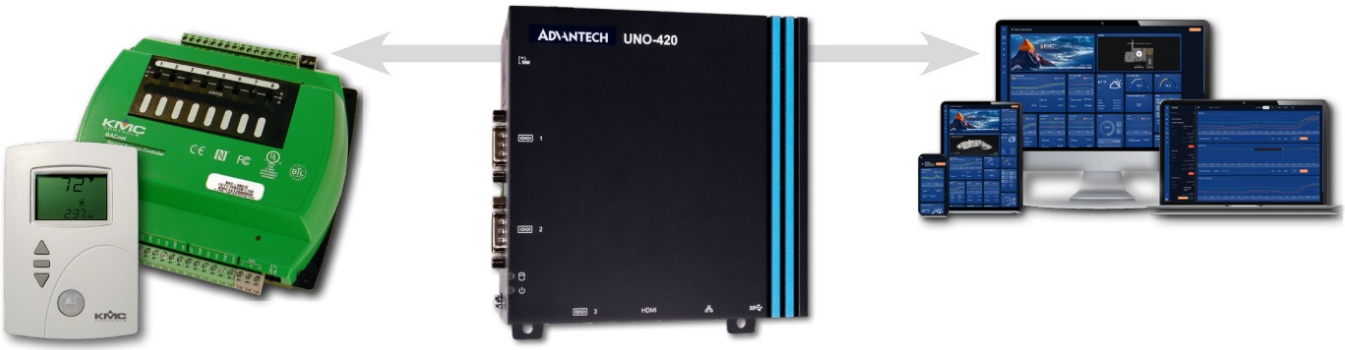
KMC BAC-5901C Commander BACnet General Purpose Controller User Guide

KMC Commander for Growers
Application Guide



Contents

Introduction to KMC Commander

Growers face challenging environmental, control, and regulatory issues. Integrating sensors with controllers for operating lights, fans, pumps, and heaters according to schedules and varying conditions is basic to business operation. Viewing trends and alarms provides awareness and documentation of present and past conditions. Making all this accessible remotely is the final step in taking command of your business.

KMC Commander is a next-generation IoT (Internet of Things) solution that connects your equipment to the cloud and provides meaningful data in real time to your PC or mobile device. The KMC Commander platform is an out-of-the-box solution (consisting of IoT-enabled hardware plus software and cloud services) to visualize, connect, and manage greenhouse systems. With KMC Commander, you can analyze and act on your data from a mobile device in the palm of your hand.

Used with KMC Conquest controllers and sensors, KMC Commander can simplify setting up IoT functions for growing a great variety of plants. The status of the system components can be displayed on “cards” in a web browser. Trends in sensor readings and other conditions can be viewed. Schedules for controlling lights, pumps, and other equipment in an area are also available. If sensor readings are outside their normal ranges, an alarm can be generated and received remotely on a computer or phone. Present values, trends, and alarms are automatically uploaded from the appliance/gateway to the KMC Commander Cloud, where they are accessible to mobile devices.

See Sample KMC Commander Screens and Descriptions on page 5 for more information about these features.

In addition to these standard features, KMC Commander’s open API (Application Programming Interface) provides further opportunities.

(See the video KMC 101: What is an API?) Optional API integration provides a means of using third-party packages for advanced analytics of your important data.

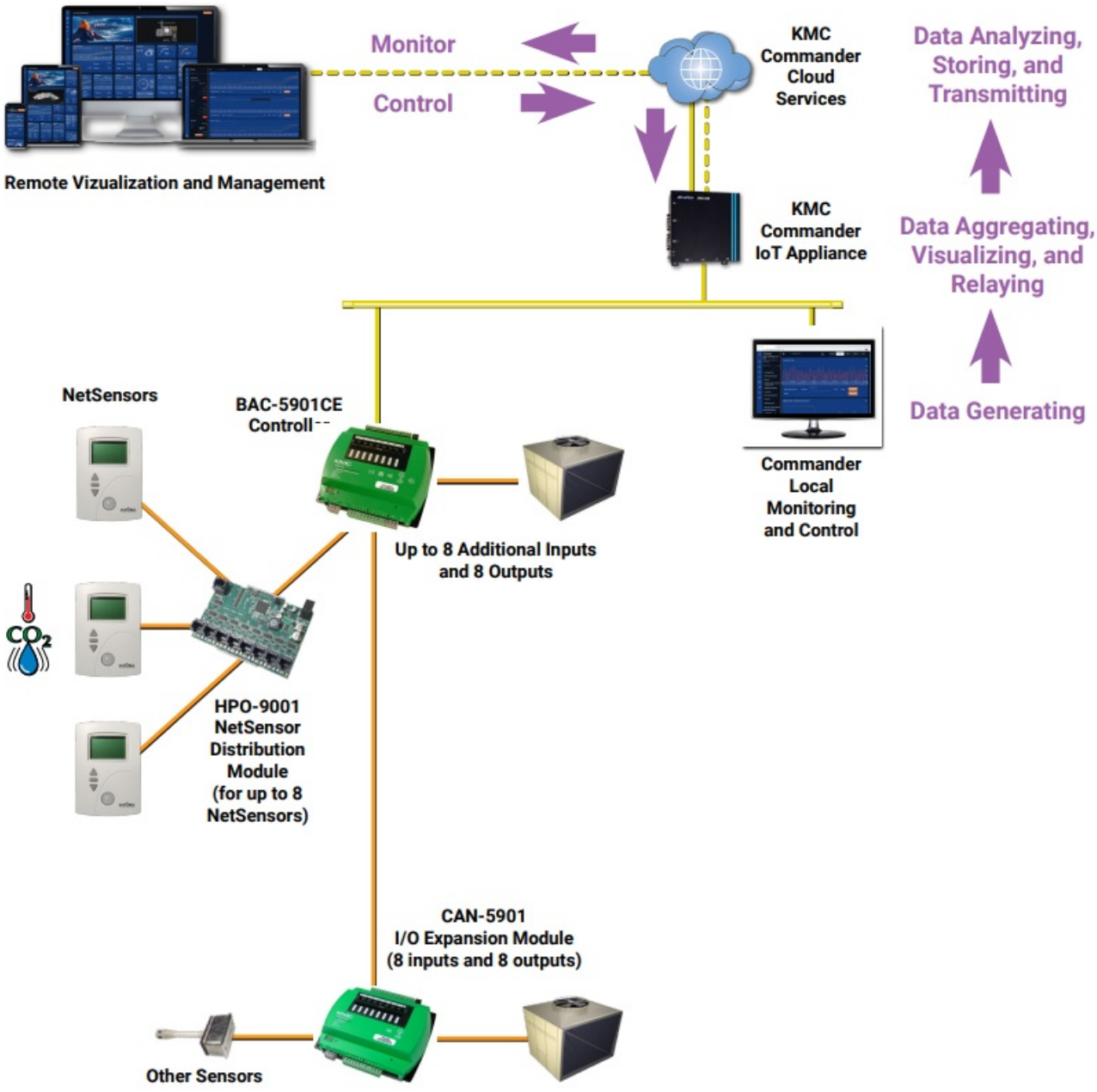
Introduction to KMC Conquest Controllers

The Internet of Things provides great benefits, but what happens if the building’s Internet access goes down? A temporarily lost Internet connection does not threaten the crops. The KMC Conquest controllers handle schedules and other critical control functions locally. They continue to operate as “stand-alone” units until full communications are restored.

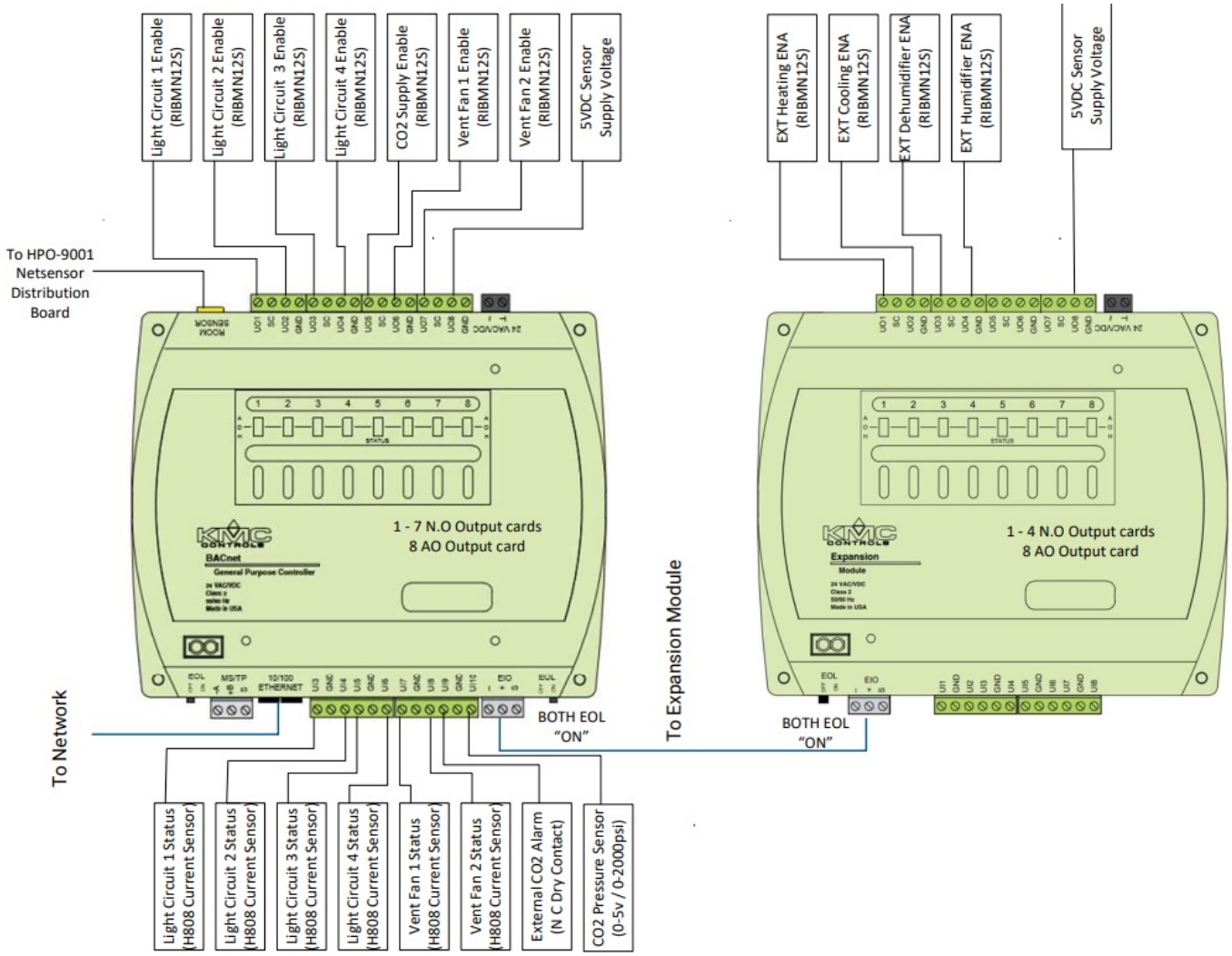
KMC Conquest BACnet® advanced application digital controllers and sensors control building systems and HVAC equipment in countless buildings. For more information about KMC Conquest equipment, see the links and illustration in Basic KMC “Growers” Components and Sample Installation on page 3.

Basic KMC “Growers” Components and Sample Installation

- KMC Commander IoT Platform (CMDR-ADVT-WIFI-BASE) or (CMDR-V2-WIFI-BASE)
- BAC-5901CE General Purpose BACnet Controller
- CAN-5901 Expansion Module
- STE-9000 Series NetSensors
- HPO-9001 NetSensor Distribution Module
- HPO-6703 Output Override Boards, Normally Open Relays
- HPO-6702 Output Override Boards, 0–12 VDC Analog Outputs

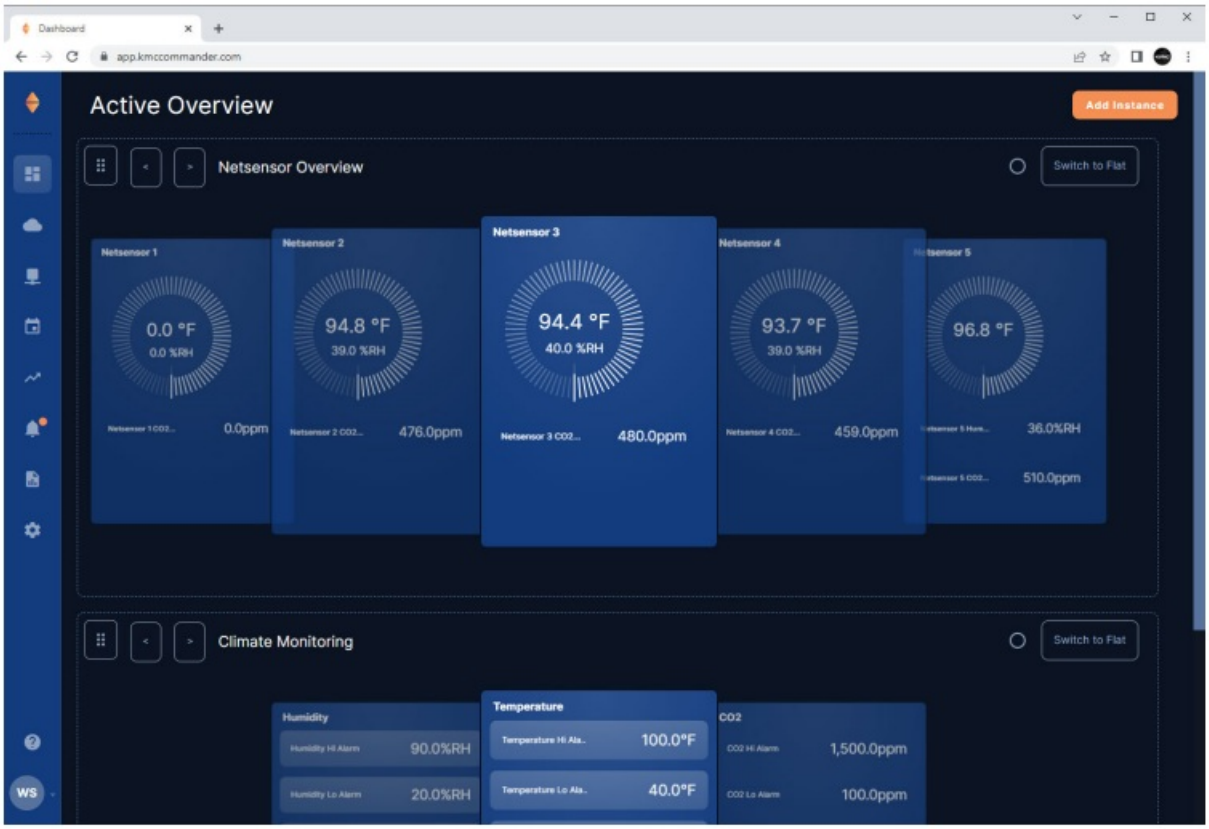


Sample Controller Details



Sample KMC Commander Screens and Descriptions

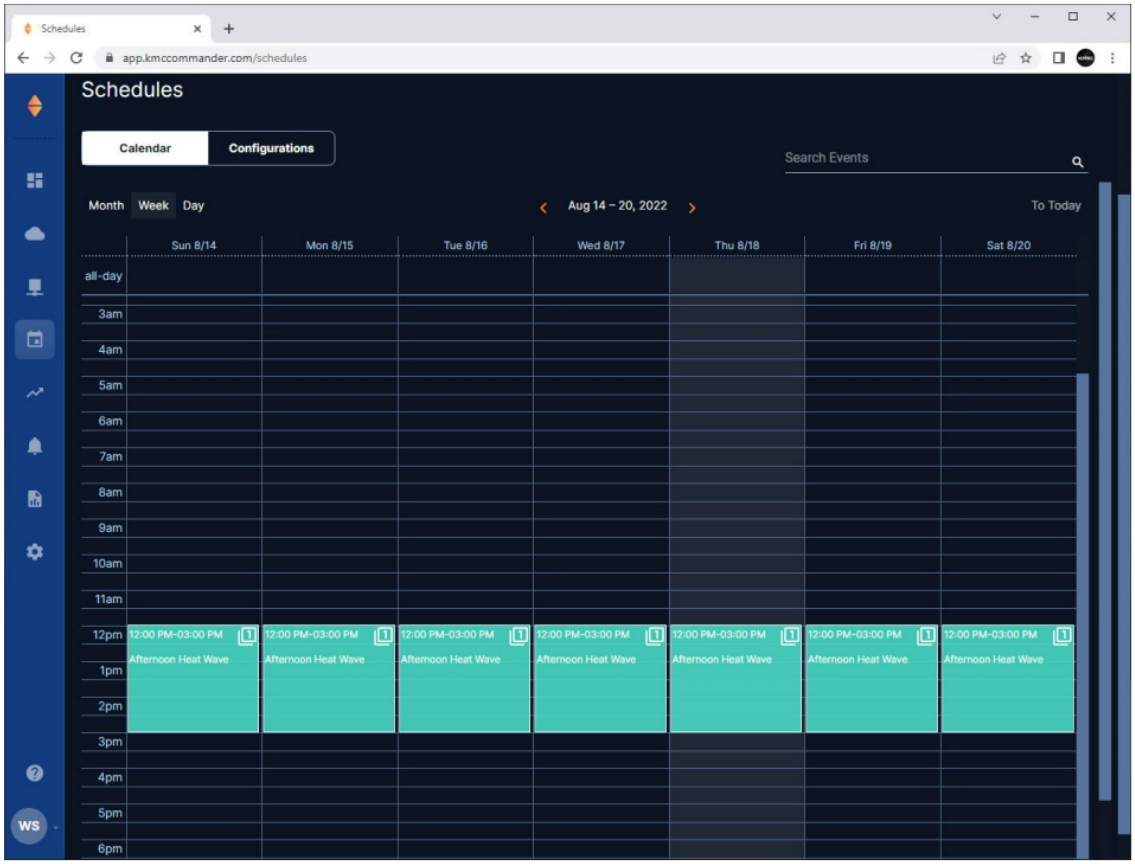
Dashboards



On a (home screen) dashboard, cards allow users to view equipment point values and change setpoints and other control functions. Cards are the primary means to visualize network data and control equipment from a web browser.

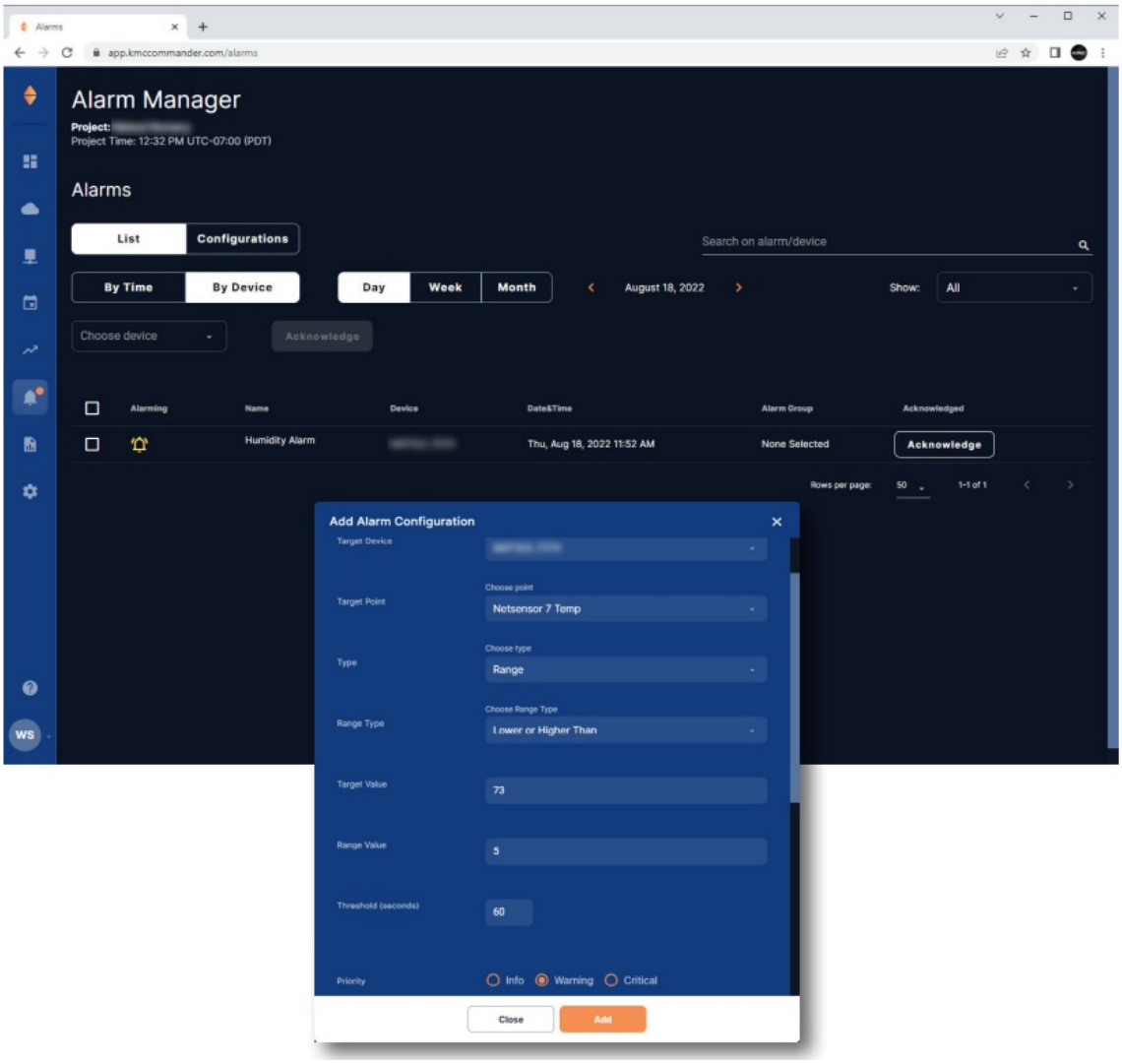
Cards (such as the most critical cards or all the cards related to a particular zone) can optionally be organized into decks. Decks show a “carousel” of the included cards. Dashboards and dashboard elements are specific to user logins. Different users (if desired) can view and control different things.

Schedules



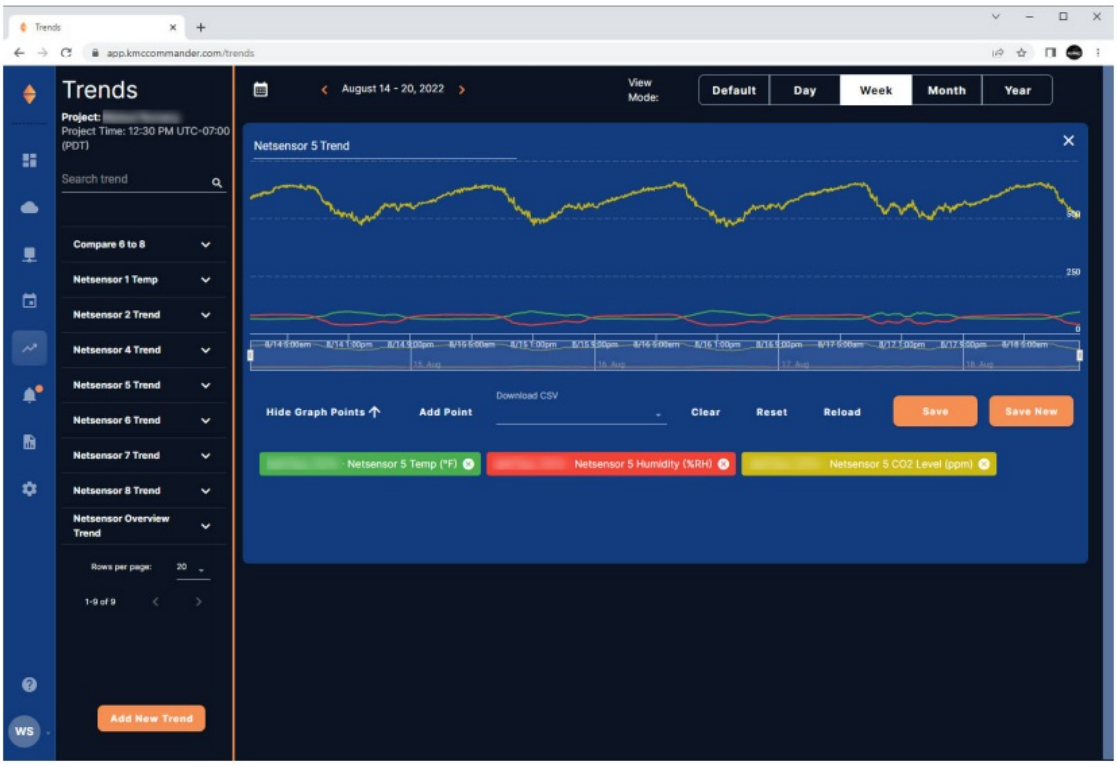
A schedule controls (with an optional default value) commendable points (e.g., Active Cooling Setpoint) on one or more devices on a network. Particular times for the schedule to operate are controlled by events. An event controls start/stop time, priority, repetition, and applicable zones of scheduled actions.
The Schedule Manager shows events by day, week, or month.
NOTE: To change the current setpoint, command the active heating/cooling setpoint rather than the (scheduled) occupied or unoccupied heating/cooling setpoint.

Alarms



Next to the Alarm (bell) icon in the left-hand menu, a notification dot appears with a color corresponding to the highest alarm priority. Hover over the Alarm icon to see the alarms in a slide-out menu. Click on the Alarm icon to go to Alarm Manager.
Alarm Manager lists alarms by the device (all alarms from that device) or by time (alarms from all devices by day, week, or month).
Alarm types include Exact Value, Range, and Dynamic. The exact Value is for alarms based on a binary point. Range compares the value of an analog point to the desired range (Lower Than, Higher Than, Lower or Higher Than, or Within Range) of acceptable values.
Dynamic compares values of two related (binary or analog) points in one or two devices (e.g., space temperature and current active setpoint).
Alarms have three levels of Priority (Info, Warning, or Critical). Alarms are color-coded according to priority (white for information, amber for warning, and red for critical).
When an acknowledgment is required, the Acknowledge button must be clicked to remove the notification dot. After the acknowledgment, the name of the user who acknowledged the alarm appears in the Acknowledged column. The user can also leave a message about what was done to address the alarm.
An optional message appears in Alarm Manager and in an optional email or notification.
To receive alarm messages, a notification group (with email addresses and/or cell phone numbers) is created in Settings (the gear icon).

Trends



Trends track values of desired points on devices and present the history as graphs.
To view a saved trend, click on its name in the list on the left pane. To zoom in on a section of the trend graph, move the slider bars at the bottom of the graph. Click the Reset button to go back to the original view, or click on the Day, Week, Month, or Year buttons for alternate views.
To view values of individual points, move the cursor near any line of the graph while reading the values in the box that appears next to the cursor. To simplify a graph for viewing, Click the X beside the name of any points to temporarily remove them from view.
Trend data can optionally be exported as a CSV file by clicking Download CSV and selecting the desired option: Current View (all visible points) or a selected visible point.

Important Notices

Support

Additional KMC product information and resources are available on the web at www.kmccontrols.com. Log in to see all available files.

KMC Commander for Growers Application Guide, AG190321B

Documents / Resources

	KMC BAC-5901C Commander BACnet General Purpose Controller [pdf] User Guide BAC-5901C, Commander BACnet General Purpose Controller, BAC-5901C Commander BACnet General Purpose Controller, BACnet General Purpose Controller, Controller

References

- KMC Controls | Building Automation and Control Solutions