



Smart-Sync™ Personal Series LCD Clock Install Guide

OneVue Synchronized Time Solution



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About this Guide

Audience

This guide is intended for users tasked with installing Smart-Sync Personal Series LCD Clock Install Guide for use with the Primex OneVue Synchronized Time solution.

Content messaging

This guide includes notes, cautions, and warnings content that highlights important messages.

Typeface	Indicates
Note	Indicates something important or useful.
Caution	Indicates a command or procedure may have an unwanted or undesirable result.
Warning	Indicates a command or procedure that could be dangerous to system or device.
Example	Provides an example of the topic.

Important Safety Instructions

READ ALL INSTRUCTIONS BEFORE INSTALLATION, OPERATION, OR MAINTENANCE OF PRODUCT.

Some of the following information may not apply to your particular product model; however, as with any electronic product, precautions should be observed during installation, operation, and maintenance.

- Installation must conform to state or local building codes and ordinances.
- Installation or maintenance should be performed only by qualified personnel as defined in the Local Electrical Code.
- Mount in location where device will not readily be subject to tampering.
- Any wiring instructions must be followed precisely. Failure to do so could cause permanent equipment damage.
- To avoid possible electric shock or damage to the device, disconnect power source before installation or servicing.
- Do not install or use device near water. To reduce the risk of electrical shock, do not expose device to rain or moisture. Device must not be exposed to dripping or splashing and no objects filled with liquids, such as vases, must be placed on the device.
- Device is designed for indoor use only. Operating outdoors, or in wet areas, is an electrical hazard and may damage the equipment while nullifying the warranty.
- Device is cleanable with a cloth moistened with water or a common disinfectant. Be sure to test any cleaning solutions on a small area of the clock before using it on the entire device.
- For healthcare facilities, devices are not intended for patient use and must not be installed within 6 feet (2 m) of patient contact.

AC-Power Models

- AC main power supply must be disconnected while installing or performing maintenance of any device. To completely disconnect the power input, the main plug should be disconnected from the main socket outlet completely.
- The main socket outlet must provide a protective earthing connection where the outlet has a protective earth (ground) connection.
- Main plug is used as disconnect device and it should remain readily operable during intended use.
- If power cable is connected directly to junction box without an outlet, AC power must be supplied from a circuit that has a resettable circuit breaker. AC mains power supply must be disconnected while installing or performing maintenance of any device. Open the circuit breaker supplying the device before attempting installation, maintenance, or repairs.

Regulatory Approvals

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 Radiation Exposure Statement

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions.

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Radio Standards Specification (RSS)

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.


Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

European Union Declaration of Conformity and Restrictions

Hereby, Primex Inc. declares that this equipment:

Primex Synchronous Network System SNS4Z200 Personal Series LCD Clock

complies with the essential requirements and other relevant provisions of Directive 1999/5/EC.

This equipment is marked with  and can be used throughout the European community.

This indicated compliance with the R&TTE Directive 1999/5/EC and meets the relevant parts of following technical specifications:

- EN 300 328 – Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission Systems; Data transmission equipment operating in the 2.4GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE directive.
- EN 301 489-17 – Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17 Specific Conditions for Wideband Data and HIPERLAN Equipment.
- EN 60950 – Low Voltage Directive (Safety)
- EN 50385 – Product standard to demonstrate the compliances of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields.

Marking by the symbol  indicates that usage restrictions apply.

- Indoor use: maximum power (EIRP*) of 100 mW for the entire 2400-2483.5 MHz frequency band.
- Outdoor use: maximum power (EIRP*) of 100 mW for the 2400-2454 MHz band and with maximum power (EIRP*) of 10 mW for the 2454-2483 MHz band.

Note:

Exposure to Radio Frequency Radiation To comply with RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

The technical documentation relevant to the above equipment will be held at:

Primex | 965 Wells Street | Lake Geneva, WI 53147 | Phone: 1-800-404-8112

Company Representative: Larry Poglitsch, Director of Operations

Signed:



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Specifications

Display operation

Display settings and time zone are managed from OneVue

Automatically adjusts for Daylight Saving Time (DST)

Time mode setting: set to 12 hour or 24-hour

Date format setting: set to Time & Date (month-day) or Time & Date (day-month), and option to show day of the week

Dimensions

Physical dimensions: 7.5 in. H (19.1 cm) x 11.5 in. W (29.2 cm) x 1.75 in. D (4.5 cm)

Calendar display dimension: 3.81 in. H (9.7 cm) x 5.5 in W (14 cm)

Time display screen dimension: 2.25 in. H (5.7 cm) x 5.5 in W (14 cm)

Color: Silver

Weight: 1.25 lbs. (.57 kg)

Estimated battery life - assumes typical clock operation

Backlight Off: estimated battery life 8 years

Backlight Low (8 hours per day): estimated battery life 3.9 years

Backlight High (8 hours per day): estimated battery life 1.7 years

Bluetooth® Wireless Communication Protocol

Bluetooth® Low Energy (BLE) Wireless Technology, version 4.1

Bluetooth Range: up to 80 feet (24.3 meters)

Environment

Operating temperature range: 32° - 120° F (0° - 49° C)

Installation

Indoor use only

Wall mount with patented anti-theft clock lock or easel stand for desk or tabletop use

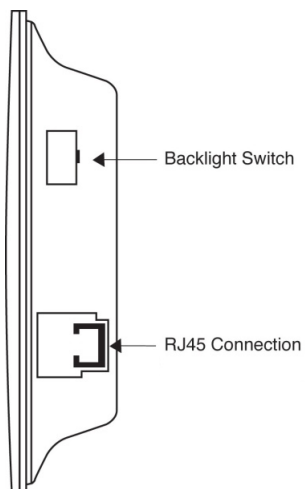
Backlight operation

A switch on the side of the clock sets the backlight to High, Low, or Off. High and Low sets the intensity of the backlight.

When set to High or Low, an optical sensor on the top of the clock samples available light to determine whether to turn on the backlight.

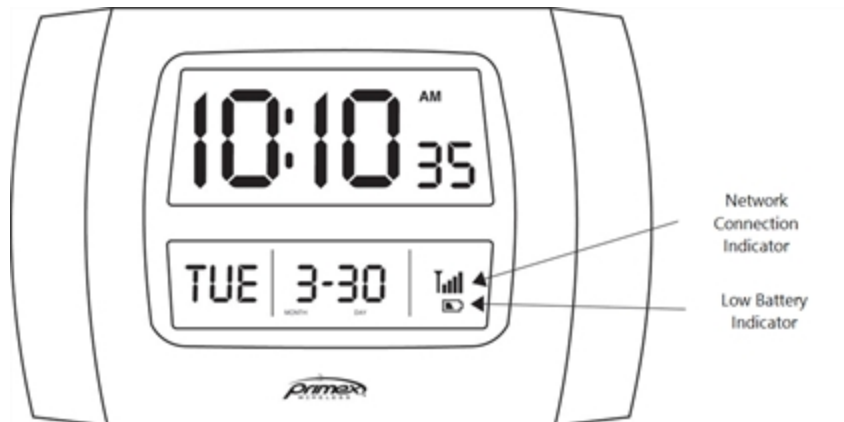
Note:

Backlight use significantly reduces battery life. To extend battery life, turn the backlight to Off or Low.



Operational indicators

The Personal Series LCD Clock features easy-to-read time, day of the week, and month-date display as well as two operational indicators.



Icon	Behavior	Status
Network Connection Indicator	Solid	Normal operation
	Display shows dashes and bars appear and disappear on lower icon	Unit is powering up and a network connection has not been received
	Flashing	Unit has not connected to the Smart-Sync Bluetooth Network for at least 4 days
Low Battery Indicator	Displayed	Low battery

Install Smart-Sync™ Personal Series LCD Clock

Learn how to install and operate a Personal Series LCD Clock.



Installation Requirements

Refer to the Important Safety Instructions before installing, operating or performing maintenance of clocks.

Installation requirements

A Smart-Sync Bridge or Smart-Sync Clock is within 80 feet (24.3 m) from a clock installation location. You can also measure the Bluetooth signal strength at an installation location to determine if the location has adequate Bluetooth signal strength. For more information, see "How to Measure the Bluetooth Signal Strength at Installation Location" on page 22.

Battery use recommendations

Battery life expectancy is based on common operating conditions and may vary due to installed site conditions and settings. Smart-Sync Clock models have up to a five (5) year battery life.

- Use only new high-quality name brand alkaline batteries
- Use batteries with expiration date five or more years beyond the installation date
- Use batteries with the same type and date code
- Do not use heavy duty and zinc carbon batteries as they will not last as long as high-quality name brand alkaline batteries
- Do not use rechargeable NiCad batteries, as their output voltage is too low to assure proper operation
- Do not use standard lithium batteries
- Clock battery level is monitored by OneVue. Batteries should be replaced promptly upon reaching low battery status to maintain clock performance and reduce the risk of battery leakage due to excess discharge.

Installation and Operation Overview

Smart-Sync Clocks are designed to provide ease of installation - requiring no end user configuration, simply take-out-of the box and install. The only operation dependency is its connection to an available Smart-Sync Bluetooth Network.

- A Smart-Sync Clock is equipped with a Bluetooth Low Energy (BLE) Wireless Technology radio component, that allows the clock to establish a wireless connection to a Smart-Sync Bluetooth Network.
- A Smart-Sync Clock is identified by a unique Smart-Sync Device ID, allowing each clock to receive its unique settings that are managed in OneVue, and also authenticate and connect to a Smart-Sync Bluetooth Network.
- A Smart-Sync Bridge is the only system device that connects to your facility's Ethernet or Wi-Fi network. Upon its network connection, it connects to a NTP Server to receive UTC time and checks-in to OneVue to send Smart-Sync Clock statuses and download Smart-Sync devices update pending settings.

Before you begin installing Smart-Sync Clocks - installation requirements

Confirm the Smart-Sync Bridge, designated to support the clock installation area, has established a network connection to OneVue and a NTP Server to obtain UTC time.

If a Smart-Sync Site Survey was completed, install a clocks at each designated location.

Note:

Start by installing Smart-Sync Clocks that are located closest to the Smart-Sync Bridge and then work outward. A Smart-Sync Clock should always be first powered on at its designated installation location.

Installation - Smart-Sync Clock Add a Clock mode

Upon first-power up at its installation location, a Smart-Sync Clock enters Add-a Clock mode as described below.

1. Once powered on at its installation location, the clock continuously searches for an available Smart-Sync Bluetooth Network.

It may take up to 15 minutes for a clock to authenticate and connect to an available Smart-Sync Bluetooth Network. We recommend to continue installing additional clocks, while other clocks establish their connection to the Smart-Sync Bluetooth Network.

2. Once a clock has authenticated with a Smart-Sync Bluetooth Network, it establishes a communication path either to another Smart-Sync Clock or directly to a Smart-Sync Bridge available within the Smart-Sync Bluetooth Network.
3. Once connected, the clock receives the New Clock Time Zone and sets its time. For analog clocks, the clock hands perform one full revolution past 12:00 and then set its time.
 - During its first connection to the Smart-Sync Bluetooth Network, its unique Smart-Sync Device ID is added to the network.
 - Smart-Sync Bridge in 8-hour deployment mode - within 30 minutes of receiving a new clock's Smart-Sync Device ID, the Smart-Sync Bridge connects to your facility's network and sends the new Device ID to OneVue. The Smart-Sync Clock is automatically added to your OneVue account.
 - Smart-Sync Bridge is not in 8-hour deployment mode - the Smart-Sync Clock is automatically added to your OneVue account within 24 hours.
4. When the Smart-Sync Bridge connects to the Smart-Sync Bluetooth Network and connects to OneVue, the new Smart-Sync Clock Device ID is automatically added to OneVue and the clock's settings are downloaded to the Smart-Sync Bridge.
5. Upon its next connection to the Smart-Sync Bluetooth Network, the Smart-Sync Bridge automatically sends the Smart-Sync Device ID settings to the new clock.

In summary, from the time a Smart-Sync Clock is first powered on at its installation location and connects to a Smart-Sync Bluetooth Network, it sets its time within 15 minutes. If a Smart-Sync Bridge is in a 8-hour deployment mode, the clock is added to your OneVue account within 30 minutes, and when not in a 8-hour deployment mode it may take up to 24 hours for the clock to be added to your OneVue account

Note:

If a battery-operated clock cannot establish a connection to a Smart-Sync Bluetooth Network to receive time, its estimated battery life is up to 90 days.

Post-Installation Smart-Sync Clock Operation

Once a Smart-Sync Clock has authenticated and connected to a Smart-Sync Bluetooth Network, the clock operates as described below.

1. Once a day, at a system defined time, a Smart-Sync Bridge connects to your facility's Ethernet or Wi-Fi network to receive UTC time from a NTP Server and check-in to OneVue to download Smart-Sync device setting updates.
2. Once a day, at a system defined time, each Smart-Sync Clock automatically establishes a wireless communication path to either another Smart-Sync Clock or to the bridge to build the Smart-Sync Bluetooth Network.
 - The clocks' statuses are forwarded to a Smart-Sync Bridge either by its communication path to another Smart-Sync Clock or directly to a Smart-Sync Bridge.
 - The clocks receive setting updates and synchronizes received UTC time to its Time Zone offset and DST rules.
3. Once the Smart-Sync Bluetooth Network has completed its daily build, a Smart-Sync Bridge connects to your facility's Ethernet or Wi-Fi network to send clock status data to OneVue.

Wall Mount

Depending on your security needs, you can choose among the two mounting options.

How use the clock-lock mount for a secure, wall-mount installation

The Clock-Lock feature is a specially designed hanger at the top center of the clock. The clock-lock is designed to prevent accidents if the clock is bumped and it may reduce theft by requiring a particular combination of moves to remove the clock.

1. Verify the installation requirements are met. For more information, see "Installation Requirements" on page 1.
2. Use the screw and anchor provided with the clock for installation. If you choose not to use the provided screw and anchor, you can substitute a #4 screw. The screw must protrude from the wall 1 inch (25 cm).

How to use a standard mount for a wall-mount installation

A standard mount avoids the clock-lock feature altogether. The clock can be removed like a standard clock.

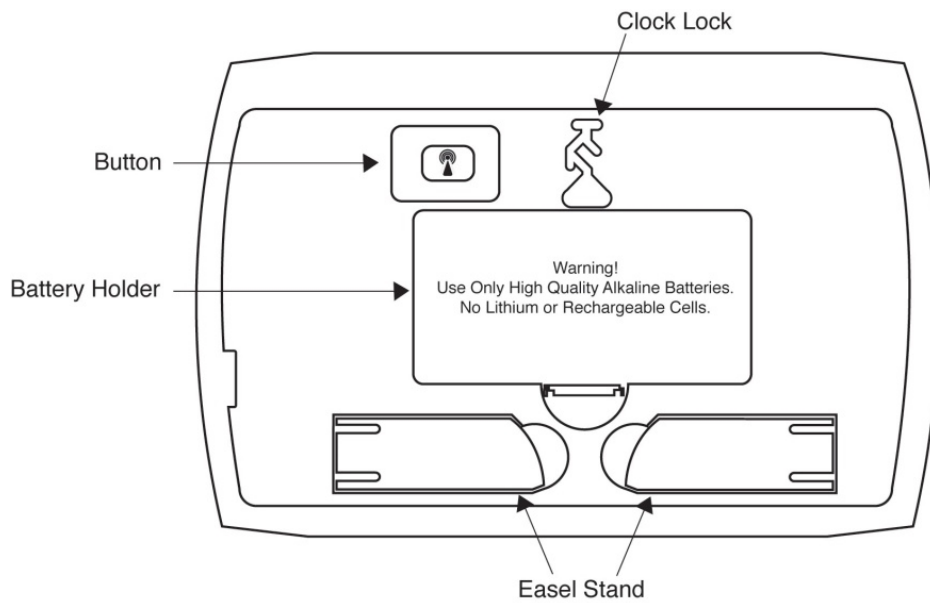
1. Verify the installation requirements are met. For more information, see "Installation Requirements" on page 1.
2. Use a finishing nail with no head angled at 45 degrees into the wall in place of headed screws and anchors.

Tabletop Use

The Personal Series LCD Clock has an easel stand located on the back of the clock.

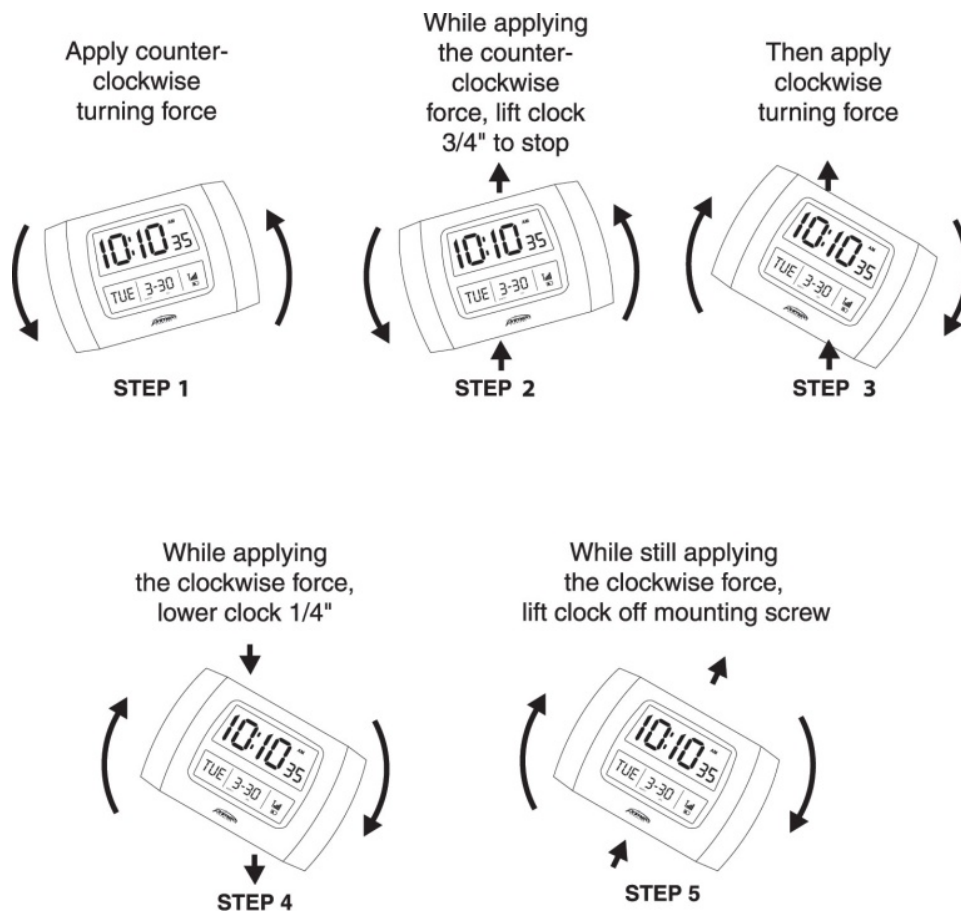
How to set up the tabletop easel of a personal series clock

1. Verify the installation requirements are met. For more information, see "Installation Requirements" on page 1.
2. To place the clock on a table or desk, simply unfold both sides of the easel stand.



Remove Clock from Clock-Lock Mount

To remove a Personal Series LCD Clock from a clock-lock mount, follow the steps illustrated below.



Battery Maintenance

The Personal Series LCD Clock indicates a low battery status by showing a low battery icon on the clock display.

The battery condition is also transmitted to your OneVue account.

During a low battery condition, the clock is set to a Warning state with a low battery status in your OneVue account.

Battery use recommendations

- Use only high quality Alkaline batteries
- Always use fresh, superior-quality batteries, with an expiration date at least five years past the installation date.
- Batteries should be the same type and date code.
- The use of heavy duty and zinc carbon batteries is not recommended, as they will not last as long as high-quality name-brand alkaline batteries.
- Do Not Use Lithium or Rechargeable Cells.

How to replace the batteries for a personal series clock

Note:

The clock retains its configuration settings during a battery replacement.

1. Remove the clock from its location to access the back of the clock.

Note:

If the clock is mounted using the clock-lock feature a specific movement is required to remove the clock from its mount location. For more information, see "Remove Clock from Clock-Lock Mount" on the previous page.

2. Remove the battery holder cover.
3. Remove the old batteries and wait 10 seconds.
4. Insert four alkaline C-cell batteries.
5. Replace the battery holder cover.

Troubleshooting - Personal Series LCD Clock

To identify and solve operating issues, view the common troubleshooting topics below.

The display appears to be locked up and the time is visible, but the time is not updating

This may be due to batteries were installed without allowing power to drain from the clock.

Recommended action

Remove the batteries and hold down the check-in button for 10 seconds.

Wait another 10 seconds and reinsert the batteries.

The display shows dashes

This may be due to:

- The clock is powering up and has not been recognized on the network.
- Every 30 minutes the clock continues trying to connect until a connection is established.

Recommended action

If connecting to the wireless network, check that the clock is in range of a wireless access point.

Verify that the clock has been configured with the correct network settings.

The clock does not beep after pressing the check-in button

This may be due to:

The clock is not connected to the network or the batteries are defective.

Recommended action

- If connecting to a wireless network, check that the clock is in range of a wireless access point.
- Verify that the clock has been configured with the correct network settings.
- Replace the batteries.

The low battery indicator is visible

This is due to the batteries are low.

Recommended action

Replace the batteries.

The network connection indicator is flashing

This may be due to the clock has not received a NTP time update for four (4) days.

Recommended action

Check that the clock can connect to the network and the NTP Server.

How to Measure the Bluetooth Signal Strength at Installation Location

To determine if a Smart-Sync device location has adequate signal strength, you can measure the Bluetooth signal strength at the installation location.

Primex recommends using the nRF Connect for Mobile - allows you to scan and explore Bluetooth® low energy devices. nRF Connect for Mobile is available for iOS and Android™ devices and can be downloaded from the App Store or Google Play.

- Smart-Sync Bridge devices advertise as **Bridge** and Smart-Sync Clocks advertise as **PrimexClock**. The device's 12-character Device ID is displayed to uniquely identify each device advertising.
- Smart-Sync Clock - the Bluetooth Radio Frequency (RF) signal is required to be **-1 to -85 dBm** at the installation location.
- Smart-Sync Bridge - the Bluetooth Radio Frequency (RF) signal is required to be **-1 to -75 dBm** at the installation location.

Warranty

Two Year Limited Warranty

Primex warrants this product to be free from defects in materials and workmanship for a standard of two (2) years from the date of purchase. Primex 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. This warranty does not cover failures due to misuse, abuse, accidental or unauthorized alterations or repairs.

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 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 guide, you are certain the product is defective, please contact Primex Technical Support to assist with troubleshooting the issue. If the issue cannot successfully be resolved and the product is under warranty, an RMA (Return Material Authorization) will be generated. The RMA form will be provided via email with detailed instructions for the return.

Primex retains the exclusive right to repair or replace the unit at its sole discretion. All merchandise returned must be shipped to Primex Attn: Returns Dept., N3211 County Road H, Lake Geneva, WI 53147. Primex 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, system 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 Primex Technical Support

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

When you contact Primex Technical Support, please have the following information available:

- Customer ID/Account Name
- Problem description/error messages
- Device hardware information
- Troubleshooting performed before contacting Primex
- Recent network changes

Primex Technical Support

Hours 7:00 am to 7:00 pm CST | Monday through Friday

Telephone: (800) 404-8112

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