Advanced GrowAire™
Microprocessor Controller

FEATURES

- Backlit LCD User Interface
- Custom programming for complex dehumidification, temperature and humidity control.
- Multiple communication options
- Alarm history retention

DESCRIPTION

The CM3550 controllers are uniquely programmed for the indoor grow application providing energy efficient moisture removal and precise temperature & humidity control.

The CM3550 controllers offer greater compatibility with building management systems (BMS) through the use of an options plug in communication module. Optional communication modules for the CM3550 include: LonWorks®, BACnet® Ethernet, BACnet® MS/TP, Modbus® TCP/IP or Modbus® RTU.

The CM3550 has a built-in time clock for optional setup/setback of temperature and humidity setpoints based on lighting schedule should a building management system (BMS) not be present on the project. An input is also available that can be tied directly into lighting contactors to provide this functionality as well.

A user interface to the CM3550 is supplied on each unit. This backlit LCD display provides easy to navigate screens for setpoint adjustment and unit monitoring. All Inputs and Outputs along with alarm history can be viewed from the user interface to aid in unit or system diagnostics. The interface is either supplied as a built-in display on the face of the controller or as a separate remote display terminal that is connected to the controller.

ORDER OPTIONS

Sensor Configuration Options
- CA3500-GR-SA (One require for each grow room unit)
  This package includes the supply air sensor that will provide feedback to the unit.
- CA3500-GR-ZONE (One require for each grow room zone)
  This package includes the zone sensor and the radiant shield. Additionally, this also includes a photocell and associated mounting for installation in the zone.
- CA3500-RDT (One require for each unit where it is selected)
  This package includes the RDT and cord.

Communication Configuration
- Standard - No BMS Communication
- LONWORKS® Module
- BACnet® Ethernet Module
- BACnet® MS/TP Module
- Modbus® Module

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**SYSTEM DISPLAY OPTIONS**

The CM3550 controller is matched for each Desert Aire product based on the number of inputs and outputs and by taking into account the accessibility of the controller and its user interface. When the Remote Display Terminals connected to a controller with an integrated display both display devices are fully functional. The following summarizes the options for each product line.

**Aura™ and TotalAire™ Series (QS)**
The Aura™ and TotalAire™ Series use a controller with the integral user interface. As an option, a remote mounted display terminal (hand-held or wall mounted) can be ordered (See figure 4). The remote display terminal is shipped with a 20 ft. interconnection cable that has RJ11 6-pin termination plugs.

**VerticalAire™ Series (QV)**
For the QV 4 to 15 ton systems, the electrical control box is located in the base section where the compressors are located. For most users, this is too low to see the display easily, so the controller without an integral display is installed in the electrical enclosure and the remote display terminal is shipped as a separate device.

For the QV 20 to 30 ton systems, Desert Aire provides the controller with the integral user interface. As an option, a remote display terminal (hand-held or wall mounted) can be ordered.

**RADIATION SHIELD**

Grow rooms utilizing high intensity lighting generate a large amount of radiant energy which can impact temperature readings. Error in the magnitude of 10F could be experienced. To eliminate this error, Desert Aire utilizes a radiation shield designed to hold our sensors. With the curved shape and white color of the plates, air flow is able to move across the sensor to keep this light form impacting the readings.

For ease of installation, the shield comes with integral pipe mounting hardware which can be easily removed for surface mounting applications.

**BMS COMMUNICATION MODULES**

**LonWorks®**- Echelon’s LonWorks® is a dominant solution of control in industry, offices, homes and transport. Electric standard supported is FTT10.

**Modbus®**- One of the most widely used protocols. Supports Modbus Slave, RTU mode; communications standard RS485. Modbus TCP/IP is also supported with appropriate card.

**BACnet® MS/TP and BACnet® Ethernet**- Based on EIA-485 and Ethernet standards. Connection is possible through the following networks:

- SNMP v1, v2, v3 networks
- BACnet®, Ethernet, BACnet®/IP networks, BACnet® MS/TP
- LAN or Internet

In order to utilize AireGuard™ on these units you must purchase the AireGuard™ Hardware Box and AireGuard™ subscription service. The AireGuard™ platform allows for remote monitoring, alarming, and data trending of connected Desert Aire equipment through a secure cloud based database. The owner must provide an Ethernet internet connection to the AireGuard™ Hardware Box to enable the data transmission to the cloud server. The connection communicates without opening additional ports in the systems firewall or requiring a virtual private network. Contact your local Desert Aire sales representative if you are interested in this service.

For those users with more than one dehumidifier, this system can act as their local building management system where all of the units are available with the same login credential. All that is required is an Ethernet cable to be connected to the AireGuard interface box and the facility network. The connection communicates without opening additional ports in the systems firewall or requiring a virtual private network.

Please refer to the AireGuard brochure for additional details.