

Installation and Operation Manual

Power over Ethernet (PoE) Clocks

Analog and Digital Clock/Elapsed Time Indicator with Code Blue



All electrical power wiring connected to the Power over Ethernet Clocks must be installed by qualified persons in conformance with applicable national and local electrical codes. Improper installation of this equipment can result in electrical shock and fire.

The PoE clock should be installed in a secure location protected from:

- Physical damage
- Water, including condensation

Operation of this product in a manner inconsistent with the instructions in the manual may result in personal injury and damage to the product and will void the warranty.

American Time

140 3rd Street South, PO Box 707
Dassel, MN 55325-0707

Phone: **800-328-8996**

Fax: **800-789-1882**

american-time.com

Introduction	4
Specifications	5-7
Analog Clocks.....	5
Digital Clocks.....	6
Timer Control Station.....	6-7
Relay.....	7
Installation	8-12
Analog Clocks.....	8
Digital Clocks.....	9-11
Timer Control Station.....	12
Timer Control Station Operation	13-17
Switch Functions.....	13
General Operation	14-15
Code Blue.....	16
Important Considerations	17
Network Clock Connect	18-29
System Requirements.....	18
Installation.....	18
Login.....	18
Main Screen	19-20
Configuration.....	21-29
Clock Tab	21
Time Zone Tab.....	22
DST Tab.....	22-23
Network Tab	24
Buzzer Tab	24
Manuf Tab	24
Schedule Editor	25
Event Editor	26-27
Troubleshooting: DHCP	28-29
Troubleshooting: Clock Time	30
Appendix A: NIST Time Servers	31
Appendix B: Supported Time Zones	31
Appendix C: Buzzer/Relay Scheduling Examples	32-33
Appendix D: Brightness Control Scheduling Example	34-35
Appendix E: Timer Control Station Operator Flowchart	36

Power over Ethernet (PoE) provides an accurate synchronized time source. PoE and Simple Network Time Protocol (SNTP) are used to make installation and setup as simple as possible. All you need to do is connect the clock to a PoE enabled Local Area Network (LAN) Ethernet drop.

PoE

Power over Ethernet (PoE) describes a system that passes electrical power, along with data, through Ethernet cabling. Power may come from a power supply within a networking device such as a PoE switch or it may be injected into the Ethernet cable using a midspan injector.

There are several advantages for using PoE. PoE eliminates the need to run AC power cables for certain devices. Instead, the more cost effective category 5 or 6 cable is run for PoE devices. Also, since PoE is symmetrically distributed, the power source may be determined after the cables are ran.

PoE clocks require connection to a PoE enabled LAN. In a typical installation, a PoE switch or a PoE injector would be used to power your PoE clock.

Network

These Power over Ethernet Clocks are plug and play on networks with Dynamic Hosting Configuration Protocol (DHCP). A NIST time server is used for the default time server but may be changed using the Network Clock Connect application or the configuration web page.

The clocks may also be configured using static IP addresses.

inCloud Management Portal

PoE clocks are configured for use with American Time's inCloud Management Portal. With the inCloud management portal you can set up, monitor and manage your American Time network clocks easily and from anywhere. inCloud is a cloud-based management interface, featuring a status dashboard for monitoring your clocks, configuration profiles to ensure clocks are utilizing the same settings, and network/connectivity information.

The designated site manager for your location should have received a welcome e-mail with a link to inCloud and initial log-in information after placing the order for your clocks. Logging in to inCloud will be required to complete setup of the clocks; ensure that you or your site manager is available during the configuration and installation process.

To log in to inCloud, visit incloud.american-time.com and log in using the credentials provided in your American Time welcome e-mail.

NOTE: For non-inCloud customers, clocks can still be configured using the Network Clock Connect application described in this manual.

Power over Ethernet Analog Clocks

Available in the following configurations:

PEXXXXXXXXB – Buzzer version

PEXXXXXXXX – Analog Version

Note: The X's are model dependent

Optional Products:

PoE Injector, single port – TMA200

USB Drive with Network Clock Connect Software – H004167B-POE

Security Bracket for analog clocks (part number varies by size)

Features:

- Time Zone Management
- Supports up to 10 SNTP servers for redundancy
- Supports Daylight Saving Time
- Power over Ethernet (IEEE802.3af)
- DHCP or Static IP addressing
- Network Clock Connect configuration
- Status LED indicator
- Scheduling (Buzzer version) - maximum of 100 scheduled events

Specifications:

Dimensions: Varies by model

Power Consumption: PoE, IEEE802.3af compliant, 1W

Operating Temperature: 32°F to 104°F (0° to 40°C)

Operating Humidity: 95% maximum, non-condensing

Accuracy: ±1 second

Buzzer Option Specifications:

Sound Level: 65dBA at 10 feet

Power over Ethernet Digital/Calendar Clocks

Available in the following configurations:

PGEXXXXXE- Base version

PGEXXXXXEB - Base w/Buzzer

PGEXMXXXXE - Base w/Calendar

PGEXMXXXXEB - Base w/Calendar & Buzzer

Note: The X's are model dependent

Optional Products:

PoE Injector, single port – **TMA200**

USB Drive with Network Clock Connect Software – **H004167B-POE**

Timer Control Station – **ATSTCS**

Double Dials – (Ceiling or Wall)

Features:

- Time Zone Management
- Supports up to 10 SNTP servers for redundancy
- Supports Daylight Saving Time
- 12/24 Hour Mode with PM indicator
- Power over Ethernet (IEEE802.3af)
- DHCP or Static IP addressing
- Network Clock Connect configuration
- Programmable Brightness Controls (High, Low, Sleep, Off)
- Elapsed Time Indication (ETI) with Code Blue
- Countdown Timer
- Scheduling (Buzzer/Relay) - maximum of 100 scheduled events
- Calendar Clock Display Modes:

MM:DD:YY	DD:MM:YY	YY:MM:DD	M:D:YY	D:M:YY	YY:M:D
----------	----------	----------	--------	--------	--------

- Configurable date/time toggle durations

Specifications:

Dimensions:

Digital Clocks: 2.5" display: 4 & 6 digit - 12.250" x 5.1875" x 2.5"d

4" display: 4 digit - 12.250" x 6.8750" x 2.5"d

4" display: 6 digit - 17.250" x 6.8750" x 2.5"d

ATSTCS: Timer Control Station: 4.63"h X 4.56"w X 1.25"deep

Weight: Digital Clock: Varies by model

ATSTCS Timer Control Station: 0.27 lb.

Power Consumption: PoE, IEEE 802.3af compliant

Size	Digits	Color	Power average	Power Max
2.5"	4	Green	5.0W	6.0W
		Red	5.5W	7.0W
	6	Green	6.0W	7.0W
		Red	6.5W	8.0W

Size	Digits	Color	Power average	Power Max
4"	4	Green	5.0W	6.0W
		Red	5.5W	7.0W
	6	Green	6.0W	7.0W
		Red	6.5W	8.0W

Distance of ATSTCS from Digital Clock/Timer: 30-ft maximum with 22 AWG stranded wire with minimum 1/32” thick insulation

Code Blue Circuits: 3.0mA. max. @ 12vac/vdc-30vac/vdc

Operating Temperature: 32°F to 104°F (0° to 40°C)

Operating Humidity: 95% maximum, non-condensing

OPERATION

Modes Available: 12 hour or 24-hour synchronized. Incrementing timer with programmable preset value and start/stop capability. Decrementing timer with programmable preset value and start/stop capability. Code Blue incrementing timer

Accuracy: ±1 second

Indications: ATSTCS Control Station: 2 second audible alarm

Buzzer Option Specifications:

Sound Level: 65dBA at 10 feet

Relay Option Specifications:

Dry contact closure

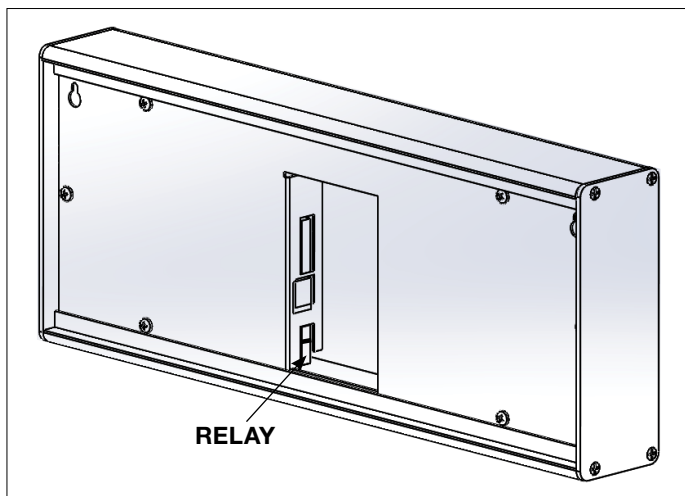
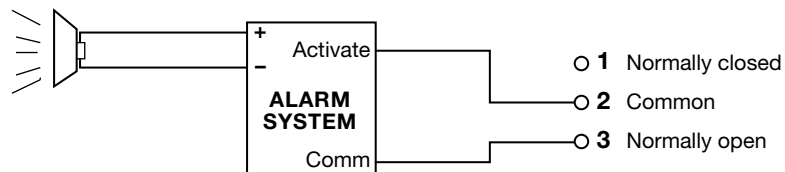
Wiring for the internal relay closure:

Maximum Voltage: 60vdc, 125vac

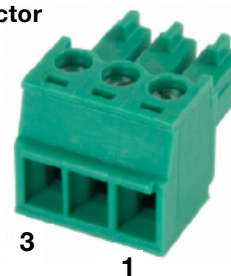
Maximum Switched Current: 1A

Maximum Carrying Current: 1A

Relay Connection Diagram



Connector Relay



Before installing, verify the network infrastructure with the Network Administrator. The Power over Ethernet (PoE) power solution and Dynamic Host Configuration Protocol (DHCP) settings should be determined. The PoE clock locations and cabling routes should also be determined prior to installation.

1. Apply power to the clock by connecting a CAT 5 (A) or higher Ethernet patch cable from a PoE switch (Fig. 1) or single injector (Fig. 2) to the PoE receiver (F).
 - PoE Switch: Check with the Network Administrator for infrastructure needs. This part is not supplied by American Time.
 - PoE Injector (TMA200): This is an optional power source that may be purchased from American Time
2. The Status LED (B) will indicate the clocks status as follows:
 - **Flashing Red:** Attempting to acquire an IP address using DHCP
 - **Continuous Red:** IP address successfully acquired
 - **Flashing Orange:** Attempting SNTP sync
 - **Continuous Orange:** SNTP sync failed
 - **Flashing Green:** Communicating with inCloud management portal
 - **Continuous Green:** Successful SNTP sync

Note: When a DHCP network is not present at initial start-up, the PoE clock will default to a random Static IP in the range of 169.254.1.0 to 169.254.254.255. The IP address may be reset by restoring the clock factory defaults by holding in the Reset Button (D) for 10 seconds and releasing. Both Status and Buzzer LEDs will flash for 5 seconds to confirm the defaults setting. Please reference the DHCP troubleshooting section if you are experiencing DHCP issues.

3. The Buzzer LED (C) designates if the Buzzer is enabled. The Buzzer is an optional feature.
4. Place the clock on the wall using the keyhole hanger (E) on the back of the clock or the optional security bracket.

Note: If hanging your clock over an Ethernet jack, see Figure 3.

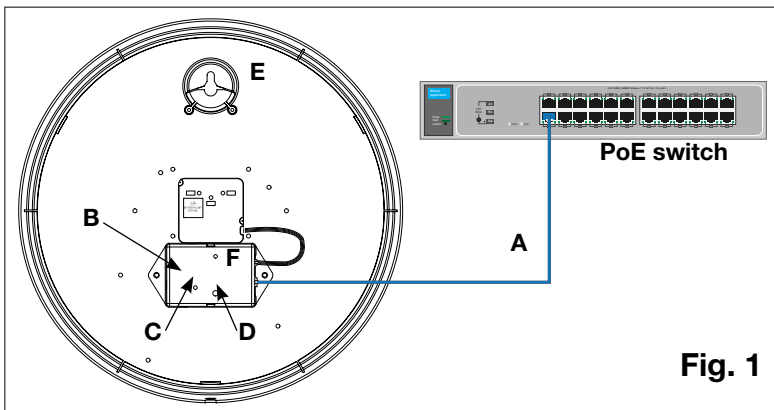


Fig. 1

A=PoE connection (CAT 5 or higher Ethernet patch cable) B=Status LED
C=Buzzer LED D=Reset Button E=Keyhole Hanger F=PoE Receiver

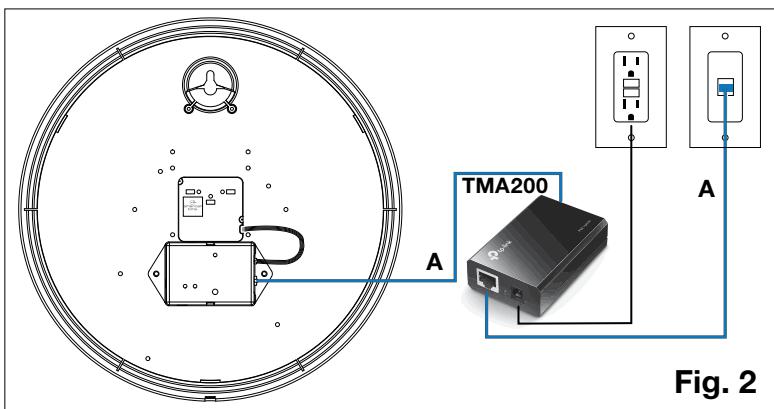


Fig. 2

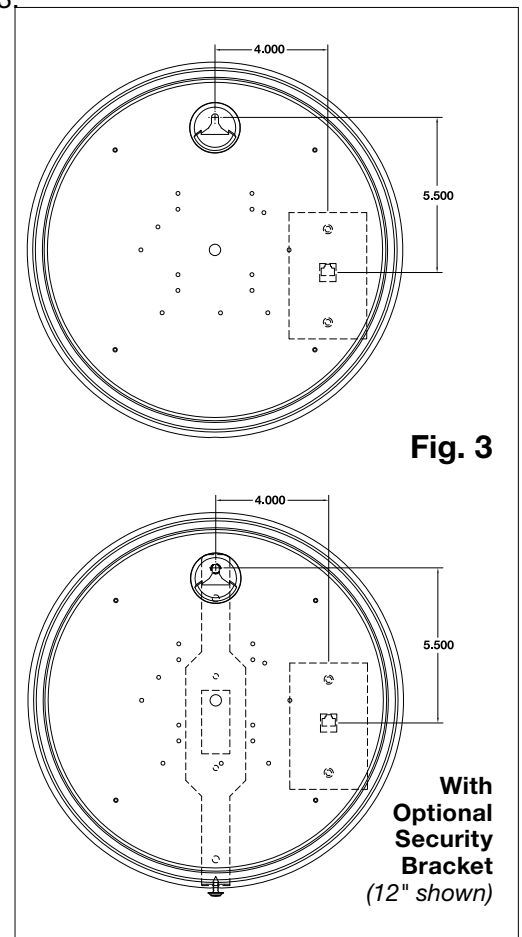


Fig. 3

With
Optional
Security
Bracket
(12" shown)

Before installing, verify the network infrastructure with the Network Administrator. The Power over Ethernet (PoE) power solution and Dynamic Host Configuration Protocol (DHCP) settings should be determined. The PoE clock locations and cabling routes should also be determined prior to installation.

- Apply power to the clock by connecting a CAT 5 (A) or higher Ethernet patch cable from a PoE switch (Fig. 1) or single injector (Fig. 2) to the rear panel of the PoE clock. The time should display in less than one minute.
 - PoE Switch: Check with the Network Administrator for infrastructure needs. This part is not supplied by American Time.
 - PoE Injector (TMA200): This is an optional power source that may be purchased from American Time
- Upon startup the clock will scroll the FW version followed by a brief digit check where all segments are illuminated and then flashing colons and dashes while obtaining an IP address and SNTP time.

Note: When a DHCP network is not present at initial start-up, the PoE clock will default to a random Static IP in the range of: 169.254.1.0 to 169.254.254.255 and display "rIP".

If there is a network or time server issue on a cold start the Clock will continuously flash colons and dashes.

Note: The IP address set to the clock can be checked by momentarily disconnecting the ethernet cable. Once reconnected, the clock IP address will scroll quickly across the display.
- Place the clock on the wall using the keyhole hanger (C) on the back of the clock. A mounting template is included with the Quick Start Installation Guide.

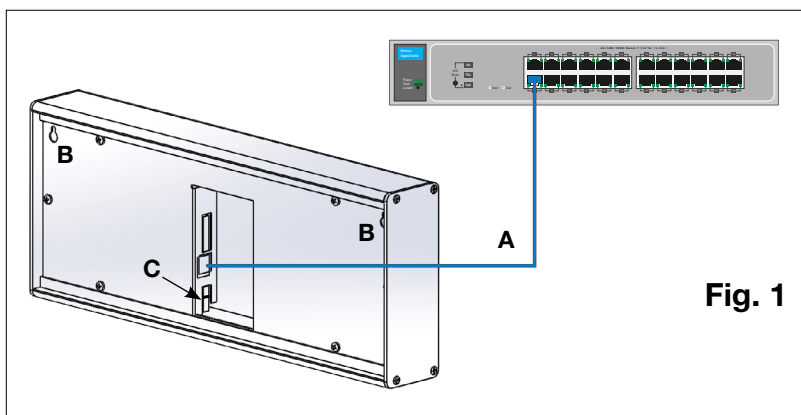


Fig. 1

A=PoE connection (CAT 5 or higher Ethernet patch cable)

B=Keyhole hanger C=Relay

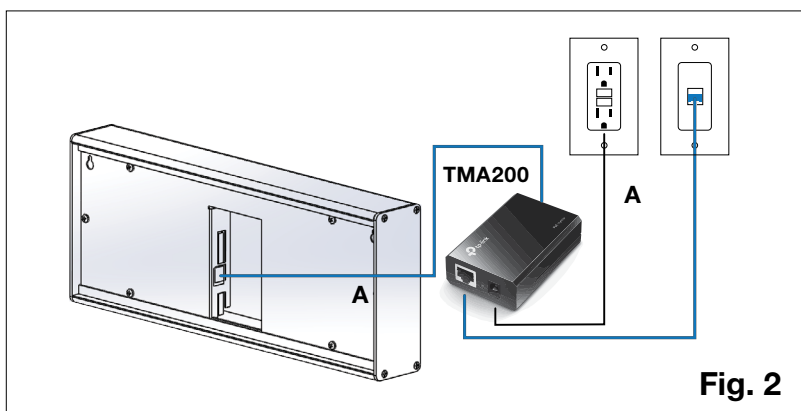
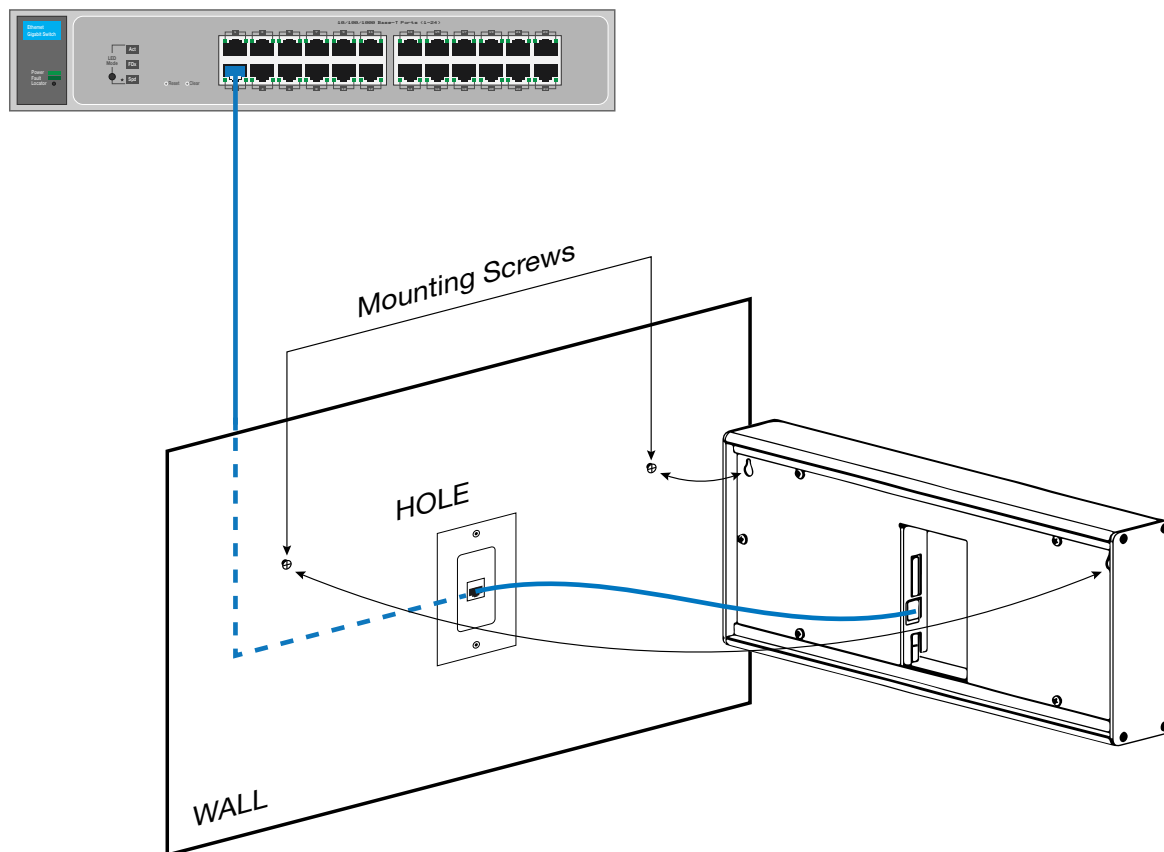


Fig. 2

Digital Single Display Surface Mounting

CAUTION: RISK OF ELECTRICAL SHOCK - Disconnect and lock out power to the electrical box before installing or servicing the clock.

1. Use mounting template shown at the bottom of the **Quick Start Installation Guide** to place mounting screws in the wall.
2. Run CAT 5 or higher Ethernet patch cable from the PoE switch or PoE injector to the clock enclosure.
3. Connect the patch cable to the clock. Route field wiring away from sharp projections, corners and internal components.
4. Hang clock on mounting screws.
5. Confirm correct operation of the clock.

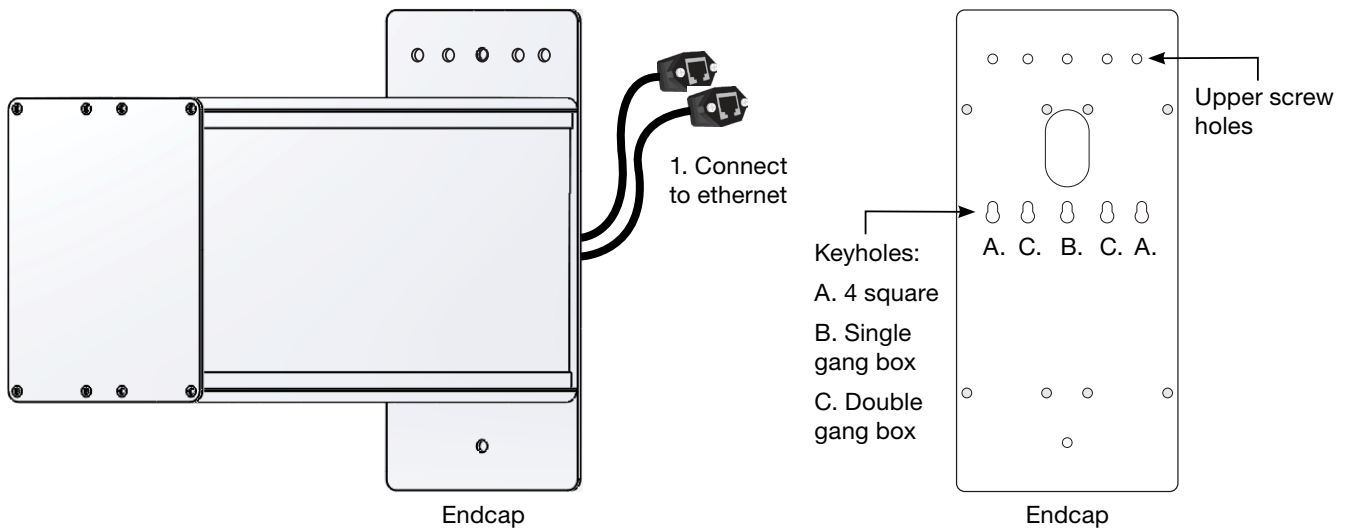


Digital Double Display Mounting

CAUTION: RISK OF ELECTRICAL SHOCK - Disconnect and lock out power to the electrical box before installing or servicing the clock.

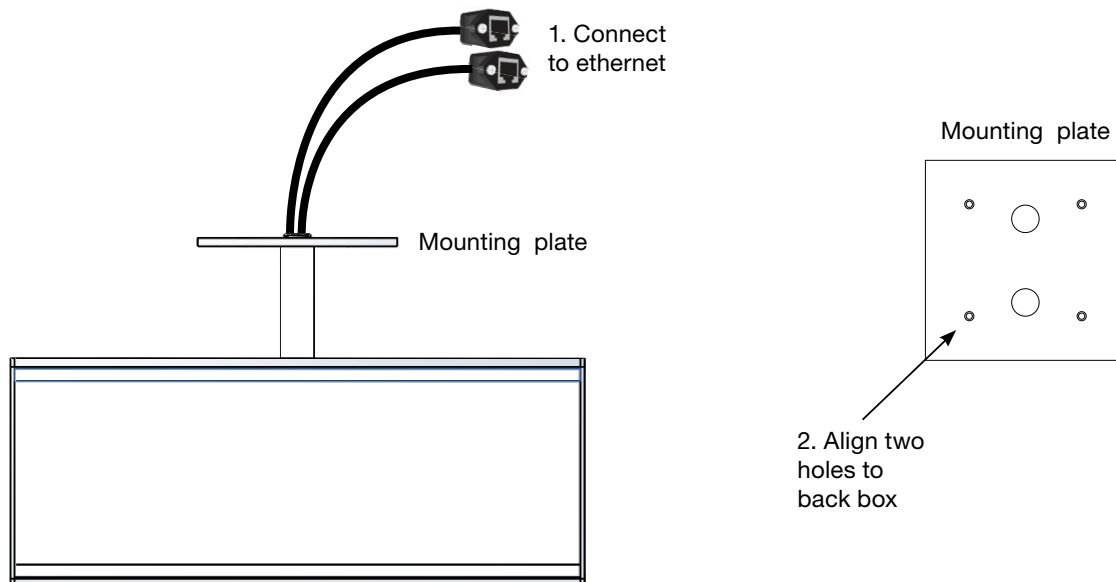
Wall Mount

1. Make patch cable connection to the digital clock.
2. Using #8-32 x 3/4" screws, hang double dial enclosure assembly according to one of the following:
 - 4 square junction box – install lower screw into back box, hang clock by keyhole, install upper screw
 - Single gang box – install lower screw into back box, hang clock by keyhole, install upper screw
 - Double gang box – Install two lower screws into back box, hang clock by keyhole, install upper screws



Ceiling Mount

1. Make patch cable connection to the digital clock.
2. Using two #8-32 x 3/4" screws, hang double dial enclosure assembly using holes onto 4" square back box.



The optional **Timer Control Station** can be mounted to a double gang box, 1½ inch deep or deeper. The Control Station can be mounted up to 30 feet away from the Digital Clock/Timer. The recommended minimum interconnecting field wire size is #22.8 AWG stranded wire.

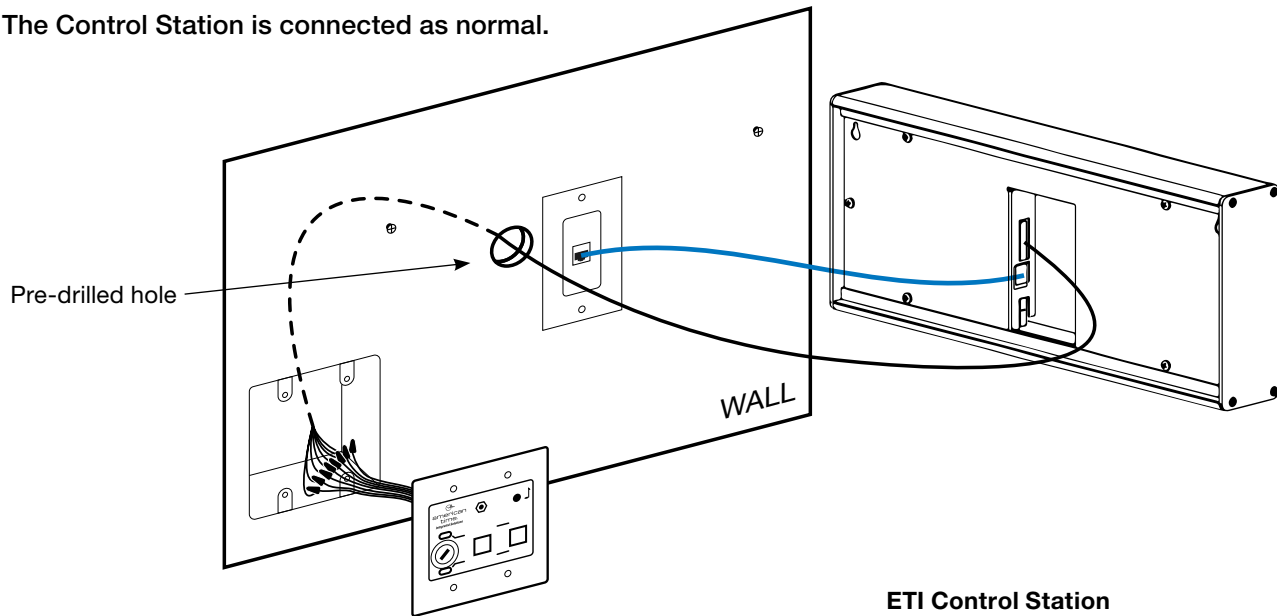
Ensure that installation conforms to the **National Electrical Code** and local wiring codes.

CAUTION: Electric Shock Hazard! Ensure that **NO** electrical power is present on any wire before installation.

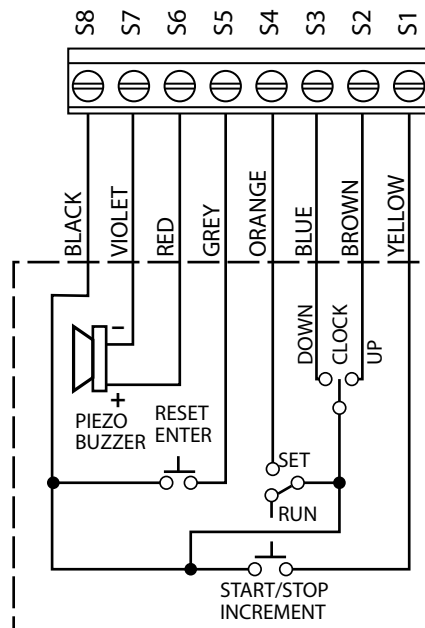
1. Pull interconnecting field wires into the double gang box.
2. Connect field wiring interconnecting the Timer Control Station with the Digital Clock/Timer to the appropriate wires of the Control Station. See wiring detail below.
3. Mount the Control Station to the double gang box using the machine screws provided.
4. Terminate

Digital Clock/Timer Code Blue wiring using Control Station

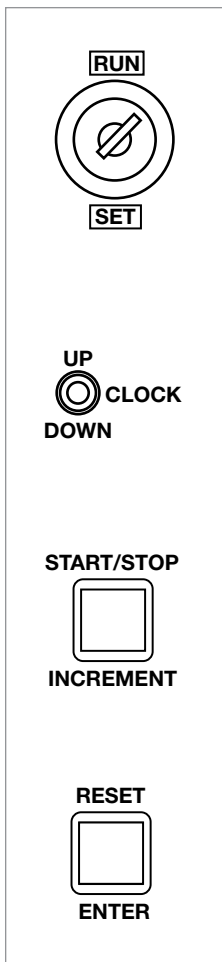
The Control Station is connected as normal.



ETI Control Station



1. START/STOP/INCREMENT – Yellow Wire
2. ETI UP – Brown Wire
3. ETI DOWN – Blue Wire
4. SET/RUN – Orange Wire
5. RESET/ENTER – Grey Wire
6. 12V – Red Wire
7. PIEZO – Violet Wire
8. GND – Black Wire



Run/Set Switch -

- **Set Position:** This position is used to set a preset up or down counting time (Timer). It is also used to reset the Code Blue timer.

This position is not used for setting time. The controller will allow you to enter in a 12/24 hour mode and set a time. However, the time will be controlled and updated by the Wi-Fi receiver.

- **Run Position:** This position is used to permit Clock/Timer to operate.

Up/Clock/Down Switch -

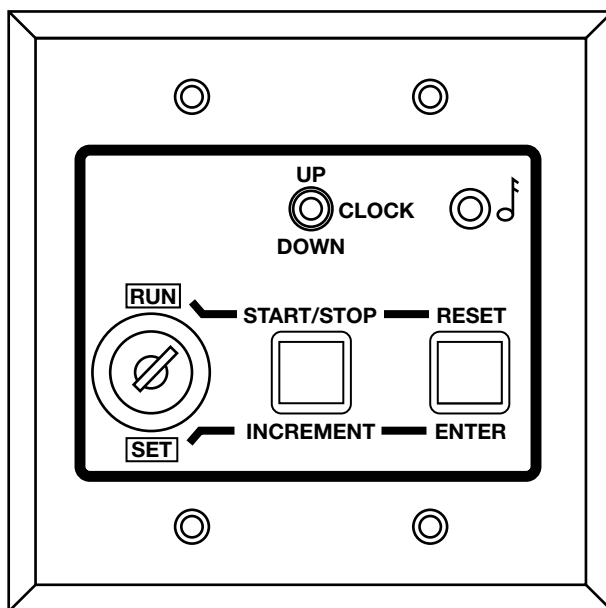
- **Up Position:** This position is used to choose up counting elapsed timer mode.
- **Clock Position:** This position is used to choose clock mode.
- **Down Position:** This position is used to choose down counting elapsed timer mode.

Start/Stop/Increment Switch -

- This button is used to Start/Stop, and resume timer count, when **Run/Set** Switch is in the **Run** position (Code Blue timer can only be stopped).
- This button is also used to increment/advance the number value being set when the **Run/Set** Switch is in **Set** position.

Reset/Enter Switch -

- This button is used to return a timer (excluding the Code Blue timer) to the beginning of its count, when the **Run/Set** Switch is in **Run** position.
- This button can also be used to select a field (i.e. format, minute digits, hour digits) when the **Run/Set** Switch is in **Set** position.



Powering Up

Before applying power, place the **SET/RUN** switch to the **RUN** position and the **UP/DOWN/CLOCK** switch to the **CLOCK** position.

Apply power to the unit. The displays may rotate during the power on self test and then a version number will appear for a few seconds. Once the receiver inside the clock completes an SNTP time sync, the clock will display and begin keeping time.

Setting Time

Setting of the time is not needed for the digital clock or timer control station. The time information is automatically updated by the Wi-Fi receiver. The 12- or 24-hour mode option is configured by the display settings of the Wi-Fi receiver.

The ATSTCS timer control station will allow the user to set a 12- or 24-hour mode and time when the **SET/RUN** switch is in the **SET** position. However, the time and the 12- or 24-hour format will be overridden by the Wi-Fi receiver settings after it updates the time. Set the **SET/RUN** switch to the **RUN** position and the **UP/DOWN/CLOCK** switch to the **CLOCK** position to return the clock display.

Setting the Up Counter Preset Time

If you want to use the alarm and hold feature with the **UP** timer, you will need to set a preset time for the UP timer.

Set the **UP/DOWN/CLOCK** switch to the **UP** position.

Set the **SET/RUN** switch to the **SET** position. The hours digits will be flashing.

Using the **INCREMENT** switch, set the desired hours for the preset time, then press **ENTER**. The minutes digits will now be flashing.

Set the desired minutes the same way, then press **ENTER**. The seconds digits will then be flashing.

Set the desired seconds the same way, then press **ENTER**. The display will then flash **done**.

Set the **SET/RUN** switch back to the **RUN** position.

n Note: A preset of **00:00:00** allows the digital clock/timer to be used as a standard elapsed timer with a maximum elapsed time of **30:59:59**.

Up Counter Elapsed Time Operation

Once the desired preset value has been set, the unit is now ready to function as an UP count elapsed timer.

Be sure the **SET/RUN** switch is in the **RUN** position.

Set the **UP/DOWN/CLOCK** switch to the **UP** position.

Press **RESET** to display **00:00:00**.

Press the **START/STOP** switch to begin counting elapsed time.

Press the **START/STOP** switch again to stop and hold the count.

Press the **START/STOP** switch again to resume elapsed time counting.

To start over press **RESET** to display **00:00:00** again.

When the timer reaches the preset value, it will sound the audible alarm for 2 seconds and hold the time count.

During an UP count elapsed time operation, you can display any of the other time functions using the UP/DOWN/CLOCK switch as desired.

Setting the Down Counter Preset Time

If you are using the clock as a DOWN counting elapsed timer, you will need to set a preset time to count DOWN from. In this mode, the alarm and hold will occur at 00:00:00.

Set the **UP/DOWN/CLOCK** switch to the **DOWN** position.

Set the **SET/RUN** switch to the **SET** position. The hours digits will be flashing.

Using the **INCREMENT** switch, set the desired hours for the preset time, then press **ENTER**. The minutes digits will now be flashing.

Using the **INCREMENT** switch, set the desired minutes for the preset time, then press **ENTER**. The seconds digits will then be flashing.

Using the **INCREMENT** switch, set the desired seconds for the preset time, then press **ENTER**. The display will then flash **done**.

Set the **SET/RUN** switch back to the **RUN** position.

Down Counter Elapsed Time Operation

Once the desired preset value has been set, the unit is now ready to function as a DOWN count elapsed timer.

Set the **UP/DOWN/CLOCK** switch to the **DOWN** position.

Be sure the **SET/RUN** switch is in the **RUN** position.

Press **RESET** to display the preset value which was set previously.

Press the **START/STOP** switch to begin counting down elapsed time.

Press the **START/STOP** switch again to stop and hold the count.

Press the **START/STOP** switch again to resume elapsed time counting.

To start over press **RESET** to display the preset value again.

When the timer reaches 00:00:00, the timer will stop counting and the audible alarm will sound for 2 seconds.

During a DOWN count elapsed time operation, you can display any of the other time functions using the UP/DOWN/CLOCK switch as desired.

Description

The Code Blue feature provides an override which forces the clock into a special count up elapsed time mode. No matter which of the three normal functions is being displayed, Code Blue input will cause the unit to begin counting elapsed time from **00:00:00**. All other functions of the unit continue to operate in the background during a Code Blue.

Operation

A Code Blue is initiated by applying a signal ranging from 12vac/vdc to 30vac/vdc to the K2+ and K2- terminals. See the sample pinout for more detail.

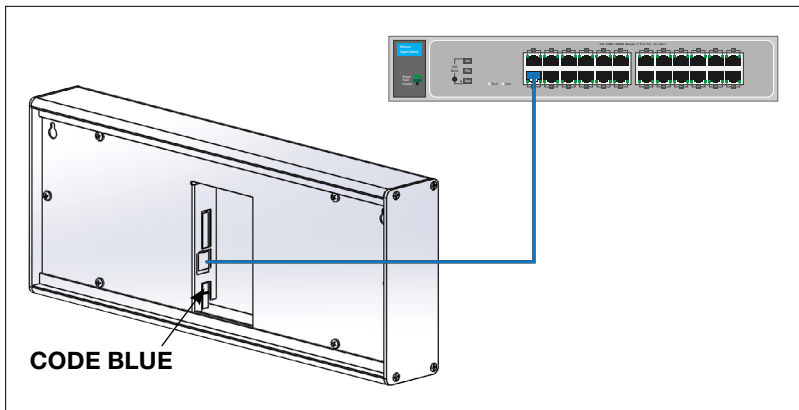
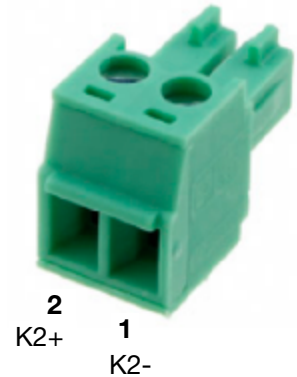
The Code Blue timer is the highest priority function of the clock/timer while in the run mode. No matter which of the 3 normal functions is being displayed, the Code Blue input will cause the clock to begin counting up elapsed time from **00:00:00**.

The Code Blue timer can be stopped and the time held for viewing by pressing the **START/STOP** button on the ATSTCS switch panel. The Code Blue timer cannot be restarted from the switch panel.

To reset the clock back to normal operation, the **RUN/SET** switch must be set to the **SET** position momentarily and then returned to the RUN position.

All other functions of the clock continue to operate in the background during a Code Blue. Time of day and time corrections from the network will not be affected. The standard count up timer and the count down timer will continue as well. However, if one of these timers is switched on for display when a Code Blue occurs, that particular timer will be reset when the clock is reset back to normal operation.

Code Blue Pinout



The ATSTCS must be in the RUN mode for Code Blue to override.

The 12vac/vdc to 30vac/vdc signal that starts the Code Blue timer originates from equipment external to the Digital Clock/Timer. The external equipment usually employs a switch device (i.e., a relay contact) to apply this signal. That switching device is often referred to as the Code Blue contact.

The Code Blue contact does not have to open before resetting the Digital Clock/Timer back to normal operation, but must be opened before another Code Blue can occur. The transition from no voltage to applied voltage (across the K2+ and K2- terminals) initiates a Code Blue.

If the Code Blue contact opens and closes again before the Digital Clock/Timer is reset back to normal operation, the Code Blue timer will start over from **00:00:00**.

If a power failure occurs during any Code Blue event, the Code Blue timer will start over from **00:00:00**.

System Maintenance

The Digital Clock/Timer and ATSTCS Control Station have been manufactured for years of dependable, reliable use. However, to assure the reliability of this product, it is recommended that the Digital Clock/Timer be **tested at least every six (6) months** with the Control Station and Code Blue contact for operation in accordance with wiring configurations used.

Network Clock Connect has been developed by American Time for configuring and monitoring your network clocks. This application will allow the user to quickly manage all of the compatible network clocks installed on the network.

NOTE: Network Clock Connect must be used to manage buzzer schedules. inCloud does not support buzzer management.

System Requirements

Personal Computers:

Windows 7 - 32-bit Windows 8

Windows 7 - 64-bit Windows 10

PC with 500Mhz or higher processor clock speed recommended

50MB free storage

256MB or RAM or higher recommended

VGA (800x600) or higher-resolution video adapter and monitor

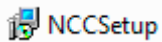
Keyboard and Mouse

Installation

1. *Network Clock Connect* may be downloaded from, <http://www.american-time.com/support/product-documentation>. Select **FIRMWARE** and click **Search** then click on **Network Clock Connect** from the search results. The software will automatically download. It is also provided through the optional USB drive (H004167B-POE sold separately).

Note: For NEW Global Series PoE digital clocks, make sure Network Clock Connect version is 0.5.0.0 or newer

2. Run the Windows Installer Package, NCCSetup.msi, file by double-clicking the icon:



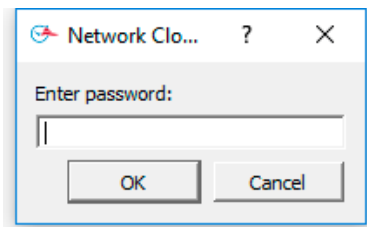
3. Follow the instructions in the Network Clock Connect Setup Wizard.

Login

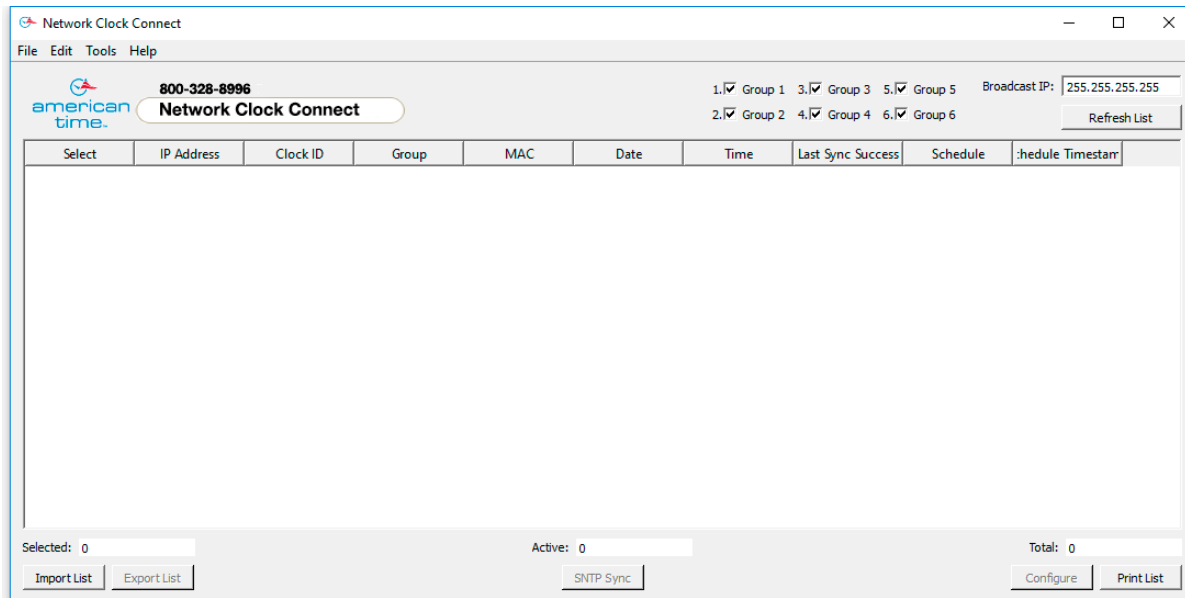
1. Double-click on the **Network Clock Connect** desktop icon to start the application.



2. Enter **clock4u** in the password prompt and press **OK**.



This screen allows access to all of the network clocks. The use of a broadcast IP is used to find all of the active network clocks. Once the list of network clocks is populated, all the clocks or individual clocks may be selected for configuration.



1. *Broadcast IP* – This is the address used to query all network clocks. The default is set to 255.255.255.255. This may be set to the subnet that the network clock(s) are configured to reduce network traffic.
2. *Refresh List* – This button is used to populate the list of network clocks using the Broadcast IP entered.
3. *Group Checkboxes* – These checkboxes are used to select the group(s) of clocks that should be displayed in the list. Pressing Refresh List, after selecting the desired groups, will display the clocks assigned to the selected groups.
4. *Select Column* – This displays checkboxes to select each clock. CTRL+A will select all clocks. The Edit menu also has a Select All and Deselect All feature.
5. *IP Address Column* – This displays the IP address of each clock.
6. *Clock ID Column* – This is used to assign a clock ID to each clock. The text field allows up to 20 alphanumeric characters.
7. *Group Column*– This is used to define the group of the clock. The network clocks may be grouped for sorting purposes. The groups may be named under Tools à Rename Groups.
8. *MAC Column* – This displays the MAC address of each clock.
9. *Date Column* – This displays the current date of the clock.
10. *Time Column* – This displays the current time of the clock.
11. *Last Sync Success Column* – This displays the last time the clock received a successful SNTP synchronization. The field will turn green to designate a successful sync and red for a failed sync.
12. *Schedule Button Column* – This button will be displayed if the network clock has the optional buzzer/relay. If the clock does not have a buzzer/relay, the field will display N/A. Reference the Schedule Editor section for more details on the buzzer/relay scheduling.
13. *Schedule Timestamp Column* – This displays the last time the schedule was altered and saved. The field will turn green to designate a successful schedule update and red for a failed schedule update.
14. *Selected* – This displays the number of clocks that are selected.
15. *Active* – This displays the number of clocks that are active. An active clock is one that is connected to the network.

16. *Total* – This displays the total number of clocks in the list.
17. *Import List Button* – This button is used to import a list of clocks.
18. *Export List Button* – This button is used to export a list of clocks. This button cannot be pressed if no clocks are selected.
 - This is useful for saving the network clock list for future reference to identify clocks that may become nonresponsive.
19. *SNTP Sync Button* – This button is used to synchronize the selected clocks to the configured SNTP server. The selected clocks Last Sync Success fields will change red when this button is pressed. Once the clocks obtain the SNTP sync, the Last Sync Success field will update to green with the correct date and time.
20. *Configure Button* – This is used to enter the Configuration Menu for the selected clocks. Reference the Configuration section for more details.
21. *Print List Button* – This button is used to print the list of clocks.
22. *Help Menu* – This menu contains a shortcut to the American Time PoE clock support site. Manuals, firmware/software updates, and tutorials are contained on the support site.

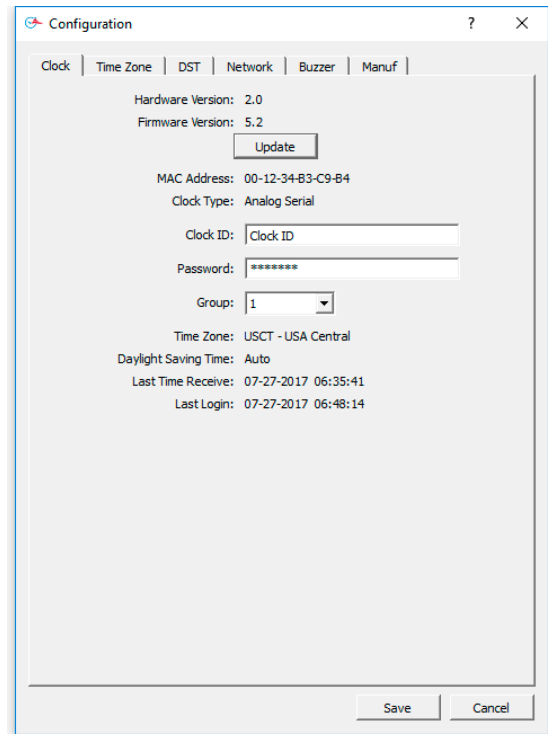
This is the configuration screen for network clocks. The time zone, daylight saving, and network settings may be configured here.

Note: If multiple clocks are selected, some configuration settings may not be editable.

Note for inCloud users: Settings changes should be performed on inCloud and issued using the "Save and Send" command. Settings changed in Network Clock Connect will not be reflected on inCloud. inCloud will highlight settings where there is a discrepancy between the settings on inCloud and the clock's own settings.

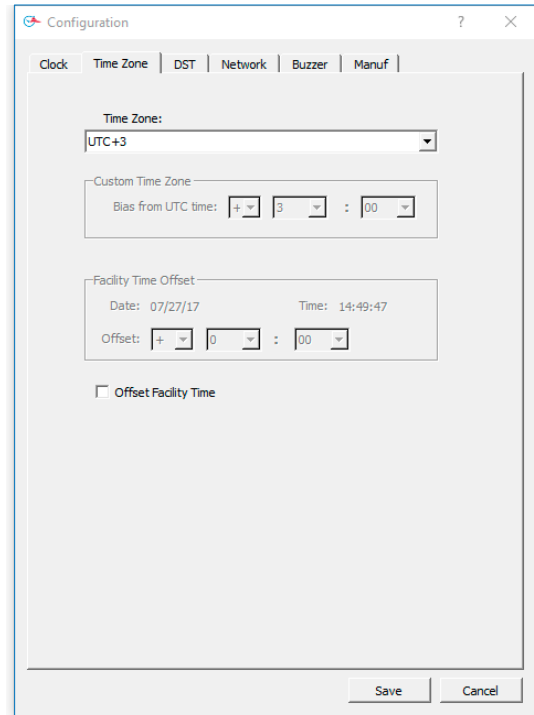
1. Clock Tab

- a. *Firmware Version* – This displays the firmware version of the selected clock. The firmware version will not be displayed if multiple clocks are selected.
- b. *Hardware Version* – This displays the hardware version of the selected clock. The hardware version will not be displayed if multiple clocks are selected.
- c. *Update Button* – This button is used to update the firmware on the clock(s). The latest firmware will be available on the Support Site.
- d. *MAC Address* – This displays the MAC address of the selected clock. The MAC address will not be displayed if multiple clocks are selected.
- e. *Clock Type* – This displays the clock type of the selected clock. The clock type will not be displayed if multiple clocks are selected.
- f. *Clock ID* – This field is used to set the clock ID of the selected clock. This field allows up to 20 alphanumeric characters to be entered. This field will not be editable if multiple clocks are selected.
- g. *Password* – This field is used to set the password of the selected clock(s).
- h. *Group* – This is used to define the group of the clock. The network clocks may be grouped for sorting purposes. If multiple clocks are selected, the group will not be displayed. However, this field can change the group of multiple selected clocks.
- i. *Time Zone* – This displays the time zone of the selected clock. The time zone will not be displayed if multiple clocks are selected.
- j. *Daylight Saving Time* – This displays the Daylight Saving Time setting of the selected clock. The Daylight Saving Time setting will not be displayed if multiple clocks are selected.
- k. *Last Time Receive* – This displays the last time a SNTP request was received by the selected clock. The last time received will not be displayed if multiple clocks are selected.
- l. *Last Login* – This displays the last time a user logged into the selected clock. The last login will not be displayed if multiple clocks are selected.
- m. *Brightness* – This is used to select the brightness setting on the clock display. There are four options for display brightness - High, Low, Sleep and Off. When in the Sleep setting, the segments of the display will be off. Every 10 seconds the time segments will display the time for 1 second in a Low brightness and turn off again. **Note:** The Brightness setting is only present for Digital clocks.
- n. *12/24 Hour Mode* – This is used to select a 12 or 24 hour display for the clock. **Note:** 12/24 Hour Mode is only present for Digital Clocks.
- o. *Date Mode* – This is used to select the date mode of the Digital Calendar Clock.
- p. *Display Duration* – This is used to set the duration of the time/date displays for a Digital Calendar Clock. If both time and date are set to "0", only the time will be displayed. If time is set to "0" and date is set to anything other than "0", only the date will be displayed. If neither time nor date are "0", the time and date will toggle for the duration specified.



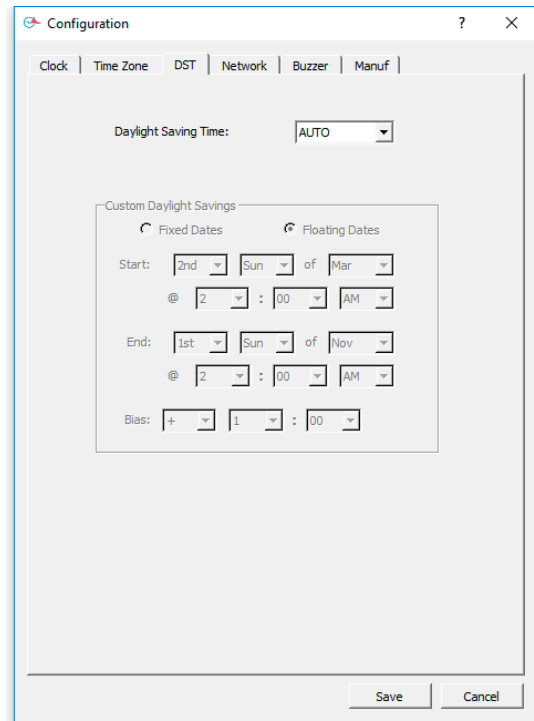
2. Time Zone Tab

- q. *Time Zone* – This is used to select the time zone. Selecting the CUSTOM time zone will enable the Custom Time Zone fields. Reference Appendix B for a list of all available time zone configurations.
- r. *Custom Time Zone* – This is used to select a custom time zone with a bias of hours and minutes from UTC time. The CUSTOM selection must be made in the Time Zone field for this to be enabled. The bias may be configured in the range of 0:00 – 23:59, positive or negative.
- s. *Facility Time Offset* – This is used to offset the received SNTP time with a positive or negative bias of hours and minutes. The Offset Facility Time checkbox must be checked for this field to be editable. **Note:** This function is typically used by school districts to accommodate bus schedules.
- t. *Offset Facility Time* – This checkbox enables the Facility Time Offset.



3. DST Tab

- u. *Daylight Saving Time* – This is used to set the DST to AUTO, OFF, or CUSTOM. The AUTO selection is the standard DST for the United States.
Note: Not all time zone selections will allow for changing the DST to AUTO or OFF. For example, if USCT – USA, Central is selected for the time zone, the DST cannot be set to OFF. In this example DST=OFF can be done by selecting UTC-6 for the time zone and selecting the DST to OFF. Reference Appendix B for a list of all available DST configurations.
- v. *Custom Daylight Savings* – This is used to select a custom DST date and time. The Daylight Saving Time must be set to CUSTOM for these fields to be editable.



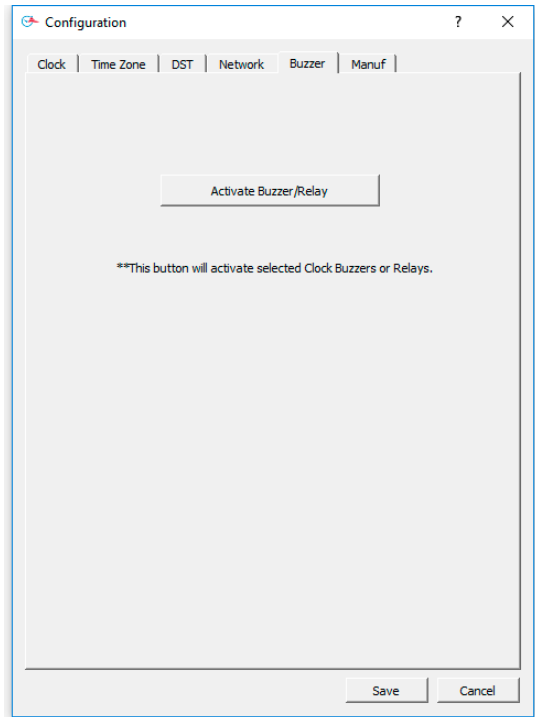
4. Network Tab

- w. DHCP – This checkbox enables Dynamic Host Configuration Protocol (DHCP) on the selected network clocks.
- x. *IP Address* – The IP address may be set to a static IP address if one clock is selected. The DHCP checkbox must be unchecked for this field to be enabled. The IP address fields cannot be changed if multiple clocks are selected.
- y. *Subnet Mask* – The Subnet mask may be configured if the DHCP checkbox is unchecked.
- z. *Gateway* – The Gateway may be configured if the DHCP checkbox is unchecked.
- aa. *DNS Servers* – The DNS servers may be configured if the DHCP checkbox is unchecked.
- ab. *SNTP Servers* – This is a list of SNTP servers from which the network clock will receive time. The selected server will be attempted first. If the server fails to provide a valid time the list is traversed until a valid time is received. This list may be user defined. A list of verified NIST time servers is available in Appendix A.

The screenshot shows the 'Configuration' window with the 'Network' tab selected. The 'DHCP' checkbox is checked. The 'IP Address' section contains three text boxes: 'IP Address' with '192.168.10.109', 'Subnet Mask' with '255.255.255.0', and 'Gateway' with '192.168.10.99'. The 'DNS Servers' section contains two text boxes: 'DNS Server 1' with '8.8.8.8' and 'DNS Server 2' with '8.8.4.4'. The 'SNTP Servers' section contains a list box titled 'SNTP Server List' with the following entries: 24.56.178.140, 24.56.178.140, 0.0.0.0, 0.0.0.0, 0.0.0.0, 0.0.0.0, 0.0.0.0, 0.0.0.0, and 0.0.0.0. An 'Edit List' button is located below the list. At the bottom of the window are 'Save' and 'Cancel' buttons.

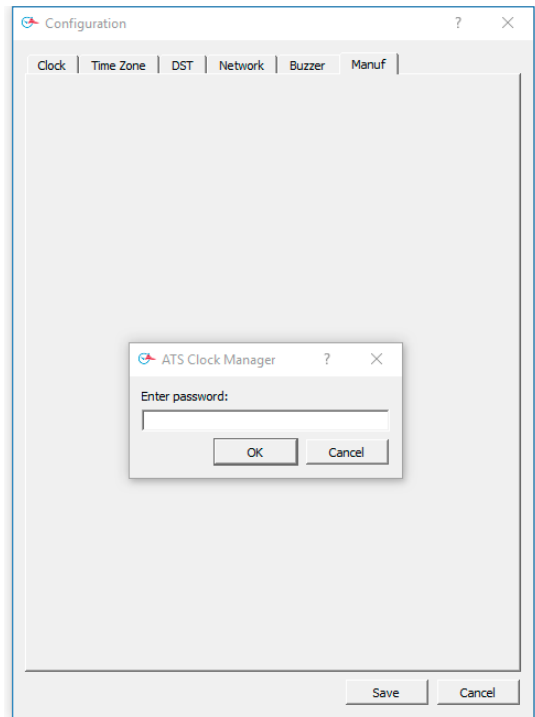
5. Buzzer Tab

- ac. Activate Buzzer/Relay Button – This button will activate the relay or buzzer on all selected network relays or clocks that have the buzzer/relay option.



6. Manuf Tab

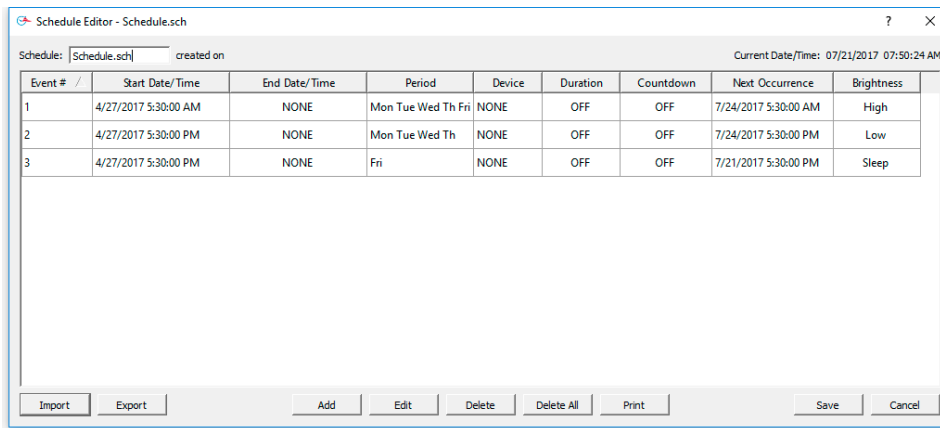
- ad. This tab is used for manufacturing purposes only.



Schedule Editor

Note: This feature is only available for analog clocks with the buzzer option, digital clocks or relay. If the option is not enabled the button will display N/A.

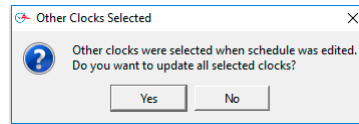
The Schedule Editor may be entered by pressing the schedule button from the main Network Clock Connect screen. This is used to add and edit events in a schedule. Multiple devices may be scheduled at once by selecting them in the Select Column in the Network Clock Connect screen. The maximum number of scheduled events is 100. Reference Appendix C for scheduling examples.



1. *Schedule* – This is the file name of the schedule and the date and time it was last modified. This field is editable so that the schedule may be named appropriately (i.e. 2HourLateStart.ats, PepFest.ats, etc.).
2. *Current Date/Time* – This displays the current date and time of the selected network clock.
3. *Event # Column* – This displays the event number.
4. *Start Date/Time Column* – This displays the start date and time of the event.
5. *End Date/Time Column* – This displays the end date and time of the event. There may not be an end date if the event is a reoccurring event.
6. *Period Column* – This displays the period of the event. The period is how often the event occurs. Therefore a period of one week correlates to an event that happens weekly.
7. *Device Column* – This displays the device(s) that will be triggered during the event. If all outputs are to be triggered for a specified event this field will display: B/R. This correlates to Buzzer/Relay (available on analog clocks only).
8. *Duration Column* – This displays the event duration. The duration may be selected from this field (ON, OFF, 0–59 seconds). The event duration must be less than the period.
9. *Countdown Column* – This displays the duration of the countdown timer.
Note: Countdown column only available for digital clocks.
10. *Next Occurrence Column* – This displays the date and time of the next occurrence of the event.
11. *Brightness Column* – This displays the brightness of the time display on the clock triggered by the event.
12. *Import Button* – This button is used to import an existing schedule.
13. *Export Button* – This button is used to export the current schedule on the network clock.
14. *Add Button* – This button is used to add an event to the schedule. The Event Editor will appear when this button is pressed. Reference the Event Editor section for more details.
15. *Edit Button* – This button is used to edit a selected event with the Event Editor. An event is selected by highlighting the event row by clicking on the event. Double-clicking on the event row will also prompt the Event Editor.
16. *Delete Button* – This button is used to delete a selected event from the schedule. A confirmation dialog will appear prior to deleting the event.
17. *Delete All Button* – This button is used to delete all events from the schedule. A confirmation dialog will appear prior to deleting the events.

Schedule Editor (cont.)

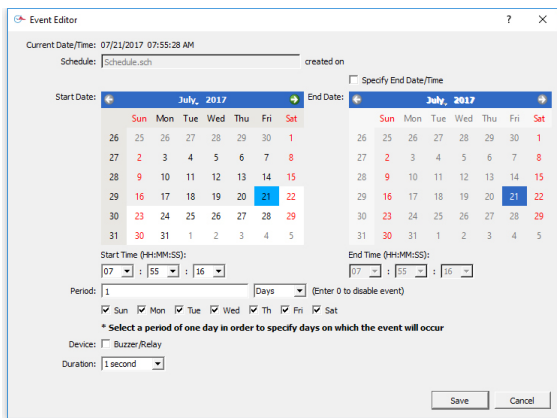
18. Print Button – This button is used to print the entire schedule. All events will be printed as they appear in the schedule list.
19. Save Button – This button is used to Save the current schedule. The schedule name and last modified date will be updated. If multiple clocks were selected in the Network Clock Connect screen, the Other Clocks Selected prompt will appear. This allows all of the selected clocks to be updated with the same schedule.



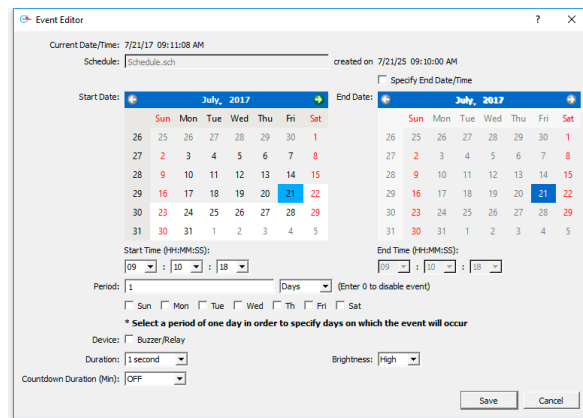
20. Cancel Button – This button is used to cancel any changes made to the schedule.

Event Editor

The Event Editor may be entered by adding a new event or editing an existing event in the Schedule Editor. Here the event is defined with a start date/time, end date/time (optional), period, duration, and device selection. Reference Appendix C for event entry examples. The maximum number of scheduled events is 100.



Relay/Analog Clock Buzzer Event Editor



Digital Clock Event Editor

1. Current Date/Time – This displays the current date and time of the selected network clock.
2. Schedule – This displays the filename of the schedule in which the event resides. The last modified date and time is also displayed.
3. Start Date Calendar – This is used to select the start date of the event. A date selection prior to the current date is not possible.
4. Start Time (HH:MM:SS) – This is used to select the start time of the event.
5. Specify End Date/Time – This checkbox is used to define an end date and time for the event. The event will be a reoccurring event if this checkbox is not selected. The End Date Calendar and End Time will not be enabled unless this box is checked.
6. End Date Calendar – This is used to select the end date of the event. An end date cannot be selected unless the Specify End Date/Time checkbox is checked. A date selection prior to the current date is not possible.
7. End Time (HH:MM:SS) – This is used to select the end time of the event. The end time cannot be defined unless the Specify End Date/Time checkbox is checked.

Event Editor (cont.)

8. **Period** – This is used to define the period of the event. The period is the interval of time between event occurrences. An entry of 0 will disable the event. A numeric value must be entered into the text field. The pull-down menu consists of seconds, minutes, hours, days, and weeks. Here are the possible entries per period duration:

- <x> seconds (0-59)
- <x> minutes (0-59)
- <x> hours (0-23)
- <x> days (0-365)
- <x> weeks (0-53)

Note: Select a period of one day in order to specify days on which the event will occur.

9. **Device** – This is used to select the devices that will trigger for this event. Buzzer/Relay may be selected.

10. **Duration** – This is used to define the duration of the event (ON, OFF, 0–59 seconds). The event duration must be less than the period.

11. **Brightness** – This is used to schedule a change in brightness on the clock display. (High, Low, Sleep, Off).

Note: Brightness settings only available for digital clocks.

12. **Countdown Duration (Min)** – This is used to define the duration of the Countdown timer (Off, 1 Minute-59 Minutes).

Note: Countdown Duration (Min) settings are only available for digital clocks.

13. **Save Button** – This saves the event entry into the schedule.

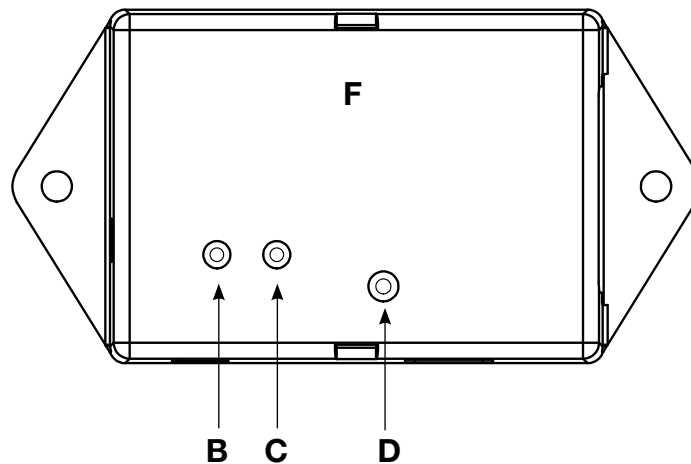
14. **Cancel Button** – This cancels the event entry.

When a DHCP network is not present at initial start-up, the PoE clock will default to a random Static IP in the range of 169.254.1.0 to 169.254.254.255. The status LED will flash red. If unable to obtain an IP address through DHCP, follow these troubleshooting steps:

1. Verify that there is power to the PoE clock. The Status LED of the PoE receiver will be illuminated if there is power to the clock.
2. Verify the Ethernet cable connection to the PoE clock. Make sure the patch cable is securely connected and not damaged. Have the cable tested or connect another Ethernet device to this cable to confirm proper connection.
3. Verify with the Network Administrator to ensure that DHCP is enabled on the network you are connecting the PoE clocks.
4. Verify that DHCP is enabled on the PoE receiver.
 - a. Configure a PC that is on the same local network as the PoE receiver, with the following network configurations:

Tip: Note existing PC settings first. Contact your Network Administrator for assistance or reference the following link: <https://support.microsoft.com/en-us/help/15089/windows-change-tcp-ip-settings>

- IP address: 169.254.0.1
 - Subnet Mask: 255.255.0.0
- b. Using the Network Clock Connect application, press the Refresh List button
 - c. Select the clock that was not receiving DHCP (IP address should be in the range of 169.254.1.0 and 169.254.254.255), and press the Configure button
 - d. Click on the Network tab and verify that the DHCP checkbox is selected



- B – Status LED
- C – Buzzer/Relay LED
- D – Default Button
- F – PoE Receiver/Relay

5. Return PC to the previous settings noted above in Step 4.

If the problem cannot be resolved after following these steps, please call Technical Support at American Time at **800-328-8996**.

When a DHCP network is not present at initial start-up, the PoE clock will default to a random Static IP in the range of 169.254.1.0 to 169.254.254.255.

Note: If DHCP is enabled and the clock does not receive a DHCP IP or loses the IP, the following symptoms will occur:

- a. On a cold start. The clock will flash colons and dashes for 20 seconds and if no IP is found, will display "noIP".
- b. During normal operation if the clock already has the time and it loses its IP address, the colons will flash with the current time displayed. Note this same behavior will also result with any network issue or all bad time servers. The best way to determine if the IP address was lost from your network is to double-tap the Set switch with a pointed object. If the IP address is not what you expected, continue to next step.

If unable to obtain an IP address through DHCP, follow these troubleshooting steps:

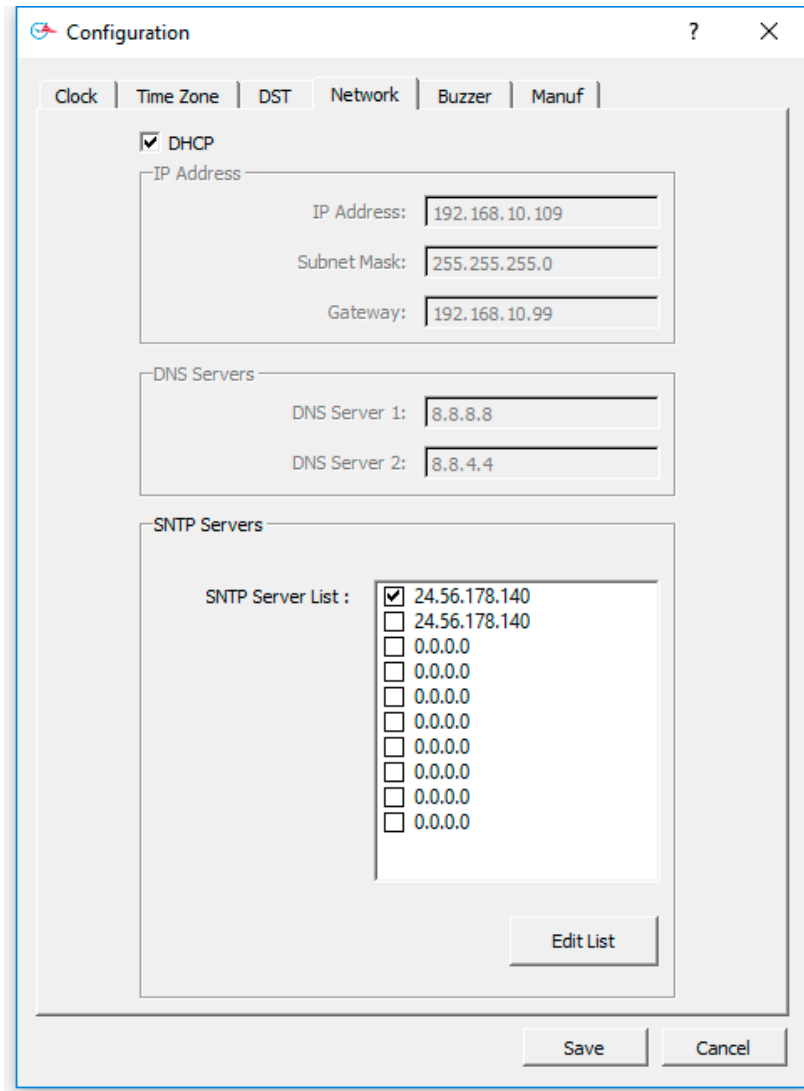
1. Verify that there is power to the PoE clock. The firmware version should scroll across the display when PoE power is first applied.
2. Verify the Ethernet cable connection to the PoE clock. Make sure the patch cable is securely connected and not damaged. Have the cable tested or connect another Ethernet device to this cable to confirm proper connection.
3. Verify with the Network Administrator to ensure that DHCP is enabled on the network you are connecting the PoE clocks.
4. Verify that DHCP is enabled on the PoE receiver.
 - a. Configure a PC that is on the same local network as the PoE receiver, with the following network configurations:

Tip: Note existing PC settings first. Contact your Network Administrator for assistance or reference the following link: <https://support.microsoft.com/en-us/help/15089/windows-change-tcp-ip-settings>

- IP address: 169.254.0.1
 - Subnet Mask: 255.255.0.0
 - b. Using the Network Clock Connect application, press the Refresh List button
 - c. Select the clock that was not receiving DHCP (IP address should be in the range of 169.254.1.0 and 169.254.254.255), and press the Configure button
 - d. Click on the Network tab and verify that the DHCP checkbox is selected
5. Return PC to the previous settings noted above in Step 4.

When the time displayed in the Network Clock Connect application is incorrect, follow the steps below:

1. Verify that the SNTP servers are working.
2. Verify that the SNTP server addresses are properly entered into the Network Tab.



3. Ping the SNTP servers with a PC on the same local network as the network clock(s).
4. Verify with the network administrator that Port 123 is open for SNTP time synchronization.
5. If the SNTP servers do not respond, update the NTP Servers List with new SNTP Servers. When the time displayed on the clock(s) differs from the Network Clock Connect application, follow the steps below:
6. Press the Refresh List button to refresh the time displayed in the application.

For Analog Clocks:

1. Home hands using Instruction Sheet 3133 "Homing PoE Analog Clocks - Serial" for H004640 movement. Find it online: american-time.com Navigate to: [RESOURCES > TECH TIPS](#) Call American Time if you need assistance.

Note: The hands may be off by minutes or seconds if the clock has been jarred. This procedure will reset the hands to 12 o'clock.

If the problem cannot be resolved after following these steps, please call Technical Support at American Time at **800-328-8996**.

Please reference <http://tf.nist.gov/tf-cgi/servers.cgi> for the latest NIST Internet Time servers list, which includes the status of each server.

Appendix B: Supported Time Zones

Time Zone Code	Description	Hours Difference from UTC (Winter)	Hours Difference from UTC (Summer)	Auto DST Adjustment?
00	LMT (Local Mean Time) - based on longitude	CALCULATED	CALCULATED	CONFIG
01	USA Alaska	-9	-8	YES
02	USA Aleutian (HAST/HADT)	-10	-9	YES
03	USA Arizona	-7	-7	NO
04	USA Atlantic / Puerto Rico (AST)	-4	-4	NO
05	USA Central (CST/CDT)	-6	-5	YES
06	USA Chamorro (chST)	+10	+10	NO
07	USA Eastern (EST/EDT)	-5	-4	YES
08	USA Hawaii (HST)	-10	-10	NO
09	USA Indiana East (USIND)	-5	-5	NO
10	USA Mountain (MST/MDT)	-7	-6	YES
11	USA Pacific (PST/PDT)	-8	-7	YES
12	USA Midway Island / Samoa (SST)	-11	-11	NO
13	USA Wake Islands (WAKT)	+11	+11	NO
14	UTC+0	+0	+0	CONFIG
15	UTC+1	+1	+1	CONFIG
16	UTC+2	+2	+2	CONFIG
17	UTC+3	+3	+3	CONFIG
18	UTC+4	+4	+4	CONFIG
19	UTC+5	+5	+5	CONFIG
20	UTC+6	+6	+6	CONFIG
21	UTC+7	+7	+7	CONFIG
22	UTC+8	+8	+8	CONFIG
23	UTC+9	+9	+9	CONFIG
24	UTC+10	+10	+10	CONFIG
25	UTC+11	+11	+11	CONFIG
26	UTC+12	+12	+12	CONFIG
27	UTC+13	+13	+13	CONFIG
28	UTC-1	-1	-1	CONFIG
29	UTC-2	-2	-2	CONFIG
30	UTC-3	-3	-3	CONFIG
31	UTC-4	-4	-4	CONFIG
32	UTC-5	-5	-5	CONFIG
33	UTC-6	-6	-6	CONFIG
34	UTC-7	-7	-7	CONFIG
35	UTC-8	-8	-8	CONFIG
36	UTC-9	-9	-9	CONFIG
37	UTC-10	-10	-10	CONFIG
38	UTC-11	-11	-11	CONFIG
39	UTC-12	-12	-12	CONFIG
99	Custom Time Zone	CONFIG	CONFIG	CONFIG

Example: Scheduling Recurring Events

To schedule a new event that turns on the buzzer for 5 seconds starting at 8:55 AM every weekday Monday – Friday, follow the steps below:

1. Click on Add to prompt the Event Editor
2. Enter the parameters as shown below:

The Event Editor window shows the following configuration:

- Schedule:** LateStart.sch (created on 07/21/0225 08:14:00 AM)
- Start Date:** July 23, 2017 (selected from a calendar)
- End Date:** July 21, 2017 (selected from a calendar)
- Start Time (HH:MM:SS):** 08:55:00
- End Time (HH:MM:SS):** 08:14:32
- Period:** 1 Days (Enter 0 to disable event)
- Days:** Sun Mon Tue Wed Th Fri Sat
- * Select a period of one day in order to specify days on which the event will occur**
- Device:** Buzzer/Relay
- Duration:** 5 seconds

- The Start Date is set to the current date
 - The Start Time is 08:55:00 (Hours dropdown is in military format) which is 8:55 AM
 - The Period is set to 1 Day
 - The Mon, Tue, Wed, Th, Fri checkboxes are selected
 - The Buzzer/Relay checkbox is selected
 - The Duration is set to 5 seconds
 - No End Date/Time is specified for the recurring event
3. Click Save in the Event Editor
 4. Name the schedule in the Schedule Editor to LateStart.sch
 5. Click Save in the Schedule Editor

Note: The maximum number of scheduled events is 100.

The Schedule Editor window displays the following table:

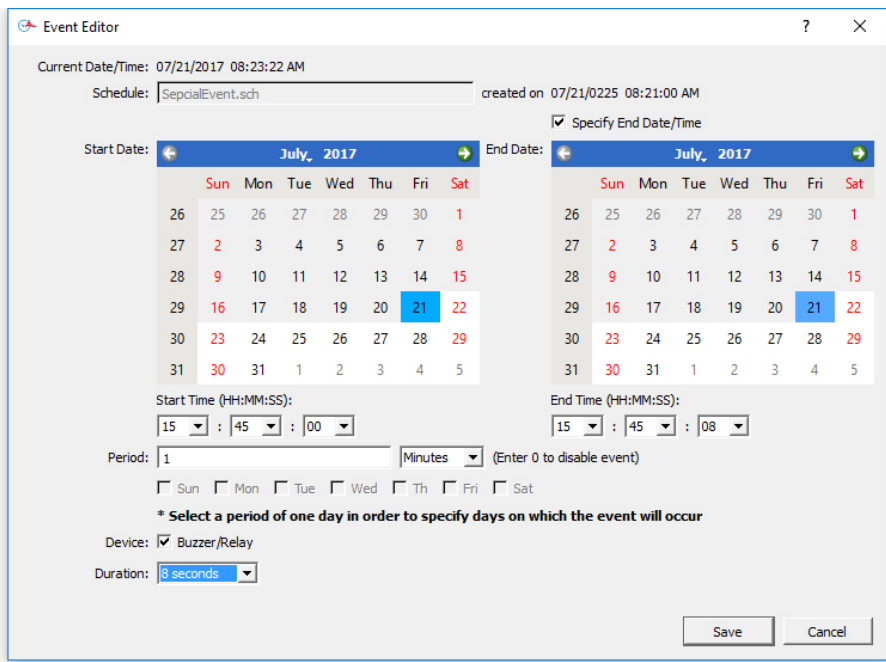
Event # /	Start Date/Time	End Date/Time	Period	Device	Duration	Next Occurrence
0	7/23/2017 8:55:00 AM	NONE	Mon Tue Wed Th Fri	2 3 B/R	5 seconds	7/23/2017 8:55:00 AM

Buttons at the bottom: Import, Export, Add, Edit, Delete, Delete All, Print, Save, Cancel

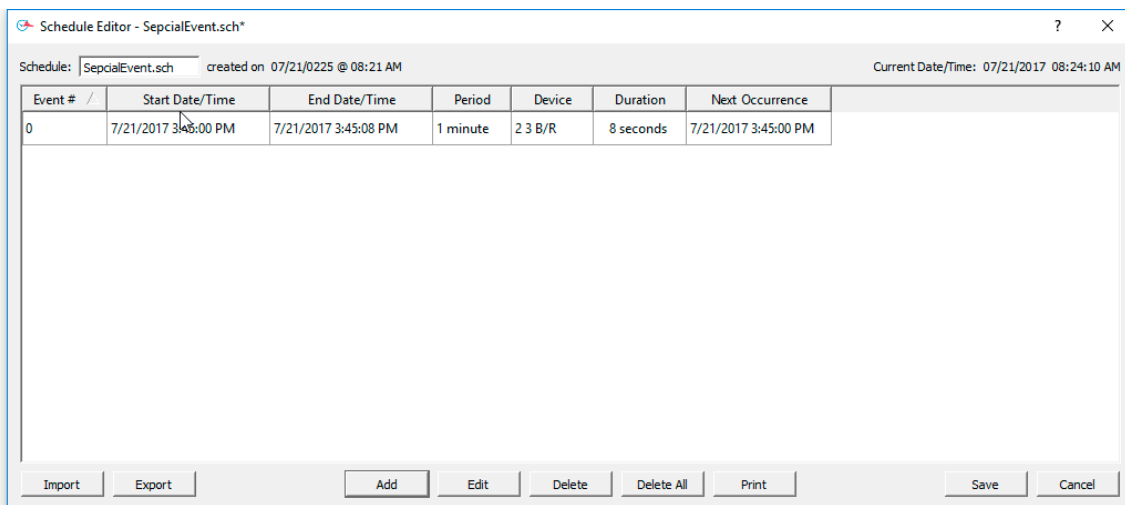
Example: Scheduling Special Events

To schedule a new special event that turns on the buzzer for 8 seconds starting at 3:45 PM on October 31, 2017, follow the steps below:

1. Click on Add to prompt the Event Editor
2. Enter the parameters as shown below:



- The Start Date is set to October 31, 2017
 - The Start Time is 15:45:00 (Hours dropdown is in military format) which is 3:45 PM
 - The Period is set to 1 Minute (Period is irrelevant since this is a special event)
 - The Buzzer/Relay checkbox is selected
 - The Duration is set to 8 seconds
 - The End Date/Time is specified as the start time plus the event duration. Therefore, October 31, 2017 at 15:45:08 (3:45:08 PM)
3. Click Save in the Event Editor
 4. Name the schedule in the Schedule Editor to SpecialEvent.sch
 5. Click Save in the Schedule Editor

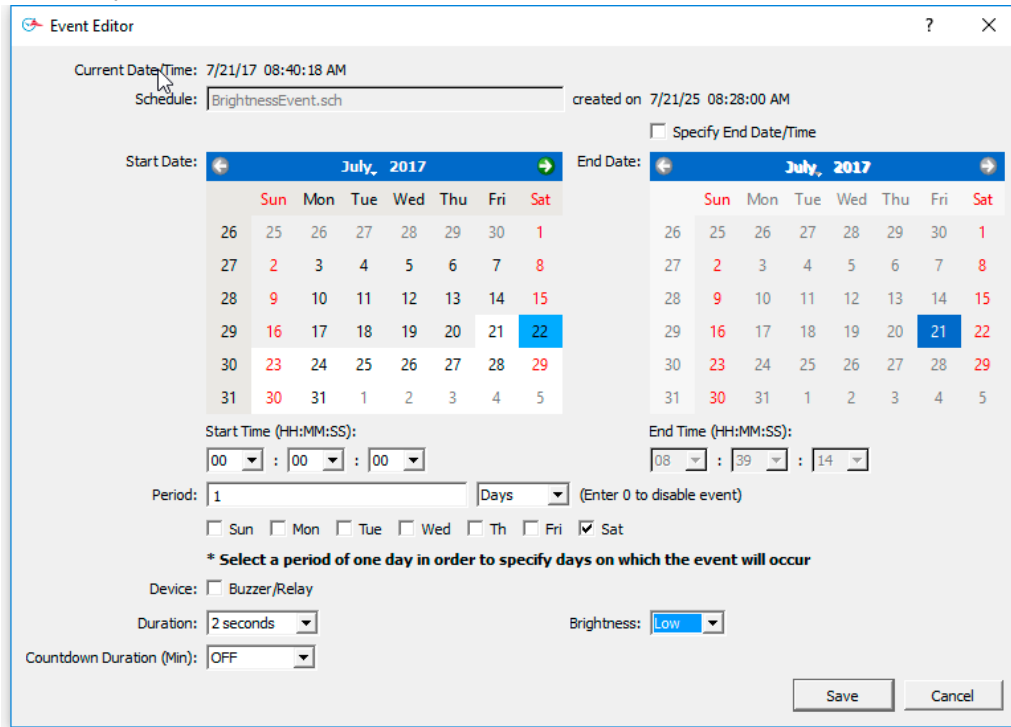


Example: Scheduling Display Brightness Events (Digital Clocks)

To schedule a new special event that dims the clocks display over the weekend to save energy, follow the steps below:

In this example, two events will be used. **Event #0** will turn the clocks display to a Low Brightness state every Saturday at 12:00 AM starting on July 22nd. **Event #1** will turn the clocks display back to a High Brightness state every Monday at 12:00 AM, starting on July 23th.

1. Click on Add to prompt the Event Editor
2. Enter the parameters as shown below:



Event #0

- The Start Date is set to September 10, 2011
 - The Start Time is 00:00:00 (Hours dropdown is in military format) which is 12:00 AM
 - The Period is set to 1 Day
 - The Sat checkbox is selected
 - The Buzzer/Relay checkbox is not selected
 - The Duration is set to 2 seconds (Duration is irrelevant as long as it is not set to ON or OFF for this example)
 - Brightness is set to Low (Sleep Mode could also be used for this example)
 - Countdown Duration is set to Off (available only with clocks with countdown functionality)
 - No End Date/Time is specified for the recurring event
3. Click Save in the Event Editor

- Click on Add to prompt the Event Editor
- Enter the parameters as shown below:

Event Editor

Current Date/Time: 7/21/17 09:05:47 AM

Schedule: created on 7/21/25 08:41:00 AM

Specify End Date/Time

Start Date: End Date:

Start Time (HH:MM:SS): : : End Time (HH:MM:SS): : :

Period: Days (Enter 0 to disable event)

Sun Mon Tue Wed Th Fri Sat

* Select a period of one day in order to specify days on which the event will occur

Device: Buzzer/Relay

Duration: Brightness:

Countdown Duration (Min):

Event #1

- The Start Date is set to July 23, 2017
 - The Start Time is 00:00:00 (Hours dropdown is in military format) which is 12:00 AM
 - The Period is set to 1 Day
 - The Mon checkbox is selected
 - The Buzzer/Relay checkbox is not selected
 - The Duration is set to 2 seconds (Duration is irrelevant as long as it is not set to ON or OFF for this example)
 - Brightness is set to High
 - Countdown Duration is set to Off (available only with clocks with countdown functionality)
 - No End Date/Time is specified for the recurring event
- Name the schedule in the Schedule Editor to BrightnessEvent.sch
 - Click Save in the Schedule Editor

Schedule Editor - BrightnessEvent.sch*

Schedule: created on 7/21/25 @ 08:41 AM

Current Date/Time: 7/21/17 09:08:19 AM

Event # /	Start Date/Time	End Date/Time	Period	Device	Duration	Countdown	Next Occurrence	Brightness
0	7/22/2017 12:00:00 AM	NONE	Sat	NONE	2 seconds	OFF	7/22/2017 12:00:00 AM	Low
1	7/23/2017 12:00:00 AM	NONE	Mon	NONE	2 seconds	OFF	7/23/2017 12:00:00 AM	High

Operator Flowchart

To Set Time	To Set UP Counter Preset	To Set DOWN Counter Preset
UP/CLOCK/DOWN switch in CLOCK position SET/RUN switch in SET position Clock display 24Hr or 12Hr Push INCREMENT to change Push ENTER Clock displays flashing hours digits Push INCREMENT to change Push ENTER Clock displays flashing minutes digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Display shows DONE	UP/CLOCK/DOWN switch in UP position SET/RUN switch in SET position Clock displays flashing hours digits Push INCREMENT to change Push ENTER Clock displays flashing minutes digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Display shows DONE Place SET/RUN switch in RUN position	UP/CLOCK/DOWN switch in DOWN position SET/RUN switch in SET position Clock displays flashing hours digits Push INCREMENT to change Push ENTER Clock displays flashing minutes digits Push INCREMENT to change Push ENTER Clock displays flashing seconds digits Push INCREMENT to change Push ENTER Display shows DONE Place SET/RUN switch in RUN position
Place SET/RUN switch in RUN position	To Use UP Counter	To Use DOWN Counter
To Use as a Clock	UP/CLOCK/DOWN switch in UP position Place SET/RUN switch in RUN position Place RESET to display 00:00:00 Place START/STOP to Begin Place START/STOP to Hold Place START/STOP to begin again Alarm will sound when preset time is reached Press RESET to reset counter	UP/CLOCK/DOWN switch in DOWN position Place SET/RUN switch in RUN position Place RESET to display preset time Place START/STOP to Begin Place START/STOP to Hold Place START/STOP to begin again Alarm will sound 00:00:00 is reached Press RESET to reset counter
Place SET/RUN switch in RUN position UP/CLOCK/DOWN switch in CLOCK position		

Code Blue Operation
SET/RUN switch **MUST** be in RUN position
To stop and hold code blue time for viewing, press **START/STOP**

To Reset Clock/Timer to Normal Operation
Place SET/RUN switch momentarily in **SET** position and return switch to **RUN** position

