



Installation Manual V5.0

# SAT/SATG Series Wireless Clock



---

# SAL/SALG Series Wireless Clocks

## Table of Contents

---

Table of Contents	2
Important Safety Instructions	3
Identify Your Clock	4
Synchronization System Setup	5 - 7
TalkBack System Pairing	8
Wall Mount Installation -	
- Round SlimLine Clock - Battery Powered	9 - 11
- Locally Powered	12 - 15
- Round Aluminum/Wood Clock - Battery Powered	16 - 19
- Locally Powered	20 - 24
- Square Clock - Battery Powered	25 - 28
- Locally Powered	29 - 32
Flag Mount Installation -	
- Round SlimLine/Aluminum Clock - Battery Powered	33 - 40
- Locally Powered	41 - 48
- Square Clock - Battery Powered	49 - 55
- Locally Powered	56 - 62
Double Mount Installation -	
- Round SlimLine/Aluminum Clock - Battery Powered	63 - 68
- Locally Powered	69 - 74
- Square Clock - Battery Powered	75 - 81
- Locally Powered	82 - 88
Legacy Movement - Battery Powered	89
Frequently Asked Questions	90 - 91
Troubleshooting	92 - 93
Diagnostic #1 - Signal Information	94
Diagnostic #2 - Signal Quality	95
Diagnostic #3 - Manufacturing Default	95 - 96
Diagnostic #4 - Battery Voltage	96
Warranty	97
FCC Statement	98

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

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

## 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**

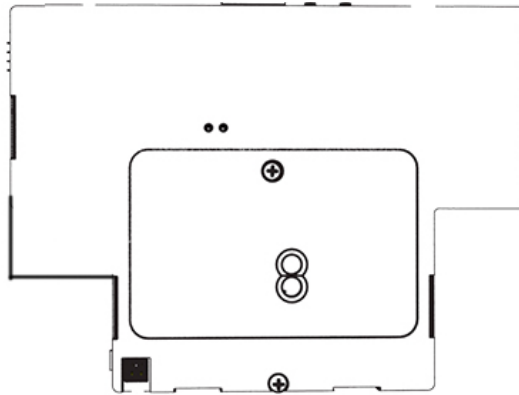
- If you are standing on an object while installing your clock, make sure that the object can support your weight, and will not sway or move as you stand on it.
- Take precautions to avoid injury by potential safety hazards near the point of installation including (but not limited to) heavy machinery, 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 movement.**



If your part number begins with SAT-4 or SATG-4, you own a SLIMLINE ABS or SQUARE clock

If your part number begins with SAT-5 or SATG-5 you own an ALUMINUM clock

If your part number begins with SAT-6 or SATG-6 you own a WOOD clock

Example part numbers:

SAT-4BS-12S-4	(SQUARE clock, 900 MHz)
SATG-4BS-12R-4	(SLIMLINE ABS clock, 2.4 GHz)
SAT-5AS-09R-1	(ALUMINUM clock, 900 MHz)
SATG-6DS-12R-2	(WOOD clock, 2.4 GHz)

## Synchronization System Setup

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

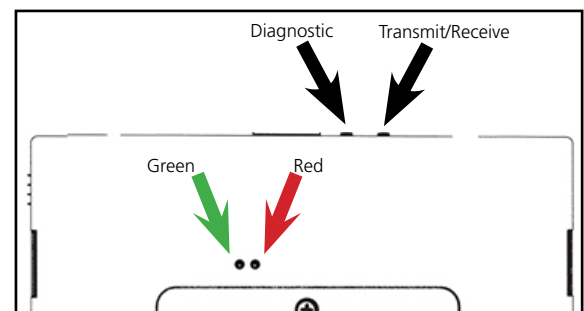
A Wireless Master Clock and any Repeaters must be installed, powered, and set up BEFORE you attempt to set up a wireless clock system. If the Master Clock and Repeaters are not properly installed and powered, the secondary clocks will not synchronize.

Instructions in this section refer to the Transmit/Receive button located on the clock movement. Review the illustration on the right if you have trouble finding it.

#### Normal/Economy Mode:

Battery-powered wireless clocks can operate in one of two different modes.

- Normal mode causes the clock to receive and transmit every two hours. Using this mode, the clock will have a 5 year battery life, assuming that the clock has good reception and is using Duracell ProCell batteries. Clocks are shipped to customers in this mode. If the clock is being added to an existing system, it must be set to normal mode.
- Economy mode causes the clock to receive and transmit every four hours. Using this mode, the clock will have an 8 year battery life, assuming that the clock has good reception and is using Duracell ProCell batteries.



The two modes may be toggled by pressing and releasing the Diagnostic Button seven times. If Normal mode is selected, the red LED will shine for one minute and the second hand will go to the 25-second position. If Economy mode is selected, the green LED will shine for one minute and the second hand will go to the 40-second position.

#### Manual Wireless Receiver Settings:

- If you power-cycle the clock (turn it off and turn it on again by removing the power connector or batteries), the receiver will be powered for ten minutes.
- If you press the Transmit/Receive button twice, the receiver will search for the time signal for ten minutes. During this time the hour and minute hands will function normally, but the second hand will move to the twenty second position until the signal is received. If a signal is received, the clock will synchronize the hands to match the time. If ten minutes have passed and a signal has not been received, the second hand will return to where it was when the button was pressed, then continue operating.
- If you press the Transmit/Receive button once, the transmitter will transmit the time signal for ten minutes. However, this will only occur if the clock has received a signal with time data during the past twelve hours. During this time, the second hand will move to the forty second position. After the ten minutes have passed, the second hand will return to where it was when the button was pressed, then continue operating.

---

## Synchronization System Setup (ctd.)

---

### **Positioning Transceivers:**

The main transceiver should be installed in a central location where there is a minimum number of walls between the transmitter and clocks. After the main transceiver has been installed, begin installing the secondary clocks nearest to the main transceiver, followed by whichever clocks are nearest to the secondary clocks, and so on. Each secondary clock within range of the transceiver should receive data and begin correcting itself within five minutes of being powered on. Be aware of walls or other obstructions made of thick concrete or sheet metal, as these may block the signal entirely.

### **Manually setting a connection between two or more wireless clocks:**

1. Identify two clocks. The one which is receiving a signal from the Master Clock is your Transmitter clock, the one which is not receiving a signal is your Receiver clock.
2. Press the Transmit/Receive button on the Transmitter clock once. The second hand will move to the 40 second position and the clock will stop running. The Transmitter clock is now in transmission mode.
3. Press the Transmit/Receive button on the Receiver clock twice. The second hand will move to the 20 second position until the Receiver clock receives time from the Transmitter clock. You may perform this step with more than one Receiver clock at the same time.
4. As you move further away from the main transceiver, use one of your now-synchronized Receiver clocks as your new Transmitter, and continue the process.

### **System Setup Options**

There are three ways to operate a system of Wireless clocks. The user may choose one or a combination of the options listed below:

1. No clocks are used for transmission. This option should only be taken if the user already has a main high-powered transceiver and as many repeaters as needed to cover the premises.
2. Battery powered clocks are used as transceivers/repeaters. This option assumes that there is at least one high powered transceiver in range of enough of the clocks that the clocks can repeat the signal to all other clocks in the system.
3. Locally powered clocks are used as transceivers/repeaters. This option assumes that there is at least one high powered transceiver in range of enough of the clocks that the clocks can repeat the signal to all other clocks in the system.

Before performing any of these options, the user must install and power the master clock and main transceiver first.

---

## Synchronization System Setup (ctd.)

---

### System Option 1

No clocks are being used for transmission. This option should only be taken if the user already has a main high-powered transceiver and as many repeaters as needed to cover the premises. There are two methods for setting up a system that uses this option:

Method A: Transceivers or repeaters are synchronized wirelessly to the main transceiver.

1. Place the main transceiver in a central location, like a hallway, where the signal will not be blocked.
2. Pick the location for a secondary transceiver or repeater.
3. Place the secondary transceiver or repeater in a location where it can receive the signal from the main transceiver.
4. Power up the main and secondary transceivers. Within five minutes, the secondary transceiver should be showing the time of the main transceiver. If the secondary transceiver is failing to synchronize, install it closer to the main transceiver.
5. Repeat steps 1-4 with all additional transceivers or repeaters. Note that other transceivers or repeaters can receive signals from a properly synchronized secondary transceiver/repeater, not just the main transceiver/repeater.

### System Option 2

Battery powered clocks are used as transceivers/repeaters. This option assumes that there is at least one high powered transceiver in range of enough of the clocks and that the clocks can repeat the signal to all other clocks in the system.

Either follow the previous instructions listed under “Manually setting a connection between two or more wireless clocks”, or perform the following steps:

1. Install the batteries in the clocks while close to the main transceiver.
2. After each clock has received a signal from the transceiver and adjusted to the main transceiver time, place the battery cover back on.
3. Take each clock, while the clock is running, to the planned point of installation and mount the clock on the wall.

**(NOTE:** This method does not confirm that the clocks are in range of each other)

### System Option 3

Locally powered clocks are used as transceivers/repeaters. This option assumes that there is at least one high powered transceiver in range of enough of the clocks that the clocks can repeat the signal to all other clocks in the system.

In this state, locally powered wireless clocks will enable their receivers at all times, and will transmit time data once each minute.



---

## TalkBack System Pairing

---

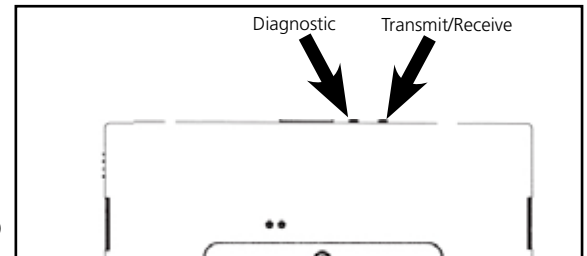
### **READ ALL OF THE INSTRUCTIONS BEFORE ATTEMPTING TO PAIR YOUR CLOCK**

IF YOU ARE INSTALLING A LOCALLY POWERED CLOCK, YOU MUST DO THIS FIRST

IF YOU ARE INSTALLING A BATTERY CLOCK, YOU MAY DO THIS BEFORE OR AFTER INSTALLING THE CLOCK ON THE WALL

After successfully synchronizing your clock using one of the four previously mentioned options, you must also pair your secondary clock to the master clock. Pairing your clock to the master clock allows the secondary clock to send TalkBack data to the master clock. TalkBack data includes battery life, signal strength, mechanical issues, last time of synchronization, and more.

1. Place the secondary clock as close as you can to the master clock's transmitter.
2. Log on to the master clock's web interface. See the SMA 5000 or 6000 Series TalkBack Master Clock manual for more information and diagrams.
3. On the web interface, go to the "TalkBack" tab and click on the "Add New Clock" button. Enter the name of the clock in the "clock name" box.
4. Power the secondary clock. If you are using a locally-powered clock, temporarily hook the clock up to 115V or 230V power. If you are using a battery-powered clock, install the batteries.
5. Locate the two buttons on the top of the analog clock movement. Press both buttons at the same time, then quickly go to step 6.
6. Immediately after step 5, press the "Start Pairing Process" button on the "Clock Pairing" page of the web interface.
  - If you see a status bar with the words, "in progress" on your web interface, then the pairing process has started.
  - If the words change to "success", then the secondary clock has successfully paired with the master clock.
  - If the words change to "time out", then the process was not successful. You will have to repeat the process by powering off the clock and starting from step 4.



**Note:** During the pairing process, all other master clocks and network repeaters must not be powered. The master clock you are pairing the secondary clock with should be the only one powered and transmitting. Failure to power off the other transmitters will prevent the TalkBack clock from pairing with the correct master clock.

### **IF YOU NEED TO PAIR THE SECONDARY CLOCK TO A NEW MASTER CLOCK OR REPEATER**

- 1) Press and hold both buttons on the clock movement at the same time. Release the buttons after three seconds. This deletes the pairing data in the secondary clock.
- 2) Go into the master clock web interface's TalkBack tab and remove the data listed for the secondary clock.
- 3) Move the secondary clock in range of the new Master Clock or repeater and pair the clock using the instructions on this page.



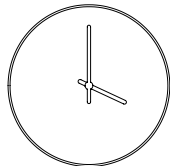
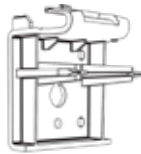





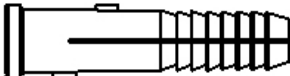
## Wall Mount Installation - Round SlimLine Clock - Battery Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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

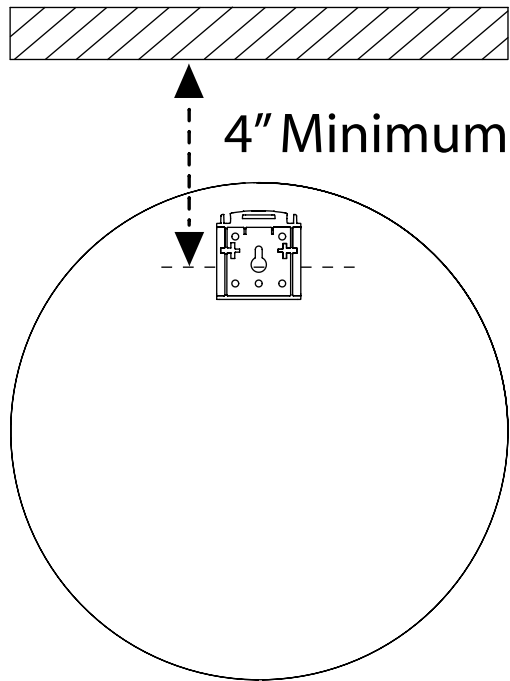
Description	Quantity	Picture
Round SlimLine analog clock	1	
Included in Wiring Kit (A-SLM-MK-S-1)		
Mounting Piece	1	
#6-19x7/16 screw	2 (not used)	
Strain Relief	1 (not used)	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	
Included in Wiring Kit (A-WK-MTG-1)		
#10x1.5 Self-tapping screw	2	
Wall anchor	2	

**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 power or ground cables. You may also need a 1/4 inch drill if you decide not to attach the clock directly to the gang box.

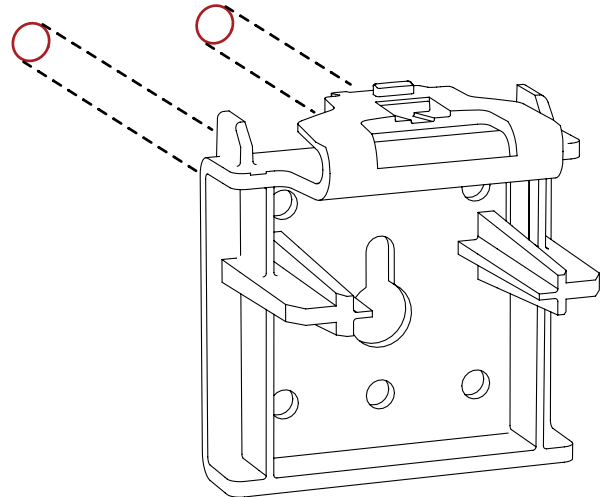
If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.

## Wall Mount Installation - Round SlimLine Clock - Battery Powered

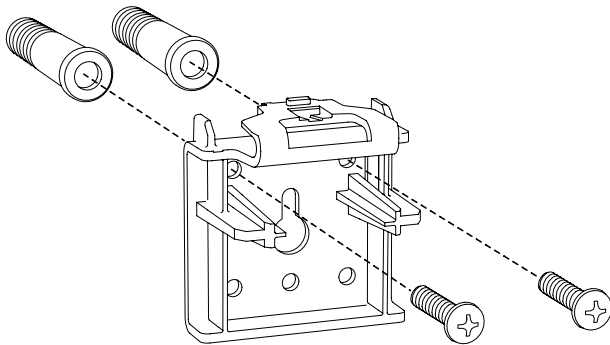
1) Place the mounting piece on the wall. Leave at least 4 inches between the top of the gang box and ceiling. Confirm that the bottom of the mounting piece is level with the floor.



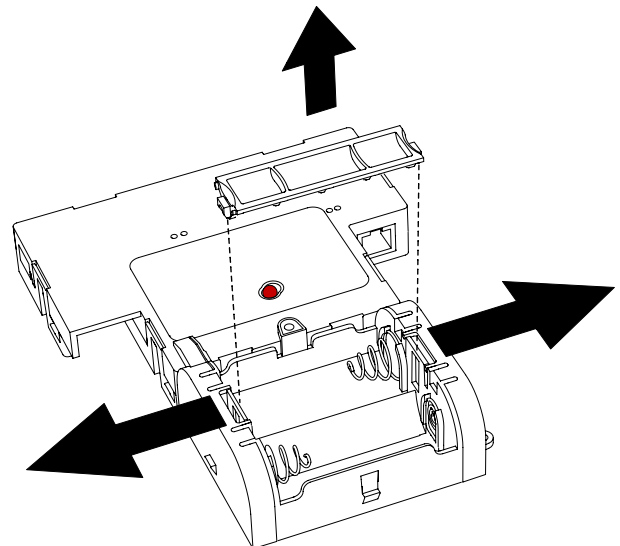
2) Use a pencil to mark the positions of the top two holes, then use the 1/4 inch drill bit to drill holes at the locations of the two marks.



3) Insert the wall anchors into the two holes, then place the two self tapping screws through the mounting piece and into the wall anchors.

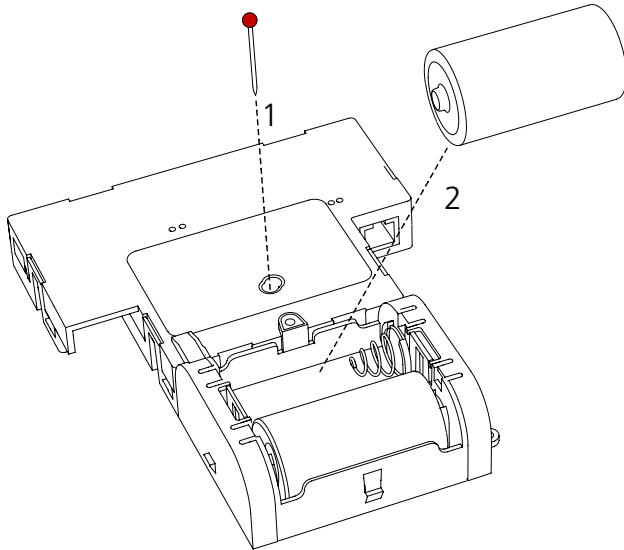


4) Remove the back cover from the battery pack by pulling the two latches away to either side and sliding the cover out.

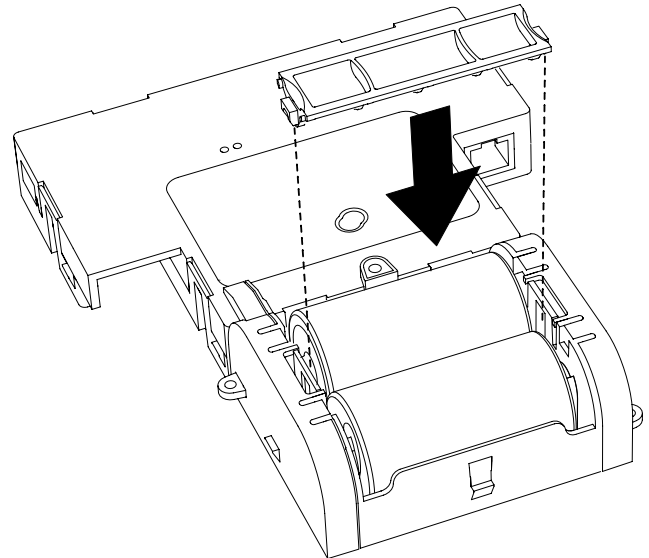


## Wall Mount Installation - Round SlimLine Clock - Battery Powered

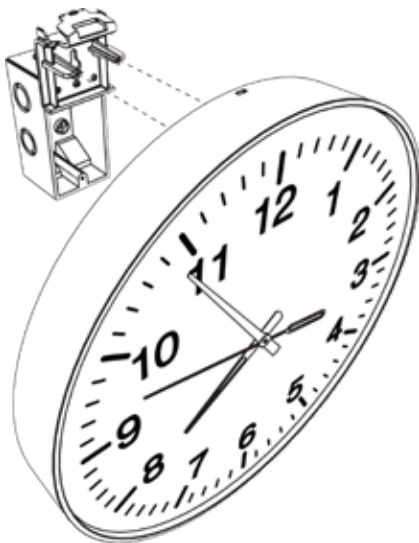
5) **First remove the gearbox pin**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.



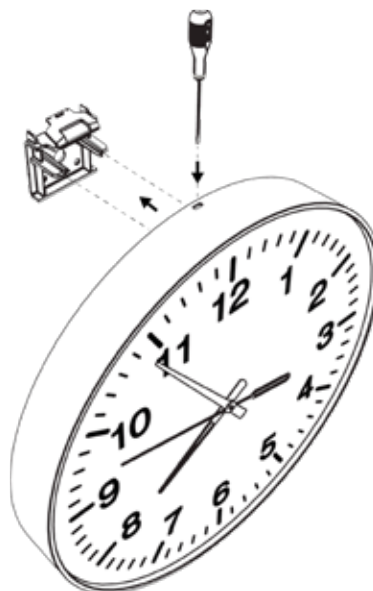
6) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.



7) Attach the clock to the mounting piece by sliding the clock back onto it. You should hear a snapping noise as the latch engages.



8) If you need to take the clock off the wall after the installation has been completed, use a flat-blade screwdriver or eyeglasses screwdriver to lower the mounting piece latch, then slide the clock off the mounting piece.



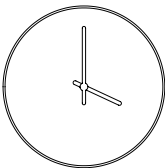
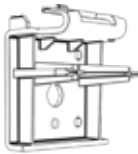






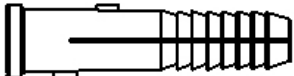
## Wall Mount Installation - Round SlimLine Clock - Locally Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Round SlimLine analog clock	1	
Included in Wiring Kit (A-SLM-MK-S-1)		
Mounting Piece	1	
#6-19x7/16 screw	2	
Strain Relief	1	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2	
#6-19x3/8 screw	1 (not used)	
Included in Wiring Kit (A-WK-MTG-1V)		
Power/grounding wires and connector	1	
#8x1.5 Self-tapping screw	2	
Wall anchor	2	

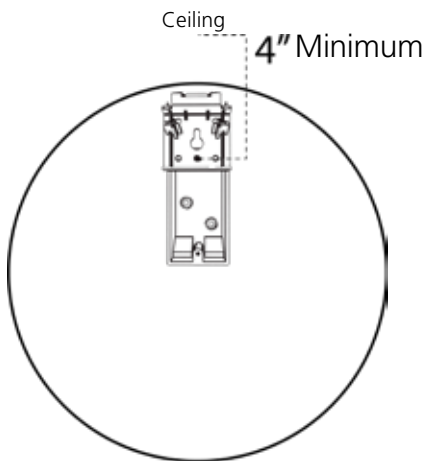
**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a single gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables. You may also need a 1/4 inch drill if you decide not to 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 - Round SlimLine Clock - Locally Powered

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 four inches away from the ceiling.



2) Run power wiring to the gang box.

**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**

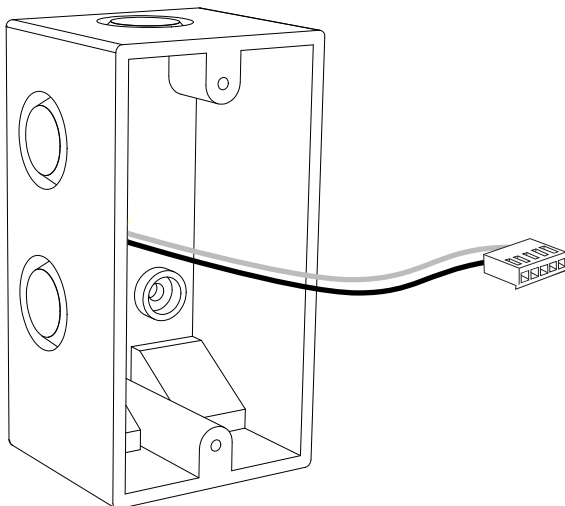
### CHECK YOUR WIRING

The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 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.

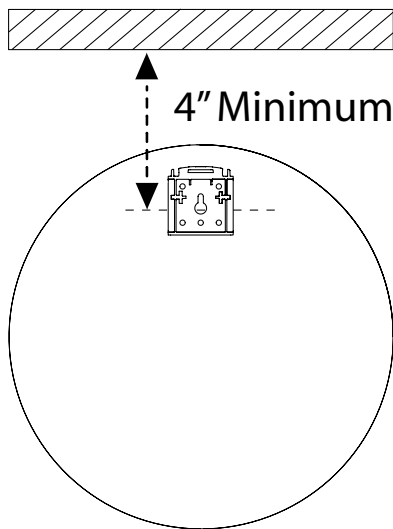
- Attach the Hot wire to the connector's black wire.
- Attach the Common wire to the connector's white wire.
- Attach the Ground wire to the connector's green wire.



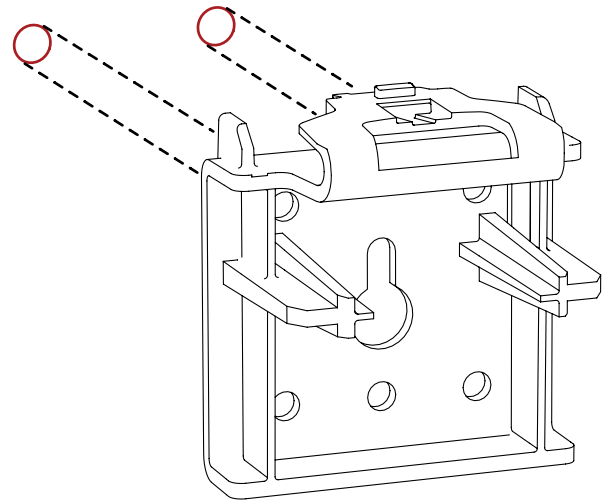
4) If you do not wish to attach the mounting piece to the gang box, proceed to step 5A. Otherwise, go to step 6.

## Wall Mount Installation - Round SlimLine Clock - Locally Powered

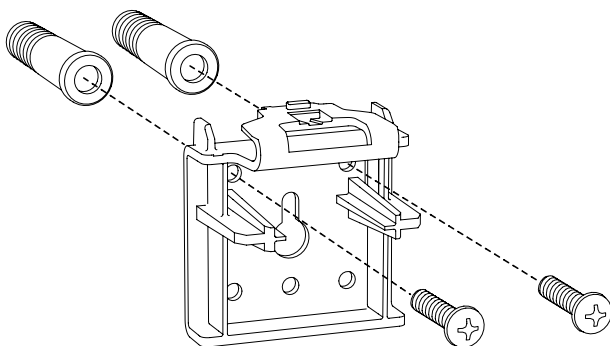
5A) If you do not wish to attach the mounting piece to a gang box, place the mounting piece on the wall. Leave at least 4 inches between the middle of the mounting piece and ceiling. Confirm that the bottom of the mounting piece is level with the floor.



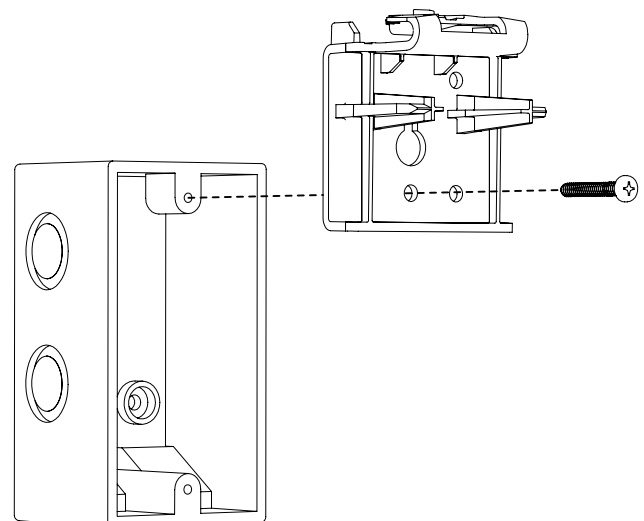
5B) Use a pencil to mark the positions of the top two holes, then use the 1/4 inch drill bit to drill holes at the locations of the two marks.



5C) Insert the wall anchors into the two holes, then place the two self tapping screws through the mounting piece and into the wall anchors. Skip step 6 and go directly to step 7.

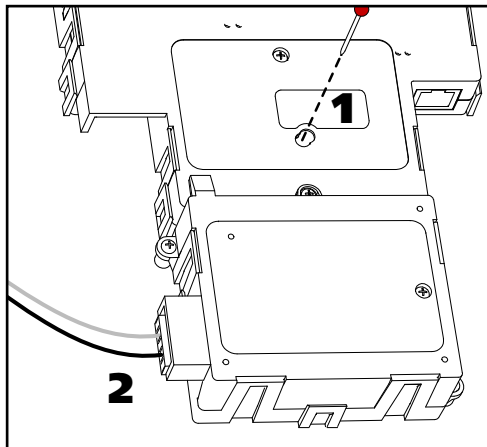


6) Place the mounting piece on the wall above the gang box so that the bottom centered hole on the piece overlaps the top hole on the gang box. Insert a #6-32x1 screw through the bottom centered hole and into the top hole of the gang box.

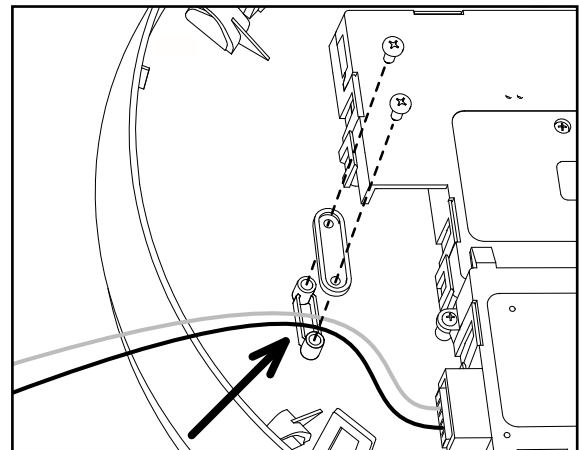


## Wall Mount Installation - Round SlimLine Clock - Locally Powered

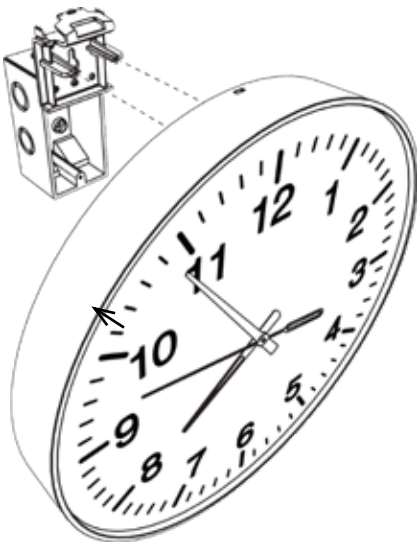
7) **First remove the gearbox pin**, then attach the power connector to the port on the movement.



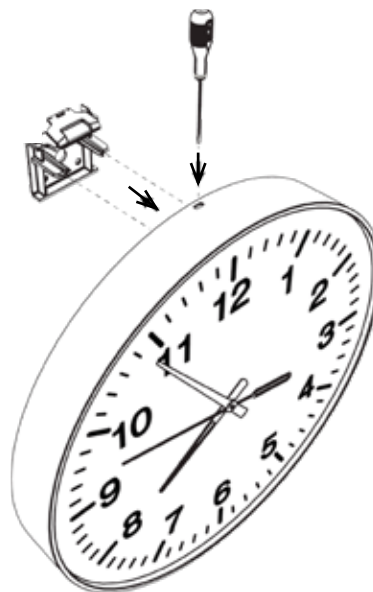
8) Lay any excess wiring across the strain relief base, then attach the strain relief to the clock with the two #6-19x7/16 screws. The strain relief should be tight enough to prevent the wire from sliding.



9) Attach the clock to the mounting piece by sliding the clock back onto it. You should hear a snapping noise as the latch engages.



10) If you need to take the clock off the wall after the installation has been completed, use a flat-blade screwdriver or eyeglasses screwdriver to press down on and release the mounting piece latch, then slide the clock off the mounting piece.





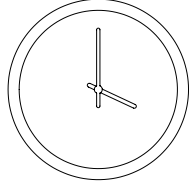
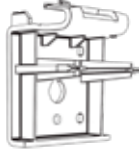







## Wall Mount Installation - Round Aluminum or Wood Clock - Battery Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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

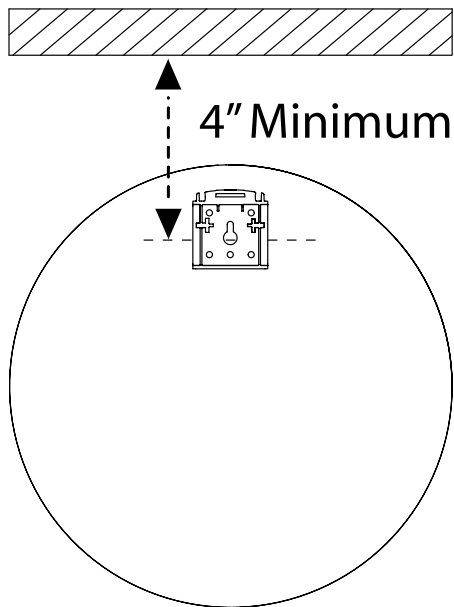
Description	Quantity	Picture
Round SlimLine analog clock with aluminum/wood rim	1	
Included in Mounting Kit (A-SLM-MK-AW-1)		
Mounting Piece	1	
Release lever	1	
#6-19x7/16 screw	2 (not used)	
Strain Relief	1 (not used)	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	
Included in Wiring Kit (A-WK-12-1V)		
#8x1.5 Self-tapping screw	2	
Wall anchor	2	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a single gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

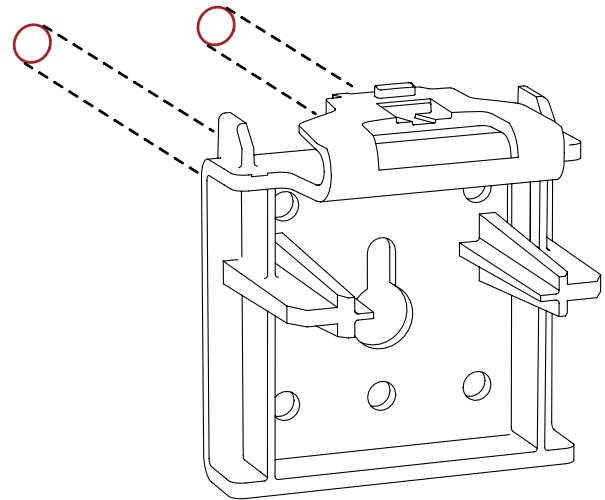
If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.

## Wall Mount Installation - Round Aluminum or Wood Clock - Battery Powered

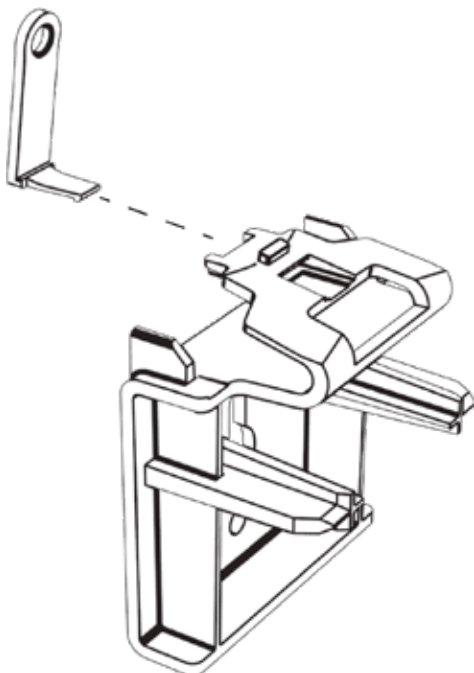
1) Place the flat side of the mounting piece on the wall. Leave at least 4 inches between the top of the mounting piece and ceiling. Confirm that the bottom of the mounting piece is level with the floor.



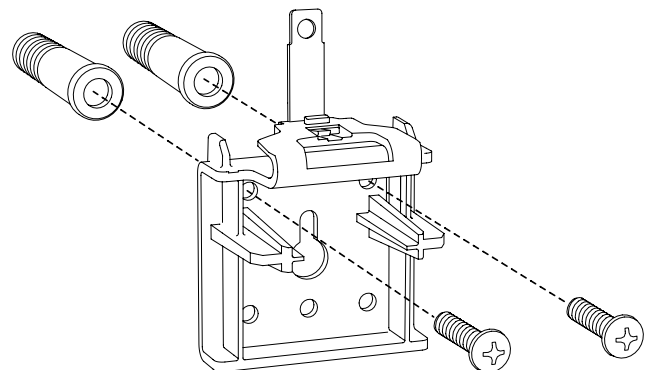
2) Use a pencil to mark the positions of the two holes, then use the 1/4 inch drill bit to drill holes at the locations of the two marks.



3) Insert the release lever into the hole atop the mounting piece latch.

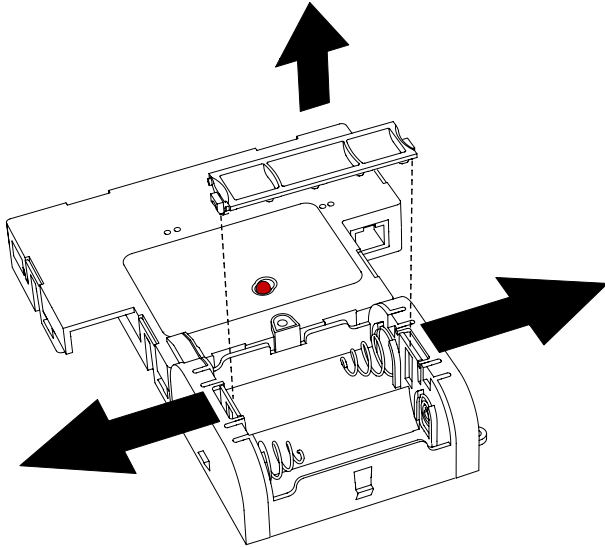


4) Insert the wall anchors into the two holes, then place the two self tapping screws through the mounting piece and into the wall anchors.

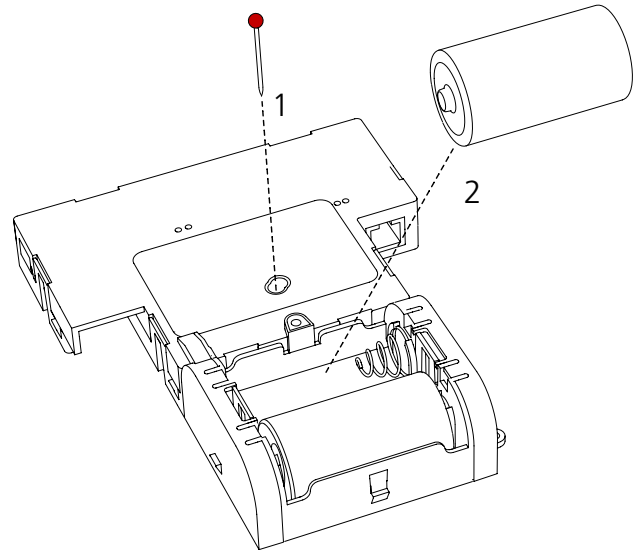


## Wall Mount Installation - Round Aluminum or Wood Clock - Battery Powered

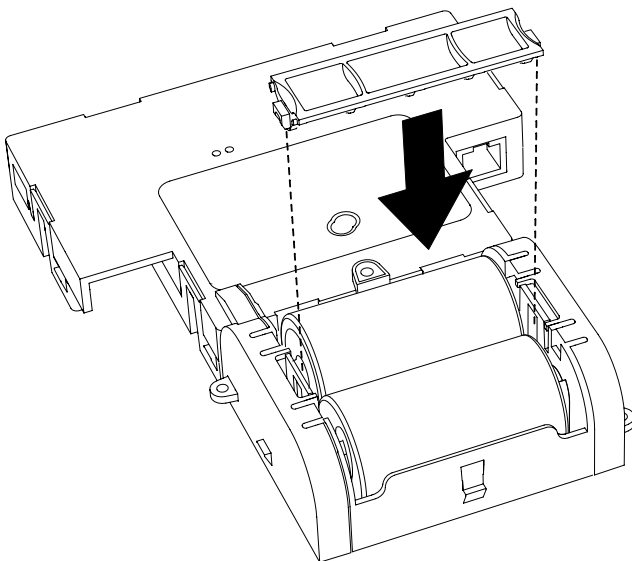
5) Remove the back cover from the battery pack by pulling the two latches away to either side and sliding the cover out.



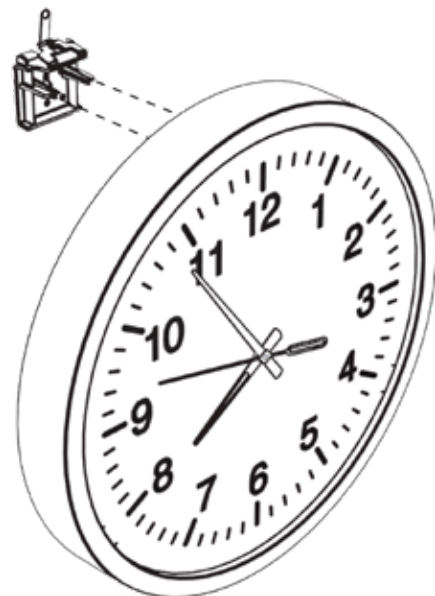
6) **First remove the gearbox pin**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.



7) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.

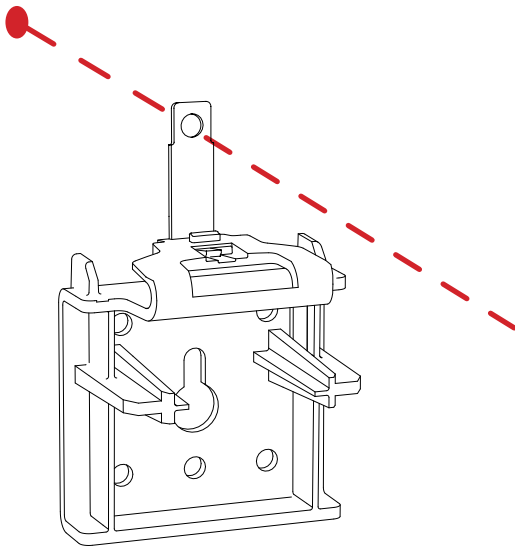


8) Attach the clock to the mounting piece by sliding the clock back onto it. You should hear a snapping noise as the latch engages.



## Wall Mount Installation - Round Aluminum or Wood Clock - Battery Powered

9) Use the pencil to mark the location of the hole at the top of the release lever, and remove the clock again (see step 11). Remove the mounting piece and make a hole at the location you just marked with the 1/8 inch drill bit.



10) Reattach the mounting piece and clock. Place one of the self-tapping screws through the hole in the top of the release lever and into the wall.



11) If you need to take the clock off the wall after the installation has been completed, remove the screw from the release lever, press the release lever down, then slide the clock off the mounting piece.



12) If you need to take the clock off the wall after the installation has been completed AND you accidentally broke off the release lever or forgot to attach it during installation, take a thin flathead screwdriver, thin ruler, or eyeglass screwdriver and insert the end between the clock and the wall. Press down on the latch until you are able to slide the clock off the mounting piece.

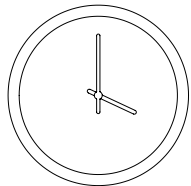
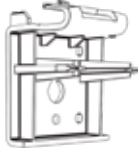





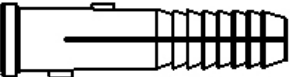


## Wall Mount Installation - Round Aluminum or Wood Clock - Locally Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Round SlimLine analog clock with aluminum/wood rim	1	
Included in Mounting Kit (A-SLM-MK-AW)		
Mounting Piece	1	
Release lever	1	
#6-19x7/16 screw	2	
Strain Relief	1	
Included in Wiring Kit (A-WK-MTG-1V)		
Power/grounding wires and connector	1	
#8x1.5 Self-tapping screw	2	
Wall anchor	2	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2	
#6-19x3/8 screw	1 (not used)	

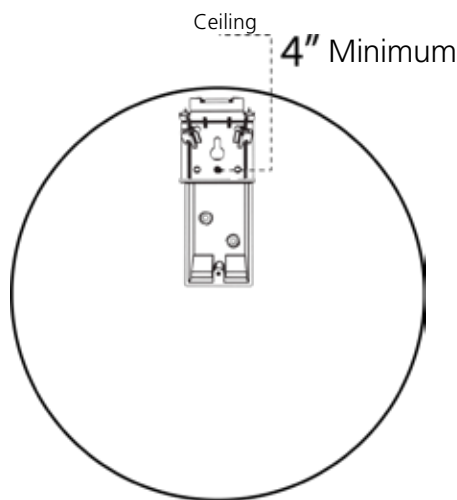
**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a single gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

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 - Round Aluminum or Wood Clock - Locally Powered

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 four inches away from the ceiling.



2) Run power wiring to the gang box.

**For 24V power use the ORANGE and YELLOW wires  
For 110VAC or 230VAC power use the BLACK and WHITE wires**

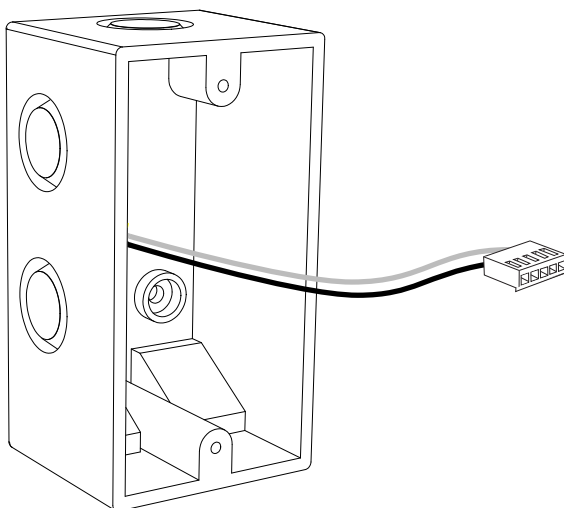
### CHECK YOUR WIRING

The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

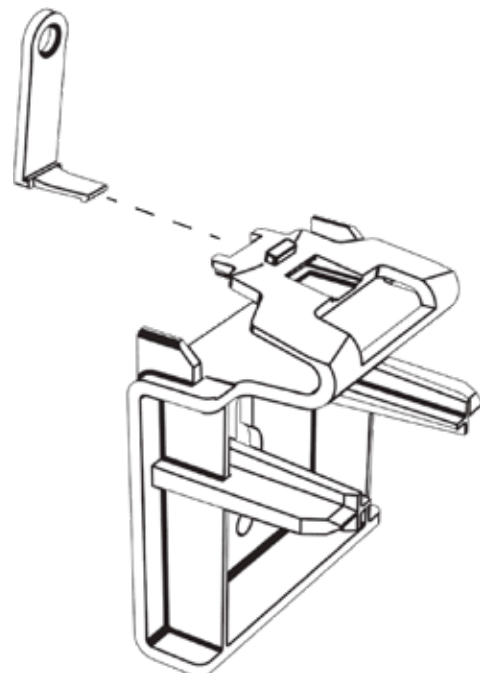
If you are using the 24 volt model, make sure that the wiring leading to the clock is from an ISOLATED transformer.

3) Attach the power wires from your kit to the power wires in the gang box.

- Attach the Hot wire to the connector's black wire.
- Attach the Common wire to the connector's white wire.
- Attach the Ground wire to the connector's green wire.



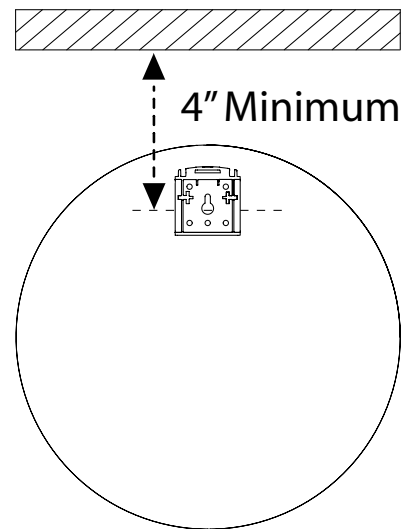
4) Insert the release lever into the hole atop the mounting piece latch.



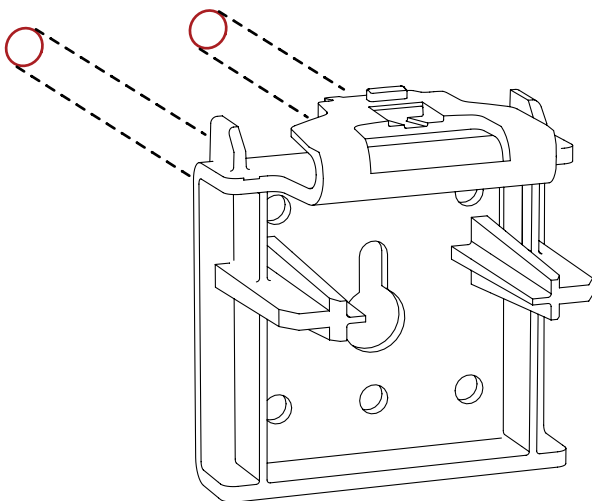
## Wall Mount Installation - Round Aluminum or Wood Clock - Locally Powered

5) If you do not wish to attach the mounting piece to the gang box, proceed to step 6A. Otherwise, go to step 7.

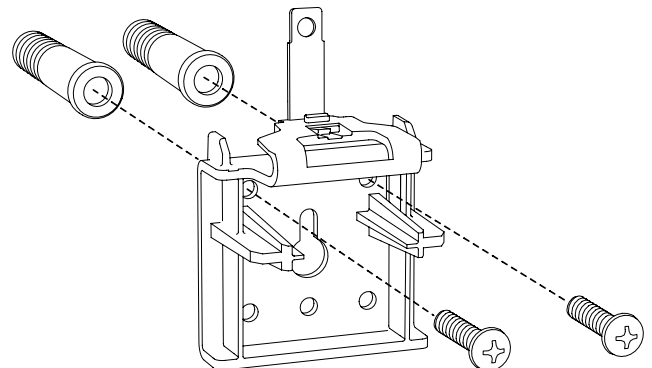
6A) If you do not wish to attach the mounting piece to a gang box, place the mounting piece on the wall. Leave at least 4 inches between the middle of the mounting piece and ceiling. Confirm that the bottom of the mounting piece is level with the floor.



6B) Use a pencil to mark the positions of the top two holes, then use the 1/4 inch drill bit to drill holes at the locations of the two marks.



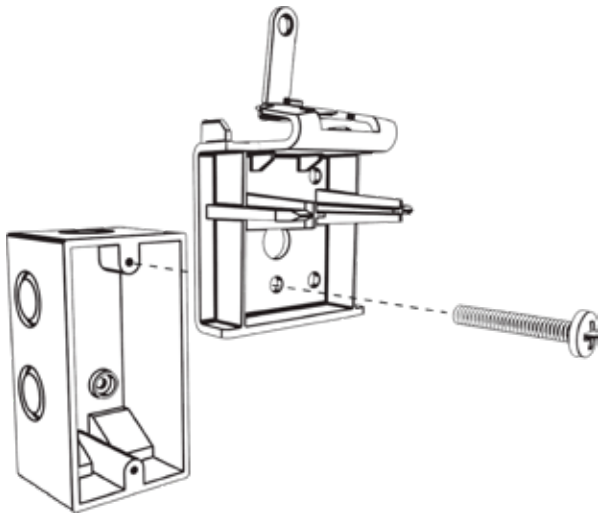
6C) Insert the wall anchors into the two holes, then place the two self tapping screws through the mounting piece and into the wall anchors. Skip step 7 and go directly to step 8.



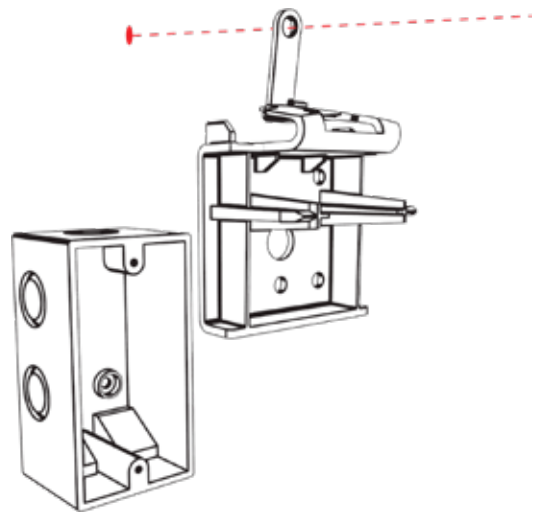


## Wall Mount Installation - Round Aluminum or Wood Clock - Locally Powered

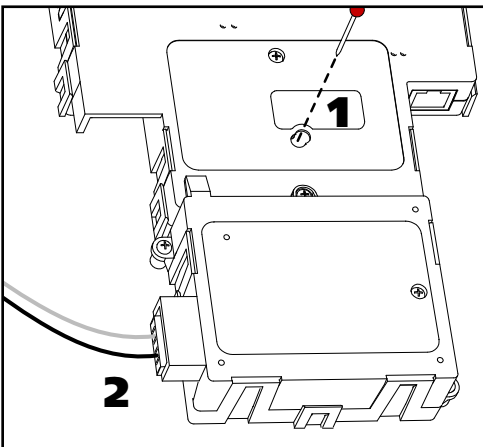
7) Place the mounting piece on the wall above the gang box so that the bottom centered hole on the piece overlaps the top hole on the gang box. Insert a #6-32x1 screw through the bottom centered hole and into the top hole of the gang box.



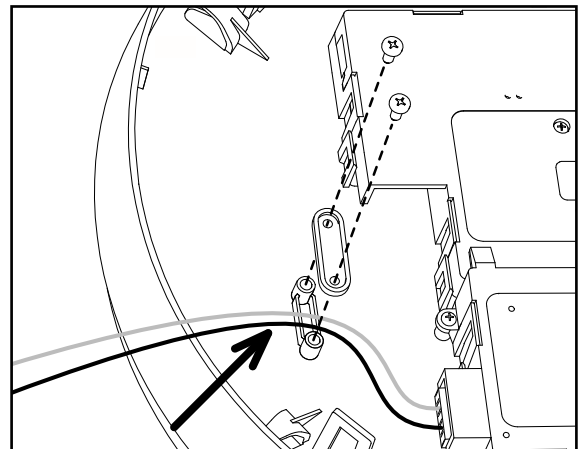
8) Temporarily attach the clock to the mounting piece (see step 11), use the pencil to mark the location of the hole at the top of the release lever, and remove the clock again (see step 13). Remove the mounting piece and make a hole at the location you just marked with the 1/8 inch drill bit. When finished, reattach the mounting piece.



9) **First remove the gearbox pin**, then attach the power connector to the port on the movement.

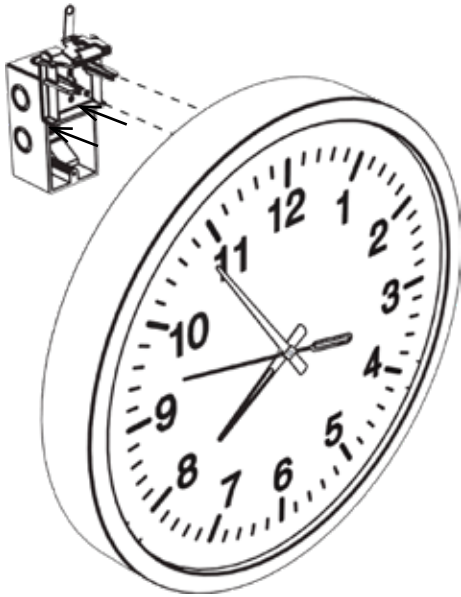


10) Lay any excess wiring across the strain relief base, then attach the strain relief to the clock with the two #6-19x7/16 screws. The strain relief should be tight enough to prevent the wire from sliding.



## Wall Mount Installation - Round Aluminum or Wood Clock - Locally Powered

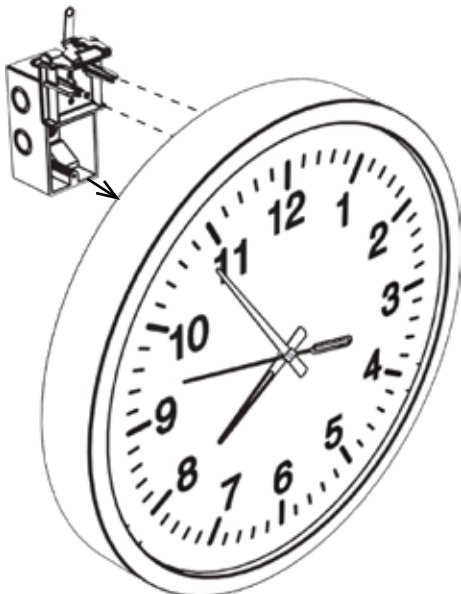
11) Attach the clock to the mounting piece by sliding the clock back onto it. You should hear a snapping noise as the latch engages.



12) Place one of the self-tapping screws through the hole in the top of the release lever.



13) If you need to take the clock off the wall after the installation has been completed, remove the screw from the release lever, press the release lever down, then slide the clock off the mounting piece.



14) If you need to take the clock off the wall after the installation has been completed AND you accidentally broke off the release lever or forgot to attach it during installation, take a thin flathead screwdriver, thin ruler, or eyeglass screwdriver and insert the end between the clock and the wall. Press down on the latch until you are able to slide the clock off the mounting piece.

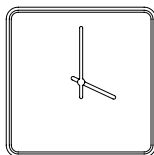
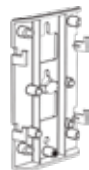

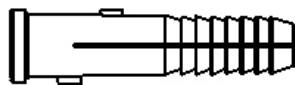


## Wall Mount Installation - Square Clock - Battery Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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

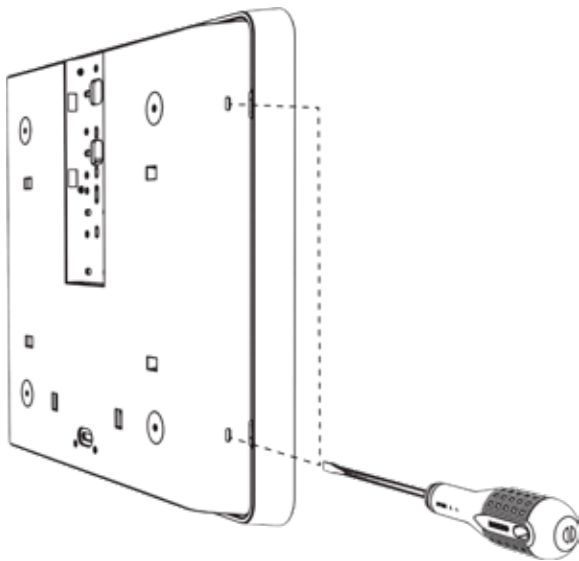
Description	Quantity	Picture
Square analog clock	1	
Mounting Piece (already attached to clock housing)	1	
Included in Wiring Kit (A-WK-MTG-1)		
#8x1.5 Self-tapping screw	2	
Wall anchor	2	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	

**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 power or ground cables.

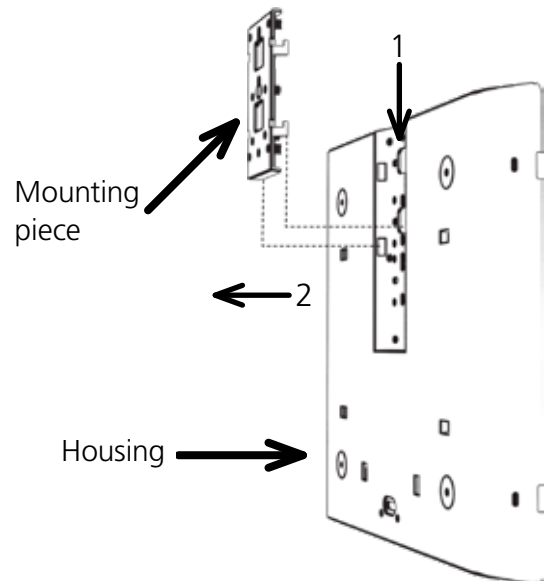
If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.

## Wall Mount Installation - Square Clock - Battery Powered

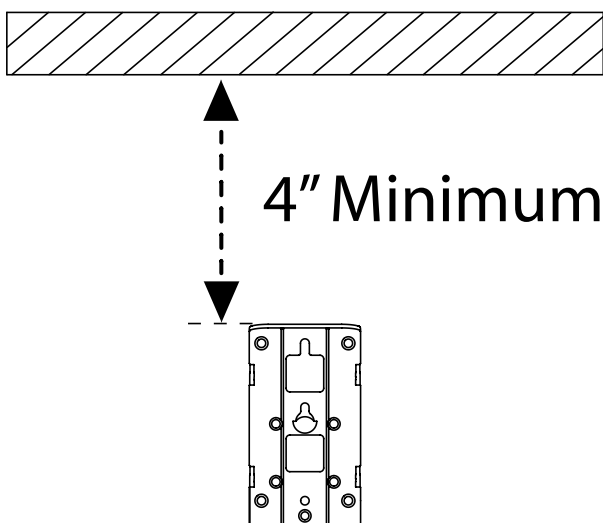
1) Detach the housing from the back of the clock. Do this by inserting a flat-blade screwdriver about 1/8 inch into each of the slot holes until the housing detaches from the clocks. You may hear a snapping noise as the latches disengage.



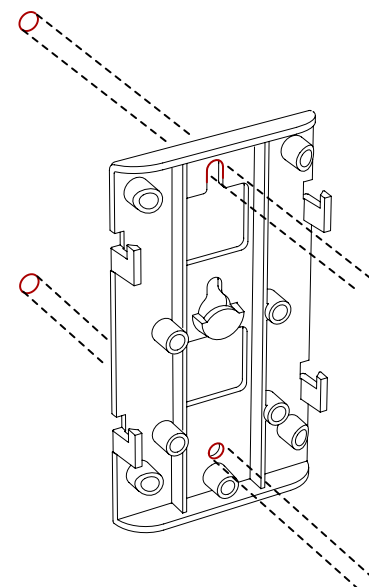
2) Release the mounting piece from the back of the housing by sliding it towards the center of the housing, then pulling it back and away from the housing.



3) Place the mounting piece on the wall. Leave at least 4 inches between the top of the mounting piece and ceiling. Take care to make sure that the bottom of the mounting piece is level with the floor.

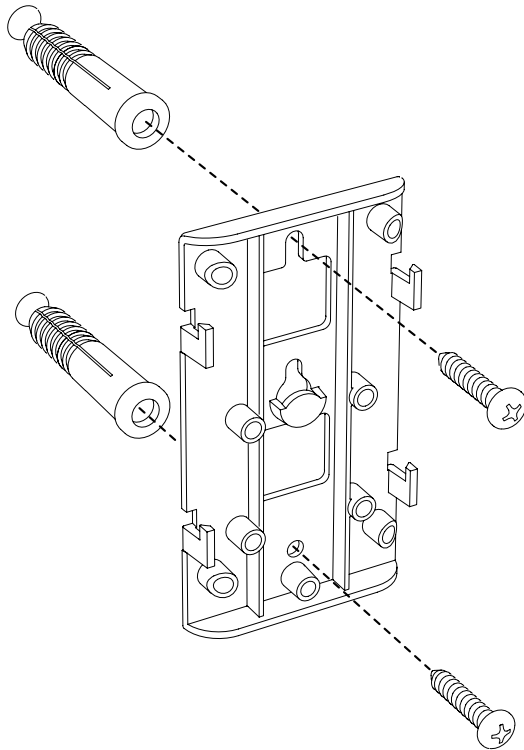


4) Use a pencil to mark the two holes shown in the diagram below. Then use the 1/4 inch drill bit to drill the holes at the marked positions.

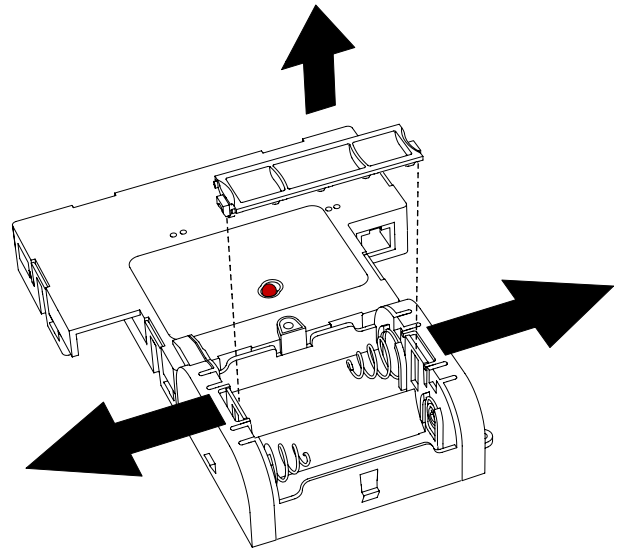


## Wall Mount Installation - Square Clock - Battery Powered

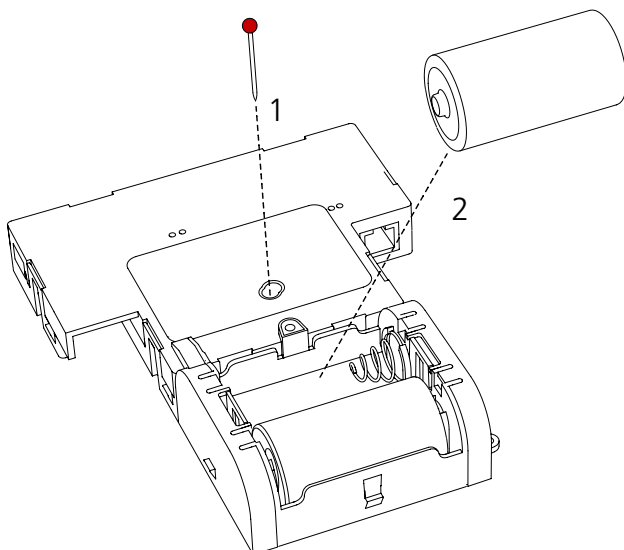
5) Insert the wall anchors into the holes, then place the self-tapping screws through the mounting piece and into the wall anchors.



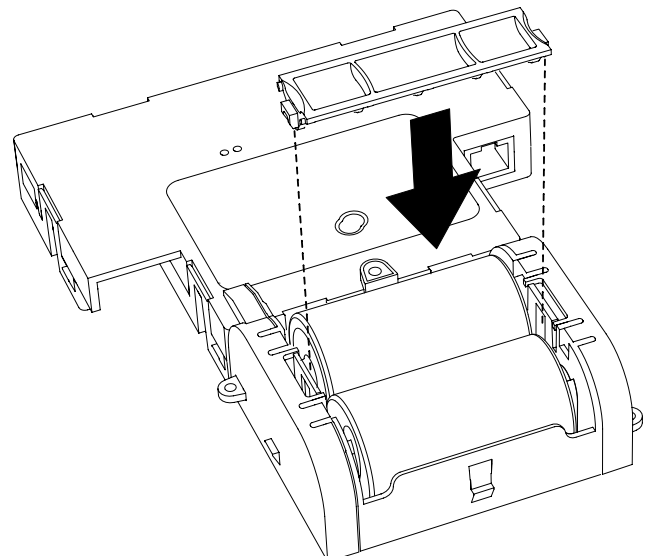
6) Remove the back cover from the battery pack by pulling the two latches away to either side and sliding the cover out.



7) **First remove the gearbox pin,** then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.

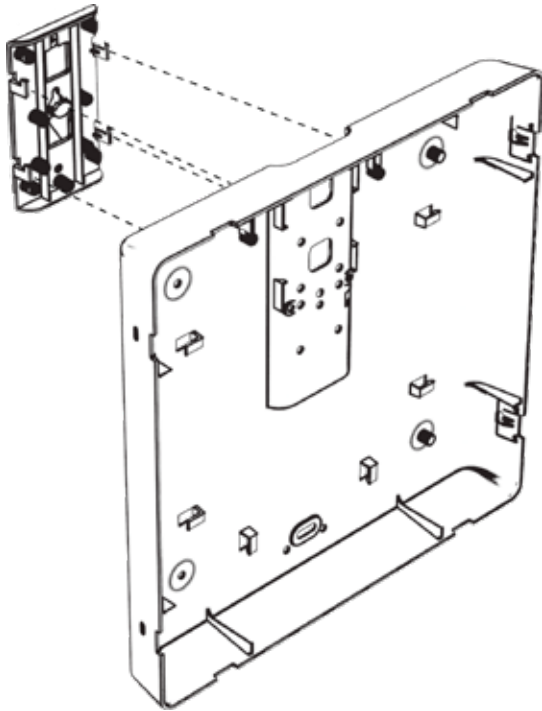


8) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.

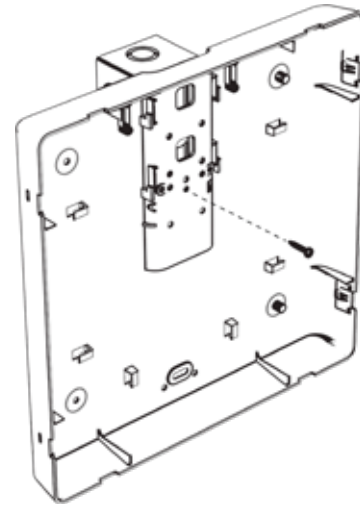


## Wall Mount Installation - Square Clock - Battery Powered

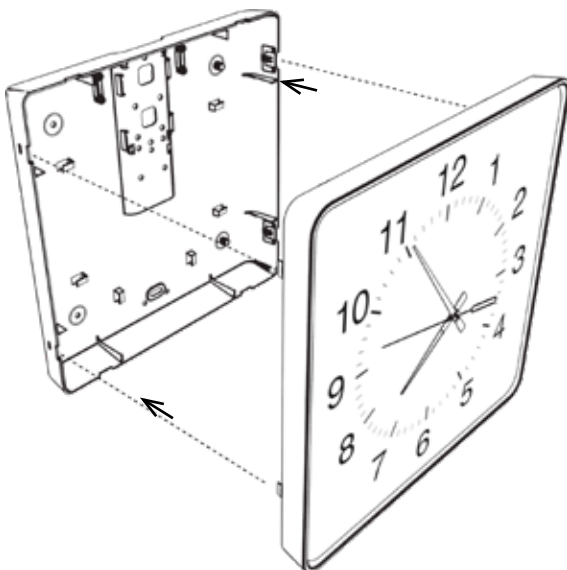
9) Slide the clock housing onto the mounting piece. If the housing does not slide on properly, tighten the screws that attach the mounting piece to the wall.



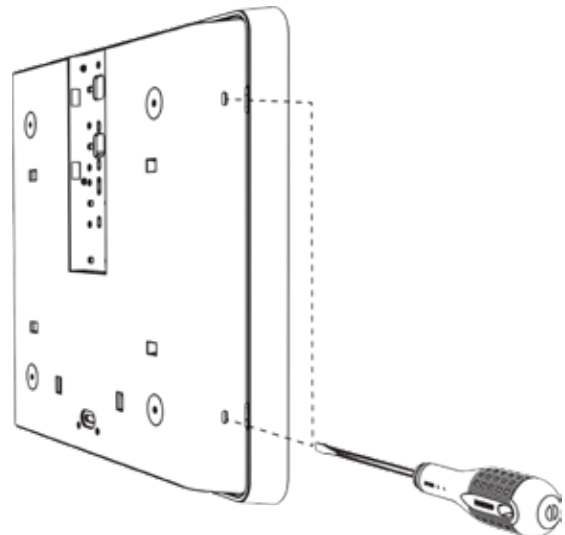
10) If you wish to prevent the clock from sliding off the mounting piece, use the small silver screw on the hole below the lower of the two #6-32x1 screws. Once the small screw is in place, test it by attempting to slide the housing up. The housing should not move.



11) Slide the clock back into the housing. You should hear a snapping noise as the latches reengage.



12) If you feel the need to take the clock off the wall after the installation has been completed, use a flat-blade screwdriver to detach the housing from the back of the clock, then use a Phillip's-head screwdriver to detach the mounting piece from the housing and gang box.



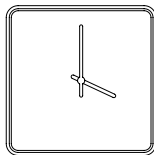
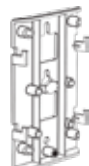
## Wall Mount Installation - Square Clock - Locally Powered

### VERY IMPORTANT:



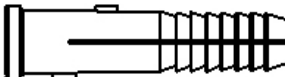
INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Square analog clock	1	
Mounting Piece (already attached to clock housing)	1	

### Included in Wiring Kit (A-WK-12-1V)

Power/grounding wires And connector	1	
#8x1.5 Self-tapping screw	2 (not used)	
Wall anchor	2 (not used)	

### Included in Gang Box Kit (A-GB-MK-1)

#6-32x1 screw	2	
#6-19x3/8 screw	1	

**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 power or ground cables.

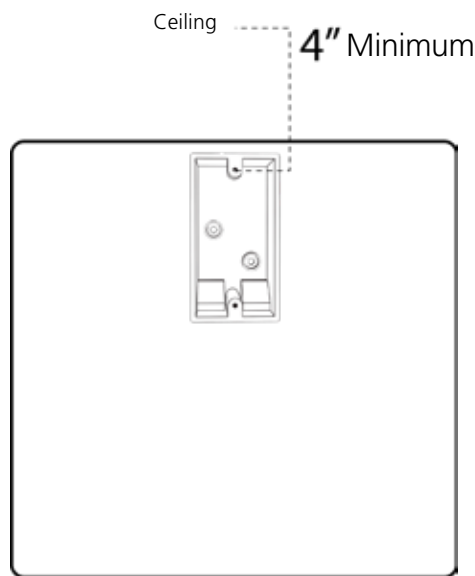
If any of the items listed in the wiring kit are missing, you may contact your dealer and order a replacement kit.



## Wall Mount Installation - Square Clock - Locally Powered

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 four inches away from the ceiling.



2) Run power wiring to the gang box.

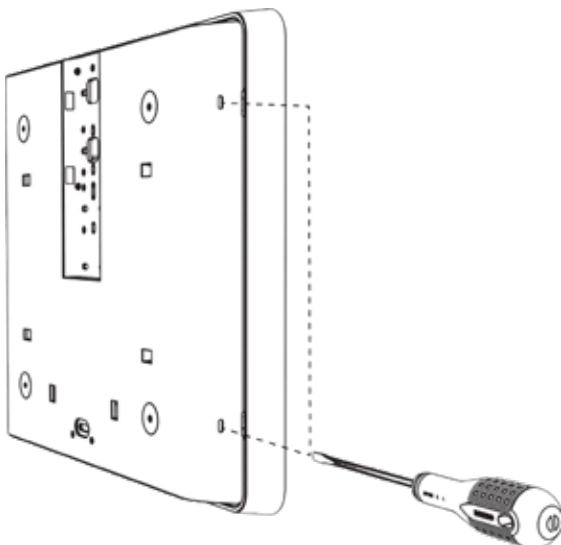
**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**

### CHECK YOUR WIRING

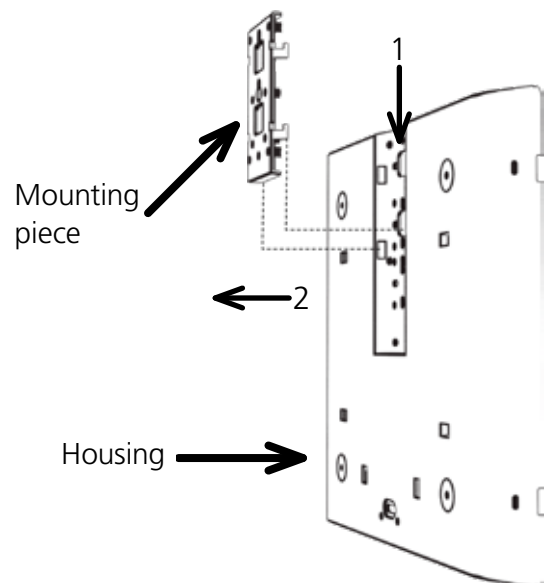
The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

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 housing from the back of the clock. Do this by inserting a flat-blade screwdriver about 1/8 inch into each of the slot holes until the housing detaches. You may hear a snapping noise as the latches disengage.



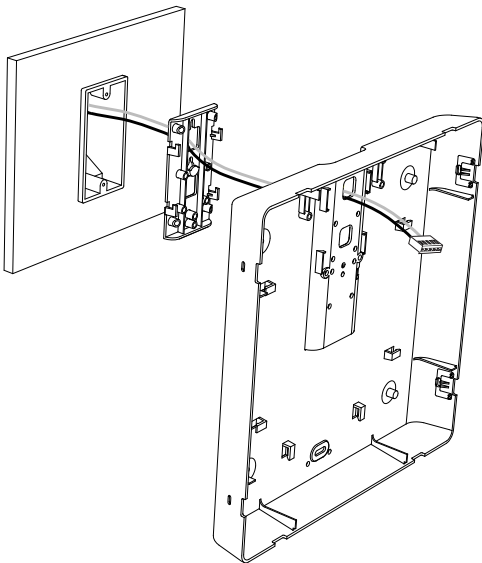
4) Release the mounting piece from the back of the housing by sliding it towards the center of the housing, then pulling it back and away from the housing.



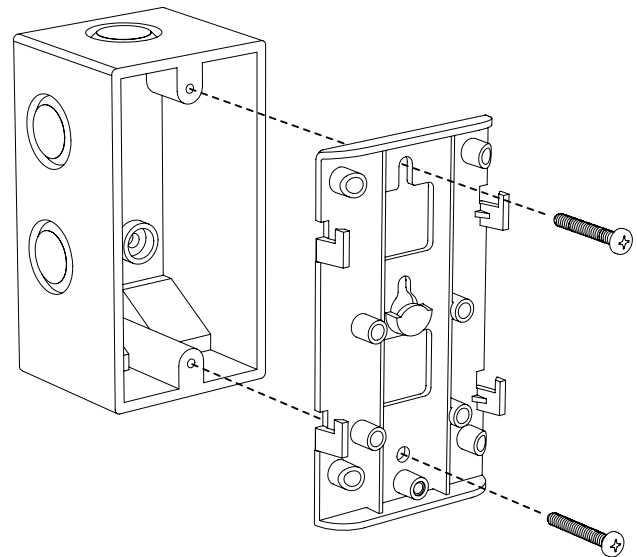
## Wall Mount Installation - Square Clock - Locally Powered

5) Thread the power wires from your kit through the hole at the top of the housing followed by the mounting piece, then attach them to the wires in the gang box.

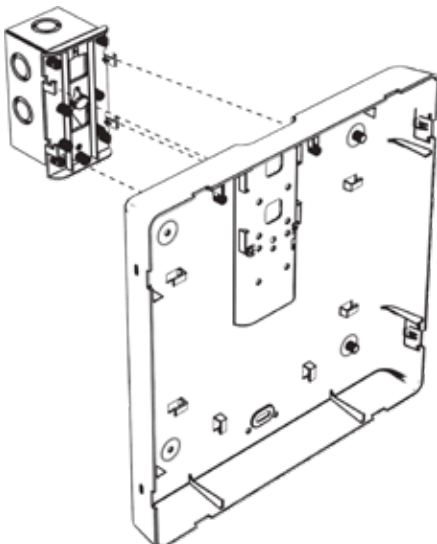
- Attach the Hot wire to the connector's black wire.
- Attach the Common wire to the connector's white wire.
- Attach the Ground wire to the connector's green wire.



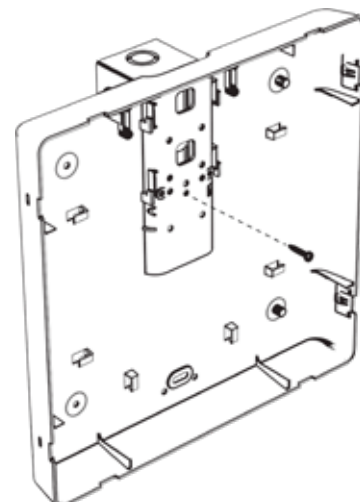
6) Attach the mounting piece to the gang box using both of the #6-32x1 screws and a Phillips-head screwdriver.



7) Slide the clock housing onto the mounting piece. If the housing does not slide on properly, tighten the screws that attach the mounting piece to the gang box.

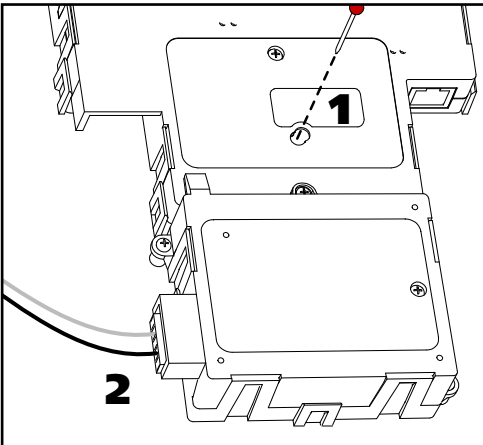


8) If you wish to prevent the clock from sliding off the mounting piece, use the small, silver 6-19x3/8 screw on the bottom centered hole. Once the screw is in place, test it by attempting to slide the housing up. The housing should not move.

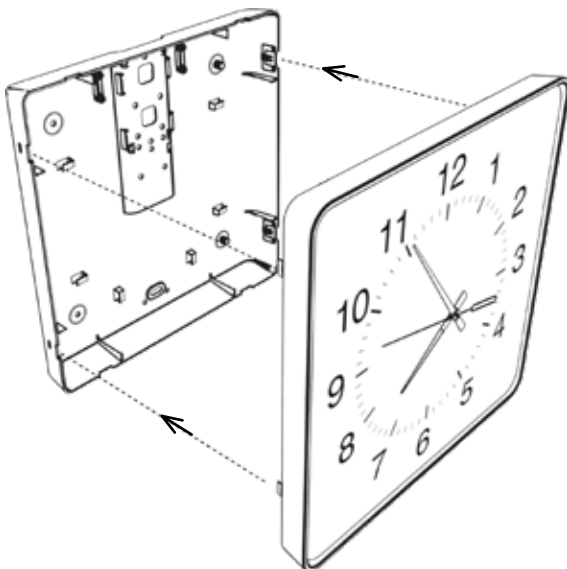


## Wall Mount Installation - Square Clock - Locally Powered

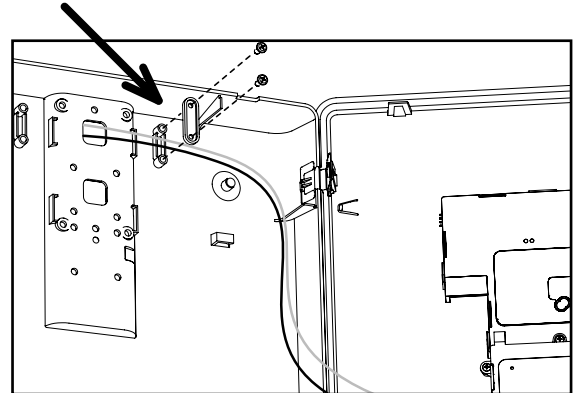
9) **First remove the gearbox pin**, then attach the power connector to the port on the movement.



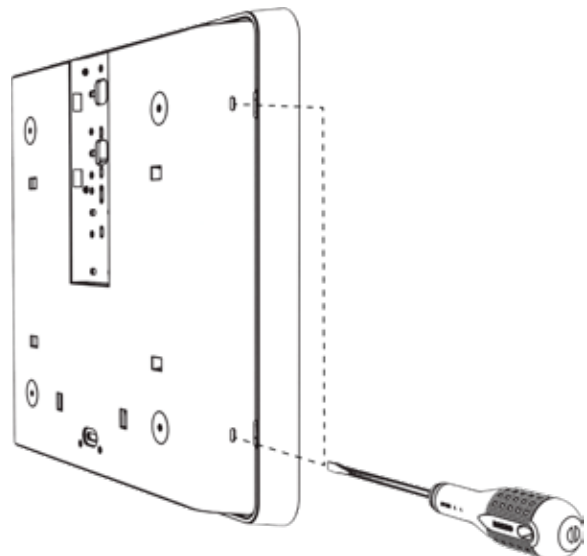
11) Slide the clock back into the housing. You should hear a snapping noise as the latches reengage.



10) Loosen the strain relief by unscrewing the two screws. Slip any excess wiring through it, then tighten the strain relief by reinserting and tightening the screws.



12) If you feel the need to take the clock off the wall after the installation has been completed, use a flat-blade screwdriver to detach the housing from the back of the clock, then use a Phillip's-head screwdriver to detach the mounting piece from the housing and gang box.



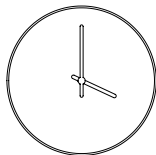
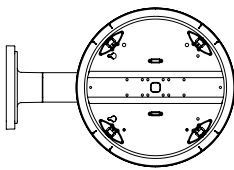
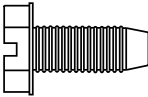
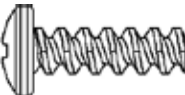



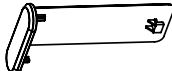
## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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

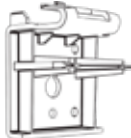



Description	Quantity	Picture
Round SlimLine analog clock	1	
Included in Double Mount Kit (SAH-1BD-12R-0 or SAH-1BD-16R-0)		
Dual-mount pole, including mounting plate.	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8 (not used)	
M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	8 (not used)	
#6-32x1 screw	4	
Flag Mount Endcap	1	

Continued on next page


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

## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered



Included in Mounting Kit (A-SLM-MK-S-1) or (A-SLM-MK-AW)

Description	Quantity	Picture
Mounting Piece	1 (not used)	
Release lever	0 or 1 (not used)	
#6-19x7/16 screw	2	
Strain relief	1	

Included in Wiring Kit (A-WK-MTG-1)

#10x1.5 Self-tapping screw	2	
Wall anchor	2	

Included in Gang Box Kit (A-GB-MK-1)

#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	

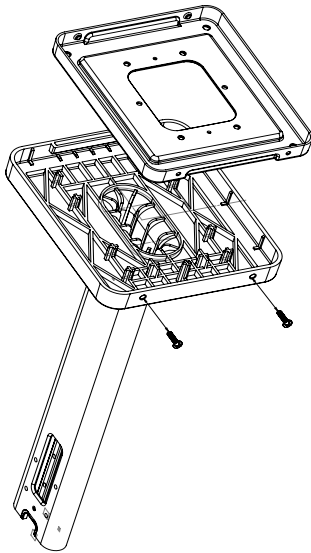
**PLEASE NOTE:** A user must also provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, two additional #6-32x1 screws for attaching the mounting plate to the gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

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

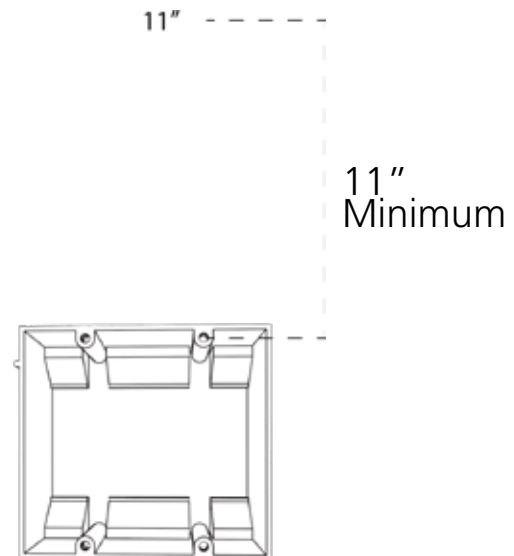
SlimLine and Aluminum Clocks use the same installation procedures for flag mount housings.

## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

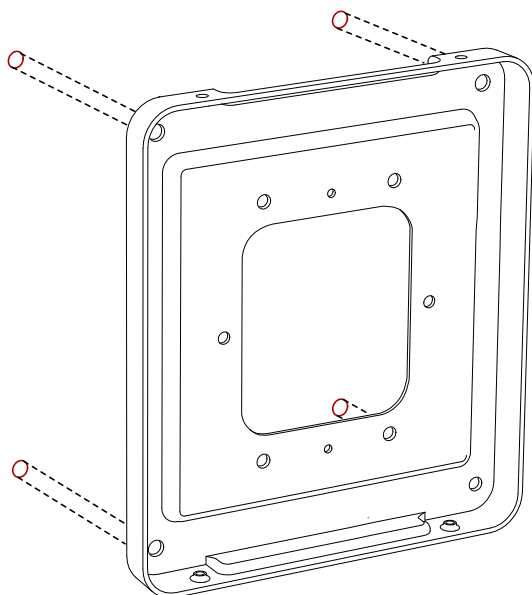
1) Detach the mounting plate from the mounting pole by unscrewing the two screws. Set the screws and pole aside for later.



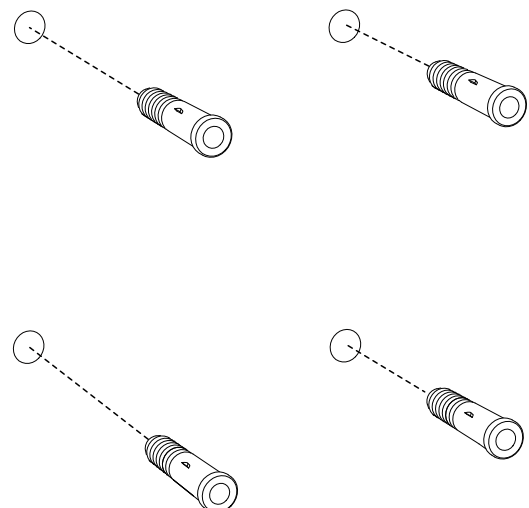
2) Place the mounting plate on the wall or ceiling. If you are installing a gang box in the wall, leave at least eleven inches between the top of the gang box and the ceiling. If you are installing the gang box in the ceiling, leave at least eleven inches between the gang box and the wall.



3) Confirm that the mounting plate is level with the floor. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners of the plate.



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

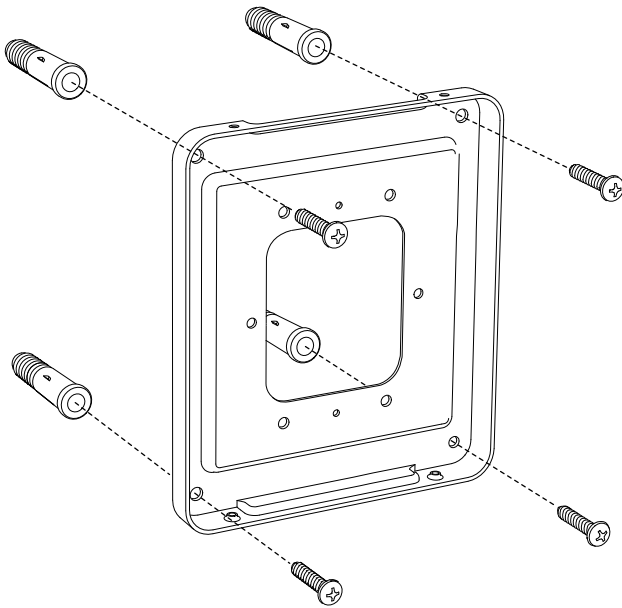


---

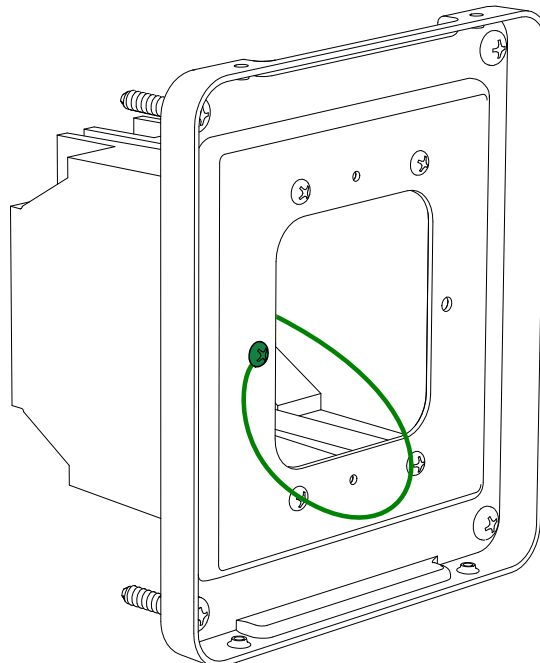
## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

---

5) Insert the #8 screws through the mounting plate and into the anchors.



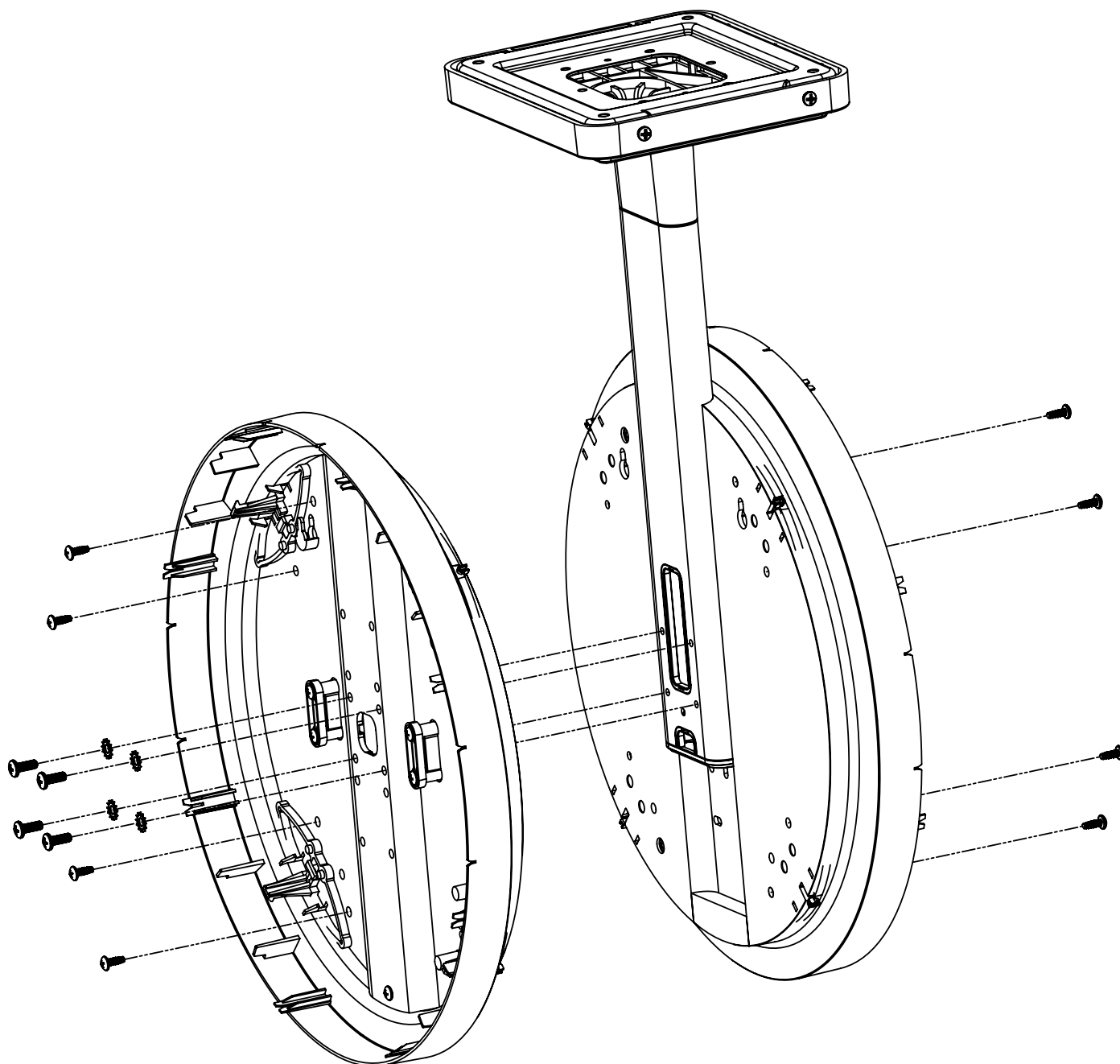
5B) If you are installing the clock atop an gang box, use the green screw to attach a grounding wire to the mounting plate.





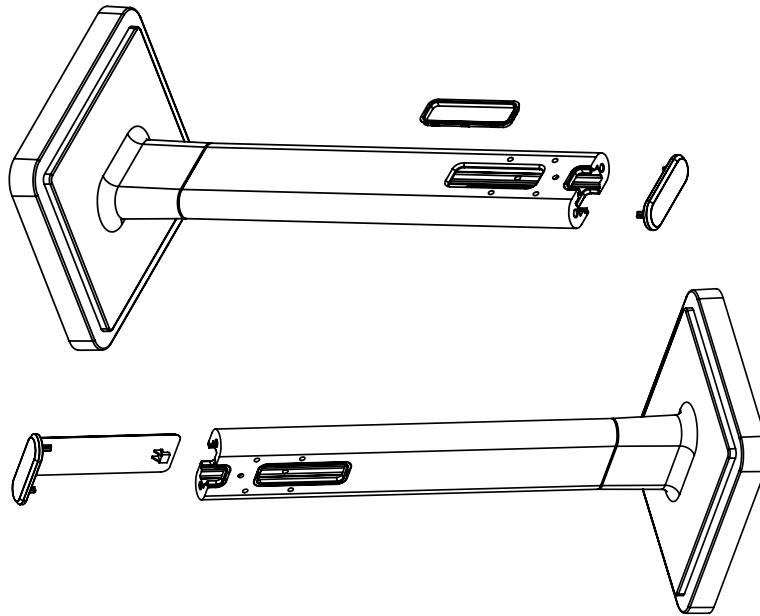
## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

6) Remove one of the included adapters. Unscrew the four screws that connect the adapter to the pole, and the eight screws that hold the two adapters to each other. You may keep the removed adapter and screws or throw them away, at your preference.

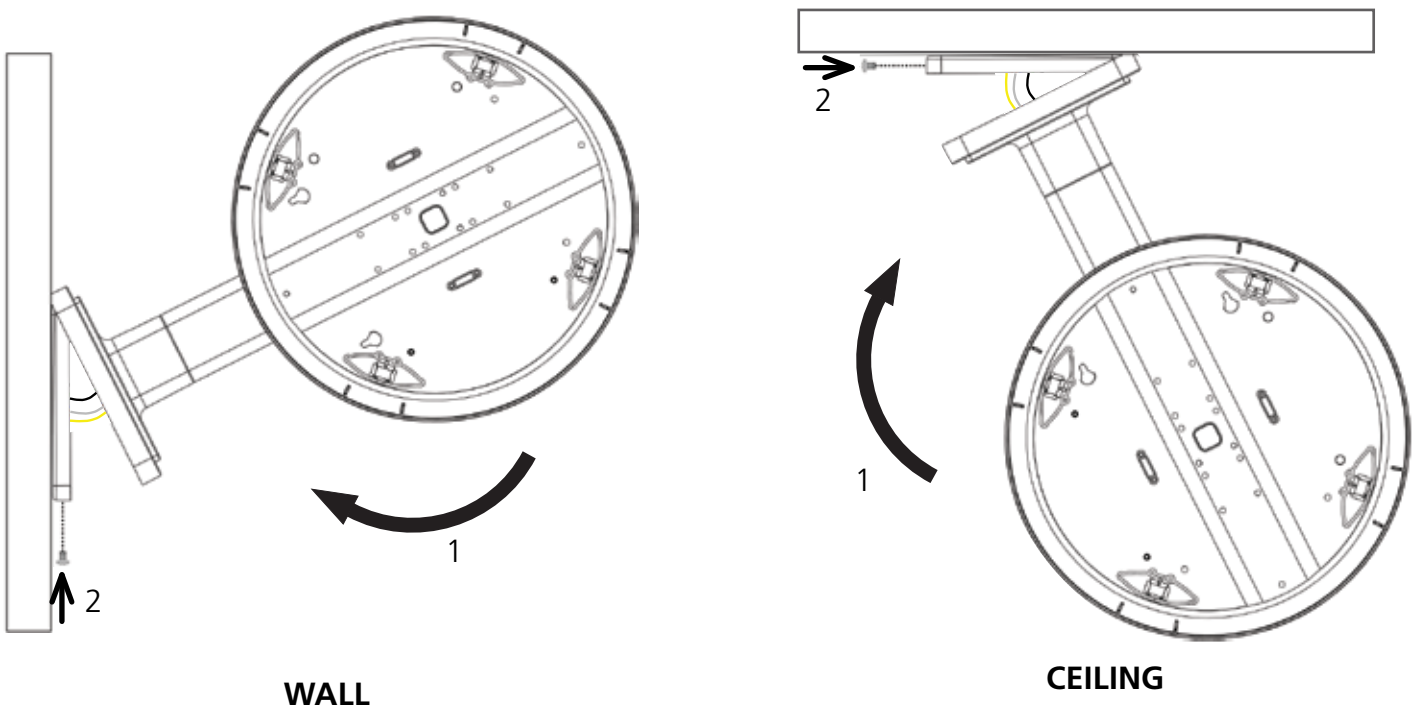


## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

7) Remove the pole endcap and plastic ring from the exposed pole side. Place the flag mount endcap on the end of the pole so that it covers the exposed large rectangular hole.

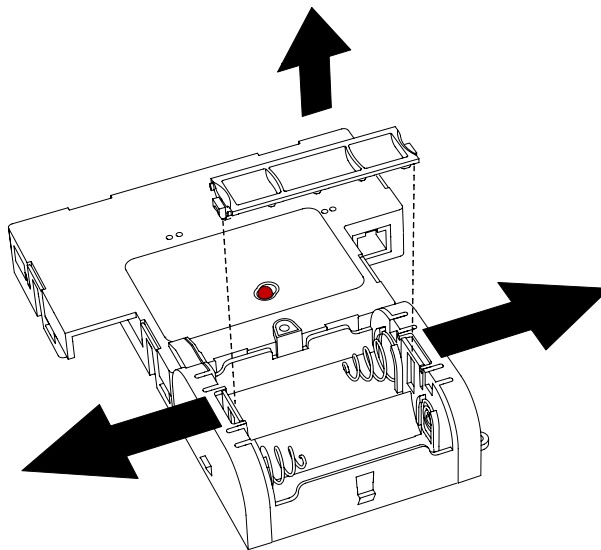


8) Attach the base of the pole to the mounting plate so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.

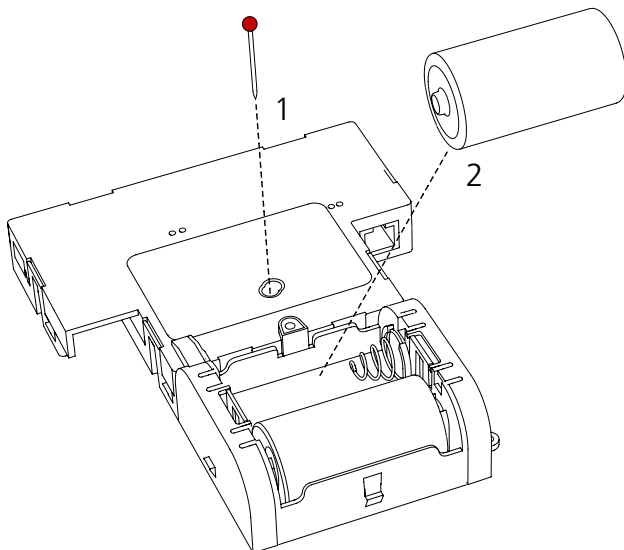


## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

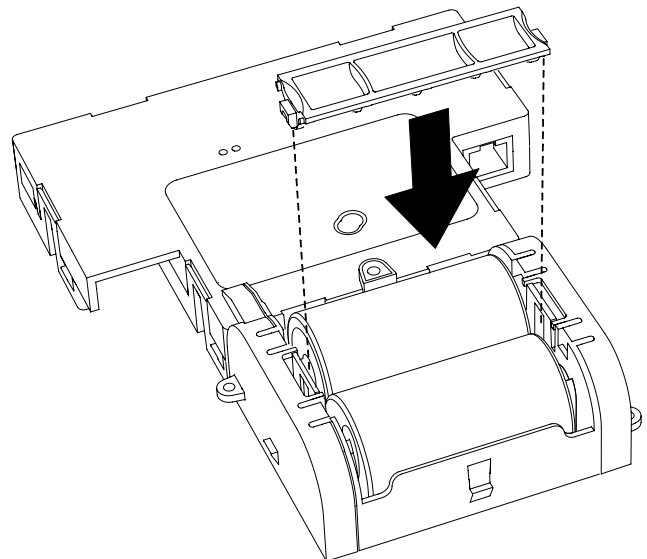
9) Remove the back covers from the battery pack by pulling the two latches away to either side and sliding the cover out.



10) **First remove the gearbox pin**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.



11) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.

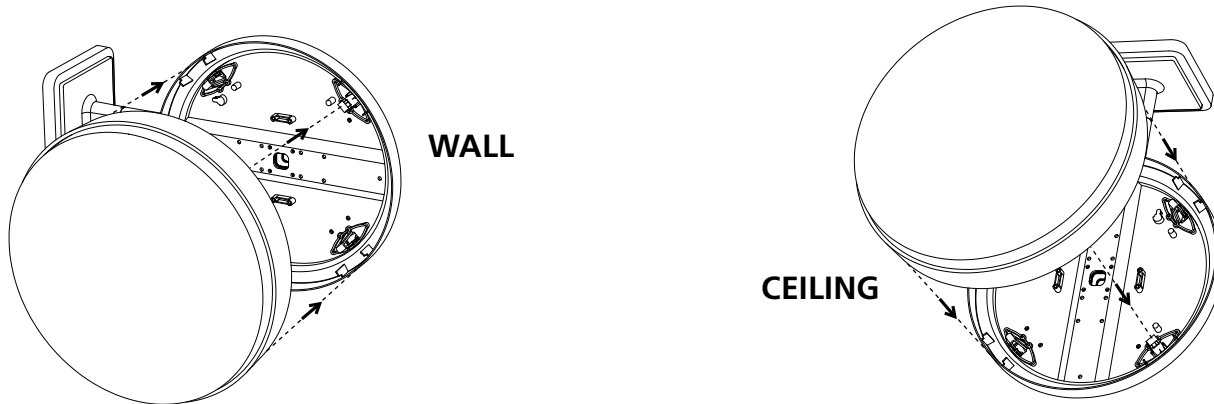


---

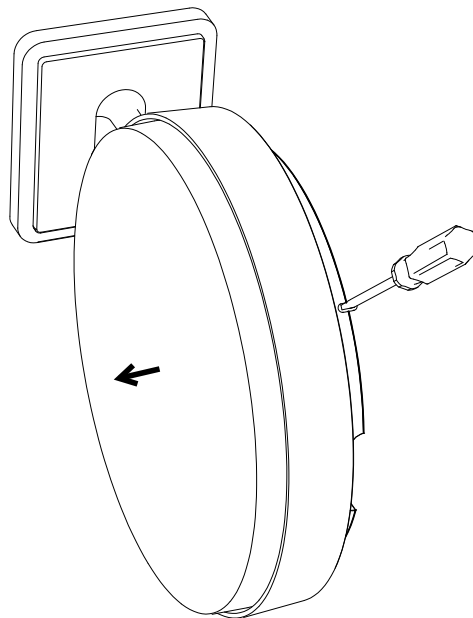
## Flag Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

---

12) Slide the clock onto the adapter in the rotation that you wish it to be viewed. You should hear a snapping noise as the four clips on the adapter secure the clock in place.



13) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.



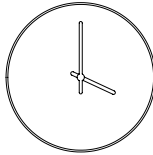
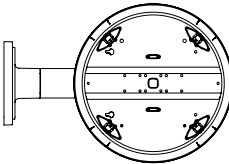
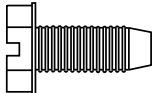
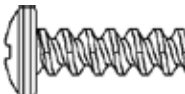




## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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.



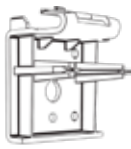





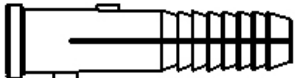
### Included in Package

Description	Quantity	Picture
Round SlimLine analog clock	1	
Included in Double Mount Kit (SAH-1BD-12R-0 or SAH-1BD-16R-0)		
Dual-mount pole, including mounting plate.	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8 (not used)	
M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	8 (not used)	
#6-32x1 screw	4	
Flag Mount Endcap	1	

Continued on next page

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

## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

Description	Quantity	Picture
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	
Included in Mounting Kit (A-SLM-MK-S-1) or (A-SLM-MK-AW)		
Mounting Piece	1 (not used)	
Release lever	0 or 1 (not used)	
#6-19x7/16 screw	2	
Strain relief	1	
Included in Wiring Kit (A-WK-12-1V)		
Power/grounding wires And connector	1	
#8x1.5 Self-tapping screw	2 (not used)	
Wall anchor	2 (not used)	

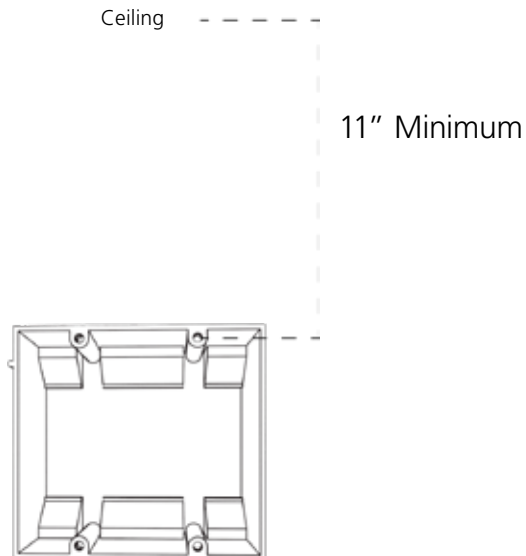
**PLEASE NOTE:** A user must also provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, two additional #6-32x1 screws for attaching the mounting plate to the gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

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

SlimLine and Aluminum Clocks use the same installation procedures for flag mount housings.

## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

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.



2) Run power wiring to the gang box.

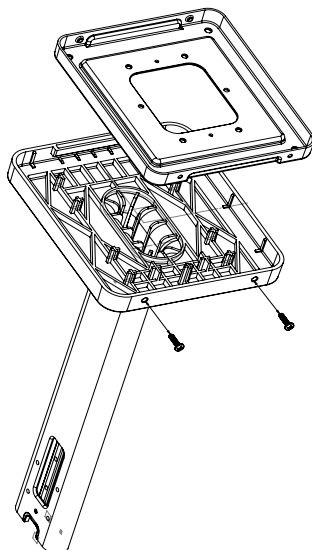
**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**

### CHECK YOUR WIRING

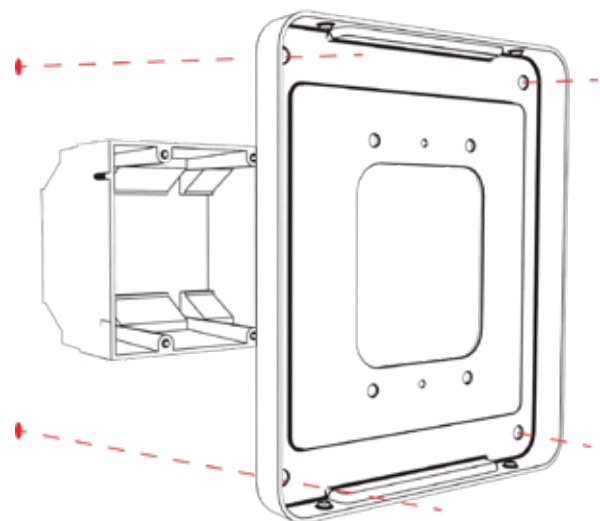
The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

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.

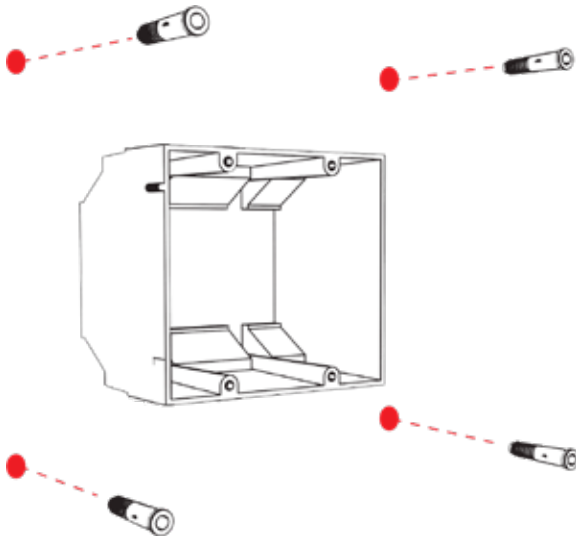


4) Attach the mounting plate to the gang box using only two of the four long, silver #6-32x1 screws. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners.

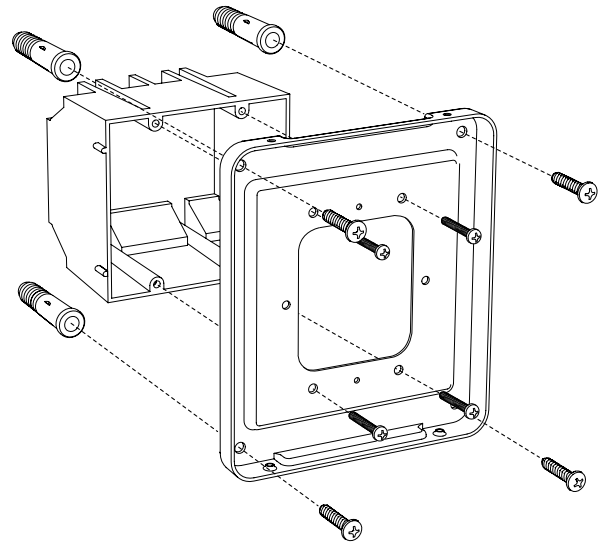


## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

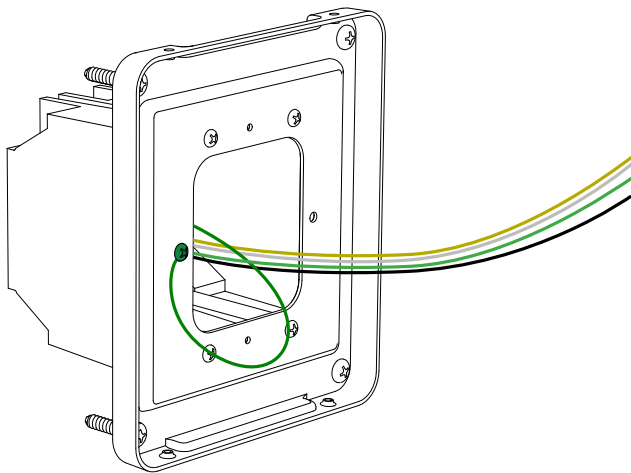
5) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.



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.



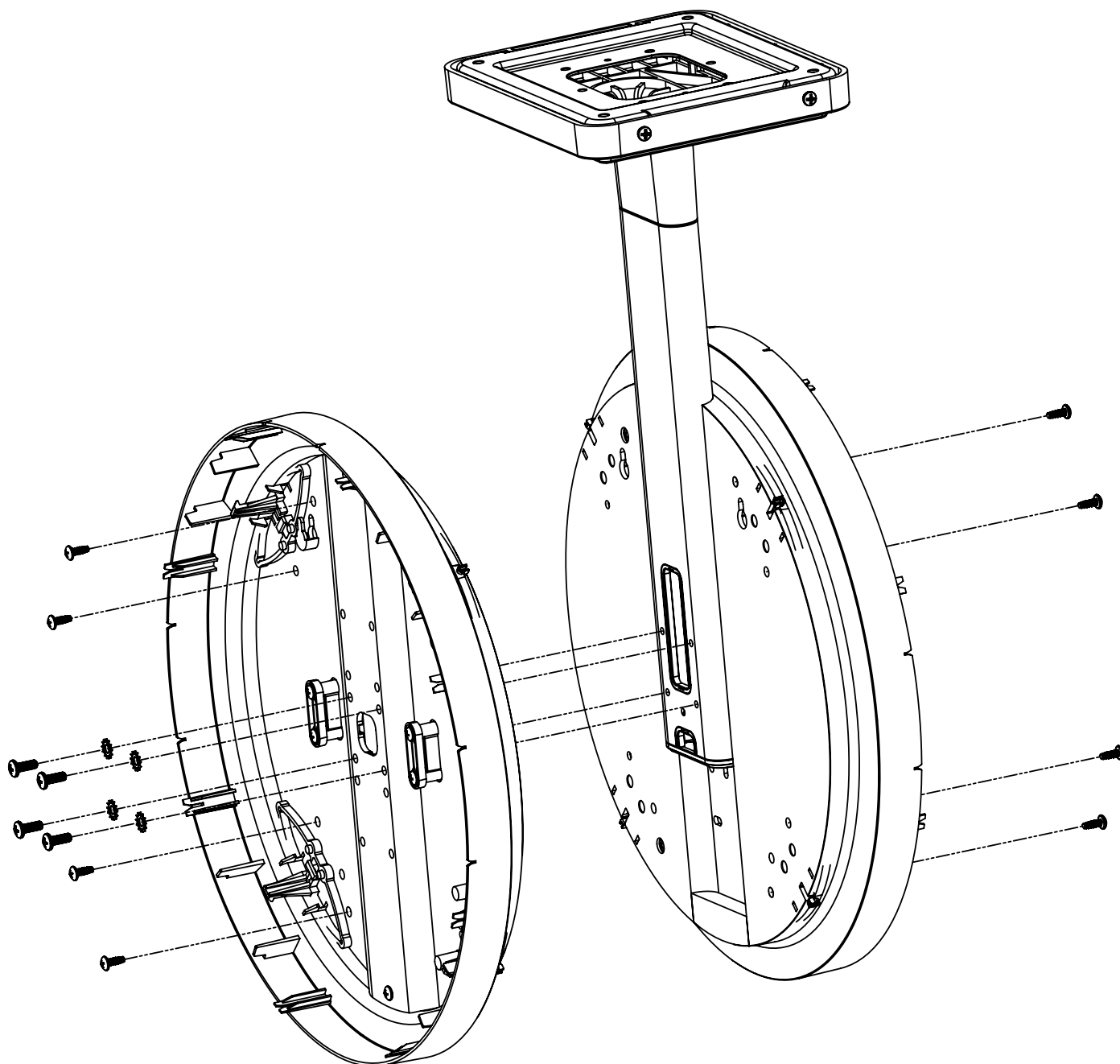
7) Thread any wiring through the mounting plate, and attach a grounding wire to the mounting plate using one of the larger centered holes and the #10-32x3/8 screw.





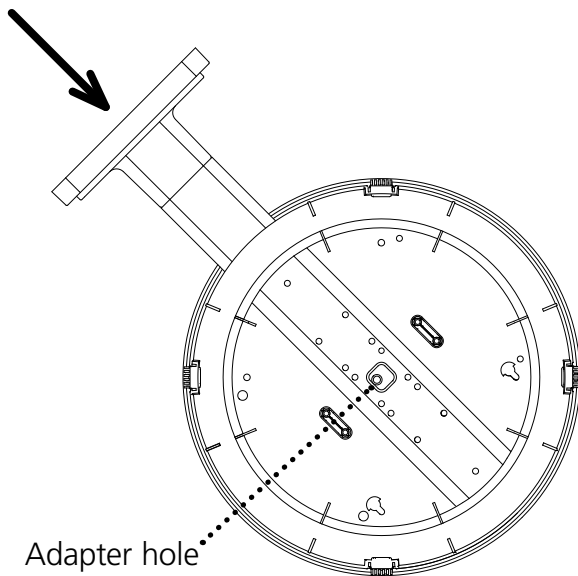
## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

8) Remove one of the included adapters. Unscrew the four screws that connect the adapter to the pole, and the eight screws that hold the two adapters to each other. You may keep the removed adapter and screws or throw them away, at your preference.

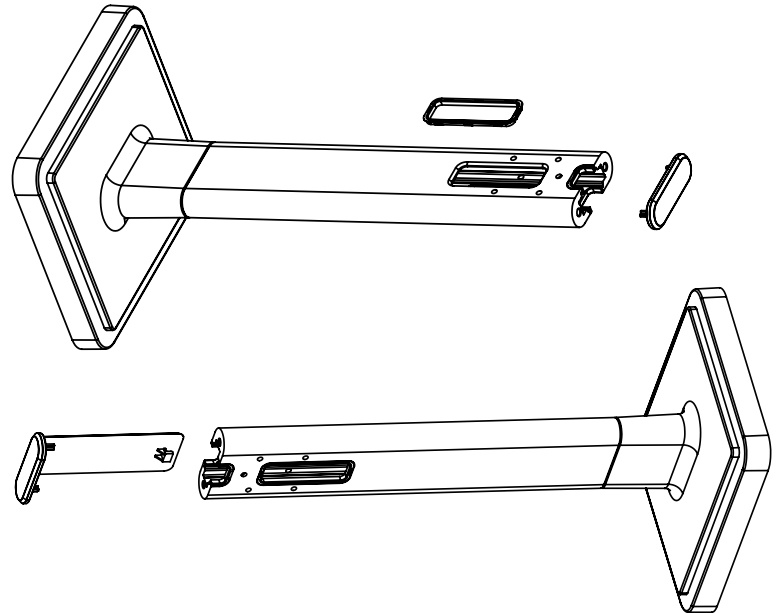


## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

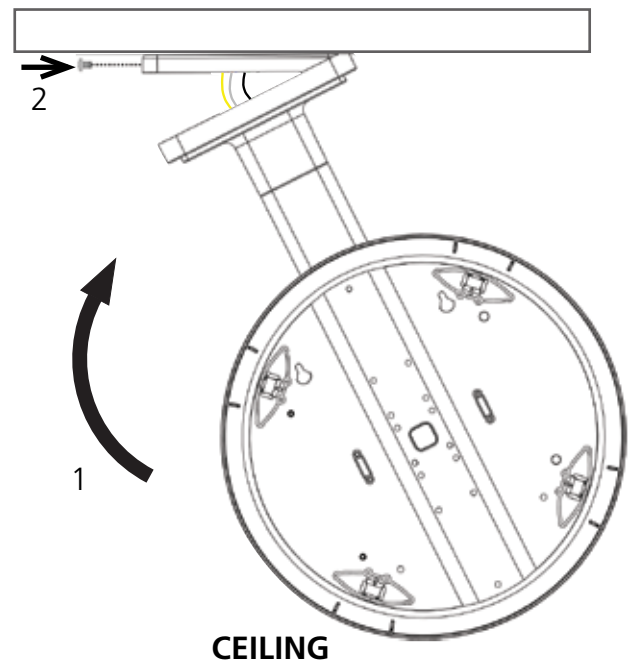
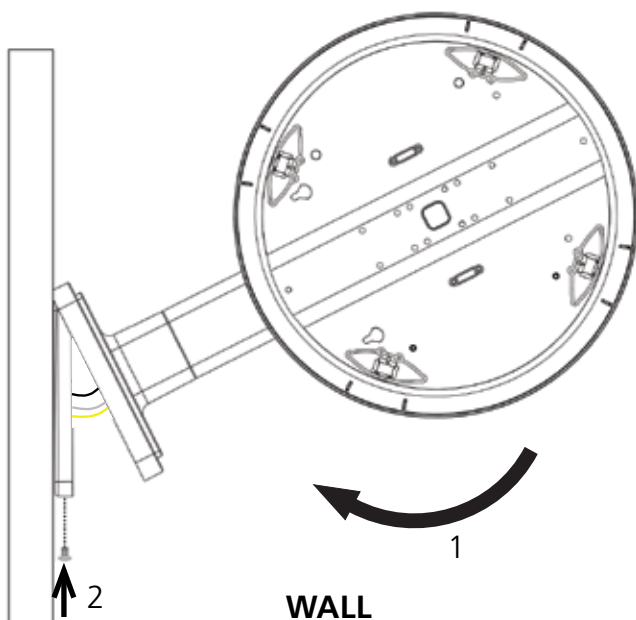
9) Thread at least fifteen inches (38.1cm) of wiring from the gang box through the bottom of the pole until each wire exits through the hole in the adapter.



10) Remove the pole endcap and plastic ring from the exposed pole side. Place the flag mount endcap on the end of the pole so that it covers the exposed large rectangular hole.



11) Attach the base of the pole to the mounting plate so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.



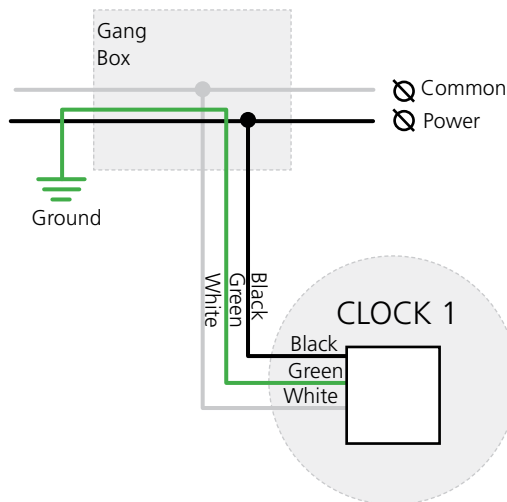
## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

12) Attach the power wires from your kit to the wires you threaded through the pole.

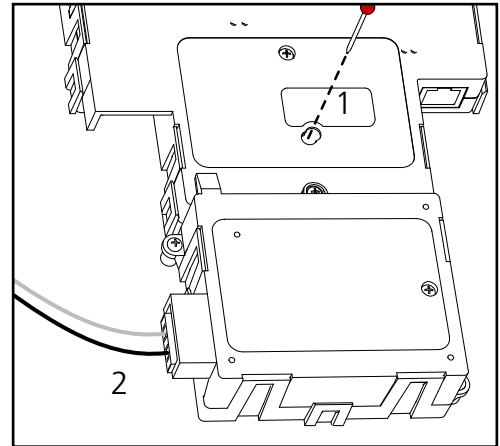
- Attach the Hot wire to the connector's black wire.
- Attach the Common wire to the connector's white wire.
- Attach the Ground wire to the connector's green wire.

Consult the diagram for additional help.

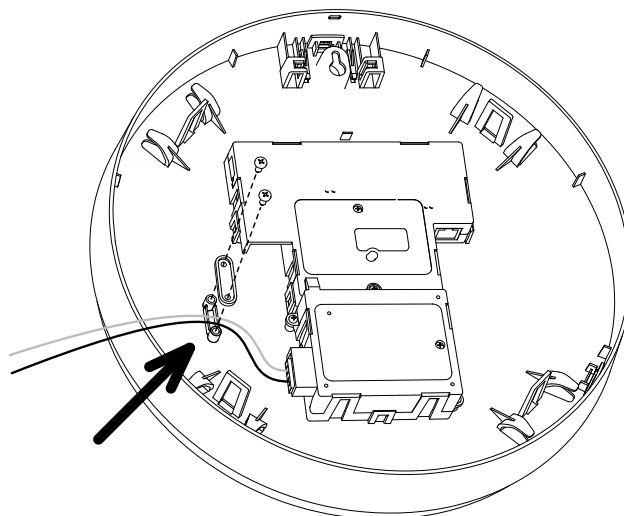
**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**



13) **First remove the gearbox pin**, then attach a power connector to the port on the side of the movement.

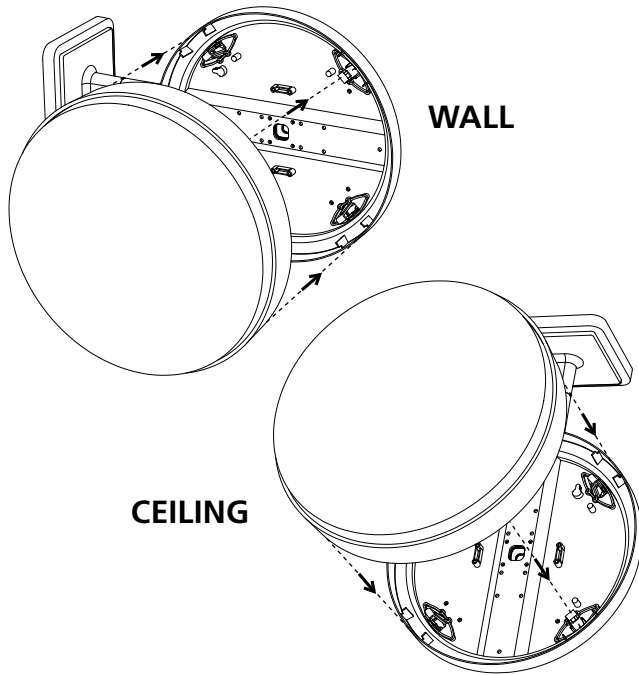


14) Lay any excess wiring across the strain relief base, then attach the strain relief to the clock with the two #6-19x7/16 screws. The strain relief should be tight enough to prevent the wire from sliding.

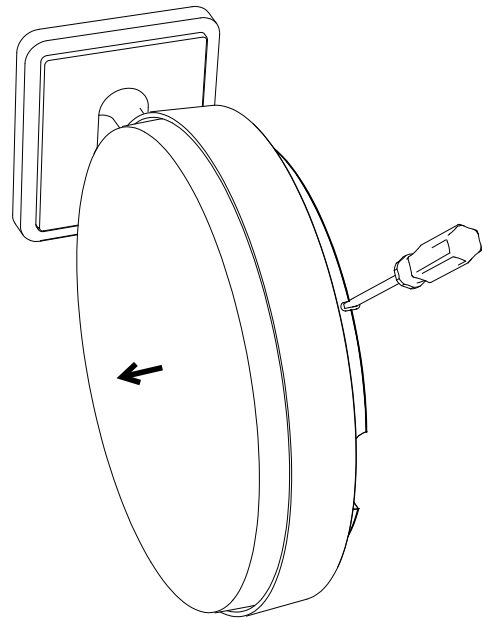


## Flag Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

15) Slide the clock onto the adapter in the rotation that you wish it to be viewed. You should hear a snapping noise as the four clips on the adapter secure the clock in place.



16) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.



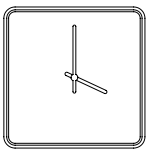
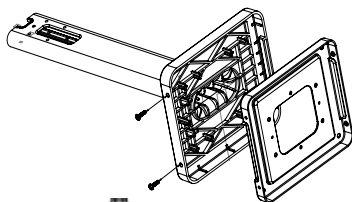
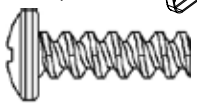
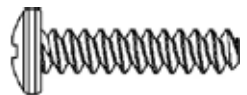

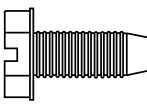

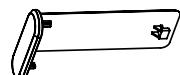
## Flag Mount Installation - Square Clock - Battery Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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


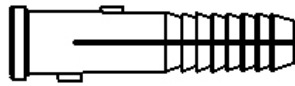


Description	Quantity	Picture
Square analog clock	1	
Included in Pole Kit (SAB-1BD-00S-0 or SAB-1BD-01S-0)		
Dual-mount pole, including mounting plate.	1	
#8-32x7/16 screw	8 (4 used)	
M3.5-1.0x10 screw (black)	4 (not used)	
Internal-tooth washer	8 (4 used)	
#10-32x3/8 green screw	1	
#6-32x1 screw	4	
Flag Mount Endcap	1	

Continued on next page

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

## Flag Mount Installation - Square Clock - Battery Powered

Included in Wiring Kit (A-WK-MTG-1)

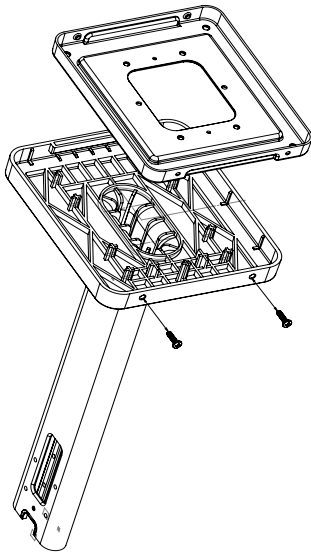
Description	Quantity	Picture
#10x1.5 Self-tapping screw	2	
Wall anchor	2	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, two additional #6-32x1 screws for attaching the mounting plate to the gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

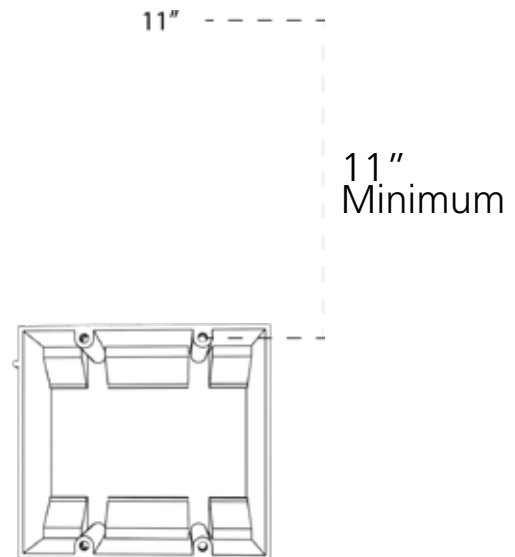
If any of the items listed in the kits are missing, you may contact your dealer and order a replacement kit.

## Flag Mount Installation - Square Clock - Battery Powered

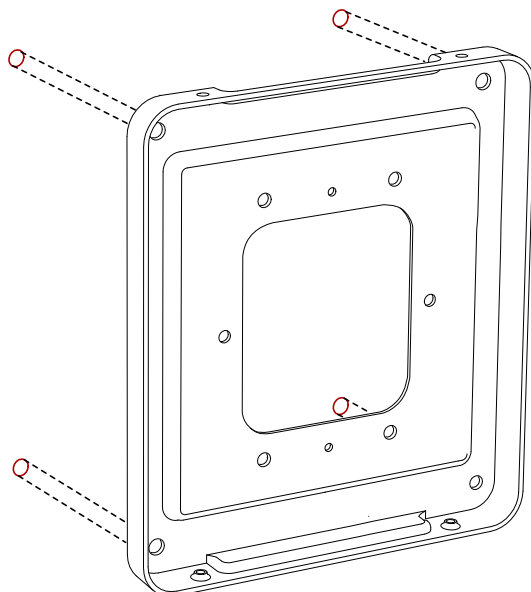
1) Detach the mounting plate from the mounting pole by unscrewing the two screws. Set the screws and pole aside for later.



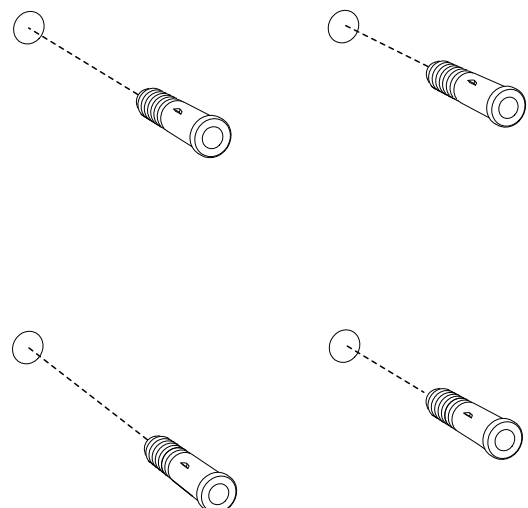
2) Place the mounting plate on the wall or ceiling. If you are installing a gang box in the wall, leave at least eleven inches between the top of the gang box and the ceiling. If you are installing the gang box in the ceiling, leave at least eleven inches between the gang box and the wall.



3) Confirm that the mounting plate is level with the floor. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners of the plate.

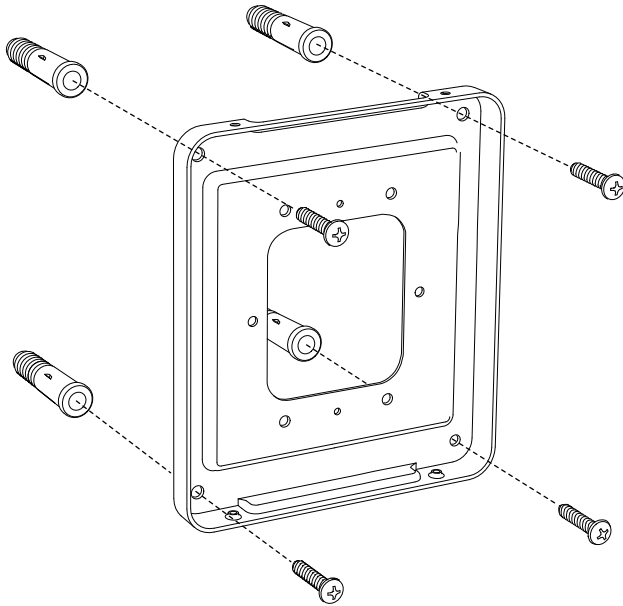


4) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.

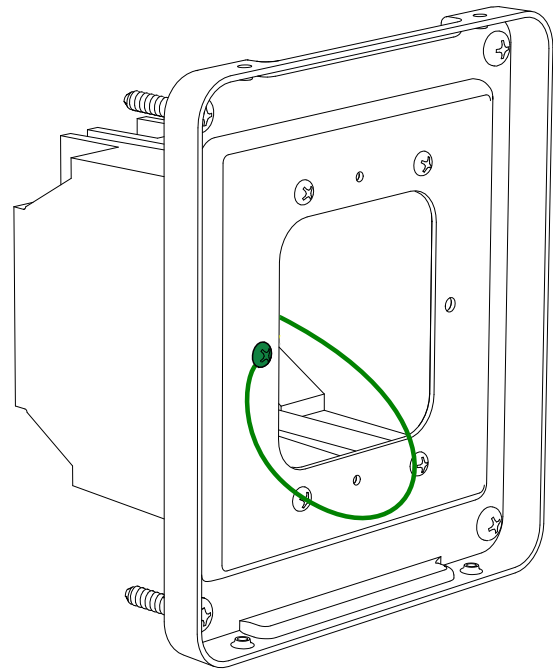


## Flag Mount Installation - Square Clock - Battery Powered

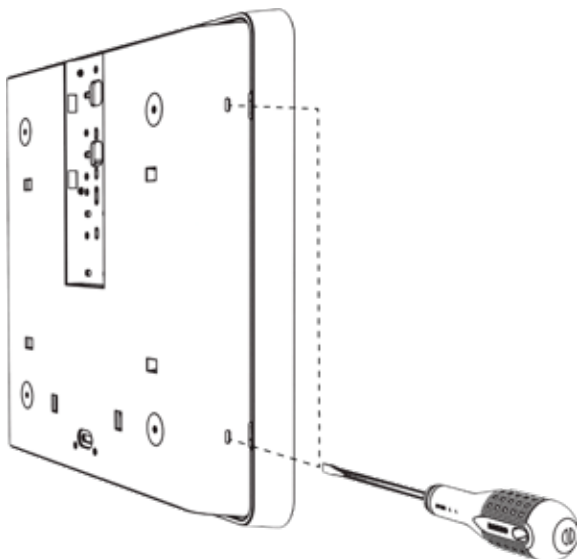
5) Insert the #8 screws through the mounting plate and into the anchors.



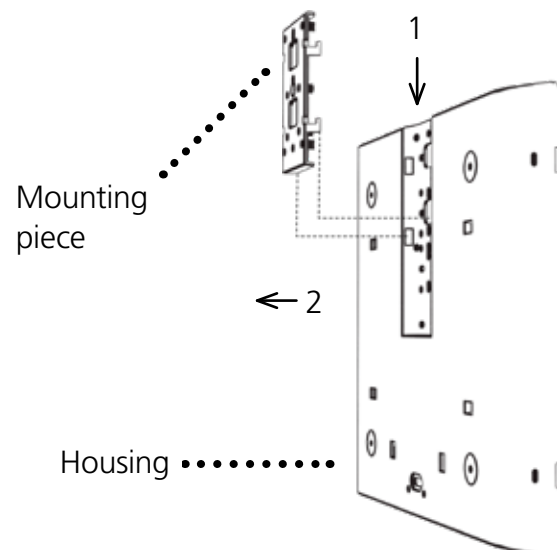
5b) If you are installing the clock atop an gang box, use the green screw to attach a grounding wire to the mounting plate.



6) Detach the housing from the back of each clock. Do this by inserting a flat-blade screwdriver about 1/8 inch into each of the slot holes until the piece detaches. You may hear a snapping noise as the latches disengage.



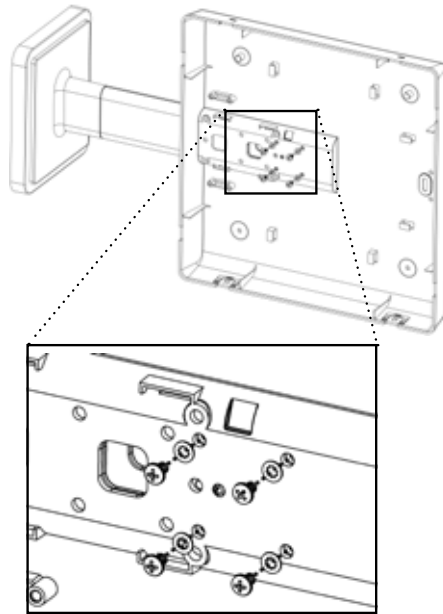
7) Release the mounting piece from the back of the housing by sliding it towards the center of the housing, then pulling it back and away from the housing. You will not need the mounting pieces later; either store them or throw them away at your discretion. **DO NOT THROW AWAY THE HOUSINGS.**



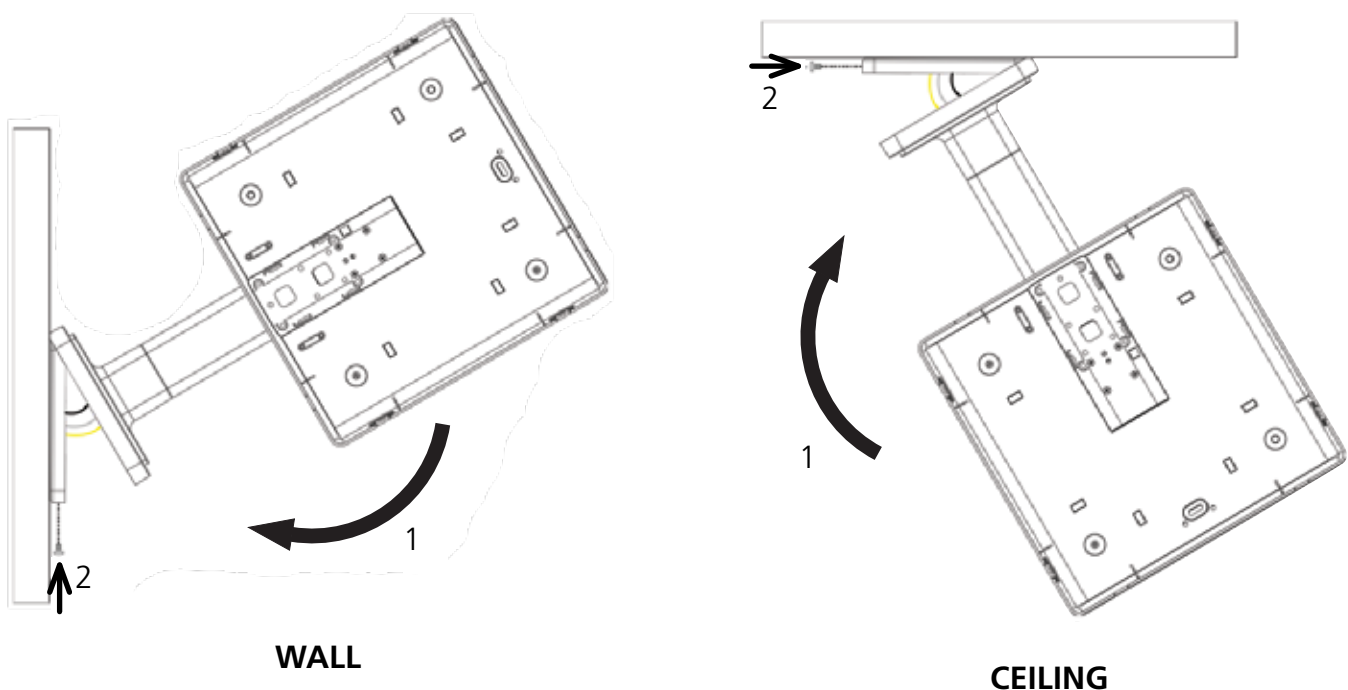


## Flag Mount Installation - Square Clock - Battery Powered

8) Attach the clock housing to the pole using four black #8-32x7/16 screws and four internal-tooth washers.

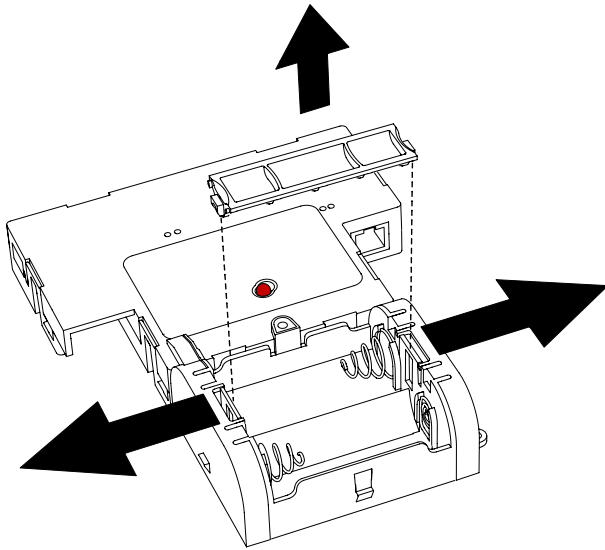


9) Attach the base of the pole to the mounting plate, so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.

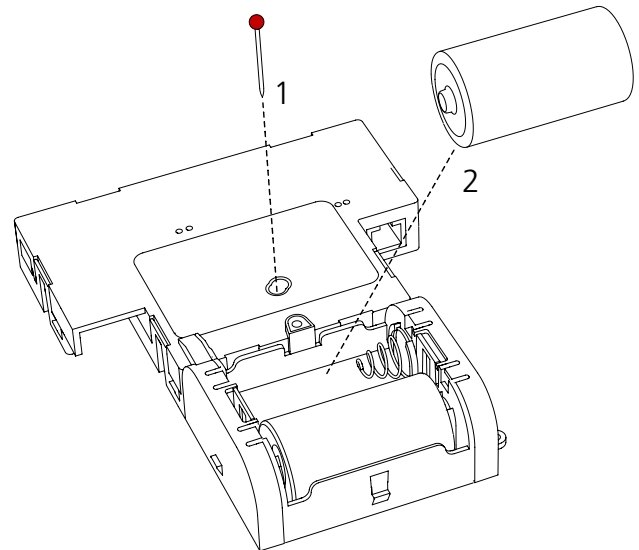


## Flag Mount Installation - Square Clock - Battery Powered

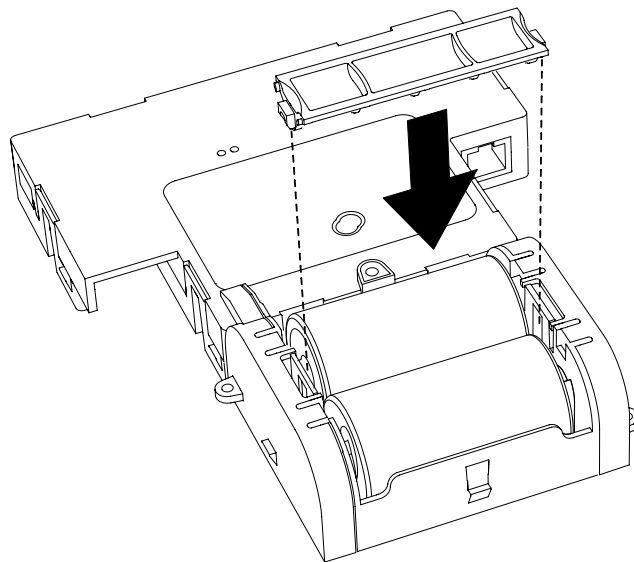
10) Remove the back covers from the battery pack by pulling the two latches away to either side and sliding the cover out.



11) **Remove the gearbox pin**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.

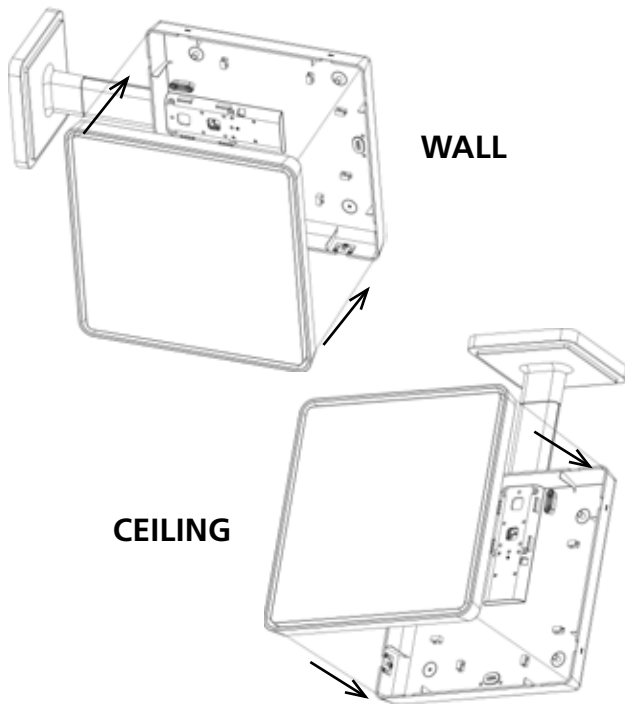


12) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.

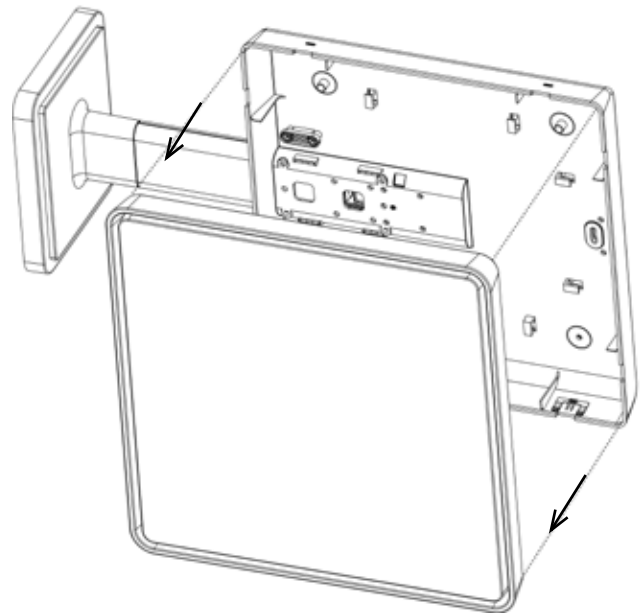


## Flag Mount Installation - Square Clock - Battery Powered

13) Rotate the clock so that it is right-side up. Slide the clock back into its housing. You should hear a snapping noise as the latches reengage.



14) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.



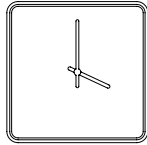
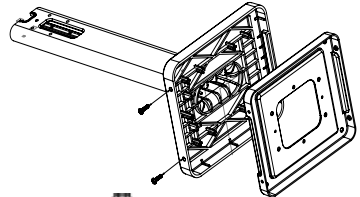



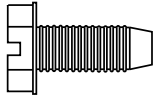

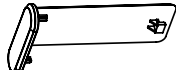
## Flag Mount Installation - Square Clock - Locally Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Square analog clock	1	
Included in Pole Kit (SAB-1BD-00S-0 or SAB-1BD-01S-0)		
Dual-mount pole, including mounting plate.	1	
#8-32x7/16 screw	8 (4 used)	
M3.5-1.0x10 screw (black)	4 (not used)	
Internal-tooth washer	8 (4 used)	
#10-32x3/8 green screw	1	
#6-32x1 screw	4	
Flag Mount Endcap	1	

Continued on next page

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

## Flag Mount Installation - Square Clock - Locally Powered

### Included in Package

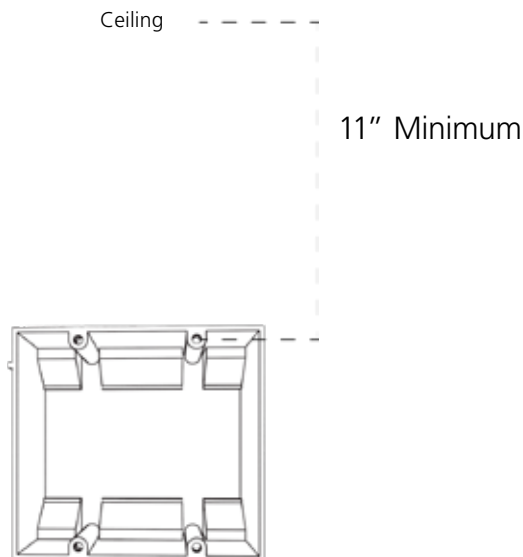
Description	Quantity	Picture
Power/grounding wires And connector	1	
#8x1.5 Self-tapping screw	2 (not used)	
Wall anchor	2 (not used)	
<b>Included in Gang Box Kit (A-GB-MK-1)</b>		
#6-32x1 screw	2 (not used)	
#6-19x3/8 screw	1 (not used)	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, two additional #6-32x1 screws for attaching the mounting plate to the gang box, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

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

## Flag Mount Installation - Square Clock - Locally Powered

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.



2) Run power wiring to the gang box.

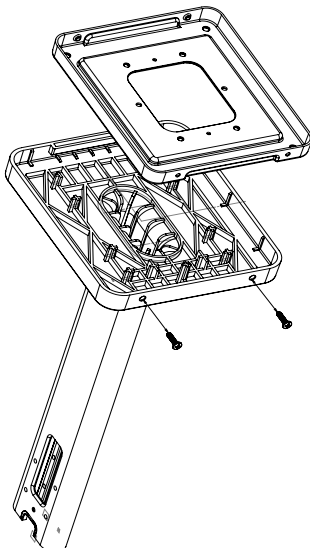
**For 24V power use the ORANGE and YELLOW wires  
For 110VAC or 230VAC power use the BLACK and WHITE wires**

### CHECK YOUR WIRING

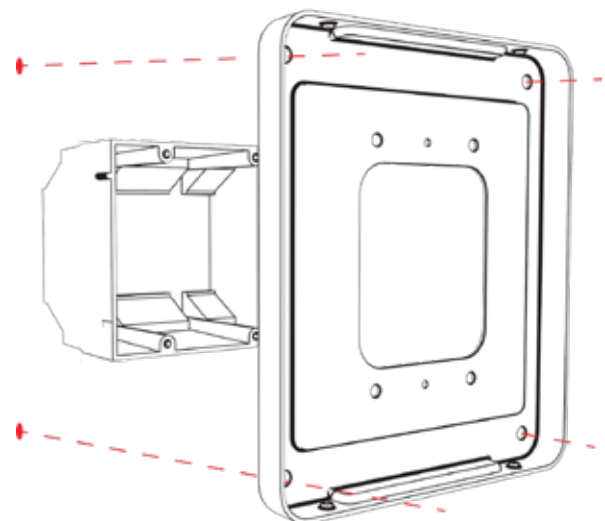
The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

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.

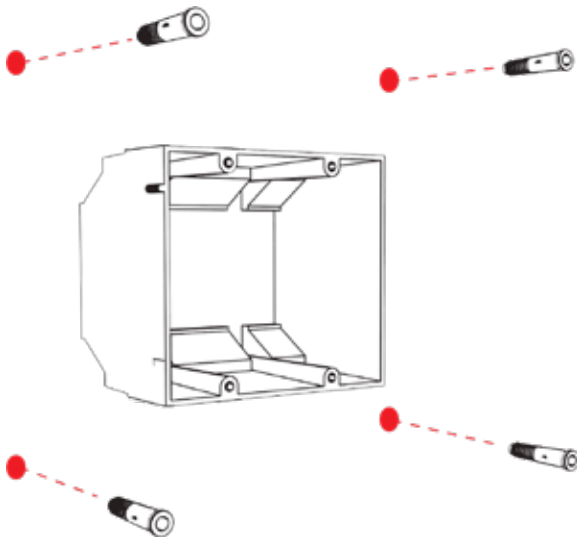


4) Attach the mounting plate to the gang box using only two of the four long, silver #6-32x1 screws. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners.

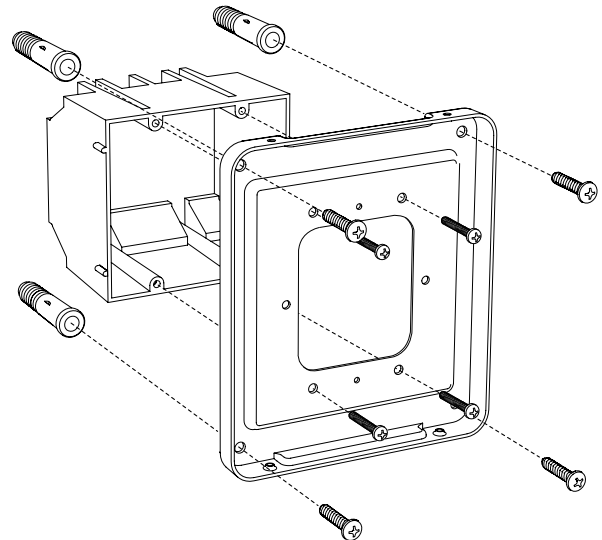


## Flag Mount Installation - Square Clock - Locally Powered

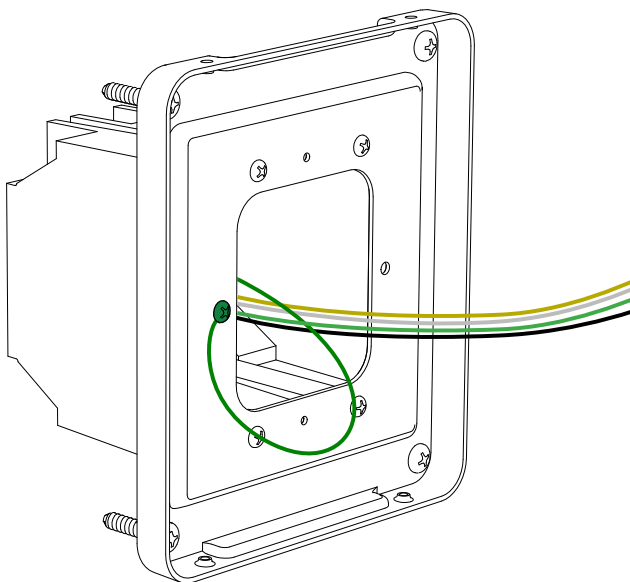
5) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.



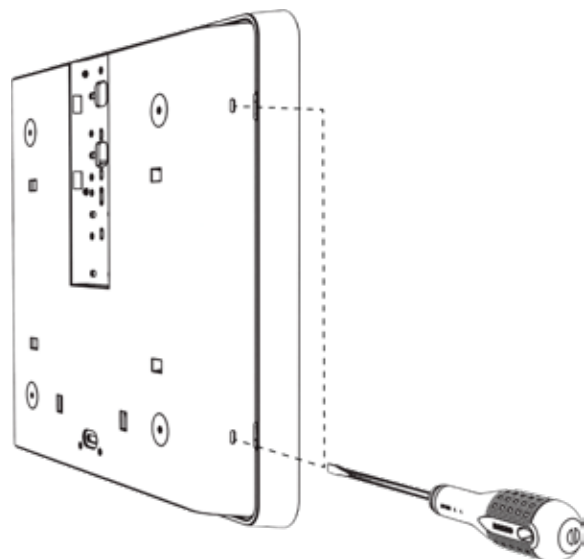
6) Reattach the mounting plate, this time using all four long, silver #6-32x1 screws, then insert the four #8 screws through the mounting plate and into the anchors.



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.

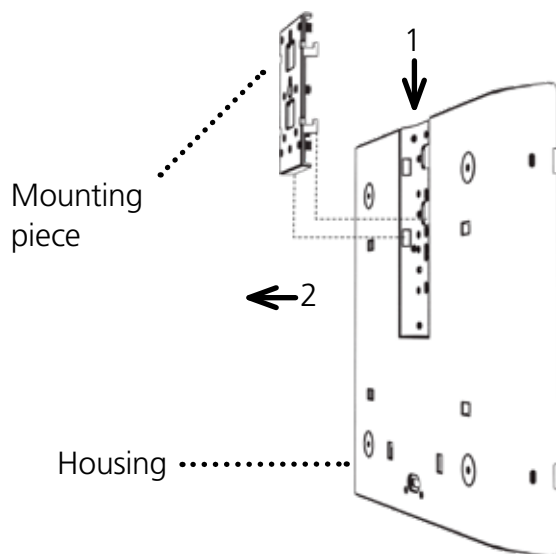


8) Detach the housing from the back of each clock. Do this by inserting a flat-blade screwdriver about 1/8 inch into each of the slot holes until the piece detaches. You may hear a snapping noise as the latches disengage.

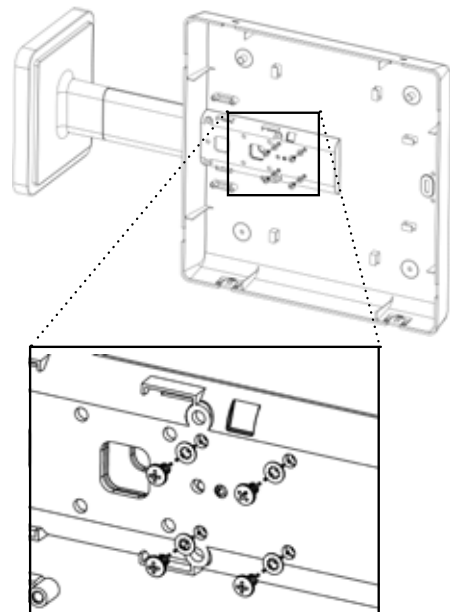


## Flag Mount Installation - Square Clock - Locally Powered

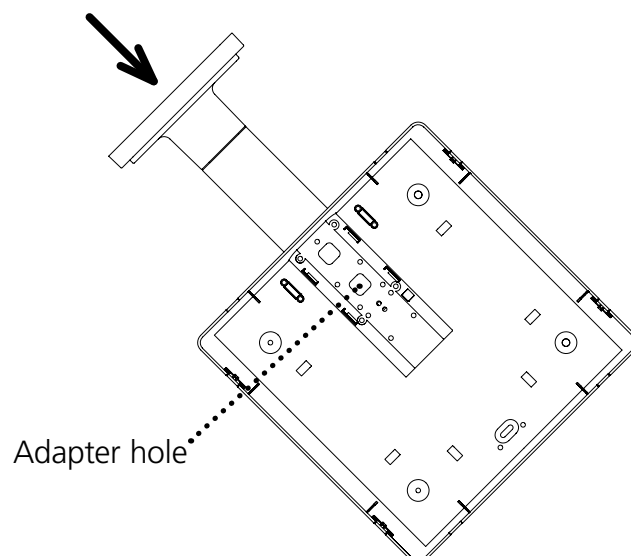
9) Release the mounting piece from the back of the housing by sliding it towards the center of the housing, then pulling it back and away from the housing. You will not need the mounting pieces later; either store them or throw them away at your discretion. **DO NOT THROW AWAY THE HOUSINGS.**



10) Attach the clock housing to the pole using four black #8-32x7/16 screws and four internal-tooth washers.



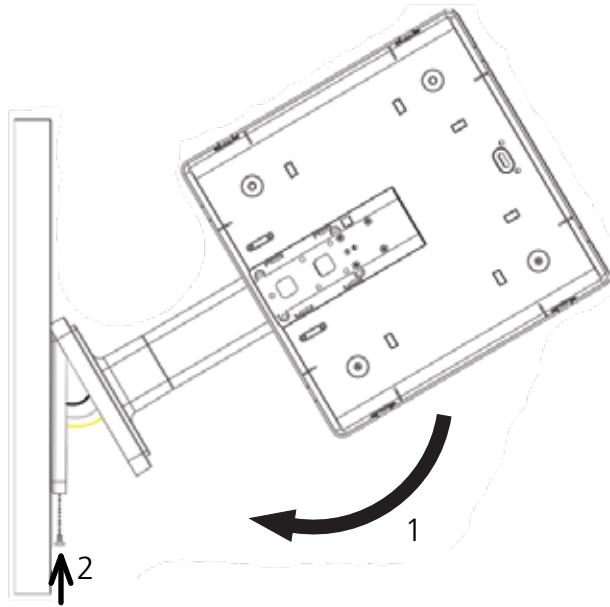
11) Thread at least fifteen inches (38.1cm) of wiring from the gang box through the bottom of the pole until each wire exits through the hole in the adapter.



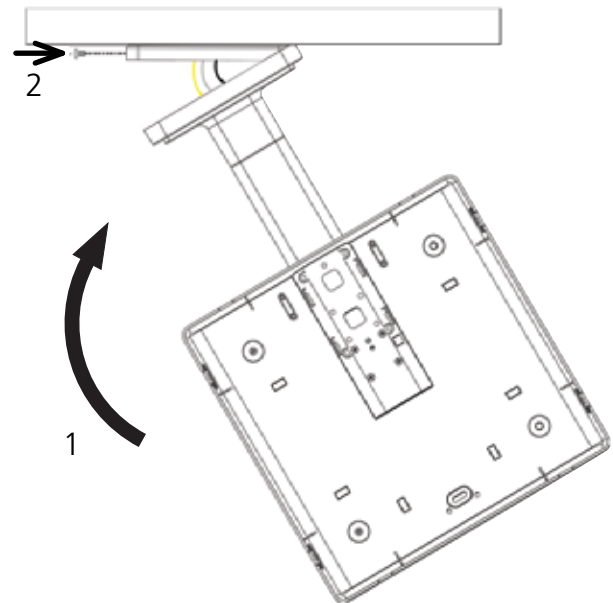


## Flag Mount Installation - Square Clock - Locally Powered

12) Attach the base of the pole to the mounting plate, so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.



**WALL**



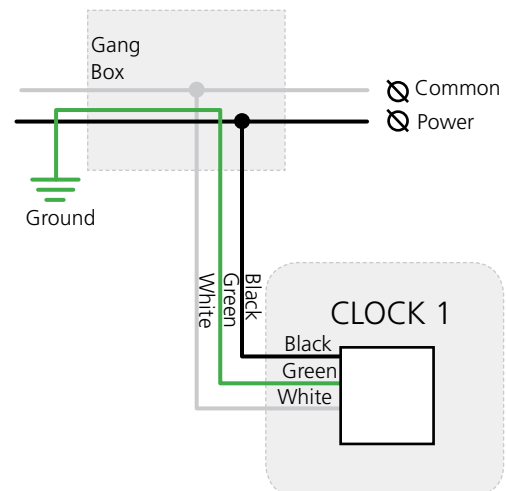
**CEILING**

13) Attach the power wires from your kit to the wires you threaded through the pole.

- Attach the Hot wire to the connector's black wire.
- Attach the Common wire to the connector's white wire.
- Attach the Ground wire to the connector's green wire.

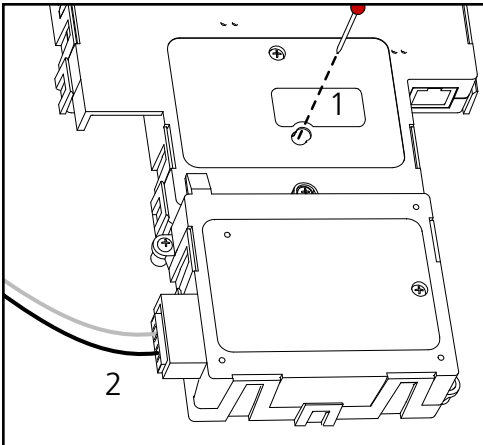
Consult the diagram on the left for additional help.

**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**

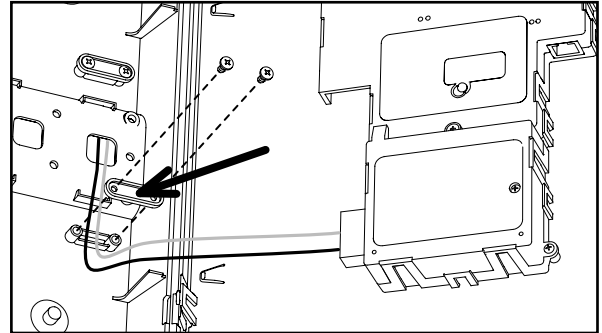


## Flag Mount Installation - Square Clock - Locally Powered

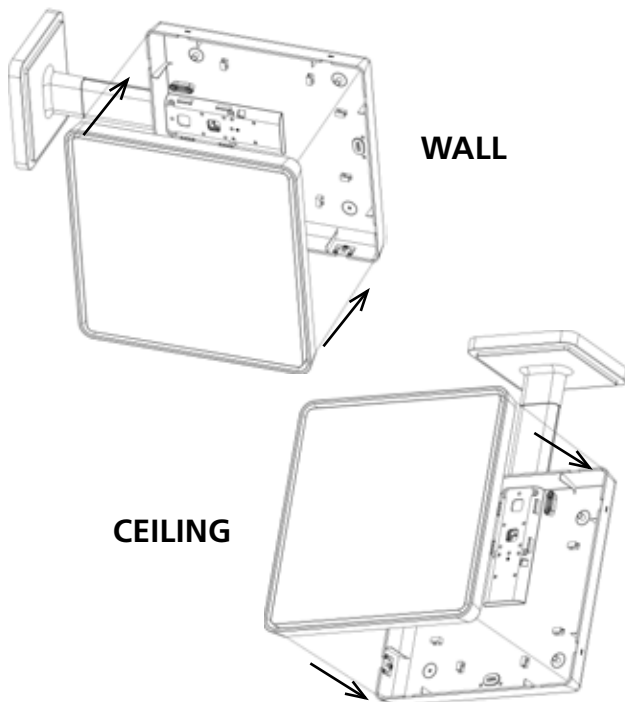
14) **First remove the gearbox pin**, then attach the power connector to the port on the movement.



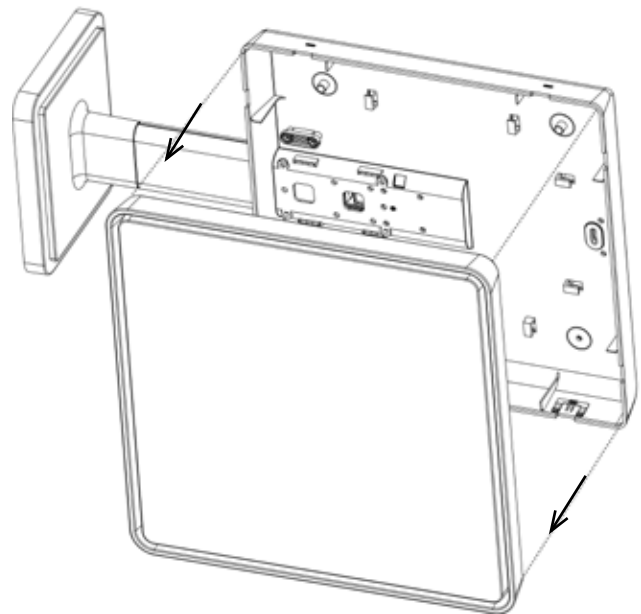
15) Loosen the strain relief by unscrewing the two screws. Slip any excess wiring through them, then tighten the strain relief by reinserting and tightening the screws.



16) Rotate the clock so that it is right-side up. Slide the clock back into its housing. You should hear a snapping noise as the latches reengage.



17) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.



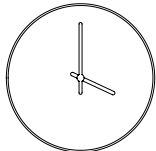
## Double Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

### VERY IMPORTANT:

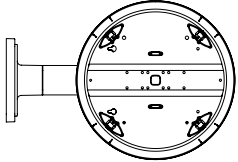



INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Round SlimLine analog clock	2	

### Included in Double Mount Kit (SAH-1BD-12R-0 or SAH-1BD-16R-0)

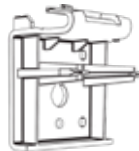




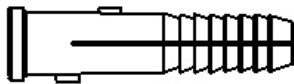


Dual-mount pole, including mounting plate.	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8	
M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	8	
#6-32x1 screw	4	

Continued on next page

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

## Double Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

Included in Mounting Kits (A-SLM-MK-S-1) or (A-SLM-MK-AW)

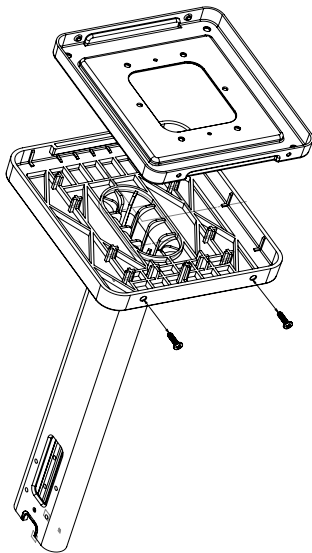
Description	Quantity	Picture
Mounting Piece	2 (not used)	
Release lever	0 or 2 (not used)	
#6-19x7/16 screw	4	
Strain relief	2	
Included in Wiring Kit (A-WK-MTG-1)		
#10x1.5 Self-tapping screw	2	
Wall anchor	2	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	4 (not used)	
#6-19x3/8 screw	2 (not used)	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

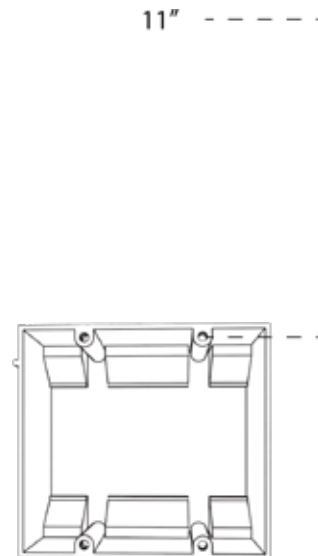
SlimLine and Aluminum Clocks use the same installation procedures for double mount housings.

## Double Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

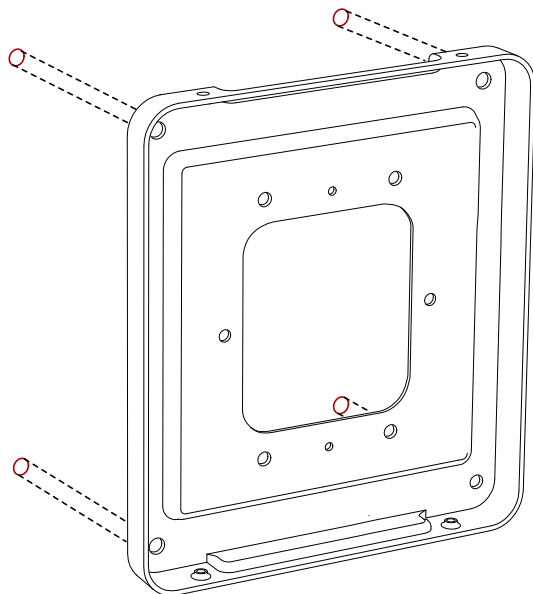
1) Detach the mounting plate from the mounting pole by unscrewing the two screws. Set the screws and pole aside for later.



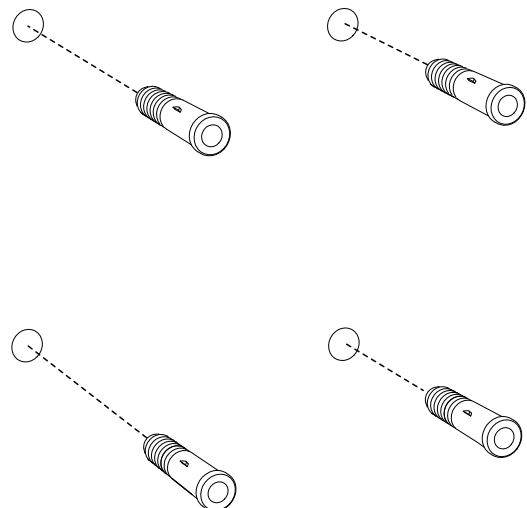
2) Place the mounting plate on the wall or ceiling. If you are installing a gang box in the wall, leave at least eleven inches between the top of the gang box and the ceiling. If you are installing the gang box in the ceiling, leave at least eleven inches between the gang box and the wall.



3) Confirm that the mounting plate is level with the floor. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners of the plate.

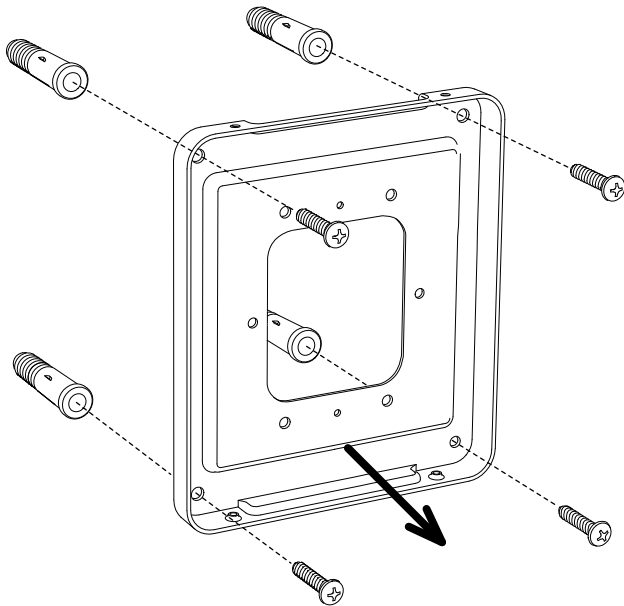


4) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.

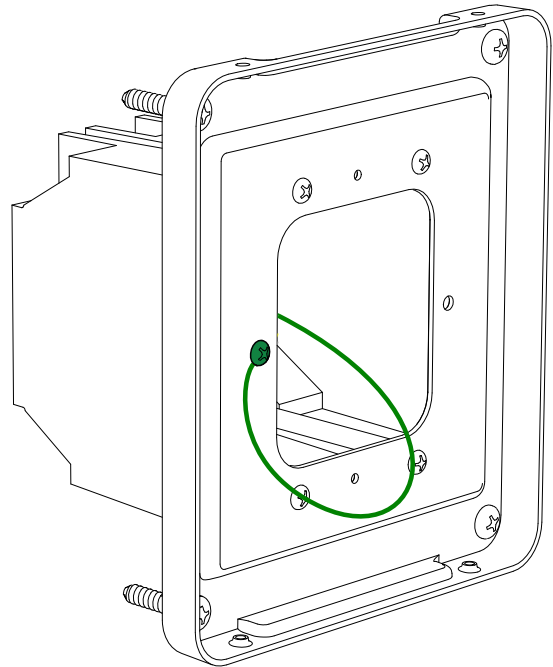


## Double Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

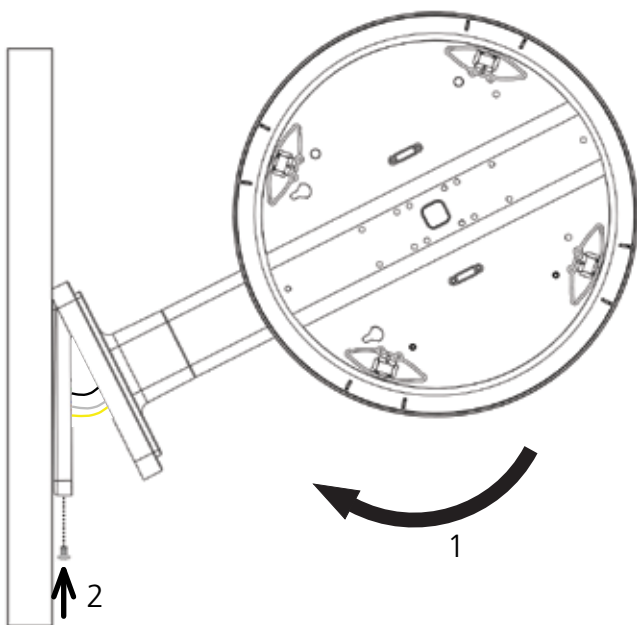
5) Insert the #8 screws through the mounting plate and into the anchors.



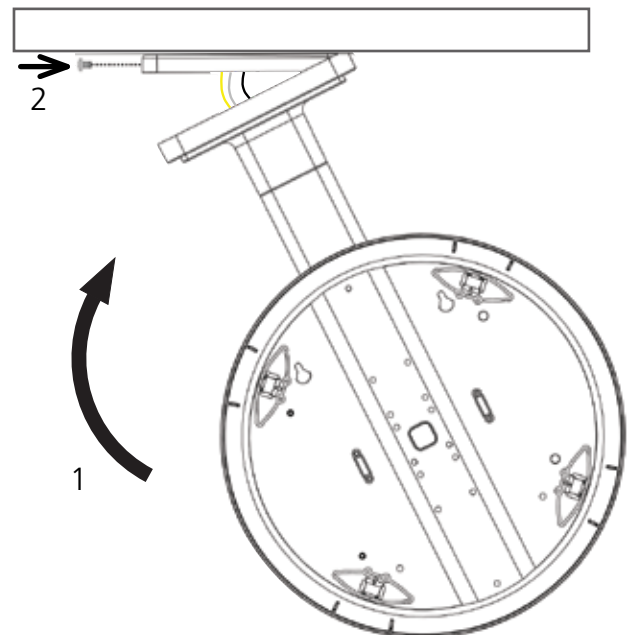
5B) If you are installing the clock atop an gang box, use the green screw to attach a grounding wire to the mounting plate.



6) Attach the base of the pole to the mounting plate so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.



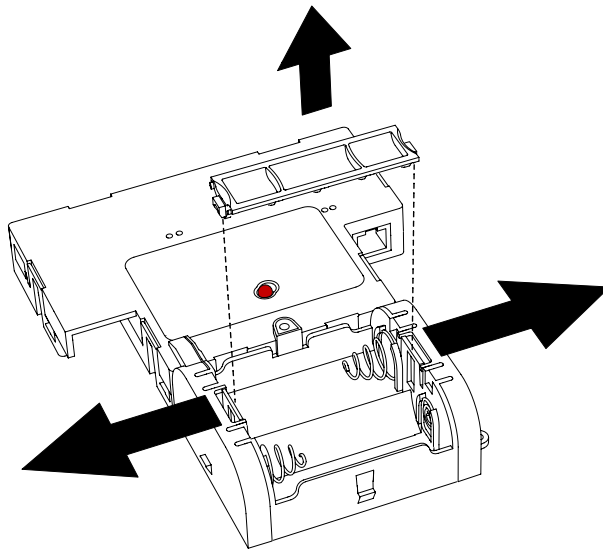
**WALL**



**CEILING**

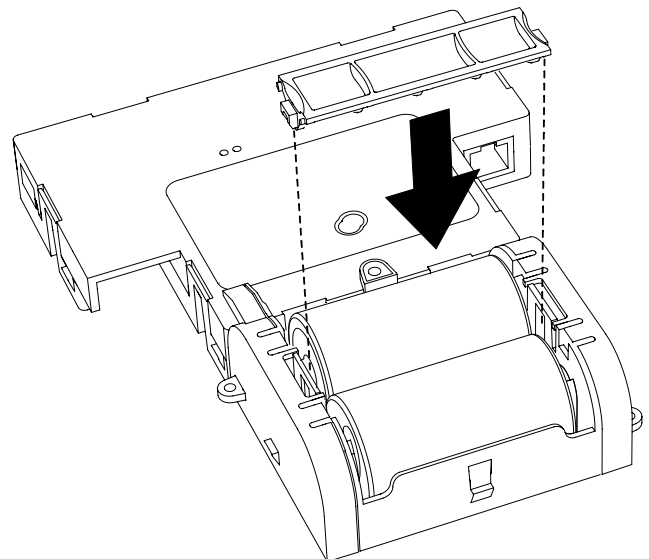
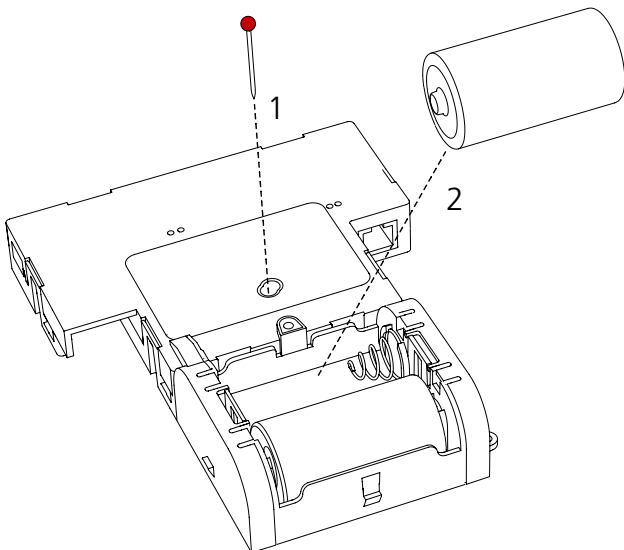
## Double Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

7) Remove the back covers from the battery pack by pulling the two latches away to either side and sliding the cover out.



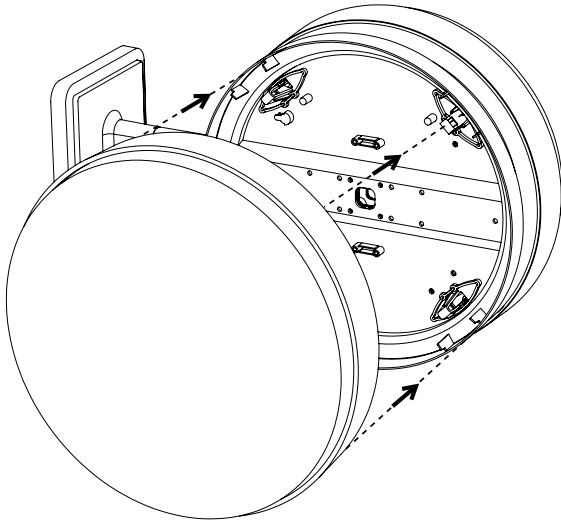
8) **First remove the gearbox pins**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.

9) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.

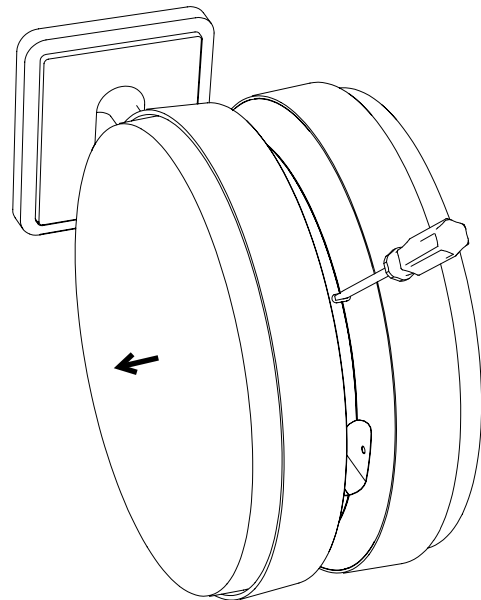


## Double Mount Installation - Round SlimLine/Aluminum Clock - Battery Powered

10) Slide each clock onto the adapter in the rotation that you wish it to be viewed. You should hear a snapping noise as the four clips on the adapter secure the clock in place.



11) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.





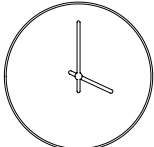
## Double Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

### VERY IMPORTANT:

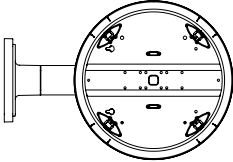


INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Round SlimLine analog clock	2	

### Included in Double Mount Kit (SAH-1BD-12R-0 or SAH-1BD-16R-0)







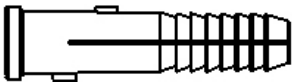


Dual-mount pole, including mounting plate.	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8	
M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	8	
#6-32x1 screw	4	

Continued on next page

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

## Double Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

Included in Mounting Kits (A-SLM-MK-S-1) or (A-SLM-MK-AW)

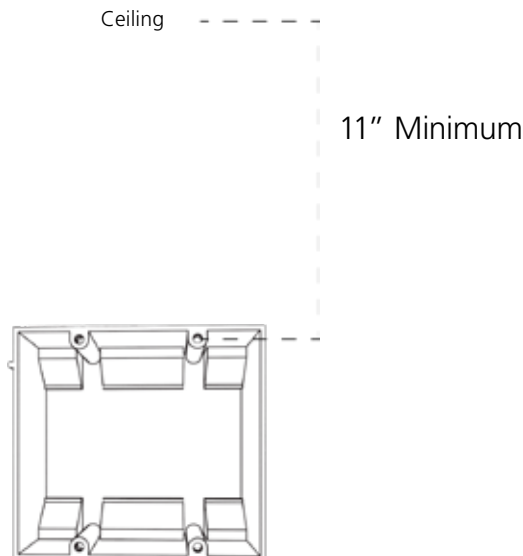
Description	Quantity	Picture
Mounting Piece	2 (not used)	
Release lever	0 or 2 (not used)	
#6-19x7/16 screw	4	
Strain relief	2	
Included in Wiring Kit (A-WK-12-1V)		
Power/grounding wires And connector	2	
#8x1.5 Self-tapping screw	4 (not used)	
Wall anchor	4 (not used)	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	4 (not used)	
#6-19x3/8 screw	2 (not used)	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5"(3.8cm) screw length), four #8 screws for the wall anchors, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

SlimLine and Aluminum Clocks use the same installation procedures for double mount housings.

## Double Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

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.



2) Run power wiring to the gang box.

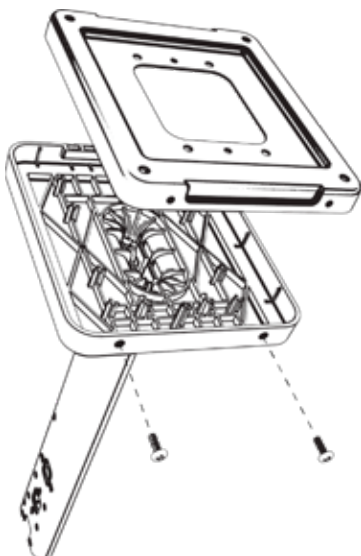
**For 24V power use the ORANGE and YELLOW wires  
For 110VAC or 230VAC power use the BLACK and WHITE wires**

### CHECK YOUR WIRING

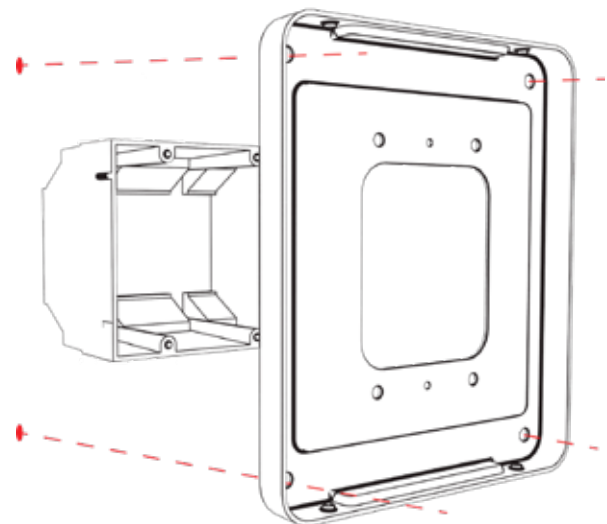
The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

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.

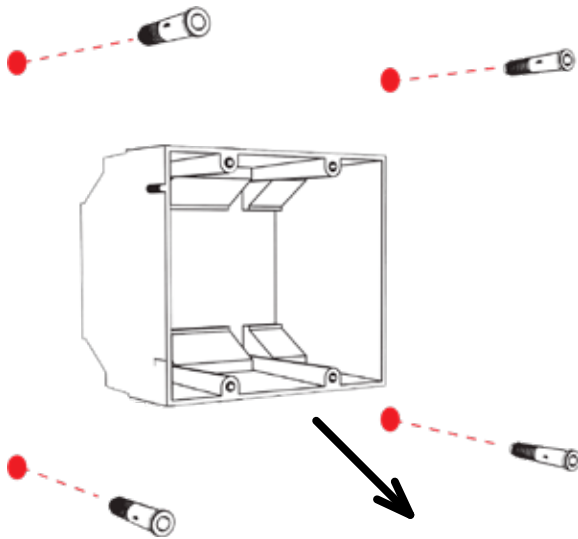


4) Attach the mounting plate to the gang box using only two of the four long, silver #6-32x1 screws. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners.

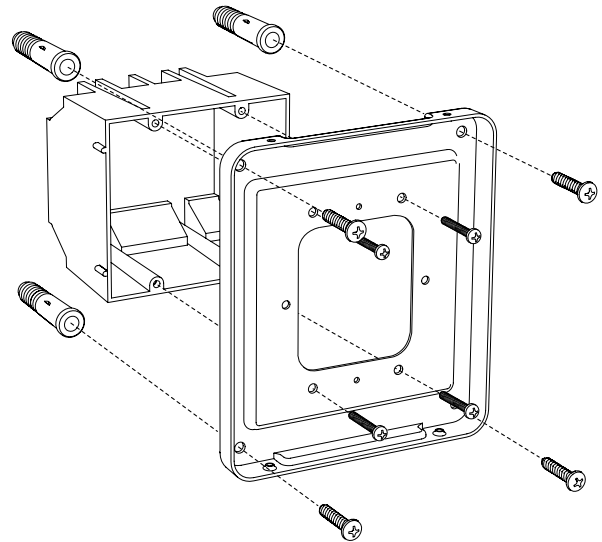


## Double Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

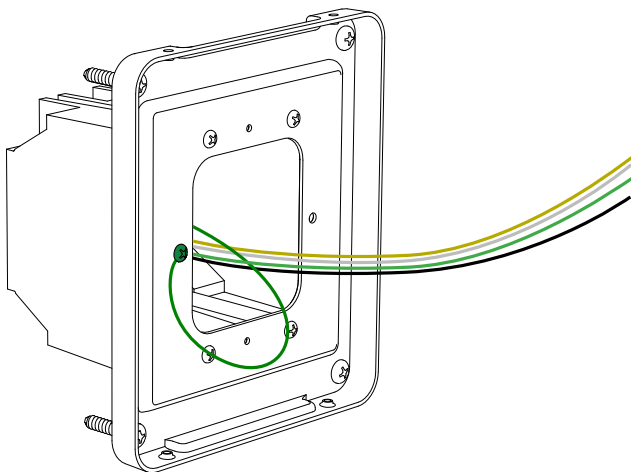
5) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.



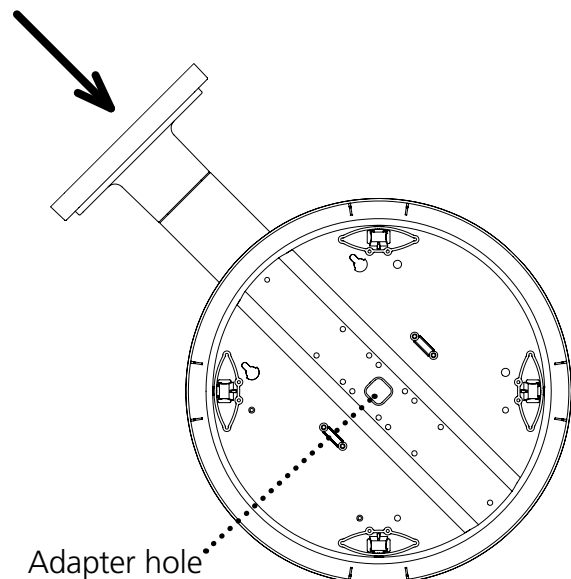
6) Reattach the mounting plate, this time using all four long, silver #6-32x1 screws, then insert the four #8 screws through the mounting plate and into the anchors.



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.

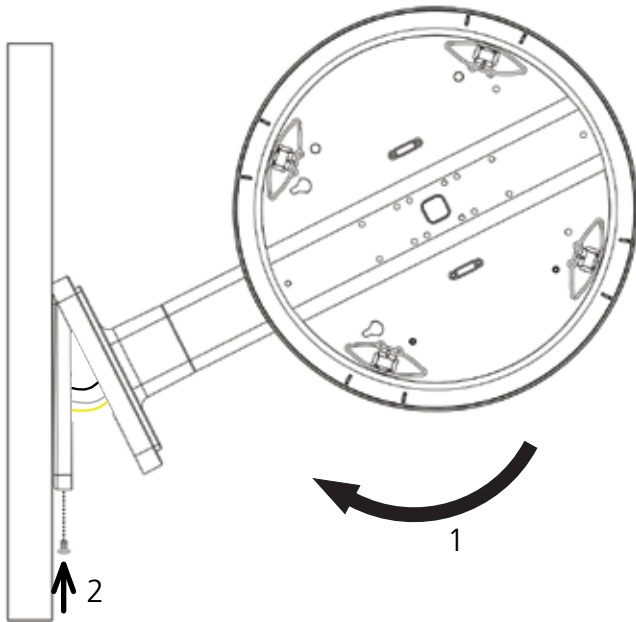


8) Thread at least fifteen inches (38.1cm) of wiring from the gang box through the bottom of the pole until each wire exits through the hole in the adapter.

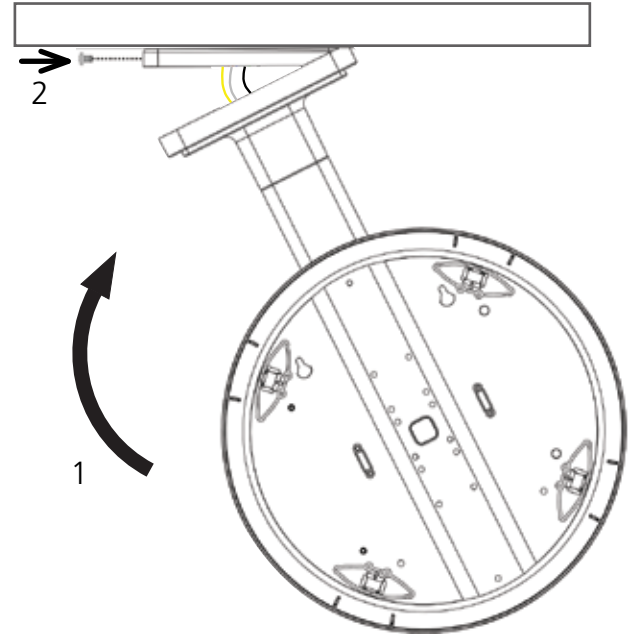


## Double Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

9) Attach the base of the pole to the mounting plate so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.



**WALL**



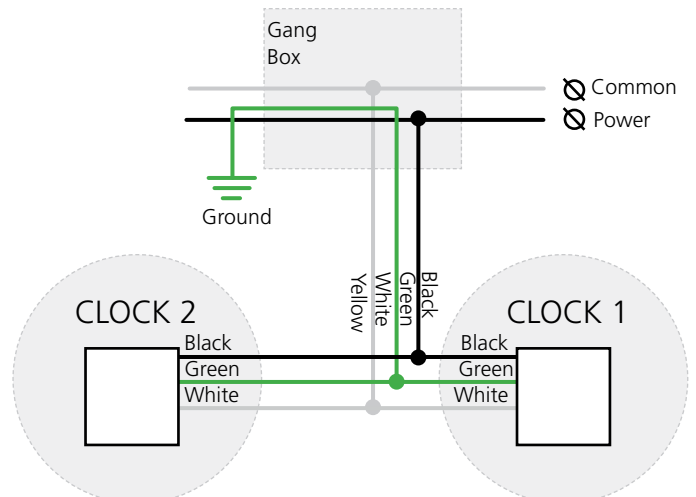
**CEILING**

10) Attach the power connectors to the wires you threaded through the pole.

- Attach the Hot wire to each connector's black wire.
- Attach the Common wire to each connector's white wire.
- Attach the Ground wire to each connector's green wire.

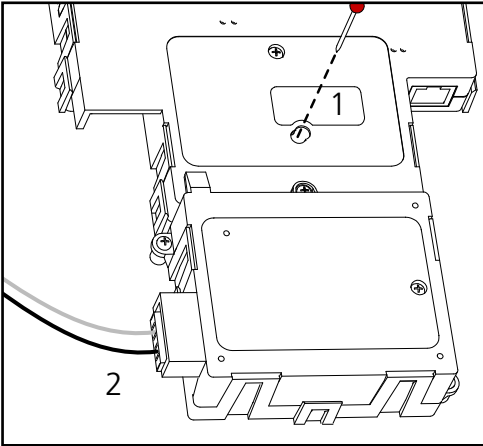
Consult the diagram on the left for additional help.

**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**

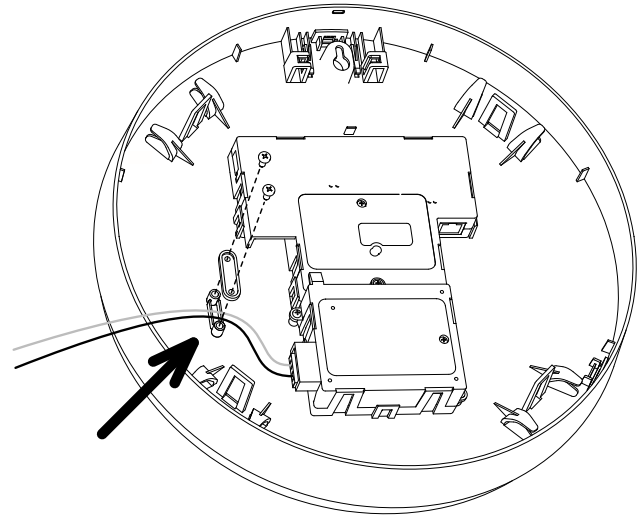


## Double Mount Installation - Round SlimLine/Aluminum Clock - Locally Powered

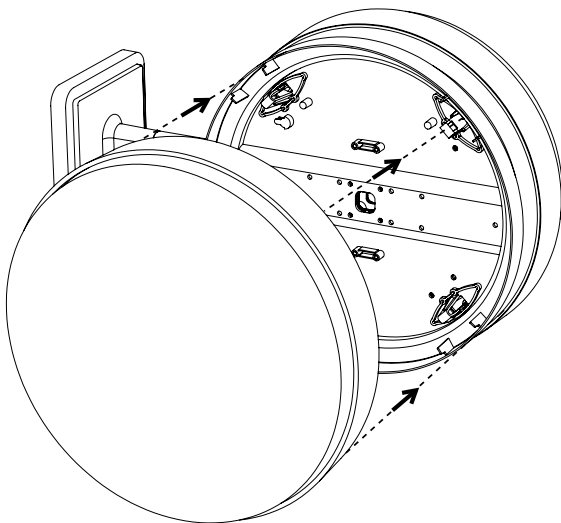
11) **First remove the gearbox pins**, then attach a power connector to the ports on the side of each movement.



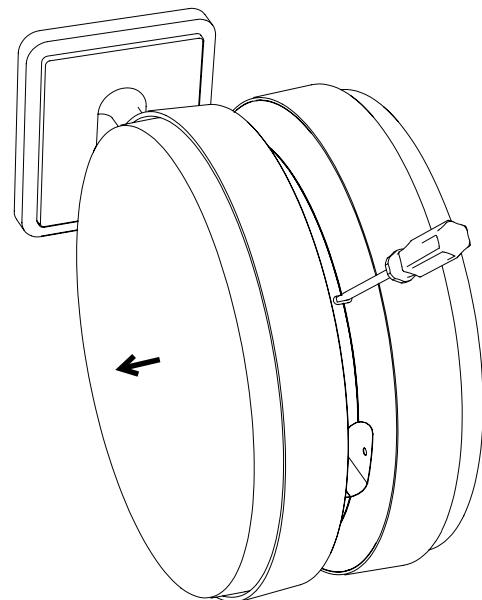
12) Lay any excess wiring across the strain relief base, then attach the strain relief to the clock with the two #6-19x7/16 screws. The strain relief should be tight enough to prevent the wire from sliding.



13) Slide each clock onto the adapter in the rotation that you wish it to be viewed. You should hear a snapping noise as the four clips on the adapter secure the clock in place.



14) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.



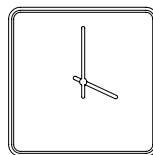

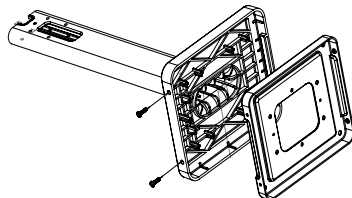
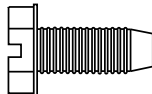
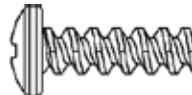



## Double Mount Installation - Square Clock - Battery Powered

### VERY IMPORTANT:

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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


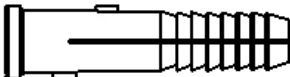
Description	Quantity	Picture
Square analog clock	2	
Mounting Piece-already attached to clock housing	2 (not used)	
Included in Pole Kit (SAB-1BD-00S-0 or SAB-1BD-01S-0)		
Dual-mount pole, including mounting plate.	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8	
M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	8	
#6-32x1 screw	4	

Continued on next page



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

## Double Mount Installation - Square Clock - Battery Powered

Included in Wiring Kit (A-WK-MTG-1)

Description	Quantity	Picture
#10x1.5 Self-tapping screw	4	
Wall anchor	4	

Included in Gang Box Kit (A-GB-MK-1)

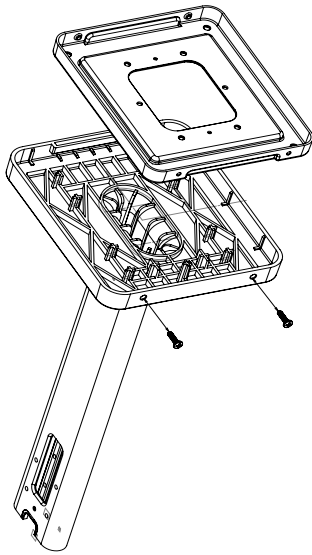
#6-32x1 screw	4 (not used)	
#6-19x3/8 screw	2 (not used)	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

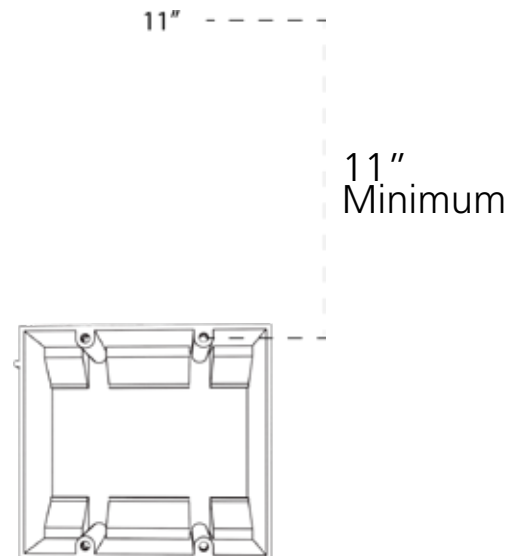


## Double Mount Installation - Square Clock - Battery Powered

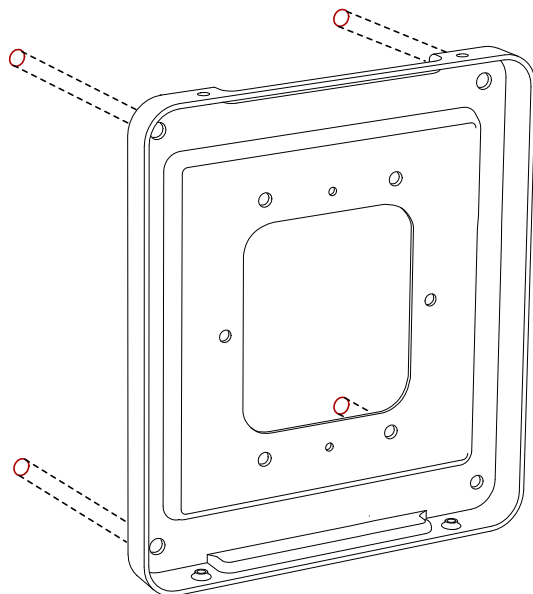
1) Detach the mounting plate from the mounting pole by unscrewing the two screws. Set the screws and pole aside for later.



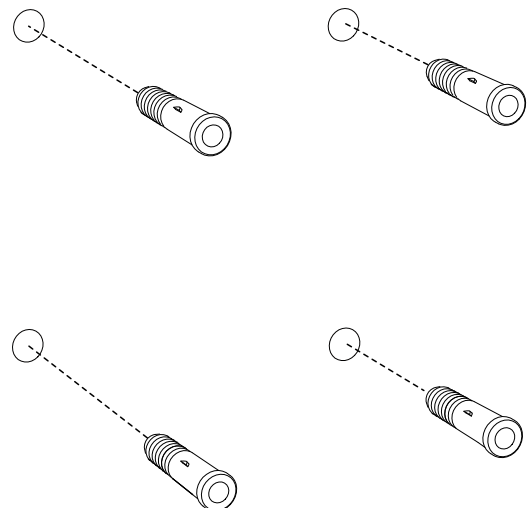
2) Place the mounting plate on the wall or ceiling. If you are installing a gang box in the wall, leave at least eleven inches between the top of the gang box and the ceiling. If you are installing the gang box in the ceiling, leave at least eleven inches between the gang box and the wall.



3) Confirm that the mounting plate is level with the floor. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners of the plate.

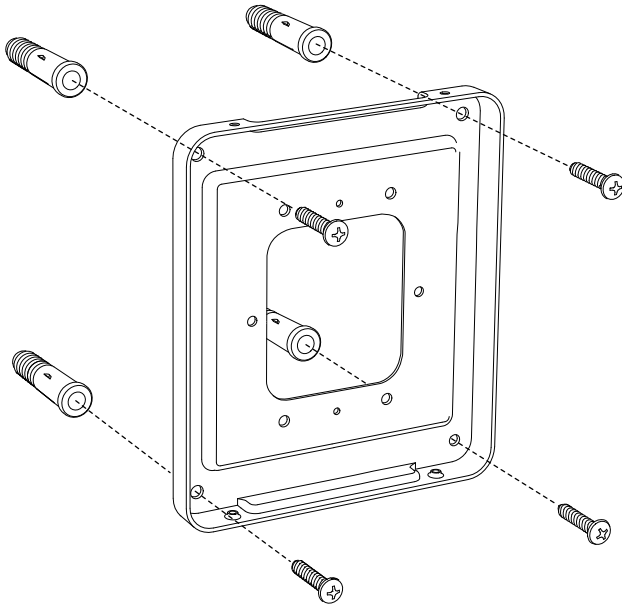


4) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.

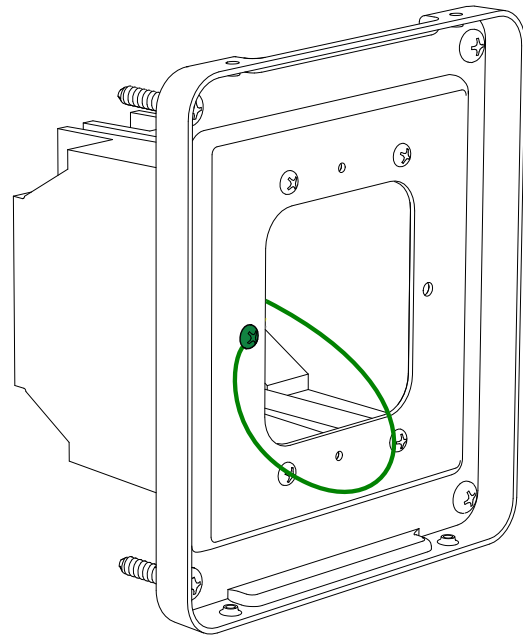


## Double Mount Installation - Square Clock - Battery Powered

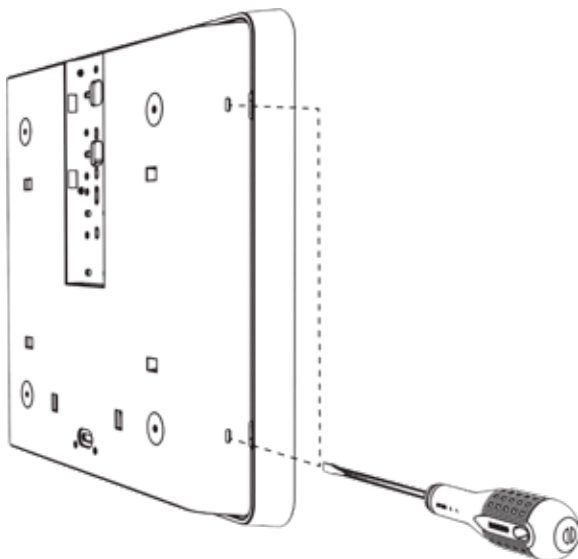
5) Insert the #8 screws through the mounting plate and into the anchors.



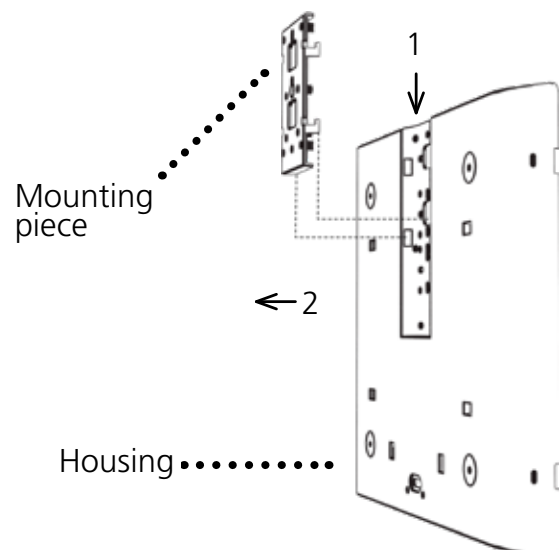
5B) If you are installing the clock atop an gang box, use the green screw to attach a grounding wire to the mounting plate.



6) Detach the housing from the back of each clock. Do this by inserting a flat-blade screwdriver about 1/8 inch into each of the slot holes until the piece detaches. You may hear a snapping noise as the latches disengage.

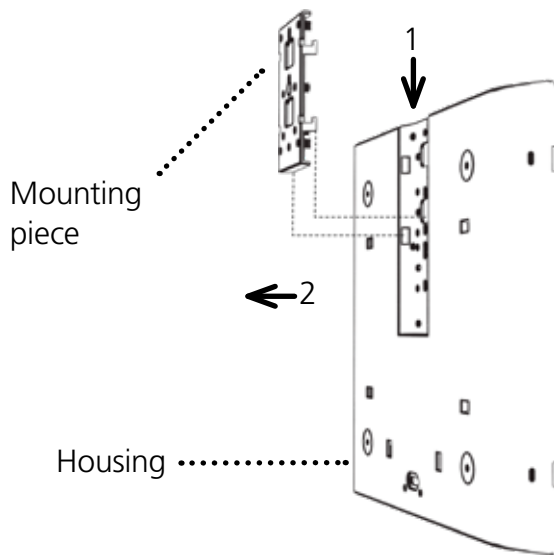


7) Release the mounting piece from the back of each housing by sliding it away from the center of the housing, then pulling it back and away from the housing. You will not need the mounting pieces later; either store them or throw them away at your discretion. **DO NOT THROW AWAY THE HOUSINGS.**

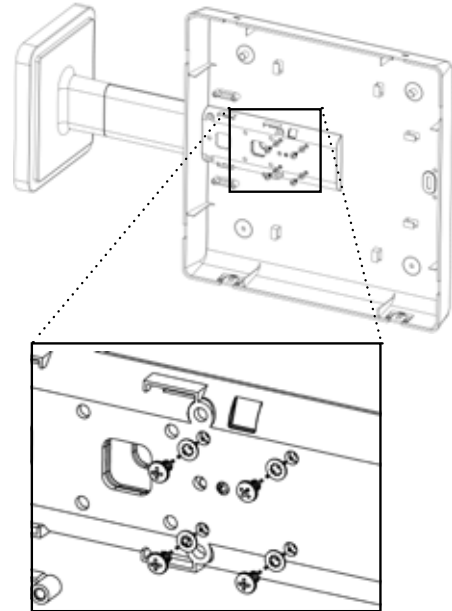


## Double Mount Installation - Square Clock - Battery Powered

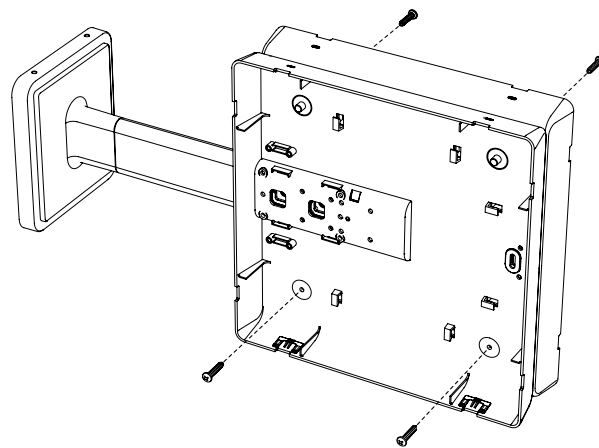
8) Release the mounting piece from the back of each housing by sliding it away from the center of the housing, then pulling it back and away from the housing. You will not need the mounting pieces later; either store them or throw them away at your discretion. **DO NOT THROW AWAY THE HOUSINGS.**



9) Attach both housings to the pole using four black 8-32x7/16 screws and four internal-tooth washers on each side.

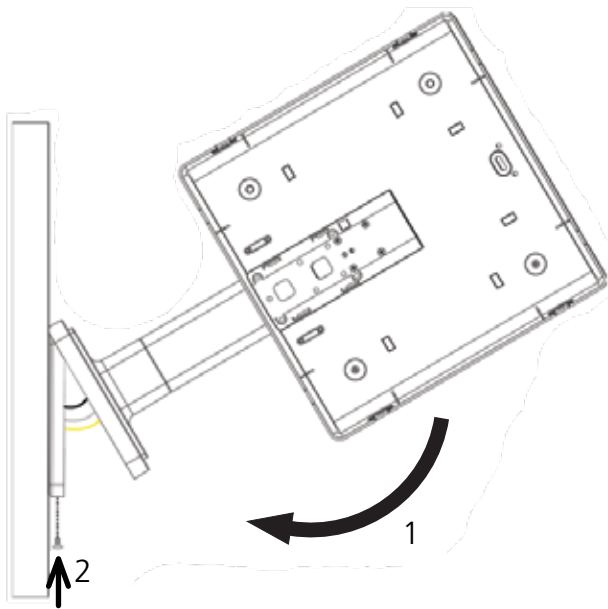


10) Attach the housings to each other using the four black M3.5-1.0x10 screws, two on each housing.

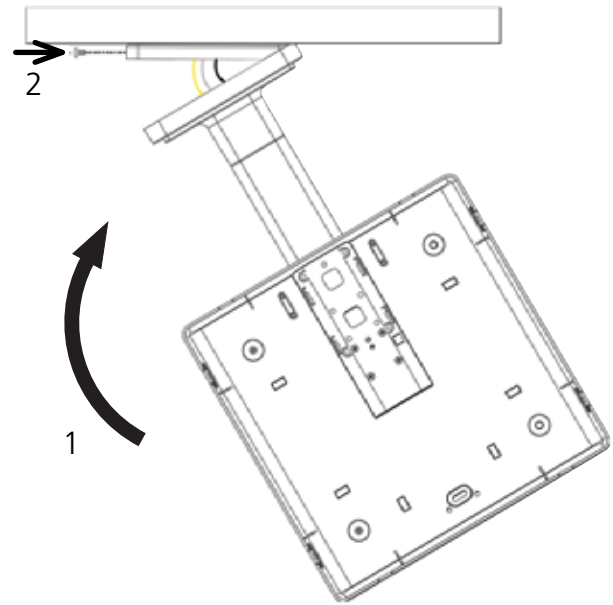


## Double Mount Installation - Square Clock - Battery Powered

11) Attach the base of the pole to the mounting plate, so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.

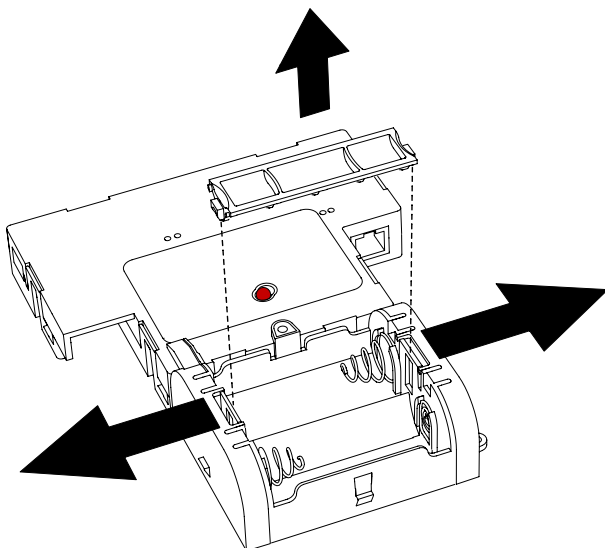


**WALL**

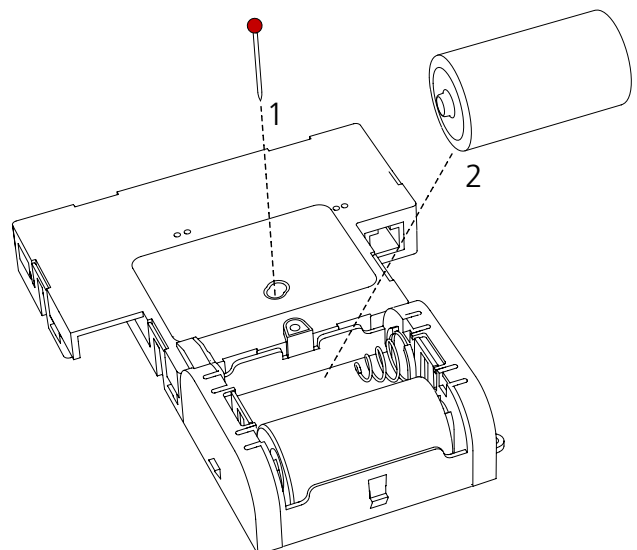


**CEILING**

12) Remove the back covers from the battery packs by pulling the two latches away to either side and sliding the cover out.

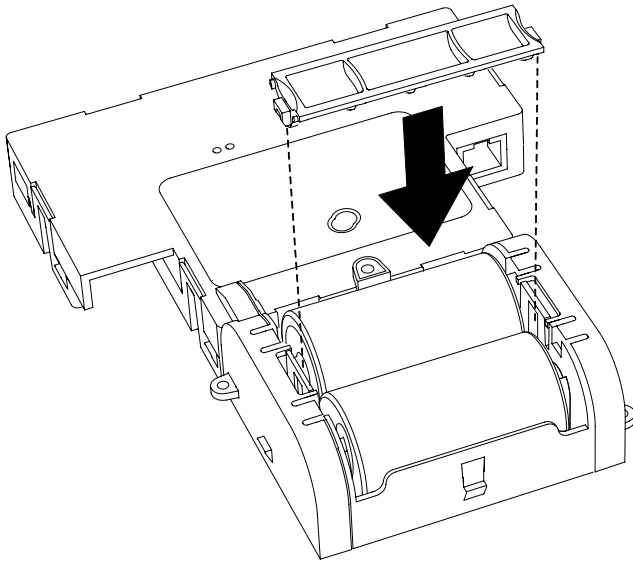


13) **First remove the gearbox pins**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.

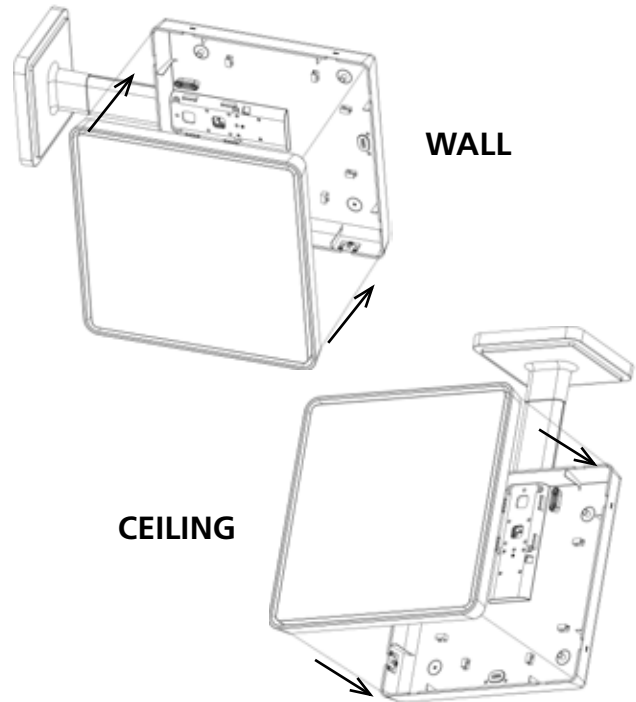


## Double Mount Installation - Square Clock - Battery Powered

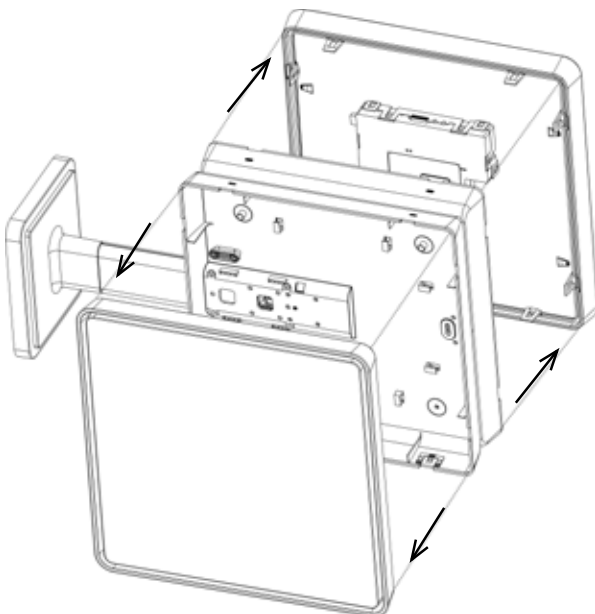
14) Place the cover back onto the battery pack. You should hear a snapping noise as the latches engage.



15) Slide both clocks back into their housings. You should hear a snapping noise as the latches reengage.



16) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.



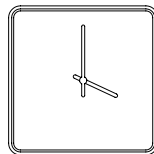
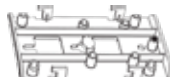
## Double Mount Installation - Square Clock - Locally Powered

### VERY IMPORTANT:

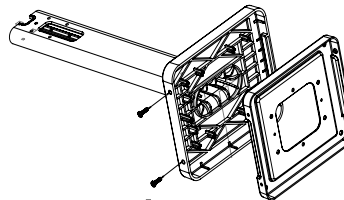
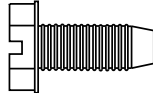
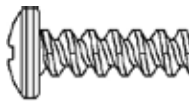



INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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
Square analog clock	2	
Mounting Piece-already attached to clock housing	2 (not used)	

### Included in Pole Kit (SAB-1BD-00S-0 or SAB-1BD-01S-0)

Dual-mount pole, including mounting plate.	1	
#10-32x3/8 green screw	1	
#8-32x7/16 screw	8	
M3.5-1.0x10 screw (black)	4	
Internal-tooth washer	4	
#6-32x1 screw	4	

Continued on next page

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

## Double Mount Installation - Square Clock - Locally Powered

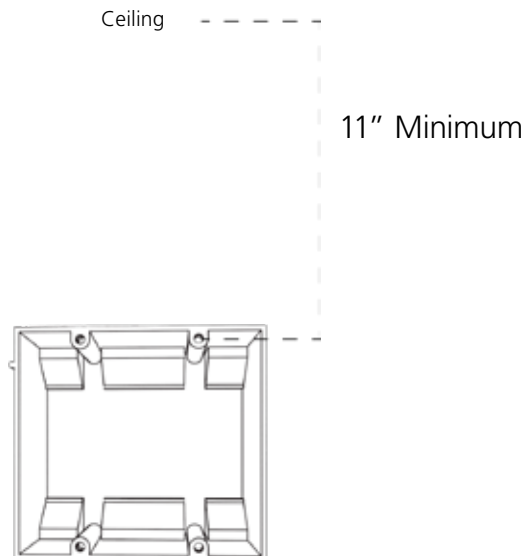
Included in Wiring Kit (A-WK-12-1V)

Description	Quantity	Picture
Power/grounding wires And connector	2	
#8x1.5 Self-tapping screw	4 (not used)	
Wall anchor	4 (not used)	
Included in Gang Box Kit (A-GB-MK-1)		
#6-32x1 screw	4 (not used)	
#6-19x3/8 screw	2 (not used)	

**PLEASE NOTE:** A user will also have to provide a Phillips-head screwdriver, a small flat-blade screwdriver, a drill with a 1/4 inch drill bit, a pencil, a double gang box, four wall anchors (must support 50 lbs, #8 screw size, 1.5" (3.8cm) screw length), four #8 screws for the wall anchors, any equipment needed to install the gang box, and any additional wiring needed to extend the power or ground cables.

## Double Mount Installation - Square Clock - Locally Powered

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.



2) Run power wiring to the gang box.

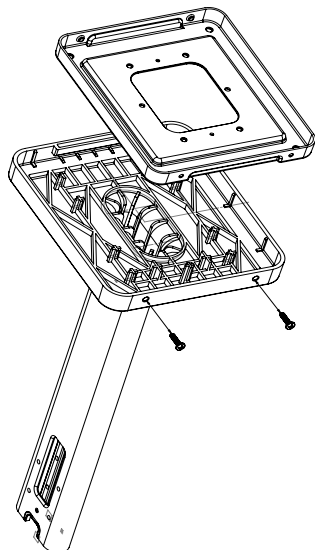
**For 24V power use the ORANGE and YELLOW wires  
For 110VAC or 230VAC power use the BLACK and WHITE wires**

### CHECK YOUR WIRING

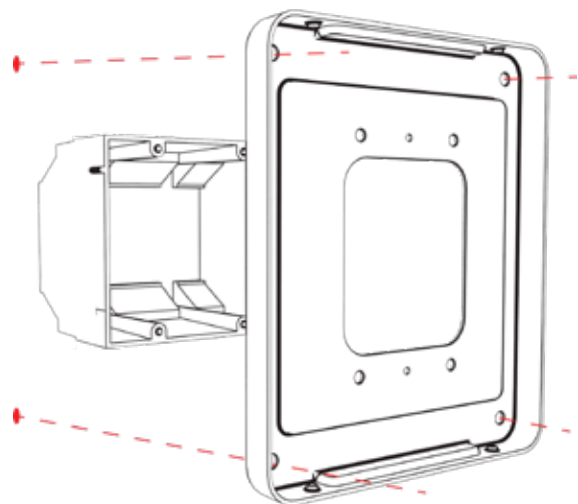
The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

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.



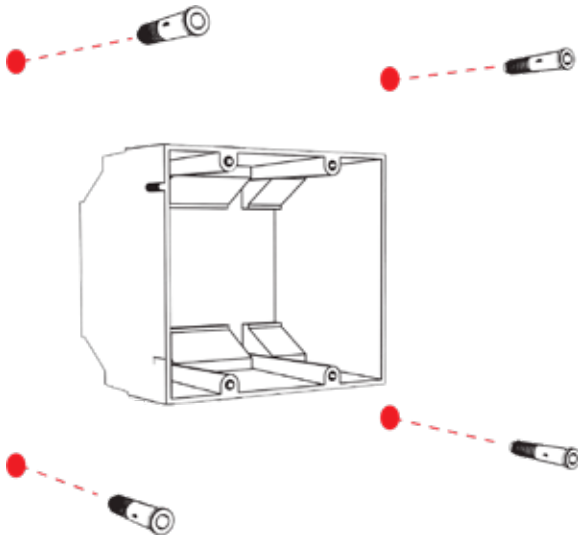
4) Attach the mounting plate to the gang box using only two of the four long, silver #6-32x1 screws. With the mounting plate as a guide, use the pencil to trace the locations of the four larger holes at the outer corners.



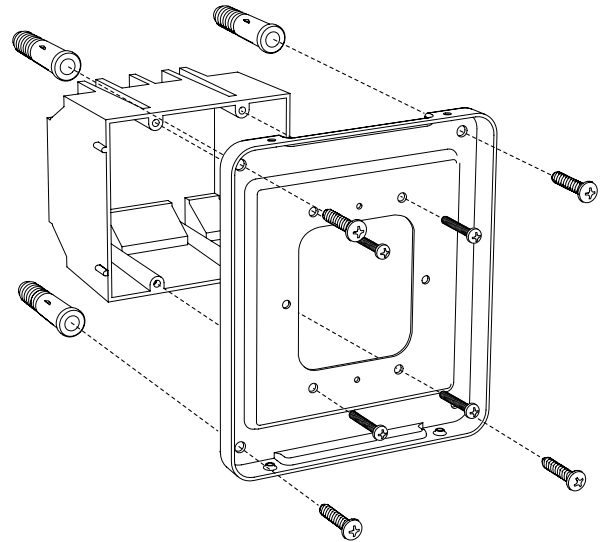


## Double Mount Installation - Square Clock - Locally Powered

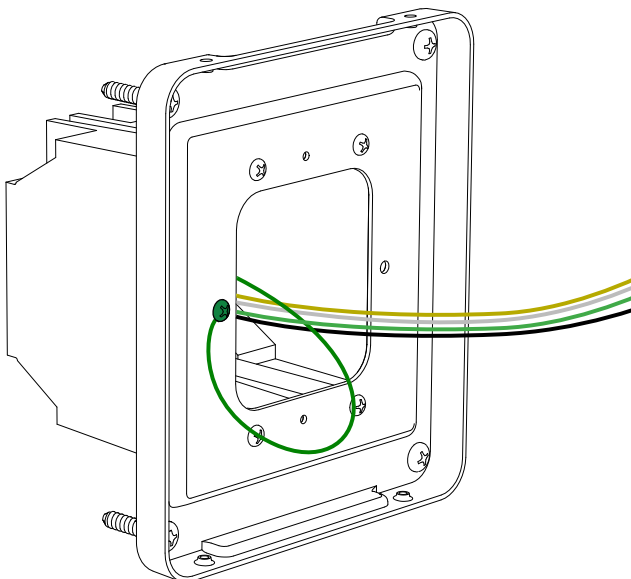
5) Remove the mounting plate and drill the four holes that were just traced. Insert the four wall anchors into the holes.



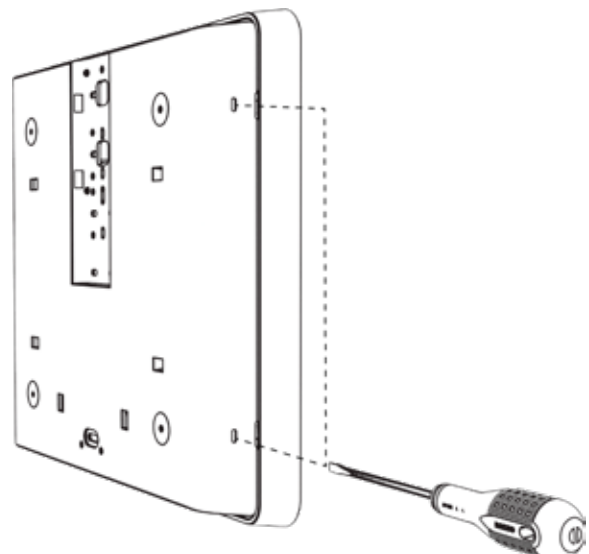
6) Reattach the mounting plate, this time using all four long, silver #6-32x1 screws, then insert the four #8 screws through the mounting plate and into the anchors.



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.

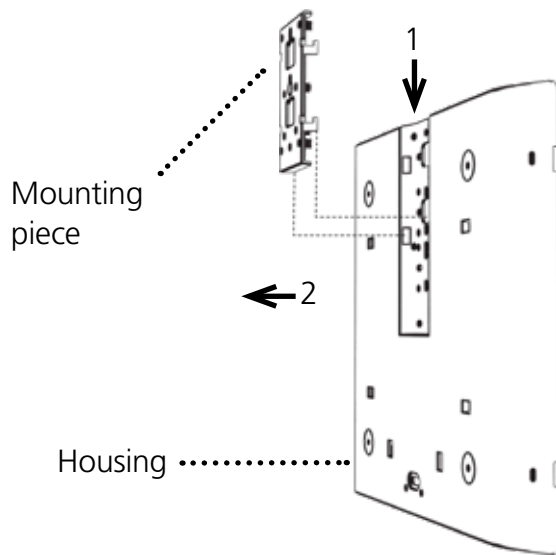


8) Detach the housing from the back of each clock. Do this by inserting a flat-blade screwdriver about 1/8 inch into each of the slot holes until the piece detaches. You may hear a snapping noise as the latches disengage.

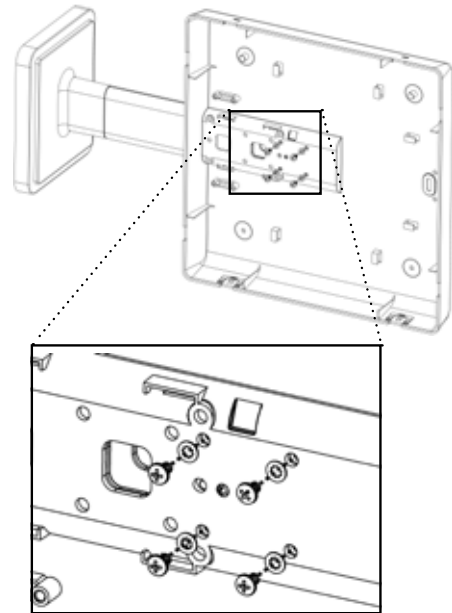


## Double Mount Installation - Square Clock - Locally Powered

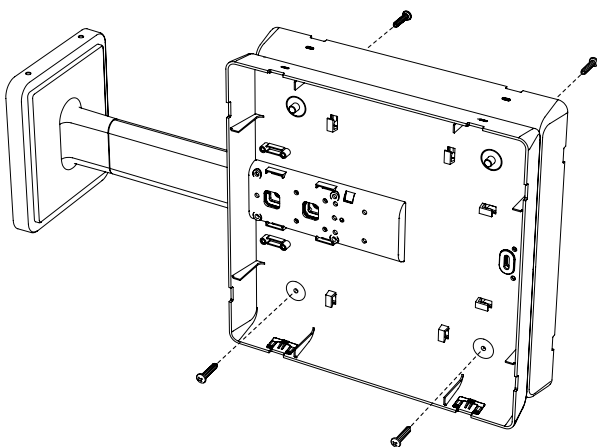
9) Release the mounting piece from the back of each housing by sliding it away from the center of the housing, then pulling it back and away from the housing. You will not need the mounting pieces later; either store them or throw them away at your discretion. **DO NOT THROW AWAY THE HOUSINGS.**



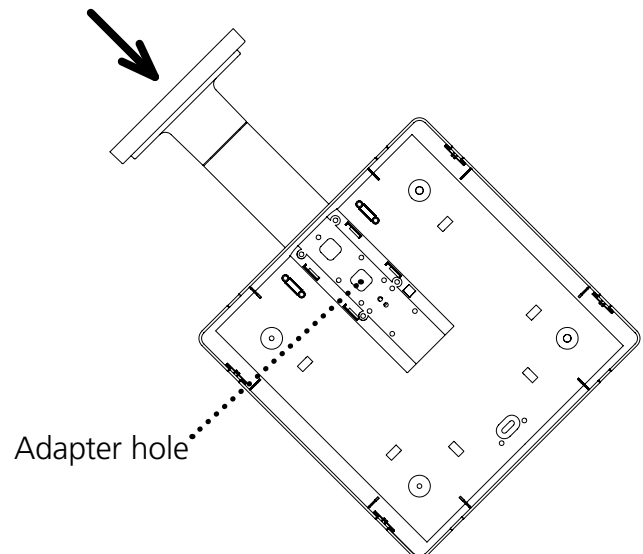
10) Attach both housings to the pole using four black 8-32x7/16 screws and four internal-tooth washers on each side.



11) Attach the housings to each other using the four black M3.5-1.0x10 screws, two on each housing.

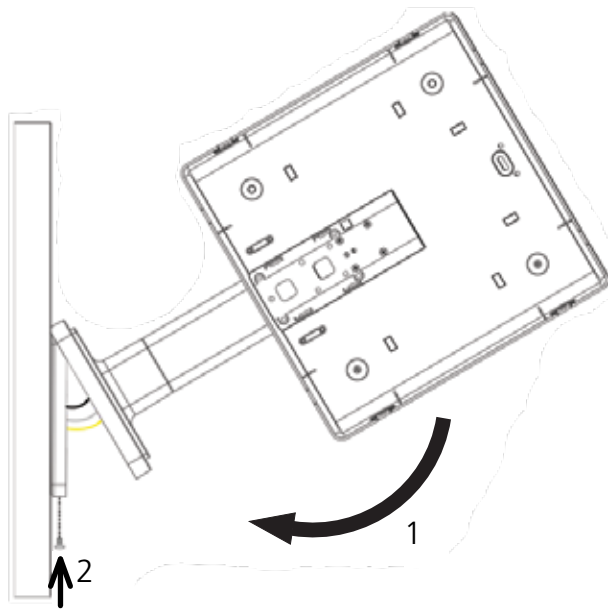


12) Thread at least fifteen inches (38.1cm) of wiring from the gang box through the bottom of the pole until each wire exits through the hole in the adapter.

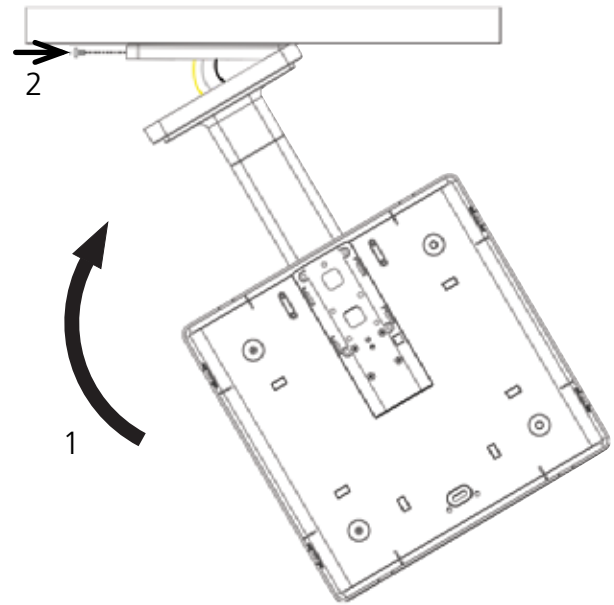


## Double Mount Installation - Square Clock - Locally Powered

13) Attach the base of the pole to the mounting plate, so that the lip is on the top of the base, and the holes for the screws are on the bottom of the base. Hang the base on the mounting plate, attach the wires from the bottom of the pole to the wires in the gang box, then screw the other side of the base onto the mounting plate using the two black screws you set aside before.



**WALL**



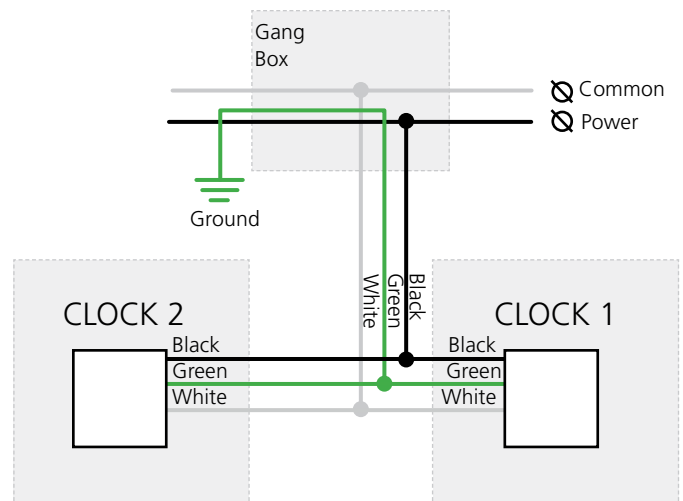
**CEILING**

14) Attach the power connectors to the wires you threaded through the pole.

- Attach the Hot wire to each connector's black wire.
- Attach the Common wire to each connector's white wire.
- Attach the Ground wire to each connector's green wire.

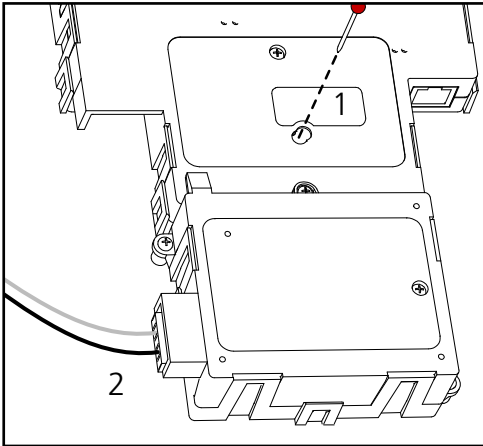
Consult the diagram on the left for additional help.

**For 24V power use the ORANGE and YELLOW wires**  
**For 110VAC or 230VAC power use the BLACK and WHITE wires**

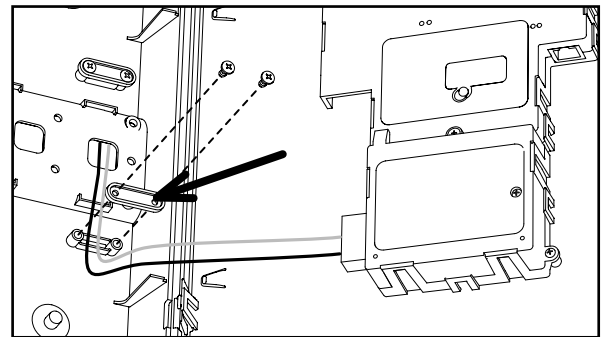


## Double Mount Installation - Square Clock - Locally Powered

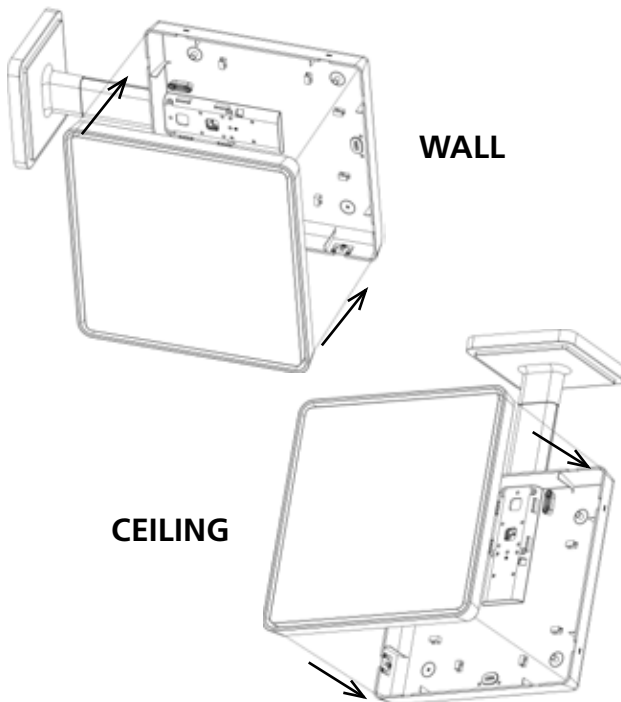
15) **First remove the gearbox pins**, then attach a power connector to the ports on the side of each movement.



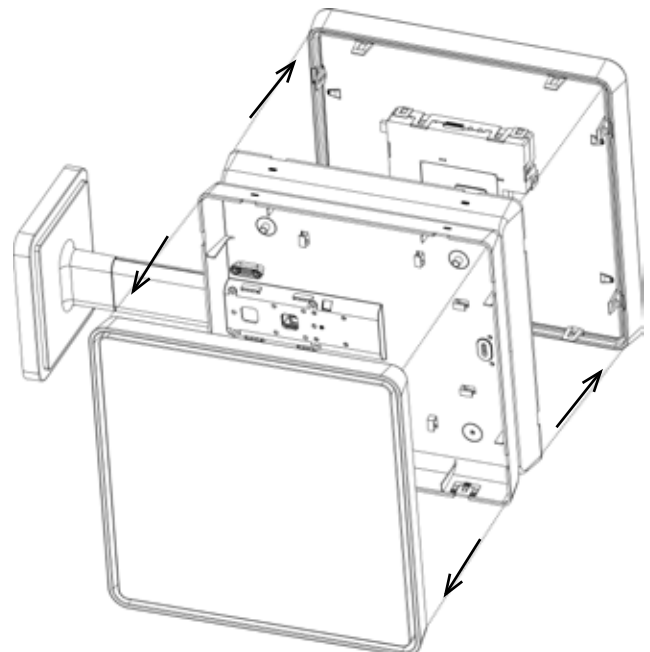
16) Loosen the strain relief by unscrewing the two screws. Slip any excess wiring through them, then tighten the strain relief by reinserting and tightening the screws.



17) Slide both clocks back into their housings. You should hear a snapping noise as the latches reengage.

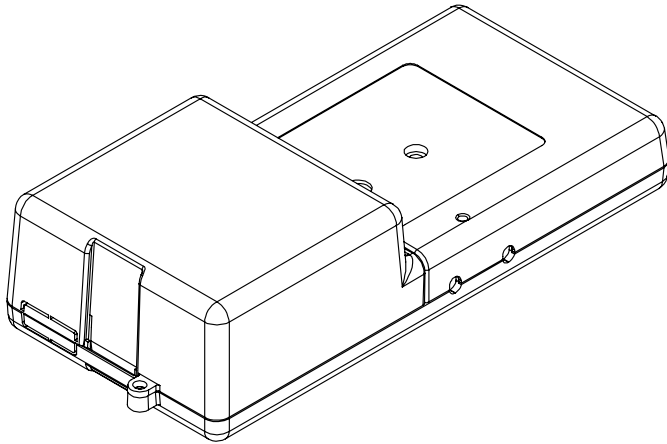


18) If you feel the need to detach the clock from the housing after the installation has been completed, use a flat-blade screwdriver on the four slots around the outside of the housing. You may hear a snapping noise as the internal latches disengage.

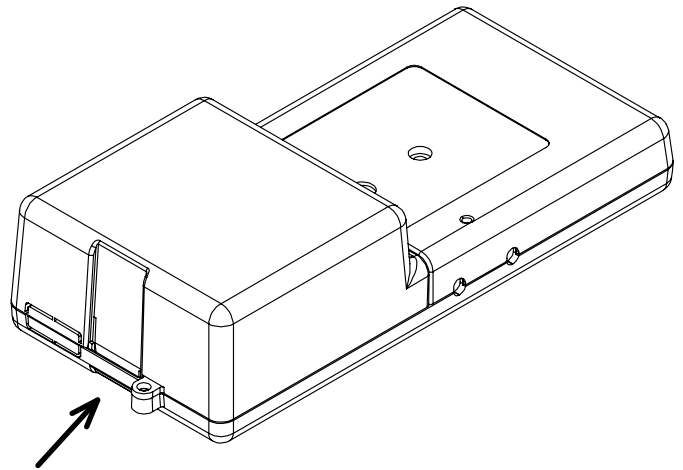


## Legacy Movement - Battery Powered

Earlier versions of the clock use a different movement design (pictured below). This section explains how to insert new batteries into the original movement.

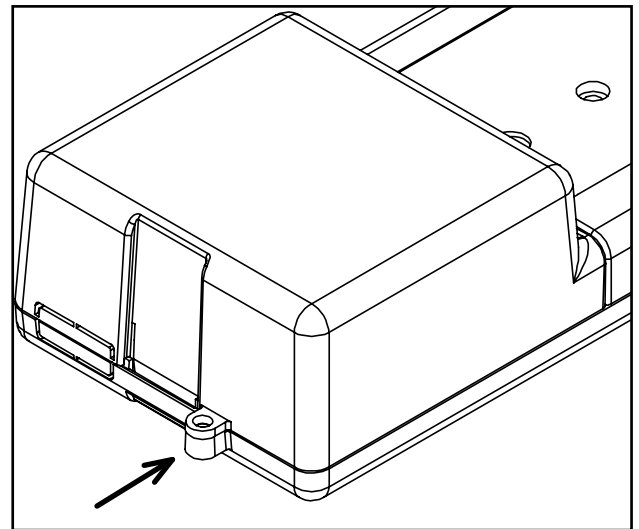
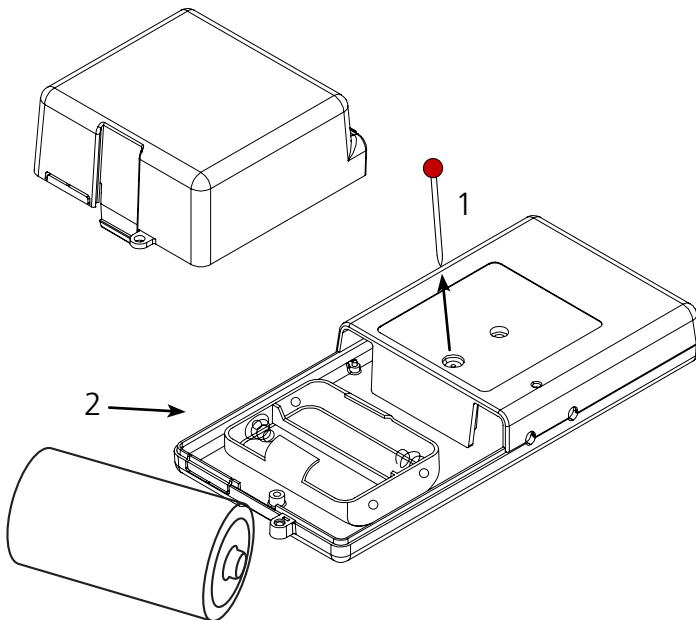


1) On the clock movement, press the battery cover locking tab and pull the cover away from the clock to access the battery pack.



2) **First remove the gearbox pin**, then insert the batteries into the clock. If the clock is within range of a powered transmitter, the hands should begin to move within a minute.

3) Place the cover back onto the battery pack. You should hear a snapping noise as the locking tab engages. Use the #4x5/16 Screw screw to prevent the cover from opening again.



---

## Frequently Asked Questions

---

### **VERY IMPORTANT:**

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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.

#### **What battery size do I use for the battery-powered clocks?**

Wireless battery-operated clocks use two “D” cell batteries. Duracell Procell D Alkaline Batteries have been found to produce the best results.

#### **What size utility/gang box is needed?**

A standard single gang box is required for wall mounting a locally-powered version of the clock. However, if you are installing a locally-powered double mount clock, then a standard double gang box is required.

#### **Will the wireless clock cause interference with other wireless devices?**

No. This model works on 915-928 MHz (2.4GHz for international variant) frequency-hopping technology, which allows the clock transmitters to avoid interfering with other devices operating on those frequencies.

#### **What advantages are there to having a locally-powered wireless clock instead of a battery-operated one?**

Locally-powered wireless clocks transmit synchronization signals every minute and can receive signals at any time. Battery-powered clocks receive and transmit signals once every two hours at most. Less time between synchronization signals means a greater guarantee of timekeeping accuracy.

#### **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 clock beyond the range of all other wireless clocks. 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.

#### **How long does it take for a clock to receive a signal?**

On initial power up, the clock will open its receiver for ten minutes until the signal is acquired. If everything is installed correctly and the transponder is open, the clock should get the signal within five minutes. If the user wants to manually cause the clock to do this, please refer to “Manually setting a connection between two or more wireless clocks” under the section “Synchronization system setup”. Once the clock has been synchronized, time correction is based on the clock’s power source and settings.

- If the clock is locally-powered, it will attempt to acquire a time signal at all times.
- If the clock is battery-powered and in Standard mode, it will attempt to acquire the time signal once every two hours.

---

## Frequently Asked Questions

---

- If the clock is battery-powered and in Economy mode, it will attempt to acquire the time signal once every four hours.

Whether or not a clock actually receives a signal is dependent on the settings of the signal source. For instance, a receiver on a locally-powered clock that uses a battery-powered 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 listens for a signal once every minute.

### **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 clock will run Diagnostic #4 followed by Diagnostic #2. After both tests are complete, it will show the time.

### **Can I manually set the time on the clock?**

No. Furthermore, attempting open the front crystal or moving the hands manually will damage the clock and void the warranty.

---

## Troubleshooting

---

### **VERY IMPORTANT:**

INSTALL, POWER, AND SET YOUR MASTER CLOCK OR REPEATER BEFORE POWERING THE SECONDARY WIRELESS CLOCKS

A Wireless 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.

#### **The clock is attached to the power source, but it is not running. What should I do?**

- a. Make sure that the movement's gearbox pin is removed.
- b. If a battery-powered model, check to be sure that the battery has been properly inserted into the battery pack and that the battery has the proper voltage.
- c. If a locally-powered model, check to make sure that the wiring in the connector complies with the installation instructions. This information is usually included in step #2.
- d. Make sure that the transformer is an isolated transformer if using a 24 volt model.
- e. Measure the voltage between the power (black) wire and the neutral (white) wire. The voltage between the white and black wires should measure 105-126 volts AC in the 115 volt model, 207-253 volts AC in the 230 volt model, or 21.5-26.5 volts AC in the 24 volt model.

*Failure to follow instructions c and d can result in a blown fuse.*

#### **The clock is not showing the right time. What should I do?**

Perform Diagnostic #1 to check the last time that a signal was received. Alternately, perform Diagnostic #3 to perform a mechanical test.

#### **How can it be determined if the clock is receiving a good signal?**

Perform Diagnostic #2.

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

You have two options:

1. Install a repeater or another analog clock nearby.
2. Install a locally-powered clock instead of a battery clock nearby.

#### **The clock is in a location with no signal. What do I do?**

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?**

First, check the battery voltage if the clock is battery powered. Low battery voltage may prevent the clock from operating correctly.



---

## Troubleshooting

---

If the clock is properly receiving power, follow the instructions listed under “Manually Setting a Connection between two or more wireless clocks”.

If this doesn't work, and you are using a battery clock, try “System Option 2” on page 7.

If the clock still does not correct, call technical support at (+1) 215.322.6063.

**I have mounted my Aluminum/Wood clock on the wall, but forgot to attach the release lever.  
How do I get it off the wall?**

Take a thin flathead screwdriver, thin ruler, or eyeglass screwdriver and insert the end between the clock and the wall. Press down on the latch until you are able to slide the clock off the mounting piece.

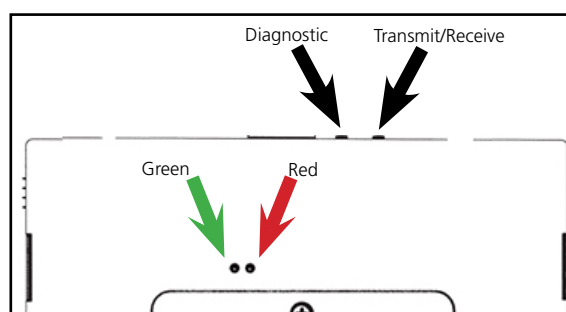
## Diagnostic Test #1 - Signal Information

The purpose of Diagnostic #1 is to determine how long it has been since the clock last received a synchronization signal.

Diagnostic #1 may be enabled by pressing the diagnostic button once. If the clock is performing this diagnostic, then a green LED on the movement will flash once every three seconds. It will continue to flash once every three seconds until the diagnostic is complete.

While in diagnostic mode, the hour and minute hands will continue to run normally. After three minutes, the Diagnostic will end and the clock will continue normal operation.

During the diagnostic, the second hand will display how long it has been since the clock received a synchronization signal.



Hour Hand Position	Time Since Clock Last Received Data
12	Within the last hour
1	Between 1 and 2 hours ago
2	Between 2 and 3 hours ago
3	Between 3 and 4 hours ago
4	Between 4 and 5 hours ago
5	Between 5 and 6 hours ago
6	Between 6 and 7 hours ago
7	Between 7 and 8 hours ago
8	Between 8 and 9 hours ago
9	Between 9 and 10 hours ago
10	Between 10 and 11 hours ago
11	Over 11 hours... may also signify that the clock is set to manufacturing default.

The second hand will remain on this number for 3 minutes, and then the clock will revert to displaying the accurate time.

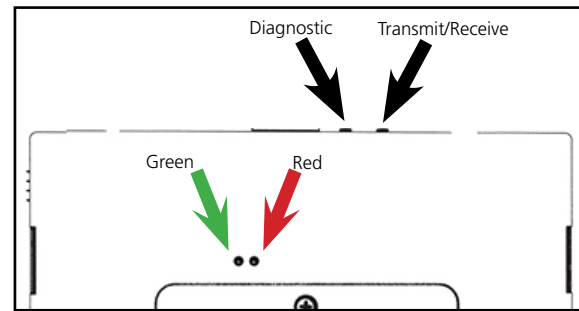
## Diagnostic Test #2 - Signal Quality

The purpose of Diagnostic #2 is to determine the quality of the synchronization signal.

Diagnostic #2 may be enabled by pressing the diagnostic button twice. If the clock is performing this diagnostic, then a green LED on the movement will flash twice every three seconds. It will continue to flash twice every three seconds until the diagnostic is complete.

During the diagnostic, the second hand will display the signal quality by pointing to a number from 1 to 10. On this scale, 10 indicates the best signal quality while 1 indicates poor signal quality.

While the second hand is indicating the signal quality, the hour and minute hands will continue to display the time. After three minutes, the Diagnostic will end and the second hand will return to displaying the time.



## Diagnostic Test #3 - Manufacturing Default

The purpose of Diagnostic #3 is to bring the clock back to 12:00:00 and reset any user-configured settings to the manufacturer's default.

Diagnostic #3 may be enabled by pressing the diagnostic button three times. If the clock is performing this diagnostic, then a green LED on the back will flash three times with a five second break between each flash. The LED will continue to flash green until the diagnostic is complete. The clock will confirm that the diagnostic is complete when the LED shines a different color.

If the LED is flashing red:

NUMBER OF FLASHES	ERROR MESSAGE
1,2	Error detected in second hand. Confirm that hands are not hitting each other, then repeat the test.
3,4,5	Error detected in the minute or hour hand. Confirm that hands are not hitting each other, then repeat the test.
6,7,8	Call tech support. (+1) 215.322.6063

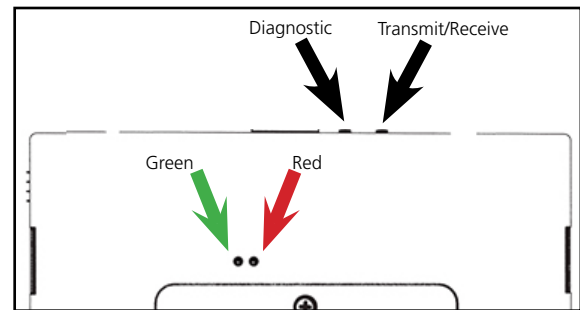
If the LED is a solid green, the test was completed successfully.

At the end of Diagnostic three, the clock hands will be set to 12:00:00. The clock will not resume normal operation until the power has been recycled.

## Diagnostic Test #3 - Manufacturing Default (ctd.)

While performing Diagnostic #3, an observer may see the clock do the following actions:

1. The clock moves the second hand to 00
2. The clock moves the second hand around to 00 again, to verify that the hand arrived after 60 pulses.
3. The clock moves the minute and hour hands to the next known position.
4. The clock moves the minute and hour hands around to the same position, to verify that the hands arrived after 720 pulses.
5. The clock moves the minute and hour hands to 12, so that the clock reads 12:00:00.
6. The clock tests frequency.



## Diagnostic Test #4 - Battery Voltage

The purpose of Diagnostic #4 is to check the voltage level of the batteries on a battery-powered clock.

Diagnostic #4 may be enabled by pressing the diagnostic button four times. If the clock is performing this diagnostic, then a green LED on the back will flash four times every three seconds. The output of the test is displayed by the second hand.

Some examples.

Second hand is on 2, the battery level is 2.2V

Second hand is on 5, the battery level is 2.5V

Second hand is on 9, the battery level is 2.9V

Second hand is on 10, the battery level is 3.0V

Second hand is on 11, the battery level is more than 3.0V

---

## 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 protection 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 900 MHz Model:**

This equipment must be installed by professional installers only. For precautionary measures, the FCC requires a minimum distance of 3 cm from the unit to constant human physical exposure. The antenna has a maximum gain of 5.14 dB.

### **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.

900 MHz FCC ID Number: R73LPA1

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