

Installation and Operation Manual



Wireless Digital Clocks with Optional Calendar and Elapsed Time Indicator/Code Blue



WARNING: Hazardous voltage in electrical equipment can cause severe personal injury or death. Inspection, installation, and preventive maintenance should only be performed on equipment to which power has been turned off, disconnected and electrically isolated so no accidental contact can be made with energized parts.

Electrostatic Sensitive Devices

CAUTION: This equipment contains electronic devices that are sensitive to static electric charges. To guarantee protection for the circuitry of this unit, it is required that electrostatic handling precautions be observed when installing or repairing this equipment. Any technician or other personnel working on this unit must wear a static grounding wrist strap or similar device to provide protection of sensitive components.



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Specifications

Description

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

Phone: **800-328-8996**
 Fax: **800-789-1882**
american-time.com

IMPORTANT INSTALLATION AND WARRANTY INFORMATION

WARRANTY INFORMATION: American Time (the Manufacturer) provides a limited warranty to the Original Purchaser of this product. The Original Purchaser is the party to whom the Manufacturer issued its Sales Order, generally the Manufacturer's distributor. In order to preserve this warranty, it is important that only persons who have been properly trained and authorized by the Manufacturer service the product.

Other parties involved in the installation of this product may have also provided a warranty, which may be different than that of the Manufacturer. The Manufacturer will only be responsible to the Original Purchaser and only for the Manufacturer's own warranty. For further information regarding the Manufacturer's warranty, contact the Original Purchaser.

OWNER'S MANUAL: The owner's manual does not purport to cover all the details or variations in the equipment described, nor does it provide for every possible contingency to be met in connection with installation, operation and maintenance. All specifications subject to change without notice. Should further information be desired or should particular problems arise which are not covered sufficiently, the matter should be referred to the Installer or Original Purchaser listed below.

INSTALLER INFORMATION

COMPANY: _____ INSTALLER: _____

PHONE _____ ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

DATE INSTALLED: _____ INSTALLER'S SIGNATURE: _____

ORIGINAL PURCHASER INFORMATION

COMPANY: _____ PHONE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PURCHASER'S PURCHASE ORDER NO: _____ DATE PURCHASED: _____

ATS SALES ORDER ACKNOWLEDGMENT NO: _____

ORIGINAL PURCHASER'S SIGNATURE: _____

NOTE: A copy of the above-completed information may be required by the Manufacturer for authorization of Warranty services.

GENERAL**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 Clocks:Varies by model

ATSTCS: Timer Control Station:0.27 lb.

ELECTRICAL**Power Requirements (Digital Clock/Timer only):**

Line Voltage:120vac 50/60Hz -SQD461RSAE and SQD461RSPE
24vac 50/60Hz - SQD461RSBE
220vac 50/60Hz - SQD461RSKE

Note: Voltage is set at factory. See above part number suffix for reference.

Battery:.....Non-rechargeable coin-cell battery

Maximum Current (Digital Clock/Timer only):120vac - 130mA (max), 101mA (avg)

Memory Retention on Loss of Line Voltage:.....Up to 10 years from coin-cell battery

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

Clock Circuits:3.0mA. max. @ 24vac/120vac

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

Power Consumption:Varies by model

ENVIRONMENTAL

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

Recommended Storage Temperature:.....-30°C to 45°C (-22°F to 113°F) for six months maximum

Humidity:0%-95% non-condensing

OPERATION

Modes Available:12 hour or 24-hour wireless 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 to SiteSync IQ system controller

Indications:Digital Clock/Timer hours and minutes – 4" and 2.5", bright red or green,
 seven segment LED's hours and minutes are separated by a colon seconds

.....ATSTCS Control Station – 2 second audible alarm

Reception:Colons flash

Specifications

The SQDx61RSxE is a six-digit digital multi-function synchronized clock/timer which can be used as an up or down counting elapsed timer with an optional Code Blue trigger. The elapsed timers can be started, stopped, resumed, and reset. Both timer modes have a programmable preset value. When the timer reaches the preset value, a two-second audible alarm sounds from the ATSTCS control panel. The Code Blue up counting elapsed timer will override all other modes of operation if used. The SQDx61RSxE can function as a 12-hour or 24 hour clock which is synchronized by the SiteSync IQ wireless clock system.

Wireless Digital Clock Features:

- Super-bright red or green LED for high readability
- SiteSync IQ master time synchronization
- Non-glare lens
- Selectable 12- or 24-hour format
- Black anodized aluminum frame
- Included mounting bracket
- Visibility: 2.5 inches=125 ft.; 4 inches=200 ft.
- Optional Elapsed Time Indicator and Code Blue function
- Optional Calendar Mode with configurable date/time display durations and six date display options:

MM:DD:YY	DD:MM:YY	YY:MM:DD	M:D:YY	D:M:YY	YY:M:D
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Description

Installation

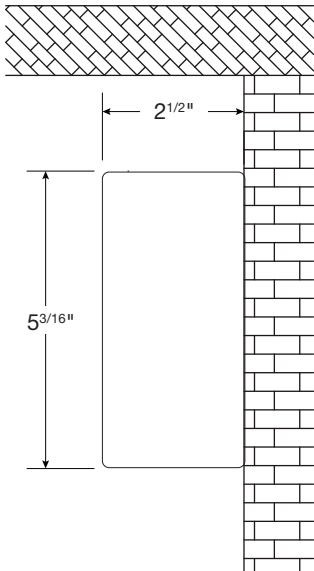
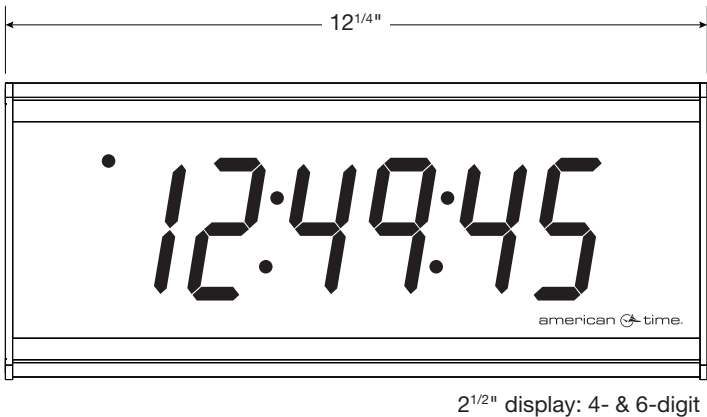
Operation

Code Blue

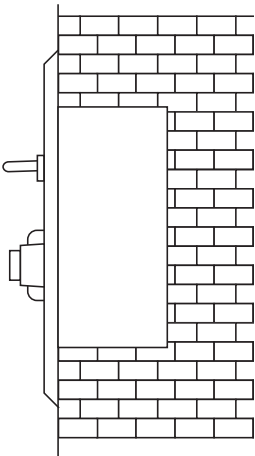
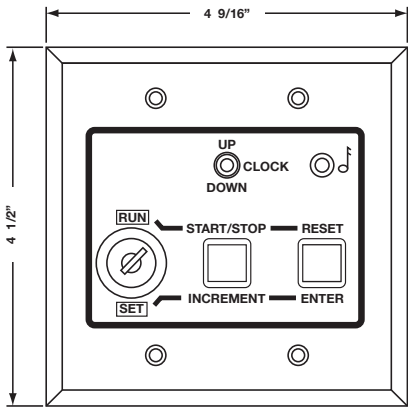
Maintenance

Appendix

Digital Clock/Timer



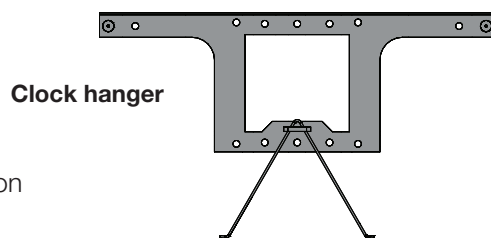
ATSTCS Control Station (optional)



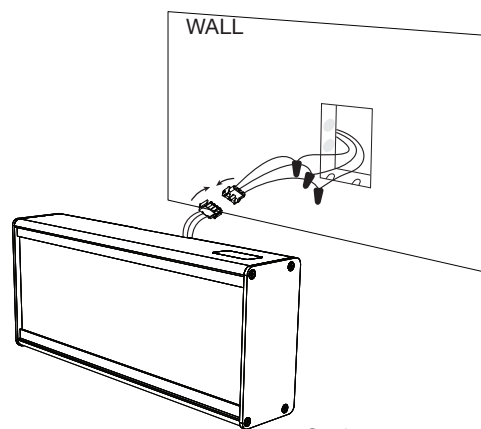
Digital Single Display Surface Mounting

CAUTION: Risk of Electrical Shock - Disconnect and lock out power to the electrical box before installing or servicing the clock.

1. Remove the hanger from the clock by pushing the bracket down and pivoting the studs out of the backplate.
2. Mount the hanger on the wall using the bracket holes, either directly to the wall or to a single or double gang box.
3. For 110v 3-prong corded clock, run the cord through either cutout on the top or bottom of the clock and plug into a grounded outlet.
4. For clocks using Molex connections, make electrical connections (black to hot, white to neutral and green to ground) for the Molex cable (not wired to the clock) to a non-switched electrical circuit wiring using UL approved wire nuts. Route field wiring away from sharp projections and corners.
5. Join the wall and clock Molex together.
6. Seat the bracket spring in the channel on the bottom rail of the clock. Press down and pivot the hanger studs into the holes on the backplate, then release.
7. Remove plastic protector from display face.
8. Apply power to the circuit and confirm correct operation.



Clock hanger

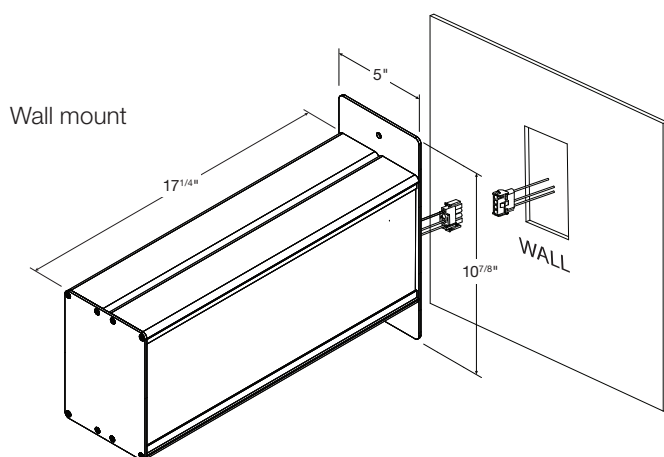


Surface mount

Digital 2-Sided Display - Ceiling or Wall Mount

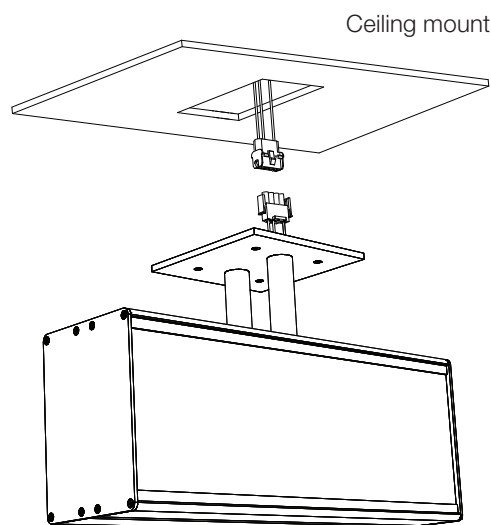
CAUTION: Risk of Electrical Shock - Disconnect and lock out power to the electrical box before installing or servicing the clock.

1. Make electrical connections (black to hot, white to neutral and green to ground) for the Molex cable (not wired to the clock) to non-switched electrical circuit wiring using UL approved wire nuts. Route field wiring away from sharp projections and corners.
2. Join the wall/ceiling and clock Molex together.
3. Mount the clock to the ceiling (4" box) or wall (single or double gang box).
4. Remove plastic protector from display face.
5. Apply power to the circuit and confirm correct operation.



Wall mount

4", 6-digit shown



Ceiling mount

Specifications

Powering Up

Apply power to the digital clock. The firmware version number will appear for a few seconds, followed by all digits illuminated. It will then scroll a digit pattern while it looks for the correct time from the SiteSync IQ system controller. Once the receiver inside the clock gets a signal, the clock will begin keeping time. At first startup, the clock may display a time such as 1:00:00 until it receives the first time update from the SiteSync IQ system controller. This should only take a few seconds, after which the correct time from the SiteSync IQ system controller should appear.

Description

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 SiteSync IQ system controller. The 12- or 24-hour mode option can be configured by the display settings of the system controller, or by the push buttons on top of the clock (see **Setting 12 or 24 Hr Mode** on pg 11). 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 SiteSync IQ system controller when 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.

Installation

Setting the Up Counter Preset Time (optional)

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.

Operation

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.
■ **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**.

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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.

Specifications

The buttons on the digital clock can be used for display setting options and connection information.

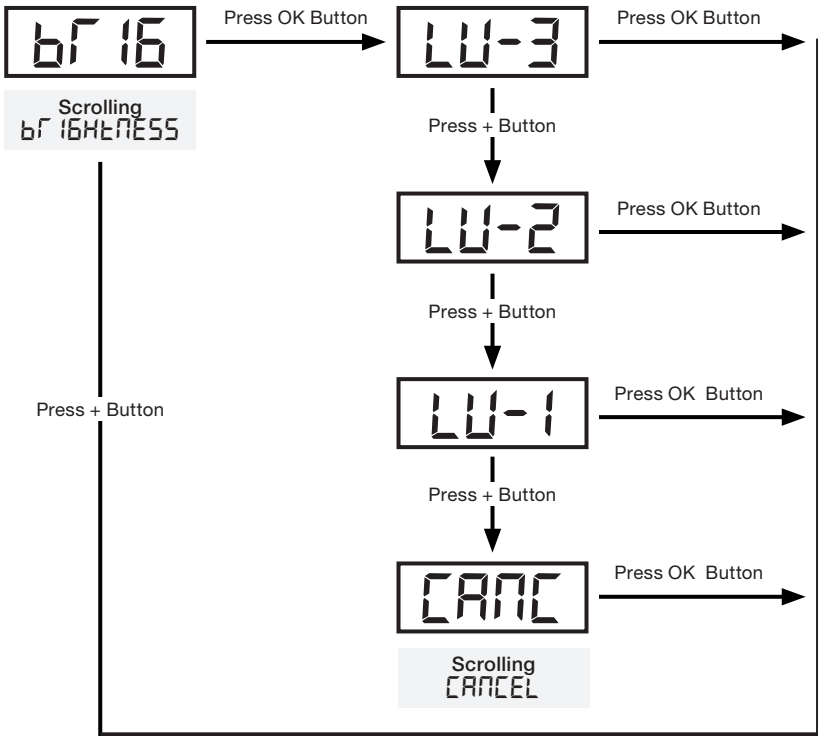


Go to the top of the clock case to change settings on the digital clock. Begin by pressing the **[SET/RUN]** button, and use the **[+]** and **[OK]** buttons to navigate through the menu as needed, referencing the Figures below. When complete, press **[SET/RUN]**.

Description

Fig. 1
Sets display brightness level.

Setting Brightness



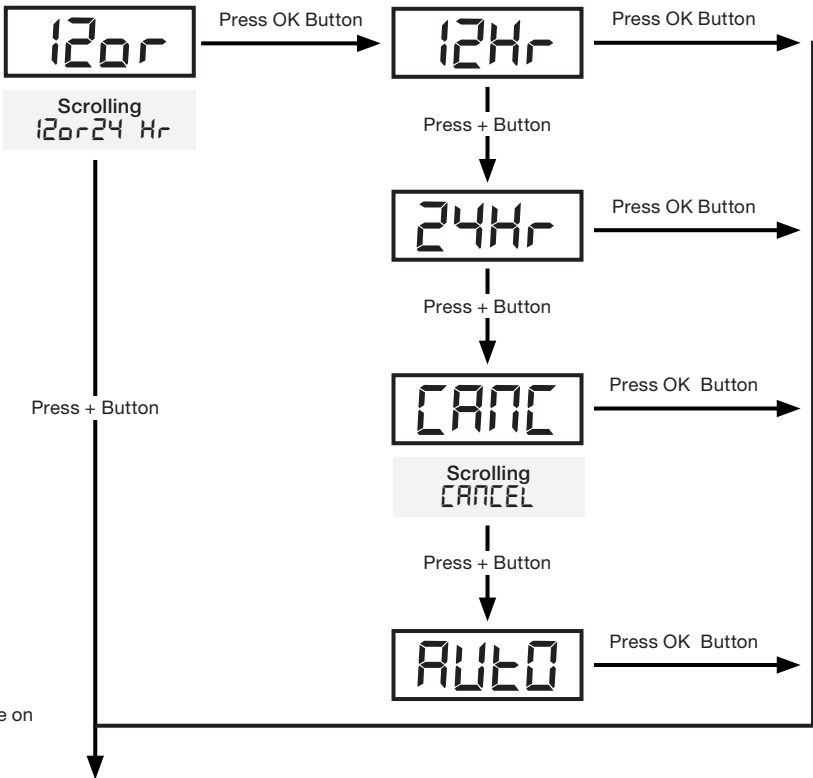
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Fig. 2
Sets the clock display to a 12 hour or 24 hour time format.

Setting 12 or 24 Hour Mode



NOTE: AUTO Selection will be controlled by the master clock.

Maintenance

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Fig. 3

Displays the software version of the clock.

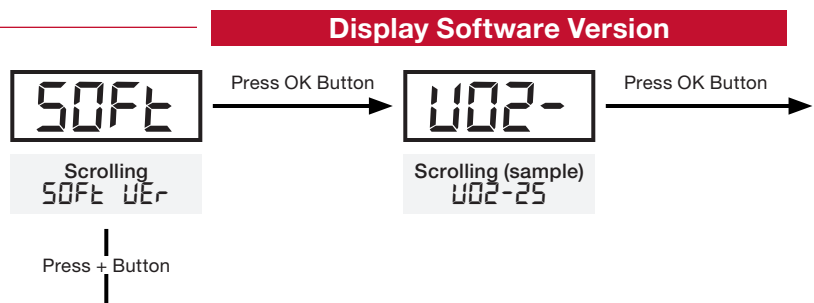
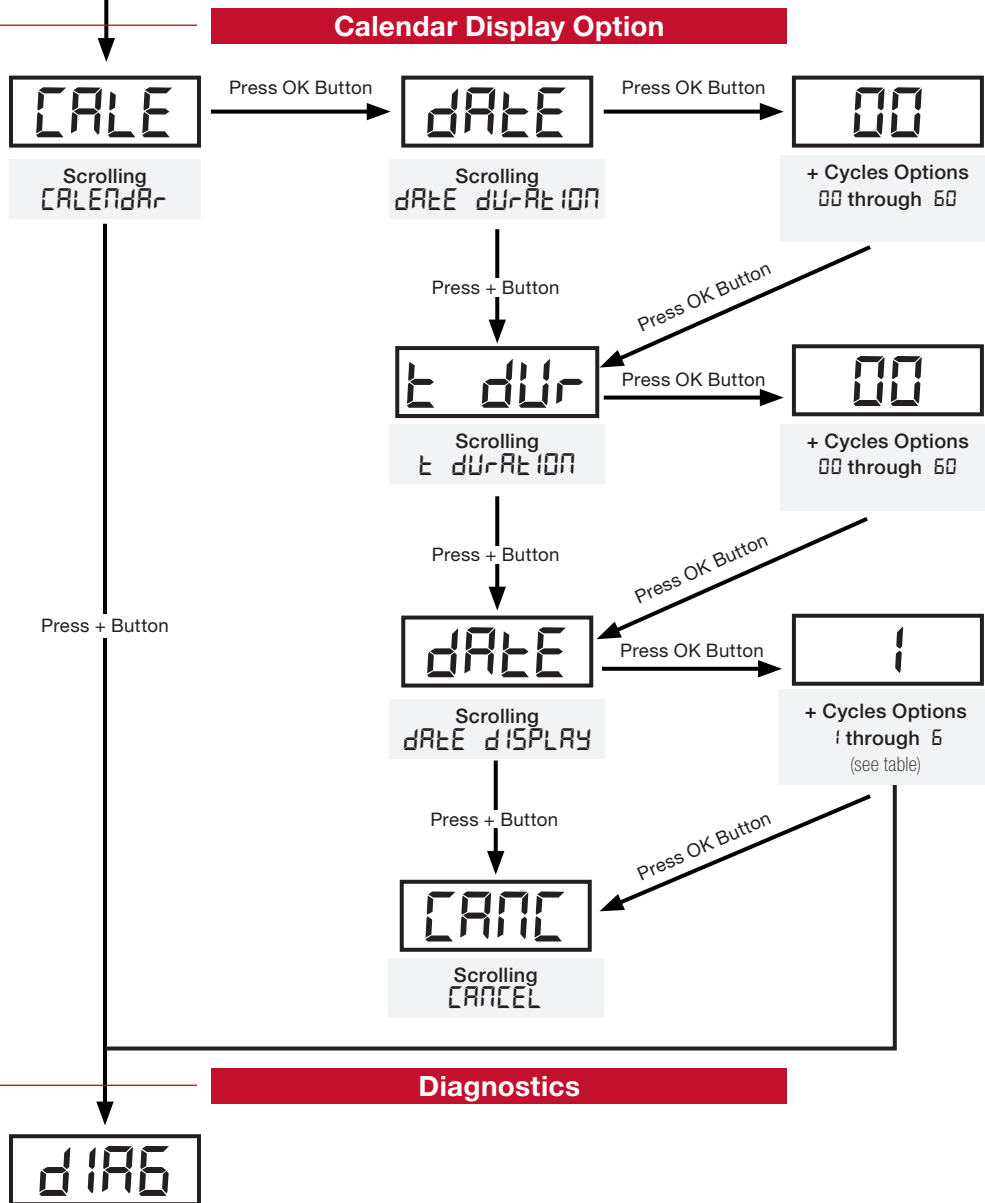


Fig. 4

Sets display options for calendar mode (if equipped).

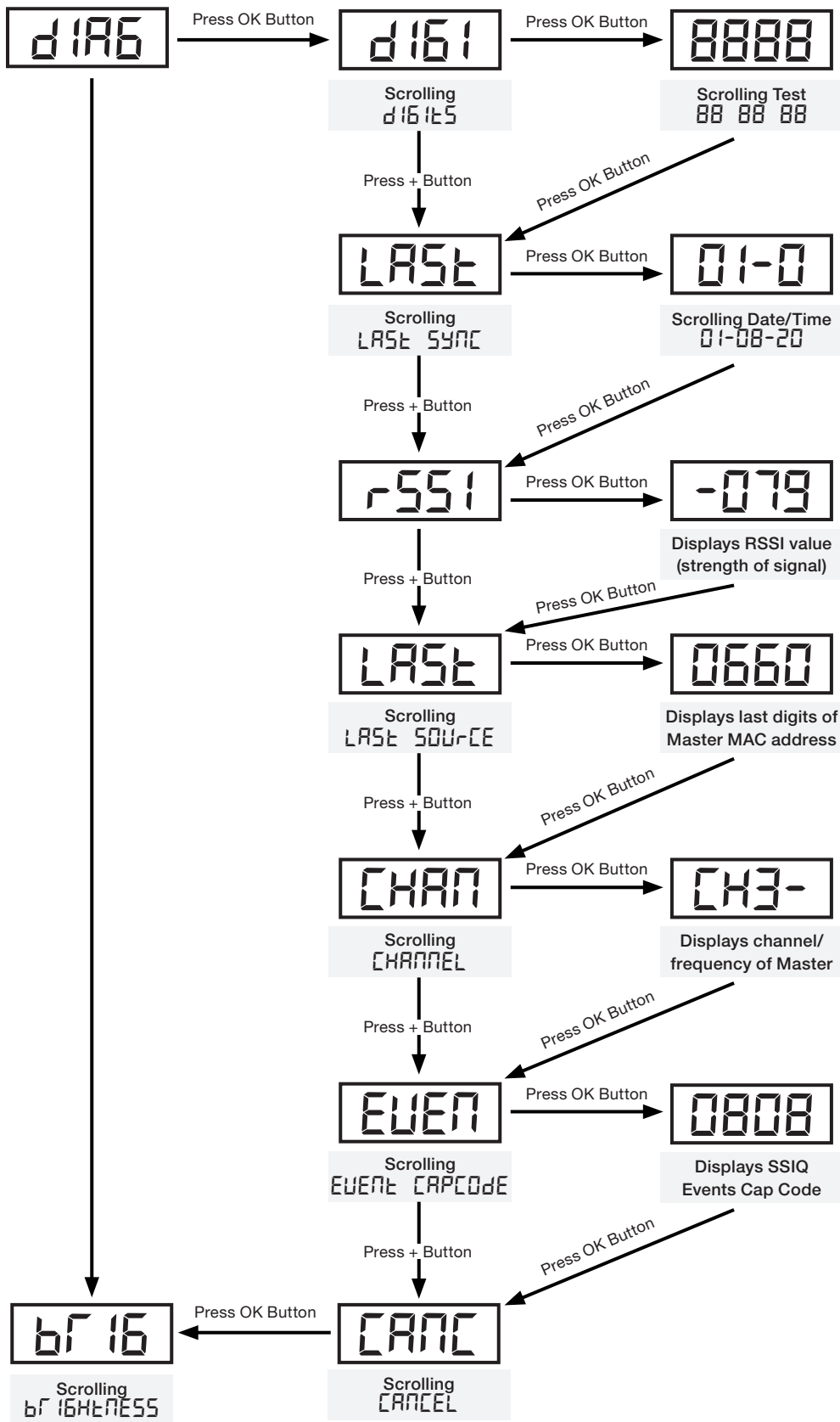


Continue to Diagnostics on
Following Page

Fig. 5

General information and clock diagnostics.

Diagnostics



Time/Date Display Duration

The calendar mode option allows the clock to be configured to alternate displaying the time and date at user-configured intervals. The time and date can be set to display at intervals ranging from 1 to 60 seconds under the **DATE DURATION** and **T DURATION** settings under **CALENDAR** in the clock menu (see page 13).

Calendar clocks are factory-configured to display the time for 15 seconds, followed by a five-second display of the date.

Setting either duration to "0" will disable the function (i.e. if **DATE DURATION** is set to "0," the clock will display only the time).

There are six options for the calendar format:

DATE DISPLAY option number	Calendar format
1	MM:DD:YY
2	DD:MM:YY
3	YY:MM:DD
4	M:D:YY
5	D:M:YY
6	YY:M:D

Specifications

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.

Description

Installation

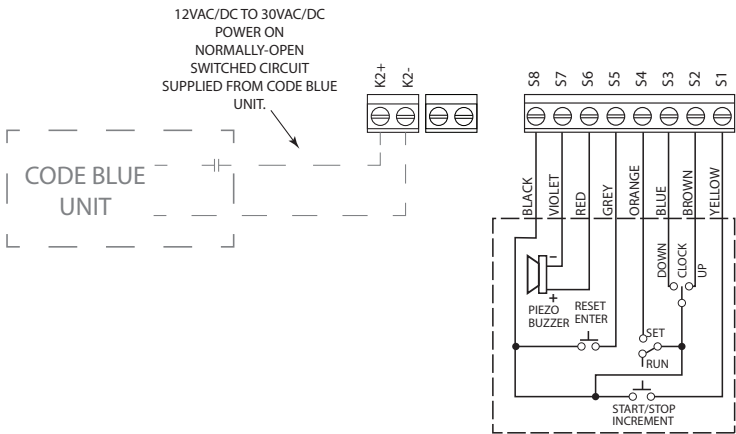
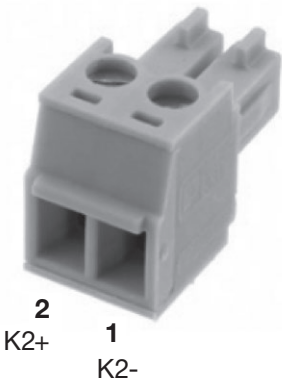
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Code Blue Pinout



Important Considerations

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.

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Specifications

Cleaning

Occasionally the Digital Clock/Timer and the Control Station will need to be cleaned. Dampen a soft, nonabrasive cloth with alcohol or a mild detergent. Do not use abrasives or solvents! Gently wipe the exteriors of the units with the cloth.

Description

Battery Maintenance

The Digital Clock/Timer uses a single 9vdc Ni-Cad battery rechargeable via an on board charger. This battery retains the time of day and timer counts when AC power is lost. If each in a series of AC power losses occur for a similar length of time, the battery can be conditioned to provide only that amount of backup capacity. This phenomenon is called “memory” effect. The Ni-Cad battery’s “memory” can be erased by deeply discharging the battery and recharging it.

It is recommended that the operator remove AC power from the Digital Clock/Timer once per year for at least four hours.

Installation

WARNING

Replace the battery only with a 9v Ni-Cad battery. Do not replace with a regular (primary) 9v transistor battery (i.e., zinc carbon battery, alkaline battery)! An incompatible battery may leak or explode, causing equipment damage and/or personal injury! If battery must be replaced, contact American Time at 800-328-8996.

Operation

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.

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The **ATSTCS 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 ATSTCS 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

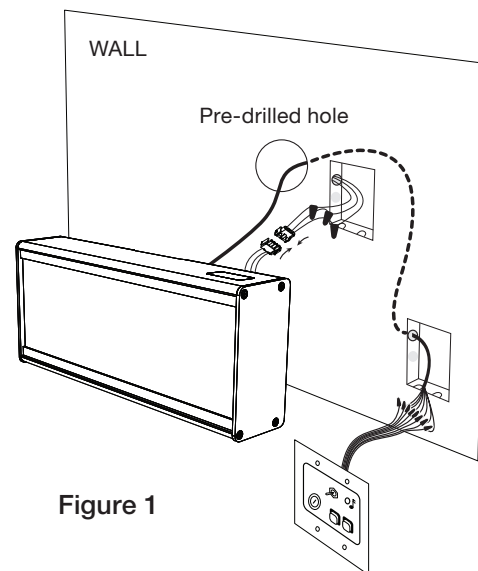
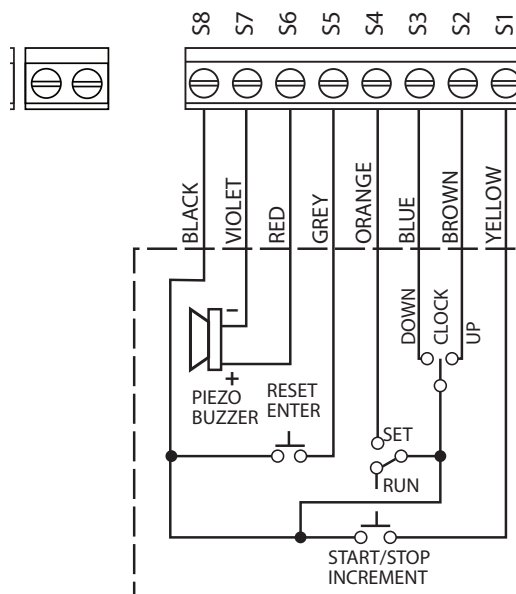
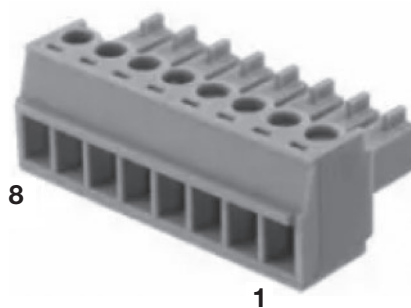


Figure 1

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

ETI Control Station



ATSTCS Wiring Diagram



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 clock time.

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.



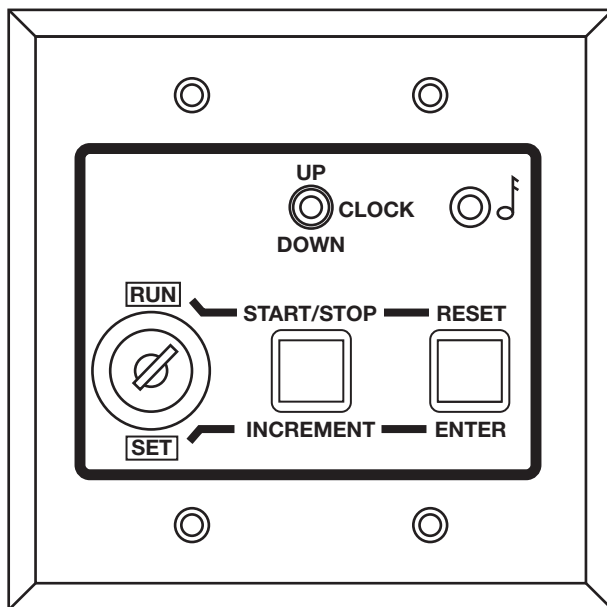
Start/Stop/Increment Switch -

- 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.



Timer Control Station Operator's Flowchart

	<p>To Set UP Counter Preset</p> <p>UP/CLOCK/DOWN switch in UP position</p> <p>SET/RUN switch in SET position</p> <p>Clock displays flashing hours digits</p> <p>Push INCREMENT to change</p> <p>Push ENTER</p> <p>Clock displays flashing minutes digits</p> <p>Push INCREMENT to change</p> <p>Push ENTER</p> <p>Clock displays flashing seconds digits</p> <p>Push INCREMENT to change</p> <p>Push ENTER</p> <p>Display shows DONE</p> <p>Place SET/RUN switch in RUN position</p>	<p>To Set DOWN Counter Preset</p> <p>UP/CLOCK/DOWN switch in DOWN position</p> <p>SET/RUN switch in SET position</p> <p>Clock displays flashing hours digits</p> <p>Push INCREMENT to change</p> <p>Push ENTER</p> <p>Clock displays flashing minutes digits</p> <p>Push INCREMENT to change</p> <p>Push ENTER</p> <p>Clock displays flashing seconds digits</p> <p>Push INCREMENT to change</p> <p>Push ENTER</p> <p>Display shows DONE</p> <p>Place SET/RUN switch in RUN position</p>
<p>To Use as a Clock</p> <p>Place SET/RUN switch in RUN position</p> <p>UP/CLOCK/DOWN switch in CLOCK position</p>	<p>To Use UP Counter</p> <p>UP/CLOCK/DOWN switch in UP position</p> <p>Place SET/RUN switch in RUN position</p> <p>Place RESET to display 00:00:00</p> <p>Place START/STOP to Begin</p> <p>Place START/STOP to Hold</p> <p>Place START/STOP to begin again</p> <p>Alarm will sound when preset time is reached</p> <p>Press RESET to reset counte</p>	<p>To Use DOWN Counter</p> <p>UP/CLOCK/DOWN switch in DOWN position</p> <p>Place SET/RUN switch in RUN position</p> <p>Place RESET to display preset time</p> <p>Place START/STOP to Begin</p> <p>Place START/STOP to Hold</p> <p>Place START/STOP to begin again</p> <p>Alarm will sound 00:00:00 is reached</p> <p>Press RESET to reset counter</p>
<p>Code Blue Operation</p> <p>SET/RUN switch MUST be in RUN position</p> <p>To stop and hold code blue time for viewing, press START/STOP</p>		
<p>To Reset Clock/Timer to Normal Operation</p> <p>Place SET/RUN switch momentarily in SET position and return switch to RUN position</p>		

