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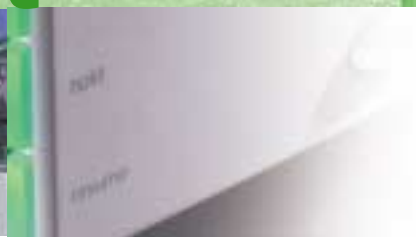


Up to 2 Cool, 3 Heat,
Humidify, Dehumidify

Innovative HVAC Controller

CAREL

Technology & Evolution

aria

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

Comprehensive Display/Keypads

The Aria was designed first for power, then for ease of use. The comprehensive, yet simple layout of the display and keypad is a testimony to the designer's art. Centered in the unit is a graphic LCD display with characters to show the operating mode, time, set points and actual readings. Also available - the top level version only - with a back-lit display for even easier reading. Models are available with internal temperature and humidity sensors (can also be remoted by changing a jumper), real time clock and/or pLAN local area network capability + hardware key to allow easy data program by OEM.

Two large keys on the front right of the display increase or decrease set points, and are also used to put the unit in manual override instantly (perfect for school rooms or conference rooms).

Five left side mounted buttons allow programming of the mode, clock, set points, manual operation, and alarm handling. The user can program three different set points: normal, temporary, night.

By using clock board option, the user can also program six timing zones per day (max 7 programs).

High Capacity Relay Control Boards

Three relay/power boards configurable for:

- Fan – continuous or on demand
- Up to 2 steps of cooling
- Up to 3 steps of heating
- External humidifier
- Internal dehumidify by cooling/reheat
- Heat pump operation with aux. Heat
- Split systems with fan speeds (3)
- Damper control for VAV systems (triac relais are used)
- Compressor rotation
- Hours run log
- Alarm relay

Three (3) digital inputs to the board are configurable for cooling/heating switchover, filter alarm, remote on/off, generic alarm, defrost end.

A 2nd temperature sensor input on the board allows connection of a defrost sensor for automatic defrosting when in the heat pump mode.

All parameters are able to be locked behind passwords to protect OEM factory settings and also to prevent unauthorized tampering with set points when installed on site.

...innovative HVAC Controller

Integration to pLAN Local Area Network

Some models of the Aria have the ability to connect onto the pLAN Local Area Network. This powerful feature allows up to 30 Aria controllers to be connected on the network to a single pCO controller. The Aria controllers can thus become terminal units with the pCO controller acting as the master.

Example No.1: VAV Multi-Zone application

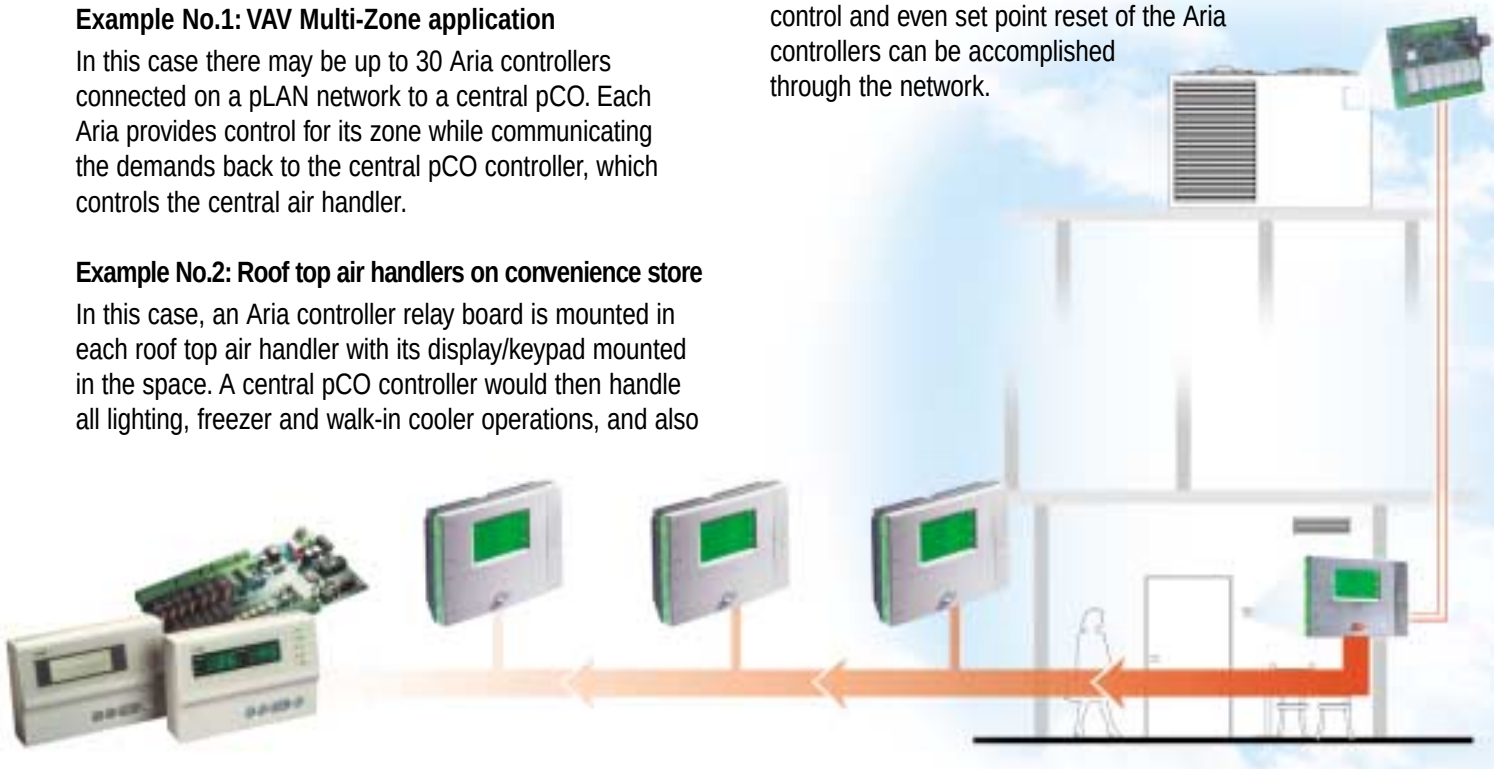
In this case there may be up to 30 Aria controllers connected on a pLAN network to a central pCO. Each Aria provides control for its zone while communicating the demands back to the central pCO controller, which controls the central air handler.

Example No.2: Roof top air handlers on convenience store

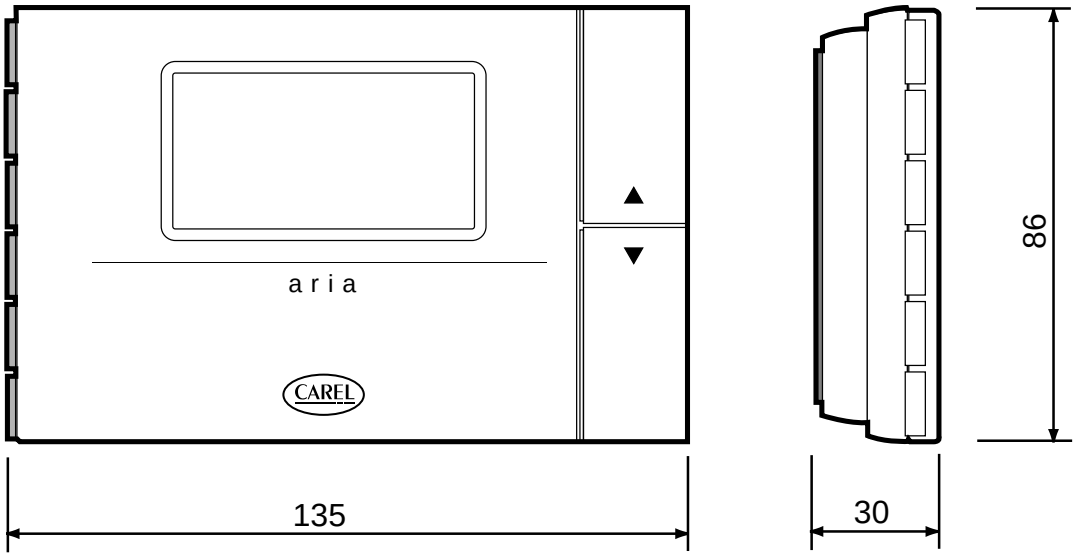
In this case, an Aria controller relay board is mounted in each roof top air handler with its display/keypad mounted in the space. A central pCO controller would then handle all lighting, freezer and walk-in cooler operations, and also provide the communications link to the modem for all the Aria controllers as well.

Example No.3: Network of ceiling mount and floor mount computer room air conditioners

When used for ceiling mount units, just as in example No.2, each Aria controls its unit and communicates to other pCO controllers in the floor mounted units. Redundant control and even set point reset of the Aria controllers can be accomplished through the network.



Dimensions



Technical Characteristics

Display/Keypad Terminal

Power supply: from the relay/power board by single twisted pair of wires
Maximum distance from the power board: 150m (500ft)
Connection to pLAN network: via shielded single twisted pair cable
Analog inputs:

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

Operating temperature: 0 to 50°C (32 to 122°F),
Storage temperature: -10 to 65°C (14 to 150°F)
Operating humidity: 20% to 80% r.H., *Storage humidity:* 0% to 80% r.H.
Maximum number of terminals in pLan network: 30
Mounting: wall-mounted
Index of protection: IP30

Relay Power Boards

Power supply: 24 Vac+10% -15% at 50-60Hz,
Minimum electrical power required: 12VA
Analog inputs: 1 (one) for Carel NTC temperature defrost sensor
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-isolated at 24Vac/dc
Operating temperature: -10 to 60°C (14 to 140°F),
Storage temperature: -20 to 70°C (-4 to 158°F)
Operating humidity: 20% to 80% r.H.,
Storage humidity: 0% to 80% r.H.
Mounting: panel standoffs

Triac Power Board

Power Supply: 24 Vac+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), voltage 0 to 10Vdc
Digital inputs: 3 (three) opto-isolated at 24Vac/dc
Operating temperature: -10 to 60°C (14 to 140°F),
Storage temperature:
-20 to 70°C (-4 to 158°F)
Operating humidity:
20% to 80% r.H.,
Storage humidity:
0% to 80% r.H.
Mounting: DIN rail

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