Critical Environment Monitor

User Guide

LIT-12013580
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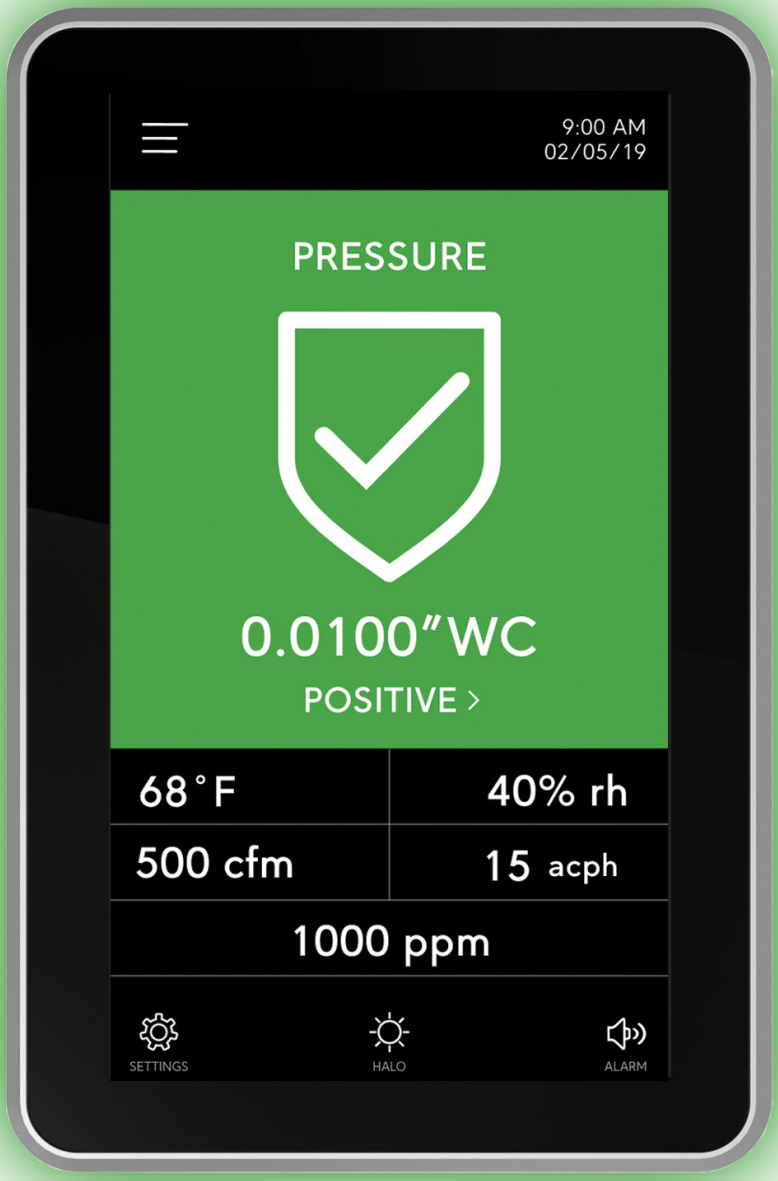

⚠ WARNING

Risk of Electric Shock.
Disconnect the power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

⚠ CAUTION

Risk of Personal Injury or Property Damage.
For use in a controlled environment only. Refer to installation instructions for environmental conditions.

NOTICE

Risk of Property Damage.
Use a 24 VAC 30 VA Class 2, LPS or Limited Energy transformer for the monitor. Failure to follow the wiring diagrams may result in damage to the monitor and could void your warranty.

Risk of Property Damage.
Do not apply power to the system before checking all wiring connections. Short circuited or improperly connected wires may result in permanent damage to the equipment.

Risk of Property Damage.
Do not run low-voltage cable in the same conduit or wiring troughs with high-voltage wires. Running low- and high-voltage wires in the same conduit or wiring troughs may damage the equipment or cause system malfunction.

Risk of Property Damage.
Ensure that the power source conforms to the requirements of the equipment. Failure to use a correct power source may result in permanent damage to the equipment.

Risk of Property Damage.
Do not run network communication cables in the same conduit, raceway, or panel with any high-voltage (greater than 30 VAC) wiring. Isolate all network wiring and all network devices from high-voltage wiring and equipment. Failure to isolate network wiring and network devices from high-voltage wiring and equipment can result in damage to network devices or poor network performance.

Risk of Property Damage.
Label all wires prior to disconnecting the equipment. Failure to label the wires may cause improper equipment operation after reconnecting the equipment.

Risk of Property Damage.
Do not connect the 24 VAC power supply directly to the FMS-2000M display four-position terminal block. You must terminate the power at the remote sensor's nine-position terminal block on the +Vin and -Vin terminals. Failure to follow the wiring instructions may cause permanent damage to the FMS-2000M monitor and void your warranty.

IMPORTANT: Do not install or use this FMS-2000M Critical Environment Monitor in or near environments where corrosive substances or vapors could be present. Exposure of the FMS-2000M monitor to corrosive environments may damage the device's internal components and will void the warranty.

IMPORTANT: Do not install this FMS-2000M Critical Environment Monitor in condensing, wet, or damp environments. Moisture may cause damage to the FMS-2000M monitor.

IMPORTANT: Only qualified personnel should install or service Johnson Controls® products. These instructions are a guide for such personnel. Carefully follow all instructions in this document and all instructions for the FMS-2000M Critical Environment Monitor.

IMPORTANT: Use copper conductors only. Make all wiring connections in accordance with local, national, and regional regulations. Do not exceed the FMS-2000M Critical Environment Monitor's electrical ratings.

IMPORTANT: Do not install the FMS-2000M Critical Environment Monitor where the maximum temperature exceeds 125°F (52°C). Installing the device where maximum temperatures exceed 125°F (52°C) may cause damage to the FMS-2000M Critical Environment Monitor and may void the warranty.

IMPORTANT: Make all wiring connections in accordance with the National Electrical Code and local regulations. Use proper Electrostatic Discharge (ESD) precautions during installation and servicing to avoid damaging the electronic circuits of the FMS-2000M Critical Environment Monitor.

IMPORTANT: Maintain proper polarity and voltage or current ratings. Improper polarity or exceeding the voltage or current ratings will void the warranty.

AVERTISSEMENT

Risque de décharge électrique.
Débrancher l'alimentation avant de réaliser tout branchement électrique. Tout contact avec des composants conducteurs de tensions dangereuses risque d'entraîner une décharge électrique et de provoquer des blessures graves, voire mortelles.

ATTENTION

Risque de blessure corporelle ou de dommages matériels.
Pour utilisation dans un environnement contrôlé uniquement. Consulter le guide d'installation pour les conditions environnementales.

AVIS

Risque de dégâts matériels.
Utilisez un transformateur de classe 2 à 24 V CA 30 VA, à limitation d'alimentation ou LPS pour le moniteur. Ne pas respecter les schémas de câblage peut causer des dommages au moniteur et peut annuler votre garantie.

Risque de dégâts matériels.
Ne pas mettre le système sous tension avant d'avoir vérifié tous les raccords de câblage. Des fils formant un court-circuit ou connectés de façon incorrecte risquent d'endommager irrémédiablement l'équipement.

Risque de dégâts matériels.
Ne pas faire courir un câble basse tension dans les mêmes gaines ou goulottes électriques que des câbles haute tension. L'installation de fils basse tension et haute tension dans les mêmes gaines ou goulottes électriques risque d'endommager l'équipement ou de provoquer des dysfonctionnements du système.

Risque de dégâts matériels.
S'assurer que la source d'alimentation électrique est conforme aux spécifications de l'équipement. L'utilisation d'une source d'alimentation électrique inappropriée risque d'endommager irrémédiablement l'équipement.

Risque de dégâts matériels.
Ne passez pas les câbles de communication réseau dans les mêmes gaines, chemins de câbles ou panneaux que les câbles à haute tension (supérieure à 30 Vca). Isolez tous les câbles et appareils réseau des câbles et appareils à haute tension. Un défaut d'isolement des câbles et appareils à haute tension peut provoquer des dommages aux appareils réseau et réduire les performances du réseau.

Risque de dégâts matériels.
Etiquetez tous les câbles avant de débrancher l'équipement. Le non-respect de cette précaution peut amener un fonctionnement anormal après redémarrage de l'équipement.

Risque de dégâts matériels.
Ne pas brancher le bloc d'alimentation de 24 V CA directement au bornier à quatre positions de l'écran du FMS-2000M. Vous devez raccorder l'alimentation aux bornes +Vin et -Vin du bornier à neuf positions du capteur à distance. Ne pas respecter les instructions de câblage peut causer des dommages permanents au moniteur FMS-2000M et annuler votre garantie.

IMPORTANT : N'installez ou n'utilisez pas FMS-2000M Critical Environment Monitor dans, ou près, d'environnements où des substances ou vapeurs corrosives peuvent être présentes. L'exposition du FMS-2000M à des environnements corrosifs peut endommager les composantes internes de l'appareil et annulera la garantie.

IMPORTANT : N'installez pas FMS-2000M Critical Environment Monitor dans un environnement humide, mouillé ou il se produit de la condensation. L'humidité peut causer des dommages au FMS-2000M.

IMPORTANT : Seul le personnel qualifié peut installer et entretenir les produits Johnson Controls. Ces instructions constituent un guide pour ce type de personnel. Suivez attentivement toutes les instructions de ce document et toutes les instructions du FMS-2000M Critical Environment Monitor.

IMPORTANT : N'utilisez que des conducteurs en cuivre. Assurez-vous que tous les branchements de câbles sont effectués selon les réglementations locales, nationales et régionales. Ne dépassez pas les spécifications électriques du FMS-2000M Critical Environment Monitor.

IMPORTANT : N'installez pas le contrôleur d'environnement critique FMS-2000M où la température maximum dépasse 52 °C (125 °F). Installer l'appareil dans un environnement où la température maximum dépasse 52 °C (125 °F) peut endommager FMS-2000M Critical Environment Monitor et peut annuler la garantie.

IMPORTANT : Assurez-vous que tous les branchements de câbles sont effectués selon le Code national de l'électricité et les réglementations locales. Utilisez une bonne protection contre les décharges électrostatiques (ESD) pendant l'installation et l'entretien pour éviter d'endommager les circuits électroniques du FMS-2000M Critical Environment Monitor.

IMPORTANT : Conservez la bonne polarité et la bonne tension ou le bon courant. Une mauvaise polarité ou le dépassement de la tension ou du courant annulera la garantie.

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Introduction

The FMS-2000M Critical Environment Monitor is a BACnet® MS/TP differential pressure monitoring solution that can also display temperature, humidity, air flow, air changes, and CO_2 from a building automation system (BAS) for up to four spaces. The monitor can measure differential pressure as low as 0.0001 in. W.C. or 0.0249 Pa and display measurements on a 5 in. (12.7 cm) diagonal touch screen.

The FMS-2000M enables maximum room status awareness with the color coded visual alarms that display on screen, and the 360° Safety Halo illuminated edge means that staff can easily monitor spaces down long corridors. You can put the audible alarm into snooze mode with one tap to the screen. The FMS-2000M features two password-protected access levels, one for administrators, and one for restricted level users, such as nurses.

Display overview

Figure 1: FMS-2000M Critical Environment Monitor display overview

Table 1: FMS-2000M Critical Environment Monitor display and icons

Number	Description
1	User menu
2	Room name or parameter name
3	Parameter status icon
4	Pressure sensor reading
5	Isolation mode quick link
6	Alarm mode quick link
7	360° Safety Halo quick link
8	Settings menu
9	Secondary parameters from BAS network variables

The icons, the screen color, and the color of the 360° Safety Halo change with the alarm status or neutral isolation mode.

Figure 2: Warning screen

Figure 3: Alarm screen

Figure 4: Neutral isolation mode

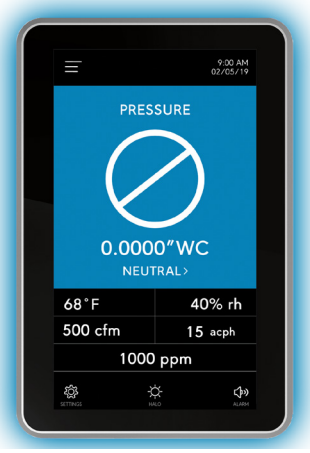


Figure 5: Alarm disabled

Table 2: Icon overview

Icon	Sensor readings
	Sensor readings in acceptable range
	Warning or alarm depending on status color
	Neutral isolation mode
	Audible alarm
	Muted alarm
	Night mode
	Home screen
	Revert
	Information

Icon	Sensor readings
	Switch is off
	Switch is on
	Next
	Expand menu
	Collapse menu
	Checkmark to confirm
	Delete or cancel
	More options

Multi-room monitoring overview

The following figures show the FMS-2000M monitor's UI in various modes. The home screen displays the number of rooms automatically, based on the model number and the connected pressure sensors. You can write temperature, humidity, air flow, air changes, and CO_2 network variables from the BAS to display on the monitor.

In Figure 5 the device monitors two rooms. For the second room, two network variables display below the pressure reading.
In Figure 7 the device monitors three rooms. For the first and second room, one network variable displays below the pressure reading.
In Figure 8 the device monitors four rooms. For the first three rooms, one network variable displays below the pressure reading.

For information about changing the network variable that displays, see Navigating the multi-room monitor home screen.

Figure 6: Two room montioring with network variables

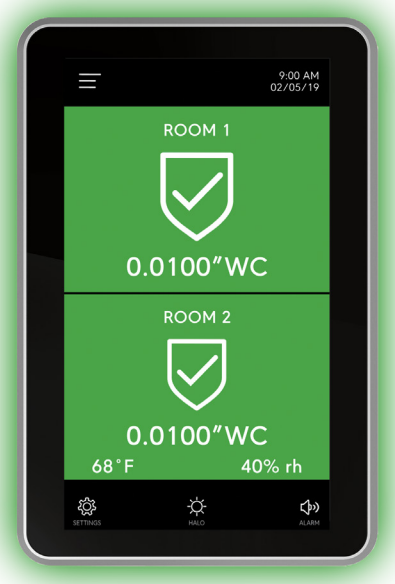


Figure 7: Three room monitoring with network variables

Figure 8: Four room monitoring with network variables

Navigating the multi-room monitor home screen

When you monitor more than one room, you can display up to two network variables. The display options depend on the number of rooms you monitor.

Viewing all network variables

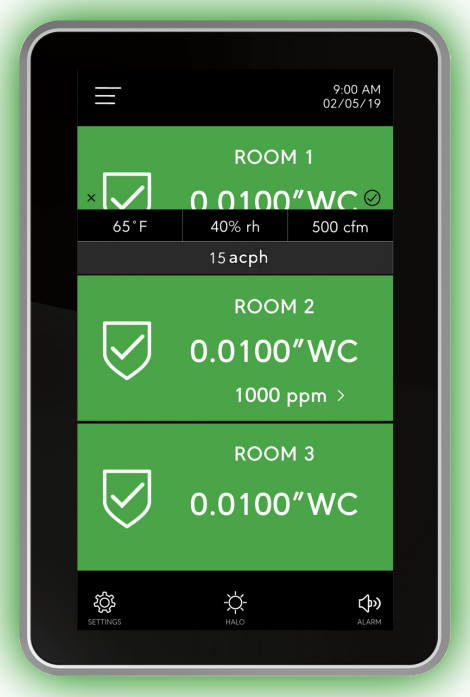
1. On the Home screen, tap the arrow next to the network variable. If no arrow displays, no other network variables are available.
2. A pop-up menu appears that displays the readings for each variable at once, as shown in Figure 10.
3. To close the menu, tap **X**.

Changing the network variable that displays on the home screen

1. On the Home screen, tap the arrow next to the network variable. If no arrow is visible, no other network variables are available.
2. A pop-up menu appears that displays the readings for each variable at once, as shown in Figure 10.
3. On the Home screen, tap the variable that you want to appear. If you monitor two rooms you can select two variables to display.
4. To save your selections, tap the **Checkmark** icon. To cancel the selection and close the menu, tap **X**.

Figure 9: Three room monitoring with network variables

Figure 10: Viewing and selecting network variables



System overview

Figure 11: FMS-2000M system diagram

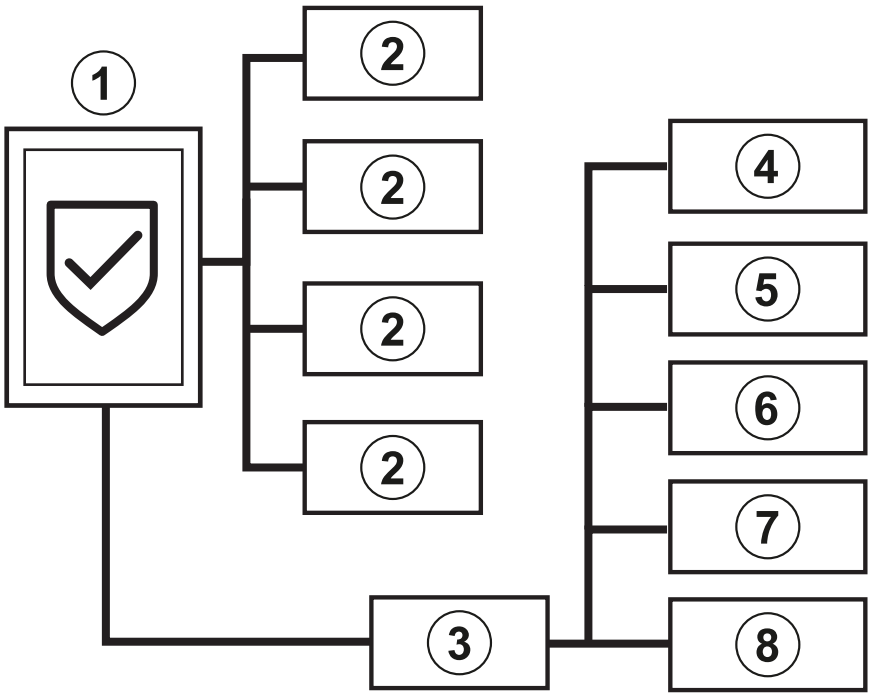


Table 3: FMS-2000M system diagram

Item	Component
1	FMS-2000M monitor
2	Remote pressure sensor
3	BAS
4	Temperature sensor
5	Humidity sensor
6	Air flow sensor
7	Air changes
8	CO_2 sensor

Initial setup

When the FMS-2000M Critical Environment Monitor starts for the first time, a setup wizard guides you through the inital setup. You configure the device language, units of measurement, device orientation, and isolation mode. When you set up the isolation mode, you specify the isolation mode available to restricted level users. See Table 4 for definitions of positive, negative and neutral isolation. You can choose from the following configurations:

- Positive and neutral only
- Negative and neutral only
- Positive, negative, and neutral

Note: Positive, negative, and neutral isolation mode is available for rare situations where a room can be either positive or negative.

Table 4: Definitions of isolation modes

Isolation mode	Definition
Positive isolation mode	The differential pressure of the monitored space is positive with respect to the reference space.
Negative isolation mode	The differential pressure of the monitored space is negative with respect to the reference space.
Neutral isolation mode	The differential pressure of the monitored space is zero or near zero with respect to the reference space.

If your FMS-2000M monitor connects with more than one remote differential pressure sensor, you can only specify the isolation mode for the first room.

Completing the initial setup

The FMS-2000M display starts in portrait orientation by default. You can change this to landscape orientation in the initial setup in step four.

1. On the **Language** screen, scroll to your preferred language, and tap the **Checkmark** icon.
2. On the **Global** screen, expand **Units,** and tap to select whether values display as **Imperial** or **Metric**.
3. Expand **Device Orientation** and tap to select **Portrait** or **Landscape** screen orientation.
4. Collapse **Device Orientation** and tap the **Checkmark** icon to save the settings.
5. On the **Isolation Mode** screen, choose from the following options:
   - **Positive and neutral only**
   - **Negative and neutral only**
   - **Positive, negative, and neutral**
6. To save the settings, tap the **Checkmark** icon.
7. To complete the initial setup, tap **Proceed**.

Note: You can make changes to your inital settings in the **Settings** menu at any time.

Configuration

After you complete the initial setup, the settings menu appears. You can configure the following settings:

- Global
- User Accounts
- Network
- Room
- Sensors
- Alarms
- Diganostics
- Documentation

Global settings

Here you can change settings that impact the entire FMS-2000M Critical Environment Monitor.

Choosing a unit of measure

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view global settings, tap **Global**.
3. On the Global screen, expand **Units** to select whether values display as **Imperial** or **Metric**.
4. To save the settings, collapse **Units**.

Choosing a language

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view global settings, tap **Global**.
3. To view all language options, tap the **Language** arrow.
4. To choose a language, scroll to your preferred language.
5. To save your language selection, tap the **Checkmark** icon.

Choosing the device orientation

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view global settings, tap **Global**.
3. On the Global screen, expand **Device Orientation** and tap to select **Portrait** or **Landscape**.
4. To save the settings, collapse **Device Orientation**.

Turning on the 360° Safety Halo and adjusting the brightness of the 360° Safety Halo

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view global settings, tap **Global**.
3. To adjust settings for the 360° Safety Halo, tap the **Safety Halo** arrow.
4. To turn the 360° Safety Halo on, switch on **Enabled**.
5. To view the brightness adjustment slider, tap the **Plus** icon.
6. To adjust the brightness, move the slider to increase or decrease the brightness.
7. To confirm the new settings, tap the **Checkmark** icon.

Turn keyboard clicks on or off

1. On the Home screen, tap the Settings icon to enter the Settings menu.
2. To view global settings, tap Global.
3. To turn the keyboard clicks on or off, tap the toggle button.

Adjusting the screen brightness

1. On the Home screen, tap the **Settings** icon to enter the Settings menu.
2. To view global settings, tap **Global**.
3. To increase or decrease the brightness of the screen, expand **Screen Brightness** and move the slider. To confirm the settings, collapse **Screen Brightness**.

User accounts

When you set up users and passwords, you restrict the use of the FMS-2000M Critical Environment Monitor to specific groups of people. This is not mandatory, but if you do not create users and passwords, anyone can access all functions of the FMS-2000M monitor. There are two access levels: admin level users and restricted users. Admin level users have access to the entire device. Restricted users have access to the user menu and the quick access icons on the home screen.

Admin user capabilities

When you create an admin user, the following conventions apply:

- After you create an admin user account, you cannot delete it unless you first create another admin user.
- Only an authenticated admin user can create users.
- Admin users can delete admin users, restricted users, or groups of users.
- Admin users can edit restricted users and groups of restricted users.
- Admin users can select all users.
- Admin users can delete multiple selected users.

Restricted user capabilities

- A user must authenticate to change setpoints.
- An individual user or group must identify themselves before they enter a PIN number.
- You cannot duplicate user names.

User name and password requirements

To create a user name, follow these minimum requirements:

- English only
- Alphanumeric
- One letter minimum
- 3 to 20 characters in length
- User names and passwords do not require special characters, but you can use the @ symbol.

To set up an admin password, follow these minimum requirements:

- English only
- Alphanumeric
- 6 to 12 characters in length
- One letter minimum
- One digit minimum
- No restrictions on special characters

To set up a PIN password for a restricted user, use the following criteria:

- Zero to nine numeric
- Four to eight digits in length

Creating the admin user account and password

The first user must be an admin. You cannot set up a restricted user until you set up an admin. Admin level users have access to the entire device.

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. On the user accounts screen, tap the **Create User** arrow.
4. To change the admin user name, tap the **User Name** arrow, and enter the new user name. See User name and password requirements for more information.
5. To select the access level for the new admin user account, expand **Access Level,** and tap **Administrator.**
6. To confirm your settings, tap the **Checkmark** icon.
7. On the **Create Password** screen, enter your new password twice. See User name and password requirements for more information.
8. To complete the admin user account and password setup, tap the **Checkmark** icon.

Creating a restricted user and PIN password

A restricted user can access the user menu and quick access links on the home screen.

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. On the user accounts screen, tap the **Create User** arrow.
4. To change the restricted user name, tap the **User Name** arrow, and enter the new user name. See User name and password requirements for more information.
5. To select the access level for the new restricted user account, expand **Access Level,** and tap **Restricted User.**
6. To confirm your settings, tap the **Checkmark** icon.
7. On the **Create PIN** screen, enter your new PIN twice. See User name and password requirements for more information.
8. To complete setting up the restricted user account and PIN, tap the **Checkmark** icon.

Deleting users
1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. On the user accounts screen, expand **Manage Users**.
4. To delete user names, tap the usernames you want to delete and tap **Delete.**
5. **Optional:** If you want to delete all users, tap **Select All,** and **Delete**.
6. To confirm your selection, tap **Delete** on the Delete User screen.

Note: When you choose the optional step of deleting all users, you delete all admin and restricted users except for the admin user account that you used to log on.

Changing a user name
1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. To change a user name, tap **Edit** next to a user name.
4. To enter a different user name, tap the **User Name** arrow on the Edit User screen.
5. To confirm the new user name, tap the **Checkmark** icon.

Changing the access level of a restricted user to an admin user
1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. To change the access level of a restricted user, tap **Edit.**
4. On the Edit User screen, tap **Restricted User** and select **Administrator.**
5. Tap **Create Password** and enter a new password twice.
6. To confirm the change, tap the **Checkmark** icon.

Changing the access level of an admin user to a restricted user
1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. To change the access level of an admin user, tap **Edit.**
4. On the Edit User screen, tap **Administrator,** and select **Restricted**.
5. Tap **Create PIN** and enter a new PIN twice.
6. To confirm the change, tap the **Checkmark** icon.

Updating the PIN of a restricted user
1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view all user accounts information, tap **User Accounts**.
3. To reset the PIN of a restricted user, tap **Edit**.
4. On the Edit User screen, tap the **Reset PIN** arrow.
5. Enter the old PIN and the new PIN twice.
6. To confirm the reset, tap the **Checkmark** icon.

Forgetting your password or PIN
If restricted users forget their PIN, they can contact the facility manager to get their new PIN. Admin users can create a new PIN for restricted users. If admin users forget their password, they must complete the following procedure:
1. Contact service@triatek.com and provide them with the device identifier listed on the screen of each FMS-2000M Critical Environment Monitor. See Contact information for more details.
2. To erase all user accounts, on each monitor, enter the number that support gives you.
3. Set up a new user account. See User accounts for information on how to set up new user accounts.

Note: You do not need to reconfigure the entire FMS-2000M monitor.

Network setup

In the network menu, you can set up the network communications between the FMS-2000M Critical Environment Monitor and the facility.

BACnet MS/TP network setup

On the BACnet MS/TP network, you can adjust the device ID offset, MaxMaster, baud rate, and MAC address.

Setting up the device ID

The device ID, or instance number, is a number used to identify a BACnet device object. Each BACnet device on a site has a unique device ID. The FMS-2000M creates a default device ID of 85,000 plus the current MAC address. For example, if the MAC address is 25, the default device identifier will be 85,025. This default number can be manually changed to any number between 0 and 4,194,303 to accommodate any device ID scheme used on the site. To set up the device ID, complete the following steps:

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view network settings, tap **Network**.
3. To view the device ID, tap **BACnet Protocol**.
4. To adjust the device ID, tap the **Arrow** icon.
5. Enter a number between 0 and 4,194,303.
6. To confirm the new settings, tap the **Checkmark** icon.

Setting up the MaxMaster

This parameter specifies the highest permitted address for a master node on the same network. The default value for this parameter is 127. When you adjust this value, you can prevent the online activation of some devices as bus masters. All devices on the bus must have the same Max Master attribute value to prevent the transfer of the token to a device with an address above the Max Master attribute value.

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view network settings, tap **Network**.
3. To view the MaxMaster, tap **BACnet Protocol**.
4. To adjust the MaxMaster, move the slider towards the **Plus** icon to increase or the **Minus** icon to decrease the parameter. You can also tap the **Plus** or **Minus** icon to make adjustments.
5. **Optional:** To revert to the previous setting, tap the **Revert** icon.
6. To confirm the new settings, tap the **Checkmark** icon.

Choosing the baud rate

Complete the following steps to set the baud rate when using a BACnet MS/TP configuration:

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view network settings, tap **Network**.
3. To set the baud rate, expand **Baud Rate**. The default baud rate is 38.4 kbps. The other rate options are 76.8 kbps, 19.2 kbps, or 9600 bps. Select the appropriate rate.
4. To save the new settings, collapse **Baud Rate**.
5. To ensure that the unit rejoins the MS/TP network following the baud rate change or selection, select **Reboot Monitor** in the **Diagnostics** menu, or power cycle the unit.

Note: Only change the baud rate to match a MS/TP trunk already in use. All devices on an MS/TP bus must communicate at the same baud rate.

Setting the MAC address for BACnet MS/TP

On the BACnet MS/TP protocol, you can set up a MAC address within a valid range of 4 to 127 to support master mode.

1. On the Home screen, tap the **Settings** icon to enter the **Settings** menu.
2. To view network settings, tap **Network**.
3. On the Network screen, tap **MAC Address**.
4. To adjust the MAC address, move the slider towards the **Plus** icon to increase or the **Minus** icon to decrease the parameter. You can also tap the **Plus** or **Minus** icon to make adjustments.
5. **Optional:** To revert to the previous setting, tap the **Revert** icon.
6. To confirm the new settings, tap the **Checkmark** icon.
7. To ensure that the unit rejoins the MS/TP network following the MAC address change or selection, select **Reboot Monitor** in the **Diagnostics** menu, or power cycle the unit.

Room setup

Each installed pressure sensor correlates to a different room. Admin level users can set up key parameters for each of the monitored rooms. These include isolation mode, the ability to name the room or parameter, and the ability to set up the door switch if installed.

Naming the device or parameter

If you monitor more than one room, the name that you input appears at the top of each room tile on the home screen.

1. On the Home screen, tap the **Settings** icon to enter the settings menu.
2. To view rooms settings, tap **Room**.
3. On the room screen, tap the **Name** arrow.
4. Enter a name. It can be up to 14 characters in portrait mode and up to 16 characters in landscape mode.
5. If there are two or more pressure sensors, swipe left to name the room or parameter for each sensor. See *Naming the device or parameter* for more information.
6. If more than one room is being monitored, swipe the screen to set up each room.
7. To confirm the name, tap the **Checkmark** icon.

Restricting the isolation mode

Isolation mode controls the isolation mode options that are available in the restricted level user's menu and in the isolation mode quick link on the Home screen. The isolation mode quick link is only available on single sensor models.

Isolation mode setup is only available for the first monitored room. Secondary rooms do not have an isolation mode quick link option. You can adjust the alarm limits to correlate with a positive or negative isolation mode.

For isolation mode, Admin level users can choose from the following configurations:

- Positive and neutral
- Negative and neutral
- Positive, negative, and neutral

To change the isolation mode restriction, complete the following steps:

1. On the Home screen, tap the **Settings** icon to enter the settings menu.
2. To view room settings, tap **Room**.
3. To adjust the isolation mode, expand **Isolation Mode,** and choose from the following options:
   - **Positive and neutral**
   - **Negative and neutral**
   - **Positive, negative, and neutral**
4. To save the new settings, collapse **Isolation Mode**.

Setting the isolation mode

To change the isolation mode from the display, see *Changing the isolation mode* in the Restricted user access section. You can also change the isolation mode from the building automation system.

Configuring the door switch

If you install a door switch, you can enable the door switch, adjust the switch type, and adjust the alarm delay. The door switch reduces false positive alarms each time the door opens. Instead, the audible alarm is silent and a yellow warning screen appears and the 360° Safety Halo flashes yellow. The switch type setting configures the monitor for a normally open or normally closed door switch.
To configure the door switch, complete the following steps:

1. On the Home screen, tap the **Settings** icon to enter the settings menu.
2. To view room settings, tap **Room**.
3. On the room screen, tap the arrow next to **Door Switch**.
4. On the door switch screen, tap the toggle button to turn the door switch on.
5. Expand **Switch Type** and choose from the following options:
   - **Normally Open**
   - **Normally Closed**
6. To confirm the settings, collapse **Switch Type**.

Setting up a delay

When you install a door switch, the FMS-2000M can alert the facility staff whenever a person opens the door. The 360° Safety Halo flashes yellow and the display presents a warning screen with a yellow background. When the door closes, the delay prevents an audible alarm until the room returns to normal operating pressure. The door switch delay has a maximum duration of 240 seconds.
To set up a delay, complete the following steps:

1. On the Home screen, tap the **Settings** icon to enter the settings menu.
2. To view digital input settings, tap **Digital Input**.
3. On the Digital Input 1 screen, expand **Delay,** and move the slider to adjust the duration of the delay.
4. To confirm the settings, tap the **Checkmark**.

Network variables

The FMS-2000M can read network variables over the BAS and display the network variables on the home screen. If you wire the monitor to the BAS in accordance with the BACnet objects below, the network variable automatically appears on the home screen.

BACnet objects

Table 5: Analog inputs for integration in a BAS

Objects	Analog inputs	Read/Write	Availability of analog input objects			
			FMS2M-Bx1x	FMS2M-Bx2x	FMS2M-Bx3x	FMS2M-Bx4x
AI-1	Analog input 1, differential pressure	Read only	Yes	Yes	Yes	Yes
AI-2	Analog input 2, differential pressure		No	Yes	Yes	Yes
AI-3	Analog input 3, differential pressure		No	No	Yes	Yes
AI-4	Analog input 4, differential pressure		No	No	No	Yes

Table 6: Binary inputs for integration in a BAS

Objects	Binary inputs	Read/Write	Availability of binary input objects			
			FMS2M-Bx1x	FMS2M-Bx2x	FMS2M-Bx3x	FMS2M-Bx4x
BI-1	Digital input 1, door switch 1	Read only	Yes	Yes	Yes	Yes
BI-2	Digital input 2, door switch 2		No	Yes	Yes	Yes
BI-3	Digital input 3, door switch 3		No	No	Yes	Yes
BI-4	Digital input 4, door switch 4		No	No	No	Yes

Table 7: Analog values for integration in a BAS

Objects	Analog values	Read/Write	Availability of analog value objects			
			FMS2M-Bx1x	FMS2M-Bx2x	FMS2M-Bx3x	FMS2M-Bx4x
AV-1	Network Variable Temperature 1	Read or write	Yes	Yes	Yes	Yes
AV-2	Differential Pressure low alarm setpoint 1		Yes	Yes	Yes	Yes
AV-3	Differential Pressure low warning setpoint 1		Yes	Yes	Yes	Yes
AV-4	Differential Pressure high warning setpoint 1		Yes	Yes	Yes	Yes
AV-5	Differential Pressure high alarm setpoint 1		Yes	Yes	Yes	Yes
AV-6	Network Variable Humidity 1		Yes	Yes	Yes	Yes
AV-7	Network Variable Temperature 2		No	Yes	Yes	Yes
AV-8	Differential Pressure low alarm setpoint 2		No	Yes	Yes	Yes
AV-9	Differential Pressure low warning setpoint 2		No	Yes	Yes	Yes
AV-10	Differential Pressure high warning setpoint 2		No	Yes	Yes	Yes
AV-11	Differential Pressure high alarm setpoint 2		No	Yes	Yes	Yes
AV-12	Network Variable Humidity 2		No	Yes	Yes	Yes
AV-13	Network Variable Temperature 3		No	No	Yes	Yes
AV-14	Differential Pressure low alarm setpoint 3		No	No	Yes	Yes
AV-15	Differential Pressure low warning setpoint 3		No	No	Yes	Yes
AV-16	Differential Pressure high warning setpoint 3		No	No	Yes	Yes
AV-17	Differential Pressure high alarm setpoint 3		No	No	Yes	Yes
AV-18	Network Variable Humidity 3		No	No	Yes	Yes
AV-19	Network Variable Temperature 4		No	No	No	Yes
AV-20	Differential Pressure low alarm setpoint 4		No	No	No	Yes
AV-21	Differential Pressure low warning setpoint 4		No	No	No	Yes
AV-22	Differential Pressure high warning setpoint 4		No	No	No	Yes
AV-23	Differential Pressure high alarm setpoint 4		No	No	No	Yes
AV-24	Network Variable Humidity 4		No	No	No	Yes

Objects	Analog values	Read/ Write	Availability of analog value objects			
			FMS2M-Bx1x	FMS2M-Bx2x	FMS2M-Bx3x	FMS2M-Bx4x
AV-25	Network Variable Flow 1	Read or write	Yes	Yes	Yes	Yes
AV-26	Network Variable Air changes 1		Yes	Yes	Yes	Yes
AV-27	Network Variable CO_2 1		Yes	Yes	Yes	Yes
AV-28	Network Variable Flow 2		No	Yes	Yes	Yes
AV-29	Network Variable Air changes 2		No	Yes	Yes	Yes
AV-30	Network Variable CO_2 2		No	Yes	Yes	Yes
AV-31	Network Variable Flow 3		No	No	Yes	Yes
AV-32	Network Variable Air changes 3		No	No	Yes	Yes
AV-33	Network Variable CO_2 3		No	No	Yes	Yes
AV-34	Network Variable Flow 4		No	No	No	Yes
AV-35	Network Variable Air changes 4		No	No	No	Yes
AV-36	Network Variable CO_2 4		No	No	No	Yes

Table 8: Multistate objects for integration in a BAS

Objects	Multistate objects	Read/Write	Availability of multistate objects			
			FMS2M-Bx1x	FMS2M-Bx2x	FMS2M-Bx3x	FMS2M-Bx4x
MV-1	Isolation mode: 1 = positive, 2 = negative, 3 = neutral	Read or write	Yes	Yes	Yes	Yes
MV-2	Status 1: 1 = normal, 2 = warning, 3 = alarm	Read only	Yes	Yes	Yes	Yes
MV-3	Status 2: 1 = normal, 2 = warning, 3 = alarm		No	Yes	Yes	Yes
MV-4	Status 3: 1 = normal, 2 = warning, 3 = alarm		No	No	Yes	Yes
MV-5	Status 4: 1 = normal, 2 = warning, 3 = alarm		No	No	No	Yes

Sensors

You can conduct a zero calibration and set alarm limits for each pressure sensor. On the Zero Calibration menu, you can create the zero offset and reset the zero offset. Swipe the screen to set each sensor.

Zero calibration

With the door to the monitored room open, the differential pressure that the FMS-2000M monitor measures usually approaches zero. However, due to imperfections in the sealing of the remote sensor enclosure and due to pressure accumulation in the wall, the pressure reading does not reach zero. If you leave the monitored room's door open to allow pressure to equalize, it is common for the differential pressure to read up to 0.0010 in. W.C or 0.249 Pa.

Creating a zero offset

1. Leave the door open to equalize the pressure between the monitored space and the reference space.
2. On the Home screen, tap the **Settings** icon to enter the settings menu.
3. To view analog input settings, tap **Analog I/O**.
4. On the Analog screen, tap the **Zero Calibration** arrow.
5. On the zero callibration screen, tap the **Create Zero Offset** arrow.
6. Follow the instructions on screen and wait for the real-time view reading on the screen to stabilize for at least 10 seconds.
7. To create a zero offset, tap **Proceed**.

Resetting the zero offset

If creating a zero offset does not result in a zero differential pressure reading when the pressure is equal, reset the zero offset before you repeat Creating a zero offset.

1. On the Home screen, tap the **Settings** icon to enter the Settings menu.
2. To view analog input settings, tap **Analog I/O**.
3. On the Analog screen, tap the **Zero Calibration** arrow.
4. On the Zero Callibration screen, tap **Reset Zero Offset**.
5. On the Reset Zero Offset screen, tap **Proceed**.
6. To confirm the new settings, tap the **Checkmark** icon.

Setting up alarms for each pressure sensor

1. On the Home screen, tap the **Settings** icon.
2. On the Settings screen, tap **Sensors**.
3. On the Sensors screen, tap the **Alarms** arrow.
4. On the Alarm screen, switch **Alarm Enabled** on.
5. For each alarm limit, tap the arrow.
6. To confirm your settings, enter the alarm limit and tap the **Checkmark** icon.

Periodic sensor calibration validation

To ensure that your pressure sensor calibration is within tolerance, return it to the factory periodically for validation. Some applications may require calibration validation quarterly. However, it is best practice to calibrate your sensors at least once a year. Contact Service@Triatek.com for assistance.

Alarms

You can use the **Alarms** screen to quickly access the alarm settings for each pressure sensor. Ensure alarms are enabled before configuration. If the alarms are not enabled the screen appears gray, the Safety Halo remains green, and all audible and visual alarms are disabled. See Figure 5 for a visual example. You can mute the audible alarm and allow the screen and Safety Halo to respond to parameter status. Enable the alarms and complete the set up process before you mute the audible alarm.

Setting up alarms for each pressure sensor

1. On the Home screen, tap the **Settings** icon.
2. On the Settings screen, tap **Alarms**.
3. On the Alarm screen, choose the pressure sensor that relates to the alarm that you want to adjust and tap the arrow.
4. On the Alarm screen, switch **Alarm Enabled** on.
5. For each alarm limit, tap the arrow.
6. To confirm your settings, enter the alarm limit and tap the **Checkmark** icon.

Diagnostics

On the Diagnostics screens, you can find information about your particular FMS-2000M Critical Environment Monitor model. You can also perform a soft reboot of the monitor.

Viewing the About this FMS information

When you contact technical support, use the About this FMS screen to reference specific details about your monitor.

1. On the Home screen, tap the **Settings** icon.
2. On the Settings screen, tap **Diagnostics**.
3. On the Diagnostics screen, tap the **About this FMS** arrow.

Rebooting the monitor

1. On the Home screen, tap the **Settings** icon.
2. On the Settings screen, tap **Diagnostics**.
3. On the Diagnostics screen, tap **Reboot Monitor**.

Troubleshooting Guide

Table 9: Troubleshooting guide

Condition	Cause	Solution
After the MAC address is changed at the display, either the unit does not come back online on the MS/TP bus or it is not discoverable.	A change to the MAC address can cause the device to not respond to the MS/TP token at its new address.	Reboot the display through the appropriate menu option or cycle power to the display.
After the baud rate of the MS/TP bus is changed at the display, the unit does not come back online or is not discoverable.	A change to the baud rate at the display can cause the device to not respond to the MS/TP token at its new baud rate. It does not communicate at the old baud rate either so the trunk should still have good communication, but the display may not rejoin the token loop.	Reboot the display through the appropriate menu option or cycle power to the display.
I do not know how to display a negative pressure reading when a unidirectional pressure sensor is in use.	The polarity of the displayed pressure reading depends on two factors: • The physical location of the pressure sensor itself • The polarity setting configuration DIP switch on the pressure sensor. Switch position 5 configures the monitored differential pressure. ON is Normal and OFF is Inverted.	If the pressure sensor is installed within the monitored space, set the polarity switch to OFF, for Inverted, to display a negative pressure. If the pressure sensor is installed outside of the monitored space, set the polarity switch to ON, for Normal, to display a negative pressure.
The display and the BACnet alarm status does not show alarms when the present value of the analog input is outside of the alarm setpoints.	The alarm limits have likely been entered incorrectly.	For the alarm logic to function properly, enter the alarm limits in descended order with the High Alarm limit as the largest in magnitude. The High Alarm must be greater than or equal to the High Warning, which must be greater than or equal to the Low Warning, which must be greater than or equal to the Low Alarm. For instructions to set the alarm and warning setpoints, see *Setting up alarms for each pressure sensor.* For negative pressure applications, the High Alarm limit must be the largest negative value and the Low Alarm must be the smallest negative value or zero. For example: • High Alarm: -0.2000 in. W.C. (-49.82 Pa) • High Warning: -0.1500 in. W.C. (-37.36 Pa) • Low Warning: -0.0015 in. W.C. (-0.37 Pa) • Low Alarm: -0.0005 in. W.C. (-0.12 Pa)
The test system is reading a negative differential pressure, but the unit displays a positive pressure reading.	The polarity of the displayed differential pressure reading is dependent on two factors: • The physical location of the pressure sensor • The polarity setting configuration DIP switch on the pressure sensor. Switch position 5 configures the monitored differential pressure. ON is Normal and OFF is Inverted.	If the pressure sensor is installed within the monitored space, then the polarity switch should be set to OFF, for Inverted, to display a negative pressure. If the pressure sensor is installed outside of the monitored space, then the polarity switch should be set to ON, for Normal, to display a negative pressure.

Restricted user access

Restricted level users have access to the user menu and the quick links on the home screen for isolation mode, 360° Safety Halo, and alarm mode. In the user menu, restricted level users can adjust the following values:

- Time and date
- Alarm
- Screen brightness
- Isolation mode
- User guide demonstation video

Setting the time and date

The time and date function is not connected to the BAS. If there is a power outage, you need to update the time and date at the display. You can turn the time and date on or off at the display.

1. On the Home screen, in the upper-left corner, tap the **User Menu** icon.
2. On the **MENU** screen, tap **TIME and DATE**.
3. To enable the time and date feature, tap the **Toggle** button.
4. On the **TIME and DATE** screen, tap the switch to turn on the time and date function and scroll to adjust the time.
   Optional: To turn on the 24-hour clock, tap the 24 Hour switch.
5. To adjust the date, tap **Date**.
6. To choose a date format, expand **Format** and tap one of the following options:

   - **Month/Day/Year**
   - **Day/Month/Year**
   - **Year/Month/Day**

7. To change the date, scroll through the months, days and years.
8. To confirm your settings, tap the **Checkmark** icon.

Adjusting the alarm mode

When the differential pressure goes out of range, the display goes into alarm state. When you adjust the alarm mode, you can control how the display responds. See Table 9 for more information.

1. On the Home screen, tap the **User Menu** icon.
2. On the User menu screen, tap **Alarm**.
3. On the Alarm screen, expand **Alarm Mode** and choose from the following options:
   - **Audible**
   - **Mute**
   - **Night**
4. To confirm your settings, tap the **Checkmark** icon.

Optional: To adjust the alarm mode quickly, tap the **Alarm** quick link on the Home screen.

Table 10: Alarm modes

Alarm mode	Display response
Audible	Screen color and action icon change to red, 360° Safety Halo flashes red, audible alarm sounds
Mute	Screen color and action icon change to red, 360° Safety Halo flashes red, audible alarm is mute
Night	Screen color and action icon stay the same brightness, 360° Safety Halo dims if enabled in the Night mode setup, audible alarm is mute **Note:** Night mode occurs during the timeframe specified in the night mode settings.

Setting the audible alarm delay

Set up a delay for the audible alarm to reduce nuisance alarms when you open the door. With the audible alarm delay, the screen and the 360° Safety Halo flash red but the alarm does not sound for the period of time that you set.

1. On the Home screen, tap the **User Menu** icon.
2. On the User menu screen, tap **Alarm**.
3. On the Alarm screen, tap the **Audible Alarm Delay** arrow.
4. To adjust the alarm delay period up to 60 seconds, move the slider.
5. To confirm the new settings, tap the **Checkmark** icon.

Changing the audible alarm snooze

The audible alarm snooze temporarily mutes the alarm for a specific duration of time. To snooze the audible alarm, tap anywhere on the home screen. While the alarm is in snooze, a timer displays over the alarm icon counting down until the alarm sounds again.

1. On the Home screen, tap the **User Menu** icon.
2. On the User menu screen, tap **Alarm**.
3. On the Alarm screen, tap the **Audible Alarm Snooze** arrow and use the slider to change the snooze time to up to 60 minutes.

Switching on and adjusting the brightness of the 360° Safety Halo

1. On the Home screen, tap the **User Menu** icon.
2. Tap the **Alarm** button.
3. To adjust settings for the 360° Safety Halo, tap the **Safety Halo Setup** arrow.
4. To turn the 360° Safety Halo on, switch **Enabled** on.
5. To adjust the brightness, move the slider to increase or decrease **Brightness**.
6. To confirm the new settings, tap the **Checkmark** icon.

Optional: To adjust the Safety Halo quickly, tap the **360° Safety Halo** quick link on the Home screen.

Setting the night mode

You can mute the audible alarm and dim the 360° Safety Halo during the night. The screen turns red and the 360° Safety Halo flashes red when the monitor goes into alarm mode. Night mode is only available if the time and date are turned on.

1. On the Home screen, tap the **User Menu** icon.
2. On the User menu screen, tap **Alarm**.
3. On the Alarm screen, tap the **Night Mode** arrow.
4. To set up a time period for the night mode, scroll to the preferred time under **Start Time** and **End Time**.
5. To dim the Safety Halo during night mode, turn on **Nightly Auto Dim** and move the slider.
6. To confirm your settings, tap the **Checkmark** icon.
7. To enable night mode, expand the Alarm Mode and select **Night Mode**.
8. To confirm your settings, tap the **Checkmark** icon.

Optional: To access the alarm mode quickly, tap the **Alarm** quick link on the Home screen.

Adjusting screen brightness
1. On the Home screen, tap the **User Menu** icon.
2. On the User menu screen, tap **Screen Brightness**.
3. Move the slider to increase or decrease screen brightness.
4. To confirm the new screen brightness setting, tap the **Checkmark** icon.

Changing the isolation mode
You can change the isolation mode of the first room only. What you see on screen depends on how the facility manager configures the device. You can choose from one of the following isolation modes:
- Positive and Neutral
- Negative and Neutral
- Positive, Negative, and Neutral

To change the isolation mode, complete the following steps:
1. On the Home screen, tap the **User Menu** icon.
2. On the User menu screen, tap **Isolation Mode**.
3. Tap one of the available isolation modes.
4. To confim the the isolation mode settings, tap the **Checkmark** icon.

Optional: To change the isolation mode quickly on single sensor models, tap the **Isolation mode** quick link on the Home screen.

Accessing the user guide demonstration video
The short demonstration video is aimed at the end user and highlights basic functionality of the FMS-2000M.
1. On the Home screen, tap the **User Menu** icon.
2. Tap the **User Guide** button.
3. To watch the video, scan the QR code with a smart phone.

Quick links
Use the quick link icons on the home screen to quickly access the isolation mode, 360° Safety Halo, and alarm mode.

Adjusting the 360° Safety Halo and brightness
1. On the Home screen, tap the **Halo** icon.
2. On the Safety Halo screen, switch on **Enabled** and expand it.
3. To adjust the brightness, move the slider.
4. To confirm the new settings, tap the **Checkmark** icon.

Adjusting the alarm mode quick links
1. On the Home screen, tap the **Alarm** icon. A pop up appears and you can choose from the following alarm modes:
   - **Audible Alarm**
   - **Muted Alarm**
   - **Night Mode**
2. To change the setting, tap one of the alarm modes.

Adjusting the isolation mode quick link
1. On the Home screen, tap the **Isolation Mode** quick link.
2. To change the isolation mode, tap one of the available isolation modes.
3. To confirm the new settings, tap the **Checkmark** icon.

Upgrading an FMS-1655M monitor to an FMS-2000M monitor

Figure 12: Wiring the FMS-2000M to an FMS-1655M remote sensor

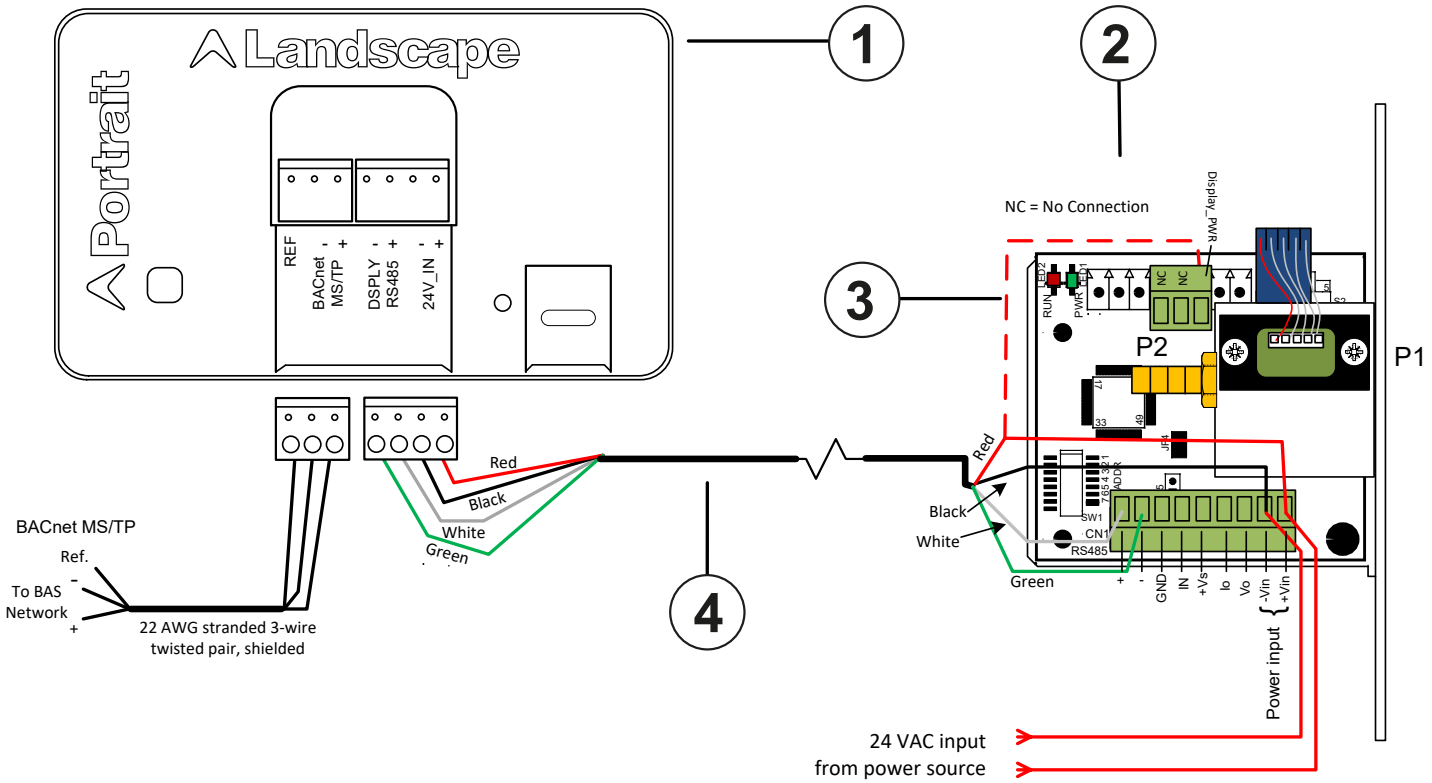


Table 11: Wiring the FMS-2000M to an FMS-1655M remote sensor

Callout	Description
1	FMS-2000M monitor
2	FMS-1655M remote sensor
3	Red display power wire. If the sensor includes a 3 position terminal block with display power installed, remove the wire and connect it at the +Vin terminal of the 9 position terminal block as shown.
4	Display-to-sensor interface cable. Supplied cable: 10 ft

1. Shut down the FMS-1655M unit and remove the monitor from the wall.
2. Remove the back cover from the display enclosure.
3. Unplug the 4-position terminal block from the display circuit board, with the wires from the interface cable still connected. If you use a BACnet network, unplug the 3-position terminal block.
4. Prepare the opening in the wall for the mounting display unit. For instructions, refer to the *FMS-2000M Critical Environment Monitor Installation Guide (LIT-12013555)*.
5. Pull the existing FMS-1655M monitor cables through the opening in the wall.
6. At the back of the FMS-2000M monitor, remove the 4-position terminal block plug from the pin header. If you use a BACnet network, remove the 3-position terminal block as well.
7. Connect the 4-position terminal block at the end of the interface cable to the 4-pin header at the back of the FMS-2000M display. If you use a BACnet network, connect the networking cable to the 3-pin header. See Figure 12.
8. After installing the new display, it is necessary to remove the old device and its associated points from the BAS and remap the new device and its associated points. To complete the installation, refer to the *FMS-2000M Critical Environment Monitor Installation Guide (LIT-12013578)*.

Technical specifications

Table 12: Technical specifications

Intended use		Indoor use
Overvoltage category		II
Altitude		Up to 2000 m (6562 ft)
Pressure range		± 0.2500 in. W.C. (± 62.27 Pa)
Alarm range		± 0.2500 in. W.C. (± 62.27 Pa)
Display range		± 0.2500 in. W.C. (± 62.27 Pa)
Accuracy		± 0.5% full scale
Air flow sensor type		Digital differential pressure sensor features no offset, zero drift and is hysteresis free
Displayed pressure resolution		± 0.0001 in. W.C (± 0.0249 Pa)
Monitoring capability		Up to 4 independent spaces
I/O Resources		One digital input for a door switch on each remote pressure sensor Remote monitoring output for each remote pressure sensor, VDC or mA
Operating temperature		32°F to 104°F (0°C to 40°C)
Operating humidity		10% to 95% relative humidity, non-condensing
Mounting		Thin mount for shallow wall cavities
Alarm indication		Safety Halo color coded visual, audible alarm
Alarm silence		Touchscreen, auto-reset
Password protection		Up to 50 user passwords with 2 access levels (administrator and restricted)
Communications protocol		BACnet MS/TP (to BAS) 76.8k, 38.4k, 19.2k, 9600 baud
Power requirement		24 VAC (nominal, 21.6 VAC minimum/26.4 VAC maximum), 50/60 Hz 30 VA power supply, Class 2, Limited Energy, LPS isolated power supply, or minimum power 30 VA transformer.
Power consumption		30 VA maximum
Pollution degree		2
Display resolution		720 pixels x 1280 pixels
Pluggable screw terminal blocks		18 AWG to 22 AWG (1 mm to 0.6 mm diameter)
Display dimensions (height x width x depth)		5.3 in. x 3.5 in. x 1.17 in. (134.62 mm x 88.9 mm x 29.72 mm)
Mounted depth		Thin mount: 0.58 in (14.73 mm)
Compliance	**United States**	UL Listed (E515759) to UL 61010-1; FCC 47CFR Part 15; BTL Listed (BTL-30774)
c UL us LISTED	**Canada**	cUL Listed (E515759) to CAN/CSA C22.2 NO. 61010-1; ICES-003
CE	**Europe (CE)**	Low Voltage Directive [2014/35/EU] per EN 61010-1 EMC Directive [2014/30/EU] per EN 61326-1 + EN 55011
UK CA	**United Kingdom (UKCA)**	Electrical Equipment (Safety) Regulations per EN 61010-1 EMC Regulations per EN 61326-1 + EN 55011
	International Standards	Product fulfils the requirements of IEC 61010-1 as recognized by national or regional authorities
	BACnet International (BTL)	BACnet Testing Laboratories (BTL) 135-2021 Listed BACnet Application Specific Controller (B-ASC)

Cleaning the display

IMPORTANT:
- Do not apply cleaner directly to the touch panel surface. If cleaner spills onto the touch panel, soak up the cleaner immediately with an absorbent cloth.
- Do not use cleaner that is either acid or alkali. Use neutral pH cleaner.
- Do not use organic chemicals such as: paint thinner, acetone, tolulene, xylene, propyl or isopropyl alchohol, or kerosene.

IMPORTANT :
- N'appliquez pas de nettoyant directement sur la surface du panneau tactile. Si du nettoyant pénètre dans le panneau tactile, essuyez immédiatement le nettoyant à l'aide d'un chiffon absorbant.
- N'utilisez aucun nettoyant qui est acide ou alcalin. Utilisez un nettoyant dont le pH est neutre.
- N'utilisez pas de produits chimiques organiques comme le diluant pour peinture, l'acétone, le toluène, le xylène, l'alcool propylique ou isopropylique, ou le kérosène.

1. Use a dry or lightly dampened cloth with a mild cleaner or ethanol.
2. Make sure the cloth is only lightly dampened, not wet.
3. Wipe the surface gently. If there is a directional surface texture, wipe in the same direction as the texture.

North American Emissions Compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case users will be required to correct the interference at their own expense.

Canada

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Patents

Patents: https://jcipat.com

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Product warranty

This product is covered by a limited warranty. Contact your representative/branch for more details.

Contact information

Contact your local branch office: www.johnsoncontrols.com/locations

Contact Johnson Controls: www.johnsoncontrols.com/contact-us

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