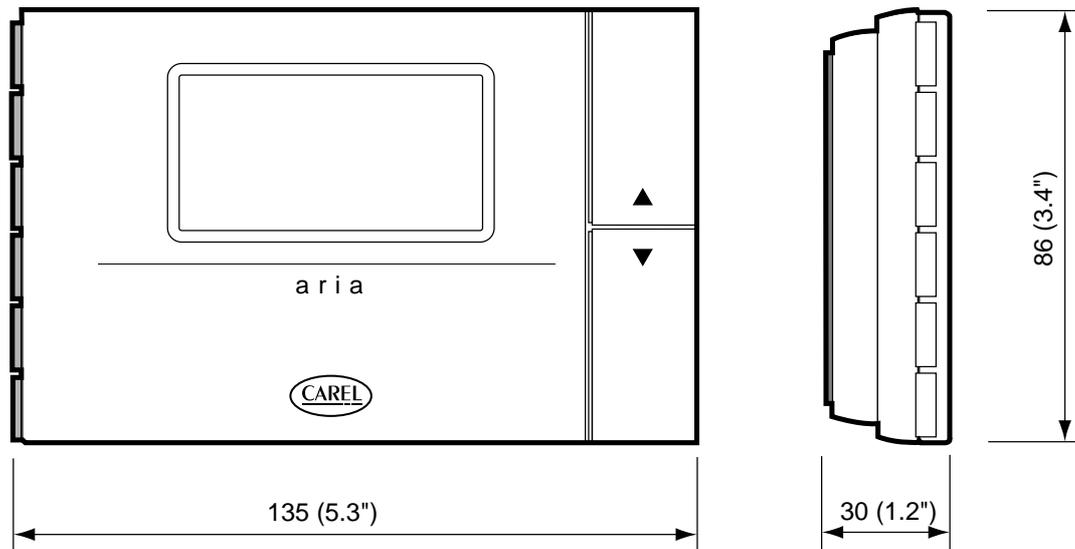
Example No. 2: Roof Top Units

An **aria** controller relay board is mounted in each roof top air handler with its display/keypad mounted in the room. A central pCO* controller will handle additional operations as lighting, energy management, etc., as well as, communication to a supervisory system or a GSM mobile phone.

Example No. 3: pCO* Terminal

The **aria** terminal replaces the LCD pCO* board. Via the pLAN, the **aria** interfaces with a pCO* board to manage basic operations, such as unit ON-OFF, alarm reset, Set Point modification, etc.

Dimensions (mm):



Technical Characteristics

Display/Keypad Terminal

Power supply: from the relay/power board via single twisted pair cable

Maximum distance from the power board: 150m (500ft)

Connection to pLAN network: via single twisted pair shielded cable

Analog inputs:

- 1 (one) for Carel NTC temperature sensor: 0°C to 50°C (32°F to 122°F), resolution 0.5°C (1°F), precision 1.5°C (3°F)
- 1 (one) voltage humidity sensor, -0.5 to 1Vdc

Operating temperature: 0°C to 50°C (32°F to 122°F)

Storage temperature: -10°C to 65°C (14°F to 150°F)

Operating humidity: 20% to 80% r.H.

Storage humidity: 0% to 80% r.H.

Maximum number of devices in a pLAN network: 32

Mounting: wall-mounted

Index of protection: IP30

Relay Power Boards

Power supply: 24Vac+10% -15% at 50-60Hz

Minimum electrical power required: 12VA

Analog inputs: 1 (one) for Carel NTC defrost temperature

Digital outputs: 5 (five) or 7 (seven), depending on the model, 2 are SPDT

Relay output power: 2500VA, 10A resistive at 250V

Digital inputs: 3 (three) opto-insulated at 24Vac/Vdc

Operating temperature: -10°C to 60°C (14°F to 140°F)

Storage temperature: -20°C to 70°C (-4°F to 158°F)

Operating humidity: 20% to 80% r.H.

Storage humidity: 0% to 80% r.H.

Mounting: panel standoffs

Index of protection: IP00

Triac Power Board

Power Supply: 24Vac+10% - 15% at 50-60Hz

Minimum electrical power required: 12VA

Analog inputs: 1 (one) for Carel NTC temperature

Digital outputs: 2 (two) triac 24Vac, 8VA max

Analog outputs: 1 (one) 0-10Vdc

Digital inputs: 3 (three) opto-insulated at 24Vac/Vdc

Operating temperature: -10°C to 60°C (14°F to 140°F)

Storage temperature: -20°C to 70°C (-4°F to 158°F)

Operating humidity:

20% to 80% r.H.

Storage humidity:

0% to 80% r.H.

Mounting: DIN rail

Index of protection: IP40



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