



## Installation and User Guide

*Firmware Version 1*

*21/05/2019*

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# SIGNALCLOCK V2 Manual

## INTRODUCTION

The SignalClock V2 is the latest edition to the SignalClock series, featuring a new user interface for web-based configuration, improved LED-lighting, enhanced durability and greater accuracy.

## KEY FEATURES

- ✓ Sleek web Interface for easy configuration
- ✓ Uses Power over Ethernet (PoE) for easy installation and operation
- ✓ Synchronises via the Network Time Protocol (NTP) for accurate time
- ✓ Available in 4-digit and 6-digit versions
- ✓ Displays accurate time for your time zone

## TECHNICAL SPECIFICATIONS

	4-Digit Model	6-Digit Model
Display Face	7 Segment Red LED	
Viewing Distance	150 Feet	
Standard Case	Matte Black Finish on Mild Steel	
Accuracy	200ms	
Power	PoE, IEEE 802.3af Compliant	
Dimensions	407 x 161 x 43 mm	602 x 161 x 43 mm
Weight	1.95KG	2.90KG
Network Interface	10/100 Base-T	
Warranty	1 Year, Return to Base	

## PRE-INSTALLATION

### IMPORTANT INFORMATION

Please remove the plastic sheet from the front of the display before powering the clock on. Removing this sheet after the clock has been powered up can result in damage to the hardware due to static build-up.

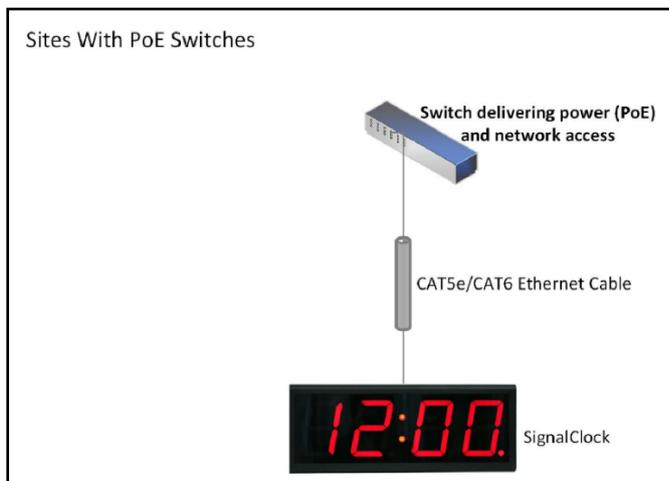
It is, currently, not possible to obtain the serial number of the clock via the web interface. We, therefore, recommend taking note of the serial number before mounting the clock to the wall. The serial number is located on the rear of the clock and will be required by the Galleon Systems support team for product/warranty verification, should you experience technical issues with your product.

### REQUIREMENTS

#### 1. Power over Ethernet (PoE)

Galleon's SignalClock requires a connection to a PoE enabled network so it can source power in compliance with IEEE 802.3af.

PoE is commonly used to power devices such as wireless access points and IP telephones. It is usually injected into the LAN using either PoE enabled Ethernet switches or a power injector. Consult with your IT Administrator regarding the PoE equipment on your network.

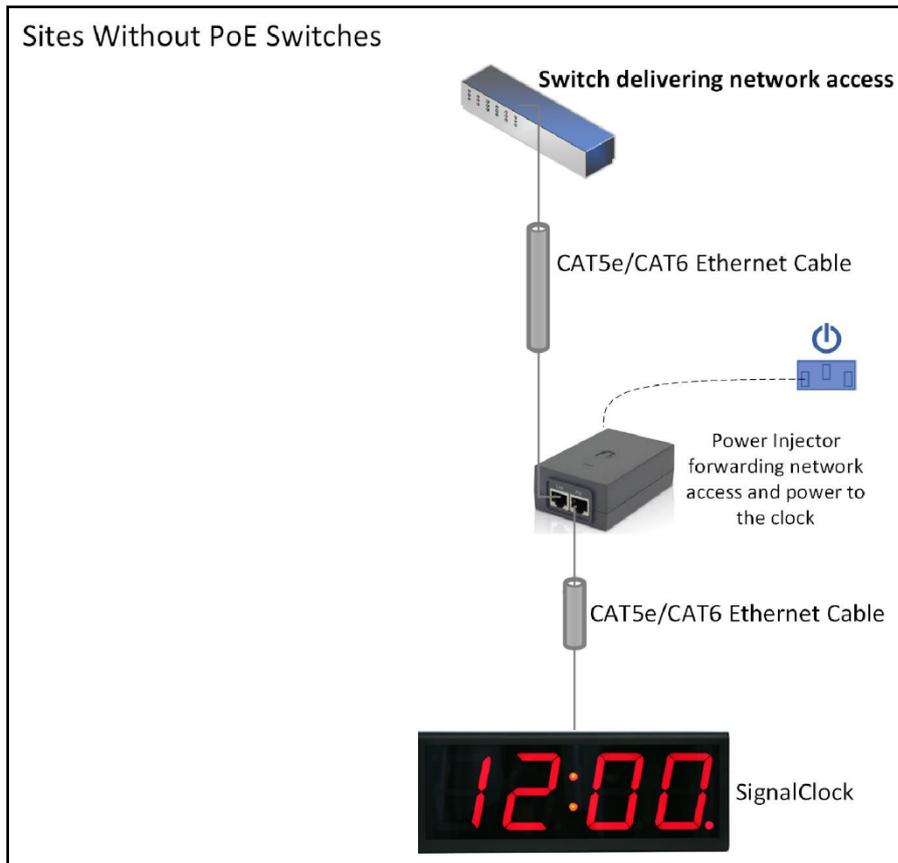


If your network has a PoE enabled network switch, simply connect the clock to the PoE enabled port on the switch as per the above diagram. The SignalClock will automatically request and receive power from the switch that conforms to the IEEE 802.3af standard.

**Note:** If the site plan requires a significant number of clocks to be powered from a single piece of network equipment, you should verify that that piece of equipment can deliver the necessary power. Some PoE enabled switches cannot deliver the full IEEE 802.3af power of 550ma per port or may require certain power options to do so.

# SIGNALCLOCK V2 Manual

If your network does not have a PoE enabled network switch, you will need to use a power injector with the clock. A power injector passes Ethernet communications through while also injecting power in accordance with the IEEE 802.3af standard.



The above diagram shows how a power injector fits into the set up. If you have a power injector supplied by Galleon, connect the hub/switch to the port labelled “LAN” on the power injector and connect the clock to the port labelled “PoE” on the power injector. Plug the power supply in and wait for the clock’s display to come on. When the unit powers up, make a note of the IP address, as this will be needed to configure the unit via the web interface.

## 2. DHCP SERVER

By default, the SignalClock is set to use DHCP to obtain its IP Address. If the clock is unable to receive network settings from the DHCP server, the clock will cycle: ‘---’. If the clock is unable to obtain an IP address after several attempts, it will set its IP address to 169.254.0.1. This is done so that the unit can be configured without requiring a DHCP server.

Once the unit has obtained an IP address from a DHCP server on your network, configuration (such as static network settings) can be applied to the clock. For help with this, please see the “Web Configuration” section of this manual.

## INSTALLATION

The mounting instructions slightly differ for the 4-digit and 6-digit models due to their different dimensions. Please follow the instructions that are relevant for your SignalClock model.

### MOUNTING THE 4-DIGIT MODEL

1. Locate the two slots on the back of the clock that allow the clock to be mounted to the wall using two screws.
2. Measure a horizontal line of exactly 300mm in the area of your choice, the end points of which represent the drilling locations for the screws.
3. Drill the holes and insert wall plugs into the wall to prevent the screws from coming loose.
4. Fit the screws into the plugs.
5. When the clock is ready, connect the Ethernet cable to the rear of the clock and hang it on the wall.

### MOUNTING THE 6-DIGIT MODEL

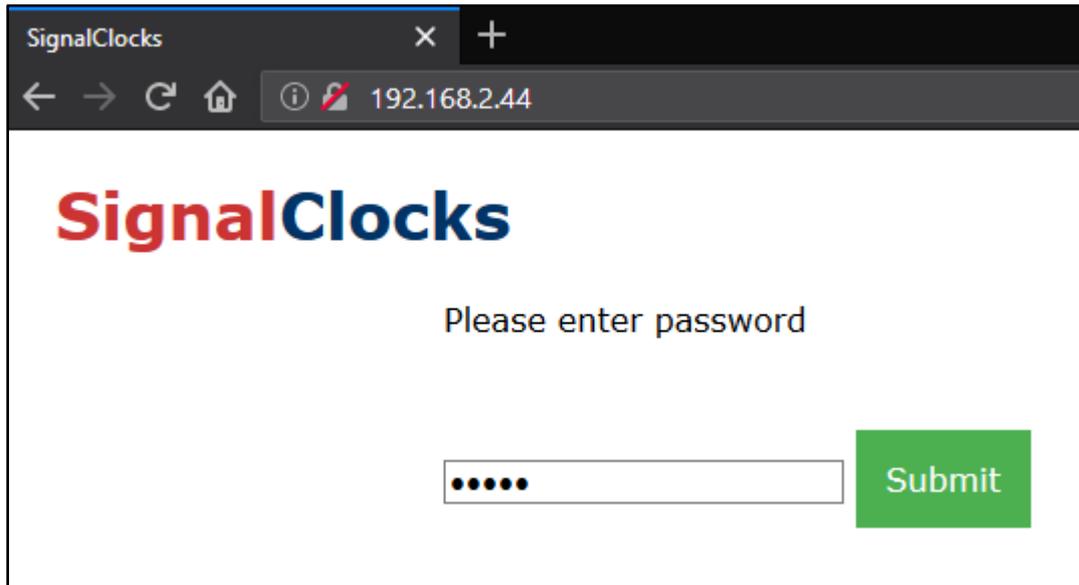
1. Locate the two slots on the back of the clock that allow the clock to be mounted to the wall using two screws.
2. Measure a horizontal line of exactly 480mm in the area of your choice, the end points of which represent the drilling locations for the screws.
3. Drill the holes and insert wall plugs into the wall to prevent the screws from coming loose.
4. Fit the screws into the plugs.
5. When the clock is ready, connect the Ethernet cable to the rear of the clock and hang it on the wall.

## WEB CONFIGURATION

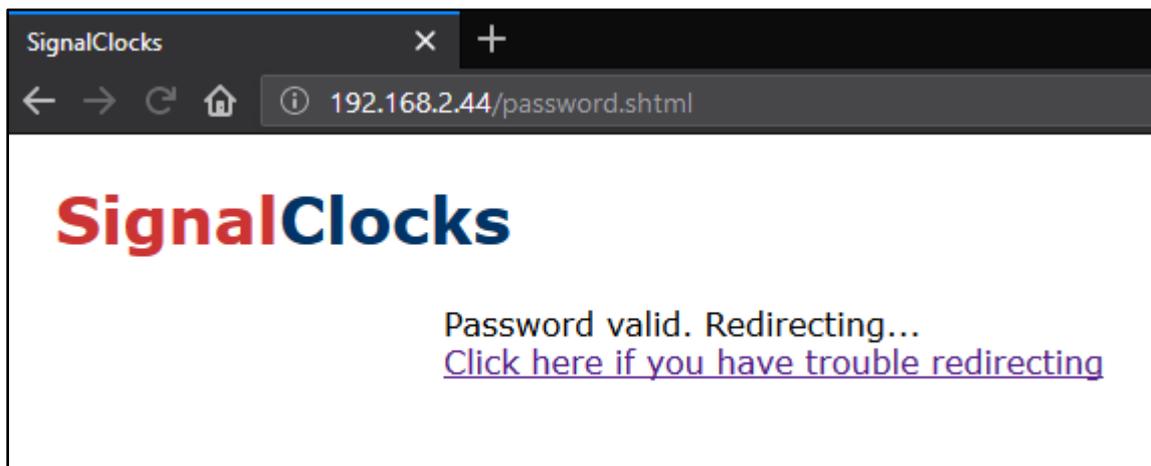
### LOGGING ONTO THE UNIT

Using a web browser (such as Chrome, Mozilla Firefox, Microsoft Edge or Internet Explorer), enter the IP address of the clock into the browser's address bar.

If you are unsure of the IP address, disconnect and reconnect the power to the clock and watch the clock's display for the IP address.



Once at the log in page of the clock, type the default password: *admin* and click *Submit*.



Upon entering the correct password, you will be redirected to the Home page.

## HOME

## SignalClocks

Home

Network Settings

Timeserver Address

Display Format

Timezone Settings

Daylight Saving Time

Firmware Upgrade

Change Password

Support

Logout

-----

Reboot clock

-----

Factory Reset

-----

Current Status	
Software Version	01.01.00 2019-MAY-20
Last NTP Update	UTC: Tues 21. May 2019 10:19:51
NTP Server Used for Update	IP: 192.168.0.150
MAC	54:10:ec:37:13:5f

FLASH DISPLAY

The Home page provides you with an overview of the following:

- The current software version and its release date.
- A date and timestamp of when the clock last received a response from an NTP server.
- The IP address of the NTP server used for the last update.
- The MAC address of the clock.

The *Flash Display* button can be used to identify a clock. This is useful if you have multiple clocks and wish to identify the unit you are currently connected to. The display will flash once per second for five flashes before returning to normal.

## NETWORK SETTINGS

### SignalClocks

<a href="#">Home</a> <a href="#">Network Settings</a> <a href="#">Timeserver Address</a> <a href="#">Display Format</a> <a href="#">Timezone Settings</a> <a href="#">Daylight Saving Time</a> <a href="#">Firmware Upgrade</a> <a href="#">Change Password</a> <a href="#">Support</a> <a href="#">Logout</a>	<div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <b>DHCP Network Settings</b>            DHCP <input checked="" type="radio"/> DHCP is used by devices on a network to automatically obtain an IP Address. These IP addresses are provided on a lease and will change should the device no longer renew its lease.         </div> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc; margin-top: 5px;"> <b>Static Network Settings</b>            STATIC <input type="radio"/> Static IP Addresses are assigned when the devices IP Address should not change.         </div> <table style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">IP Address</td> <td style="width: 15%; border: 1px solid #ccc;">192</td> <td style="width: 15%; border: 1px solid #ccc;">168</td> <td style="width: 15%; border: 1px solid #ccc;">0</td> <td style="width: 15%; border: 1px solid #ccc;">100</td> </tr> <tr> <td>Subnet Mask</td> <td style="border: 1px solid #ccc;">255</td> <td style="border: 1px solid #ccc;">255</td> <td style="border: 1px solid #ccc;">255</td> <td style="border: 1px solid #ccc;">0</td> </tr> <tr> <td>Gateway</td> <td style="border: 1px solid #ccc;">192</td> <td style="border: 1px solid #ccc;">168</td> <td style="border: 1px solid #ccc;">0</td> <td style="border: 1px solid #ccc;">1</td> </tr> </table> <div style="text-align: center; margin-top: 10px;"> <input type="button" value="Apply Changes"/> </div>	IP Address	192	168	0	100	Subnet Mask	255	255	255	0	Gateway	192	168	0	1
IP Address	192	168	0	100												
Subnet Mask	255	255	255	0												
Gateway	192	168	0	1												

Reboot clock

IP address settings are configured on the Network Settings page. You can either:

- Enable Dynamic Host Configuration Protocol (DHCP), which will make the clock request network settings from a DHCP server.
- OR
- Choose STATIC and manually enter the network settings for the clock (ensure the IP address is not already in use by another device).

Please note that any changes made to the Network Settings page will require a reboot for the settings to take effect. This can be achieved using the *Reboot Clock* button—as indicated.

## TIME SERVER ADDRESS

### SignalClocks

Home      Please enter the IP address of an NTP (Network Time Protocol) server.

Network Settings

Timeserver Address     

IP Address     

Display Format

Timezone Settings      Please note public NTP servers rate limit the requests for time to one per minute, this clock will ask every 64 seconds for the time.

Daylight Saving Time      As such you cannot use multiple clocks with a public NTP server.

Firmware Upgrade

Change Password     

Support

Logout

---

Reboot clock

The Time Server Address page allows you to point the clock to a time server for time updates. Currently this only accepts an IP address.

You should ensure the time server you are pointing the clock to is synchronised. The clock may reject time from an unsynchronised source.

Once you have entered a time server address, click the *Apply Changes* button. A restart is not required for changes on this page to take effect.

### Public Time Servers

If you are pointing the clock to a public time server, you should be aware that these servers usually use rate limiting to prevent Denial of Service (DoS) attacks and misuse. Pointing multiple clocks to, or having multiple NTP requests to, a public time server can often lead to a ban by the public time server. In this case, the clock(s) will indicate they have lost connection to the time server by flashing 'No Sync' every 60 seconds.

To prevent your devices from being banned by the public time server, you can download and install our TimeSync software on a non-domain controller system. Point TimeSync to the public time server and point your clock(s) and any other devices to TimeSync. This minimises the chance of being banned by the public time server. You should contact Galleon Systems for more information, and you will need to purchase licenses before using TimeSync.

## DISPLAY FORMAT

Use this page to set either 12-hour or 24-hour display modes.

### SignalClocks

Home	Display Format
Network Settings	Please select between 12 and 24 hour clock format.
Timeserver Address	<b>Display Format</b> <input type="radio"/> 12 Hour <input checked="" type="radio"/> 24 Hour
Display Format	
Timezone Settings	
Daylight Saving Time	
Firmware Upgrade	<b>Apply Changes</b>
Change Password	
Support	
Logout	
-----	
Reboot clock	
-----	

12-hour mode features a dot in the top-left corner of the screen to indicate whether the current time is AM or PM. If the dot is off, it means the current time is AM.

## TIMEZONE SETTINGS

### SignalClocks

- Home
- Network Settings
- Timeserver Address
- Display Format
- Timezone Settings
- Daylight Saving Time
- Firmware Upgrade
- Change Password
- Support
- Logout

---

- Reboot clock

### Timezone Settings

Please enter the offset from Coordinated Universal Time (UTC)

Timezone settings

+ ▾ 0 Hours 0 Mins

Apply Changes

By default, the clock will display Coordinated Universal Time (UTC). The Time Zone page allows you to add an offset so that the clock displays the correct time for your time zone. Simply choose whether the offset is plus or minus to UTC and specify the hours and/or the minutes of the offset.

For example, the below configuration would be correct for Montréal, Canada, which has a UTC-05:00 offset:

### SignalClocks

- Home
- Network Settings
- Timeserver Address
- Display Format
- Timezone Settings
- Daylight Saving Time
- Firmware Upgrade
- Change Password
- Support
- Logout

---

- Reboot clock

### Timezone Settings

Please enter the offset from Coordinated Universal Time (UTC)

Timezone settings

- ▾ 5 Hours 0 Mins

Apply Changes

Click the *Apply Changes* button and the change will take effect immediately. A restart is not required.

## DAYLIGHT SAVING TIME

**SignalClocks**

Home

Network Settings

Timeserver Address

Display Format

Timezone Settings

Daylight Saving Time

Firmware Upgrade

Change Password

Support

Logout

---

Reboot clock

---

Factory Reset

### Daylight Saving Time

Please select whether the daylight savings is required or not.

If enabled, please ensure to fill in the start and end dates.

DST Disabled options	
<input type="radio"/> Disable DST	
DST Enabled options	
<input checked="" type="radio"/> Enable DST	
Daylight Saving Time Starts (Clocks go forwards)	
MONTH ( 1 - 12 )	<input type="text" value="3"/>
WEEK ( 1 - 5 )	<input type="text" value="5"/>
DAY OF WEEK ( 0-SUN to 6-SAT )	<input type="text" value="0"/>
HOUR ( 0 - 23 )	<input type="text" value="2"/>
MIN ( 0 - 59 )	<input type="text" value="0"/>
Daylight Saving Time Ends (Clocks go backwards)	
MONTH ( 1 - 12 )	<input type="text" value="10"/>
WEEK ( 1 - 5 )	<input type="text" value="5"/>
DAY OF WEEK ( 0-SUN to 6-SAT )	<input type="text" value="0"/>
HOUR ( 0 - 23 )	<input type="text" value="1"/>
MIN ( 0 - 59 )	<input type="text" value="0"/>

By default, the clock will not have daylight saving time (DST) enabled. You will need to enter the DST settings for your time zone manually.

To enable DST, select 'Enable DST' and enter the settings required.

These settings determine when DST starts and ends. When DST starts, the clock will go forward one hour and return to normal time once DST ends.

**Note:** The DST end time does not take daylight saving into account. For example, setting 1.00 AM here means the time would revert at 2.00 AM with daylight saving.

**Example Configuration:**

In the UK, DST begins on the last Sunday in March at 2.00 AM and ends on the last Sunday of October at 2.00 AM. Therefore, the settings would be:

Start: 3 (March), 5 (5<sup>th</sup> Sunday), 0 (Sunday), 2, 0

End: 10 (October), 5 (5<sup>th</sup> Sunday), 0 (Sunday), 1, 0

## FIRMWARE UPGRADE

### SignalClocks

Home	Please select the firmware file then click upload.
Network Settings	Select a file: <input type="button" value="Browse..."/> No file selected.
Timeserver Address	
Display Format	<input type="button" value="Upload"/>
Timezone Settings	
Daylight Saving Time	
Firmware Upgrade	
Change Password	
Support	
Logout	
-----	
Reboot clock	
-----	

Any firmware updates are applied on the Firmware Upgrade page. The latest firmware can be downloaded from here:

<https://support.galsys.co.uk/index.php?/Knowledgebase/List/Index/19/digital-clocks>

To upgrade the firmware on the clock, simply click *Browse* and locate the firmware file. Next, click *Upload*.

The clock will count to one-hundred and then count down from one-hundred. After this, the clock will reboot and should go back to displaying the time.

## CHANGE PASSWORD

**SignalClocks**

Home

Network Settings

Timeserver Address

Display Format

Timezone Settings

Daylight Saving Time

Firmware Upgrade

Change Password

Support

Logout

---

Reboot clock

---

**Change password**

Enter current password

Enter new password

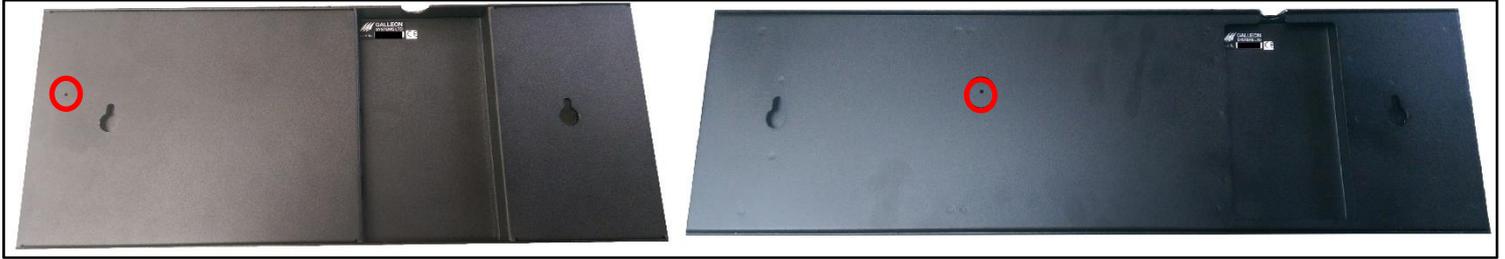
Re-enter new password

Apply Changes

It is recommended that you change the default password of your SignalClock. This can be done on the Change Password page. The password must be at least four characters, and special characters can be used (!"£\$%^&\*).

We also recommend noting down the web interface password and keeping it in a secure location. If you forget the password for the clock, you will need to remove the clock from its mounting location and press the reset button located on the rear of the clock. This will reset the clock to factory default settings, which means you will need to re-configure the unit. More information can be found in the "Resetting the Clock" section of this manual.

## RESETTING THE CLOCK



To reset clock, use a small pin to press and hold the reset button (located on the rear of the clock) while the unit has power and network access. The clock will countdown from ten. Ensure you keep the reset button pressed down for the duration of the countdown or the reset will be cancelled.

Once the reset procedure has completed, the clock will reboot with factory default settings. Some things to note:

- The web interface password will reset to *admin*.
- DHCP will be enabled by default. After the clock has rebooted, watch the clock's face for the IP address.

## QUICK SETUP GUIDE

1. Connect the clock via Ethernet to either a PoE enabled switch or a power injector.
2. By default, the clock will have DHCP enabled. If a DHCP server is unavailable, the clock will assign itself the IP address: 169.254.0.1. Once the clock has an IP address, it will display it on the clock face. Take note of the IP address.
3. Using a web browser, navigate to <http://> followed by the IP address of the clock.
4. At the log in screen, type the default password: *admin*.
5. After successfully logging in, you will be redirected to the Home page. Navigate to the Network Settings page if you wish to configure static network settings. Select STATIC and type in the network settings. Now, click *Apply Changes*.
6. Navigate to the Time Server Address page and type in the IP address of the time server. Click *Apply Changes*.
7. Navigate to the Display Format page, choose the appropriate format and click *Apply Changes*.
8. Navigate to the Time Zone Settings page and configure the appropriate offset to UTC. Click *Apply Changes*.
9. If applicable, navigate to the Daylight Saving Time page and configure the appropriate settings. Ensure DST is enabled and click *Apply Changes*.
10. Navigate to the Change Password page and change the web interface password (default password is *admin*). Click *Apply Changes*.
11. Click Reboot Clock to apply the configured changes.

## HELP

Use this section to troubleshoot common problems.

### TROUBLESHOOTING COMMON PROBLEMS

CONDITION	SOLUTION
NO ACTIVITY ON THE DISPLAY	Verify that the network port is capable of supplying Power over Ethernet (PoE). Reboot the clock by disconnecting the Ethernet cable, counting to five and reconnecting the cable.
THE CLOCK SHOWS INCORRECT TIME	If the minutes past the hour are correct and the hour is incorrect, verify the Time Zone and Daylight Saving Time settings on these pages.
CLOCK FLASHES 'NO SYNC' ONCE EVERY 60 SECONDS	The time server is either improperly configured or unreachable. If you have pointed your clock to a public time server, see page 10 for reasons why that time server might be unreachable.
CLOCK CYCLES: ----	There is no DHCP server on the network or the security settings on your DHCP server are preventing the clock from obtaining an IP address.
DETERMINE THE IP ADDRESS OF THE CLOCK	Disconnect the network cable and count to five. Reconnect the network cable and watch the digital clock face for the IP address.

If you are unable to resolve your issue, please contact Galleon Support. Contact details can be found in the "Support and Maintenance" section of this manual.

## SUPPORT AND MAINTENANCE

### SUPPORT

Galleon offers free lifetime technical support on all its products.

Technical support is available Monday to Friday from 9.00 AM – 5:30 PM (excluding UK bank holidays).

- Contact technical support on: +44 (0)121 608 4433 (option 3)
- Alternatively, you can contact the technical department by submitting a support ticket here: <https://support.galsys.co.uk/index.php?/Tickets/Submit>

For quick solutions to common problems, please visit our website and refer to our Knowledgebase and Troubleshooter: <https://support.galsys.co.uk>

### WARRANTY STATEMENT

Galleon Systems warrants the product to be free from defects in material and workmanship for a period specified in the product description on the Galleon Systems website. The warranty commences from the date the unit is shipped from Galleon Systems. For extended warranties, please contact our sales team.

In accordance with the terms of the warranty, Galleon Systems' liability is limited to repairing or replacing, at the discretion of Galleon Systems, the defective equipment and providing upgraded version changes for firmware. In case of repair, the product must be returned to Galleon Systems.

This warranty does not apply if repairs are required due to acts of nature beyond Galleon Systems' control, such as, but not limited to, lightning strikes, power surges, misuse, damage, neglect or if repairs/modifications have been made or attempted by anyone other than the personnel authorised by Galleon Systems.

In no event will Galleon Systems be liable for any indirect, special, incidental or consequential damages from the sale or use of this product.

This disclaimer applies both during and after the term of the warranty. Galleon Systems disclaims liability for any implied warranties, including implied warranties of merchantability and fitness for a specific purpose.