The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com

Installation Manual V1.2

SDLG Messaging Clock

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com

1
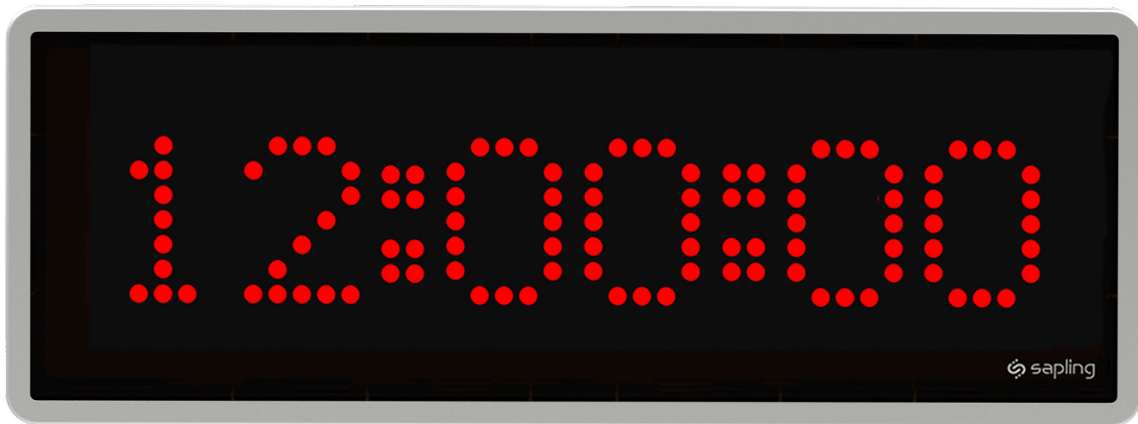
SDLG Series Wireless Messaging Clocks

Table of Contents - *Interactive Hyperlinked PDF – Click on the topic and the document will go to the relevant page. Clicking on the logo will take you back to the table of contents.*

Manuals may change without prior notice

![sapling logo]

Important Safety Instructions

DANGER

⚡ **SHOCK HAZARD**

- Keep the electricity to this device turned OFF until the clock installation is complete.
- Do not expose the clock movement to water, or install the clock in a location where it may be exposed to water.

NOTICE

- Do not install the clock outdoors. Damage to the clock if placed outdoors voids the warranty.
- Do not hang objects from the clock or clock mounting parts. The clocks are not designed to support the weight of other objects.
- The clock face and housing may be cleaned with a damp cloth or disinfectant. Test other cleaning products on a small part of the clock housing before attempting to use on the rest of the clock. Avoid bleach and chemicals known to dissolve plastics.

WARNING

🔥 **FIRE HAZARD**

- Always follow your national and regional electrical codes or ordinances.
- The AC power circuit for the clock must be attached to a circuit breaker that can be reset by the user.

⚠ **PHYSICAL INJURY HAZARD**

- If you are standing on an object while installing your clock, make sure that the object can support your weight, and will not sway or move as you stand on it.
- Take precautions to avoid injury by potential safety hazards near the point of installation including (but not limited to) heavy machinery, sharp objects, hot surfaces, or exposed cables carrying an electric current.
- Follow all mounting instructions exactly as stated in this manual. Failure to do so may result in the device falling off the point of installation.
- Packaging materials and mounting items include plastic bags and small pieces, which pose a suffocation hazard to young children.

Identify Your Clock

A label containing the part number of your clock is attached to the clock packaging

If your part number ends with -4, the clock uses 24 VDC Power

If your part number ends with -1, the clock uses 110 VAC Power

If your part number ends with -2, the clock uses 230 VAC Power

Wireless System Setup

VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE MESSAGE DISPLAYS.

A Wireless Master Clock and any Repeaters must be installed, powered, and set up **BEFORE** you attempt to set up a message display system. If the Master Clock and Repeaters are not properly installed and powered, the secondary clocks will not synchronize.
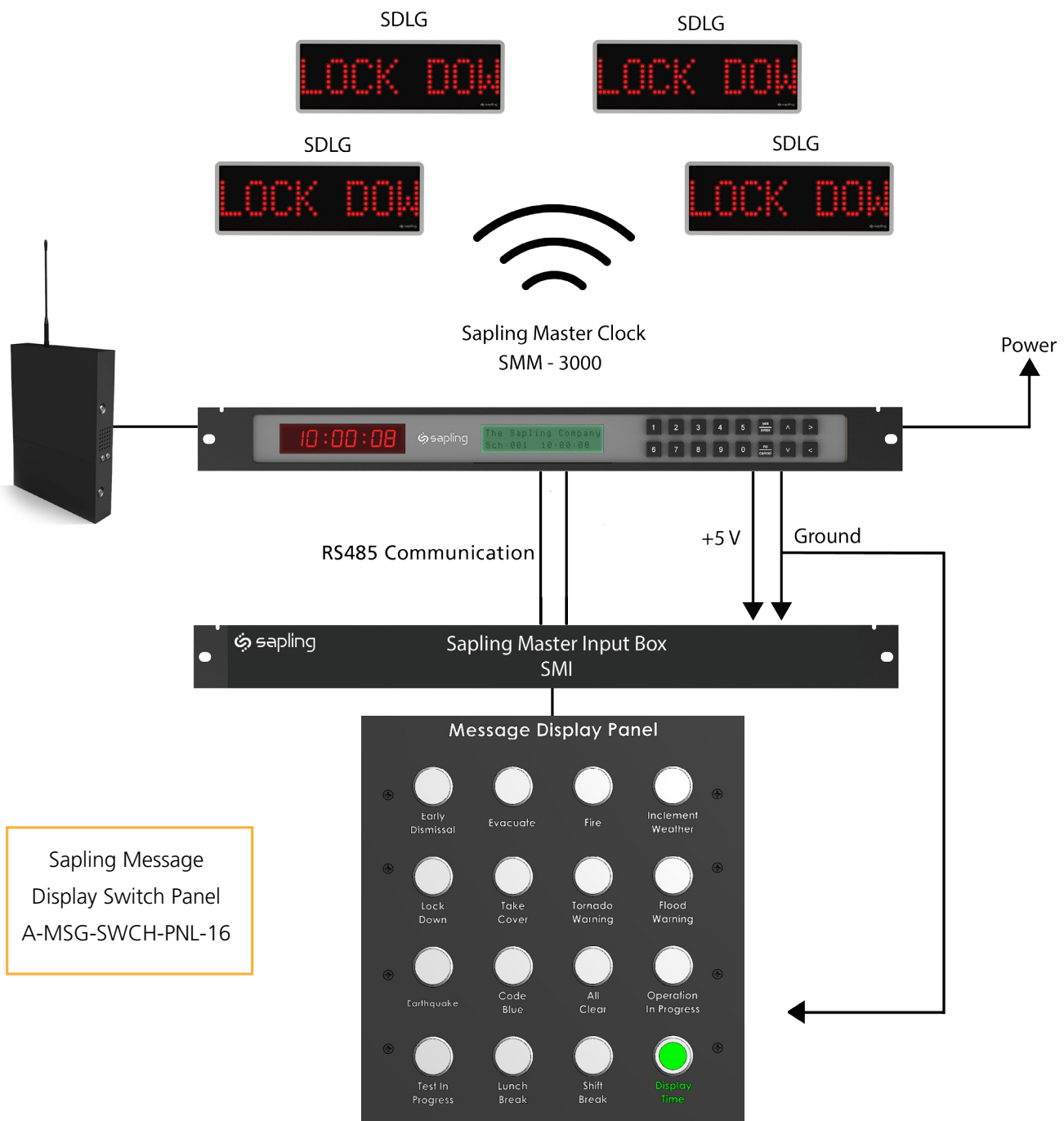
Clock Programming - SDLG

The SDLG Messaging clocks come preprogrammed with 15 default messages and settings. These can be customized at the time of purchase or with the USB Programming Cable.

The 15 preprogrammed messages are shown below:

Message 1:	Message 2:	Message 3:
Tornado Warning	Inclement Weather	Take Cover
Message 4:	Message 5:	Message 6:
Evacuate	Lockdown	Fire
Message 7:	Message 8:	Message 9:
Early Dismissal	Flood Warning	Earthquake
Message 10:	Message 11:	Message 12:
Code Blue	All Clear	Operation in Progress
Message 13:	Message 14:	Message 15:
Test in Progress	Lunch Break	Shift Break

Input 16 is dedicated to commanding the clocks to stop displaying the selected message and revert back to displaying the time.

If the manufacturer default messages and clock settings are meeting the user's needs, then the installer can proceed to the installation instructions section of this manual.

If the user desires to change one or more messages, or any of the additional clock settings such as: brightness schedules, alternating between time and date, etc., then there is a need to program each clock prior to installing it on the wall.

This section includes instructions on how to set and program each clock with the user's preferences. For doing so, there is a need for the USB Programming Cable **(D-USB485-INTF-1)**, which is an optional accessory provided along with the USB programming software.

Sapling can also provide an optional service of programming the SDLG Message Clocks with the consumer's desired messages, as well as the other settings **BEFORE** clocks are shipped out. This eliminates the need for the user to program upon receiving the clocks.

Clock Programming Using the USB Programming Cable

Follow the below instructions ONLY IF the default messages and settings need to be changed. If not, skip to the clock installation instructions section of this manual.

The USB Programming Cable **(D-USB485-INTF-1)** is an optional accessory allowing the user to program the clock, change one or more messages, or change any of the additional clock settings. The USB Programming Cable comes with a USB that contains a special programming software to be installed on a local computer, allowing the user to interface with and program the clock.

Step One:

Installing the software on the user's computer – The USB that is provided along with the USB Programing Cable contains two different kinds of software. The first software is called: "**SBDCONFIG-DRIVER**" and the second software is called: "**SBDconfig-MSG**." **First**, there is a need to install the USB programing Cable driver (called: "SBDCONFIG-DRIVER"), which is compatible with the Windows 10 operating system. Please follow the below steps:

   a. Copy the USB DRIVER software ZIP folder provided on the USB to your computer's desktop.

   b. Un-zip (extract) the USB DRIVER software.

   c. Connect the USB connector side of the USB Programming Cable to the computer's USB port. When inserting the USB-A side into the USB-A port, confirm that the metal contacts on the adapter are facing the metal contacts on the port connector (in most computers, the metal USB contacts should be inserted facing up). The adapter is not reversible and will not function if installed upside down into the computer.

   d. Go to the "**Device Manager**" located in the "Control Panel" menu on your computer. You can do so by simply typing "Device Manager" in your computer search bar.

   e. In order to identify if the computer has automatically recognized the USB programming cable, scroll down to the "**Universal Serial Bus Controllers**" menu in the "Device Manager" (as shown in Image A). Expand the "Universal Serial Bus Controllers" menu by double clicking on it. Search for a line with the following name: "**USB Serial Converter**" (as shown in Image B). If this does not appear, skip to step g.

Image A

Image B

Expanded Tab

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com
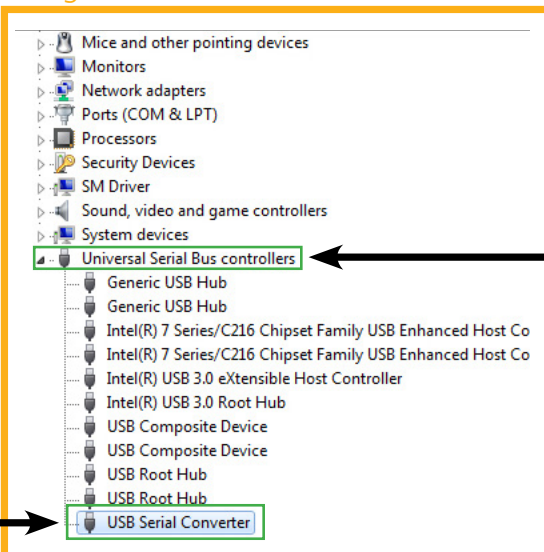
Clock Programming Using the USB Programming Cable

f. If under the "Universal Serial Bus Controllers" tab, there is a line stating "**USB Serial Converter**," it means that the computer has automatically recognized the USB programming cable. If so, please skip to step m.

g. Look under the "**Other Devices**" tab for an item titled "**FT230X USB Half UART**" as shown in image C (this tab is located above the "Universal Serial Bus Controllers" tab). There might be a need to expand the "**Other Devices**" tab in order to see the "**FT230X USB Half UART**" sub line (by double clicking on it).

h. Right click on the "**FT230X USB Half UART**" which will open its "**Properties**" tab, as shown in Image C.

i. Click on the "**Properties**" tab which will cause a menu bar to open.

j. At the top of the "**Properites**" menu bar, select the "**Driver**" tab as shown in Image D.

k. Click on the "**Update Driver**" option (shown in Image D) and browse your computer to choose the USB DRIVER software that you have previously saved on your desktop, titled "**SBDCONFIG-DRIVER**" as shown in Image E.

l. After the "**SBDCONFIG-DRIVER**" folder has been selected, click OK in the menu bar in order to have the Driver installed, as shown in Image E. Then hit "next" to start the downloading process.

Once the "**SBDCONFIG-DRIVER**" is successfully installed, the computer has identified the USB Programming Cable and is able to communicate with it.
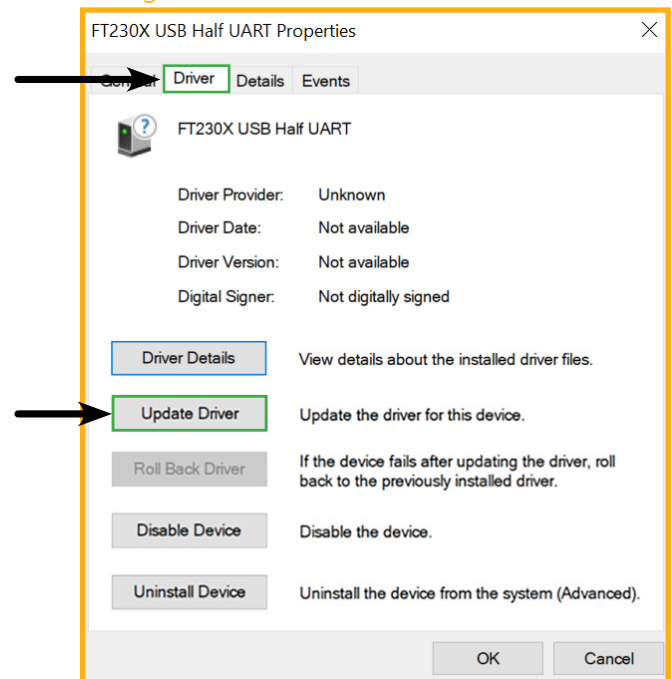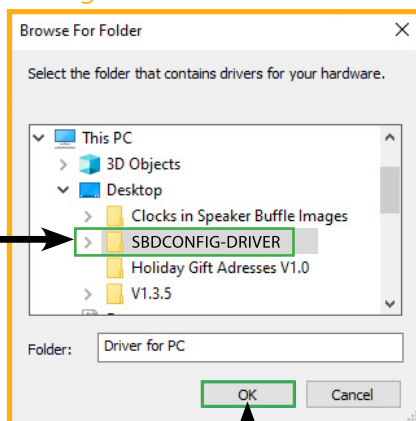
Image C
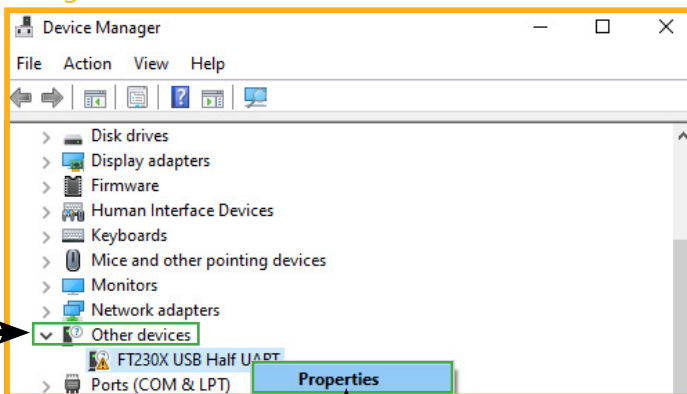
Image D

Image E

Clock Programming Using the USB Programming Cable

m. Open the "**USB Serial Converter**" by double clicking it, and a new window should appear.

n. Navigate to the "**Advanced**" tab, check the box next to "**Load VCP**," then click OK (as shown in Image F). The "Advanced" tab may not appear initially. If so, there is a need to exit out of the "Device Manager," and then re-open it.

o. Remove the USB Programming Cable from the USB port, wait 5 seconds, and plug it back in.

p. Open the "Device Manager" and scroll to "**Ports**." Make note of which port the USB Serial Port is assigned to as shown in Image G. For example: (COM 4). The "Ports" tab may not appear initially. If so, there is a need to uninstall the drivers and restart from Step One.

Image F

Image G

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com
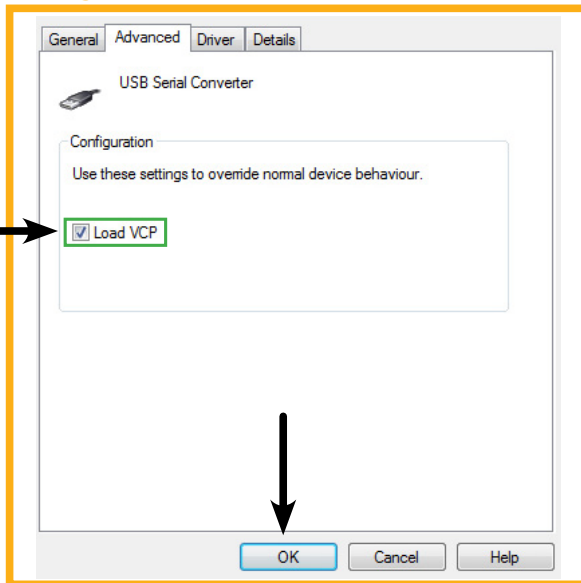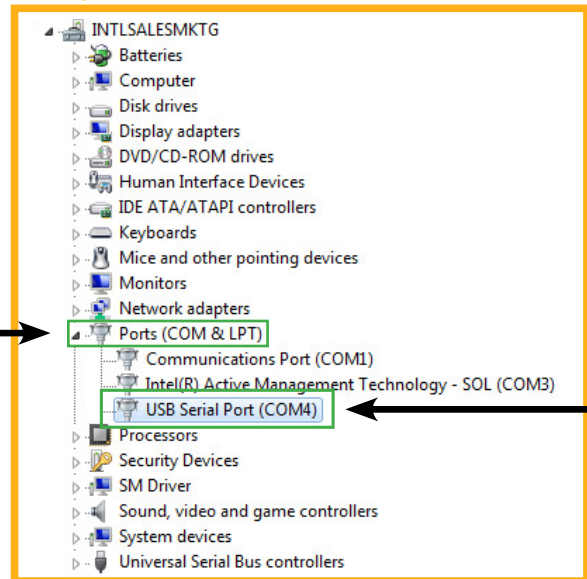
Clock Programming Using the USB Programming Cable

Step Two:

Allowing data communication from the computer to the clock – The digital clock has jumper switches located on its main electrical board (shown in Image H). The jumper switches are located on the left side of the electrical board and each one is numbered: JP1, JP2, JP3... JP6. In order to allow data communication from the computer to the clock, jumper switch number 6 has to close electrical contacts of pins 2 and 3 (other jumper switches can remain in their original location). The default position of the jumper switches are to close electrical contact of pins 1 and 2, and the jumper switch would need to be moved to pins 2 and 3, as shown in Image H below:

Image H
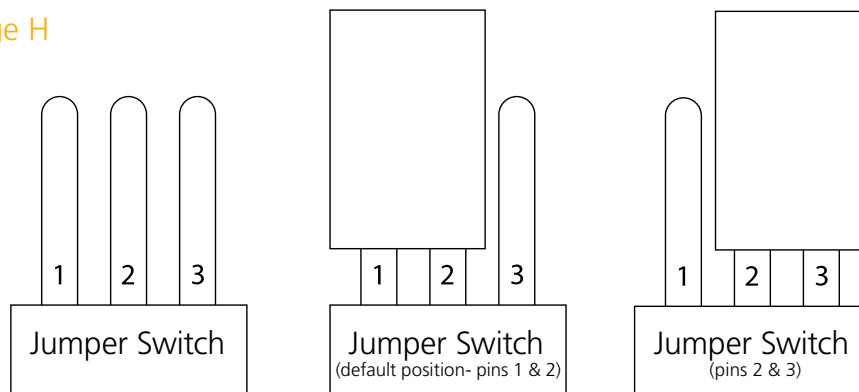
1 2 3
Jumper Switch

1 2 3
Jumper Switch
(default position- pins 1 & 2)

1 2 3
Jumper Switch
(pins 2 & 3)

Clock Main Electrical Board

Image I

Jumper Switches

Male Power Connector
for power

Receptacle Female Connector
for USB Programming Cable
(J7 port)
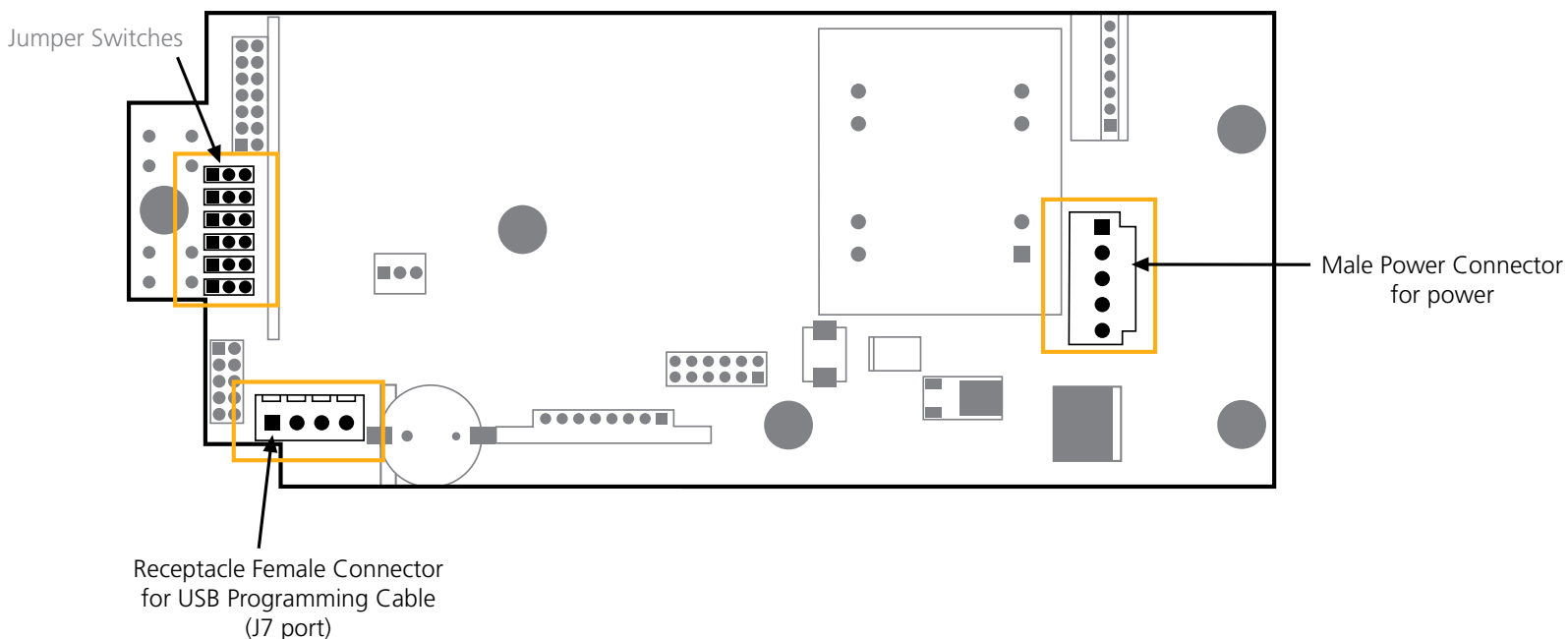
Clock Programming Using the USB Programming Cable

Step Three:

Connecting the USB Programming Cable to the clock - The USB Programming Cable has two ends. One end is a USB-A connector and will work with any USB-A port for the purpose of connecting with a computer or laptop. The other end has a male connector, allowing it to interface with a receptacle female connector (J7 port) located on the clock main electrical board. Make sure that the USB-A side of the USB Programming Cable is plugged into a computer (or laptop), and that the other side is plugged into the digital clock main electrical board as shown in Image J below.

Clock Main Electrical Board

Image J

J7 port

Male Connector

USB-A Connector

USB Programming Cable

USB-A Port

Port Connector
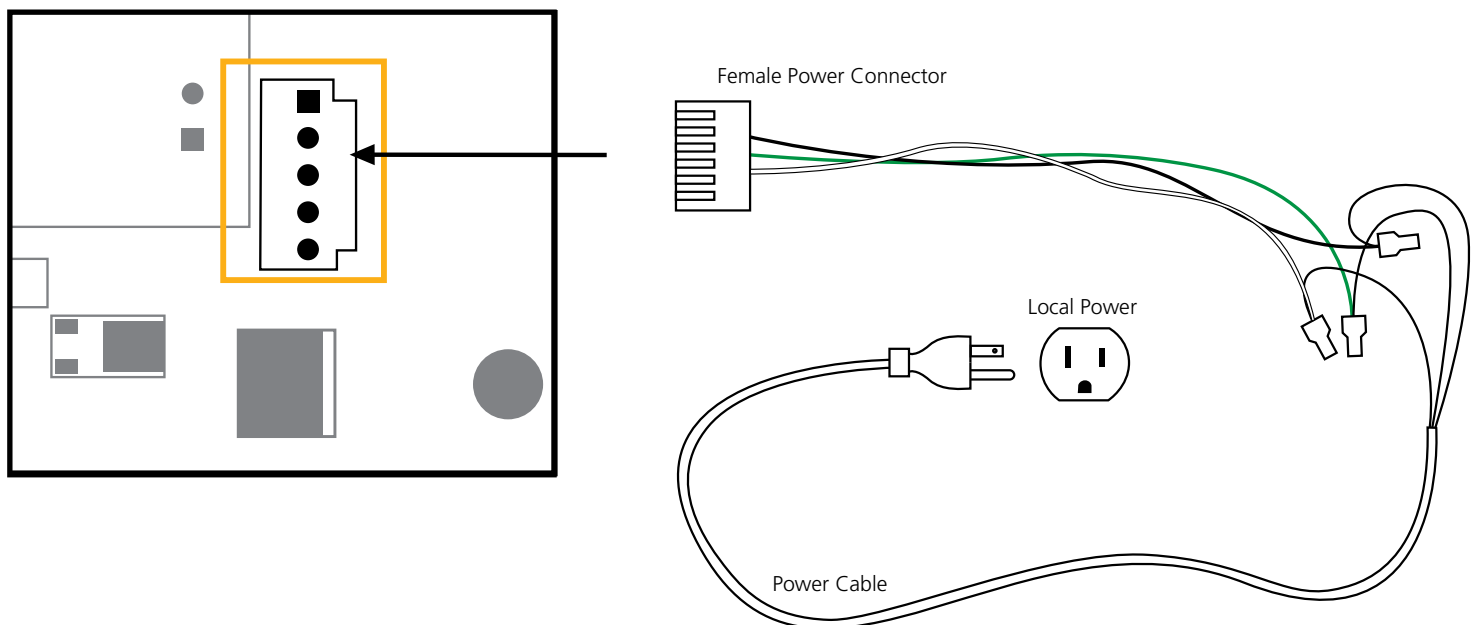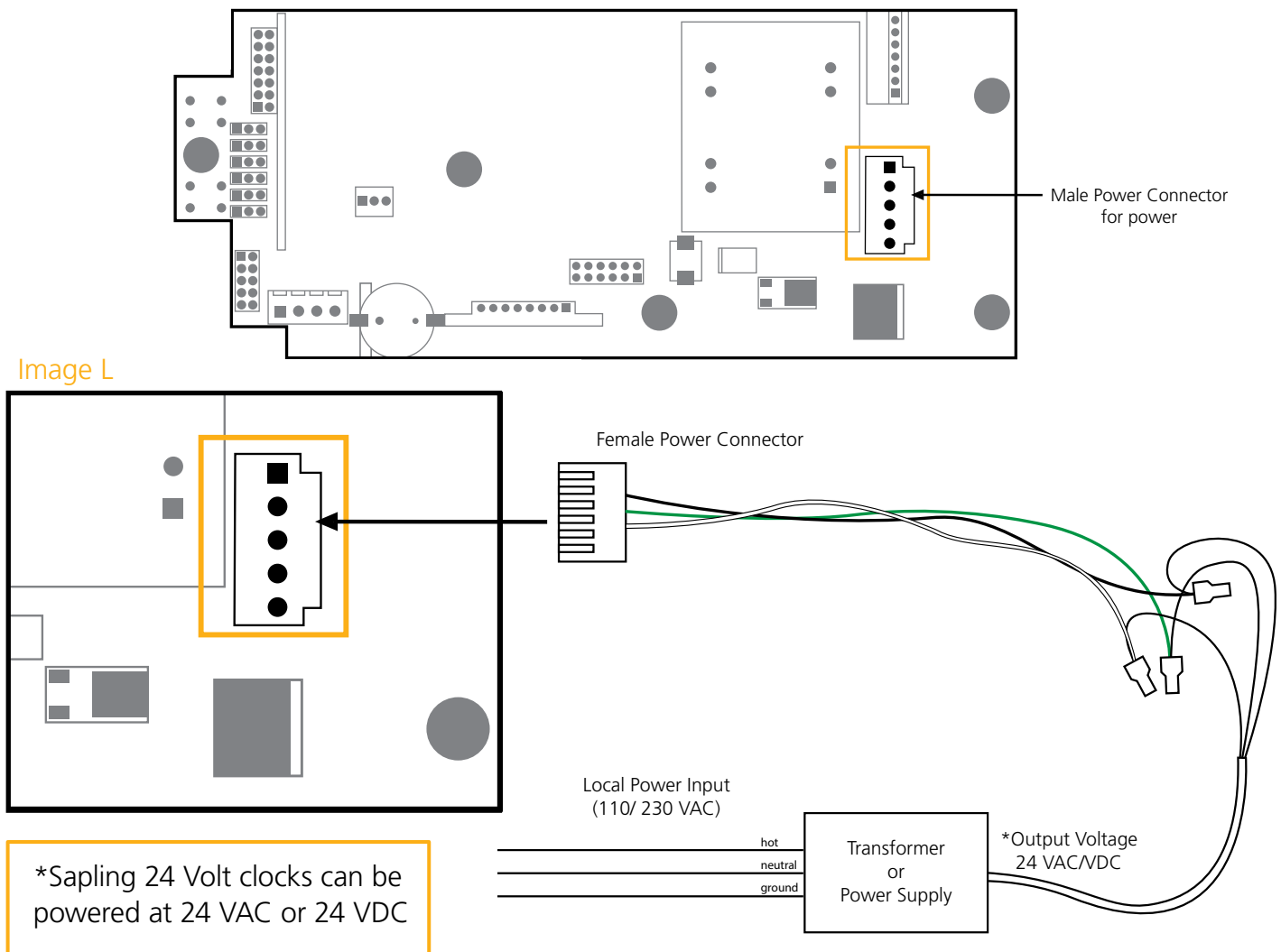
Adapter in this space
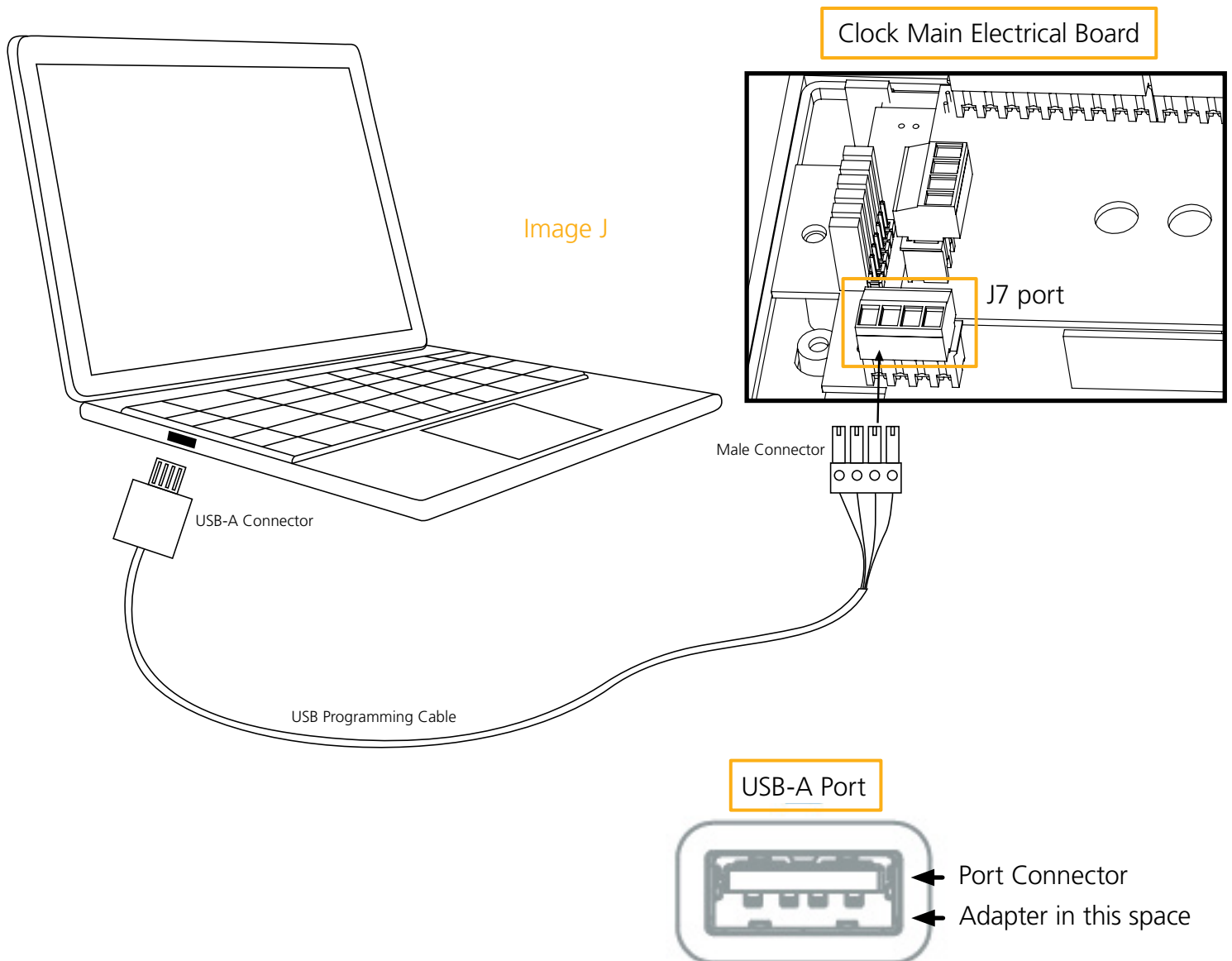
Clock Programming Using the USB Programming Cable

If your clock is 110/ 230 VAC, follow Step Four (A).

Step Four (A):

Powering the clock using local 110 VAC or 230 VAC power – In order to program the clock, it needs to be powered. Each clock comes with a wire harness for powering the clock. One end of the wire harness will have a female connector, allowing it to interface with a receptacle male connector located on the right side of the clock main electrical board. The second end will have exposed electrical wires, which are meant to be wired to the electrical wires coming out of the wall (or the gang box), typically by using wire nuts. In this case, since we want to program the clock before it is being installed on the wall, instead of wiring the clock to the wall, there is a need to wire it by using a power cable. Plug the female connector side into the receptacle male connector located on the clock main electrical board, and plug the power cable to local power as shown in Image K.

If the ordered clocks are locally powered at 110 VAC or 230 VAC, follow the diagram in Image D below:

Male Power Connector for power

Image K

Female Power Connector

Local Power

Power Cable

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com
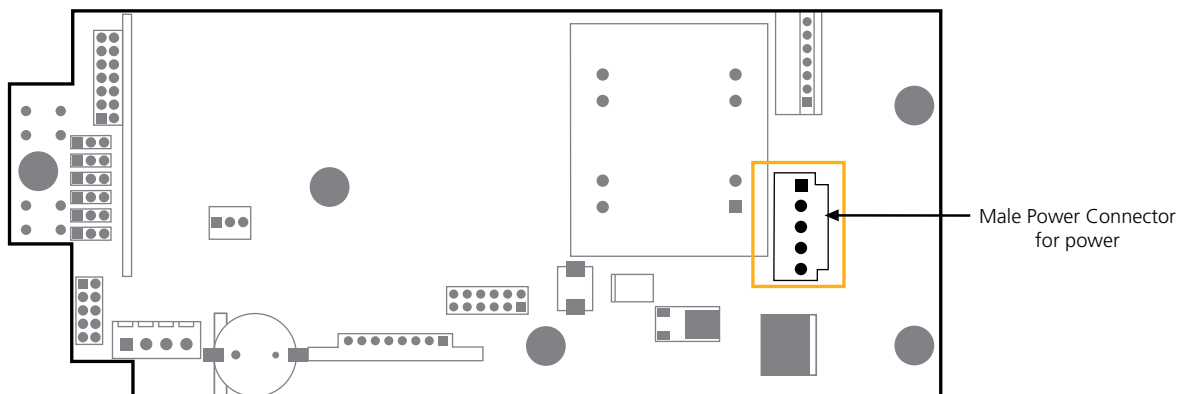
Clock Programming Using the USB Programming Cable

If your clock is 24 VAC/VDC, follow Step Four (B).

Step Four (B):

Powering the clock using a transformer or a power supply at 24 VAC/VDC – In order to program the clock, it needs to be powered. Each clock comes with a wire harness for powering the clock. One end of the wiring harness will have a female connector, allowing it to interface with a receptacle male connector located on the right side of the clock main electrical board. The second end will have exposed electrical wires, which are meant to be wired to the electrical wires coming out of the wall (or the gang box), typically by using wire nuts. In this case, since we want to program the clock before it is being installed on the wall, instead of wiring the clock to the wall, there is a need to wire it to a 24 VAC/VDC power source. Plug the female connector side into the receptacle male connector located on the clock electric main board, and wire the clock to a 24 VAC/VDC power source as shown in Image L.

If the ordered clocks are powered at 24 VAC/ VDC, follow the diagram in Image E below:

Male Power Connector for power

Image L

Female Power Connector

Local Power Input
(110/ 230 VAC)

hot
neutral
ground

Transformer
or
Power Supply

*Output Voltage
24 VAC/VDC

*Sapling 24 Volt clocks can be powered at 24 VAC or 24 VDC

Clock Programming Using the USB Programming Cable

Step Five:

Installing the USB Programming software on the user computer – In order to program the clock, there is a need to install the clock programming software, which is also provided on the USB. For doing so, please follow the below steps:

    a. Copy the clock programming software "**SBDconfig**" ZIP folder provided on the USB to your computer desktop.

    b. Un-zip (extract) the "**SBDconfig**" software.

    c. Make sure that the USB connector of the USB Programming Cable is properly connected to your computer, and that the other end of the USB Programming Cable is connected to the clock (as previously explained). Please also make sure that the clock is powered (as previously explained).

    d. Once the clock is properly connected to the computer and powered, and after both software are installed, go to the "**SBDconfig**" folder on your desktop. In this folder, various file types will be visible, but only the application file should be opened by double clicking it. Doing so will open the programming software. This will allow you to browse between the different clock programming tabs that contain different settings depending on the application needs.

    e. After opening the programming software, click on "**Serial Port**" (on the menu bar) and then "**Configure Serial Port**" as shown in Image M.

    f. Make sure that the COM port matches the number you saw on the "Device Manager," then click "Apply," as shown in Image N.

Image M

Image N

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com
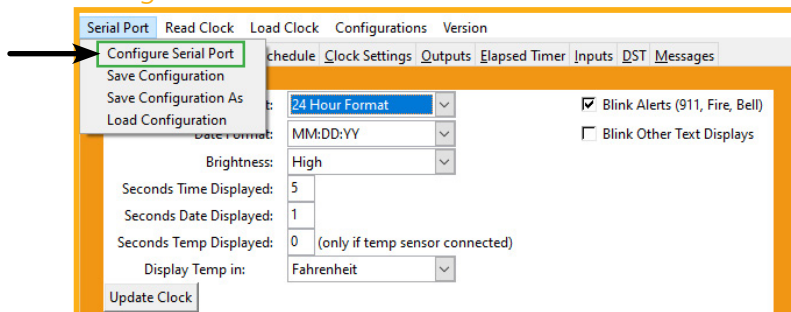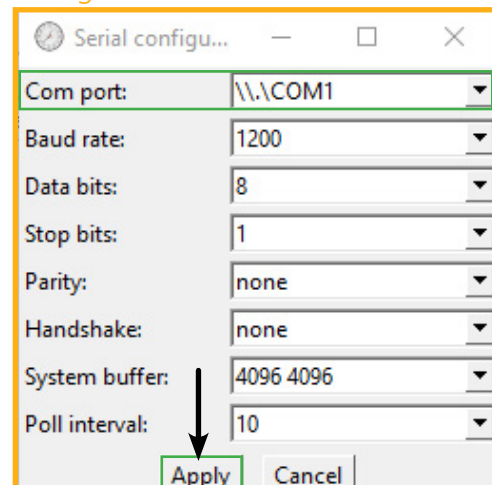
Clock Programming Using the USB Programming Cable

At this stage, the USB programming cable has been configured and is ready to be used.

The USB programming cable, along with the "**SBDconfig-MSG**" Software, allows the user to program the clock with any of its advanced settings per user preferences.

This section will cover these advanced clock settings such as: changing the clock's default messages, setting the message scrolling speed, and having the messages flash (blink). In addition to these message settings, additional advanced clock settings may include: Brightness Schedules, alternating between time and date, and setting the duration of how long the time is to be displayed versus the date (for example: display the time for 7 seconds and display the date for 3 seconds). If a clock was purchased with a temperature sensor, the user can also program the display intervals, and any additional advanced settings may be applicable, as explained in the manual.

The first step would be to have the USB programming cable, along with the "SBDconfig-MSG" software, identify the clock by selecting "**Read Clock**," as explained below. Please note that one clock can be programmed with the desired settings, and if these same settings are desired to be programmed in more or all of the clocks, these settings can be saved on the user's computer. Then, this settings file can be downloaded on the following clocks. There is still a need to apply these settings by downloading the saved file to each clock, but this will eliminate the need to program all settings again in each clock. This process is explained later in this manual.

Image O
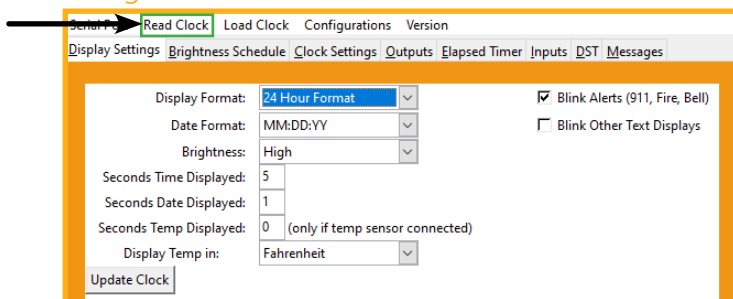
Image P

Image Q

1. Click the "**Read Clock**" button, as shown in Image O. The default settings will populate the tabs on the "SBDconfig-MSG" software. Once the "**Read Clock**" button is clicked, another window will open that will signify the upload process.
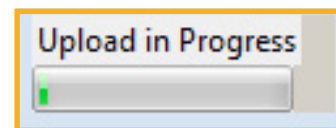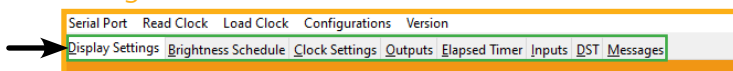
2. The clock software will contain different tabs depending on the settings that need to be changed. These tabs are highlighted in Image P.
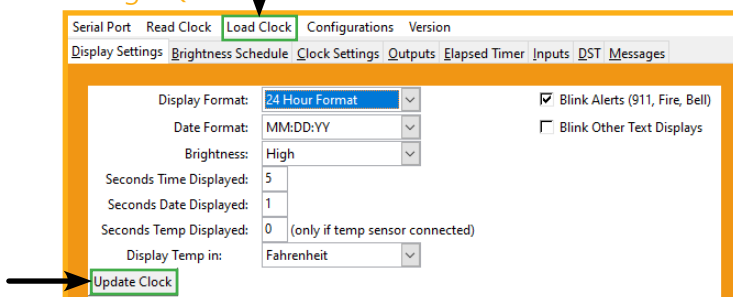
3. You may now edit the clock settings with the "SBDconfig-MSG" Software. Once new settings have been configured, they can be applied to the clock by pressing the "**Update Clock**" button on each tab, as shown in Image Q. Alternatively, "Load Clock" can also be used to apply settings.

Clock Programming - Task Bar

Located on the task bar of the sbdconfig software, there are five options to choose from: Serial Port, Read Clock, Load Clock, Configurations, and Version.
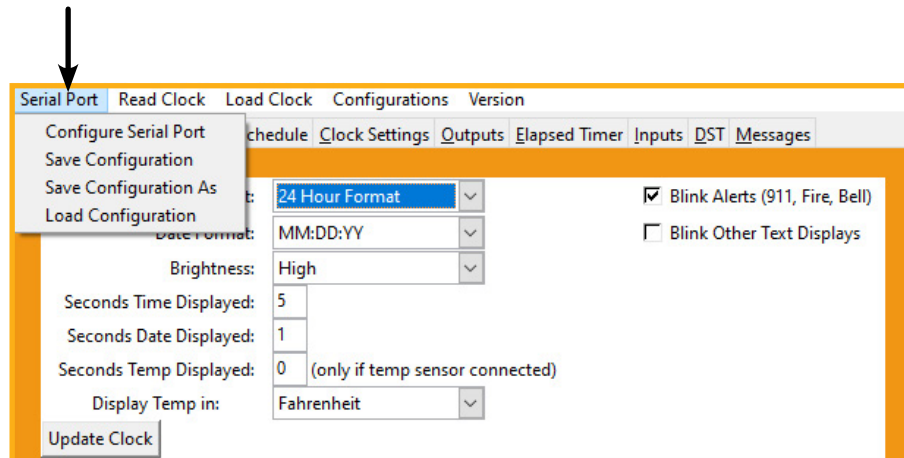
Serial Port

- **Configure Serial Port:** When clicked, this option will open the settings for the serial port. This is where a user can manage the settings that connect a PC to the digital clock.

- **Save Configuration:** After a user sets the serial port's settings on the sbdconfig software, this option will save a particular configuration to a computer in order to upload it to a different clock.

- **Save Configuration As:** If a user modifies the serial port's settings, this option will save a copy of the reconfigured clock to a computer.

- **Load Configuration:** This option allows a user to upload a previously saved serial port's configuration to the sbdconfig software. Once a digital clock is connected to a computer via the USB Programming Cable, click the "Load Configuration" option.
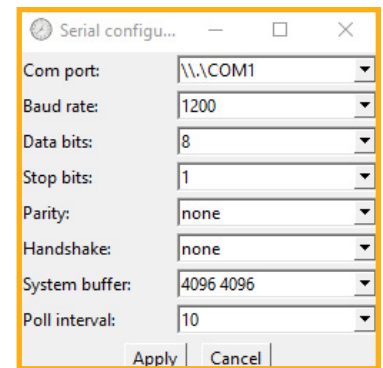
Note: When any of the above options listed under the Serial Port tab are selected, they only apply to the Serial Configuration settings.

Clock Programming - Task Bar

Read Clock

- If a user has a previously configured clock and connects it to a computer, this option will read and upload the settings to the "SBDconfig-MSG" software program. Once the "Read Clock" button is clicked, another window will open that will signify the upload process.

Load Clock

- The "Load Clock" button will allow a user to change multiple settings within the "SBDconfig-MSG" software tabs. This eliminates the need to click "Update Clock" on each screen. When the "Load Clock" button is clicked, another window will open showing that the download is in progress.
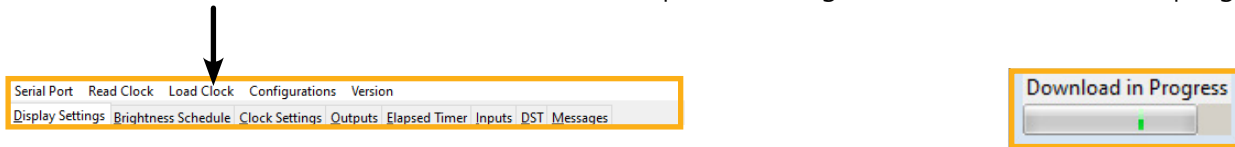
Configurations

- **Save Configuration:** This option will save the configuration to the computer.
- **Load Configuration:** This option will allow a user to load the previously saved configuration from the computer.
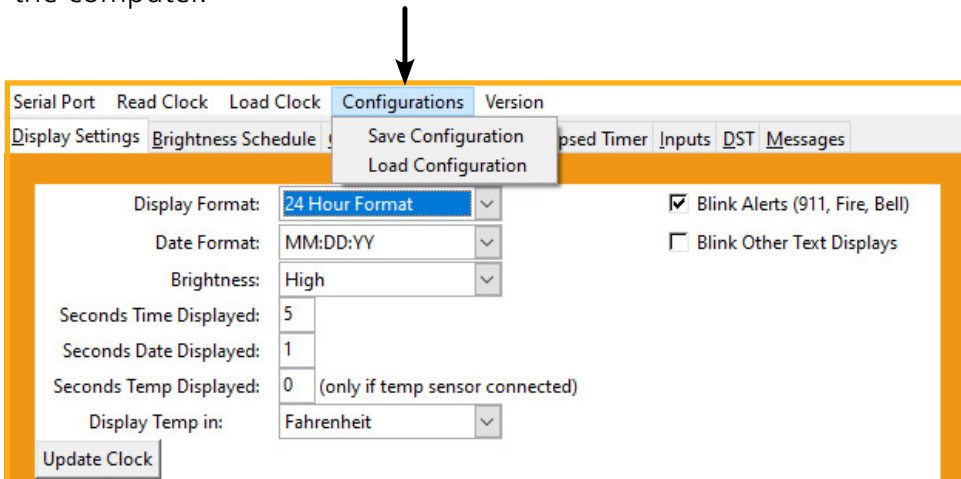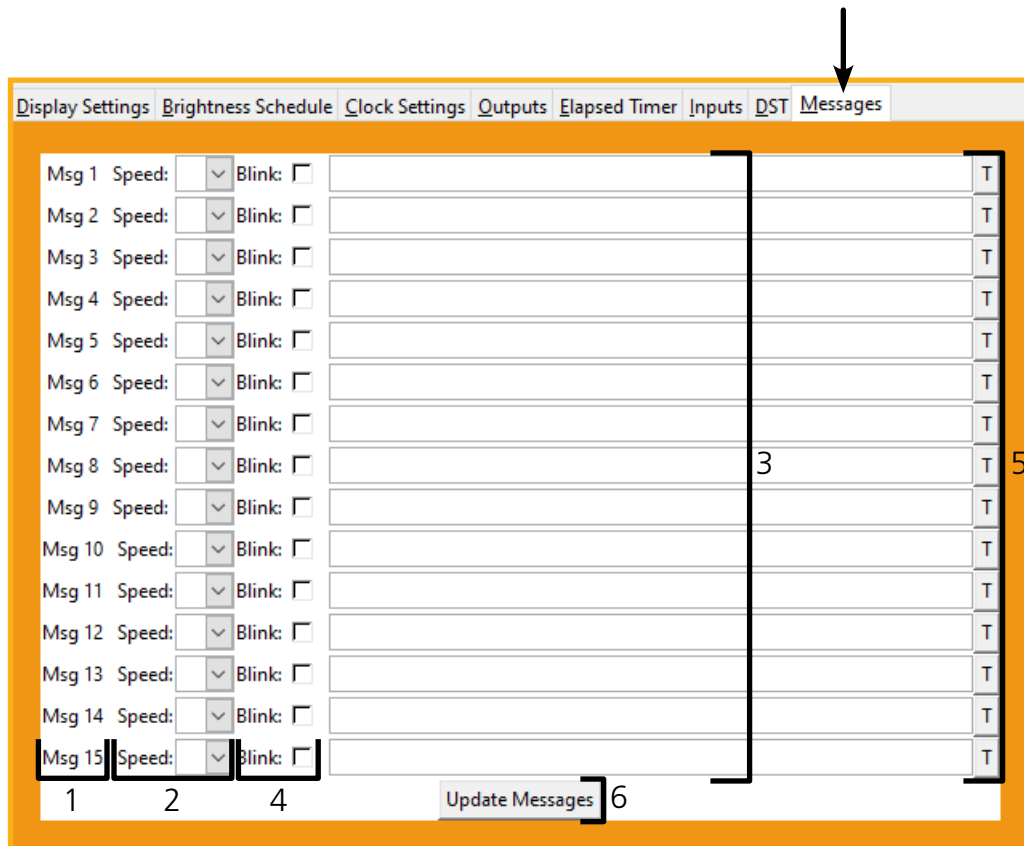
Version

- The Version button displays the number of the software version. Current version may be different from what is listed in the manual. Check with Support team for current version.
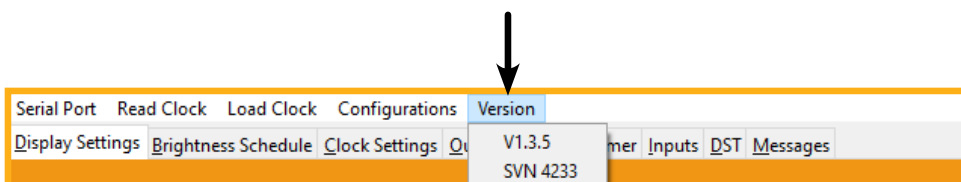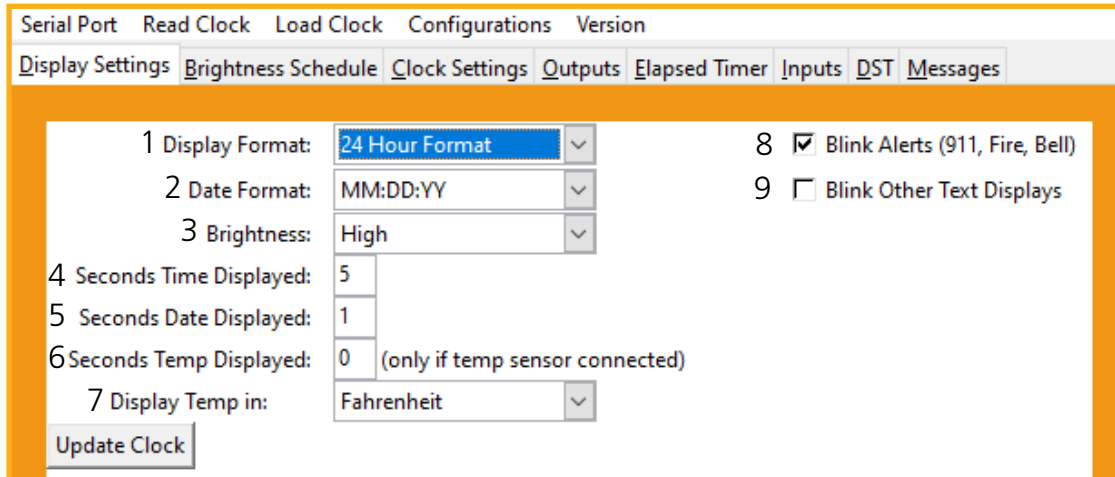
Clock Programming - Configuring Messages

1. Message Number - The activation number for each message. For example, when Input 1 is activated on the Input Box, the text entered for Message 1 is displayed.

2. Speed - Sets the Scroll Speed of the message. Higher numbers are faster scroll speed.

3. Text Field - Enter the text you wish to display here. **IF THE FIELD IS LEFT EMPTY, ACTIVATING THE INPUT WILL COMMAND SECONDARY CLOCKS TO SHOW THE TIME.**

4. Blinking Messages - Check the "Blink" box if you want the message to blink while being displayed.

5. Test Button - Click on the "T" button next to the test field to see the message appear on the clock at the selected scroll speed.

6. Update Messages - Once each message has been entered and tested, click on this button to upload the message configuration to the clock. Messages on "SBDconfig-MSG" will not be saved to the clock until this button is pressed.

7. "Read Clock" will always leave messages blank, you cannot read messages already in a clock.

Clock Programming - Display Settings

Clicking on the Display Settings tab will allow a user to program the following settings:

1. Display Format - Allows the user to select how the time is displayed on the clock. There are two options: 12 hour format (3:00AM/3:00PM) or 24 hour format (3:00/15:00).

2. Date Format - Sets the date to display in either American style: MM:DD:YY or European style: DD:MM:YY. For 4 digit clocks, the date will display in either American style: MM:DD or European style: DD:MM.

3. Brightness - Sets the brightness level that the clock will display. There are four levels to choose from: High, Medium, Low or Off.

4. Seconds Time Displayed* - The clock will display the time for the number of seconds entered in the box. After the selected amount of time passes, the clock will change to show Date or Temperature. If a time of 0 is selected, the clock will not display the time. If Date and Temp Displayed are set to 0, the clock will only display the time.

5. Seconds Date Displayed* - The clock will display the date for the number of seconds entered in the box. After the selected amount of time passes, the clock will change to show the Time or Temperature. If a time of 0 is selected, the clock will not display the date. If Time and Temp Displayed are set to 0, the clock will only display the date.

6. Seconds Temp Displayed* - If a temperature sensor was installed on the clock, the clock will display the temperature for the number of seconds entered in the box. After the selected amount of time passes, the clock will change to show the Time or Date. If a time of 0 is selected, the clock will not display the temperature. If Time and Date Displayed are set to 0, the clock will only display the temperature.

7. Display Temp In - If a temperature sensor was installed on the clock, this option allows a user to select whether the temperature appears in Fahrenheit or Celsius.

8. Blink Alerts (Fire, Bell) - When checked, this option will enable the emergency alert messages programmed with the master clock to blink when activated (see the specific master clock user manual for more information). Leaving the message unchecked will result in the message being sent in text that does not blink. **DOES NOT APPLY TO MESSAGES SENT BY THE INPUT BOX.**

9. Blink Other Text Displays - When checked, this option will enable any other messages programmed with the master clock to blink when activated (see the specific master clock user manual for more information). Leaving the message unchecked will result in the message being sent in text that does not blink. **DOES NOT APPLY TO MESSAGES SENT BY THE INPUT BOX.**

Once all of the Display Settings are chosen, click the 'Update Clock' button to store the selected options or, when all the tabs have been programmed, click the 'Load Clock' button located on the menu bar to store all options.

***Note:** If the Time, Date, and Temp Displayed are ALL set to 0, the display will turn completely blank. Will turn on for count down/up, and off again once the counting has been cleared.
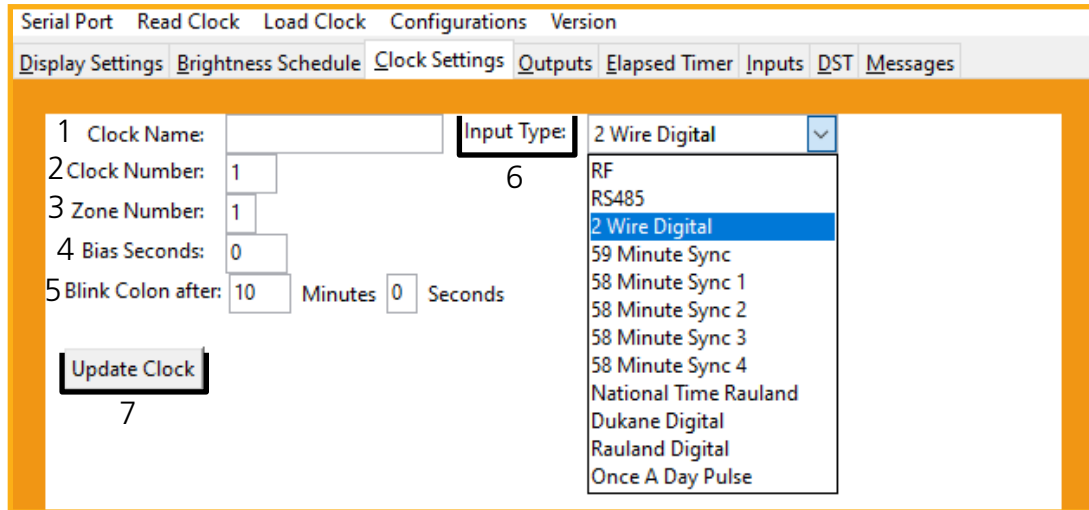
Clock Programming - Brightness Schedule

1. Date Column - Allows the user to select dates where changes to the brightness schedule are active. If a date is not selected, the actions in the adjustment columns will not be applied to the clock.

2. Adjustment 1 - Allows the user to select a new brightness level for the clock, and the time when the new brightness level will take effect. Times are entered in 24 hour mode. Brightness options are High, Medium, Low, and Off.

3. Adjustment 2 - Allows the user to set a second time during a given day where the brightness level will change.

   The time for Adjustment 2 may be set for any time before or after Adjustment 1 during the same day. For example, if Adjustment 1 is set to activate at 11:00 AM and Adjustment 2 is set to activate at 8:00 AM, Adjustment 2 will activate first at 8 AM, followed by Adjustment 1 at 11 AM.

   If you wish for the brightness to only change once on a given day, set Adjustment 1 and Adjustment 2 to the same brightness level and time.

4. Once the Brightness Schedule has been programmed, click the "Update Clock" button to store the selected options or, when all the tabs have been programmed, click the "Load Clock" button located on the menu bar to store all options.

*Note: Earlier versions of the Message Display do not include this feature. Contact your dealer to verify if brightness adjustment was included with your version of the clock.

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com

Clock Programming - Clock Settings

Clicking on the Clock Settings tab will allow a user to program the following settings:

1. **Clock Name** - This field allows a user to assign the clock a unique name, such as its location in a facility. The name cannot exceed 24 characters.

2. **Clock Number** - This field allows a user to assign a unique number to a clock. This number is used when commanding a specific digital clock from the Master Clock Web Interface. Please refer to the master clock manual associated with your system for more information.

3. **Zone** - This field allows a user to enter a number (1-99) for the clock's zone. A zone is a collection or grouping of clocks within a certain section of a facility. This number is used when commanding a designated group of digital clocks from the master Clock Web Interface. Please refer to the master clock manual associated with your system for more information.

4. **Bias Seconds** - In some scenarios, there may be a need to adjust the time displayed by the clock. If your application requires such an offset, enter a value (in seconds) into the "**Bias seconds**" field of the needed offset.

5. **Blink Colon After** - The colon on the digital clock display has the ability to blink in order to signify a loss of communication with the master clock. These fields will let the user choose how long after a loss of communication the clock will wait before the colon starts to blink.

6. **Input Type** - Selecting an item from this drop-down menu allows the user to select a primary input source for accepting new time data. **A wireless clock should have RF set as its input.**

7. Once all of the Clock Settings are chosen, click the "**Update Clock**" button to store the selected options or, when all the tabs have been programmed, click the "**Load Clock**" button located on the menu bar to store all options.

Clock Programming - Outputs

Clicking on the Outputs tab will allow a user to program the following settings:

RS485 Data Rate: This option determines how often data (time and date) is sent to the clock(s) or other Sapling devices, such as Wireless Repeaters, Converter Boxes, or other Master Clocks.
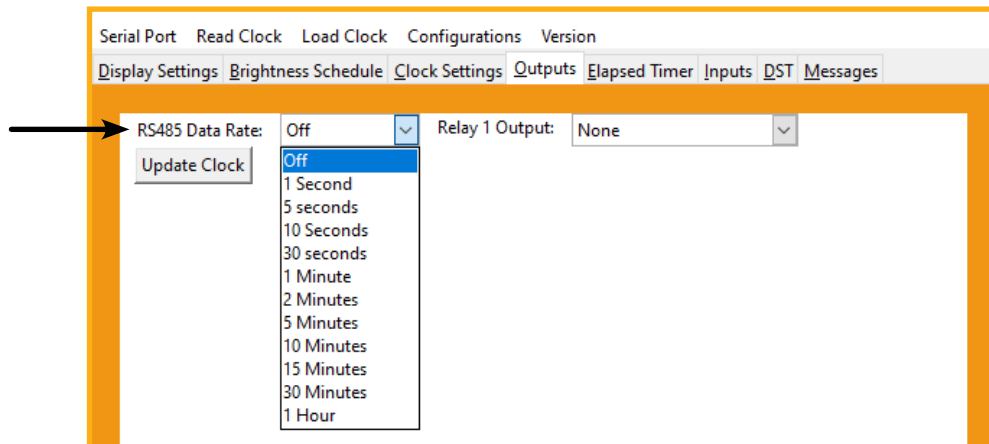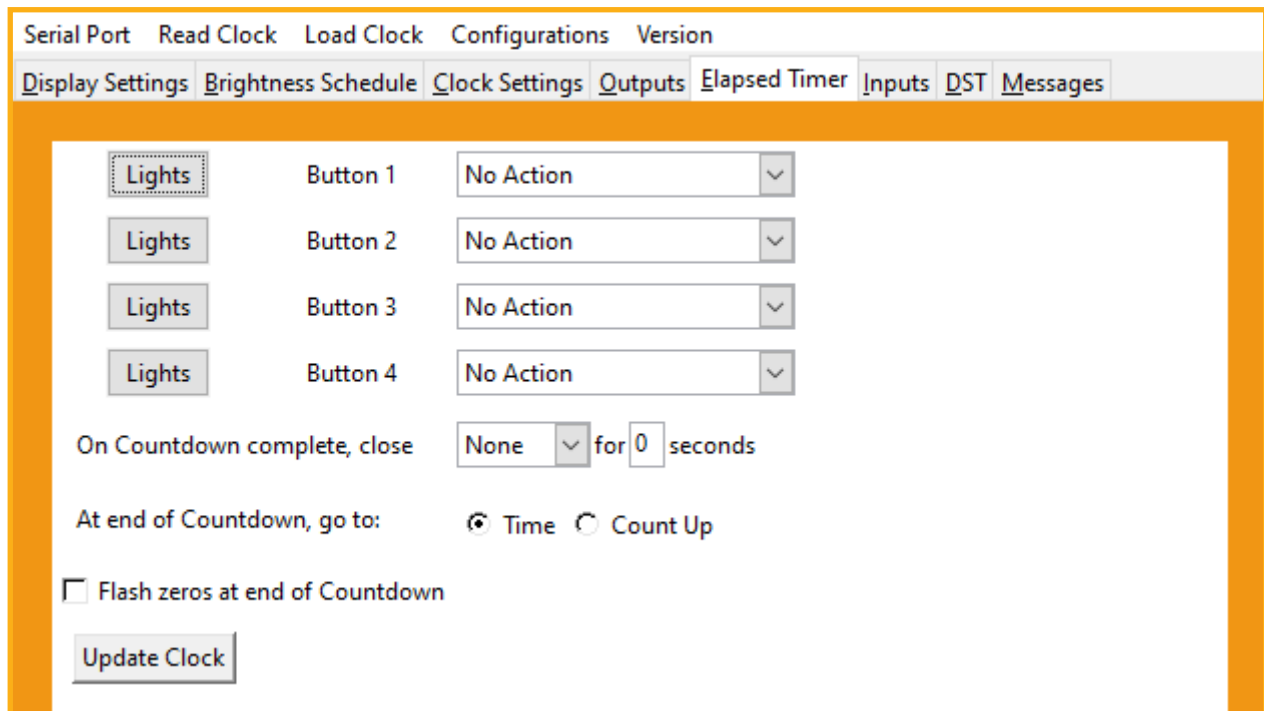
Relay 1 Output: Not available for this clock model.

Once the settings are chosen, click the "Update Clock" button to store the selected options or, when all the tabs have been programmed, click the "Load Clock" button located on the menu bar to store all options.

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com

Clock Programming - Elapsed Timer

A user may set up and configure the Elapsed Timer control panel through sbdconfig. For detailed instructions on the many functions and uses of the Elapsed Timer, refer to the Elapsed Timer Manual.
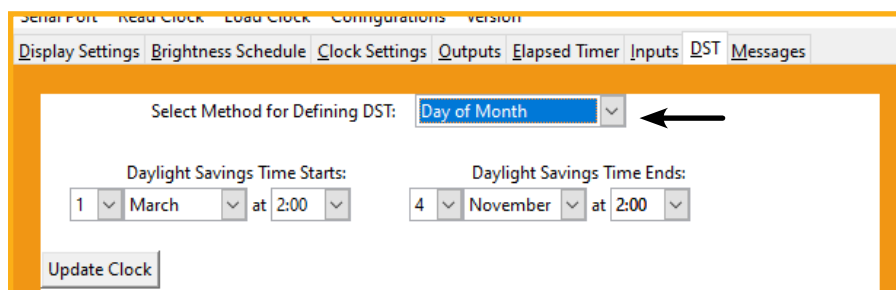

Once the settings are chosen, click the "Update Clock" button to store the selected options or, when all the tabs have been programmed, click the "Load Clock" button located on the menu bar to store all options.

Clock Programming - Inputs

The "Inputs" tab allows a user to program the clock to perform a certain function through a switch or relay contact closure from an outside device such as Code Blue, Nurses Call, etc. Program the first Input on the SDLG by selecting one of the options in the drop down list next to Input 1. Listed below are the options and the function of each one:

No Action - This function does nothing if the input is activated.

Return to Time Display - Activating the input causes the clock to display the time. If a countdown or count up is in progress, the function is reset when the input is activated.

Briefly Display Date - Activating the input causes the clock to briefly display the date. This only works if the clock is displaying the time, not a countdown.

Go to Count Up and Hold - Activating the input causes the clock to display and hold at zero.

Go to Count Up and Start - Activating the input causes the clock to switch from its current display and begin a count up from zero.

Go to Count Down and Hold - Activating the input causes the clock to display and hold at a start time specified by the user.

Go to Count Down and Start - Activating the input causes the clock display to begin counting down from a time specified by the user.

Reset - Activating the input restarts whichever countdown/count up is in progress.

Start/Stop - Activating the input causes the timer to pause or resume its counting functions.

Shift Digits - Activating the input causes the digits to shift from displaying Hour/Minutes to Minutes/Seconds (Applies to 4 digit clocks only).

Flash Time - Activating the input causes the clock to briefly display the time while another function, such as count up or count down, is occurring. Activating the input does not pause, stop, or reset whichever function is occurring at the same time.

Relay 1 - Activating the input causes Output Relay 1 to activate.

Relay 2 - Activating the input causes Output Relay 2 to activate.

Code Blue - Performs a special-purpose count up. Refer to the section on the next page labeled "Code Blue."

Clock Programming - Inputs

Code Blue:

Code Blue is a special-purpose count up designed for use in hospitals and other medical facilities. This function overrides the control panel LED settings. The lights are green while the timer is running and red when the timer has been paused.
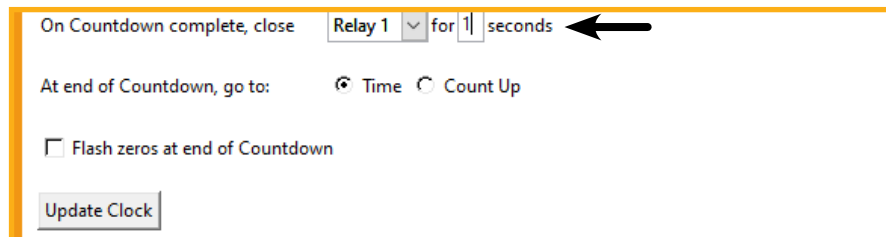
When an input programmed with Code Blue is activated for the first time, the count up starts.

When the input is activated a second time, the count up pauses. If the input is activated a third time, the count up will resume.
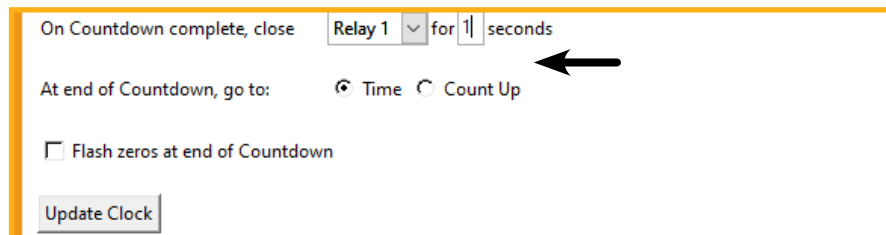
When the input is activated for a period longer than three seconds, the count up resets to zero and the display goes back to showing the time.

If a button programmed with the Start/Stop function is pressed while Code Blue is running, the count up will pause. If Start/Stop is pressed again, the count up will resume.

On countdown complete, close: This option allows a user to choose how many seconds a relay will be closed for.

At end of Countdown, go to: This option allows a user to choose between having the clock display the time or start a count up when a countdown completes.

Once all of the Input settings are chosen, click the "Update Clock" button to store the selected options or, when all the tabs have been programmed, click the "Load Clock" button located on the menu bar to store all options.
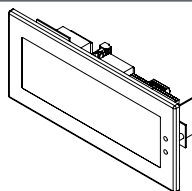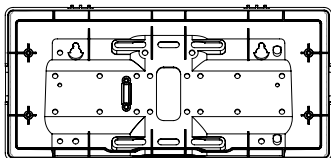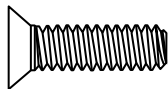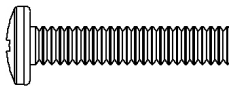
The Sapling Company, Inc.   P. (+1) 215.322.6063
670 Louis Drive   F. (+1) 215.322.8498
Warminster, PA 18974   www.sapling-inc.com
USA

Clock Programming - Daylight Saving Time (DST)

The DST Tab allows a user to configure the clock for automatic Daylight Saving Time changes.
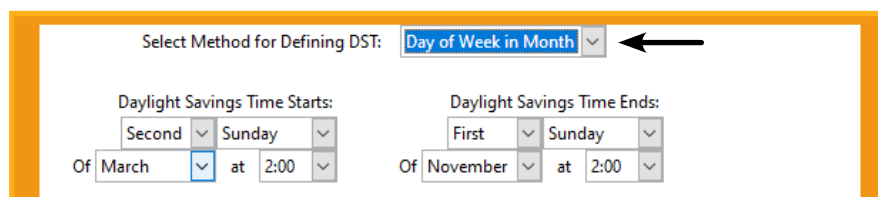
Select Method for Defining DST: This drop down allows a user to choose between four options for Daylight Savings Time.

Day of Month: When this option is selected, Daylight Saving Time can be set based on what date and time it begins and ends. For example, Daylight Saving Time can begin on March 28 at 2AM and end on November 1st at 2AM.

Day of Week in Month: When this option is selected, Daylight Saving Time can be set based on what week in what month and what time it begins and ends. For example, Daylight Saving Time can begin on the second Sunday in March at 2AM and ends on the first Sunday in November at 2AM.

By Country: When this option is selected, Daylight Saving Time can be chosen by country. For example, Daylight Saving Time can be selected to follow the DST rules established in the United States.

None: When this option is selected, Daylight Saving Time is not applied.

Once all of the DST settings are chosen, click the "Update Clock" button to store the selected options or, when all the tabs have been programmed, click the "Load Clock" button located on the menu bar to store all options.

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
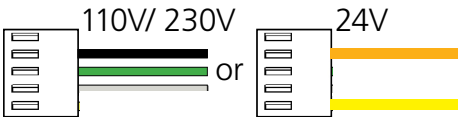F. (+1) 215.322.8498
www.sapling-inc.com

Wall Mount Installation

VERY IMPORTANT:

CONFIGURE THE MESSAGE DISPLAY BEFORE MOUNTING THE DISPLAY TO A WALL OR CEILING

A Sapling Master Clock and any Repeaters must be installed, powered, and set up **BEFORE** you attempt to set up a wireless clock system. If the Master Clock and Repeaters are not properly installed and powered, the secondary clocks will not synchronize.

Included in Package

Description	Quantity	Picture
SDLG Digital Clock	1	
Digital Clock Wall Housing	1	
6-19x1/2 screw	4	
6-32x1 screw	4	

Included in Wiring Kit (D-PK-3-24-S or D-PK-3-110-S)

Description	Quantity	Picture
Power/grounding wires and connector	1	110V/ 230V or 24V

PLEASE NOTE: A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a single gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the signal, power, or ground cables. You may also need a 1/4 inch drill, 4 #8x1.5 self-tapping screws, and 4 wall anchors for those screws if you decide not to attach the clock directly to the gang box.

If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.

Wall Mount Installation

1) If you are installing a new gang box in the wall, leave at least 4 inches between the top of the gang box and ceiling. Confirm that the bottom of the gang box is level with the floor.

If you are using an existing gang box, the top of the gang box must be a minimum of three inches away from the ceiling.
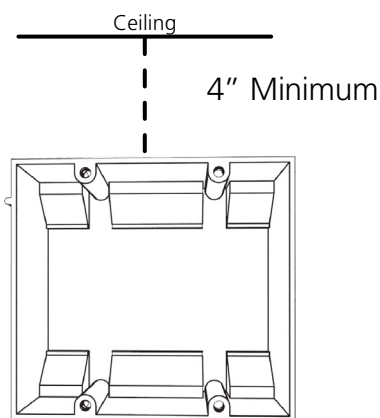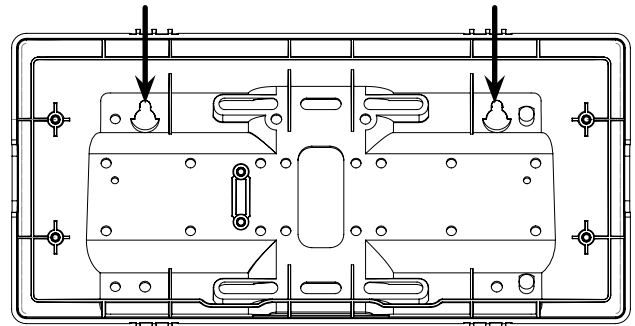
Ceiling

4" Minimum

2) Run power wiring to the gang box.

CHECK YOUR WIRING

The voltage between the white and black wires should measure 105-126 volts AC in the 110 volt model, 207-253 volts AC in the 230 volt model, or Yellow & orange wires for 21.5-26.5 volts AC in the 24 volt model.

If you are using the 24 volt model, make sure that the wiring leading to the clock is from an ISOLATED transformer.

3) Attach the power wires from your kit to the power wires in the gang box.
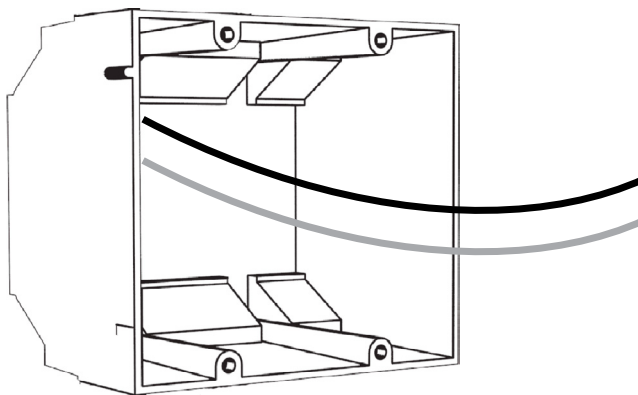
4) If you do not wish to attach the housing to the gang box, proceed to step 5A. Otherwise, go to step 6.

Wall Mount Installation

5A) If you do not wish to attach the housing to a gang box, place the mounting piece on the wall. Leave at least 4 inches between the top rear edge of the housing and ceiling. Confirm that the bottom of the mounting piece is level with the floor.

Ceiling

4" Minimum
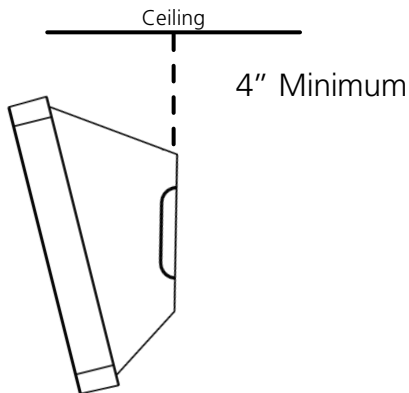
5B) Identify the keyholes towards the top of the back of the clock housing. Use a pencil to trace the top of each keyhole onto the wall, then use the 1/4 inch drill bit to drill holes at the locations of the two marks.
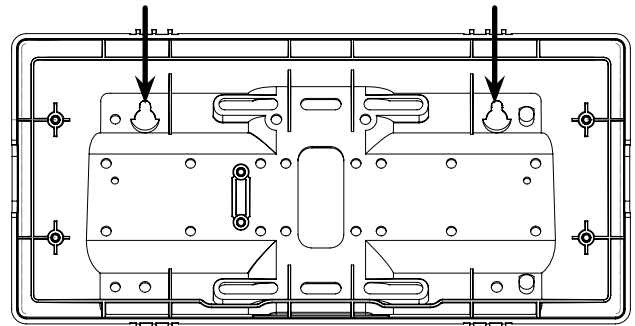
5C) Insert the wall anchors into the two holes, then place a #8 self-tapping screw into each wall anchor, leaving at least a 1/8" gap between the top of the screw and the wall.
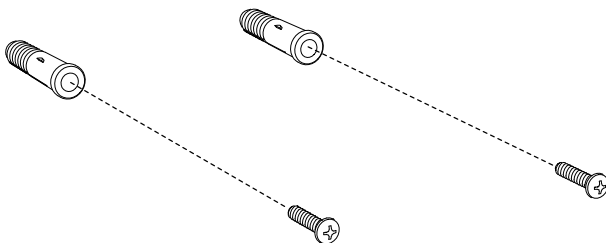
5D) Use the keyholes in the back of the housing to hang the clock onto the screws.

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com

Wall Mount Installation

5E) Use a pencil to trace the holes beneath each keyhole onto the wall. Take the clock housing off the wall, drill holes at the marked locations, and add another two wall anchors.
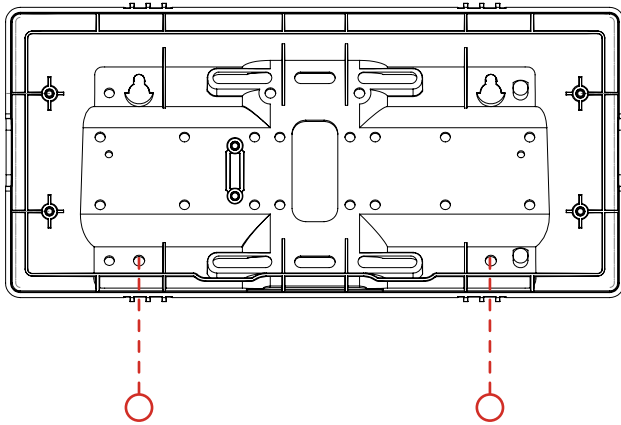
5F) Repeat step 5D, then pass another pair of #8 screws through the bottom holes and secure them in the remaining two wall anchors.
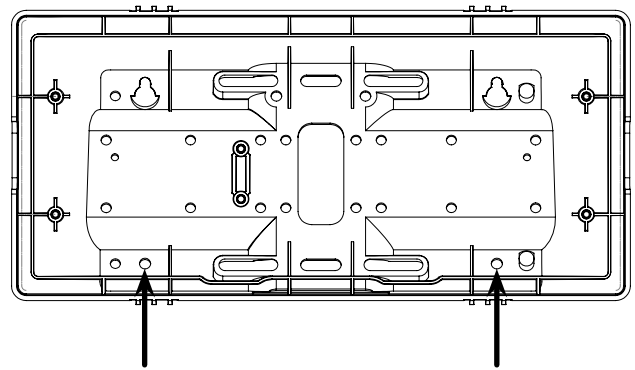
5G) Run power wires through the large hole in the back of the housing. Secure the wires by passing them through the wire clamp.
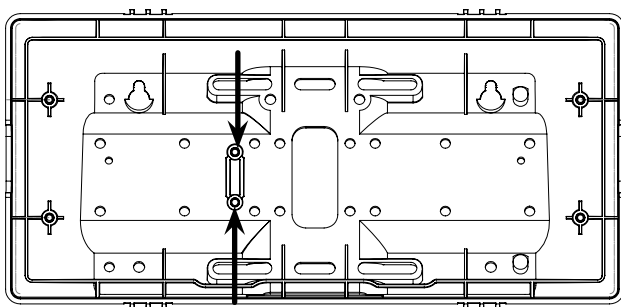
6) Perform step 5F, then attach the housing to the gang box using the #6-32x1 screws.
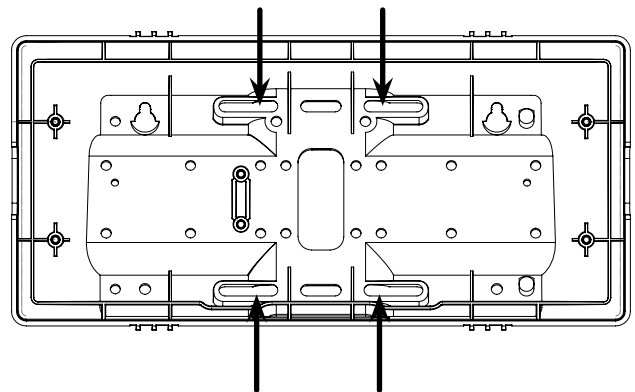
Wall Mount Installation

7) Detach the filter from the clock display board by pressing inward on the red tabs.
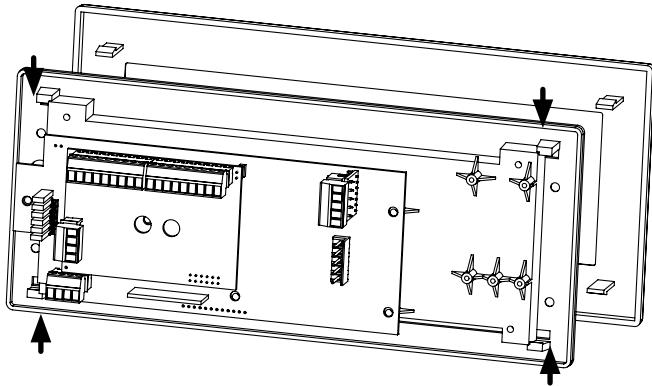
8) Attach the power wires to the ports as shown below.
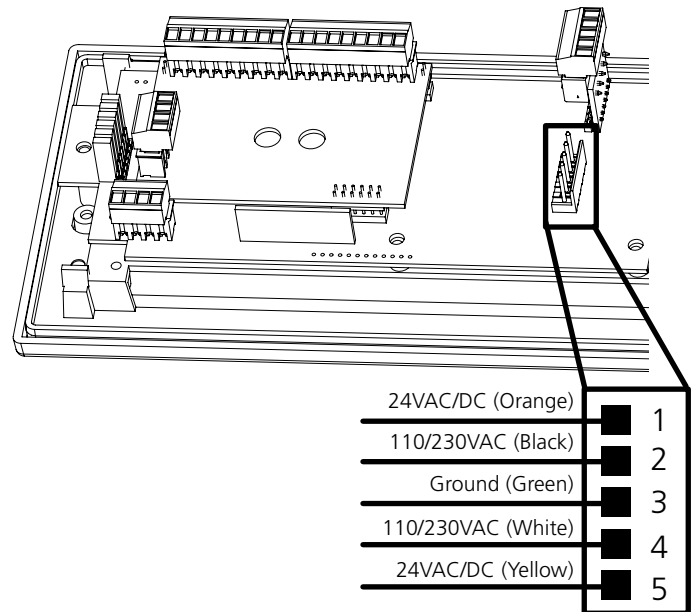
24VAC/DC (Orange)	1
110/230VAC (Black)	2
Ground (Green)	3
110/230VAC (White)	4
24VAC/DC (Yellow)	5

9) Detach the frame from the front of the clock housing by pulling the bottom and top edges away from the housing.
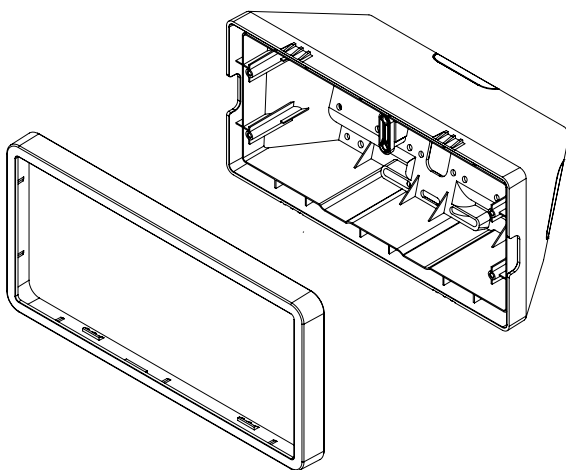
10) Use the 6-19x1/2 screws to attach the display board to the housing.

NOTE: For 2.5" Digit clocks, the holes for the screws will be on the left and right inner surfaces of the housing. For 4.0" Digit Clocks, the holes will be on the top and bottom surfaces.
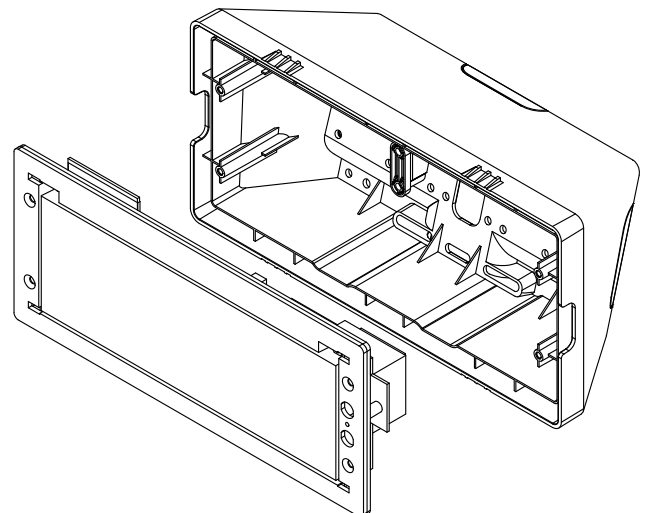
Wall Mount Installation

11) Remove the plastic cover from the display board.
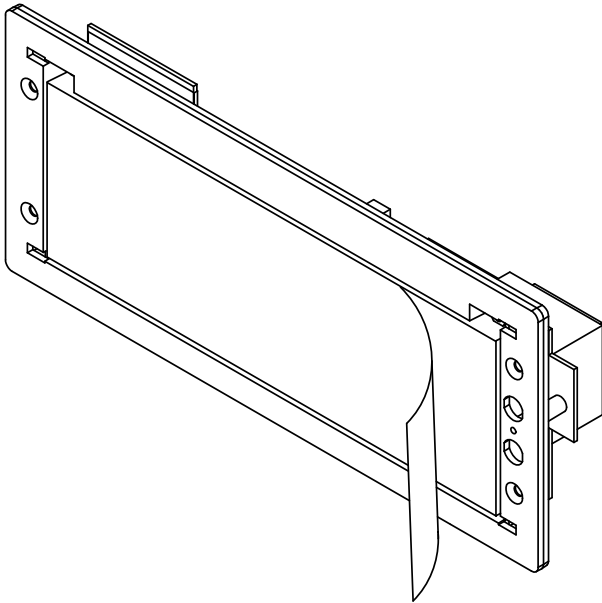
12) Place the filter over the display board. You should hear a snapping noise as the latches drop into place.
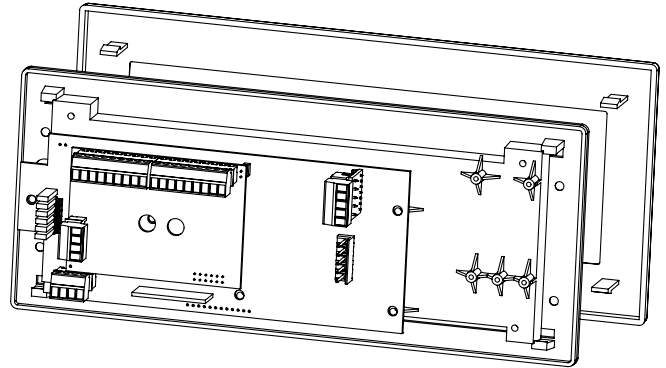
13) Place the housing frame onto the housing. You should hear a snapping noise as the latches drop into place.
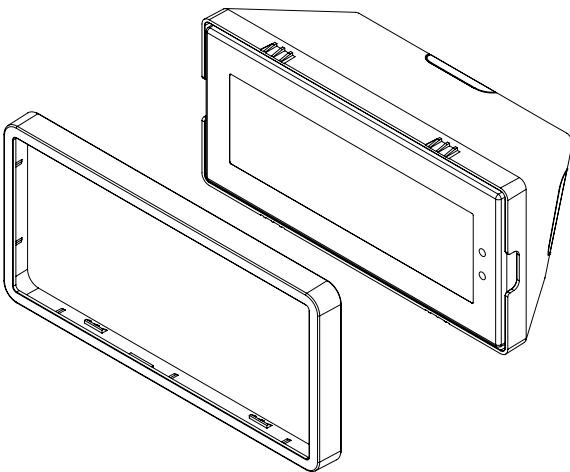
14) Power the clock. After testing the LED segments and presenting some diagnostic information, the clock will display the time based off if its internal quartz oscillator. It will correct itself to show synchronized time as soon as it receives data from a master clock.
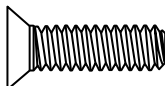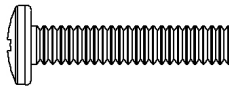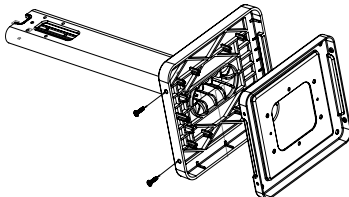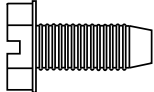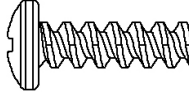
Flag Mount Installation

VERY IMPORTANT:

CONFIGURE THE MESSAGE DISPLAY BEFORE MOUNTING THE DISPLAY TO A WALL OR CEILING

A Sapling Master Clock and any Repeaters must be installed, powered, and set up **BEFORE** you attempt to set up a wireless clock system. If the Master Clock and Repeaters are not properly installed and powered, the secondary clocks will not synchronize.
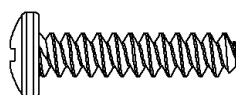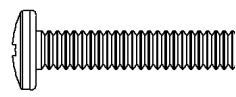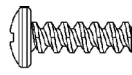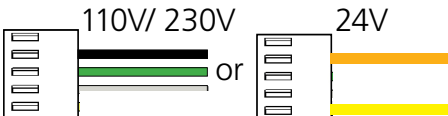
Included in Package

Description	Quantity	Picture
SDLG Digital Clock	1	
Digital Clock Wall Housing	1	
6-19x1/2 screw	4	
6-32x1 screw	4	

Included in Pole Kit (SAB-1BD-00S-0)

Description	Quantity	Picture
Dual-mount pole, including mounting plate	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8	

If any of the items listed in the kits are missing, you may contact your dealer and order a replacement kit.

Flag Mount Installation

M3.5-1.0x10 screw (black)   4
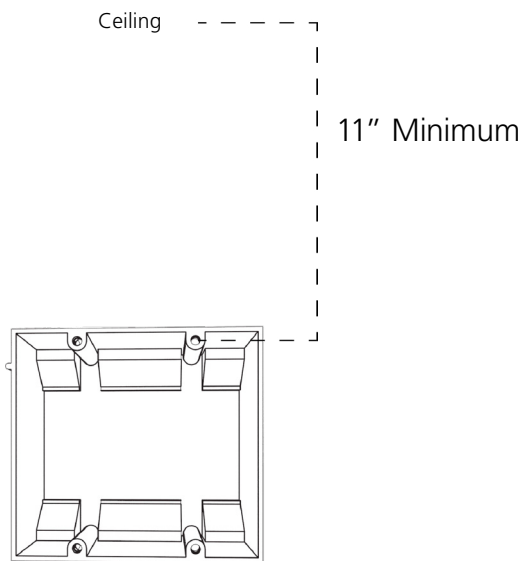
Internal-tooth washer   8

#6-32x1 screw   4

Adapter tab screws   4

Included in Wiring Kit (D-PK-3-24-S or D-PK-3-110-S) - 2 kits included

Power/grounding wires   1
and connector

110V/ 230V   24V

or

PLEASE NOTE: A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a single gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the signal, power, or ground cables. You may also need a 1/4 inch drill, 4 #8x1.5 self-tapping screws, and 4 wall anchors for those screws if you decide not to attach the clock directly to the gang box.

If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.

Flag Mount Installation

1) Install the double gang box in the wall or ceiling. If you are installing the gang box in the wall, leave at least eleven inches between the top of the gang box and the ceiling. If you are installing the gang box in the ceiling, leave at least eleven inches between the gang box and the wall. The box should be installed level and plumb with the wall and ceiling.
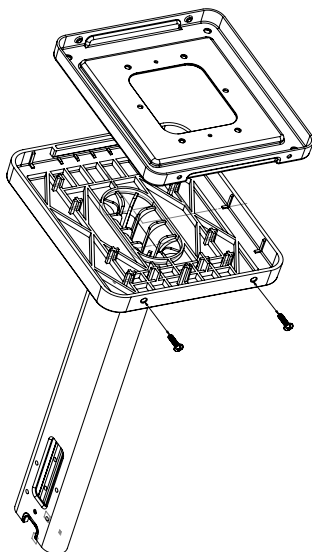
Ceiling

11" Minimum

2) Run power wiring to the gang box.
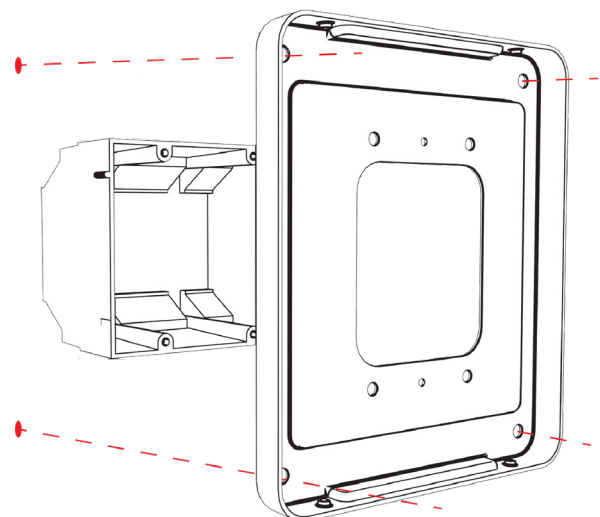
CHECK YOUR WIRING

The voltage between the white and black wires should measure 105-126 volts AC in the 110 volt model, 207-253 volts AC in the 230 volt model, or Yellow & orange wires for 21.5-26.5 volts AC in the 24 volt model.

If you are using the 24 volt model, make sure that the wiring leading to the clock is from an ISOLATED transformer.

3) Detach the mounting plate from the mounting pole by unscrewing the two screws. Set the screws and pole aside for later.

4) Attach the mounting plate to the gang box using only two of the four long, silver #6-32x1 screws. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners.
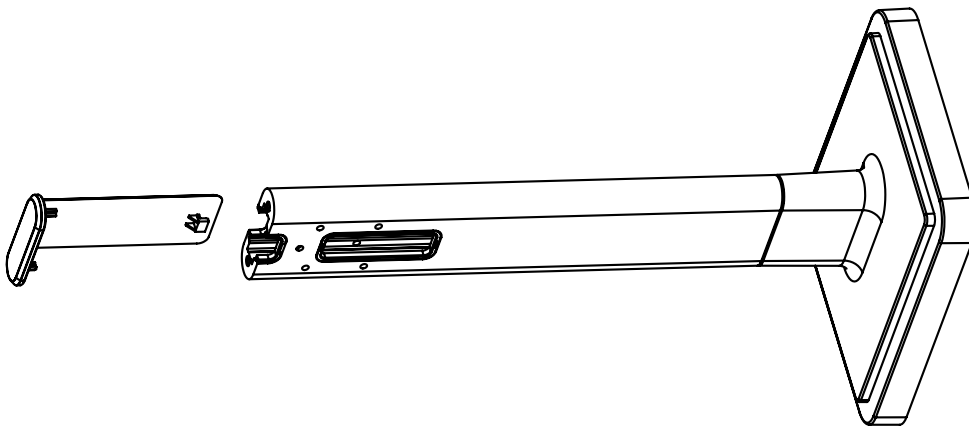
Flag Mount Installation

Steps 5 and 6 only apply to metal mounting poles. If you have an ABS mounting pole, skip to step 7

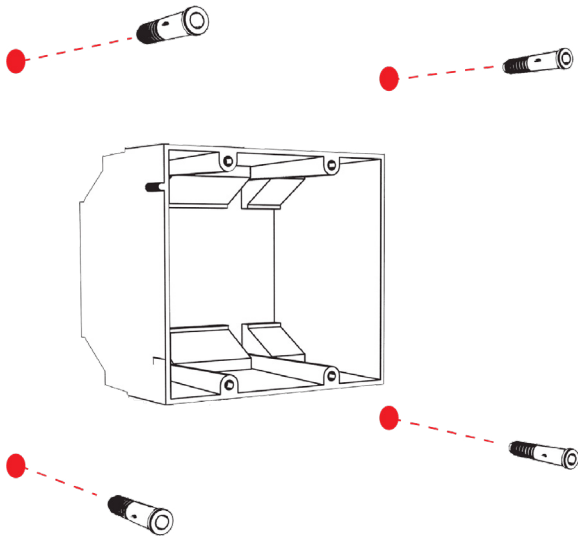5) Remove the mounting pole end cap and the plastic ring from one of the holes.
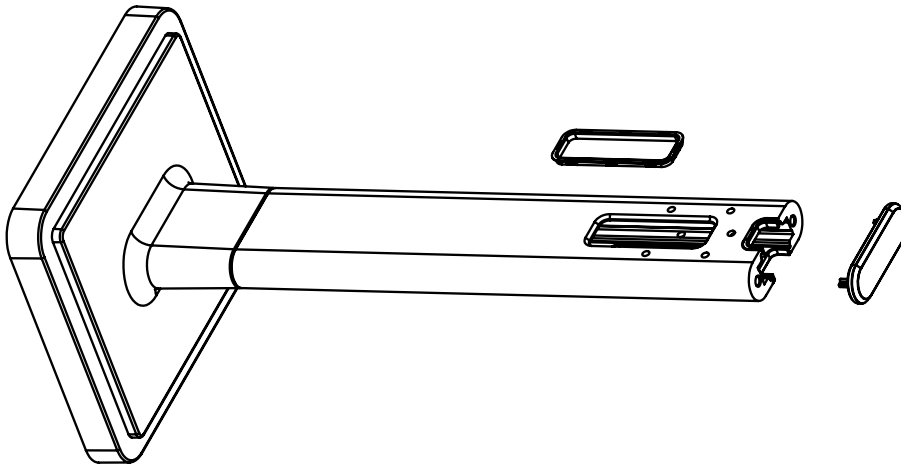
6) Attach the flag-mount end cap to the pole. Confirm that the covering flap is attached to the side where the plastic ring was removed.

Flag Mount Installation

7) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.

8) Reattach the mounting plate, this time using all four long, silver #6-32x1 screws, then insert the four #8 screws through the mounting plate and into the anchors.

9) Thread any wiring through the mounting plate, and attach a grounding wire to the mounting plate using one of the larger centered holes and the #10-32x3/8 screw.
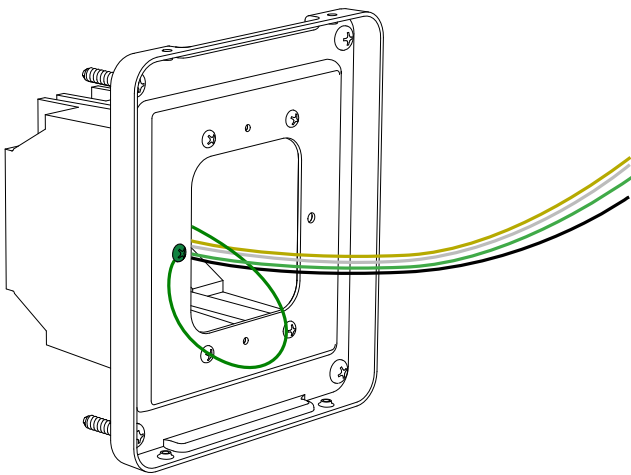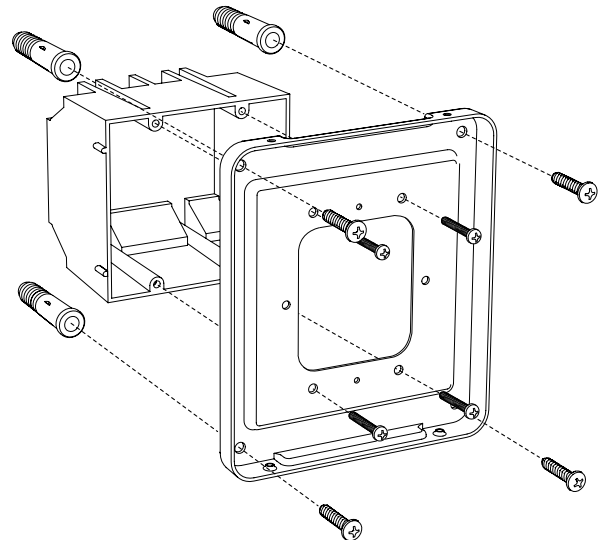
10) Use a screwdriver to remove one of the end caps. The selected end cap should match the position of the orientation of the clock on the mounting pole; for example, if you wish to attach the clock to the pole in a ceiling-mount configuration, then the top end cap should be removed. The end cap and screw that was used to secure it will not be needed again during this installation.

Flag Mount Installation

11) Detach the frame from the front of the clock housing by pulling the bottom and top edges away from the housing.
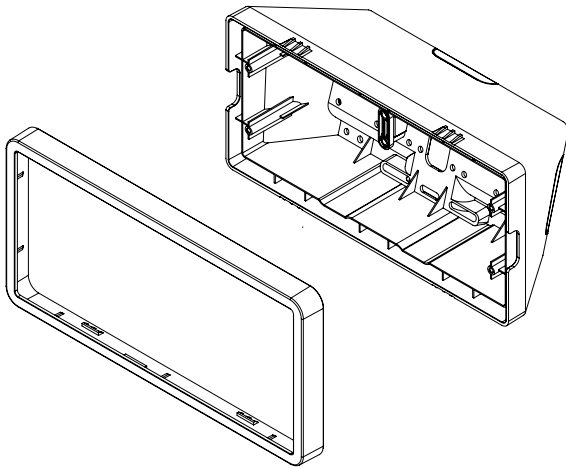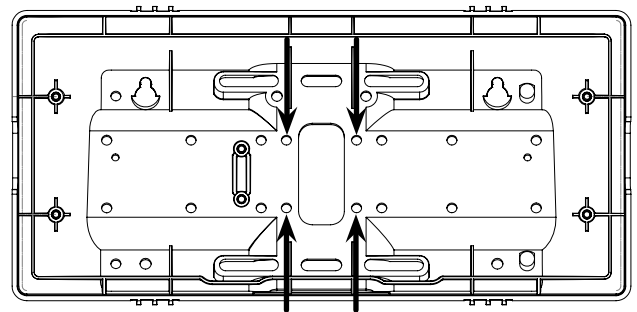

12) Insert the four #8-32x7/16 screws through the internal-tooth washers, then through the adapter, and finally into the pole. Use a screwdriver to tighten the screws so that the adapter does not move.

13) Thread at least fifteen inches (38.1cm) of wiring from the gang box through the bottom of the pole until each wire exits through the hole in the adapter. Secure the wires by passing them through the wire clamp.
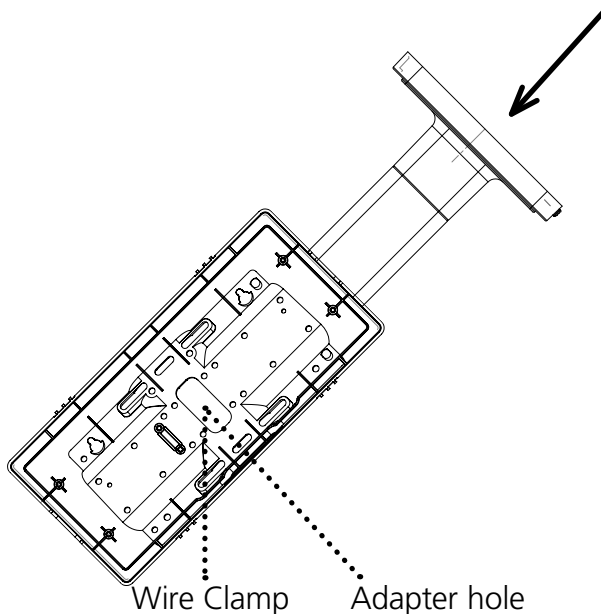
Wire Clamp   Adapter hole

14) Detach the filter from the clock display board by pressing inward on the red tabs.

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com
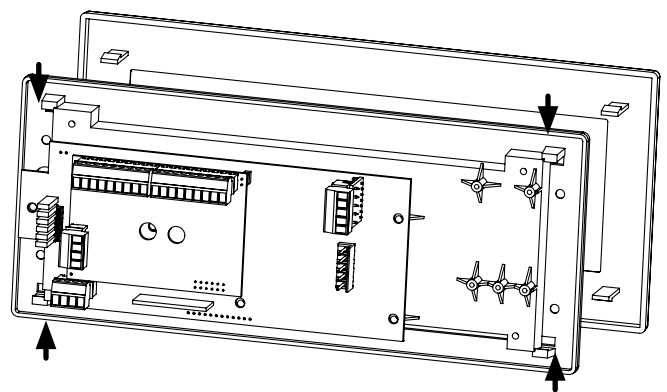
Flag Mount Installation

15) Attach the power wires to the ports as shown below.

24VAC/DC (Orange)	1
110/230VAC (Black)	2
Ground (Green)	3
110/230VAC (White)	4
24VAC/DC (Yellow)	5
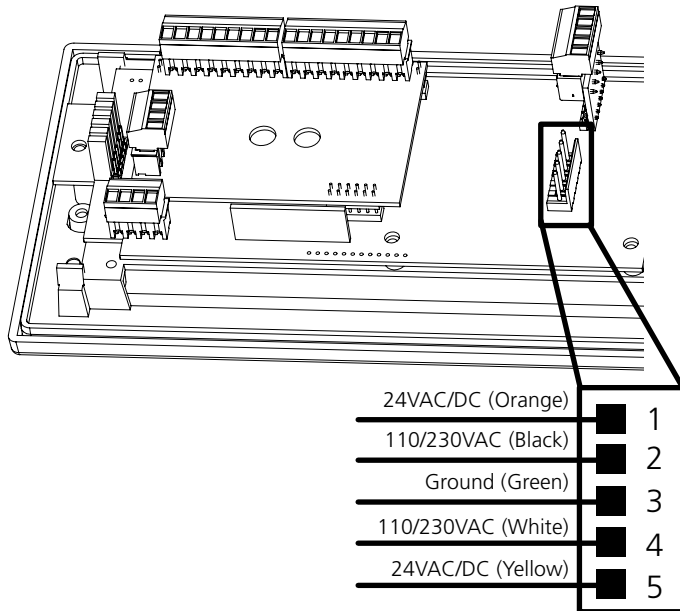
16) Use the 6-19x1/2 screws to attach the display board to the housing.

NOTE: For 2.5" Digit clocks, the holes for the screws will be on the left and right inner surfaces of the housing. For 4.0" Digit Clocks, the holes will be on the top and bottom surfaces.
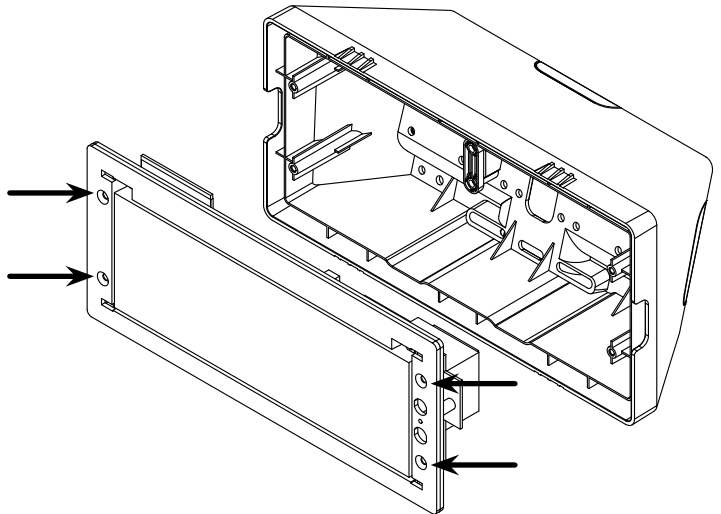
17) Remove the plastic cover from the display board.

18) Place the filter over the display board. You should hear a snapping noise as the latches drop into place.

Flag Mount Installation

19) Place the housing frame onto the housing. You should hear a snapping noise as the latches drop into place.

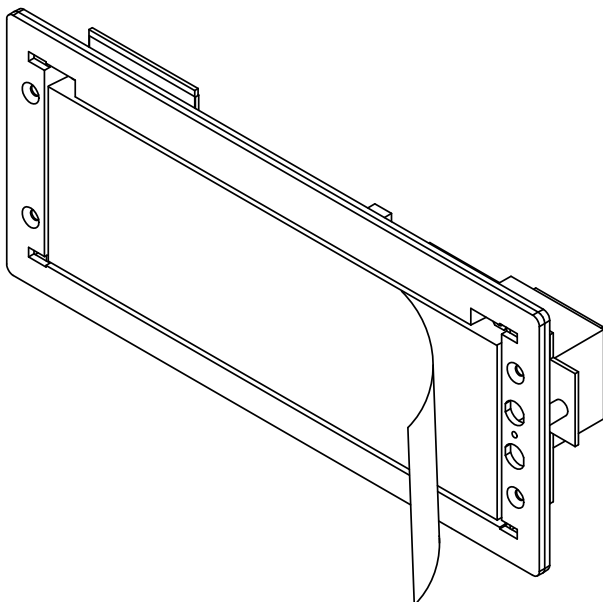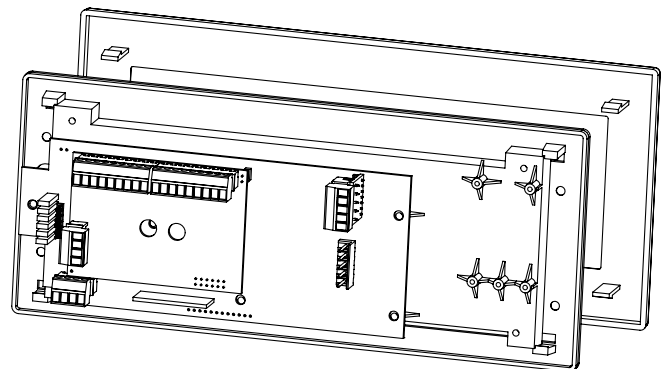20) Hang the base of the pole on the mounting plate so that the lip is on top of the base, and the holes for the screws are on the bottom of the base. Attach the wires from the pole to the wires in the gang box, then use the two black base screws to attach the other side of the base to the mounting plate.

WALL

CEILING

21) Power the clock. After testing the LED segments and presenting some diagnostic information, the clock will display the time based off if its internal quartz oscillator. It will correct itself to show synchronized time as soon as it receives data from a master clock.

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com

Double Mount Installation

VERY IMPORTANT:

CONFIGURE THE MESSAGE DISPLAY BEFORE MOUNTING THE DISPLAY TO A WALL OR CEILING

A Sapling Master Clock and any Repeaters must be installed, powered, and set up **BEFORE** you attempt to set up a wireless clock system. If the Master Clock and Repeaters are not properly installed and powered, the secondary clocks will not synchronize.

Included in Package

Description	Quantity	Picture
SDLG Digital Clock	1	
Digital Clock Wall Housing	1	
6-19x1/2 screw	8	
6-32x1 screw	8	

Included in Pole Kit (SAB-1BD-00S-0)

Dual-mount pole, including mounting plate	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8	

If any of the items listed in the kits are missing, you may contact your dealer and order a replacement kit.

The Sapling Company, Inc.   P. (+1) 215.322.6063
670 Louis Drive   F. (+1) 215.322.8498
Warminster, PA 18974   www.sapling-inc.com
USA

Double Mount Installation

M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	8	
#6-32x1 screw	4	
Adapter tab screws	4	

Included in Wiring Kit (D-PK-3-110-S or D-PK-3-24-S) - 2 kits included

Power/grounding wires and connector	1	110V/ 230V 24V

PLEASE NOTE: A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a single gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the signal, power, or ground cables. You may also need a 1/4 inch drill, 4 #8x1.5 self-tapping screws, and 4 wall anchors for those screws if you decide not to attach the clock directly to the gang box.

If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.

Double Mount Installation

1) Install the double gang box in the wall or ceiling. If you are installing the gang box in the wall, leave at least eleven inches between the top of the gang box and the ceiling. If you are installing the gang box in the ceiling, leave at least eleven inches between the gang box and the wall. The box should be installed level and plumb with the wall and ceiling.

Ceiling

11" Minimum

2) Run power wiring to the gang box.

CHECK YOUR WIRING

The voltage between the white and black wires should measure 105-126 volts AC in the 110 volt model, 207-253 volts AC in the 230 volt model, or Yellow & orange wires for 21.5-26.5 volts AC in the 24 volt model.

If you are using the 24 volt model, make sure that the wiring leading to the clock is from an ISOLATED transformer.

3) Detach the mounting plate from the mounting pole by unscrewing the two screws. Set the screws and pole aside for later.

4) Attach the mounting plate to the gang box using only two of the four long, silver #6-32x1 screws. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners.

Double Mount Installation

5) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.

6) Reattach the mounting plate, this time using all four long, silver #6-32x1 screws, then insert the four #8 screws through the mounting plate and into the anchors.

7) Thread any wiring through the mounting plate, and attach a grounding wire to the mounting plate using one of the larger centered holes and the #10-32x3/8 screw.
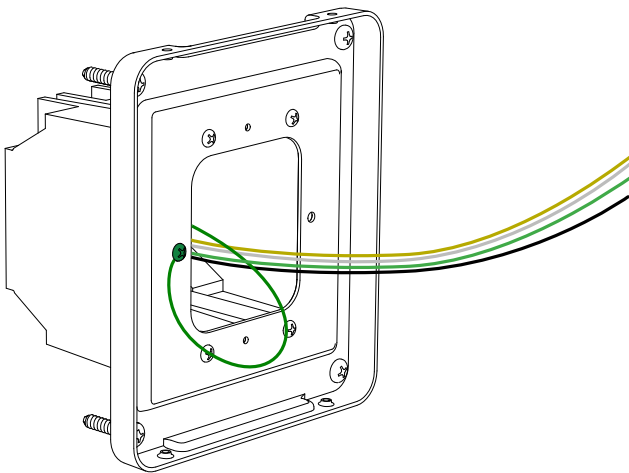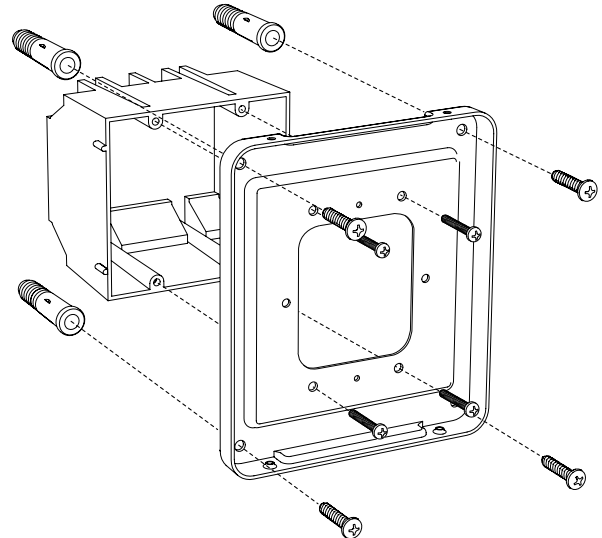
8) Use a screwdriver to remove one of the end caps. The selected end cap should match the position of the orientation of the clock on the mounting pole; for example, if you wish to attach the clock to the pole in a ceiling-mount configuration, then the top end cap should be removed. The end cap and screw that was used to secure it will not be needed again during this installation.

Double Mount Installation

9) Detach the frame from the front of each clock housing by pulling the bottom and top edges away from the housing.
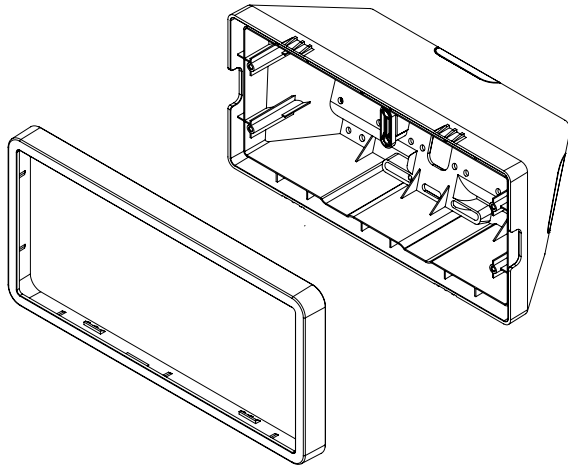
10) Insert the four #8-32x7/16 screws through the internal-tooth washers, then through each adapter, and finally into the pole. Use a screwdriver to tighten the screws so that the adapters do not move.
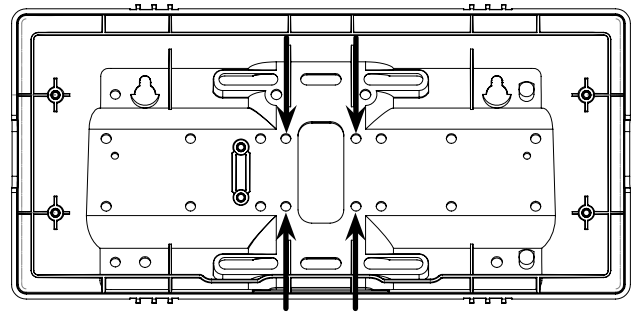
11) Attach adapters to each other using adapter tab screws, two on each side.
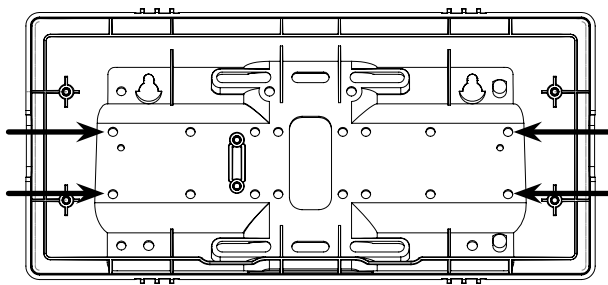
12) Thread at least fifteen inches (38.1cm) of wiring from the gang box through the bottom of the pole until each wire exits through the hole in each adapter. Secure the wires by passing them through the wire clamp.
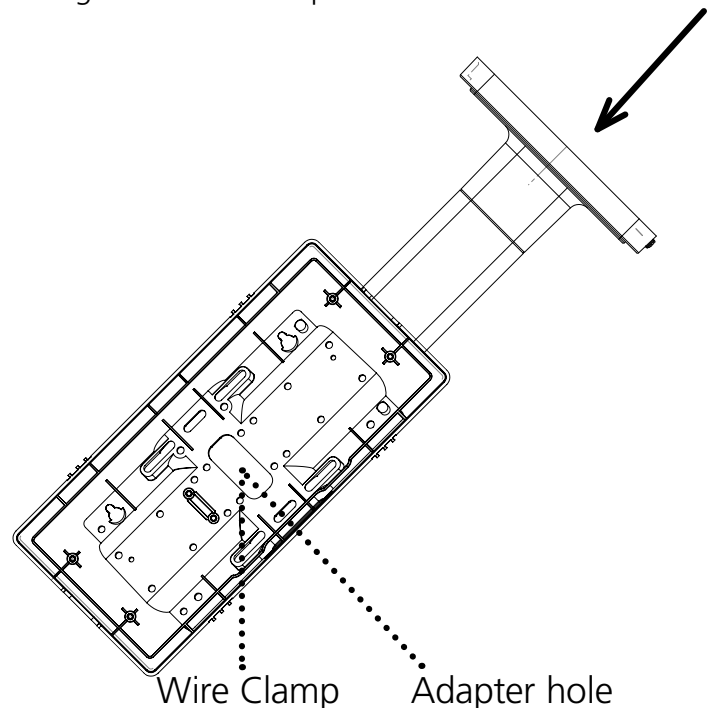
Wire Clamp   Adapter hole

13) Detach the filter from the clock display board by pressing inward on the red tabs.

44

The Sapling Company, Inc.
670 Louis Drive
Warminster, PA 18974
USA

P. (+1) 215.322.6063
F. (+1) 215.322.8498
www.sapling-inc.com
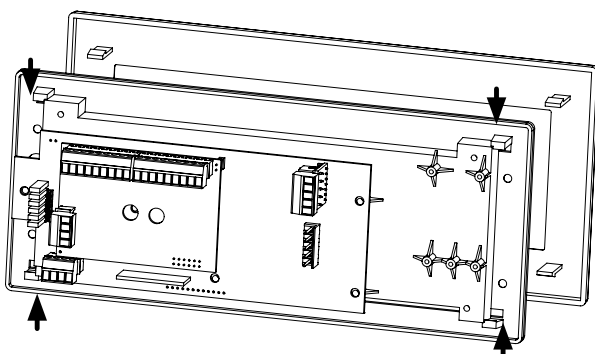
Double Mount Installation

14) Attach the power wires to the port as shown below.

Wire	Pin
24VAC/DC (Orange)	1
110/230VAC (Black)	2
Ground (Green)	3
110/230VAC (White)	4
24VAC/DC (Yellow)	5
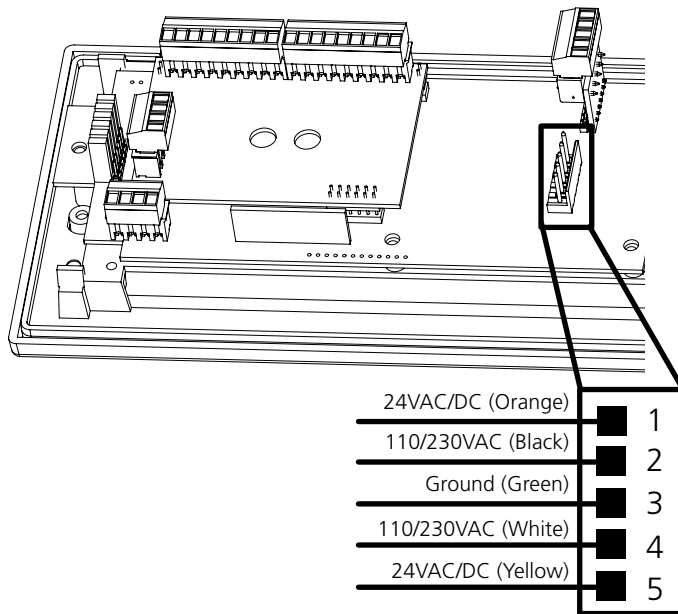
15) Use the 6-19x1/2 screws to attach a display board to each housing.

NOTE: For 2.5" Digit clocks, the holes for the screws will be on the left and right inner surfaces of the housing. For 4.0" Digit Clocks, the holes will be on the top and bottom surfaces.
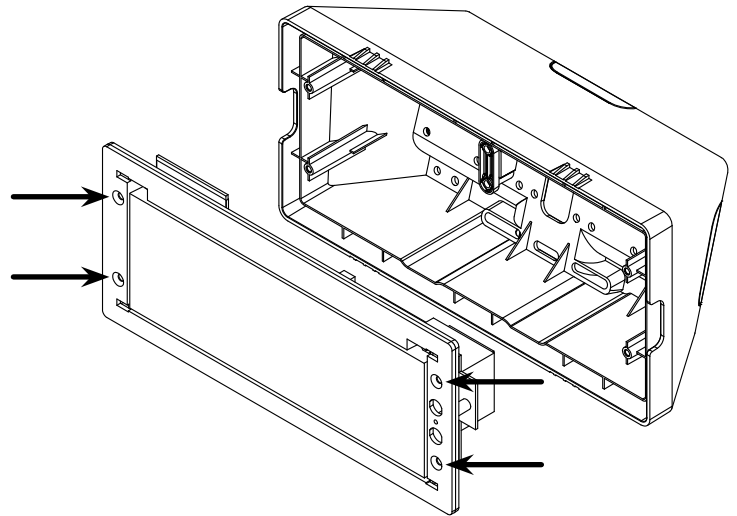
16) Remove the plastic cover from each display board.

17) Place a filter over each display board. You should hear a snapping noise as the latches drop into place.
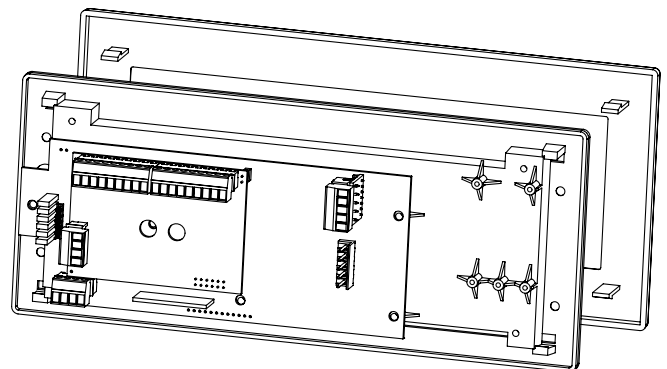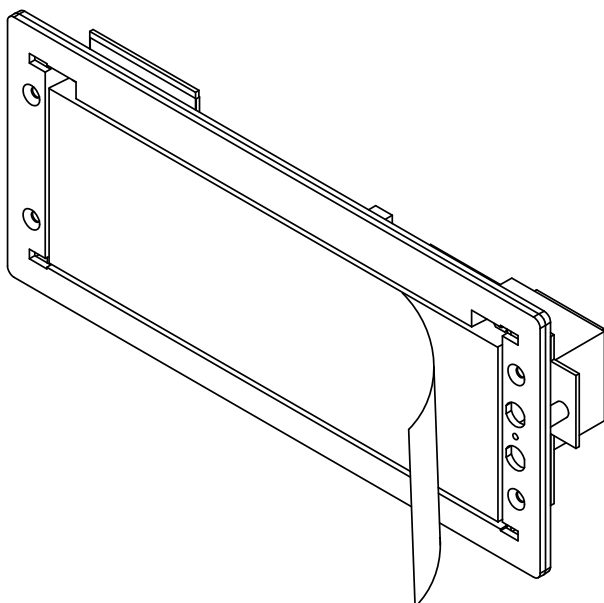
Double Mount Installation

18) Place a housing frame onto each housing. You should hear a snapping noise as the latches drop into place.
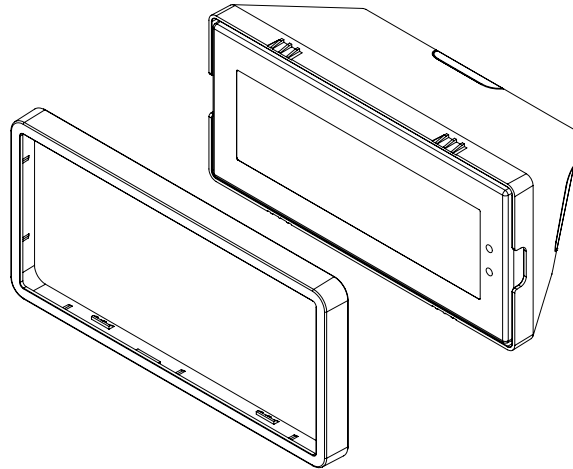
19) Hang the base of the pole on the mounting plate so that the lip is on top of the base, and the holes for the screws are on the bottom of the base. Attach the wires from the pole to the wires in the gang box, then use the two black base screws to attach the other side of the base to the mounting plate.

WALL

CEILING
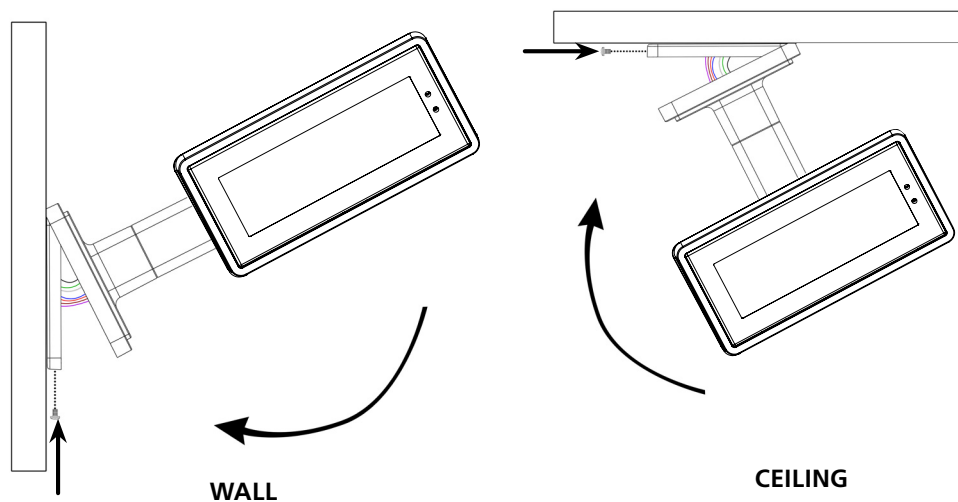
20) Power the clock. After testing the LED segments and presenting some diagnostic information, the clock will display the time based off if its internal quartz oscillator. It will correct itself to show synchronized time as soon as it receives data from a master clock.

Adjustable Jumper Settings

Every version of the digital clock contains a set of jumpers which can be moved to change a particular setting. The functions and positions of each jumper are described below:

	Left Position	Right Position
	Pins 1 & 2	Pins 2 & 3
Jumper 1	12 Hour Time (Default)	24 Hour Time
Jumper 2	DO NOT TOUCH (Default)	DO NOT TOUCH
Jumper 3	Display Time Only (Default)	Alternate display between Time and Date
Jumper 4	DO NOT TOUCH (Default)	DO NOT TOUCH
Jumper 5	DO NOT TOUCH (Default)	DO NOT TOUCH
Jumper 6	Clock accepts sync-wire inputs (Default in 3300)	Clock accepts RS485 input or sbdconfig cable (Default in 3200)
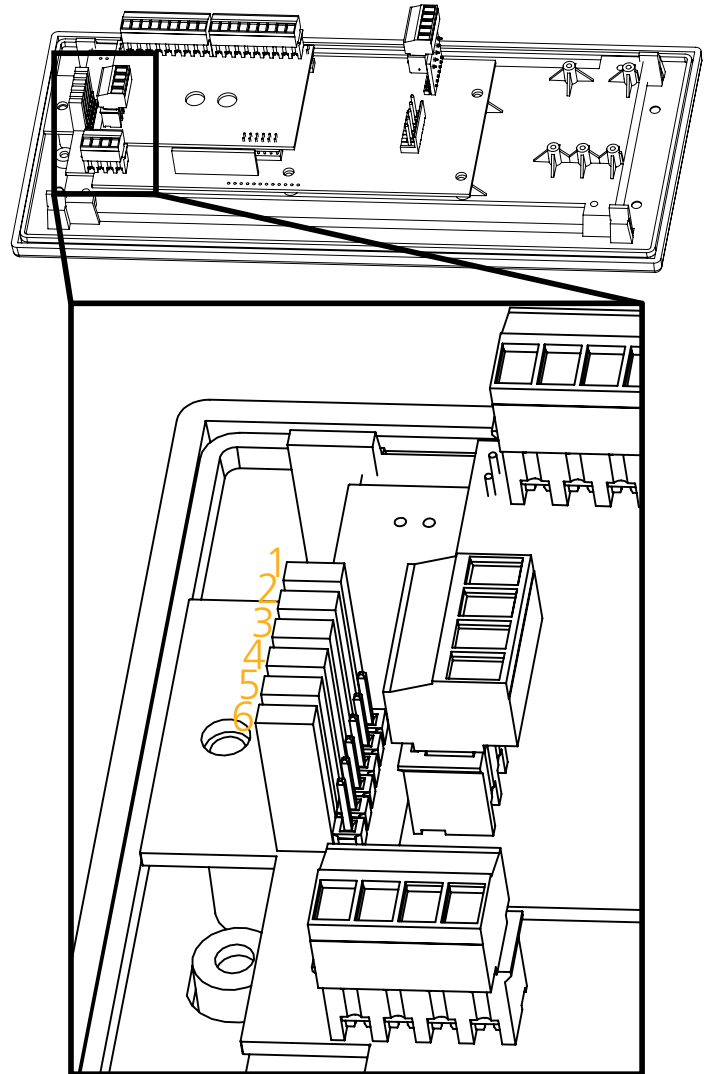
Temperature Sensor Installation

(**IMPORTANT:** Detach clock from power source before installing new circuitry. DO NOT add new circuitry while the clock is operating)

Attach the end of the Temperature Sensor Wire to the circuit board in the following manner:
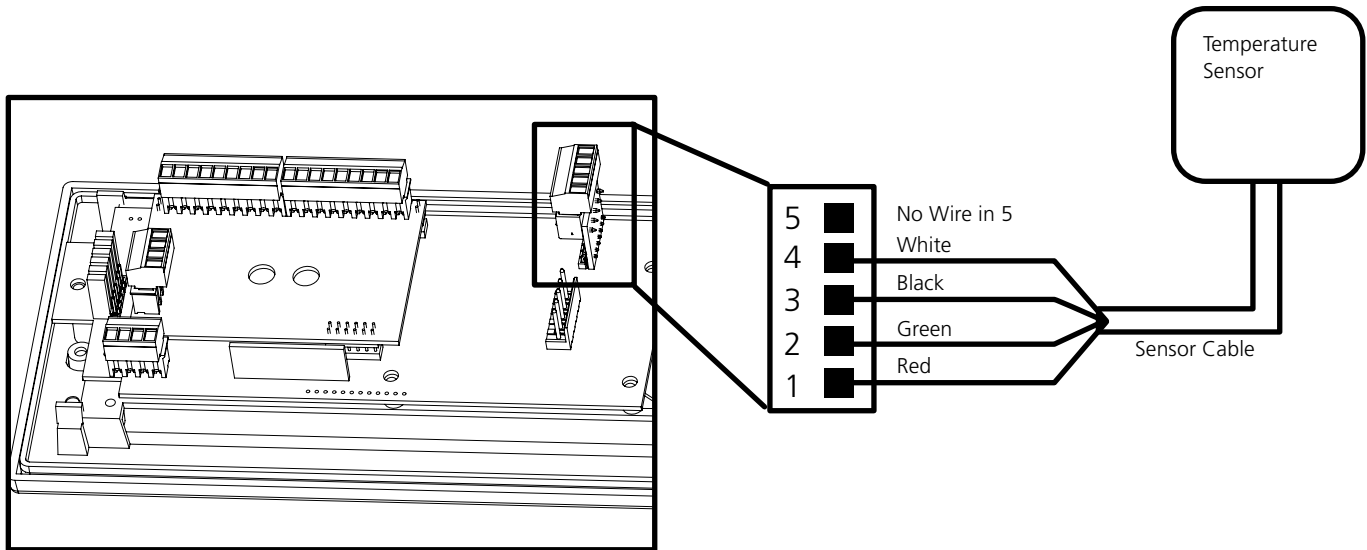
The Sensor Cable is 6 feet (1.83 meters) long, and so the sensor should be positioned within 6 feet of the clock. The cable is unshielded, 4 conductor, 22AWG (.33mm²). If longer than 6 feet is required, the wire would have to be terminated in an electrical box, and the longer wire would have to be provided by the customer.

Data from the temperature sensor will be sent to your clock when the clock is powered on. For more information on how to make the digital clock display temperature, please see the section labeled "sbdconfig - Display Settings".

Reading the Display

The digital clock is designed to display time in either a 12-hour or 24-hour format. When the display is set to the 12-hour format, a circular light will appear in the top left corner of the display to indicate PM, or disappear to indicate AM. When the display is set to the 24 hour format, the full 24-hour time will appear on the display; no other lights should appear.

Some examples:

2:00:45 AM (12-hour format)

PM: ➡

2:00:45 PM (12-hour format)
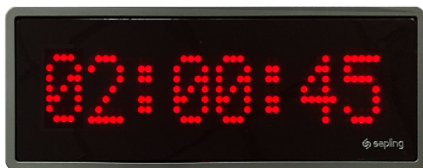
2:00:45 AM (24-hour format)
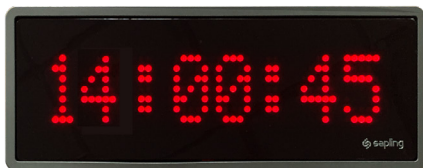
2:00:45 PM (24-hour format)

The factory default setting for all digital clocks is the 12-hour format. If you wish to set the clock to display time in a 24-hour format, see the section labeled "Adjustable Jumper Settings" or "Clock Programming - Display Settings", included earlier in this manual.

Frequently Asked Questions

What happens to the clock if a power failure occurs?

If a power failure occurs, the display will shut off but the clock will continue to keep time with its internal quartz oscillator. This oscillator will continue to run on a tiny battery backup for about ten years. In this mode, it may drift from synchronized time by a few seconds for each year that the clock is without power. Once power is restored to the clock, the display will turn on and display the time on the quartz oscillator. It will correct this to accurate, synchronized time once a signal from a master clock is received.

What happens to the clock if contact with the time data source is lost?

The digital clock will rely on an internal quartz oscillator for keeping the time until time data is received. The clock will drift by a few seconds each year while in this mode, and will need to be readjusted manually.

For 24V clocks, what happens if voltage on the power line drops from 24V to lower voltage?

The clock will still function, and will maintain the same level of brightness. However, the current consumption will increase proportionally to the decrease in voltage. Very low voltage will cause the display to turn off.

Will the wireless messaging system cause interference with other wireless devices?

The messaging system uses 2.4GHz frequency-hopping technology, which allows the device transmitters to avoid interfering with other devices operating on those frequencies.

Do I gain any advantages by having more than one transceiver on a locally-powered wireless clock system?

Additional transceivers are only useful if you must mount a message display beyond the range of all other wireless clocks/displays. If all the clocks in the system are in range of each other, then there are no additional benefits from having more than one primary transceiver.

When I power my clock, it seems to be running a test instead of showing the time. What is it doing?

Immediately after power up the message display will run an LED display test to allow the user to confirm that each segment of the display is functioning properly.

If I add traditional (7-segment) wireless digital clocks to a system of Message Display clocks, what will they do when inputs are activated?

When inputs are activated, traditional digital clocks will display the input number until the reset input (Input 16) is triggered.

How long does it take for a message display to receive a signal?

If everything is installed correctly and the transponder is open, the clock should get the first signal within five minutes. Once the clock has been synchronized, it will attempt to acquire a time signal once every minute.

Once the clock has been synchronized, messages sent by the master clock and input box will appear on a wireless message display within a few seconds. The message will appear on displays closer to the master clock first, and will propagate to other master clocks over the next few seconds.

Whether or not a clock actually receives a signal is dependent on the settings of devices between the master clock and any other given clock. For instance, a receiver on a locally-powered message display that uses a battery-powered analog clock on economy mode as a signal source will only receive time data when the signal source transmits it—once every four hours—even though the receiver on the message display listens for a signal once every minute.

The Sapling Company, Inc.   P. (+1) 215.322.6063
670 Louis Drive   F. (+1) 215.322.8498
Warminster, PA 18974   www.sapling-inc.com
USA

Troubleshooting

How can I determine that the clock is receiving a signal?

if the clock is not receiving a signal, then the colons on the clock will blink on and off, unless configured by the user not to do so.

The clock is not running. What do I do?

1. Measure the input voltage to the clock. The voltage should match one of the corresponding ranges below, depending on the power source:

24V	16-28 V
110VAC	85-130 VAC
230VAC	180-260 VAC

2. Make sure that the transformer is an isolated transformer if using a 24VAC model.
3. Make sure the ground wire is not touching other wires.

NOTE: If you fail to follow instructions 2 and 3 listed above, the fuses can be blown.

The clock is in a location with a poor signal. What should I do?

Install a repeater or a locally-powered clock nearby.

The clock is in a location with no signal or a weak signal. What should I do?

If the clock is in a location that isn't receiving signal, or is not receiving a strong-enough signal to synchronize, install a signal repeater or add more secondary clocks in a location between clocks that are receiving the signal and clocks that are not.

The clock is not receiving a communication signal from the master clock, despite the fact that other nearby clocks are receiving a signal. What should I do?

Measure the voltage of the clock, as a low-voltage clock may not pick up master clock signals. Refer to the table above as a reference for the expected input voltage range for each clock type.

My version of the sbdconfig.exe software does not show the messaging tab. What should I do?

sbdconfig.exe relies on instructions in a .cfg file included with the executable. Confirm that sbdconfig. exe and this .cfg file are in the same folder. If both items are where they should be, contact support. They will either send you a new copy, or direct you to a website where a new copy of the software can be downloaded.

The Sapling Company, Inc.   P. (+1) 215.322.6063
670 Louis Drive   F. (+1) 215.322.8498
Warminster, PA 18974   www.sapling-inc.com
USA

Warranty

Sapling Limited Warranty and Disclaimer

The Sapling Company, Inc. warrants only that at the time of delivery and for a period of 24 calendar months after delivery or the period stated in this invoice, if different, the Goods shall be free of defects in workmanship and materials, PROVIDED that this warranty shall not apply:

To damage caused by Buyer's or any third party's act, default or misuse of the Goods or by failure to follow any instructions supplied with the Goods.

Where the Goods have been used in connection with or incorporated into equipment or materials the specification of which has not been approved in writing by The Sapling Company, Inc.;

To Goods which are altered, modified or repaired in any place other than a Sapling Company, Inc. factory or by persons not expressly authorized or approved in writing by The Sapling Company, Inc.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WITH RESPECT TO GOODS DELIVERED UNDER THIS CONTRACT, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The foregoing warranty runs only to Buyer. There are no oral or written promises, representations or warranties collateral to or affecting this contract. Representatives of The Sapling Company, Inc. may have made oral statements about products described in this contract. Such statements do not constitute warranties, shall not be relied on by Buyer and are not part of the contract.

Note: An extended 5 year (60 month) warranty is also available at the time of the system purchase with a surcharge.

FCC Statements

The Federal Communications Commission (FCC) wants you to know:

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 protraction against harmful interference in a commercial 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 to an outlet on a circuit different from which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician.

FCC Warnings:

Changes or modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC Rules.

For the 2.4 GHz Model:

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 5.78 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

2.4 GHz FCC ID Number: R73MOD-24G-1