OneVue™ Sense Differential Pressure Sensor

Install Guide

Product Models: A120
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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**

Differential Pressure Sensor specifications ........................................................................................................ 4
Differential Pressure Sensor components ........................................................................................................... 5
Differential Pressure Sensor LCD display .......................................................................................................... 6
Differential Pressure Sensor service buttons ...................................................................................................... 7
Sensor LED indicators ......................................................................................................................................... 8
Sensor audio alert ............................................................................................................................................... 8
Sensor power input ............................................................................................................................................ 9
Manually initiate a sensor to check-in to OneVue ............................................................................................. 9
About Differential Pressure Sensor door switch monitoring ........................................................................... 10
Install Differential Pressure Sensor: Mounting kit for through the wall install .................................................... 12
Typical installation illustration .......................................................................................................................... 12
Supplied components ....................................................................................................................................... 12
Mounting kit contents ....................................................................................................................................... 13
Mounting guidelines ......................................................................................................................................... 13
Step 1: Verify sensor configuration .................................................................................................................. 14
Step 2: Insert sensor batteries and turn on battery power .................................................................................. 14
Step 3: Route tubing between Controlled and Reference Space ....................................................................... 15
Step 4: Mount sensor, connect tubing, and apply power .................................................................................. 15
Step 5: Verify connection to OneVue .............................................................................................................. 15
Step 6: Verify OneVue settings ........................................................................................................................ 16
Differential Pressure Install: Enable door switch monitoring ........................................................................... 18
Use door switch monitoring to manage when monitoring is enabled or disabled ........................................... 18
Enable door switch monitoring ........................................................................................................................ 18
OneVue network requirements .......................................................................................................................... 20
Network communication protocols .................................................................................................................. 20
Safety, Regulatory, Warranty ............................................................................................................................. 22
SAFETY PRECAUTIONS ................................................................................................................................... 22
REGULATORY APPROVALS .............................................................................................................................. 22
ONE YEAR LIMITED WARRANTY ...................................................................................................................... 24
Technical Support ........................................................................................................................................... 25
Differential Pressure Sensor specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches of Water (inH20) Range</td>
<td>± 0.001 to ± 0.500</td>
</tr>
<tr>
<td>Pascal (Pa) Range</td>
<td>± 0.2 to ± 125.0</td>
</tr>
<tr>
<td>Reading Accuracy</td>
<td>± 3%</td>
</tr>
<tr>
<td>Factory Calibration</td>
<td>Digital temperature compensation over the ± 0.500 inH20 range and ±125.0 Pa</td>
</tr>
<tr>
<td>Sample Rate</td>
<td>Sampled reading taken every 5 seconds</td>
</tr>
<tr>
<td>Operation</td>
<td>Local Device Alerts: audio and visual status indicators</td>
</tr>
<tr>
<td></td>
<td>Audio Alert Reset Periods (user-defined): next alarm, 15 and 30 minutes, 1, 2, 3 and 4 hours</td>
</tr>
<tr>
<td></td>
<td>Alarm Delay (user-defined): 0 to 240 minutes</td>
</tr>
<tr>
<td></td>
<td>Logging Interval (user-defined): 15, 20, 30 minutes, 1, 2, 3, 4, 8, 12 hours</td>
</tr>
<tr>
<td></td>
<td>Check-In Interval (user-defined): 15, 20, 30 minutes, 1, 2, 3, 4, 8, 12 hours</td>
</tr>
<tr>
<td></td>
<td>Unresponsive Timeout (user-defined): none, 30 minutes, 1, 2, 3, 4, 6, 8, 12, 16 hours, 1 day</td>
</tr>
<tr>
<td></td>
<td>Internal Local Stored Reading Capacity: 4096 readings</td>
</tr>
<tr>
<td>Optional door switch</td>
<td>Eliminates false alarms when a door is intentionally left open for an extended period of time signaling that the room is not in use.</td>
</tr>
<tr>
<td>Power</td>
<td>AC power supply: 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</td>
</tr>
<tr>
<td></td>
<td>Battery Power: 2 AA Lithium 1.5V batteries; use of Energizer® L91 Ultimate Lithium batteries recommended.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Network Communication</td>
<td>Wi-Fi specifications</td>
</tr>
<tr>
<td></td>
<td>Applies to: OneVue Sense Sensors.</td>
</tr>
<tr>
<td></td>
<td>• Wireless Networking Protocols: 802.11b, 11g, 11n single stream (2.4 GHz)</td>
</tr>
<tr>
<td></td>
<td>• Wireless Security Protocols: WEP (Open &amp; Shared), WPA (TKIP &amp; AES), WPA2 (TKIP &amp; AES)</td>
</tr>
<tr>
<td></td>
<td>• Wireless Authentication Protocols: None, EAP-FAST, EAP-TLS, EAP-TTLS (MSCHAPv2), PEAP v0 (MSCHAPv2), PEAP v1 (GTC)</td>
</tr>
<tr>
<td></td>
<td>• Network Communication Protocols: Hypertext Transfer Protocol Secure (HTTPS)/TLS 1.2</td>
</tr>
<tr>
<td></td>
<td>• IP Addressing: Dynamic Host Configuration Protocol (DHCP), static IP addressing</td>
</tr>
<tr>
<td></td>
<td>• Data Packet Size: typically less than 5 kilobytes (kB)</td>
</tr>
<tr>
<td></td>
<td>Power over Ethernet (PoE) and Ethernet specifications</td>
</tr>
<tr>
<td></td>
<td>Applies to: OneVue Sense Temperature, Differential Pressure, Water Leak, and, Contact Closure Sensors, OneVue Sync Transmitters, Sync Bluetooth Bridge, Notify Bell Controller, and Notify InfoBoards.</td>
</tr>
<tr>
<td></td>
<td>• Power over Ethernet (PoE): Compliant with IEEE 802.3af standard</td>
</tr>
<tr>
<td></td>
<td>• Network Communication Protocols: Hypertext Transfer Protocol Secure (HTTPS)/TLS</td>
</tr>
<tr>
<td></td>
<td>• IP Addressing: Dynamic Host Configuration Protocol (DHCP), static IP addressing</td>
</tr>
<tr>
<td></td>
<td>• Data Packet Size: typically less than 5 kilobytes (kB)</td>
</tr>
</tbody>
</table>
Enclosure
High and Low Air Flow Pressure Ports: tubing 1/4 in. (6.35 mm) O.D./1/8 in. (3.17 mm) I.D.
Removable port cover
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 and operating status
LED Status Indicator
AC-power input: USB Mini B (5 pin) connector
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

Warranty
1 Year

Differential Pressure Sensor components

The following images represent the components of a OneVue Differential Pressure Sensor device.
Differential Pressure Sensor LCD display

The LCD display provides a visual reporting of its sampled reading and current operating status.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure</td>
<td>The last sampled reading in either inH2O or Pa. A sample reading is taken every 5 seconds. The unit (inH2O or Pa) is configured within the sensor profile in your OneVue account. A Primex sensor continuously samples and monitors its sampled readings. If its sampled readings are out of range for 60 consecutive seconds, the sensor device automatically sends the out of range reading to OneVue.</td>
</tr>
<tr>
<td>OPEN</td>
<td>Door switch is in the Open status.</td>
</tr>
<tr>
<td>Door Switch Monitor enabled</td>
<td></td>
</tr>
</tbody>
</table>
### Segment Description

<table>
<thead>
<tr>
<th>Segment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLOS</td>
<td>Door switch is in the Closed status.</td>
</tr>
<tr>
<td>Door Switch Monitoring</td>
<td>enabled</td>
</tr>
<tr>
<td>No Signal</td>
<td>Indicates its last check-in to OneVue failed. This is commonly due a network connection issue.</td>
</tr>
<tr>
<td></td>
<td>• For wireless network use, a failed check-in may be due to the device is not within range of a wireless signal or the wireless signal strength is not adequate for normal operation.</td>
</tr>
<tr>
<td></td>
<td>• For PoE or Ethernet use, a failed check-in may be due to a network connection cannot be established.</td>
</tr>
<tr>
<td></td>
<td>If the device is powered by AC or Power over Ethernet (PoE), the yellow LED indicator flashes during this state.</td>
</tr>
<tr>
<td>Signal Ok</td>
<td>Indicates its last check-in to OneVue was successful.</td>
</tr>
<tr>
<td>LOW -Battery Level</td>
<td>Device is in an Alarm state due to its estimated battery life is less than 25%.</td>
</tr>
<tr>
<td></td>
<td>From the start date of this state, its estimated battery life remaining is 30 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.</td>
</tr>
<tr>
<td></td>
<td>If the device is powered by AC or Power over Ethernet (PoE), the yellow LED indicator flashes during this state.</td>
</tr>
<tr>
<td>Lbat</td>
<td>Device is an Alarm state due to its battery level is critically low.</td>
</tr>
<tr>
<td></td>
<td>Readings are not logged or transmitted your OneVue account during this state.</td>
</tr>
<tr>
<td>Up</td>
<td>A firmware update is being applied to the device.</td>
</tr>
<tr>
<td></td>
<td>Readings are not displayed, sampled, or logged during this mode.</td>
</tr>
<tr>
<td>Con</td>
<td>Device is in configuration mode. The config icon is also displayed.</td>
</tr>
<tr>
<td></td>
<td>Readings are not displayed, sampled, or logged during this mode.</td>
</tr>
</tbody>
</table>

### Differential Pressure Sensor service buttons

A sensor has two service buttons located on the front of the device.

<table>
<thead>
<tr>
<th>Button</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>🅰️ Silence Button</td>
<td>The silence button clears the local reading alarm.</td>
</tr>
<tr>
<td></td>
<td>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 in your OneVue account.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>
### Check-in button

Pressing and releasing the check-in button during normal operation initiates a check-in to OneVue. During a check-in, all logged readings are transmitted to OneVue and any pending updates are downloaded to the device. During an active check-in connection, additional pressing of the check-in button is ignored.

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 beeps as indicated below 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

If a check-in fails, commonly due to the device cannot establish a network connection, all logged readings are stored in the device's 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 LED indicators

Primex sensors have three LED indicators that provide a visual indicator of its current state.

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

<table>
<thead>
<tr>
<th>LED</th>
<th>State/Status</th>
<th>Device power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green LED</td>
<td>Normal state</td>
<td>AC or PoE power: LED illuminated</td>
</tr>
<tr>
<td></td>
<td>Operating as expected</td>
<td>Battery-power only: LED disabled to conserve battery life. Upon power up, illuminates for 2 seconds</td>
</tr>
<tr>
<td>Yellow LED</td>
<td>Warning state</td>
<td>AC or PoE power: LED illuminated and flashes</td>
</tr>
<tr>
<td></td>
<td>Low battery</td>
<td>Refer to the LCD display to identify the condition</td>
</tr>
<tr>
<td></td>
<td>Unresponsive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alarm state</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No Temp Probe or Water Detector</td>
<td></td>
</tr>
<tr>
<td>Red LED</td>
<td>Reading Alarm</td>
<td>All power methods: LED illuminated and flashing</td>
</tr>
<tr>
<td></td>
<td>Out of Range, Past Alarm Delay</td>
<td></td>
</tr>
</tbody>
</table>

### Sensor audio alert

Primex sensors are equipped with an audio alert that is activated during a reading Alarm state (Out of Range, Past Alarm Delay status). 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 and the sensor is in a reading alarm state, the device 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 in your OneVue account. 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 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.

All data stored in non-volatile memory is lost when a device loses all power.

<table>
<thead>
<tr>
<th>Battery-power</th>
<th>Power over Ethernet (PoE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 3.0v Primex Lithium/Iron Disulfide Battery Pack or two AA 1.5V Energizer® Ultimate Lithium batteries.</td>
<td>• Compliant with IEEE 802.3af standard and compatible with 802.3at standard</td>
</tr>
<tr>
<td>• Temperature, Temperature and Humidity, and Differential Pressure Sensors</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>• Water Leak and Contact Closure Sensors (backup battery power use only)</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>• Use of alkaline batteries is not recommended.</td>
<td></td>
</tr>
</tbody>
</table>

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

Manually initiate a sensor to check-in to OneVue

While locally at a sensor device, 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 the sensor's gateway profile.
1. From the front of the sensor device, press and release the check-in button. The device emits a series of audio beeps indicating its connection sequence:
   - 1 beep: device booted
   - 2 beeps: device connected to network
   - 3 beeps: device connected to OneVue
   During a check-in, all logged readings are transmitted to OneVue and any pending updates are downloaded to the device. During an active check-in connection, additional pressing of the check-in button is ignored.

2. If a check-in fails, commonly due to the device cannot establish a network connection, all logged readings are stored in the device's 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.
   - If you only hear 1 beep: The device could not connect to the facility's network. Contact the onsite IT department to seek assistance to determine why the device failed to connect to the network. It's recommended to verify the network assigned to the sensor's gateway (select the Monitored Asset > select the sensor type > select its Gateway ID link > verify its assigned Network).
   - If you hear 1 beep followed by 2 beeps: The device could not connect to OneVue. Log in to OneVue and verify its last check-in. If in an Alarm state with an Unresponsive status, contact your Primex support team.

About Differential Pressure Sensor door switch monitoring

The OneVue Differential Pressure Sensor is equipped with an optional door switch monitoring feature. This feature is designed to monitor whether a door in the room being monitored is open or closed - when a door is intentionally left open for an extended period of time signaling that the room is not in use. When a door status change is detected, the sensor device automatically transmits the door status to OneVue.

To enable the door monitoring feature, the sensor's device door jumper must be enabled (jumper removed) and a magnetic door switch is required to be wired to the sensor door terminal block. By factory default, the door monitoring feature is disabled. For door switch monitoring, it's recommended to supply AC power to the sensor device and apply battery power for backup power purposes only.

Use door switch monitoring to manage when monitoring is enabled or disabled

The Differential Pressure Sensor door monitoring feature is designed to allow the status of a magnetic door switch and the sensor's Door Delay setting time period to manage when a monitored asset is set to the Alarms Disabled state. When set to the Alarms Disabled state, OneVue does not monitor the differential pressure readings or the sensor device operating status and will not generate alerts for the Monitored Asset.

Use of this feature eliminates manually setting the Monitored Asset to a Suspended state when a room is not in use and is not required to be monitored. When a room is not in use, you can simply open the door to disable the monitoring of the room's differential pressure.

How it works - door monitoring

1. When an Open status is detected, the sensor device automatically transmits an Open status to OneVue and the sensor status is set to Open.
2. When the door switch has remained in an Open status for longer than the sensor's Door Delay setting, the sensor and its assigned Monitored Asset (room) is automatically set to an Alarms Disabled state with a status of Past Door Delay.

3. During the Alarms Disabled state, the sensor device continues to transmit its readings and operating statuses, but the data is only logged and stored in your OneVue account. OneVue does not monitor the sensor readings or device operating status and disables the alerts assigned to the Monitored Asset during the Alarms Disabled state.

4. When the door switch changes from an Open status to a Closed status, the device automatically transmits the Closed status to OneVue. The sensor and its Monitored Asset (room) are then set to a Normal state and the system begins to monitor the sensor readings and device operating conditions.
Install Differential Pressure Sensor: Mounting kit for through the wall install

A Differential Pressure Sensor mounting kit is used for through-the-wall installation in combination with a Differential Pressure Sensor. The kit allows assembly through either a solid or hollow wall.

Typical installation illustration

Add: sensor with tube attached to H pressure port if in sensor in Reference Space. Sensor installed in Controlled Space and tube attached to L pressure port.

Supplied components

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sensor device</td>
</tr>
<tr>
<td>1</td>
<td>Removable port cover</td>
</tr>
<tr>
<td>2</td>
<td>Flexible silicone tube measuring 6 feet (1.82 m), 1/8 in. (3.17 mm) I.D., 1/4 in. (6.35 mm) O.D.</td>
</tr>
<tr>
<td>1</td>
<td>AC power supply: 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</td>
</tr>
<tr>
<td>1</td>
<td>Primex 3.0v Lithium/Iron Disulfide Battery Pack (contains 2 AA 1.5V Energizer® Ultimate Lithium batteries). 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</td>
</tr>
<tr>
<td>4</td>
<td>3M™ Dual Lock™ Tape, 2 in. x 1 in. strips</td>
</tr>
<tr>
<td>1</td>
<td>USB configuration cable; one cable is 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.</td>
</tr>
</tbody>
</table>
Mounting kit contents

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Stainless steel wall plate sealed with foam gaskets (use with 2 in. x 4 in. electrical box is optional)</td>
</tr>
<tr>
<td>2</td>
<td>Rubber sealing grommet</td>
</tr>
<tr>
<td>1</td>
<td>Tapered nozzle and screen pickup. For use only with supplied 1/8 in.(3.17 mm) I.D. tubing</td>
</tr>
</tbody>
</table>

Mounting guidelines

When mounting and installing a Differential Pressure Sensor it's recommend to consider the following guidelines.

Sensor mounting location guidelines

- Sensor is commonly mounted in the Reference Space.
- Sensor mounting location is required to in close proximity to wall plate to allow tubing to be connected to the sensor pressure port.
- Sensor must be mounted vertically; pressure ports pointing down. If the pressure ports point upward, condensation can collect inside the sensor causing damage to the device.
- 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.
Tubing guidelines

• It's recommended to only use the supplied flexible silicone tubes.
• Tubing is free of crimps or obstructions that may inhibit airflow to the pressure ports.
• Tubing is clean and do not allow material to fall into the pressure ports, as contamination could damage the sensors.
• Arrange tubing to minimize stress on the connections to the pressure ports.
• Tubing can be cut to length to support application use.
• If the tubing used is longer than the supplied 6 ft. (1.82 m) tubing, reading accuracy may be affected due to reduced air flow within the tubing. A general rule is that for each additional 2 ft. (.61 m) of tubing, a 1% of error is introduced into the differential pressure reading. For applications that are only interested in a positive or negative pressure indication, the overall accuracy of the reading may not be an issue. For application use requiring tubing lengths that exceed 6 ft. (1.82 m), please contact your Primex support representative to calculate the extended tubing error rate.

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 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: Route tubing between Controlled and Reference Space

1. Drill a hole through each side of the wall that is large enough to pass through the tubing. Wall cut out should not exceed the dimension of the supplied wall plate.
2. From the Reference Space, first route tubing through rubber sealed grommet, then through wall plate, and through the wall to the Controlled Space wall plate.
3. From the Controlled Space (monitored room), connect the pickup screen to the tubing routed from the Reference Space.
4. Attach Controlled Space wall plate to the tubing by screwing the screen pickup into the mating connector. Make sure to use the backing gasket on the wall plate to ensure no pressure leaks.
5. Secure Controlled Space wall plate to surface.

Step 4: Mount sensor, connect tubing, and apply power

1. Mount sensor using the key-hole slot on backside of unit.
   - 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.
   - Insert a #6 drywall screw into the wall anchor, leaving approximately 3/8 in. (0.95 cm) of the screw head exposed for hanging.
   - Attach device by sliding the key-hole slot onto the mounting screw. Ensure the device is properly secured and level.
   - Optionally mount to surface using the supplied 3M™ Dual Lock Fastener & Tape, 2” x 1” strips. It’s recommended to place the strip(s) horizontally.
2. Attach tubing to appropriate port located on the bottom side of the sensor. Tubing can be cut to length as required.
   - Where the sensor is mounted determines the port the tubing is attached to. Sensor can monitor for either for Positive or Negative pressure in the Controlled space, which is configured from OneVue.
     - **Sensor located in Reference space**: Push tubing onto the sensor H (High) port.
     - **Sensor located in Controlled space**: Push tubing onto the sensor L (Low) port.
3. Dress and secure the tubing as needed. Arrange the tubing to minimize stress on the connections and ensure there are no kinks in the tubing.
4. Apply primary power to sensor; AC or PoE.
5. Secure Reference Space wall plate to surface.
6. Snap the sensor’s removable port cover into place.

Step 5: 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 release the check-in button. It 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 6: 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 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 an audio alert that is activated during a reading Alarm state (Out of Range, Past Alarm Delay status). 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.
**Differential Pressure Install: Enable door switch monitoring**

The OneVue Differential Pressure Sensor is equipped with an optional door switch monitoring feature. This feature is designed to monitor whether a door in the room being monitored is open or closed. When a door status change is detected, the sensor device automatically transmits the door status to OneVue.

**Use door switch monitoring to manage when monitoring is enabled or disabled**

The Differential Pressure Sensor door monitoring feature is designed to allow the status of a magnetic door switch and the sensor’s Door Delay setting time period to manage when a monitored asset is set to the Alarms Disabled state. When set to the Alarms Disabled state, OneVue does not monitor the differential pressure readings or the sensor device operating status and will not generate alerts for the Monitored Asset.

Use of this feature eliminates manually setting the Monitored Asset to a Suspended state when a room is not in use and is not required to be monitored. When a room is not in use, you can simply open the door to disable the monitoring of the room’s differential pressure.

**Enable door switch monitoring**

To enable the door monitoring feature, the device door jumper must be enabled (jumper removed) and a door switch is required to be wired to the device door terminal block. By factory default, the door monitoring feature is disabled.

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**IMPORTANT**

For door switch monitoring, it's recommended to supply AC power to the sensor device and apply battery power for backup power purposes only.

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1. Remove the device cover; simultaneously press the two tabs located on the top side of the device.
2. Remove the bottom plate containing the dual port sensor by applying slight outward pressure on the sides of the sensor housing to allow the bottom plate to slide out. It's recommended to disconnect the cable connection to the dual port sensor and note the cable orientation and pin connection.
3. Remove the 2-pin terminal block located on the edge of the lower circuit board. The use of needle nose pliers can be used to pull off the terminal block header.
4. Remove the jumper from the lower circuit board. Move the jumper to one pin only on jumper block to retain the jumper.
5. Wire the two door switch wires to the 2-pin terminal block header by loosening the lock down screws on the header. Insert the wires and tighten the screws to secure the wires.

6. Reinsert the terminal block header to the receptacle on the lower circuit board.

7. Reinstall the bottom plate containing the dual port sensor by routing the door switch wires trough the wire slot on the bottom plate cover – make sure to reattach connecting cable to dual port sensor if previously removed. Applying slight outward pressure on the sides of the sensor housing allows bottom plate to slide in. Make sure the bottom plate slides into the retention tab slots on the housing.

8. Reattach the device cover.
   
   The sensor is now configured to monitor the door status set by the magnetic door switch.

9. Log into OneVue and set the sensor’s Door Delay. Go to Devices > Sensors > select sensor > select Show Advanced Options > set Door Delay (minutes).
OneVue network requirements

The information below provides the details required to allow Primex devices equipped with Ethernet, Power over Ethernet (PoE), or Wi-Fi technology to communicate over a facility’s network to OneVue.

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 Wi-Fi 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**

Applies to: OneVue Sense Sensors.

- 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**

Applies to: OneVue Sense Temperature, Differential Pressure, Water Leak, and, Contact Closure Sensors, OneVue Sync Transmitters, Sync Bluetooth Bridge, Notify Bell Controller, and Notify InfoBoards.

- Power over Ethernet (PoE): Compliant with IEEE 802.3af standard
- 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 your facility’s network using the Hypertext Transfer Protocol Secure (HTTPS) protocol. OneVue client and device data is encrypted in transmit 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 your 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 firewall supports wildcards

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<th>URL filters</th>
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#### If firewall does not support wildcards

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</tr>
</tbody>
</table>

### Sync Bluetooth Bridge: Connection to a switch port

Spanning tree portfast (STP) must be enabled when a switch port is not connected to other routers or switches. Optionally STP can be turned off, which is not the same as disable.

### Email and voice communication

OneVue generates email alert and report notifications and voice alert notifications. To ensure email notifications are received by system users, please ensure support@primexonevue.com is added to your email program's safe sender list. OneVue 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 void 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).
- **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)

Warranty applies to: Notify Bell Controller (E130)

Warranty applies to: 72MHz Sync system accessories including external antenna and kit components, Wireless Tone Generator, Wireless Data Receiver

Warranty applies to: Sync PoE Analog Clocks (C100), PoE Digital Clocks and Timers (B200)

Warranty applies to: Sync Bluetooth Education Series Analog Clock (BT004)

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 licenses 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 offer 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: 8:00 AM to 5:00 PM CT, Monday through Friday

Phone: 1-262-729-4860

Email: service@primexinc.com

Web: www.primexinc.com/support