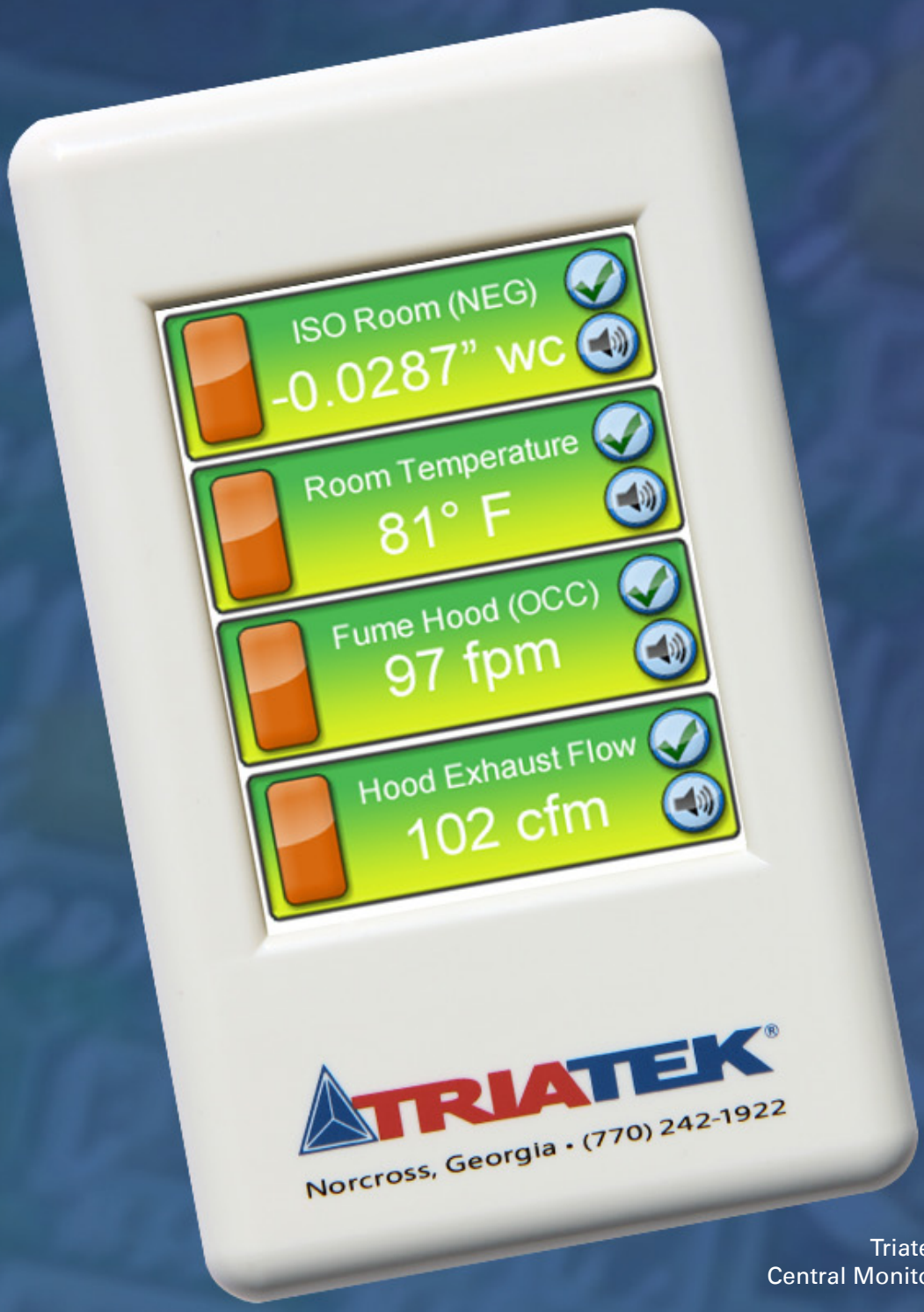
CMS-1655
Installation Manual
Programmer's Guide
Version: 08.03.15



Triatek CMS-1655
Central Monitoring Station

INSTALLATION MANUAL AND PROGRAMMER'S GUIDE

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Specifications

CMS-1655 Central Monitoring Station

Monitoring Capacity.....Combination of any four FMS-1650/55 or HMS-1650/55
Interface Cable..... Belden 3107A, 22 AWG minimum
Protocol..... Protocol-independent (Triatek proprietary)
Power (may be supplied by FMS-165x or by separate power supply)..... 18 to 32 Vdc

Touchscreen User Interface

LCD Size and Type..... 3.2" diagonal, transmissive
Resolution..... 240 pixels x 320 pixels, portrait mode
Viewing Area..... 50.60 mm x 66.80 mm
Color Depth..... 18-bit or 262K colors
Backlight Color.....White
Luminous Intensity..... min 2500 cd/m2

Mechanical

Mounting Options ..... Surface (Plastic), Flush (Brushed Stainless)
Mounting Dimensions (surface-mount).....3"W x 5"H x 1.13"D
Mounting Dimensions (flush-mount)..... 5"W x 8"H x ¾"D

Environmental

Operating Temperature..... 32° to 125° F

Operating

Operating Humidity ..... 10% - 95% RH, Non-condensing

Ordering Codes

Surface Mount model..... CMS1655-S
Flush Mount model..... CMS1655-F

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INSTALLATION MANUAL

Introduction
The Triatek CMS-1655 Central Monitoring Station is used to monitor any combination of up to four FMS-1650/55 Room Pressure Controllers and HMS-1650/55 Fume Hood Controllers.

The CMS-1655 is capable of monitoring and displaying parameters in any critical environment space or fume hood including differential pressure, face velocity, isolation mode, operating mode, and alarm status. The CMS-1655 includes both visual and audible alarms independent of the alarms on the monitored controllers.

Key features of the CMS-1655 include:

- Display up to four parameters from any of Triatek's isolation room controllers and/or fume hood controllers in real-time
- Expanded visibility of a monitored station, allowing all six of its analog inputs to be viewed in real-time (AI-1 through AI-4, TI-1 & TI-2)
- Full-color touchscreen display with programmable options and adjustable LED backlighting
- Intuitive graphical user interface which simplifies setup and configuration
- Display background and action icons change to indicate room or fume hood status
- Audible and visual alarms for each monitored parameter
- Password protection (up to 10 entries)
- Protocol-independent solution; works seamlessly with BACnet® and N2® networks
- Simple installation with 4-conductor cable attached to nearest Triatek controller
- No separate power supply required

The CMS-1655 is equipped with a 3.2" diagonal full-color touchscreen display in portrait orientation (240 x 320 resolution).

The display incorporates bright background color changes to indicate up to five different status indications of the monitored space or fume hood.

Green represents a normal status whereby the monitored parameter is within defined normal operating limits. Yellow indicates that the monitored parameter has drifted outside of the normal operating limits, and is approaching the alarm region. Red indicates that the monitored parameter has encroached the critical region and is currently in alarm. Blue indicates that the monitored parameter is either in neutral isolation mode (differential pressure for rooms), or in decommissioned mode (face velocity for fume hoods). Cyan indicates that the monitored FMS-1650/55 is currently in *Auto Clean* mode, and is being evacuated of all airborne contaminants.

See *Figure 1* for a sample screenshot of a CMS-1655 monitoring the parameters of multiple FMS-1655s and HMS-1655s.

The user may set up multiple passwords to prevent unauthorized or casual access to the CMS-1655 configuration settings. Up to 10 passwords of up to eight digits may be stored.

Fig 1. Sample screenshot

The CMS-1655 is configured at the factory to monitor up to four controllers. The user may change the factory-default settings by following the procedures outlined in the *Quick Start Guide* (page 3) section of this manual.

The electrical connections to the CMS-1655 are made via convenient terminal block connectors as shown on page 7. All wiring should conform to local regulations and to the National Electrical Code (NEC). Precautions must be taken to avoid running communications wiring in the same conduit as line voltage or other conductors that supply highly inductive loads such as generators, motors, solenoids, contactors, and other sources of induced noise. Use 22 AWG or larger for all electrical wiring terminations.

Mounting Procedure: Flush Mount
The CMS-1655 flush mount model offers an attractive stainless steel faceplate with an ultra-thin enclosure (less than ¾" thick) that may be installed in any application where wall depth is either unknown or extremely

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limited. New construction applications can take advantage of the included wall box that may be installed during the rough-in phase. For retrofit applications not requiring electrical conduit termination, the unit may be installed using the retrofit mounting plate that simplifies the installation process.

1. The CMS-1655 flush mount model should be mounted in a location that provides convenient access so the display may be viewed with minimal glare and the touch screen is easily accessible to facilitate silencing the unit in the event of an alarm condition.

2. If this is a new construction project and the wall box has been installed, you may skip the next two steps. If this is a retrofit application and existing drywall is in place, then proceed with the next step to prepare the opening for the CMS-1655 flush mount model.

3. Using the retrofit mounting plate (see *Figure 2*) as a template, trace the inner outline onto the drywall at the desired mounting location with a pencil or marker. Also mark the location of the two mounting holes on the drywall. Cut along the traced outline with a drywall knife or saw, taking care not to make the opening too large. Drill out the two holes to clear access to the mounting clip nuts. Remove the cut section of drywall and discard. Be sure to brush off any drywall dust or remnants from the inside surface of the opening to ensure proper adhesion of the retrofit mounting plate.

4. Remove the paper backing from the two adhesive strips on the retrofit mounting plate and insert it into the cut opening of the drywall. The retrofit plate should be oriented such that the corner notch is located at the lower left corner of the opening in the drywall, with the tabs bent towards you. Using the four tabs on the retrofit mounting plate as alignment guides, press the mounting plate onto the inside surface of the drywall opening firmly to ensure maximum adhesion.

Fig 2. Retrofit mounting plate

5. The electrical connections must be terminated before installing the stainless steel faceplate of the CMS-1655. Run the 4-conductor, dual twisted pair, electrical connection from the nearest FMS-1650/55 or HMS-1650/55. Refer to the wiring diagram shown on page 7 for details.

6. Terminate the interface cable originating from the host controller at the 4-position and 3-position terminal blocks on the back side of the CMS-1655 display, ensuring proper electrical connections. Power connections should be terminated at +V and GND of the 4-position terminal block, and the subnet connections should be terminated at NETWK+ and NETWK- at the 3-position terminal block (see page 7). Do not apply power until the faceplate has been securely fastened to the wall.

7. With the electrical connections properly terminated, the stainless steel faceplate may be installed using the two flat head machine screws. For retrofit applications where the mounting plate has been affixed to the inside surface of the drywall, the two mounting screws thread into the clip nuts of the mounting plate. For those applications where the wall box has been installed, the two mounting screws fasten the faceplate directly.

8. With power applied, the CMS-1655 should display the offline status of four stations at the default subnet addresses.

Mounting Procedure: Surface Mount

The CMS-1655 surface mount model incorporates a low-profile display enclosure that may be mounted to any surface using wall anchors or the appropriate fastening hardware. For new construction applications, the CMS-1655 surface mount enclosure is designed to accommodate a standard single-gang (2x4) wall box. This allows the wall box to be installed during the rough-in phase, and the appropriate electrical conduits to be installed as necessary. The CMS-1655 is configured at the factory to monitor up to four controllers. The user may change the factory-default settings by following the procedures outlined in the *Quick Start Guide* (page 3) section of this manual.

The electrical connections to the CMS-1655 are made via convenient terminal block connectors as shown on page 7.

All wiring should conform to local regulations and to the National Electrical Code (NEC). Precautions must be taken to avoid running communications wiring in the same conduit as line voltage or other conductors that supply highly inductive loads such as generators,

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motors, solenoids, contactors, and other sources of induced noise. Use 22 AWG or larger for all electrical wiring terminations.

1. The CMS-1655 surface mount model should be mounted in a location that provides convenient access so the display may be viewed with minimal glare and the touch screen is easily accessible to facilitate silencing the unit in the event of an alarm condition.

2. Begin the mounting procedure by removing the surface mount enclosure cover from the backplate. Turn the set screw at the bottom of the enclosure clockwise until it has cleared the hole in the cover, thereby allowing it to be removed from the backplate. To re-secure the cover, turn the set screw counter-clockwise until is it flush with the cover.

3. If this is a new construction project and a single-gang wall box has been installed, you may skip the next step. If this is a retrofit application and existing drywall is in place, then proceed with the next step to prepare for the mounting of the CMS-1655 surface mount model.

4. There are two primary options for installing the CMS-1655 surface mount model in retrofit applications. The first option is to use two drywall anchors to mount the surface mount Safety Halo™ backplate. Using the backplate as a template for marking and drilling a ¾" hole at the center, bring the low-voltage wiring required for the CMS-1655 through the center hole at the backplate. The second option is to use an "old-work" low-voltage box or bracket as shown in *Figure 3*.

5. Once the surface mount Safety Halo™ backplate has been properly mounted, the electrical connections should be terminated before installing the cover with the display. Run the 4-conductor, dual twisted pair, electrical connection from the nearest controller. Refer to the wiring diagram shown on page 7 for details.

6. Terminate the interface cable originating from the host controller at the 4-position and 3-position terminal blocks on the back side of the CMS-1655 display, ensuring proper electrical connections. Power connections should be terminated at +V and GND of the 4-position terminal block, and the subnet connections should be terminated at NETWK+ and NETWK- at the 3-position terminal block (see page 7). Do not apply power until the Safety Halo™ faceplate has been securely fastened to the wall.

7. With the electrical connections properly terminated, the surface mount enclosure cover may be installed by sliding the two tabs at the top of the inside edge into the two slots at the top of the backplate secured to the wall. Secure the CMS-1655 enclosure cover by turning the slotted set screw at the bottom of the backplate counter-clockwise, backing it out until it is flush with the cover.

Fig 3. Old work low-voltage box/bracket

8. With power applied, the CMS-1655 should display the offline status of four stations at the default subnet addresses.

Quick Start Guide

After the CMS-1655 unit has been properly installed, apply power to the unit. Upon power up, you will hear a quick beep at the CMS-1655 display which indicates that the initialization sequence has been initiated; the Safety Halo™ status indication bezel will cycle through seven colors (red, green, blue, yellow, magenta, cyan, and white); followed by the three action icons shown in *Figure 4* that represent normal, caution, and alarm; and finally, the Triatek splash screen indicating the electronic serial number (ESN), firmware version numbers, and the number of controllers being monitored.

Fig 4. Action icons

This splash screen remains displayed for several seconds and then disappears to reveal the main display screen in the currently configured monitor mode. The splash screen information may also be redisplayed at any time using the *About This CMS* option on the *Diagnostics* menu.

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Quick Start Guide

Main Display Screen
All CMS-1655 units come shipped from the factory in the *Quad Station Monitor* mode (*Figure 5*). Information displayed on the main screen includes the following for FMS units:

- Name of monitored room (up to 25 characters)
- Current mode (positive, negative, neutral, or auto clean)
- Current alarm status (normal, warning, or alarm)
- Current monitored parameter reading in selected engineering units
- Current local audible alarm status (enabled or disabled)

When monitoring parameters at HMS units, the following information may be displayed on the main screen:

- Name of monitored fume hood (up to 25 characters)
- Current operating mode (occupied, unoccupied, or decommissioned)
- Current alarm status (normal, warning, or alarm)
- Current monitored parameter reading in selected engineering units
- Current local audible alarm status (enabled or disabled)

Fig 5. Quad Station View

If a monitored station is offline, the background color of the monitored parameter section on the screen will be blue with the "offline" or "disabled" action icon shown.

Once a monitored station comes online, the background color will update to represent the current alarm status of the monitored parameter. A green background with the green checkmark action icon indicates that the monitored parameter is within normal operating range.

A yellow background with the yellow exclamation point action icon indicates that the monitored parameter has drifted outside of the allowable limits of the desired setpoint, and is in the caution or warning range. The yellow background is also used to indicate that a door is open at a monitored FMS unit (if a door switch has been incorporated with the FMS).

A red background with the red exclamation point action icon indicates that the monitored parameter has reached a critical condition and is outside of the allowable limits of the target setpoint. This visual indication is supplemented by an audible alarm to indicate that attention is required for the current situation.

The CMS-1655 incorporates a full-color touch screen display and includes an intuitive menu system that allows the user to quickly set up the monitoring station for immediate use.

Also incorporated in the CMS-1655 display are hotspots that provide quick access to in-depth station details, as well as individual audible alarm enable/disable functions. While in single-station (standard viewing) mode, the main screen includes hot spots for quick access to set the time and date.

Touching the screen anywhere other than one of the reserved hotspots invokes the menu system, unless one or more security passwords have been entered. If the FMS or HMS stations that are monitored by the CMS-1655 reside on a network with a time server, then the time and date will automatically be synchronized by the CMS-1655 through one of the units.

Configuring CMS-1655
Configuring the CMS-1655 settings can be accomplished in three simple steps:

1. Select monitoring mode (single, dual, triple, or quad)
2. Specify subnetwork address of each monitored controller
3. Select individual parameter to be monitored at each controller

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The CMS-1655 comes pre-configured for *Quad Station Monitor* mode. If your application requires monitoring less than four controllers or parameters, then the monitoring mode can be re-configured in the next step (see *Figure 6*).

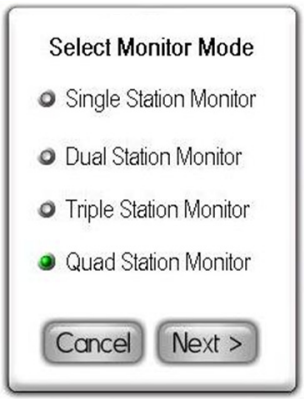

Fig 6. Selecting monitoring mode

Specifying Network Address(es)

Once the monitoring mode is selected, the user is prompted to specify the subnetwork address(es) of the monitored controllers. Use the address sliders to specify the address for each monitored controller, and tap *Finish* to save the new configuration settings (see *Figure 7*). If *Dual* or *Triple Station Monitor* mode is selected, then the screen below in *Figure 7* will be replaced by one with two or three address sliders, respectively.

Fig 7. Specify addresses for each monitored controller

If *Single Station Monitor* mode is selected, in addition to specifying the subnetwork address of the controller to be monitored, the *Viewing Mode* must also be selected. There are two viewing mode options available for single station monitor mode: *Standard View* and *Status-Only View*. Standard view presents the normal single sensor viewing screen with the two simulated LCD windows at the top and bottom of the display. Status-only view presents the user with a view free of numeric values (see *Figure 8*).

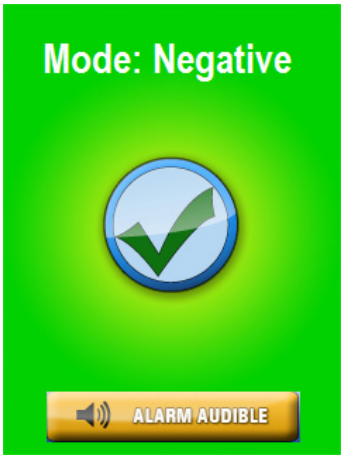

Fig 8. Status-only view

Selecting Individual Parameters

The CMS-1655 is capable of monitoring up to four parameters of up to four independent Triatek controllers. Once the individual controllers have been specified, the parameters at each monitored controller may be selected. This is accomplished by tapping the orange button on the main display (*see Figure 9*). Tapping this button invokes a detailed screen which includes all six of the analog input parameters currently being monitored at the selected station. To change which parameter gets displayed at the main screen of the CMS-1655, select the individual parameter on the details screen and tap the *OK* button.

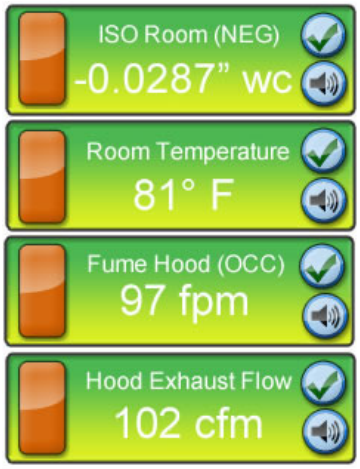

Fig 9. Selecting individual parameters

Adding Password Security

The CMS-1655 menu system may be protected by adding as many as ten user-specified passwords to the system. A password entry may be created by selecting System Setup >> Password Setup >> Add Password and the user is prompted to enter a minimum of four and up to eight digits (see *Figure 10*).

All password entries are stored in non-volatile memory, and are preserved while the unit is powered down. In the event that a password has been forgotten, there is a factory-default override password that will provide access to the user menu system. Please consult with the factory for more information regarding this password.

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Fig 10 . Adding a password

Changing Display Settings

The CMS-1655 display screen may be customized using the options on the *Display Setup* menu. The settings for the Safety Halo™ feature may be enabled or disabled at the *Safety Halo™* option on the *Display Setup* menu. Settings include normal intensity, and auto-dim intensity, and duration.

The auto-dim feature of the Safety Halo™ function allows the CMS-1655 to go to a reduced intensity level (or even turn off completely) between specified hours each day. The display brightness may be adjusted by selecting Display Setup >> Set Brightness. The specified brightness setting is stored in non-volatile memory and remains in effect through a power cycle.

The time and date, which are only displayed while *Single Station Monitor* mode (standard view) is selected, may be adjusted either by using the hotspots on the main display, or by selecting Display Setup >> Set Time & Date. The CMS-1655 is also designed to request time and date settings periodically from any of the monitored stations, assuming they are resident on a network that has a time server available. This ensures that the time and date are accurate on the CMS-1655 main display.

Configuring Display Module Settings		
Options Dipswitch (S1) – *internal use only*		
1. Amulet Chip Mode Selection:	OFF = Programming Mode	ON = Run Mode
2. Touchscreen Calibration Mode:	OFF = Force calibration	ON = Auto calibration
3. *Reserved*		
4. *Reserved*		
Options Dipswitch (S2) – *internal use only*		
1. Mode Select:	OFF = FMS/HMS1650	ON = CMS1655
2. Test Mode:	OFF = Inactive	ON = Active
3. FMS/HMS Mode:	OFF = FMS1650	ON = HMS1650
4: Operational Mode	OFF = Demo Mode	ON = Run Mode
Pushbutton Switch (SW1)	Reset Button	
Pushbutton Switch (SW2)	*Reserved*	

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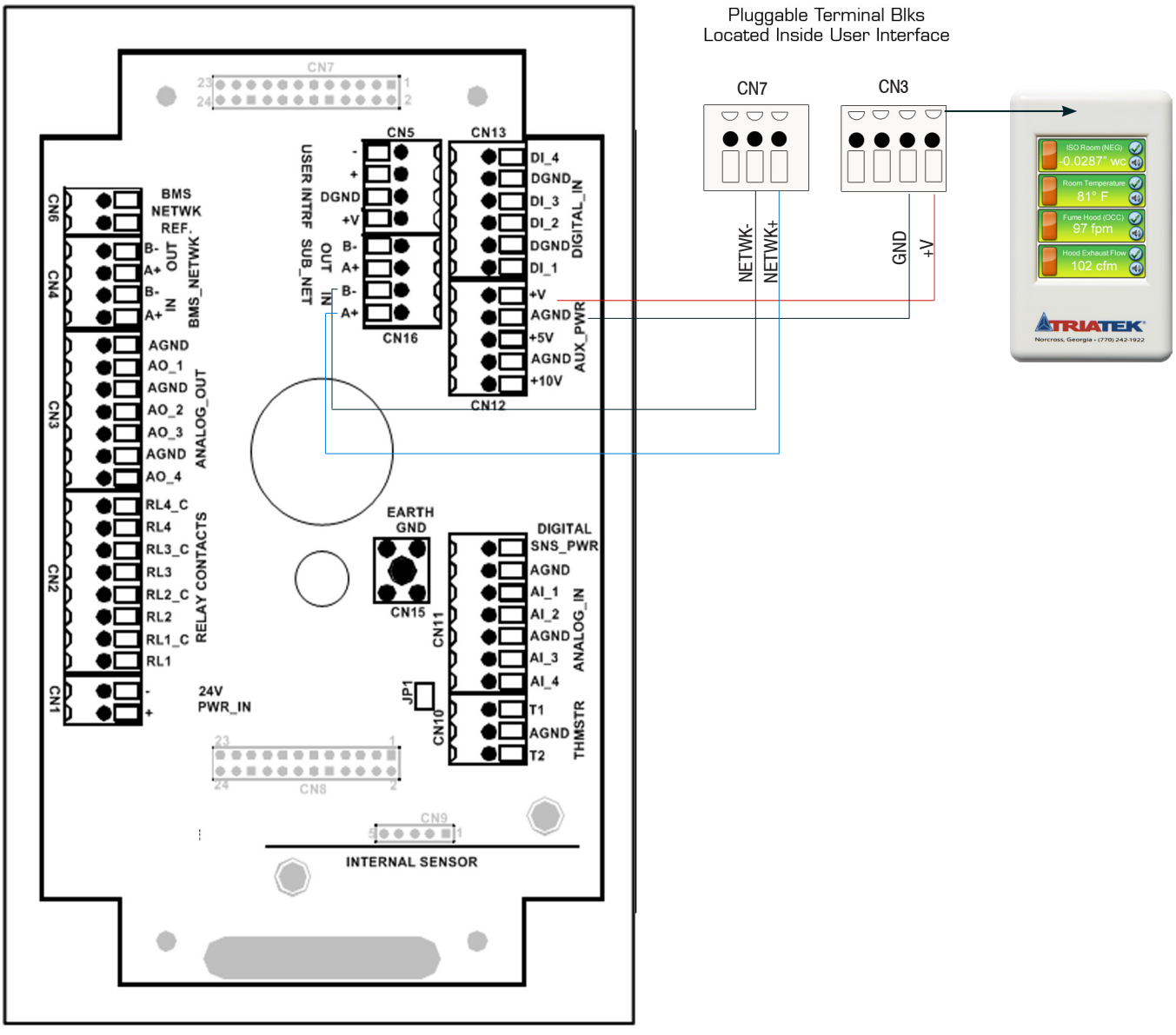
Wiring CMS-1655 to Nearest Triatek Controller



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Notes

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Introduction
This section details all of the available capabilities in the CMS-1655, and should be used to access more detailed information regarding the menu options in the product organized as follows:

- Overview
- Main Setup Menu
- Unit Setup
- System Setup
- Display Setup
- Diagnostics

The touchscreen user interface of the CMS-1655 Central Monitoring Station is designed to facilitate the initial setup and configuration, diagnosis, and troubleshooting during the installation process. Each menu screen is limited to four options, thereby simplifying navigation through the menu system. Context-sensitive help is available at most menu screens and is accessed simply by touching the menu title on any particular screen (see *Figure 12*).

To exit from any *Help* screen, simply touch the display anywhere. Multi-page menu screens have navigation buttons at the bottom of each screen that allow the user to move forward or backward, and include a convenient *Exit* button on the last screen to quickly exit the menu system and return to the main display.

To preserve the security of the configuration settings, up to 10 passwords may be programmed to prevent unauthorized access to the system configuration settings. To further prevent unauthorized access, the CMS-1655 user menu system incorporates automatic time-out periods based on the screen currently being displayed.

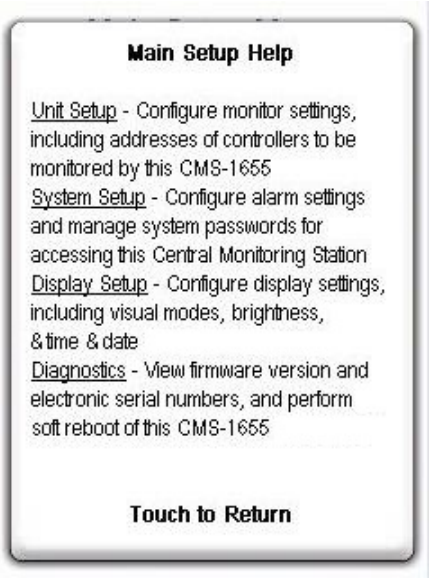

Fig. 12 Main Setup Help

Menu screens time-out after 90 seconds of inactivity, while configuration screens automatically time-out after 60 seconds.

This prevents unauthorized access to the user menu system should a unit be inadvertently left unattended at one of the configuration screens.

Main Setup Menu
All of the configuration screens that allow the settings of the CMS-1655 to be configured for a specific application originate from the top level of the user interface menu system, the *Main Setup Menu* as shown in *Figure 13*.

The *Main Setup Menu* includes four options which provide support for 1) configuring the settings specific to the unit as a central monitoring station, 2) configuring the alarm facility settings and managing the system security passwords, 3) configuring the display-specific settings, and 4) using the diagnostics and troubleshooting resources.

Fig. 13 Main Setup Menu

The majority of the configuration settings are available through the *Unit Setup* option on the *Main Setup Menu*. Options available through the *System Setup Menu* option include support for configuring the comprehensive alarm facility and managing the security passwords. The *Display Setup* option provides support for configuring all of the display-specific settings integrated in the CMS-1655.

The CMS-1655 can simultaneously display in real-time up to four monitored parameters, their operating modes (if applicable), alarm status, and their associated names. The *Diagnostics* menu option provides information specific to this particular CMS-1655 unit.

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Unit Setup

The CMS-1655 is capable of monitoring and displaying up to four parameters total, from up to four individual Triatek controllers. These four parameters may all be from one controller or from multiple controllers. The *Unit Setup* menu shown in *Figure 14* provides support for 1) selecting the individual controllers to be monitored, 2) configuring the subnetwork address of the central monitoring station, and 3) configuring the audible alarm settings.

Fig 14. Unit Setup

The *Monitor Setup* option allows the user to select the number of stations or parameters to monitor as well as the subnetwork addresses for each. Up to four parameters may be monitored on any combination of up to four controllers. The *Network Setup* option provides support for configuring the subnetwork address for the CMS-1655. The *Audible Alert* option provides support for configuring the settings associated with the alarm facility integrated in the CMS-1655.

Configuring Monitor Settings

The *Monitor Setup* option on the *Unit Setup* menu invokes the configuration screen shown in *Figure 15*, which allows the user to specify the monitoring mode of the CMS-1655. *Single Station Monitor* should be selected if a single controller is being monitored. If multiple parameters at a single station need to be monitored, then the monitor mode should be specified for the number of parameters being monitored. For example, if monitoring differential pressure, temperature and humidity at an FMS-1650/55 controller, then *Triple Station Monitor* mode should be selected.

Tapping the *Next* button at the *Select Monitor Mode* configuration screen invokes the next screen based on the monitor mode selected. Selecting *Single Station Monitor* mode would invoke a configuration screen that allows the subnetwork address for the single controller to be specified.

In the example shown in *Figure 15*, selecting *Quad Station Monitor* mode invokes the *Quad Monitor Setup* configuration screen shown in *Figure 16* being displayed. At this configuration screen, the subnetwork address(es) for the station(s) being monitored may be specified using the address slider(s). If all four parameters are on the same station, then the same subnetwork address would be specified for all four stations.

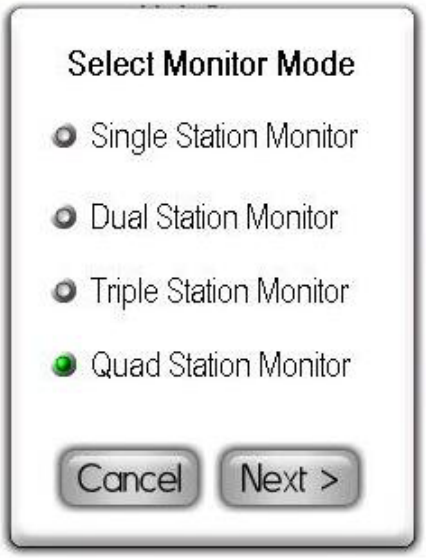

Fig. 15 Select Monitor Mode

Fig. 16 Quad Monitor Setup

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If *Single Station Monitor* mode is chosen, then the user is prompted to select the *Viewing Mode* option: *Standard View* or *Status-only View*. *Standard View* presents the usual single sensor main display that is shown on an FMS-1655 configured for single sensor mode (or dual sensor, primary/secondary view). *Status-only* View presents the view shown below in *Figure 17*, with no numeric values, and only background color to indicate the units current status.

Tapping *Finish* at the *Monitor Setup* configuration screen stores that subnetwork addresses of the controller to be monitored and begins to poll each one individually.

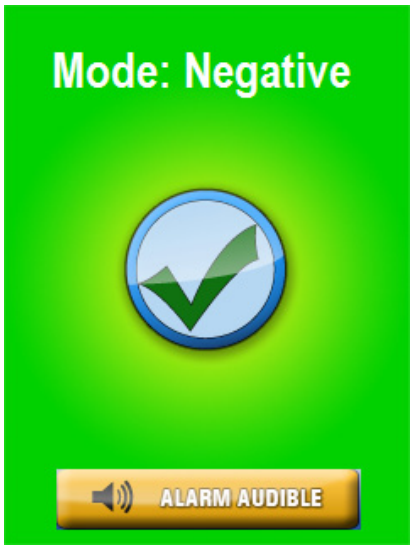

Fig. 17 Status-only View

Configuring Audible Alert Settings
The *Audible Alert* option on the *Unit Setup* menu provides support for configuring the settings associated with the audible alarming capabilities of the CMS-1655, and invokes the configuration screen shown in *Figure 18* when selected.

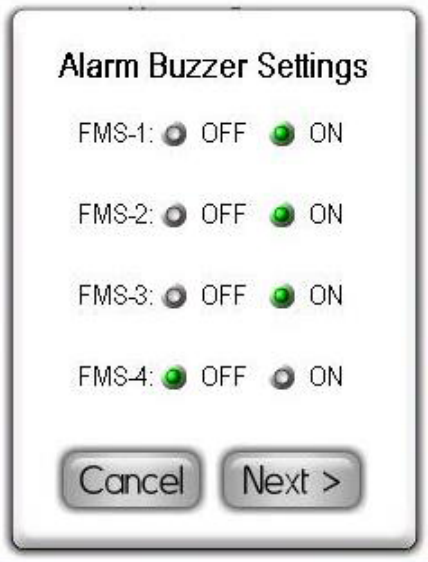

Fig. 18 Alarm Buzzer Settings

After selecting the specific stations which should activate the audible alarm when the alarm status occurs, pressing the Next button invokes the next configuration screen as shown in *Figure 19* where the user may specify the operating mode for the alarm buzzer, *Audible Mode* or *Silent Mode*.

Selecting *Audible Mode* allows the user to specify a *Delay Time* in seconds or minutes, which defines the period of time the audible alarm activation will be delayed when alarm status occurs.

Selecting *Audible Mode* on the *Alarm Buzzer Settings* configuration screen also allows an *Alarm Quiet Period* to be defined, during which the audible alarm will be muted whenever an alarm condition occurs at one of the monitored stations or controllers.

Tapping the *Next* button invokes the *Alarm Quiet Period* configuration screen as shown in *Figure 20*. At this screen, the starting and ending hour may be specified which defines the alarm buzzer muted period.

Fig. 19 Specifying operating modes for the Alarm Buzzer Settings

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Fig. 20 Specifying Alarm Quiet Period within the Alarm Buzzer Settings

System Setup

The CMS-1655 integrates an alarm facility that may be easily customized to suit the requirements of a specific application. This includes the ability to enable and disable individual alarms for both audible and visual modes. An *Alarm Quiet Period* feature has been integrated in the CMS-1655 which allows the audible alarms to be suppressed while still allowing the visual alarms to continue.

To preserve the integrity of the configuration settings stored in the non-volatile memory of the CMS-1655, a system security password management facility has been incorporated with a capacity of ten unique passwords. The *System Setup* menu shown in *Figure 21* provides support for both configuring the alarm settings and managing system security passwords.

Fig. 21 System Setup

Configuring Universal Alarm Settings

All of the configuration settings associated with the CMS-1655 alarm facility may be accessed at the *Alarms Setup* menu shown in *Figure 22*. Options on this menu allow individual alarms to be enabled for each of the monitored parameters at up to four individual stations or controllers.

Selecting the *Enable Alarms* option invokes the *Alarm Enable Settings*, where individual parameters or stations may be enabled for alarm status monitoring.

A controller that has been enabled for alarm status reporting at the *Alarm Enable Settings* screen will report its status visually, independent of its audible alarm settings.

There are three alarm status conditions, each represented by a distinct background color and action icon on the display as shown in *Figure 23*.

Fig. 22 Alarms Setup

Fig. 23 Action icons

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There are also two additional action icons that represent *Decommissioned* mode at a monitored HMS-1650/55, and *Neutral* and *Auto Clean* mode at a monitored FMS-1650/5 controller. More information on these additional mode indications is provided in sections below.

Normal status indicates that the monitored parameter is within its normal operating range and is indicated by a green background and a green checkmark action icon. The Safety Halo™ status indicator, if enabled, will illuminate in green to indicate the normal status.

Warning status indicates that the monitored parameter has drifted outside of its normal operating range, but has not yet exceeded the alarm setpoints. This condition is indicated by a yellow background and a yellow exclamation point action icon. The Safety Halo™ status indicator, if enabled, will flash slowly in yellow to indicate the warning or caution status. This warning status is also used to indicate that a monitored door associated with the differential pressure input at an FMS-1650/55 is open.

Alarm status indication that the monitored parameter has exceeded the defined alarm limits and is in need of attention. This critical condition is indicated by a red background and a red exclamation point action icon. The Safety Halo™ status indicator, if enabled, will flash quickly in red to indicate the alarm status.

A blue background indicates either *Neutral* isolation mode is selected at a monitored FMS-1650/55, or *Decommissioned* mode is selected at a monitored HMS-1650/55. These modes are indicated by an action icon represented as a red circle with a line through its center. The Safety Halo™ status indicator, if enabled, will illuminate in blue to indicate the neutral or decommissioned mode.

When *Auto Clean* mode at a monitored FMS-1655 is enabled, the CMS-1655 indicates the status by a cyan background and a simulated fan as the action icon. The Safety Halo™ status indicator, if enabled, will flash slowly in cyan to indicate the *Auto Clean* mode.
The *Audible Alert* option on the *Alarms Setup* menu invokes the same configuration screens as described above in *Configuring Audible Alert Settings* section of this document.

Managing System Security Passwords
The CMS-1655 incorporates a system security password facility to prevent unauthorized access to the system menus and configuration settings, and may store up to 10 unique password entries. The *Password Setup* option on the *System Setup* menu allows the user to manage the system passwords, including options for adding and deleting entries (see *Figure 24*). The following sections discuss the use of these three options.

Adding New Passwords
To add a new password entry, select the *Add Password* option from the *Password Setup* menu. At the *Add Password* entry screen shown in *Figure 25*, enter at least four and up to eight digits. If the entry is unique, tapping the *Finish* button stores the password to non-volatile memory. If the entry is invalid or not unique, the warning buzzer will sound briefly, and the password entry screen will reset to accept a new entry.

Fig. 24 Password Setup

Fig. 25 Adding a password

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Deleting an Existing Password
To delete an existing password entry, the password to be deleted must be used to enter the user menu system. Select the *Delete Password* option from the *Password Setup* menu, and tap *OK* to confirm that you want to delete the existing password entry.

Purging All Passwords
In the event a previously entered password is forgotten, the user may purge all password entries at any time using the *Purge All* option.

Display Setup
The *Display Setup* menu provides support for configuring all of the display settings on the CMS-1655. This includes configuring the Safety Halo™ settings, selecting the display mode based on the number of parameters or controllers being monitored, adjusting the display brightness, and setting the system time and date. Each of these *Display Setup* menu options is discussed in more detail in the following sections.

Configuring the Safety Halo™
The Safety Halo™ option on the *Display Setup* menus allows the configuration of the settings for the Safety Halo™ status indicating bezel, including the *Nightly Auto-Dim* feature. This feature allows the Safety Halo™ indicator to automatically reduce its brightness to the specified percentage at the specified *Starting Hour*, and return to normal brightness at the specified *Ending Hour*.

To configure the Safety Halo™ settings, select the Safety Halo™ option from the *Display Setup* menu, which invokes the *Safety Halo™ Settings* configuration screen. The Safety Halo™ feature may be enabled or disabled by selecting the corresponding radio button. If enabled, the normal intensity level may be varied between one percent and 100 percent. This is the intensity of the Safety Halo™ illuminated bezel during normal operating hours if *Nightly Auto-Dim* is enabled, or continuously otherwise.

To configure the Safety Halo™ feature to reduce in brightness intensity during evening hours or otherwise, select the *Nightly Auto-Dim* radio button and adjust the *Dimmed Level* between zero percent and 100 percent. To turn off the Safety Halo™ during the *Nightly Auto-Dim* period, set the dimmed level to zero percent. Tap the *Next* button to proceed to the next *Safety Halo™ Settings* screen where the starting and ending hours of the *Dimmed Period* may be specified.

For example, to configure the Safety Halo™ feature to reduce in brightness intensity to the dimmed level between 7:00 pm and 6:00 am every day, set the *Starting Hour* to 19 and the *Ending Hour* to 6. In this example, the Safety Halo™ status indicating bezel will reduce in intensity at 7:00 pm every night, and return to normal intensity at 6:00 am every morning.

Selecting Display Mode
The *Display Mode* option on the *Display Setup* menu allows the units main display to be configured based on the number of parameters or stations being monitored by the CMS-1655. Selecting this option invokes the *Select Display Mode* configuration screen as shown below in *Figure 26*.

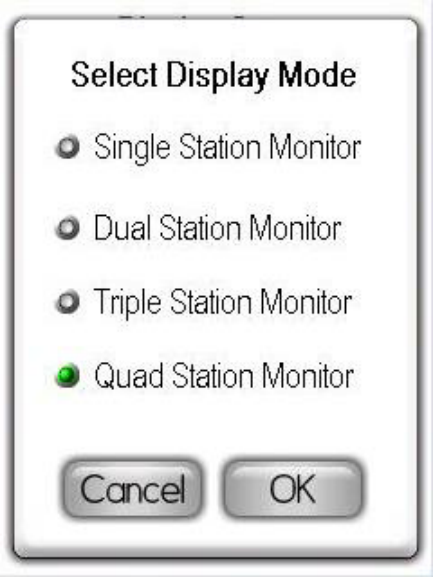

Fig. 26 Select Display Mode

Selecting Display Brightness
Selecting the *Set Brightness* option on the *Display Setup* menu invokes the *Set Backlighting Level* configuration screen as shown below in *Figure 27*. To increase the brightness of the display, move the slider to the right. Moving the slider to the left reduces the brightness down to a minimum level that remains visible. Tapping the *OK* button stores the new brightness setting to non-volatile memory, which allows the display to return to this brightness level even if a power loss is experienced.

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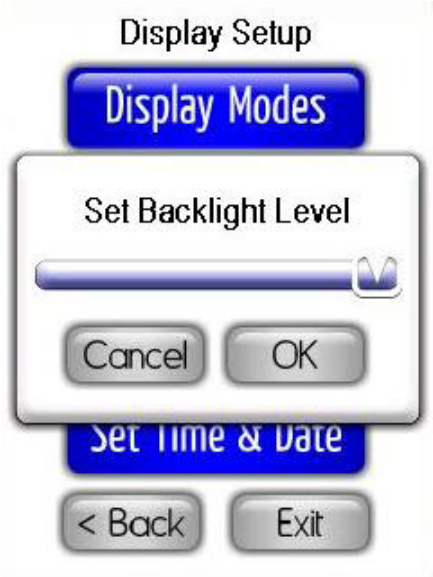

Fig. 27 Display Setup

Setting System Time and Date

The CMS-1655 is designed to synchronize its local time and date with the network-resident controllers it is monitoring, thereby allowing the time-based features to operate accurately. These include the *Alarm Buzzer Quiet Period*, and the *Safety Halo™ Auto-Dim Period*.

The time and date may also be configured manually using the *Set Time & Date* option on the *Display Setup* menu. Selecting this option invokes the time configuration screen as shown in *Figure 28*. The colon between the hours and minutes automatically appears while entering the time. Similarly, the forward slash appears between the month, day, and year automatically while entering the date.

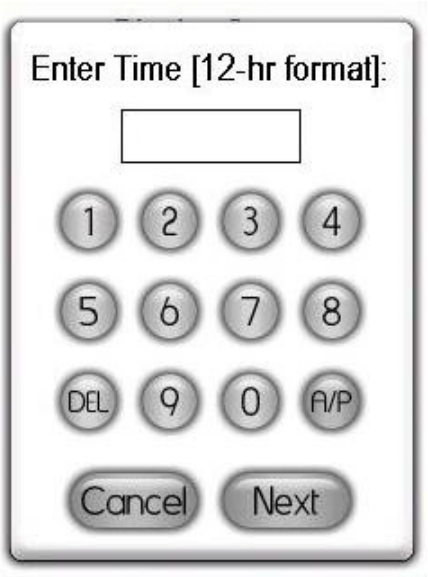

Fig. 28 Entering in the time

After entering the digits for the current time, tap the *A/P* button to specify am or pm, and then tap the *Next* button to enter the date. The date entry should be in the U.S. format as shown in *Figure 29*. Note that the year should be entered as a two-digit entry.

For convenience, the time and date may also be entered directly from the main screen (*Single Station Monitor* mode only) by tapping the time and date fields, respectively. Tapping each invokes the appropriate configuration screen without requiring the user to enter the menu system.

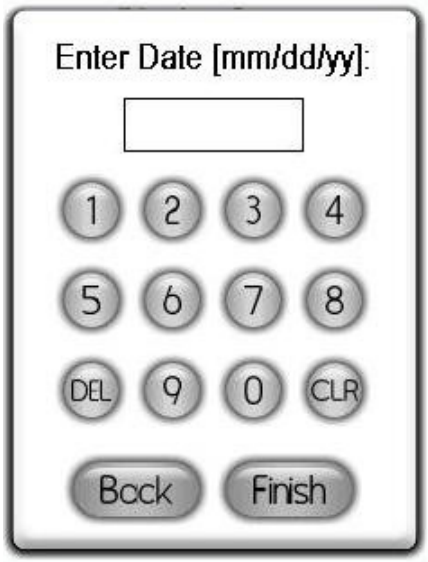

Fig. 29 Entering in the date

Diagnostics

The *Diagnostics* menu provides support for displaying information specific to this particular CMS-1655 unit, as well as convenient method of executing a soft reboot.

Selecting the *About This CMS* option from the *Diagnostics* menu invokes the information splash screen shown in *Figure 30*, including the electronic serial number, firmware version numbers, and number of controllers being monitored.

If you have general questions regarding the CMS-1655 or need technical assistance during installation, this screen lists the phone number to Triatek's Tech Support line. You will need the information included on the *About This CMS* screen to identify the specific details pertaining to your unit.

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Fig. 30 Information splash screen

Fig. 31 Warning message

Resetting the CMS-1655

The *Reset Monitor* option on the *Diagnostics* menu allows the user to perform a soft reboot of the central monitoring station.

This option may be useful during the installation process when changes have been made to the network parameters (subnetwork address). Selecting this option invokes the warning message as shown in *Figure 31*, informing the user that the CMS-1655 will be reset when the *OK* button is tapped to confirm the request.

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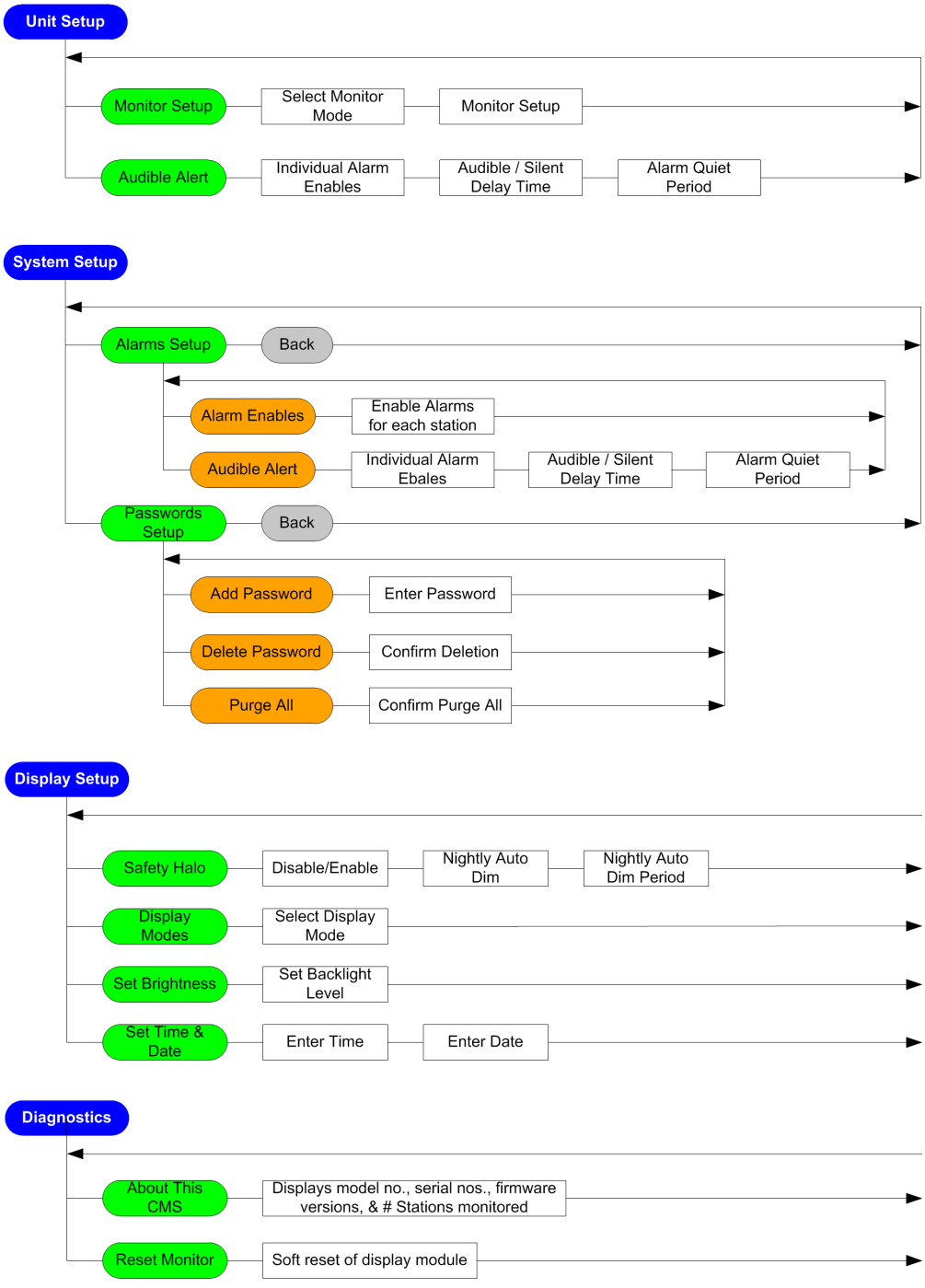
User Menu Flow Diagram



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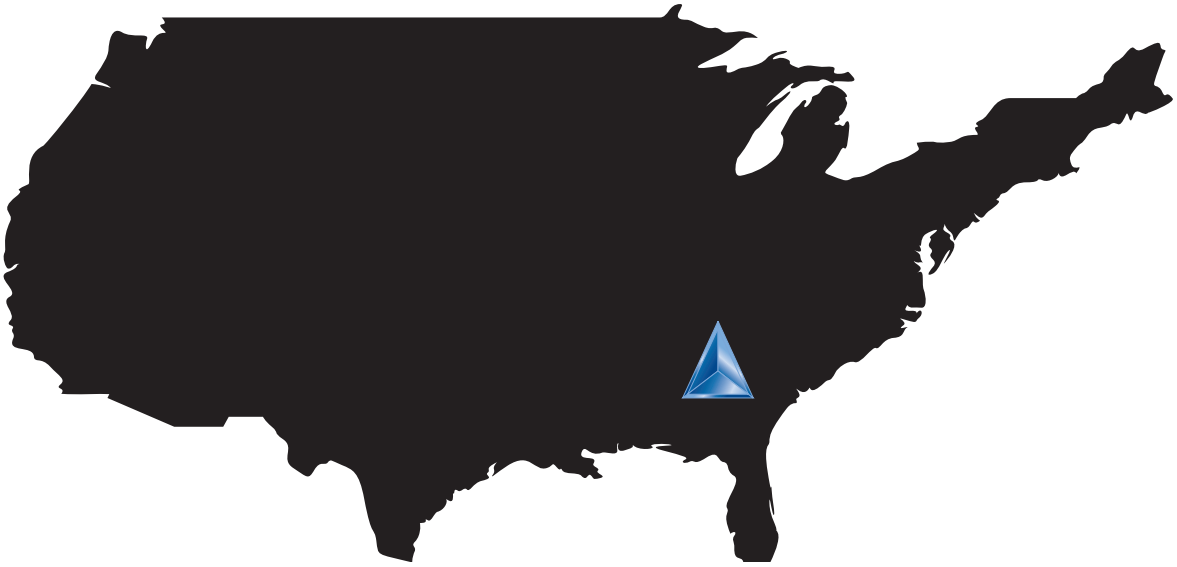
CMS-1655
Installation Manual
Programmer's Guide
Version: 08.03.15

Headquartered in Norcross, Georgia, Triatek has been on the forefront of designing and manufacturing innovative airflow solutions for critical environments since 1985. Triatek provides complete end-to-end solutions for healthcare facilities and laboratories including Venturi valves, room pressure controllers, fume hood controllers, monitors, sensors, actuators, and more all designed to seamlessly integrate into a facility's building automation system.



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