

# CM35xx SERIES CONTROLLERS

## Advanced Microprocessor Controllers



ADVANCED COMMUNICATION CAPABILITIES

EASY INSTALLATION & OPERATION

CONTINUOUS MONITORING

### FEATURES

- Backlit LCD User Interface
- Custom programming for complex dehumidification temperature and humidity control
- Multiple communication options:
  - LONWORKS®
  - BACnet™ Ethernet
  - BACnet™ MS/TP
  - Modbus®
- Alarm history retention



### DESCRIPTION

The CM35xx series controllers are now available on Desert Aire's Aura™, TotalAire™ (QS Series), VerticalAire™ (QV Series), ExpertAire™ (LC/LV Series), LT Low Temperature Dehumidifiers, and the ND/SA Dehumidifiers for large capacity applications. The CM35xx controllers are uniquely programmed for each Desert Aire application providing energy efficient moisture removal and precise temperature & humidity control.

The CM35xx controllers offer greater compatibility with building management systems (BMS) than previous control platforms. Optional communication modules for the CM35xx include: LonWorks®, BACnet™ Ethernet™, BACnet™ MS/TP or Modbus®. The CM35xx has a built in time clock for occupied scheduling should a BMS not be present on your project.



A user interface to the CM35xx 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.



Figure 1 - Controller w/integral display

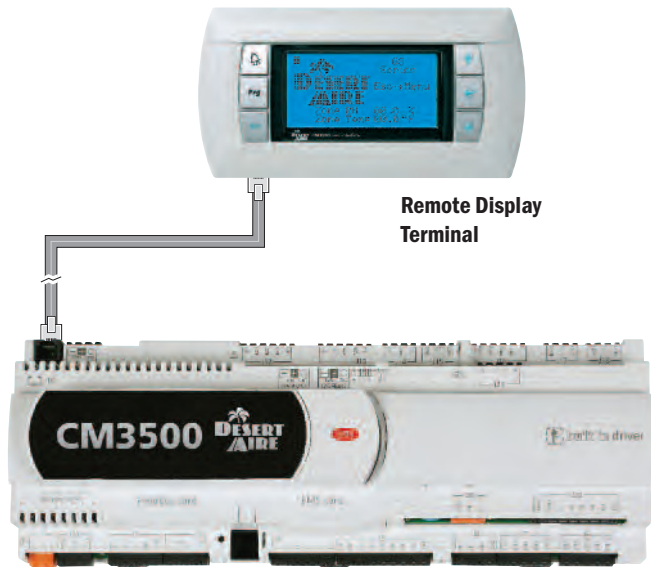


Figure 2 - Controller w/remote display terminal



Figure 3 - LT w/integral display



Figure 4 - Remote display terminal

## SYSTEM DISPLAY OPTIONS

The CM35XX 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 Terminal is 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 the CM3500 controller with the integral user interface (See figure 1). 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. Please refer to sales brochure 284, CM3500 Controller for more details and order options.

### 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 CM3500 controller without an integral display is installed in the electrical enclosure and the remote display terminal is shipped as a separate device (See figure 2).

For the QV 20 to 30 ton systems, Desert Aire provides the CM3500 controller with the integral user interface (see figure 1). As an option, a remote display terminal (hand-held or wall mounted) can be ordered (See figure 4).

Please refer to sales brochure 284, CM3500 Controller for more details and order options.

### ND / SA Series

This series uses the CM3510 controller with the integral user interface (see figure 1). As an option, a remote display terminal (hand-held or wall mounted) can be ordered (See figure 4). Please refer to sales brochure 319, CM3510 Controller for more details and order options.

# CM35xx Series Advanced Microprocessor Controllers

## ExpertAire™ Series

The LC & LV series uses the CM3530 controller without an integral display. The control is installed in the electrical enclosure and a remote display terminal is shipped as a separate device (See figure 2). Please refer to sales brochure 320, CM3530 Controller for more details and order options.

## LT Series

The low temperature series uses the CM3540 controller with the integral user interface (see figure 3). As an option, a remote display terminal (hand-held or wall mounted) can be ordered (See figure 4). Please refer to sales brochure 288, CM3540 Controller for more details and order options.

## AIRENET™

For larger facilities with multiple dehumidifiers in one location, Desert Aire's CA3500 controllers allow our dehumidifiers to link together on an simple 3-wire with shield (RS-485) network called AireNet™. The dehumidifiers, temperature/relative humidity sensors and remote display units can be wired serially in any order.

AireNet™ provides the following major features and benefits to the end user:

- Multiple dehumidifiers that are serving the same zone can be programmed to function off a single zone sensor, enhancing ensuring optimum efficiency and zone accuracy.
- An optional single remote display can be added to monitor operation and change set points of all of the dehumidifiers on the network.

AireNet™ allows up to 10 dehumidifiers to be connected and has simple configuration set-up commands for easy start-up. The Remote Display Terminal(RDT) provides simple selection of which dehumidifier the user would like to monitor or change.

An optional remote access point can be added to the network to provide information through cloud-based subscription services.

## Application Example

Refer to figure 5 for a dual zone example. Zone 1 has two dehumidifiers controlling the temperature and humidity of this space. In this zone

one combination temperature and relative humidity sensor has been added to provide the zone conditions to the two dehumidifiers. Each dehumidifier has its own built-in display for commissioning and service.

In zone 2 there is just one dehumidifier, with built-in display and one zone sensor. While in the office an optional RDT has been added to the AireNet loop to monitor all three dehumidifiers.

An optional AireNet Remote Access Point (RAP) appears on the network in this example to provide cloud-based internet access for the entire network.

## AIREGUARD™

AireGuard™ is Desert Aire's optional remote monitoring and alarming service to allow users to easily monitor the performance of the dehumidifier on a cloud-based database at any computer or portable device. 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 located within the dehumidifier. This connection will meet all of your IT departments security requirements and does not need to pass through your firewall.

### Features

- Read and write variables in real time.  
Allows the user to adjust set-points remotely as well as monitor all the operating variables.
- Alarm management with email notification  
User can establish communication that provides alarm notification at time of occurrence.
- One AireGuard interface box is required to monitor up to 10 dehumidifiers at a single jobsite. The AireNet cabling links the dehumidifiers to the interface.
- Two levels of service available
  1. Remote monitoring with alarm notification via email or text.
  2. Monthly report generation.

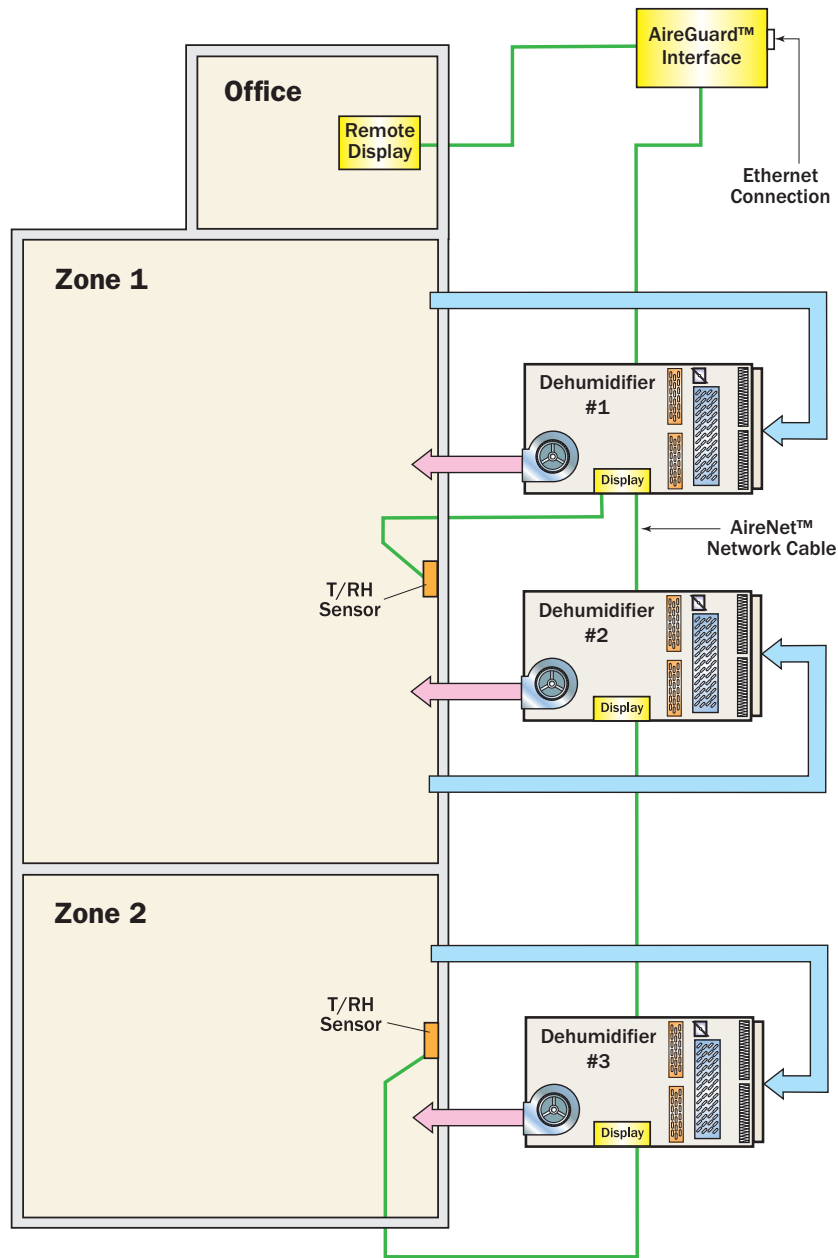


Figure 5 - Example of two zone application



*OPTIMIZING SOLUTIONS THROUGH SUPERIOR DEHUMIDIFICATION TECHNOLOGY*



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