Link 5.03

Remote Access and Management Program

User's Manual

Trademark Acknowledgements

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Introduction

This application allows you to remotely access your environmental controller using a PC interface or modem. This access gives you nearly all of the same capabilities as using the controller's keypad. This application provides a Microsoft® Windows® user interface making it easy for you to:

- Locate information such as the current building temperature.
- Change controller settings.
- Remotely view equipment status for the whole building.
- View history from your controller.
- Generate graphs and reports.

You may notice some slight variations between this manual and the application you are using. That is because there are several variations of this application to meet a variety of growing requirements. The variations are minor such as an occasional reference to brooders that may not apply to hog growers.

What you need to know

This application uses a standard Microsoft Windows interface. You must be familiar with the Microsoft Windows operating system to use this application. If you need Windows training, the Microsoft Windows CD includes a tutorial.

This application operates on the Windows 9x, Windows NT/2000, Windows ME, and Window XP systems.

Installation

System Requirements

Minimum System Requirements	Recommended System Requirements
Pentium 100	Pentium 166 or better
16MB Ram	32MB Ram or better
30MB free hard disk space	60MB free hard disk space

Compatibility with Controller Software / Upgrading an Existing System

Link 5.03 may not be compatible with controller software versions earlier than 5.0. To maximize program stability we recommend you upgrade your controller to software version 5.03. We recommend you do not update databases from earlier versions of link. You can install your older version of Link in a different directory than c:\Program Files\Link, along with your old database, if you need access to your old files. If you try and update your old database, the database file may be corrupted during the update process.

Your database file should be located at one of the following locations. The location depends on your existing version of Link:

- c:\Program Files\PorkLink\
- c:\Program Files\PorkWatch\
- c:\Program Files\BirdLink\
- c:\Program Files\BirdWatch\
- c:\Program Files\Link\

The "c:" may be another disk drive in some cases. Your database file has the extension .mdb. Copy this file into another directory on your computer, or some type of backup media.

Uninstall your current version of Link using the Windows Add/Remove Programs control panel. You can get to this by clicking the Windows Start Menu, selecting **Settings**, and then selecting **Control Panel**. Then, select the **Add/Remove Programs** control panel, scroll through the list of installed programs until you locate PorkLink, PorkWatch, BirdLink, BirdWatch or Link. Click the application name and then click the **Add/Remove** button. The application will be removed.

You may be prompted to Keep or Remove files that other applications might be using. Click the **Remove All** button, if you see this dialog box.
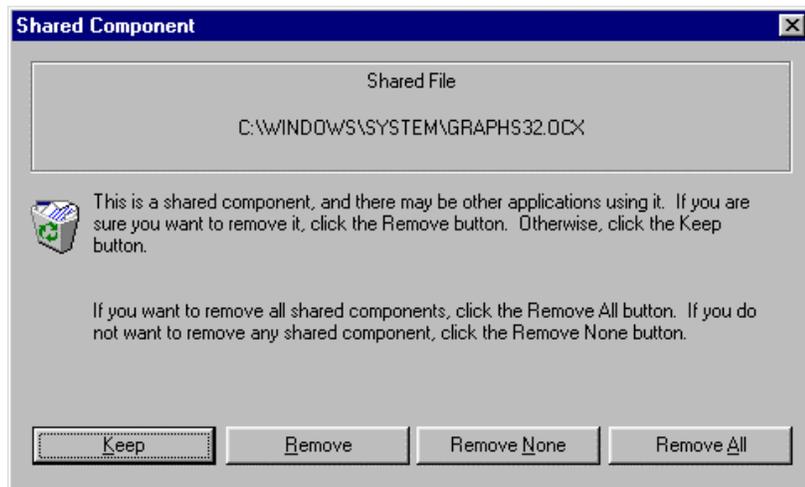
Installing From CD

1. Follow the installation instructions printed on the CD label.

2. Follow the on-screen installation instructions. You may need to restart your computer during and/or after the installation process.

Updating Existing Databases

The first time you open an existing database with this application, the application prompts you to update your database file from database version X.X to version 2.2.
Click the **Yes** button to proceed with the update. This application updates the database to the new version. It may take several minutes for the application to process all of the history records and other data in your database. Once a database has been updated to the new version level, it cannot be used with older versions of this application.
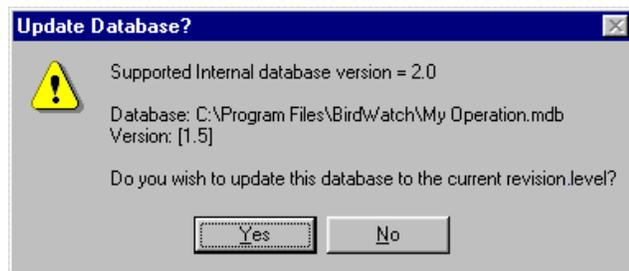
Navigation

The application's window has two main areas:
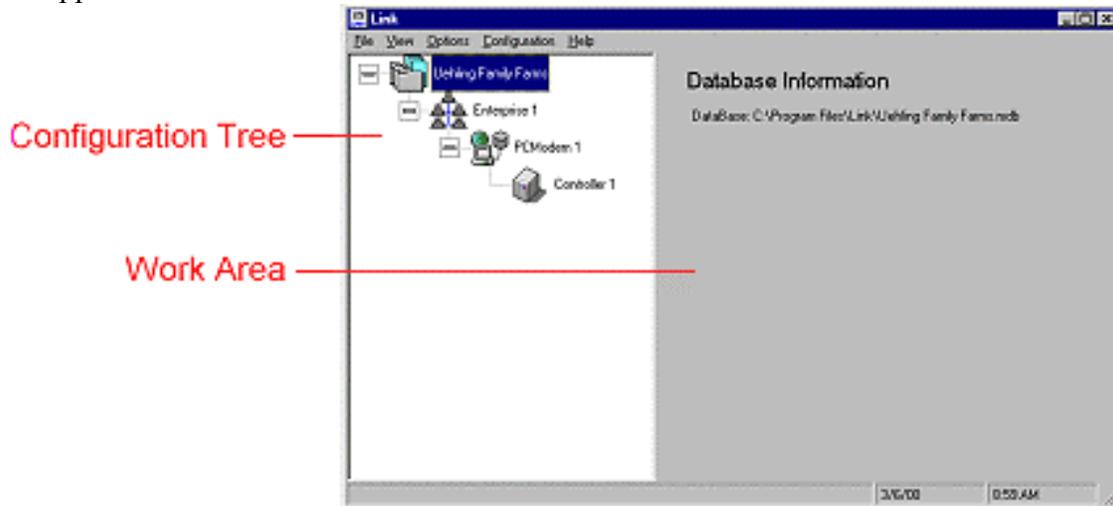
- **Configuration Tree** - This works similar to a directory tree in Windows Explorer. Click the ⊞ next to an item to expand the tree. As you click items in the tree, corresponding information appears in the work area.

- **Work Area** - This side of the screen is called the work area. Use this area to view device information and change control settings.

Using this Application the First Time

The first time you run this application, you will need to create a new database to store the information as it is collected from your controllers.

You are prompted to Create New Database or Open Existing Database.

To create a new database:

1. Click the **Create New Database** button. The Enter New Database Name dialog box appears.

2. Type a name for the database in the File name box.

3. Click the **Open** button. The Getting Started dialog box appears. It contains information about what you need to do when creating a new database.

4. Click the **Add Configuration** button. The main application window appears. Your new database has been created.

Now that the database is created, you are ready to identify the equipment being used and set up the communications need to communicate with the controller. You can set up multiple sites, controllers and modems within a single database.

Using the Configuration Tree

Icons

	Database
	Enterprise (building or location)
	Modem or PC Interface
	Controller
	Zone Devices

Adding an Enterprise

You can set up an enterprise to organize one or more modems for your business or for a location.

1. Click the **Database icon** to highlight it.

2. Click the **Configuration** menu and then select **Add Enterprise**.

An enterprise is added to your database. You may now rename the enterprise
The work area allows you to enter notes for the enterprise.

Renaming an Enterprise

When you add an enterprise, this application gives it a generic name such as Enterprise 1. You may want to rename the enterprise to relate it to the location or building it refers to.

1. Click the **Enterprise icon** to highlight it.

2. Click the **Enterprise** menu and then select **Rename Enterprise**.

3. Type the new name.

Press the **Enter** key to finalize the change.

Adding Enterprise Notes

You can type notes about an enterprise to help you remember details about the PC interfaces, modems and controllers located there. This is especially useful in multi-location and multi-building operations.

Adding a Modem or PC Interface

You can set up one or more modems or PC interfaces to communicate with your controllers. Several controllers can be wired to a single modem or PC interface. Refer to your controller's *Operating Manual* for details about wiring.

1. Click the **Enterprise icon** to highlight it.

2. Click the **Enterprise** menu and then select **Add PCModem**.

A modem or PC interface enterprise is added to your database. You may now rename the modem or PC interface.

Renaming a Modem or PC Interface

When you add a modem or PC interface, this application gives it a generic name such as PCModem 1. You may want to rename the device to relate it to the modem or PC interface it refers to.

1. Click the PCModem icon to highlight it.

2. Click the PCModem menu and then select Rename PCModem.

3. Type the new name.

Press the **Enter** key to finalize the change.

Adding a Controller

You can set up one or more controllers attached to a modem or interface. The controllers appear beneath the PCModem icon in the configuration tree. To add a controller:

1. Click the **PCModem icon** to highlight it.

2. Click the **PCModem** menu and then select **Add Controller**.

A new controller is added to your database. You may now rename the controller.

Renaming a Controller

When you add a controller, this application gives it a generic name such as Controller 1. You may want to rename the controller to better relate it to the building or area it is in.

1. Click the **Controller icon** to highlight it.

2. Click the **Controller** menu and then select **Rename Controller**.

3. Type the new name.

Press the **Enter** key to finalize the change.

Renaming a Zone Devices Group

When this application detects a devices group or a zone programmed in your controller, it gives it a generic name such as Zone Devices 1. You may want to rename the zone devices group to better relate it to the group or zone it refers to.

1. Click the **Zone Devices icon** to highlight it.

2. Click the **Zone Devices** menu and then select **Rename Zone Devices**.

3. Type the new name.

4. Press the **Enter** key to finalize the change.

Renaming a Device

When this application detects a device programmed in your controller, it gives it a generic name such as Air Sensor 1. You may want to rename a device to better relate it to the device it refers to. For example, you could name a device North Air Sensor.

1. Click the icon for the device to highlight it.

2. Click the Device menu and then select Rename Device.

3. Type the new name.

Press the **Enter** key to finalize the change.
The device name in the controller does not change.

Summary of Menus

File Menu

New	Allows you to create a new database.
Open	Allows you to open an existing database.
Exit	Closes this application.

View Menu

Communications Log	Allows you to view all activity that occurred while your data was being automatically collected or if you collected information from more than one controller. Use this information before you begin looking at the new data to make sure that no problems occurred during collection.
QuickView	Allows you to compare and view data for selected controllers.
Status Bar	Allows you to either view or not view the date and time at the very bottom of the application window. The status bar also displays communication messages while this application attempts to connect to controllers. A check next to this option indicates that the status bar is currently in view.
Tree Icons On	Allows you to either view or not view the icons associated with the text labels on the configuration tree.

Options Menu

Auto Collect	Allows you to specify your settings for automatic data collection.
File Maintenance	Allows you to repair data or remove old data from a database.
QuickView	Allows you to select and view data for selected controllers.
Security	Allows you to add security to your databases by adding users, editing users, or removing users from the database.

Configuration Menu

Add Enterprise	Allows you to add a new enterprise to the configuration tree.

Note: You can only see this menu item by clicking a database icon in the configuration tree.

Enterprise Menu

Add PCModem	Allows you to add and set up a Modem or PC Interface connection for your computer.
Delete Enterprise	Allows you to remove an enterprise and everything below it from the database. When you select this option, a new dialog box appears. Click the **Yes** button if you are sure that you want to delete the enterprise. This only deletes the Enterprise from the database and in no way affects the actual controllers.
Rename Enterprise	Allows you to type a new name for the enterprise you've currently selected.

Note: You can only see this menu item by clicking an enterprise in the configuration tree.

PCModem Menu

Add Controller	Allows you to add a controller to the configuration tree.
Delete PCModem	Allows you to remove a PCModem and its controllers from the database. When you select this option, a new dialog box appears. Click the **Yes** button if you are sure that you want to delete the PCModem. This only deletes the PCModem from the database and in no way affects the actual controllers.
Rename PCModem	Allows you to type a new name for the PCModem you've currently selected.

Note: You can only see this menu item by clicking a PCModem (modem or PC interface) in the configuration tree.

Controller Menu

Collect Information	Allows you to collect configuration, history, alarm, and alarm detail information for the controller.
Update Controller	Allows you to send setting changes to the controller.
Print Control Configuration	Allows you to print configuration reports that shows installed devices and their settings.
Delete Controller	Allows you to remove a controller from the database. This only deletes the controller from the database and in no way affects the actual controller.
Rename Controller	Allows you to type a new name for the controller you've currently selected.

Note: You can only see this menu item by clicking a controller in the configuration tree.

Zone Devices Menu

Delete Zone Devices	Allows you to remove a collection of devices or a zone from the database. When you select this option, a new dialog box appears. Click the **Yes** button if you are sure that you want to delete the collection of devices. This only deletes the collection from the database and in no way affects the actual controller.
Rename Zone Devices	Allows you to type a new name for the devices or zone you've currently selected.

Note: You can only see this menu item by clicking a Zone Devices icon in the configuration tree.

Device Menu

History	Allows you to view or print history information for the current device. You can select Graph, Report or View.
Rename Device	Allows you to type a new name for the device you've currently selected.

Note: You can only see this menu item by clicking on a Device in the configuration tree.

Help Menu

Contents	Opens the introduction topic of this application's online help. You can then click the online help's **Contents** button.
Search for Help On	Opens the index tab of this application's online help.
Getting Started	Displays a quick reference guide to getting started.
About Link	Displays copyright and version information for this application.

Maintaining Your Database Files

The File Maintenance dialog box appears when you click the **Options** menu and select **File Maintenance**. This dialog box allows you to delete history records and repair corrupted database files.

Removing Old Records

Periodically, you may want to remove any old database records in order to reduce the file size. This makes it easier to locate the information you want to find.

History records can be deleted using the File Maintenance dialog box.

1. If you want to delete history records prior to a certain date, enter that date in the Delete History records with dates before box. For example, if you want to remove all records before January 1, 1999, enter 01/30/1999.

2. If you want to delete history records after a certain date, enter that date in the Delete History records with dates after box. For example, if you want to remove all records after January 30, 1999, enter 01/30/1999.

3. Click the **Delete** button. You are prompted to verify you want to remove each type of record; History Records, Alarm Detail Records and Alarm History Records.

4. Click the **Yes** button if you are sure that you want to remove the records.

5. Click the **OK** button.

Note: You can also set the date by clicking the arrow and selecting the date from the calendar.

Repairing a Database

If your database is behaving unpredictably, try repairing the database. Database files can be repaired using the File Maintenance dialog box.

1. Click the **Repair** button. You are prompted to confirm the database has been backed up and is ready for an attempted repair.

2. Click the **Yes** button. The Database Repair Complete dialog box appears.

3. Click the **OK** button. This should return your database function to normal.

Setting up Communications

You can collect data from an on-site or off-site controller by setting up your computer to talk to the controller through a modem or a direct connection (PC Interface or Comm Station).

The Communications parameters are displayed in the PCModem work area (right pane) by clicking a PCModem icon in the configuration tree (left pane).

The Connection box displays the computer port or modem used for communication.

1. Click on the **Connection** box to select a communications port for direct connection via a PC Interface or Comm Station**,** or your computer's Modem for connection via a phone line.

2. If using your computer's Modem to connect via a phone line, enter the phone number for the PCModem in the **Phone Number** box.

3. Leave the **PC / Modem Interface NOT USED** box unchecked unless told otherwise by Blue Earth Research. Check with a Blue Earth Technician for more information on this option.

Note: If you're using a modem on your PC, the modem must be set up in Windows before it will be recognized by Link.

Note: After making changes to these settings, click **Save Changes** to save your changes to the database.

The **Current Password** box displays the password used by the Modem, PC Interface or Comm Station. The password displayed must match the password used by the Modem, PC Interface or Comm Station (remote password). The default is MASTER.

1. If the password displayed is not correct, enter the correct password and click **Save Changes** to save your changes.

2. If the password displayed is correct but a new password is desired, click the **Change Remote Password** button. The New PCModem Password dialog box appears. Type the new password and then click the **OK** button. This application will connect to the modem or PC interface and update the password. The **Current Password** box will also be updated to display the new password.

Note: The password is disabled if the **PC / Modem Interface NOT USED** is checked.

Checking Your Port Settings

If you are not sure which port to select, you can find out which port is being used by checking your current settings. You can look in the System portion of the Windows Control Panel.

1. Click the **Device Manager** tab. This tab lists all the hardware that is currently connected to your computer, such as your mouse and keyboard.

2. Click the **Plus** icon next to Ports (COM & LPT). A list of ports appears. The port your PC interface is connected to is labeled Communications Port and will have a next to it.

Checking **Enable Automatic Data Collection** in the Controller Information work area sets this controller to automatically collect data only if Auto Collection is on. To turn Auto Collection on and off, see **Collecting Data Automatically** below.

Collecting Data Automatically

The Automatic Data Collection dialog box appears when you click the **Options** menu and then select **Auto Collect**. This dialog box allows you to set the collection frequency and data to be collected for controllers that have automatic data collection enabled (see above).

To set automatic data collection options:

1. Click a collection frequency option. Notice that data collection times are always 10 minutes past the hour. This is because the controllers internally update their history on the hour. The 10-minute delay ensures you always receive the most current history.

2. Check the data items you want to collect (History, Alarm History and/or Alarm Detail).

3. Check **Allow Automatic Data Collection** if you want to have data automatically collected. Only controllers with **Enable Automatic Data Collection** checked in the Controller Information work area will be collected (see above).

4. Click the **View Communications Log** button to see a list of dates and times when this application connected to your controller and any problems that may have been encountered while collecting data.

Note: When you setup automatic data collection, you should ensure Auto Collect doesn't occur at a time you are changing settings in the application. If Auto Collect starts while you are making changes, or before you get a chance to update the controller, all of your new settings in this application will be overwritten by the controller.

Automatic data collection only occurs while this application is running.

Viewing the Communications Log

The Communications Log dialog box appears when you click the **View** menu and then select **Communications Log**, or when you click the **Options** menu, select **Auto Collect**, and then click the **View Communications Log** button.

The log lists the dates and times data was automatically collected. The log also shows any errors that occurred.

Click the **Print Log** button to print the entire log.

Click the **Clear Log** to delete the contents of the log file.

Collecting Data Manually

If you need to collect data immediately and do not want to wait for the data to be automatically collected, you can collect data manually. Clicking on the **Collect All Enterprise Controllers** button, in an enterprise work area, will collect data from all controllers in that enterprise. Clicking on the **Collect All PCModem Controllers,** in a PCModem work area, will collect all controllers under that PCModem. When clicking these buttons, what is collected is determined by the settings in the Automatic Data

Collection window, which is found by clicking the **Options** menu and selecting **Auto Collect**. Note: Auto Collect does not have to be enabled for this to work and all controllers, under the enterprise or PCModem, are collected.

You can also collect controllers individually by clicking the **Collect Information** button, in a controller work area. The **Select Information** dialog box appears when you click the **Collect Information** button on the Controller Information work area. This dialog box allows you to choose the information that is collected for a controller.

1. Check the data items you want collected.

2. Click the **Collect Information** button.

This application connects to the controller and collects the data.

Updating a Controller

You can make changes to a controller's operating parameters (such as the Load Sequencing Delay) or any operating parameters for the controller's devices using this application.

To update a controller's information:

1. Click the controller's icon in the configuration tree (left pane). The Controller work area is displayed in the right pane.

2. Click the **Update Controller** button.

3. This application connects to the controller through the modem or PC interface you specified. The controller is updated to reflect the changes you've made in this application.

Note: Updating a controller overwrites settings contained in the controller.

Establishing Security

Setting up security measures ensures that unauthorized personnel do not access your controllers. There are two types of passwords you can set up to protect your controllers. These are:

1. PCModem Passwords
2. Controller Passwords

Security Levels

Security levels are used to limit the information users are able to change in the controller software.

Level	Access
0	Users at this level can view but not change settings.
1	Users at this level can change the **Temperature Setpoint** and the Temperature **Ramping Offset**
2	Users at this level can change current animal information, time & date, and feeder times.
3	Users at this level can change all settings except for adding/deleting control devices and passwords.
4 - 7	Users at these levels are allowed to make any changes. **Note:** • Level 7 is the default setting until you set up passwords and assign security levels. • At least one person must be given access at this level in order to make changes to the controller

Note: There is no PC database security in Link. Changes in Link can be uploaded to the controller without passwords.

Editing Controller Software Passwords

Controllers are shipped without any passwords for the controller software. You can set up passwords using the controller, this application or both to limit the parameter changes that can be made.

Note: These controller software passwords are different than the PCModem password that is strictly used for protecting communication between your computer and the controller. You can view or enter controller software passwords in a controller's work area. The Controller work area appears in the right pane when you click a controller's icon. There are 10 password boxes since up to 10 passwords can be set up for each controller.

To set up controller software passwords:

1. Type a password for each user or level of user you want to set up. Be sure to assign a security level for each.

2. Click the **Update Controller** button to write the new or changed passwords to the controller.

Note: If you set up passwords for your controller, be sure to always have at least one Level 4 or higher user so that changes can be made in the future.

Changing a PCModem Password

1. Click on the PCModem icon.

2. Make sure the **Current Password** box shows the correct password for the modem or PC interface.

3. Click on the **Change Remote Password** button.

4. Type a new password in the New Password box.

5. Click the **OK** button. This application will connect to the modem or PC interface and update the password. The Current Password box will also be updated to display the new password.

Viewing Zone Device Information

The Zone Devices work area is displayed when you click the Zone Devices icon. This work area allows access to information and settings for an installed zone (single zone controllers always display just one Zone Devices icon). Any device installed in this zone is shown under the Zone Devices icon.

Note: The Zone Devices icon and the icons for specific devices do not appear until you have successfully collected data from a controller.

Viewing Current Conditions

This dialog box appears when you click the **Current Conditions** button on the Zone Devices work area.

The Current Conditions dialog box displays the current condition (as of the last data collection), operational state, or readings of all the sensors and devices connected to a controller. It shows controller information such as current controller time, date, and software revision information. The animal stress index also appears in this dialog box when Link is used with controllers designed for hog operations.

Click the **Print** button to print the current conditions.

Viewing Alarm Information

The controller constantly monitors all input sensors and controller circuits for possible alarm conditions. The criteria necessary to trigger the alarm circuit could be based on the number of times a condition is detected, or the amount of deviation the controller reads. All error conditions are recorded under alarm detail, regardless if it meets the criteria necessary to trigger the alarm circuit.

Note: Once an alarm condition meets the criteria necessary to trigger an alarm, the alarm relay closes, activating the external alarm. This alarm activation is recorded under alarm history

Viewing Alarm History Information

This dialog box appears when you click the **Alarm History** button in the Zone Devices work area.

The Alarm History dialog box displays alarm types, dates, times, and the number of occurrences for the last 20 alarms. Active alarms are identified by a "Yes" in the Active column.

Click the **Report** button to print or export the alarm detail information.

Viewing Alarm Detail Information

The Alarm Detail Settings dialog box appears when you click the **Error Detail** button in the Zone Devices work area. This dialog box allows you to select the start date and end date for the historical information to include in the Alarm Detail report.

There are two calendars. The left calendar is for the start date and the right calendar is for the end date. Click a calendar date to select it. You can select different months and years from the month and year drop-down lists.

Click the **View** button to view the alarm detail.

Click the **Report** button to print or export the alarm detail information.

Viewing Error Detail

The Error Detail dialog box appears when you click the **View** button on the Alarm Detail Settings dialog box.

This dialog box allows you to view details about any alarms that have occurred for the current controller. You can also view other significant events such as times when a power up occurred.

Selecting Zone Devices History Settings

The Zone Devices History View Settings dialog box appears when you click the **View Zone Devices History** button on the Zone Devices work area. This dialog box allows you to select the start date and end date for the historical information to include in a report.

There are two calendars. The left calendar is for the start date and the right calendar is for the end date. Click a calendar date to select it. You can select different months and years from the month and year drop-down lists.

Click the **View** button to view the history.

Viewing Zone Devices History

The Zone Devices History View dialog box appears when you click the **View** button on the Zone Devices History View Settings dialog box.

This dialog box allows you to view when restarts, humidity purge cycles and timed purge cycles occurred for a controller or zone.

Click the **Report** button if you want to print or export this information.

Viewing Device Summary

The Device Summary dialog box appears when you click the **Device Summary** button in the Zone Devices work area. The Device Summary dialog box displays description, name, group, module, and channel information for each device on the current controller or zone.

Click the **Print** button to print this information.

Changing Building Purge Settings

The Building Purge Settings dialog box only appears when Link is used with buildings set up for natural (no fans) ventilation.

The Building Purge Settings dialog box appears when you click the **Building Purge Settings** button in the Zone Devices work area. Purging is the process of evacuating stale contaminated air and replacing it with fresh outside air.

Enter the settings you want for your building:

Purge Time	Determines how long the building will purge when triggered by the Delay Timer.
Delay Time	The length of time the building must be closed before a purge can start.
Purge Inhibit Temp Low	If the working temperature drops below this setting purging is inhibited. In progress purging is stopped.
Purge Inhibit Temp High	If the working temperature rises above this setting, purging is inhibited. In progress purging is stopped.
Humidity Setpoint	If a building is closed and the humidity rises above this setting for the length of the Humidity Delay Timer, a purge is initiated. This box is disabled if you do not have a humidity sensor installed.
Humidity Purge Time	Determines how long a building is purged when triggered by the Humidity Setpoint and the Humidity Delay Time. This box is disabled if you do not have a humidity sensor installed.
Humidity Delay Time	The length of time a building must be continuously closed and humidity above the Humidity Setpoint before starting a purge based on humidity. This box is disabled if you do not have a humidity sensor installed.

Click the **Print** button to print the settings. Click the **Save Changes** button to save any changes or **Original Settings** button to return the settings to the last saved values.

Changing Minimum Vent Settings

The Minimum Vent and Building Purge Settings dialog box only appears when Link is used with buildings set up for power (fans and inlets/curtains) ventilation.

The Minimum Vent and Building Purge Settings dialog box appears when you click the **Minimum Vent Settings** button in the Zone Devices work area. This dialog box allows you to set up building purges and/or minimum ventilation. Minimum ventilation is important when a building purge is not triggered frequently enough to keep inside air fresh.

Minimum ventilation runs inlets using their proportional settings or by static pressure control depending on how you've set up the inlet or curtain.

Enter the settings you want for your building:

Minimum Vent Timer On	Determines the on time (minutes and seconds) for fans designated as Temp or Minimum Vent.
Minimum Vent Timer Off	Determines the off time (minutes and seconds) for fans designated as Temp or Minimum Vent.
Purge Inhibit Temp Low	If the working temperature drops below this setting purging is inhibited. In progress purging is stopped. This box is disabled if you do not have a humidity sensor installed.
Purge Inhibit Temp High	If the working temperature rises above this setting, purging is inhibited. In progress purging is stopped. This box is disabled if you do not have a humidity sensor installed.
Humidity Setpoint	If the humidity remains at or above this setting for the length of the Humidity Delay Timer, a purge is initiated. This box is disabled if you do not have a humidity sensor installed or no fans are set to purge.
Humidity Purge Time	Determines how long a building is purged when triggered by the Humidity Setpoint and the Humidity Delay Time. This box is disabled if you do not have a humidity sensor installed or no fans are set to purge.
Humidity Delay Time	The length of time the humidity must be at or above the humidity setpoint before starting a purge based on humidity. This box is disabled if you do not have a humidity sensor installed or no fans are set to purge.

Click the **Print** button to print the settings. Click the **Save Changes** button to save any changes or **Original Settings** button to return the settings to the last saved values.

Minimum Vent Ramp Table

This table consists of up to 9 different ramp points. Each ramp point consists of an animal age, Minimum Vent On time and Off Time. Every night at midnight, the animal's age is compared to this ramp table. New Minimum Vent On and Off times are extrapolated from the table based on the two settings nearest to the animal's current age. The controller's Minimum Vent times are set to that value.

Ramping is turned on after you have entered at least two ramp points, and after both Animal Count and Animal Age are set above zero. In order for ramping to work, the Age in the first row has to be greater than zero. If you are not familiar with Minimum Vent ramping, refer to the *Operating Manual* for your controller.

The Minimum Vent Ramp Table appears on the Minimum Vent Settings dialog box.

1. Click a box in the Age column to enter the animal's age.
    Note: If you set this age to zero or below the previous Age row, ramping is disabled beyond that point.

2. In the On Time column, enter the Minimum Vent On time to use for that age.

3. In the Off Time column, enter the Minimum Vent Off time to use for that age.

Note: If Minimum Vent ramping is enabled, the Minimum Vent On and Off times in the controller can not be changed.

Changing Current Animal/Bird Information

The Current Animal Information dialog box appears when you click the **Current Animal Information** button in the Zone Devices work area.

"Current Animal Information" appears as "Current Bird Information" when Link is used with controllers designed for poultry operations.

The Current Animal Information dialog box allows you to keep up-to-date information about your animals. This information can help you manage the progress and profitability of the current batch of animals. The animal's age, weight, and beginning count also indirectly effect how the environment of your building is controlled.

You can change any of the numbers below, at any time, and the controller recalculates, at midnight, a new projected value for "Today's Animal Weight". It also increments the "Today's Animal Age" counter by one. The animal age used here is the same animal age used by the temperature ramping feature. The calculated animal weight is also used in the stress index calculation.

Today's Animal Age	Enter the animal age in days.
Today's Animal Weight	Enter the animal weight based on age and projected finishing weight.
Projected Finishing Age	Enter the age at which the animals are removed from the building.
Projected Finishing Weight	Enter the estimated animal weight when removed from the building.
Beginning Animal Count	Enter the head count initially placed in the building. Setting the beginning animal count to zero forces the temperature control mode to OFF, which also disables the alarms.
Mortality Animal Count	Use this to keep a running total of animals lost.
Total Sold Animal Count	Use this to keep a running total of animals sold.

Click the **Print** button to print the settings. Click the **Save Changes** button to save any changes or **Original Settings** button to return the settings to the last saved values.
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Changing Alarm Settings

The Sound Alarm When dialog box appears when you click the **Sound Alarm When…** button in the Zone Devices work area.

The Sound Alarm When dialog box allows you to specify when you want your alarms to sound.

High Temp Exceeds	If the average actual temperature exceeds this temperature the alarm will be activated. This setting automatically adjusts when the Temp Setpoint is changed.
High Temp Exceeds (Fixed)	If the average actual temperature exceeds this temperature the alarm will be activated. This setting is fixed and does not adjust automatically.
Low Temp Drops Below	If the average actual temperature falls below this temperature the alarm will be activated. This setting automatically adjusts when the Temp Setpoint is changed.
Water Meter #1 – 24 Hour Flow Drop %	Each hour, the number of gallons of water measured by water meter number one is totaled. The most recent 24-hour total is compared to the previous 24-hour total. If the total use drops by a percentage larger than the setting entered here, the alarm is activated. Set the value to zero to disable this check. The check is also disabled if the totals being compared are less than 10 gallons. This box is disabled if you do not have a water sensor installed.
Water Meter Flow Limit	If the gallons per hour exceeds the value entered here for one minute, the alarm is activated. Set the value to zero to disable this check. This box is disabled if you do not have a static pressure sensor installed.
Feed Sensor Off Time Limit and On Time Limit	Feeder motors can run up to nine times per day. The feeder motor current can be checked to determine if the feeders are on too long or off too long based on the values you enter here. Set the value to zero to disable this check. If a feeder ON alarm is generated, that feeder is turned off until the alarm is cleared or the controller is reset. If a feeder OFF alarm is generated, it is automatically cleared if the feeder is detected as running. This box is disabled if you do not have water sensor installed.
Open all inlets on High Static Pressure Alarm	Checking this box will cause all the curtains and inlets to open fully if a High Static Pressure alarm is active. Clearing the alarm will allow the devices to return to normal operations.
Static Pressure Stays Above	The alarm is activated when negative static pressure exceeds the value you enter here for more than the time you specify. This box is disabled if you do not have a static pressure sensor installed.

Static Pressure Stays Below	The alarm is activated when negative static pressure drops below the value you enter here for more than the time you specify. This setting is constantly monitored. This box is disabled if you do not have a static pressure sensor installed.
Fan On Static Pressure Below	The alarm is activated when negative static pressure drops below the value you enter here for longer than the time you specify. This setting is only monitored when proportional fans are running. This box is disabled if you do not have a static pressure sensor installed.
Humidity Sensor Reading is Invalid	The alarm is activated when the humidity sensor is sending an invalid reading. This box is disabled if you do not have a humidity sensor installed. See the Humidity Sensor Device to set this for each Humidity sensor.

Note: Refer to your controller's *Operating Manual* for more information about static pressure.

Click the **Print** button to print the settings. Click the **Save Changes** button to save any changes or **Original Settings** button to return the settings to the last saved values.

Changing Temperature Control Settings

The Temperature Control Settings dialog box appears when you click the **Temperature Control Settings** button in the Zone Devices work area. The Temperature Control Setting dialog box allows you to view or change the temperature setpoints and other settings that control your building's temperature.

Temp Setpoint	The value you enter here is the target building temperature. You can set this manually or have the temperature ramping feature automatically adjust it everyday at midnight. Changing the setpoint temperature changes all temperature settings for all installed devices by the same amount. This is disabled if Ramping is ON.
Temp Control Mode	Select the desired control mode from the list box: None, Actual, Effective, or Scaled Effective. See the next page for more information.
House Control Mode (Poultry controllers only)	Select the desired house control mode from the list box: Brood, Growout1, or Growout2. See the next page for more information.

Ridge to Curtains	Select Interlocked or No Interlock. Interlock means ridge vents will open and close in sync with the curtains. This box is disabled if no ridge vents or curtains are installed.
Heat to Curtains	Select Interlocked or No Interlock. Interlocked means the curtains and ridge vents must close prior to heaters turning on. No Interlock means curtains and ridge vents may be operated independent of heater operation. This box is disabled if no heating devices or curtains/ridge vents are installed.
Enter Tunnel Temp	Enter the temperature at which the controller should begin tunnel mode ventilation. This box is disabled if no tunnel fans are installed.
Exit Tunnel Temp	Enter the temperature at which the controller should exit tunnel mode. This box is disabled if no tunnel fans are installed.
Remain in Tunnel Time	Enter the minimum amount of time in hours, minutes and seconds that tunnel mode will operate. This prevents the ventilation system from going into and out of tunnel mode too quickly. A drop in temperature to the setpoint will override the minimum time.
Today's Animal Age	Enter the Animal's age in days. Changing this, with temperature ramping on, will change the Setpoint and all device temp values.
Floor Type (hog controllers only)	Enter the floor type. The type of floor impacts the effective environmental temperature (EET is not available on some controllers).
Close Curtains Below Outside Temp	Enter a temperature that you want the curtains to close when the outside temperature falls below it. This box is disabled if no outside sensor or curtain is installed.
Tunnel Enable Outside Temp	Enter the Outside Temperature that you want Tunnel mode to be enabled. The controller will not enter Tunnel mode until the outside temperature is above this setting. This box is disbled if no outside temperature setting is installed.

The Temperature Control Setting dialog box also allows you to set up a temperature ramp table. A ramp table allows the controller to automatically adjust a building's temperature based on the animals' ages.

Click the **Print** button to print the settings. Click the **Save Changes** button to save any changes or **Original Settings** button to return the settings to the last saved values.

House Control Mode: Poultry

Brood	Indicates the controller should use air sensors in the brood area for controlling devices.
Growout1	Indicates the controller should use air sensors in the brood and growout1 areas for controlling devices.
Growout2	Indicates the controller should use air sensors in the brood, growout1 and growout2 areas for controlling devices.

Temperature Control Mode

None	This setting "parks" the control and essentially stops its operation. It changes Animal Count to zero. This setting is handy for shutting down fans and other equipment in between batches of animals (only recommended in climates where heat is not necessary to protect the building against freezing).
Actual	Indicates the controller should use actual temperatures from the sensors. Some air sensors are capable of sensing wind speed (which is used to calculate the effective environmental temperature).
Effective	Indicates the controller should use effective environmental temperature from the air sensors. You will need to install EET sensors, such as Air Sensor Model 935, to use this feature.
Scaled Effective	Indicates the controller should use a percentage of actual air temperature and a percentage of effective environmental temperature. When you select this item, a drop-down list appears on the dialog box. You can select a percentage ranging from 10 to 90 percent.

Temperature Ramp Offset

If you have set up a temperature ramp table on this dialog box, you can add or subtract a value from every temperature setting in the table. Enter the desired value in the Temperature Ramp Offset box (use a minus – symbol before the value to decrease the temperatures) and then click the **Adjust Table** button. If Ramping is On, clicking the **Adjust Table** button will also change the temperature values for all the devices installed. You can also enter a value without pressing the **Adjust Table** button to have the controller adjust the setpoint temperature at midnight by the amount you enter.

Temperature Ramp Table

This table consists of up to 12 different ramp points. Each ramp point consists of an animal age and a temperature. Every night at midnight, the animal's age is compared to this ramp table. A new setpoint is extrapolated from the table based on the two settings nearest to the animal's current age. The controller's setpoint temperature is set to that value.
Ramping is turned on after you have entered at least two ramp points, and after both Animal Count and Animal Age are set above zero. In order for ramping to work, the Age

in the first row has to be greater than zero. If you are not familiar with temperature ramping, refer to the *Operating Manual* for your controller.

1. The Temperature Ramp Table appears on the Temperature Control Settings dialog box. Click a box in the Age column to enter the animal's age.
   Note: If you set this age to zero or below the previous Age row, ramping is disabled beyond that point.

2. Click a box In the Setpoint column and enter the desired temperature.

Click the **Graph** button to view a graph of your values.

Viewing the Temperature Ramp Graph

The Temperature Ramp Graph appears when you click the **Graph** button on the Temperature Control Settings dialog box. The graph allows you to quickly verify that the ramp settings you've entered in the table will produce the desired results. If you entered a value that is way out of line, you can quickly spot it on the temperature ramp graph. Click the **Print** button to print the graph.

Changing Static Pressure Control Settings

The Static Pressure Control Settings dialog box appears when you click the **Static Pressure Settings** button in the Zone Devices work area. The Static Pressure Control Settings dialog box allows you to view or change the static pressure setpoints and other settings that control your building's static pressure. You need to install a static pressure sensor for this feature to work. You also need an outside air sensor.

Natural Static Pressure Setpoint	The value you enter here is the target static pressure while in Natural mode. You can set this manually or have the static pressure ramping feature automatically adjust it everyday at midnight.
Natural Static Pressure Close	Enter the pressure where devices controlled by static pressure should start closing to increase static pressure while in Natural mode. This value must be lower than the setpoint.
Natural Static Pressure Open	Enter the pressure where devices controlled by static pressure should start opening to decrease static pressure while in Natural mode. This value must be higher than the setpoint.
Tunnel Static Pressure Setpoint	The value you enter here is the target static pressure while in Tunnel mode. This value does not have a ramping feature
Tunnel Static Pressure Close	Show the pressure where the devices will start to close while in Tunnel mode. This value is calculated based on the offset of the Natural Static Pressure Close setting.
Tunnel Static Pressure Open	Show the pressure where the devices will start to open while in Tunnel mode. This value is calculated based on the offset of the Natural Static Pressure Open setting.
Static Pressure Ramp #1 Temperature and Pressure	Enter the outside temperature and desired static pressure for ramp point one. This temperature value should be lower than the #2 Temperature setting.
Static Pressure Ramp #2 Temperature and Pressure	Enter the outside temperature and desired static pressure for ramp point two. This temperature value should be between the #1 and #3 Temperature settings.
Static Pressure Ramp #3 Temperature and Pressure	Enter the outside temperature and desired static pressure for ramp point three. This temperature value should be between the #2 and #4 Temperature settings.
Static Pressure Ramp #4 Temperature and Pressure	Enter the outside temperature and desired static pressure for ramp point four. This temperature value should be between the #3 and #5 Temperature settings.
Static Pressure Ramp #5 Temperature and Pressure	Enter the outside temperature and desired static pressure for ramp point five. This temperature value should be higher than the #4 Temperature setting.

Air Sensor Settings … continued

Wire Gauge	Input the gauge of the cable connecting the air sensor to the controller. The air sensor is an analog resistive device so improper cable gauge settings can cause erroneous temperature readings. Use shielded wire, 16 to 24 gauge (.5 to 1.2mm) stranded, such as Carol® AWM style 2426, to connect sensors to input channels.
Cal Values	If you are using an effective environmental temperature (EET) air sensor, input the calibration values printed on the sensor's tag. If no calibration values are available, use the default values that appear when you add a new air sensor to the controller.
Location (poultry only)	If applicable, select the location of the air sensor. The location is important because the controller will need to know which sensors to use for the various house control mode settings (found in the Temperature Control Settings menu).
Use for Wind Speed	If you are using an effective environmental temperature (EET) air sensor, check this box to use this sensor when calculating the effective temperature.

Outside Air Sensor Settings

The air sensor display shows the sensor group, cable length, wire gauge, and location. Only one Outside air Sensor can be installed per zone.

Group	The controller will always assign group number 13 to an outside air sensor.
Cable Length	Input the length of cable connecting the air sensor to the controller. The air sensor is an analog resistive device so improper cable length settings can cause erroneous temperature readings. If you enter the proper cable length and still get an erroneous reading, you can essentially calibrate the sensor by adding or subtracting the cable length value entered here. Adding about 5 to 15 feet of cable (the variance depends of the cable gauge you are using) will drop the air sensor's temperature reading by 0.1 degree Fahrenheit.
Wire Gauge	Input the gauge of the cable connecting the air sensor to the controller. The air sensor is an analog resistive device so improper cable gauge settings can cause erroneous temperature readings. Use shielded wire, 16 to 24 gauge (.5 to 1.2mm) stranded, such as Carol® AWM style 2426, to connect sensors to input channels.

Feed Sensor Settings

The feed sensor measures amps. The controller assumes the feeder is on when the measured current is above the minimum amps setting.

Group	This is the assigned device group. You cannot change this setting through this application.
Minimum amps	Input a value less than the minimum amps draw of the feeder. When the controller detects current higher than this value, it assumes the feeder is on.
Cal value	Unless otherwise specified in your feeder sensor's documentation, the calibration value is 100.

Static Pressure Sensor Settings

Only one Static Pressure Sensor can be installed per zone

Group	This is the assigned device group. You cannot change this setting through this application.
ADC Cal 1 and ADC Cal 2	Input the ADC calibration values for the static pressure sensor. Typical values are 6554 for Cal 1 and 58982 for Cal 2.
WC Cal 1 and WC Cal 2	Input the WC calibration values for the static pressure sensor. Typical values are 0.000 for WC Cal 1 and 0.250 for WC CAL 2. All static pressure settings in the application are limited to values between these settings

Humidity Sensor Settings

Only one Humidity Sensor can be installed per zone

Group	This is the assigned device group. You cannot change this setting through this application.
Cal 1/ Cal 2	These are the calibration values for the humidity sensor. You should input 10485 for Cal 1 and 51118 for Cal 2 unless the humidity sensor's instructions state otherwise. Do not change these values unless the sensor is being replaced.
Alarm when Humidity Sensor Reading is Invalid	Check this box if you what the controller to alarm if the humidity sensor is sending an invalid reading.

Water Meter Sensor Settings

Input the pulses per gallon (PPG) calibration values for the water meter sensor. Unless otherwise specified, the PPG is 25.

Digital Alarm Sensor Settings

Digital alarms provide warnings of almost any emergency condition you need to be informed about. Any no-voltage circuit that can be switched will provide an alarm to the controller. The term "digital" refers to two possible states for a circuit: open and closed. You can set up each digital alarm input to sense for an open or a closed circuit.

Group	This is the assigned device group. You cannot change this setting through this application.
Trigger Alarm on Active Input	Check this if you want the controller to trigger an alarm when the input is active.
Input is Active when	Set this to CLOSED if you want the controller to alarm when the digital input circuit becomes closed. Set this to OPEN if you want the controller to alarm when the digital input circuit becomes open.
Alarm Delay Time	Input the amount of time the alarm condition must exist before the alarm is triggered. For example, if you want to alarm when a door is left open, you would set the Delay Time to 30 seconds to prevent a false alarm from normal building entry and exiting.

Operating Modes: Curtains and Inlets

Curtains and inlets must be designated for how they will be used (ridge vents are natural only). Here are the basic ventilation modes:

Natural	Operates for all ventilation below the Tunnel Entry Temperature. Often referred to as power, minimum, or natural ventilation. Closed during tunnel mode.
Tunnel	Operates only during tunnel mode. Closed during natural mode.
Static	Operates automatically based on the static pressure sensor readings. You must install the sensor for these options to appear. The inlets open or close based on the Setpoint, Close and Open values you enter in the Static Pressure Sensor Control Settings dialog box.
Temp	Operates based on temperature (typically curtains) or operates proportionally (typically inlets) based on the number of fans running.

The above modes are combined for the following menu choices.

Static Tunnel Only	The inlet or curtain only operates during tunnel mode. The device is controlled by static pressure.
Temp Natural Only	The inlet or curtain only operates when the building is not in tunnel mode. An inlet opens or closes based on the number of fan groups running (proportional control). A curtain opens or closes based on its Open Temp and Close Temp.
Static Natural Only	The inlet or curtain only operates when the building is not in tunnel mode. The device is controlled by static pressure.
Temp Natural/ Temp Tunnel	When the building is not in tunnel mode, an inlet operates based on the number of fan groups running (proportional control). A curtain operates based on its Open Temp and Close Temp settings. During tunnel mode, the inlet or curtain operates based on proportional control.
Temp Natural/ Static Tunnel	When the building is not in tunnel mode, an inlet operates based on the number of fan groups running (proportional control). A curtain operates based on its Open Temp and Close Temp settings. During tunnel mode, the inlet or curtain operates based on static pressure.
Temp Tunnel Only	The inlet or curtain operates only during tunnel mode and its position is based on the number of fan groups running (proportional control).
Static Natural/ Temp Tunnel	When the building is not in tunnel mode, the inlet or curtain operates based on static pressure. During tunnel mode, the inlet or curtain operates based on proportional control.
Static Natural/ Static Tunnel	The inlet or curtain operates based on static pressure in natural mode and tunnel mode.

Note: These Operating Modes are enabled only if a Static Pressure sensor is installed or a fan is installed and operates during tunnel mode.

Response Modes – Curtains and Ridge Vents

Standard	Allows the curtain or ridge vent to open and pause for the times you input.
Aggressive	Allows the curtain or ridge vent to move faster if the temperature is changing quickly. If the temperature is more than 2 degrees beyond the setpoint, the curtain or ridge vent opens or closes twice the distance you input and then pauses for only half the time. If the temperature moves further from the setpoint, the curtain or ridge vent moves further and more often.

Note: In areas where temperatures can drop rapidly, we recommend setting the curtain or ridge vent to open slowly and close quickly. This will cut the heat loss and limit chill stress to the animals.

Side Curtain Settings

The controller has a minimum allowed motion time of 3 seconds. For example, if a curtain moves 60 inches in 60 seconds, 3 inches is the smallest change in opening size that can be made. Opening sizes should be set large enough to allow a minimum of 3 seconds movement from one setting to the next.

Refer to you controller's *Operating Manual* for details about using curtains.

Group	This is the assigned device group. You cannot change this setting through this application.
Use Sensors	Input the group numbers of the air sensors you want to use for controlling the curtain. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Open Temp	Input the temperature at which the controller should open the side curtain (when the curtain is in a temperature-controlled mode). When the temperature is at or above this temperature, the controller will open the curtain as many inches as you designate in **Open this Distance** below. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Close Temp	Input the temperature at which the controller should close the side curtain (when the curtain is in a temperature-controlled mode). When the temperature is at or below this temperature, the controller will close the curtain as many inches as you designate in **Close this Distance** below. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Open This Distance	Input the distance the controller should open the curtain before pausing. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Open Pause Timer	Input the amount of time the controller should pause before checking the temperature to determine if it should open the curtain more, do nothing, or begin closing it. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Close This Distance	Input the distance the controller should close the curtain before pausing. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Close Pause Timer	Input the amount of time the controller should pause before checking the temperature to determine if it should close the curtain more, do nothing, or begin opening it. Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Operating Mode	Select the operating mode for the curtain. This is enabled only if a Static Pressure sensor is installed or a fan is installed and operates during tunnel mode.

Side Curtain Settings … continued

Response Mode	Select the response mode (see Response Modes above). Enabled only when Operate As is disabled or Operating mode has Temp Natural.
Full Opening Size	Input the full opening size. This setting is used for calibration purposes.
Purge Opening Size	The curtain can be used as a purge opening for purge fans. Input zero to disable the curtain during the purge function. The purge opening size must be large enough to allow at least 3 seconds of movement. This box is disabled if you haven't set up purging in the Minimum Vent and Purge Settings dialog box.
Full Open Travel Time	Input the amount of time it takes for the curtain to open completely. The controller uses this time to determine how open the curtain is, so enter the exact travel time.
Full Close Travel Time	Input the amount of time it takes for the curtain to close completely. The controller uses this time to determine how closed the curtain is, so enter the exact travel time.
Pre-Open Time	Input the time the curtain should start opening before fans start running when the controller transitions to a different ventilation mode. This box is enabled only for Static Natural modes.
Static Pressure Pause Timer	Input the time the curtain should pause after it moves due to a change in static pressure. This box is enabled only for Static operating modes.
Inlet Maximum Open Size	Input the maximum opening you want the curtain to open if the current temperature is below the **Override Temperature** setting. This value has to be between the **Temperature Setpoint** and the **Setpoint** + 15 degrees. This feature only works if the value is above 0, is attached to a Position Sensor and the sensor is calibrated, set to alarm and is not in an alarm state.
Override Temp Maximum Open	Input the temperature where, if the temperature is higher than this, you want the curtain to ignore the **Inlet Maximum Open Size** above.

Side Curtain Settings … continued

Tunnel Opening Settings Fans On / Opening	Input the desired curtain opening size for each potential number of simultaneously operating fan groups while controller is in Tunnel ventilation mode. If vari-speed fans are installed, Fans On can be set in 0.5 increments to account for ramping operating speeds. Enabled for tunnel operating modes only. **Note:** If you are using a static pressure sensor for proportional control, the opening sizes you input here will be used if the static pressure sensor malfunctions.
Tunnel Fan Interlocks	This is an extension of the Fan Groups On boxes. Instead of opening a curtain based on the number of fans running, you can interlock specific fans with curtains (open the curtain based on the number of interlocked fans running). Check each fan that you want the controller to use in determining how far to open the curtain. Enabled for tunnel operating modes only.

Note: Side Curtains operate on temperature in natural ventilation mode and so have no Natural Opening settings. Setting the Natural Open Settings and Interlocks will have no effect on the controller operations.

Ridge Vent Settings

The controller has a minimum allowed motion time of 3 seconds. Opening sizes should be set large enough to allow a minimum of 3 seconds movement from one setting to the next.
Ridge vents operate in natural mode only so there is no operating mode selection as in other types of inlets.
If you have interlocked ridge vents to curtains then the temperature-controlled settings are disabled in the Ridge Vent Settings work area.
Refer to you controller's *Operating Manual* for details about using ridge vents.

Group	This is the assigned device group. You cannot change this setting through this application.
Use Sensors	Input the group numbers of the air sensors you want to use for controlling the ridge vent. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
Open Temp	Input the temperature at which the controller should open the ridge vent. Whenever the temperature is at or above this temperature, the controller will open the ridge vent as many inches as you designate in **Open this Distance** below.

⬆ Ridge Vent Settings… continued

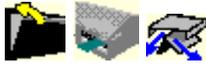|	
Close Temp	Input the temperature at which the controller should close the ridge vent. Whenever the temperature is at or below this temperature, the controller will close the ridge vent as many inches as you designate in **Close this Distance** below.
Open This Distance	Input the distance the controller should open the ridge vent before pausing.
Open Pause Timer	Input the amount of time the controller should pause before checking the temperature to determine if it should open the ridge vent more, do nothing, or begin closing it.
Close This Distance	Input the number of inches the controller should close the ridge vent before pausing.
Close Pause Timer	Input the amount of time the controller should pause before checking the temperature to determine if it should close the ridge vent more, do nothing, or begin opening it.
Response Mode	Select the response mode (see Response Modes above).
Full Opening Size	Input the full opening size. This setting is used for calibration purposes.
Full Open Travel Time	Input the amount of time it takes for the ridge vent to open completely. The controller uses this time to determine how open the ridge vent is, so enter the exact travel time.
Full Close Travel Time	Input the amount of time it takes for the ridge vent to close completely. The controller uses this time to determine how closed the ridge vent is, so enter the exact travel time.
Purge Opening Size	The ridge vent can be used as a purge opening for purge fans. Input zero to disable the ridge vent during the purge function. The purge opening size must be large enough to allow at least 3 seconds of movement. This box is disabled if you haven't set up purging in the Minimum Vent and Purge Settings dialog box.
Interlock with Curtain Groups	If you have set the Ridge to Curtains Interlock you will be able to specify the curtain groups here. Interlocking ridge vents to curtains can enhance air quality in a building while maintaining good temperature control. When ridge vents are interlocked, their open and close settings are ignored. The interlocked ridge vent attempts to open the same number of inches as the curtain with the largest opening size. For example, a curtain has a maximum opening size of 48 inches, and the ridge vent's maximum opening size is 10 inches. As the curtain opens, the ridge vent will also open the same amount as the curtain. When the curtain is open 10 inches, the ridge vent will be fully open at 10 inches. Input up to six curtain groups.
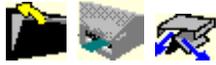
Inlet Settings – Sidewall, Tunnel, Ceiling

The controller has a minimum allowed motion time of 3 seconds. Opening sizes should be set large enough to allow a minimum of 3 seconds movement from one setting to the next.

Inlets are typically a proportionally controlled device so the menu items Open This Distance and Close This Distance are not used. Instead, when an inlet needs to open or close more, the proportional control or static pressure control settings are used.

Refer to you controller's *Operating Manual* for details about using curtains.

Group	This is the assigned device group. You cannot change this setting through this application.
Operating Mode	Select the operating mode for the inlet. This is enabled only if a Static Pressure sensor is installed or a fan is installed and operates during tunnel mode.
Full Opening Size	Input the full opening size. This setting is used for calibration purposes.
Purge Opening Size	The inlet can be used as a purge opening for purge fans. Input zero to disable the inlet during the purge function. The purge opening size must be large enough to allow at least 3 seconds of movement. This box is disabled if you haven't set up purging in the Minimum Vent and Purge Settings dialog box.
Full Open Travel Time	Input the amount of time it takes for the inlet to open completely. The controller uses this time to determine how open the inlet is, so enter the exact travel time.
Full Close Travel Time	Input the amount of time it takes for the inlet to close completely. The controller uses this time to determine how closed the inlet is, so enter the exact travel time.
Pre-Open Time	Input the time the inlet should start opening before fans start running when the controller transitions to a different ventilation mode. This box is enabled only for Natural modes or when Operate As is disabled. This is not available for Tunnel Inlets.
Static Pressure Pause Timer	Input the time the inlet should pause after it moves due to a change in static pressure. This box is enabled only for Static operating modes.

Inlet Settings… continued

Natural Opening Settings Fans On / Opening	Input the desired inlet opening size for each potential number of simultaneously operating fan groups while controller is in natural ventilation mode. If vari-speed fans are installed, Fans On can be set in 0.5 increments to account for ramping operating speeds. Enabled for natural operating modes only.
Natural Fan Interlocks	This is an extension of the Natural Opening boxes. Instead of opening an inlet based on the number of fans running, you can interlock specific fans with inlets (open the inlet based on the number of interlocked fans running). Check each fan that you want the controller to use in determining how far to open the inlet. Enabled for natural operating modes only.
Tunnel Opening Settings Fans On / Opening	Input the desired inlet opening size for each potential number of simultaneously operating fan groups while controller is in tunnel ventilation mode. If vari-speed fans are installed, Fans On can be set in 0.5 increments to account for ramping operating speeds. Enabled for tunnel operating modes only.
Tunnel Fan Interlocks	This is an extension of the Fan Groups On boxes. Instead of opening a inlet based on the number of fans running, you can interlock specific fans with inlets (open the inlet based on the number of interlocked fans running). Check each fan that you want the controller to use in determining how far to open the inlet. Enabled for tunnel operating modes only.

Chimney Damper Settings

The controller has a minimum allowed motion time of 3 seconds. Opening sizes should be set large enough to allow a minimum of 3 seconds movement from one setting to the next.

The Chimney Damper is a unique device because it contains and a fan and an inlet. If you use this type of device, install the fan portion as a ridge fan and the damper portion as a chimney damper.

The damper functions as an inlet when it is interlocked with one or more ridge fans (typically just one fan). The damper starts to function as a ridge vent when the curtains open (and, presumably, the fan is turned off).

There are two settings required to accomplish this:

1. The **Ridge to Curtains Interlock** box (in the Temperature Control Settings of the Zone Devices icon) must be set to Interlock.

2. The fan coupled with the chimney damper should be set up to turn off when the curtains open (see **Fans Off at Curtain Opening of** settings for Fans later in this document).

Refer to you controller's *Operating Manual* for details about using curtains.

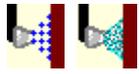|	
Group	This is the assigned device group. You cannot change this setting through this application.
Opening Settings Fans On / Opening	Input the desired inlet opening size for each potential number of simultaneously operating ridge fans. If no ridge fans are running, the chimney damper opens and closes based on curtain openings (as long as Ridge to Curtain Interlock is set). If vari-speed fans are installed, Fans On can be set in 0.5 increments to account for ramping operating speeds.
Full Opening Size	Input the full opening size. This setting is used for calibration purposes.
Full Open Travel Time	Input the amount of time it takes for the inlet to open completely. The controller uses this time to determine how open the inlet is, so enter the exact travel time.
Full Close Travel Time	Input the amount of time it takes for the inlet to close completely. The controller uses this time to determine how closed the inlet is, so enter the exact travel time.
Fan Interlocks	This is an extension of the Opening boxes. Instead of opening a chimney damper based on the number of ridge fans running, you can interlock specific ridge fans with the chimney damper (open the damper based on the number of interlocked fans running). Check each fan that you want the controller to use in determining how far to open the damper. Only fixed and variable ridge fans will show here.

Furnace and Heater Settings

| Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the furnace or heater. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
On Temp	Input the temperature at which the controller should turn on the furnace or heater.
Off Temp	Input the temperature at which the controller should turn off the furnace or heater.
Interlock with Curtain Groups	If you have set the Heater to Curtains Interlock (in the Temperature Control Settings of the Zone Devices icon) you will be able to specify the curtain and ridge vent groups here (even though the menu only has enough space to say "Curtains" it actually includes ridge vents). When interlocking is enabled for heaters (and furnaces), and the controller detects that the heater's ON temperature has been reached, the heater will not turn on if the interlocked curtains and ridge vents are open more than one inch. Input up to six curtain and ridge vent groups.

Brooder Settings

Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the brooder. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
On Temp	Input the temperature at which the controller should turn the brooder on.
Off Temp	Input the temperature at which the controller should turn the brooder off.
Interlock with Curtain Groups	If you have set the Heater to Curtains Interlock (in the Temperature Control Settings of the Zone Devices icon) you will be able to specify the curtain and ridge vent groups here (even though the menu only has enough space to say "Curtains" it actually includes ridge vents). When interlocking is enabled for heaters (and brooders), and the controller detects that the heater's ON temperature has been reached, the heater will not turn on if the interlocked curtains and ridge vents are open more than one inch. Input up to six curtain and ridge vent groups.

Cool Pad Settings (High or Low)

Refer to you controller's *Operating Manual* for details about using Cool Pads

Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the cool pads. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
Time of Day to Enable	The cool pad can be enabled for a certain period of day to prevent having the device turned on at an undesirable time. The device will only operate between the enable and disable times you input. The time you input here should be in a 24-hour clock format. Input the time when the cool pad should be enabled.
Time of Day to Disable	The time you input here should be in a 24-hour clock format. Input the time when the cool pad should be disabled.
Humidity Disable	Input the humidity percentage at which evaporative cooling should be disabled. When the humidity reaches the Disable value, the evaporative cooling device remains disabled until the humidity drops to the Re-Enable value. Input 100 to have the controller ignore humidity disable/re-enable entirely.
Humidity Re-Enable	Input the humidity percentage at which evaporative cooling should be re-enabled. Input 100 to have the controller ignore humidity disable/re-enable entirely.
Temp + Humidity Disable	Input the temp+humidity (stress index) value at which evaporative cooling should be disabled. When the stress index reaches the Disable value, the evaporative cooling device remains disabled until the stress index drops to the Re-Enable value. Input 220 to have the controller ignore temp+humidity disable/re-enable entirely.
Temp + Humidity Re-Enable	Input the temp+humidity value at which evaporative cooling should be re-enabled. Input 220 to have the controller ignore temp+humidity disable/re-enable entirely.
Full On Temp	Input the temperature at which the controller should turn on the cool pad continuously. When the temperature is between the OFF Temp and the FULL ON Temp, the cycle table is used (see below). This value will change during temperature ramping.
Off Temp	Input the temperature at which or below the cool pad should be turned off. This value will change during temperature ramping.
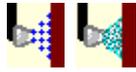
Cool Pad Settings (High or Low)… continued

Refer to you controller's *Operating Manual* for details about using Cool Pads

Minimum On Temp	As the temperature ramps downward over the growing period (assuming you use the temperature ramping feature), you may reach a temperature where evaporative cooling should not be used. You can specify a Minimum On Temp for your devices. The device will not turn on below this temperature, regardless of the Cycle On temperatures. This value will not change with temperature ramping.
Cycle	When the temperature is between the OFF Temp and the FULL ON Temp, the controller scans the On temperature values you enter here. It determines where the current temperature falls in those values and uses the ON Timers and OFF Timers you specify for that temperature.
	Cycle one should be the lowest temperature and cycle four should be the highest. The cycle one temperature is usually slightly higher than the OFF Temp.
	These temperature settings will change during temperature ramping.
Min Temps	These boxes show the actual Cycle temperatures used when determining which Cycle times the cool pad uses. These will match the Cycle On Temperatures and the Full On Temperature unless the Cycle #1 On Temp is lower than the Minimum ON Temp. In that case, the first Min Temp will equal the Minimum On Temp with each of the other temperatures set by adding the difference between it's Cycle On temp and the Cycle #1 On Temp to the Minimum On Temp. These values are calculated by the application and cannot be changed.

Fogger Settings

Refer to you controller's *Operating Manual* for details about using Foggers

Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the fogger. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
Time of Day to Enable	The fogger can be enabled for a certain period of day to prevent having the device turned on at an undesirable time. The device will only operate between the enable and disable times you input. The time you input here should be in a 24 hour clock format. Input the time when the fogger should be enabled.
Time of Day to Disable	The time you input here should be in a 24 hour clock format. Input the time when the fogger should be disabled.
Humidity Disable	Input the humidity percentage at which evaporative cooling should be disabled. When the humidity reaches the Disable value, the evaporative cooling device remains disabled until the humidity drops to the Re-Enable value. Input 100 to have the controller ignore humidity disable/re-enable entirely.
Humidity Re-Enable	Input the humidity percentage at which evaporative cooling should be re-enabled. Input 100 to have the controller ignore humidity disable/re-enable entirely.
Temp + Humidity Disable	Input the temp+humidity (stress index) value at which evaporative cooling should be disabled. When the stress index reaches the Disable value, the evaporative cooling device remains disabled until the stress index drops to the Re-Enable value. Input 220 to have the controller ignore temp+humidity disable/re-enable entirely.
Temp + Humidity Re-Enable	Input the temp+humidity value at which evaporative cooling should be re-enabled. Input 220 to have the controller ignore temp+humidity disable/re-enable entirely.
Full On Temp	Input the temperature at which the controller should turn on the fogger continuously. When the temperature is between the OFF Temp and the FULL ON Temp, the cycle table is used (see below). This value will change during temperature ramping.
Off Temp	Input the temperature at which or below the fogger should be turned off. This value will change during temperature ramping.

Fogger Settings … continued

Refer to you controller's *Operating Manual* for details about using Foggers.

Minimum On Temp	As the temperature ramps downward over the growing period (assuming you use the temperature ramping feature), you may reach a temperature where evaporative cooling should not be used. You can specify a Minimum On Temp for your devices. The device will not turn on below this temperature, regardless of the Cycle On temperatures. This value will not change with temperature ramping.
Cycle	When the temperature is between the OFF Temp and the FULL ON Temp, the controller scans the On temperature values you enter here. It determines where the current temperature falls in those values and uses the ON Timers and OFF Timers you specify for that temperature.

Cycle one should be the lowest temperature and cycle four should be the highest. The cycle one temperature is usually slightly higher than the OFF Temp.

These temperature settings will change during temperature ramping. |
| Min Temps | These boxes show the actual Cycle temperatures used when determining which Cycle times the fogger uses. These will match the Cycle On Temperatures and the Full On Temperature unless the Cycle #1 On Temp is lower than the Minimum ON Temp.   In that case, the first Min Temp will equal the Minimum On Temp with each of the other temperatures set by adding the difference between it's Cycle On temp and the Cycle #1 On Temp to the Minimum On Temp. These values are calculated by the application and cannot be changed. |

Mister Settings

Refer to you controller's *Operating Manual* for details about using Misters

Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the mister. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
Time of Day to Enable	The mister can be enabled for a certain period of day to prevent having the device turned on at an undesirable time. The device will only operate between the enable and disable times you input. The time you input here should be in a 24 hour clock format. Input the time when the mister should be enabled.
Time of Day to Disable	The time you input here should be in a 24 hour clock format. Input the time when the mister should be disabled.
Humidity Disable	Input the humidity percentage at which evaporative cooling should be disabled. When the humidity reaches the Disable value, the evaporative cooling device remains disabled until the humidity drops to the Re-Enable value. Input 100 to have the controller ignore humidity disable/re-enable entirely.
Humidity Re-Enable	Input the humidity percentage at which evaporative cooling should be re-enabled. Input 100 to have the controller ignore humidity disable/re-enable entirely.
Temp + Humidity Disable	Input the temp+humidity (stress index) value at which evaporative cooling should be disabled. When the stress index reaches the Disable value, the evaporative cooling device remains disabled until the stress index drops to the Re-Enable value. Input 220 to have the controller ignore temp+humidity disable/re-enable entirely.
Temp + Humidity Re-Enable	Input the temp+humidity value at which evaporative cooling should be re-enabled. Input 220 to have the controller ignore temp+humidity disable/re-enable entirely.
Full On Temp	Input the temperature at which the controller should turn on the mister continuously. When the temperature is between the OFF Temp and the FULL ON Temp, the cycle table is used (see below). This value will change during temperature ramping.
Off Temp	Input the temperature at which or below the mister should be turned off. This value will change during temperature ramping.

Mister Settings … continued

Refer to you controller's *Operating Manual* for details about using Misters

Minimum On Temp	As the temperature ramps downward over the growing period (assuming you use the temperature ramping feature), you may reach a temperature where evaporative cooling should not be used. You can specify a Minimum On Temp for your devices. This value will not change with temperature ramping
Cycle	When the temperature is between the OFF Temp and the FULL ON Temp, the controller scans the on temperature values you enter here. It locates the current temperature and uses the ON Timers and OFF Timers you specify for that temperature. Cycle one should be the lowest temperature and cycle four should be the highest. The cycle one temperature is usually slightly higher than the OFF Temp. This temperature values will change with temperature ramping
Min Temps	These boxes show the actual Cycle temperatures used when determining which Cycle times the mister uses. These will match the Cycle On Temperatures and the Full On Temperature unless the Cycle #1 On Temp is lower than the Minimum ON Temp. In that case, the first Min Temp will equal the Minimum On Temp with each of the other temperatures set by adding the difference between it's Cycle On temp and the Cycle #1 On Temp to the Minimum On Temp. These values are calculated by the application and cannot be changed.

Operating Modes: Fans

Each fan can operate in one of nine different operating modes:

Cool	The fan exhausts hot air from the building. The fan turns on when the temperature rises to the ON temperature and turns off when the building cools to the OFF temperature (if set up to run on temperature).
Heat	This setting assumes a fan is blowing hot air into the building from a warmer area. The fan turns on at a low temperature set as the ON temperature and turns off at a higher temperature set as the OFF temperature.
Purge	The fan runs during a purge cycle to clear humidity, ammonia, and bad air from the building. The fan runs based on the purge settings you enter in the Building Purge Settings menu.
Cool & Purge	The fan runs in cool mode when the temperature is at or above the ON temperature and in purge mode when the temperature is below the ON temperature.
Heat & Purge	The fan runs in heat mode when the temperature is below the ON temperature and in purge mode when the temperature is above the ON temperature.
Tunnel	Tunnel mode turns on tunnel fans and moves air from the open tunnel inlets, through the building, and out through the tunnel fans. It closes all natural sidewall inlets and curtains. More groups of tunnel fans typically turn on as the temperature rises. Tunnel fans only run during tunnel mode.
Tunnel & Cool	The fan runs in cool mode when the temperature is below the Tunnel Entry temperature and in tunnel mode when the temperature is at or above the Tunnel Entry temperature.
Tunnel & Purge	The fan runs in purge mode when the temperature is below the Tunnel Entry temperature and in tunnel mode when the temperature is at or above the Tunnel Entry temperature.
Tunnel, Cool, Purge	The fan runs in purge mode when the temperature is below the ON temperature, in cool mode when the ON temperature is reached, and in tunnel mode when the temperature is at or above the Tunnel Entry temperature.

Run Modes: Fans

Each fan can operate in one of five different run modes:

Temp Only	The fan runs when the temperature is at or above the ON temperature. The fan turns off when the temperature is at or below the OFF temperature.
Timed Only	The fan cycles on and off continuously based on the ON and OFF times you input.
Temp or Timed	The fan runs according to temperature control when the temperature is at or above the ON setting. The fan runs according to timed setting when the temperature is below the ON setting.
Temp and Timed	The fan runs according to the timed settings when the temperature is at or above the ON setting. When the temperature is below the ON setting, the fan does not operate.
Temp or Minimum Ventilation	The fan runs according to temperature control when the temperature is at or above the ON setting. The fan runs according to the minimum ventilation times (entered in the Minimum Ventilation and Purge Settings dialog box) when the temperature is below the ON setting.

Fixed Speed Fan Settings

Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the fan group. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
Operating Mode	Select the operating mode for the fan group.
Fan On Temp	Input the temperature at which or above the fan group should turn on. This box is disabled when Run Mode is Timed Only.
Fan Off Temp	Input the temperature at which or below the fan group should be turned off. This box is disabled when Run Mode is Timed Only.
Fan Run Mode	Select a run mode for the fan group.
On Timer	This item is enabled for timed fans. Input the number of hours, minutes and seconds (up to nine hours) you want the fan group to run when in a timed mode.
Off Timer	This item is enabled for timed fans. Input the number of hours, minutes and seconds (up to nine hours) you want the fan group to remain off after the ON Timer is complete.
Run While Entry/Exit of Tunnel Mode	Check this feature when you want the fan group to run while the building transitions into or out of tunnel mode. Typically, several fans are allowed to run during the transition to continue effective ventilation. Too many fans can create excessive suction and cause inlets to stick shut.
Use for Proportional Control	Check this feature when you want the fan group to be used in proportional control. When a fan group is included in proportional control, it will be counted in determining the total number of fan groups running. The total number of running fan groups determines the positioning of inlets and curtains. **Note:** Stir fans cannot be used for proportional control since they are not designed to produce negative static pressure in a building.
Fan Off at Curtain Opening of	Input an opening size at which the fan group should be disabled. In buildings where curtains and fans are used, this is used to turn off fans when any curtain is open enough to provide natural ventilation. This is used only when a position sensor is installed to a curtain and is working correctly and the fan doesn't run during Tunnel mode.
Fan Override Curtain Open Temp	This item is and extension of the Fans Off described above. When the temperature reaches the value you enter, the fan group resumes operations according to its run mode. This is enabled if Fan Off is enabled and is greater than 0.

Variable-Speed Fan Settings

The RPM of most PSC type fan motors is controlled by varying the amount of power (voltage) applied. The way a PSC motor responds to a given power setting varies considerably between fan motor manufacturers. One motor may require a setting of 50 to run at full speed while another just 35.

Fans always get a five second full power burst (see Full Power Setting below) at start up before adjusting to the specified power setting.

Group	This is the assigned device group. You cannot change this setting through this application.
Uses Sensors	Input the group numbers of the air sensors you want to use for controlling the fan group. The controller uses Shared Sensor Technology (SST) to average the temperature readings of any sensors you want to use to control any device.
Operating Mode	Select the operating mode for the fan group.
Fan On Temp	Input the temperature at which or above the fan group should turn on. This box is disabled when Run Mode is Timed Only.
Fan On Power Setting	Input a value from 0 (off) to 60 (full power) for the power you want the fan to operate at when the temperature is at or above the ON Temp. This box is disabled when Run Mode is Timed Only.
Fan Off Temp	Input the temperature at which or below the fan group should be turned off. This box is disabled when Run Mode is Timed Only.
Power Ramp Starting Temp	Input the temperature at which power ramping should start. Power ramps from the Fan ON Temp (see above) to the FULL Power Temp (see below) as the temperature rises. This box is disabled when Run Mode is Timed Only.
Full Power Temp	Input the temperature at which the fan group should be operating at the FULL Power Setting you specify (see below). This box is disabled when Run Mode is Timed Only.
Full Power Setting	Input the power setting value the fan group should operate at when the FULL Power Temp is reached (see above). This box is disabled when Run Mode is Timed Only.
Fan Run Mode	Select a run mode for the fan group.
On Timer	This item is enabled for timed fans. Input the number of hours, minutes and seconds (up to nine hours) you want the fan group to run when in a timed mode.
Timed Power Setting	This item is enabled for timed fans. Input the power setting that should be used when the fan is operated on time.
Off Timer	This item is for timed fans. Input the number of hours, minutes and seconds (up to nine hours) you want the fan group to remain off after the ON Timer is complete.

Variable-Speed Fan Settings … continued

Purge Mode Power Setting	Input the power setting that should be used for this fan when the building is in purge mode. This is enabled only when a purge mode has been set in Minimum Vent Settings.
Run While Entry/Exit of Tunnel Mode	Check this feature when you want the fan group to run while the building transitions into or out of tunnel mode. Typically, several fans are allowed to run during the transition to continue effective ventilation. Too many fans can create excessive suction and cause inlets to stick shut.
Use for Proportional Control	Check this feature when you want the fan group to be used in proportional control. When a fan group is included in proportional control, it will be counted in determining the total number of fan groups running. The total number of running fan groups determines the positioning of inlets and curtains. **Note:** Variable Stir fans cannot be used for proportional control since they are not designed to produce negative static pressure in a building.
Fan Off at Curtain Opening of	Input an opening size at which the fan group should be disabled. In buildings where curtains and fans are used, this is used to turn off fans when any curtain is open enough to provide natural ventilation. This is used only when a position sensor is installed to a curtain and is working correctly and the fan doesn't run during Tunnel mode.
Fan Override Curtain Open Temp	This item is and extension of the Fans Off described above. When the temperature reaches the value you enter, the fan group resumes operations according to its run mode. This is enabled if Fan Off is enabled and is greater than 0.

Lights Timer Settings

Group	This is the assigned device group. You cannot change this setting through this application.
Start/Stop times	You can set up to nine timers to turn on and turn off light groups. Input the on and off times for each timer using a 24-hour clock format. To set a light group for continuous on, set the ON time for timer one to 00:00 and the OFF time to 24:00.

Feeder Timer Settings

Group	This is the assigned device group. You cannot change this setting through this application.
Start/Stop times	You can set up to nine timers to turn on and turn off feeder groups. Input the on and off times for each timer using a 24-hour clock format. To set a feeder group for continuous on, set the ON time for timer one to 00:00 and the OFF time to 24:00.

Position Sensor Settings

Group	This is the assigned device group. You cannot change this setting through this application.
Closed Resistance	Shows the calibrated resistance when the attached device was fully closed. This is a calculated value and you cannot change it.
Open Resistance	Shows the calibrated resistance when the attached device was fully Open. This is a calculated value and you cannot change it.
Open to Close Time	Shows the time it took the attached device to go from fully open to fully closed. The attached device's Open Travel Time should match this value. This is a calculated value and you cannot change it.
Close to Open Time	Shows the time it took the attached device to go from fully closed to fully open. The attached device's Close Travel Time should match this value. This is a calculated value and you cannot change it.
Calibrated High Reading	Shows the highest reading received from the position sensor during the calibration sequence. This value is used to determine if the position sensor is sending a bad reading. This is a calculated value and you cannot change it.
Calibrated Low Reading	Shows the lowest reading received from the position sensor during the calibration sequence. This value is used to determine if the position sensor is sending a bad reading. This is a calculated value and you cannot change it.
Attached Device	Shows the device that the Position Sensor is attached to. This has to be changed on the controller.
Percent Out of Position	Input the percentage you want the Position Sensor to be out of position before it will alarm.
Enable Postion Alarm	Check this box if you want the Position Sensor to alarm if it is out of position or sends a bad reading.

QuickView: Viewing Current Conditions

The Current Conditions QuickView dialog box appears when you click the **View** menu and then select **QuickView**, or when you click the **Options** menu and set up a QuickView. QuickView lets you quickly compare and view selected data across multiple controllers.
Click the **Select Info** button to change the information displayed in QuickView.
Click the **Print** button to print or export the QuickView information.

Selecting Controllers for QuickView

The QuickView Controllers dialog box is displayed when you click the **Options** menu and select **QuickView**. You can select the controllers that you want to include in the QuickView of current conditions.

1. Click the **Select All** button to select all (check) the listed controllers.

2. Click the **Unselect All** button to unselect all (uncheck) the listed controllers.

3. Click each controller to select (check) or unselect (uncheck) them.

4. Click the **Next** button to proceed to the dialog box that allows you to select the information you want to view.

Selecting QuickView Information

The QuickView Information dialog box is displayed when you click the **Next** button on the QuickView Controllers dialog box, or when you click the **Select Info** button on the Current Conditions Quick View dialog box.
Items to be included in QuickView have a check mark next to them. Click an item to uncheck it. Click the item again to include it.
Click the **OK** button to view the Current Conditions QuickView dialog box.

Creating a Graph of Device Information

The Device Graph Settings dialog box appears when you click the device icon in the configuration tree, click the **Device** menu, select **History** and then select **Graph**. This dialog box allows you to select a start date for the graph, the types of information to graph, and other options for the graph. The information to graph changes depending on the device you selected before getting to this dialog box.
Note: History is not available for all device types.

1. Set the start and end date. Click a day on the calendar. You can change the calendar's month and year by selecting a different month and year from the drop-down lists.

2. Click an option in the Graph Type box (just below the calendar). This determines whether your graph is in a line, scatter or bar format.

3. Click an option in the Graph Period box (just below the calendar). This determines how your information will appear– in hours, days, or weeks.

4. Enter the time of day in the Starting Hour box, where 0 is midnight and 23 is 11:00 PM.

5. Enter the time of day in the Ending Hour box, where 0 is midnight and 23 is 11:00 PM.

6. Enter the number of periods you want each point on the graph to represent in the Period/Graph Point box.

7. Check each device on the right that you want to appear in the graph.

8. Click the **Graph** button to create a graph.

Creating a Device History Report

The Report Settings dialog box appears when you click the **Device** menu, select **History** and then select **Report**. This dialog box allows you to select a start date and an end date. Note: History is not available for all device types.

1. Enter the start date. Click the month drop-down list, and click a month to select it. Select the year in the same manner. Then, click a day in the calendar.

2. Enter the end date as you did for the start date in step 1.

3. Click the **Report** button. The report appears in a new window where you can view, print, or export the device information.

Viewing a Device History Table

The History View Settings dialog box appears when you click the **Device** menu, select **History** and then select **View**. This dialog box allows you to select a start date and an end date.

History is not available for all device types.

1. Enter the start date. Click the month drop-down list, and click a month to select it. Select the year in the same manner. Then, click a day in the calendar.

2. Enter the end date as you did for the start date in step 1.

3. Click the **View** button. The history appears in a new dialog box.

Printing a Controller's Configuration

You can print a report containing some or all of the device settings for a controller. You can choose the information to print on the Select Reports dialog box.

The Select Reports dialog box appears when you click the **Print Control Configuration** button on the Controller work area. It also appears when you click the **Controller** menu and select **Print Control Configuration**.

This dialog box allows you to choose the information that is collected for a controller.

1. Click (check) the data items you want printed. Each checked item will be printed as a separate report.

2. Click the **Print** button.

Note: In multi-zone applications, a set of reports is generated for each zone.

Printing Reports

A standard print preview dialog box is used for most of the report printing in this application.

◁	Click this button to view the first page of the report. If you are currently viewing the first page, this button is dimmed and cannot be selected.
◀	Click this button to see the previous page. If you are currently viewing the first page, this button is dimmed and cannot be selected.
▶	Click this button to see the next page. If you are currently viewing the last page of the report, this button is dimmed and cannot be selected.
▶|	Click this button to see the last page. If you are currently viewing the last page of the report, this button is dimmed and cannot be selected.
■	If there is a great deal of information on one page, the report may take a moment to display all the information. Click this button to stop a page from displaying information.
🖨	Click this button to print the report.
📤	Click this button to export the information.

Exporting Data

The Export dialog box allows you to export data for use in other applications such as Microsoft Excel.

The Export dialog box appears when you click the **Export** button on any of the Report Preview dialog boxes.

1. Select the format you want to export the data as from the Format list.

2. Select the destination for the data. Most users select Disk file.

3. Click the **OK** button. You are prompted to select a location, folder or application for the data.

Alarm Definitions

Alarm Type	Description
ADC 0 Volt Error	Malfunction in the power supply or analog circuit on the module. Possible faulty ground going to the controller or station.
ADC 5 Volt Error	Malfunction in the power supply or analog circuit on the module.
ADC 9 Volt Error	Malfunction in the power supply or analog circuit on the module.
Air Sensor Bad	Invalid temperature reading from air sensor.
Feeder Error	The feeder run time has exceeded the set limit, or the feeder off time has exceeded the set limit.
Erase Error	Error erasing FLASH memory.
Voltage Low Error	A low power condition was detected when updating FLASH memory.
Write Error	Error writing parameters, history, or errors to the system FLASH memory.
High/Low Temperature Error	Building temperature exceeded alarm limits.

Alarm Type	Description
Module Communication Error	0= Power-up clear expected
	1= Undefined command
	3= Input buffer overrun
	4= Non-printable ASCII character received
	5= Data field error
	7= Invalid limit set
	8= Module not available (wind speed)
	9= Wind speed data not available
	12= Invalid position
	13= Incorrect device module type

	F9= Framing error in response from slave FA= Unknown response from slave FB= Check sum error on response FC= Time out. Module did not respond in allotted time. FD= Buffer overrun on response from module
PC/Modem Communication Error	Error communicating with PCModem or PC interface.
Temperature Change Error	An air sensor reading has changed more than 15 degrees from the last reading. The new reading will be marked with an "*" in current conditions, and will be ignored until it reads within 15 degrees of the previous temperature.
Unknown Alarm	An alarm of an unknown condition has occurred.
Digital Alarm	The digital alarm input triggered an alarm condition.
Watch Dog Reset	The program watchdog timer caused the system to reset.
Water Flow Error	The water flow exceeded the set limit.
Water Percent Change Error	The total gallons used in the past 24 has dropped more than the alarm percent drop setting.
High or Low Static Pressure	Static pressure has exceeded or fallen below the limits you specified.
Device Out of Position	The position sensor position did not match the inlet or curtain position.
Position Sensor Invalid Reading	The position sensor received a reading that was outside the calibrated range.

Controller Operating Parameters

Specification	Minimum	Maximum	Step Size
Temperature Settings			
Temperature Settings Range	30.0° F	120.0° F	1°
	-1.1° C	48.8° C	0.1°
Temperature Ramp Offset	-12.0° F	12.0° F	0.1°
	-12.0° C	12.0° C	
Animal Age for Ramp Point	0	900	1 day
Time Settings			
Time	00:00	24:00	1 hr / 1 min
Timers	0:00:00	9:00:00	1 hr / 1 min / 1 sec
Travel Time	0:00	59:59	1 hr / 1 min
Alarm Delay Time	0:00	59:59	1 hr / 1 min
Static Pressure Settings			
Static Pressure Settings (inches of water)	0.000	6.500	0.001
Cycle Static Pressure	0.000	6.500	0.001
Sound Alarm When Settings			
Feeder On/Off Time Exceeds	0:00:00	18:00:00	1 hr / 1 min / 1 sec
Water LPH / GPH Flow Exceeds	0	9999	1 gal. 1 liter

Specification	Minimum	Maximum	Step Size
Water 24-Hour Flow Drops	0	100	1%
Power Settings			
Fan Power Setting	1	60	1
Inlets			
Min and Max Opening Size	0	250	1 inch 1 cm
Fan Group Opening size	0	250	1 inch 1 cm
Purge Opening Size	0	250	1 inch 1 cm
Full Opening Size	1	250	1 inch 1 cm
Sidewall Curtains			
Open/Close This Many Inches/CM and Pause	0	250	1 inch 1 cm
Purge Opening Size	0	250	1 inch 1 cm
Full Opening Size	1	250	1 inch 1 cm
Min and Max Opening Size	0	250	1 inch 1 cm
Fan Groups Opening Size	0	250	1 inch 1 cm
Building Purge Settings			
Humidity and Purge Delay Timers	0:00:00	18:00:00	1 hr / 1 min / 1 sec
Humidity and Purge On Time	0:00:00	9:00:00	1 hr / 1 min / 1 sec
Humidity Setpoint	0	100	1%

Specification	Minimum	Maximum	Step Size
Sensor Calibration and Settings			
Air Sensor Cable Length	1	9999	1 foot 1 meter
Air Sensor Wire Gauge/Diameter	16 AWG 0.5 mm	24 AWG 1.2 mm	2 AWG 0.1 mm
Air Cal Values	400 / 40	1200 / 200	1
Humidity Cal Values	0	65535	1
Static Pressure ADC Cal	0	65535	1
Static Pressure WC Cal	0.000	6.5000	0.001
Feed Minimum and Actual	0.0	25.0	1 amp
Feed Cal Value	0	999	1
Water Cal Value	0.0	99.9	1
System and Control Device Setup			
Time Setup	00:00:00	24:00:00	1 hr / 1 min / 1 sec
Date	mm/dd/ yyyy	dd/mm/ yyyy	1
Loading Sequence Delay Time	00:00	02:00	1 min / 1 sec

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