

## Introduction

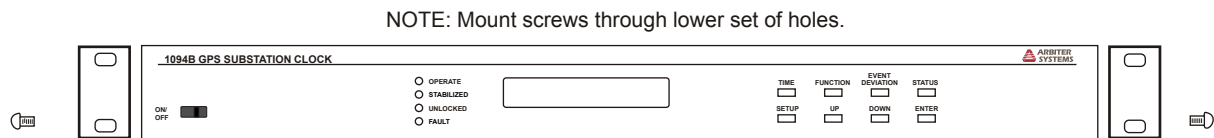
This document covers the basics of getting the Model 1094B unpacked, installed, connected and running. For complete details covering the Model 1094B, please consult the operation manual available for download from [www.arbiter.com](http://www.arbiter.com).

## Unpacking

Several accessories included with the clock are located inside the packing material. These accessories include the GPS antenna (AS0087800), a 50-ft antenna cable assembly (CA0021315), two rack-mount ears (AS0028200) and a quick setup guide (PD0052500). Handle the GPS antenna carefully, as it may be damaged if dropped.

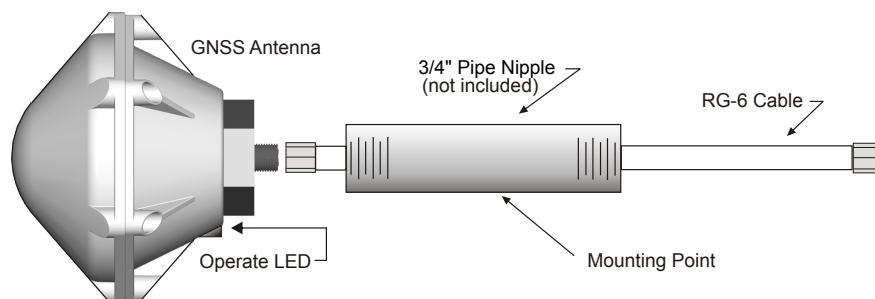
## Attaching Rack-Mount Ears

Each rack-mount ear is attached with two M5×10 mm flat head screws, with a rack-mount ear mounted on each side of the clock. To mount them, first remove the two pan head screws securing the clock cover on one side of the clock. Place a rack mount ear against that side of the clock, as shown in the diagram below. Insert the two screws on that side of the clock and tighten. Repeat with the other rack-mount ear on the opposite side.



## Installing GPS Antenna

The GPS antenna included with the clock is designed to be threaded onto a piece of 3/4 in pipe nipple. Follow these instructions to mount the antenna. Make sure to mount the antenna so that it has a clear view of the sky in all directions of the compass.



1. Pass the antenna cable through the pipe nipple and attach the cable to the antenna. Tighten by hand, and do not spin the antenna onto the cable connector, as it may damage the antenna/cable connection.
2. Thread the pipe nipple into the base of the antenna and snug by hand.

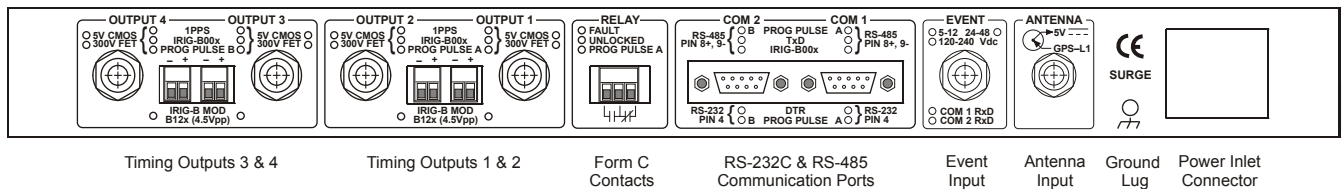
3. Mount the pipe nipple to a fixture, such as the side or top of a building, or to a pipe. You can also purchase the antenna mounting kit (AS0044600) available from Arbiter Systems.
4. Also available is a surge arrester (AS0094500) that can protect the Model 1094 from induced voltages that may appear on the antenna cable and potentially damage the clock.
5. Connect the antenna cable to the clock so the clock can synchronize with the GPS.

## Installing the Clock in a Rack

Holes in each of the ears of the two rack mount ears should match up to the mounting holes in a standard 19-inch rack. Locate the clock in the rack and secure with the rack hardware.

## Connecting Signal Cables

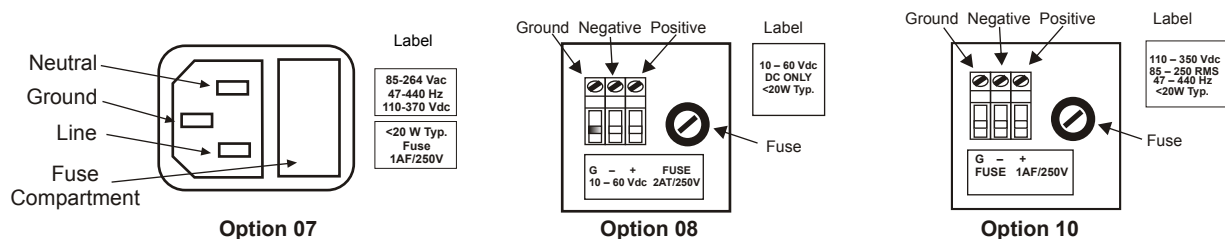
Connecting cables to the clock is fairly straightforward. For changing signal types on any of the ports, please see the operation manual which discusses jumper settings.



- **Timing Outputs** Model 1094B has four timing output ports, labeled Output 1 – Output 4. Each port has two connectors: one terminal connector and one BNC female connector. To change the timing signal, see the operation manual.
- **Out-of-Lock Relay** Connect the three wires – normally open (NO), normally closed (NC) and common (COM) – to the SPDT relay contact terminals. Strip the wire insulation about 1/4 in and DO NOT TIN the bare wire with solder. “Normally” refers to the relay condition with the clock powered off.
- **RS232 ports** Every Model 1094B has two RS232 serial ports: COM 1 and COM 2. Connect a null-modem serial cable between the computer and the clock. A USB-to-serial adapter may be required.
- **Event Input** The Model 1094B has one dedicated BNC event input connector. There are three input voltage ranges: 5 Vdc to 12 Vdc, 24 Vdc to 48 Vdc, and 120 Vdc to 240 Vdc.

## Energizing the Clock

Before connecting voltages to the clock, make sure to read the power inlet label to verify the correct voltage. The figures shown indicate the three types of inlet supplies available. For Option 07, a fuse is located behind a snap-fit latch on the right side of the connector. Options 08 and 10 have a separate fuse located to the right of each power inlet connector.

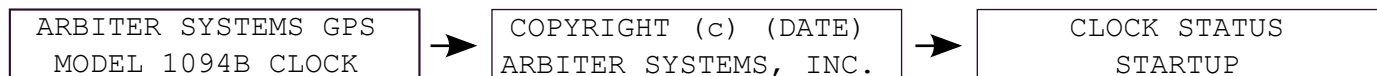


## Configuring the Clock Settings

Every Model 1094B is shipped from the factory with default settings, which you can change through the front panel interface or through one of the serial ports using the 1094 Utility. This section discusses configuring the clock using the front panel in which two common configuration examples are given. For a complete configuration of the clock, download the pdf version of the manual, or order a printed version (AS0035400) from Arbiter Systems.

### Clock Startup – Model 1094B

Illustrated below are display indications for the Model 1094B during startup.



After a few minutes the clock should synchronize with the GPS and the CLOCK STATUS should change from STARTUP to LOCKED\*POSITION HOLD.

### Configuring Common Settings – Model 1094B

After the clock indicates “CLOCK STATUS – STARTUP” press the SETUP key to begin configuring some common settings in the clock. These include the local (time) offset, including daylight saving time, and IRIG-B settings.

#### Set Local Offset and Daylight Saving Time

1. Press the SETUP key until the display indicates, “SET LOCAL HOUR?” and press the ENTER key. The display will indicate the local offset from UTC.

```
SET LOCAL OFFSET?  
HOUR:MIN 00:00
```

2. Press the UP key to adjust a positive offset and the DOWN key to adjust a negative offset. For example, Eastern Standard Time would require pressing the DOWN key until the offset indicates -5:00, then press the ENTER key.
3. Next is the daylight saving time, or summer time, setting. There are three choices: OFF, ON and AUTO. If you observe daylight saving time, the most efficient setting is AUTO.

```
SET DST/SUMMER TIME  
AUTO
```

4. Press the ENTER key to page through the DST/Summertime settings to make sure they are correct for your region. Settings require you to set up the START day, minute after midnight, month and week of month. Then, it requires the STOP day, minute after midnight, month and week of month. Change them as required for your geographical region.

#### Set IRIG-B Time Zone and IEEE 1344

1. Press the SETUP key until you reach the IRIG-B submenu as illustrated below.

```
SET IRIG TIME DATA?
```

2. Press the ENTER key and the display should allow you to change the time zone provided by the IRIG-B time signal. Choices include UTC or Local.

```
SELECT UTC OR LOCAL
IRIG DATA TIME = UTC
```

3. Press the UP or DOWN key to select either the UTC or Local time zone and press the ENTER key. The display should now indicate the IRIG IEEE 1344 setting choices.

```
IRIG-B IEEE 1344
1344: OFF
```

4. Use the UP or DOWN key to turn the IRIG IEEE 1344 feature ON or OFF, and press the ENTER key. With the IEEE 1344 setting ON, the IRIG-B will send out additional time-related information, including the year and time quality. However, not all devices can interpret the extra data supplied with IRIG IEEE 1344 turned ON.

### Configuring the Model 1094B Using the Utility Software

1. You can also configure the Model 1094B using the Utility software. Download the 1094\_Utility from [www.arbiter.com](http://www.arbiter.com).
2. Connect a null-modem cable between the Model 1094B and your computer.
3. With 1094\_Utility open, select Settings in the Utility menu and make sure you are using the correct COM port for your computer and the same baud rate.
4. Click the READ icon and wait for the Utility windows to populate.
5. Go through the various menus and change settings as needed.
6. When you are finished changing settings, click the WRITE icon to configure the clock.
7. Verify that the clock and utility configurations are identical by clicking the VERIFY icon.
8. You can also save this configuration file for later use by clicking the Save icon.

### Additional Help

For complete details concerning the setup and operation of the Model 1094B, please go to [www.arbiter.com](http://www.arbiter.com) and download the operation manual from the Model 1094B product page. A printed manual is also available for purchase. See contact information for Arbiter Systems<sup>1</sup>.

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<sup>1</sup>Arbiter Systems, Inc. · 1324 Vendels Circle Suite 121 · Paso Robles, CA 93446 · USA · 1.805.237.3831 · 1.800.321.3831 · E-mail: [sales@arbiter.com](mailto:sales@arbiter.com) · [techsupport@arbiter.com](mailto:techsupport@arbiter.com) · Internet: [www.arbiter.com](http://www.arbiter.com)