Temperature Sensor

Install Guide

Primex is the leading provider of solutions to automate and maintain facility compliance, increase efficiencies, enhance safety and reduce risk for enterprise organizations in the healthcare, education, manufacturing and government vertical markets. Primex delivers solutions that utilize a facility's existing network infrastructure to automate, monitor, document and report essential activities performed by facility staff. Our solutions include synchronized time, automated critical notifications and bell scheduling, and environmental and event monitoring.

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Table of Contents

TEMPERATURE SENSOR SPECIFICATIONS

OneVue Temperature Sensors use intelligent recording and alerts to continuously safeguard valuable medications, vaccines, and other temperature sensitive assets. These temperature sensors meet the strictest of CDC guidelines. The guidelines call for temperature monitoring data loggers with features that ensure patient safety, maintain compliance, and reduce liability while protecting vaccine efficacy and minimizing inventory losses.

Parameter	Specification
Power	AC power adapter: 5V DC USB Mini B (5 pin) connector interface, 5 ft (1.5 m) cable, Input: 100-240 VAC, 50/60 Hz, 0.4A, Output: 5V DC, 1.0A max Battery Power: 2 AA Lithium 1.5V batteries; use of Energizer® L91 Ultimate Lithium batteries recommended. Estimated Battery Life: up to 18 months with use of Lithium 1.5V batteries; estimation based on 1 hour Logging Interval, 8 hour Check-In Interval and adequate wireless signal. Power over Ethernet (PoE) model: Compliant with IEEE 802.3af standard and compatible with 802.3at standard
Operation	Local Device Alerts: audio and visual status indicators Audio Alert Reset Periods (user-defined): next alarm, 15 and 30 minutes, 1, 2, 3 and 4 hours Alarm Delay (user-defined): 0 to 240 minutes Logging Interval (user-defined): 15, 20, 30 minutes, 1, 2, 3, 4, 8, 12 hours Check-In Interval (user-defined): 15, 20, 30 minutes, 1, 2, 3, 4, 8, 12 hours Unresponsive Timeout (user-defined): none, 30 minutes, 1, 2, 3, 4, 6, 8, 12, 16 hours, 1 day Internal Local Stored Reading Capacity: 4096 readings

Parameter	Specification
Network Communication	**Wi-Fi specifications** • Wireless Networking Protocols: 802.11b, 11g, 11n single stream (2.4 GHz) • Wireless Security Protocols: WEP (Open & Shared), WPA (TKIP & AES), WPA2 (TKIP & AES) • Wireless Authentication Protocols: None, EAP-FAST, EAP-TLS, EAP-TTLS (MSCHAPv2), PEAP v0 (MSCHAPv2), PEAP v1 (GTC) • Network Communication Protocols: Hypertext Transfer Protocol Secure (HTTPS)/TLS 1.2 • IP Addressing: Dynamic Host Configuration Protocol (DHCP), static IP addressing • Data Packet Size: typically less than 5 kilobytes (kB) **Power over Ethernet (PoE) and Ethernet specifications** • Power over Ethernet (PoE): Compliant with IEEE 802.3af standard • Ethernet:10/100 Mbps • Network Communication Protocols: Hypertext Transfer Protocol Secure (HTTPS)/TLS • IP Addressing: Dynamic Host Configuration Protocol (DHCP), static IP addressing • Data Packet Size: typically less than 5 kilobytes (kB)
Enclosure	Enclosure: ABS plastic Dimension: 4.7" H x 3.7" W x 1.3" D (11.93cm x 9.39cm x 3.30cm) Weight: 0.3 lb (136 gram) with 2 AA Lithium batteries Display: Liquid crystal display (LCD), HTN reflective glass, dimension: 0.75" H x 1.38" W (1.90 cm x 3.50 cm) LCD Display: current sampled reading, low and high sampled readings for the current collection period, and current operating state LED Status Indicator Mounting: wall or surface-mount
Environment	Operating Temperature: 32° to 122° F (0° to 50° C), indoor use only Storage Temperature: -4° to 140° F (-20° to 60° C)
Certifications	FDA registered, 21 CFR Part 11 compliant FCC, CE, and IC compliant

All specifications are subject to change without notice.

Temperature Sensor components

The below image represents the components of a OneVue sensor device.
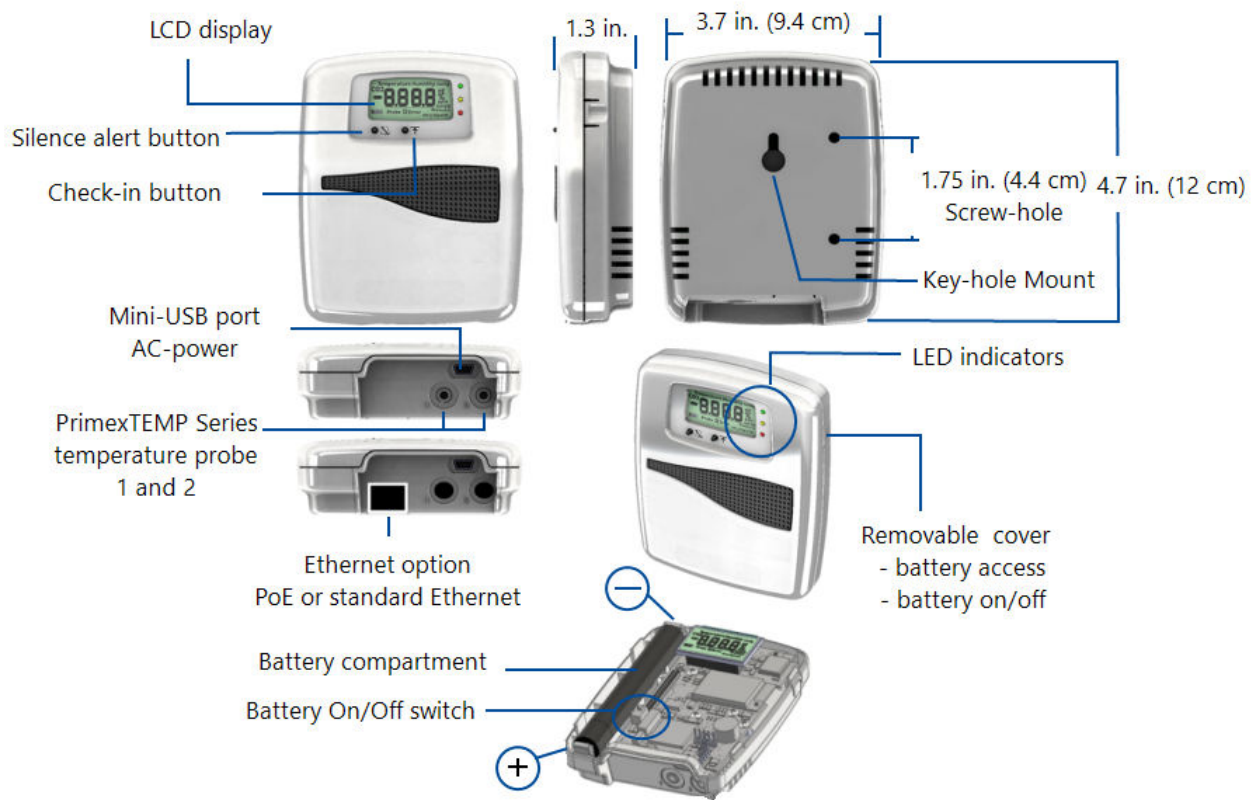
Temperature Sensor LCD screen

The LCD screen provides a visual display of its current sampled reading(s), the lowest and highest sampled readings for its current Collection Period, and current operating state.
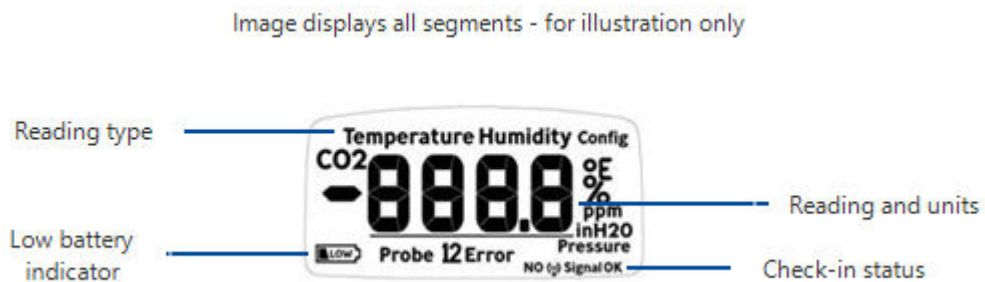
Sensor LCD screen operating state indicators

In addition to the sampled readings, the LCD screen provides visual indicators of its current operating state.

Segment	Description
Signal OK	Indicates its last connection to the facility's network and check-in to OneVue was successful.
No Signal	Indicates the device could not establish a connection to the facility's network and check-in to OneVue. For wireless network use, this may be due to the device is not within range of a wireless access point or the wireless signal strength is not adequate for normal operation. If the device is powered by AC or Power over Ethernet (PoE), the yellow LED indicator also flashes during this state.
Err (Temperature or Water Leak Sensor)	**For a temperature sensor:** indicates either of the following: (1) a probe is either removed from or not inserted correctly into the sensor's probe input jack, or can be caused due to the probe is not operating as expected, or (2) the collection period must be reset, which may result from inserting a new probe or reinserting a probe. To clear the error state and reset the Lo/Hi collection period, verify the probe is inserted into the sensor jack and press and release the sensor Silence (bell) button 🔕 . **For a water leak sensor:** indicates the water detector is either removed from or not inserted correctly into the sensor's input jack or can be caused due to the detector is not operating as expected. **During this error:** • When a probe or detector is not detected or operating as expected, the sensor automatically sends a No Probe error status to OneVue. The sensor and its assigned Monitored Asset are set to an Alarm state with a No Probe status. • Readings are not sampled or logged during this state. • If the device is powered by AC or PoE, the yellow LED indicator also flashes during this state.
Low Battery icon	Indicates an Alarm state due to its estimated battery life is less than 25%. To avoid loss of battery power, be sure to replace its batteries. Requires 2 AA Lithium AA batteries. The use of alkaline batteries is not recommended.
Lbat	Indicates an Alarm state due to its battery level is critically low. Replace its batteries immediately. Requires 2 AA Lithium AA batteries. The use of alkaline batteries is not recommended. Readings are not displayed, sampled, logged, or transmitted to OneVue during this state.

Segment	Description
Up	Indicates a firmware update is currently being applied to the device. **Do not remove power during this state.** When the firmware update is complete, UP is no longer displayed. Readings are not displayed, sampled, logged, or transmitted to OneVue during this state.
Con	The device is in configuration mode. The config icon is also displayed. Data is not logged or transmitted to OneVue during this state.
HwF	Indicates an internal hardware failure due to the main processor cannot communicate with the internal sensing element. Contact Primex Technical Support for assistance. Readings are not displayed, sampled, logged, or transmitted to OneVue during this state.
FTST	Indicates the sensor is in a Factory Test Mode state. A sensor enters Factory Test Mode when its Silence button 🔕 (bell button) is pressed and held for more than 7 seconds. This mode does not impact the use of the sensor or the logged readings stored in its local memory. The purpose of this mode is for use by Primex during factory testing. When a sensor has entered this mode, it performs a factory test and power-cycles (turns off and on), which can take up to approximately 1 minute. Once the factory test is complete, the sensor returns to its normal operating mode. Readings are not displayed, sampled, logged, or transmitted to OneVue during this state.

Sampled readings

Sampled readings are not transmitted to OneVue and are only displayed on the LCD screen.

Only a sensor's logged readings are transmitted to OneVue. How frequent logged readings are taken is set in the sensor's Logging Interval setting.

The sensor LCD screen displays three specific sampled reading types for each enabled probe input. Sampled readings are taken every 15 seconds.

- Current Reading: Last sampled reading.
- Lowest Sampled Reading: Coldest sampled reading for its current Collection Period.
- Highest Sampled Reading: Warmest sampled reading for its current Collection Period.

Sampled readings LCD screen display sequence

The temperature readings cycle through the specific sequence below. If a dual probe sensor, it cycles the sequence displaying Probe 1 and then Probe 2.

1. Displays Lo for 1 second. Indicates the next displayed reading is the Lowest (coldest) Sampled Reading for the current Collection Period.

2. Displays the Lowest Sampled Reading for 2 seconds.

3. Displays Hi for 1 second. Indicates the next displayed reading is the Highest (warmest) Sampled Reading for the current Collection Period.

4. Displays the Highest Sampled Reading for 2 seconds.

5. Displays Cur for 1 second. Indicates the next displayed reading is the Current Sampled Reading.

6. Displays the Current Sampled Reading for 2 seconds.

Collection Period - lowest and highest sampled readings*

CDC guidelines list "Checking and recording minimum/maximum temperatures at start of each workday" as a recommendation for coordinators. These values are the lowest (minimum) and highest (maximum) temperatures that have occurred over a period of time.

Primex refers to this period of time as the Collection Period and is reset manually at the sensor.

For example, if you reset a sensor's collection period at 8:02 AM on a Tuesday and you look at the sensor's local display at 7:45 AM on Wednesday, the lowest sampled reading (Lo) and highest sampled reading (Hi) displayed is for the time period from 8:02 AM Tuesday to 7:45 AM on Wednesday. If you reset the collection period at 7:46 AM on Wednesday, that resets the collection period to start on Wednesday at 7:46 AM.

*Meets CDC Guidelines for Vaccine Storage

How to reset the Collection Period

- **If the sensor is NOT in a reading alarm:** press and hold down the Silence button 🔕 (bell icon) for 1 second. A single beep is emitted when the reset is complete.
- **If the sensor IS in a reading alarm (audio alert and/or red LED is flashing):** press and quickly release the Silence button 🔕 (bell icon) to clear the alarm, and then for 1 second press and hold down the Silence button. A single beep is emitted when the reset is complete.
  This clears the audio alarm and resets the collection period.

Temperature Sensor service buttons (bell icon and up arrow buttons)

A Temperature Sensor has two service buttons located on the front of the device. The silence button (bell icon) is used to clear the local audible reading alarm and reset the collection period. The check-in button (up arrow) is used to initiate a manual check-in to OneVue.

Silence button 🔕 (bell icon)

The silence button has two functions, to clear an audio reading alarm and to reset the Collection Period for the lowest and highest sampled temperature readings.

Clear local sensor reading alarm (audio and LED visual alert)

When a sensor is in a reading alarm state (its last reading is out of range) the sensor emits an audio alert (if enabled) and its red LED flashes.

To stop the the local alarm, **press and immediately release** the sensor **Silence button** 🔔. (bell icon) This clears the audio alert and stops the red LED from flashing, but does not acknowledge the alert in OneVue.

The local alarm resumes once the time period set in the sensor's Resume Audio Alert (default 15 minutes) has been reached. Audio alert settings are configured from a sensor's gateway profile.

Reset collection period (local temperature low and high readings)

A Temperature Sensor displays its current sampled reading and the lowest and highest sampled reading for its current collection period. A sample reading is taken every 15 seconds.

When the collection period is reset, the lowest and highest sampled readings collected are set to start at the time the reset was performed.

How to reset the collection period varies if the sensor is in or not in a reading alarm.

- **If the sensor is NOT in a reading alarm:** for 1 second, press and hold down the Silence button (bell icon). A single beep is emitted when the reset is complete.
- **If the sensor IS in a reading alarm (audio alert and/or red LED is flashing):** press and quickly release the Silence button (bell icon) to clear the alarm, and then for 1 second press and hold down the Silence button. A single beep is emitted when the reset is complete.
  This clears the audio alarm and resets the collection period.

Check-in button ↑ (up arrow)

Pressing and quickly releasing the sensor check-in button ↑ (up arrow) initiates a check-in to OneVue. During each check-in, all logged readings are transmitted to OneVue and any pending updates are downloaded to the sensor.

When the check-in button is pressed and released, the device emits a series of audio beeps indicating its connection sequence. When a device emits the following beep sequence and displays Signal Ok, this indicates a successful check-in.

1 beep: device booted

2 beeps: device connected to network

3 beeps: device connected to OneVue

During an active check-in connection, additional pressing of the check-in button is ignored.

If a check-in fails, commonly due to the sensor cannot establish a network connection, all logged readings are stored in its non-volatile memory. If the number of failed check-ins exceeds the size of the non-volatile memory, the oldest readings are overwritten. Primex sensor devices store up to 4096 readings.

Sensor Green, Yellow, and Red LED indicators

A Primex sensor has three LED indicators (green, yellow, and red) that provide a visual indicator of its current state.

When power is first applied, the LCD segments display and LED indicators briefly illuminate.

LED	State/Status	Device power
Green LED illuminated	Normal state Operating as expected	AC or PoE power: LED illuminated Battery-power only: LED disabled to conserve battery life. Upon power up, illuminates for 2 seconds

Yellow LED flashing	Warning/Alarm state due to either of the below conditions:
	
	• Low battery
	  Batteries need to be replaced and the low battery icon is also displayed
	• Unresponsive
	  Its last connection to the network failed and the No Signal indicator is also displayed
	• Alarm state (Temperature or Water Detector Sensor only)
	  The sensor has detected no input from a Temperature Probe or Water Detector
		AC or PoE power: LED is illuminated and flashing
		
		Refer to the LCD display to identify the condition

Red LED flashing	Reading Alarm (Out of Range, Past Alarm Delay status) • Out of Range: last reading is below or above its Normal Condition, • The amount of time it has been out of range has exceeded its Alarm Delay	All power methods: LED is illuminated and flashing

Sensor reading alarm audio alert

Primex sensors are equipped with a reading alarm audio alert. The audio alert is activated when a reading is out of range and the time period it has been out of range has exceeded the time period set in its Alarm Delay.

• When the audio alert is enabled (disabled by default) and the sensor is in a reading Alarm state, the sensor emits an audio beep at one second intervals. Also, when powered by AC or PoE, the sensor's red LED flashes once per second.

• During a reading Alarm state, pressing and immediately releasing the silence button 🔕 clears the audio alert and stops the red LED from flashing, but does not acknowledge the alert. The audio alert resumes once the time period of the Resume Audio Alert setting has been reached.

• Audio alert settings are configured from a sensor's gateway profile.

Sensor power input

The power source of a Primex sensor is dependent upon the model's power specifications, including AC power with battery backup, battery-powered, and Power over Ethernet (PoE). All models are compatible with the AC power adapter accessory.

Models using AC power or PoE can also use battery power as a backup power source. During battery backup, the device operates on its battery power and continues to log and transmit readings until the primary power source is restored.

AC power	• AC power adapter: 5V DC USB Mini B (5 pin) connector interface, 5 ft (1.5 m) cable • Input: U.S./Canada: 120V~, 60Hz, 0.4A | Outside U.S.: 100 to 240V~, 50/60Hz, 0.4A • Output: 5V DC • Max current: 1A • Optional power extension cable: USB power cable 6.5 ft. (2 m), Mini B (5 pin) M and Mini B (5 pin) F connector
Power over Ethernet (PoE) Temperature, Temperature and Humidity, Differential Pressure, Water Leak, and Contact Closure Sensors	• Compliant with IEEE 802.3af standard and compatible with 802.3at standard
Battery power Recommend for backup power use only	• 3.0v Primex Lithium/Iron Disulfide Battery Pack or two AA 1.5V Energizer® Ultimate Lithium batteries. • Temperature, Temperature and Humidity, and Differential Pressure Sensors When operating solely on battery power, estimated battery life is up to 18 months with use of Lithium 1.5V batteries; estimation based on 1 hour Logging Interval, 8 hour Check-In Interval, and adequate wireless signal. • Water Leak and Contact Closure Sensors (backup battery power use only) When operating solely on battery backup power, estimated battery life is 7 days. This estimation is based on the use of Lithium 1.5V batteries, 1 hour Logging Interval, 8 hour Check-In Interval, and adequate wireless signal. • Use of alkaline batteries is not recommended.

Manually initiate a sensor to check-in to OneVue

While locally at a sensor, you can initiate a manual check-in. During each check-in all logged reading(s) are transmitted to OneVue and any pending updates are downloaded to the sensor.

A Primex sensor checks-in to your OneVue account at regular intervals, per the frequency set in its Check-In Interval setting. The Logging Interval and Check-In Interval settings are configured from a sensor gateway profile.

1. From the front of the sensor, press and quickly release its **check-in button** ↑ **(up arrow)**.
    The sensor emits a series of audio beeps indicating is connection sequence.
    1 beep: device booted

    2 beeps: device connected to network

    3 beeps: device connected to OneVue

    During an active check-in connection, additional pressing of the check-in button is ignored.
2. If a check-in fails, this is commonly due to the device cannot establish a network connection. During this condition, all logged readings are stored in the sensor's non-volatile memory. If the number of failed check-ins exceeds the size of the non-volatile memory, the oldest readings are overwritten. A sensor can store up to 4096 readings in its non-volatile memory.
    -   **If you only hear 1 beep:** sensor could not connect to the facility's network.
    -   **If you hear 1 beep followed by 2 beeps:** sensor could not connect to OneVue.

PROBE WITH CERTITRAK SPECIFICATIONS

A OneVue Probe with CertiTrak is supplied with a unique Certificate of Traceability and Calibration Testing. The certificate provides data required for compliance with the guidelines issued by the CDC and other authorities having jurisdiction. OneVue intelligently tracks the calibration lifespan for Probes with CertiTrak by calculating the days remaining to perform calibration testing based on the Probe Replacement settings. OneVue also logs and stores a record of the last calibration testing date, date a probe was put into service (first use date), and days until the next calibration testing is due (or probe replacement).

OneVue logs and stores a record of the last calibration testing date, date a probe was put into service (first use date), and days until the next calibration testing is due (or probe replacement).

Standard Probe with CertiTrak specifications (T100SMRT)

Parameter	Specification
Temperature Range	-40 ° to 105 °C (-40° to 221 °F)
Accuracy	± 0.5 °C (1° F)
Sheath Material	Stainless steel
Sheath Length	4 in. (10.1 cm)
Sheath Diameter	1/4 in. (0.63 cm)
Cable Properties	Ribbon
Cable Length	6 ft. (1.8 m)

Cyro Probe with CertiTrak specifications (T100CSMRT)

Parameter	Specification
Temperature Range	-200° to 150 ° C (-328° to 238° F)
Accuracy	± 0.5 °C (1° F)
Sheath Material	Stainless steel
Sheath Length	4 in. (10.1 cm)
Sheath Diameter	1/4 in. (0.63 cm)
Cable Properties	Nylon
Cable Length	6 ft. (1.8 m)

THERMOBUFFER SPECIFICATIONS

A Thermobuffer is used to simulate the temperature of refrigerated assets rather than the air temperature of a refrigeration unit. The bottle, either filled with food grade glycol or solid wax, allows for slower reaction to abrupt temperature changes, yet still maintain long-term accuracy if the temperature change remains permanent.

The use of a thermobuffer can eliminate temperature spikes due to frequent refrigerator or freezer door opening and decrease false alarms.

Glycol bottle

Bottle is filled with up to 2 ounces (60 ml) of food grade glycol, temperature probe inserted into glycol, and sealed.

Solid wax based bottle

Bottle is assembled with a NIST-certified probe and filled with a solid wax.

INSTALL TEMPERATURE SENSOR AND TEMPERATURE PROBE

Temperature Sensor supplied components

Inspect the package contents to verify the supplied components are present and no damage has occurred during shipping.

Quantity	Component
1	Sensor device
2	3M™ Dual Lock Fastener & Tape, 2" x 1" strips
1	Primex 3.0v Lithium/Iron Disulfide Battery Pack (contains 2 AA 1.5V Energizer® Ultimate Lithium batteries)
1	USB configuration cable; supplied with a device order only. For use with the Primex Device Configuration software to manually configure a device or troubleshoot device network connectivity issues. It's recommended to save this cable for future use.

Optional accessories: AC power adapter, AC power extension cable

Devices using AC or PoE power can also use battery power as a backup power source in the event of a power loss. During battery backup, the device operates on battery power and continues to log and transmit readings until the primary power source is restored.

Temperature probe supplied mounting components

Quantity	Component
4	Zip ties
4	Cable tie mounts
4	HEYClip™ Tension Wire Clips with adhesive back-mount

Not supplied: side cutters, sand paper

Mounting guidelines

Temperature Sensor location guidelines

Where a sensor device is mounted impacts its use and operation. Be sure to identify a location that meets the following guidelines.

• Mount on the door hinge side of the unit, either on the front of the unit or on the side of the unit. The device should not be mounted to the back side of a unit.

• Easily accessible for maintenance and clear from obstructions. Avoid a location that would interfere with the use of the monitored unit or area.

- Wireless Network use

  It's recommended that the device is in a clear line of sight to a wireless access point. If the location is NOT in a clear line of sight to a wireless access point, its LCD screen must be above the unit it's being mounted to. Wireless signal strength of -60db or better at the mounting location. It's recommended to measure the strength with a Wi-Fi analyzer app on a mobile phone.

- PoE/Ethernet use

  An open, active network port in close proximity to the mounting location.

- AC power

  Outlet within 5 ft. (1.5 m) from its mounting location. Devices using AC or PoE power can also use battery power as a backup power source in the event of a power loss. During battery backup, the device operates on battery power and continues to log and transmit readings until the primary power source is restored.

> ⚠ **CAUTION**
>
> The device is shock and vibration resistant; however, be careful not to drop or install the device in a location where it could be exposed to excessive vibration.

Temperature Probe and Thermobuffer location guidelines

The mounting location impacts reading accuracy. Be sure the location meets the following guidelines.

- Mount in a location where temperature fluctuation is minimal. Commonly the temperature inside a refrigeration or freezer unit is not uniform. The cold air enters the unit from one location only and is measure by the thermostat at one location only, a temperature gradient is sure to exist.
- Mount in the center of the unit for optimal readings; maintain a 3 to 6 in. (7.6 to 15.2 cm) distance between the refrigeration unit contents and thermobuffer bottle to avoid creating a cold sync.
- Mount in a location that is not in the direct path of a cooling fan.
- Located where the probe/thermobuffer cannot to be moved inside the unit to ensure consistent readings
- For non-conductive wire shelving, mount and secure the probe/thermobuffer to underside of a shelf located in the center-rear of the unit.
- Secure probe cable at every 6 inches (15.2 cm) of cable run and at all turns.

Step 1: Verify sensor configuration

Prior to installation, a sensor device must be configured for use with OneVue. A sensor is either configured prior to shipment through Device Preconfiguration or onsite using the OWDC app.

- **Device Preconfiguration completed:** white label with configured settings is affixed to the backside of the sensor. Sensor has been configured with network settings allowing its connection to OneVue and also added to OneVue. Proceed to next install step.
- **OWDC onsite configuration required:** Sensor shipped with factory default settings and is not added to OneVue.

You must configure the sensor now using the OWDC app.
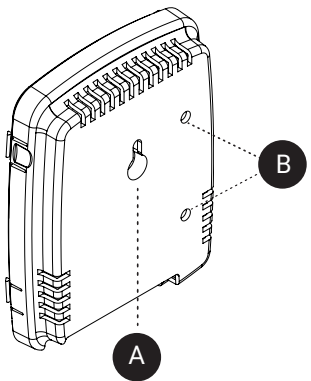
Step 2: Insert sensor batteries and turn on battery power

1. Remove the device cover; simultaneously press the two tabs located on the top side of the device (A).
2. Insert the 3.0v Primex Lithium/Iron Disulfide Battery Pack or two 1.5v Lithium AA batteries. Follow the symbols showing the correct way to position the positive (+) and negative (-) ends of the battery pack.
3. Located to the lower-right of the battery compartment, set the battery on/off switch to the Up (On) position (B).
4. Replace the device cover.
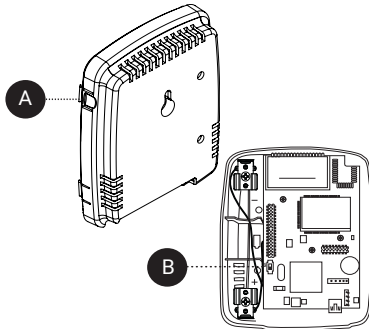
Step 3: Mount sensor

Mount sensor using either of the methods below.

Method	Steps
Wall mount	**Key-hole mount (A)** 1. Determine the mounting location by referencing the key-hole slot located on the back of the device. Pre-drill mounting hole into the wall surface and insert wall anchor. 2. Insert a wall anchor into mounting hole. 3. Insert a #6 drywall screw into the wall anchor, leaving approximately 3/8 in. (0.95 cm) of the screw head exposed for hanging. 4. Attach device by sliding the key-hole slot onto the mounting screw. Ensure the device is properly secured and level. **Two-screw mount (B)** 1. Mark and pre-drill two mounting holes into the wall surface. 1.75 in. (4.4 cm) distance between the two screw slots. 2. Insert wall anchors. 3. Remove device cover to attach the device to the wall surface by inserting # 6 drywall screws. Ensure the device is properly secured and level.
Surface mount 3M™ Dual Lock Fastener & Tape, 2" x 1" strips	1. Prepare the mounting area to ensure maximize adhesion. If there is moisture, dry the area first. 2. Press a black fastener strip and a clear adhesive strip together. 3. Remove the backing off of the clear adhesive strip(s) and affix to the back of the device. It's recommended to place the strip(s) horizontally. 4. Remove the backing off of the black fastener strip and affix to mounting surface; creating a secure mount between the device and mounting surface. 5. Verify the strips are securely fastened together and the device mount is secure.

Step 4: Mount probe or thermobuffer

1. Thermobuffer with Glycol: Fill the thermobuffer bottle with food grade glycol until the bottle is 3/4 full, allowing room for fluid expansion. Insert the sensor probe through the bottle cap grommet with the probe fully submersed in the glycol fluid. Tighten the thermobuffer bottle cap with a wrench to secure the probe.
2. Mount in the center of the unit with the probe cable facing toward the back of the unit; do not place next to or near a cooling fan or element.
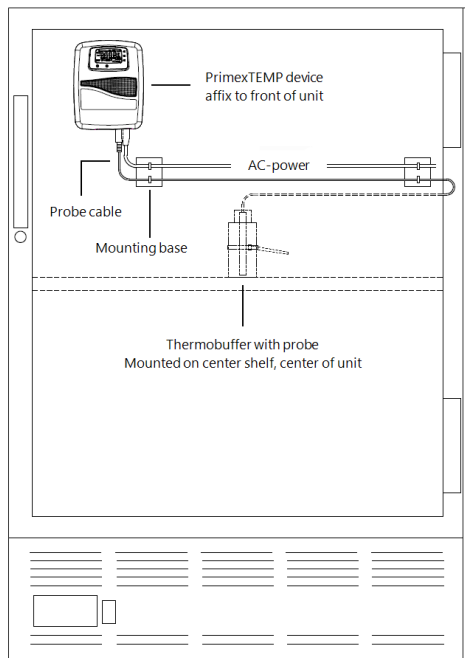
3. Secure to the unit shelving to prevent a risk of accidentally pulling out a cable or moving the probe/thermobuffer from its fixed mounting position. If using a thermobuffer, zip tie the probe and bottle to a mounting base. Avoid placing the thermobuffer in direct contact with the side of the unit.
   Wire shelving: Secure to the underside of the shelf using a zip tie.
   Solid shelving: Secure to shelf using the supplied dual lock fastener and tape.
4. Route the probe cable to the back of the shelf and along the door hinge side of the unit.
5. Route the probe cable through the door hinge gap or existing hole.
6. Insert probe into the sensor device probe input.
   A specific procedure is required when either installing a new sensor with a CertiTrak Probe or replacing a probe. This procedure ensures OneVue is updated with the probe serial number. The tag affixed to the probe cable identifies its unique serial number.

When installing a new sensor with a CertiTrak Probe	When replacing a CertiTrak Probe
Wait for Err to display on the sensor's LCD screen.	Remove the existing probe from sensor jack and wait for Err to display on the sensor's LCD screen.

When installing a new sensor with a CertiTrak Probe	When replacing a CertiTrak Probe

Proceed by completing the steps below.

1. Insert the probe into the sensor probe jack.
2. Press and release the sensor **Check-In button** ⊼ (up arrow) to send the new probe serial number update to OneVue.
3. For 1 second, press and hold the sensor **Silence button** 🔕 (bell icon). A single beep is emitted when the reset is complete.
4. From the LCD screen verify the readings are displaying (Lo, Hi, and Cur).
5. Verify the probe serial number update: From OneVue go to **Monitoring** > **Monitored Assets** > select the **Name** of asset the sensor is monitoring > from the Sensor Type section, select the **Temperature** link. From the sensor profile's **Probe Life** section, verify the **Probe Serial Number** is the same as the number printed on the tag attached to the probe.

Devices ➜ Sensors ➜ Sensor Profile

Sensor Profile

Show Advanced Options

Monitored Asset	Pharmacy Freezer (TR) ▼	Clear		Sensor Type	Temperature

View

			Gateway ID	00:1E:B3:8F:73:DE

Normal Condition	-31.7	to	0.0	C ⌄		State	⬤ Normal

💾 Save   ↺ Cancel

Probe Life

Probe Serial No.   A0102917

Last Testing Date   2019-08-09

First Use Date   2020-09-23

Probe Replacement   Use Default ⌄

Information for CDC and other AHJ Audits

7. Secure the cable along its mounting path. Using the supplied zip ties and the cable tie mounts or tension wire clips, secure the probe cable every six inches along its mounting path and at all turns.
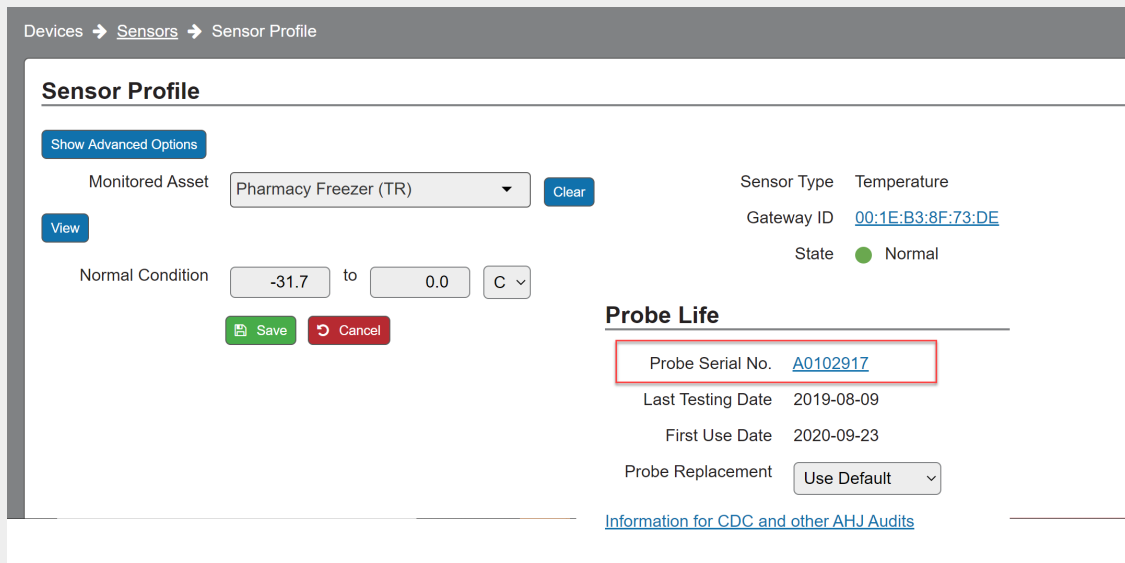8. Neatly tuck the cable along the sides using the mounting bases leading through the door gap or an existing hole designed for remote temperature sensor probe installation.
   If the door gap method is used for installation, secure the probe cable with adhesive foam tape where the cable passes through the door gap to protect it from excessive rubbing or getting caught in the door hinge. Be sure the cable is flat and the door seal is tight.
9. Secure the AC power cable and probe cable to the outside of the unit using the supplied cable tie mounts or tension wire clips.
10. Once all cables are in their desired location, tighten and trim all zip ties. If needed, use sandpaper to eliminate sharp edges.

Step 5: Establish Connections

1. Connect AC power. For PoE model, insert Ethernet cable.
2. Connect Probe(s) to sensor device.

Step 6: Verify connection to OneVue

1. Verify Signal OK is displayed on the LCD screen, which indicates it successfully checked-in. When power was applied, the sensor initiated a check-in to OneVue.
2. If Signal OK is not displayed, initiate a manual check-in. From the front of the sensor, press and quickly release the check-in button ⊼ (up arrow). The sensor emits a series of audio beeps indicating its connection sequence. During an active check-in connection, additional pressing of the check-in button is ignored.
   1 beep: device booted

   2 beeps: device connected to network

   3 beeps: device connected to OneVue

Step 7: Verify OneVue settings

Verify the following settings are configured to meet the requirements of the condition being monitored.

1. Monitored Asset settings. Go to **Monitoring** > **Monitored Assets**.
   Each Primex sensor device is assigned to a Monitored Asset and its readings or monitored conditions generate the Monitored Asset's current and historical readings. In addition, sensor operating condition data is linked to its assigned Monitored Asset. When a sensor enters a Warning or Alarm state, its assigned Monitored Asset is also set to an Alarm or Warning state.
   - Sensor assigned to a Monitored Asset. Go to Devices > Sensors > select sensor > verify assigned Monitored Asset.
   - Monitored Asset assigned to sensor is added to an Alert Rule.
   - Monitored Asset assigned to sensor is added to a Report Profile.
   - Users responsible for the monitored condition are assigned to Monitored Asset's Business Unit.
2. Sensor settings (Go to Monitoring > Monitored Assets > select Monitored Asset > select sensor.
   - **Normal Condition**
     The Normal Condition is the expected operating range or the condition of the Monitored Asset assigned to the sensor. The settings vary based on the type of sensor and the condition being monitored.
   - **Alarm Delay**
     The Alarm Delay sets the amount of time OneVue delays setting the sensor and its assigned Monitored Asset to an Alarm state. When a sensor reading is not within its Normal Condition (an Out of Range status) and it remains Out of Range for the time period set in its Alarm Delay setting, the sensor and Monitored Asset are then set to an Alarm state with a status of Out of Range, Past Alarm Delay.
   - **Audio Alert (sensor gateway setting)**

Primex sensors are equipped with a reading alarm audio alert. The audio alert is activated when a reading is out of range and the time period it has been out of range has exceeded the time period set in its Alarm Delay.

- **Logging Interval (sensor gateway setting)**

  The Logging Interval is how frequent a sensor logs a reading and stores it into its internal memory. All logged readings are then sent to OneVue at the frequency set the sensor's Check-in Interval frequency.

- **Check-in Interval (sensor gateway setting)**

  The Check-in Interval is the frequency a sensor connects to the facility's network to send its logged readings to OneVue. Also during each check-in, pending setting updates are downloaded to the sensor.

- **Unresponsive Timeout (sensor gateway setting)**

  The Unresponsive Timeout is the maximum amount of time a Primex device can go without a check-in to OneVue. When this time limit is exceeded, the device is set to an Alarm state with an Unresponsive status.

ONEVUE NETWORK REQUIREMENTS

The information below provides the details required to allow Primex network-enabled devices to communicate over a facility's network to OneVue. Details include device Wi-Fi, PoE, and Ethernet network communication protocols, and network port and firewall requirements.

Network communication protocols

The OneVue platform is designed, developed, and managed in-house, allowing Primex to control the user experience and provide the highest level of reliability and security.

To support the myriad of network security and protocol standards in today's business environment, Primex network-enabled devices offer an array of options for secure network connectivity. This ensures our customers can use and leverage our full line of products without adding costly additional IT infrastructure.

Wi-Fi specifications

- Wireless Networking Protocols: 802.11b, 11g, 11n single stream (2.4 GHz)
- Wireless Security Protocols: WEP (Open & Shared), WPA (TKIP & AES), WPA2 (TKIP & AES)
- Wireless Authentication Protocols: None, EAP-FAST, EAP-TLS, EAP-TTLS (MSCHAPv2), PEAP v0 (MSCHAPv2), PEAP v1 (GTC)
- Network Communication Protocols: Hypertext Transfer Protocol Secure (HTTPS)/TLS 1.2
- IP Addressing: Dynamic Host Configuration Protocol (DHCP), static IP addressing
- Data Packet Size: typically less than 5 kilobytes (kB)

Power over Ethernet (PoE) and Ethernet specifications

- Power over Ethernet (PoE): Compliant with IEEE 802.3af standard
- Ethernet:10/100 Mbps
- Network Communication Protocols: Hypertext Transfer Protocol Secure (HTTPS)/TLS
- IP Addressing: Dynamic Host Configuration Protocol (DHCP), static IP addressing
- Data Packet Size: typically less than 5 kilobytes (kB)

Network port requirements

Primex Ethernet, PoE, and Wi-Fi enabled devices communicate to OneVue over a facility's network using the Hypertext Transfer Protocol Secure (HTTPS) protocol. OneVue client and device data is encrypted in transit and all sensitive data is encrypted at rest. An outbound HTTPS connection is established by each device and once complete the IP address is released.

The following ports must be open to allow for outgoing OneVue device communication from the facility network.

- **Port TCP 443:** required to be open to allow Hypertext Transfer Protocol over TLS/SSL (HTTPS) communication with OneVue and Wi-Fi, Power over Ethernet (PoE)/Ethernet enabled devices.

- **Port UDP 123:** used by Wi-Fi, Power over Ethernet (PoE)/Ethernet devices to access an external NTP Server. Port is required to be open for use with external Network Time Protocol (NTP) Servers. Use of internal NTP Servers is also supported.

Network firewall requirements

The OneVue platform runs on the Amazon Web Services (AWS) cloud infrastructure. Organizations with network firewalls in place must proactively allow outbound network communication and file downloads through specific OneVue Domains and URLs. The files downloaded include the Sync device clock list, Notify device schedules, and device setting updates.

OneVue is a high-availability (HA) platform that may change IP addresses at anytime, therefore OneVue does not support the use of firewall IP address filtering.

If the firewall support wildcards:

Domain filters	*.primexonevue.com
	us-east-1-production.s3.amazonaws.com
URL filters	https://*.primexonevue.com
	https://us-east-1-production.s3.amazonaws.com

If the firewall does not support wildcards:

Domain filters	console.primexonevue.com
	deviceapi-alt.primexonevue.com
	deviceapi.primexonevue.com
	onevueapi.primexonevue.com
	us-east-1-production.s3.amazonaws.com
URL filters	https://console.primexonevue.com
	https://deviceapi-alt.primexonevue.com
	https://deviceapi.primexonevue.com
	https://onevueapi.primexonevue.com
	https://us-east-1-production.s3.amazonaws.com

Email, text (SMS), and voice communication

OneVue generates email, text (SMS), and voice notifications. Be sure to add **support@primexonevue.com** to your email program's safe senders list. Text and voice alert notifications are sent from phone number (608) 709-7043.

SAFETY, REGULATORY, WARRANTY

The following applies to a OneVue Sense models T101, T102, A120, A100, E121, E122, E123.

SAFETY PRECAUTIONS

READ THIS DOCUMENT THOROUGHLY BEFORE PERFORMING INSTALLATION OR SERVICE PROCEDURES.

Safety Precautions

- Device is designed for indoor use only and is not weather protected. Operating a device outdoors or in wet areas is an electrical hazard and may damage the device while nullifying its warranty.

Equipment Precautions

- To avoid possible electric shock or damage, make sure device is not powered during installation or mounting.
- For healthcare facilities, device is not intended for patient use and must not be installed within 6 feet (2 m) of patient contact.
- Device may be cleaned with a cloth moistened with water or a common disinfectant. Be sure to test any cleaning solution on a small area before applying solution to entire device.

REGULATORY APPROVALS

Primex models: Sensors (T101, T102, A120, A100, E121, E122, E123), Bell Controller (E130)

FCC Compliance

Pursuant to FCC 15.21 of the FCC rules, changes not expressly approved by Primex might cause harmful interference and void the FCC authorization to operate this product.

FCC Radio Frequency Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiver's antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To assure continued appliance, any changes or modifications not expressly approved by the party responsible for compliance could voice the user's authority to operate this equipment. (Example -use only shielded interface cables when connecting to computer or peripheral devices).

FCC Warning

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Channel

The Wireless Channel sets the radio frequency used for communication.

- Access Points use a fixed Channel. You can select the Channel used. This allows you to choose a Channel which provides the least interference and best performance. In the USA and Canada, 11 channel are available. If using multiple Access Points, it is better if adjacent Access Points use different Channels to reduce interference.
- In "Infrastructure" mode, Wireless Stations normally scan all Channels, looking for an Access Point. If more than one Access Point can be used, the one with the strongest signal is used. (This can only happen within an ESS).
- Is using "Ad-hoc" mode (No Access Point), all Wireless stations should be set to use the same Channel. However, most Wireless stations will still scan all Channels to see if there is an existing "Ad-hoc" group they can join. Note: This equipment marketed in the USA is restricted by firmware to only operation on 2.4 GHz channel 1-11

ONE YEAR LIMITED WARRANTY

Warranty applies to: Sense Sensors (T101, T102, A120, A100, E121, E122, E123, LD100STRD, MSW1, SMRTGRP, T100)

Primex, Inc. warrants this product to be free from defects in materials and workmanship for a standard of one (1) year from the date of purchase. Primex, Inc. will at its sole option, repair or replace any components that fail in normal use. Such repairs or replacements will be made at no charge to the customer for replacement parts. The customer will be responsible for any transportation costs. All product accessories are warranted for a period of one (1) year against material or manufacturing defects from the date of purchase.

THIS WARRANTY DOES NOT COVER

(1) Physical damage to this product; (2) Product failure or damage caused by improper installation, lack of periodic maintenance, improper or abnormal use, misuse, neglect or accident (3) Damage caused by another device or software used with this product (including, but not limited to, damage resulting from use of non-Primex brand or approved parts, consumables or accessory items); (4) Problems arising from anything other than defects in materials or workmanship; and (5) Consumables or other items requiring periodic maintenance or replacement with ordinary wear and tear, including, but not limited to, product batteries and cables. This warranty is VOID if this product has been altered or modified in any way (including, but not limited to, attempted warranty repair other than by Primex or an authorized service partner).

LIMITATION OF LIABILITY

The warranties and remedies contained herein are exclusive and in lieu of all other warranties express or implied or statutory, including any liability arising under any warranty or merchantability or fitness for a particular purpose, implied, statutory or otherwise. In no event shall Primex, Inc. be liable for any incidental, special, indirect or consequential damages, whether resulting from the use, misuse or inability to use this product or from defects in the product. Some states do not allow this exclusion or limitation of incidental or consequential damages so the above limitations or exclusion may not apply to you.

TO OBTAIN WARRANTY SERVICE

If, after following the instructions in the product manual, you are certain the product is defective, contact Primex Technical Support to assist with troubleshooting the issue. If the issue cannot successfully be resolved and the product is under warranty, a RMA (Return Material Authorization) will be generated. The RMA form will be provided via email with detailed instructions for the return. All merchandise returned must be shipped to Primex, Inc. Attn: Returns Dept., N3211 County Road H, Lake Geneva, WI 53147. Primex, Inc. retains the exclusive right to repair or replace the unit at its sole discretion. Such shall be your sole exclusive remedy for any breach of warranty.

TECHNICAL SUPPORT

You may require technical support when you have questions about product features, installation and configuration, or troubleshooting. Support services are delivered in accordance with your organization's support agreement, end-user license agreements, and warranties, either with a Primex Certified Sales and Service Partner or directly with Primex.

Support through Primex Certified Sales and Service Partners

Ensuring our customers experience excellent service is of utmost importance to Primex. Our network of Certified Sales and Service Partners offers technical support services for Primex products.

If you have purchased Primex products or have a service agreement with a Primex Partner, they are your primary contact for all Technical Support inquires.

When contacting Technical Support

Make sure you have satisfied the system requirements specified in the product documentation. Also be at the computer or device on which the problem occurred, in case it's necessary to replicate the problem.

Please have the following information available:

- Customer ID/Account Name
- Problem description/error messages
- Device hardware information
- Troubleshooting performed

Primex Technical Support

Hours: 7:00 AM to 7:00 PM CT, Monday through Friday

Phone: 1-262-729-4860

Email: service@primexinc.com

Web: www.primexinc.com/support