

Introduction

This document covers the initial set up of the Model 1133A. For complete details covering the Model 1133A please consult the operation manual. Download from www.arbiter.com. On the website, search under **Products > Synchronized Power Measurements > Model 1133A Power Sentinel** on the product page locate the file under **Documentation**.

Unpacking

Several accessories are included with the 1133A inside the packing material. These accessories include the GNSS antenna, a 50-ft antenna cable assembly, two rack-mount ears and this quick setup guide. Handle the GNSS antenna carefully, as it may be damaged if dropped.

Attach Rack-Mount Ears

Each rack-mount ear is attached with two M5×10 mm flat head screws; one rack-mount ear 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. Insert the two screws in the two lower holes on that side of the clock and tighten. Repeat with the other rack mount ear on the opposite side.

Installing GNSS Antenna

The GNSS 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. If this is not possible, partial sky views can result in normal operation but with the possibility of unlocked conditions if satellites cannot be acquired. For additional details on antenna mounting see Chapter 4 in the manual.

1. Refer to the figure below. Pass the antenna cable through the pipe nipple and attach the cable to the antenna. Tighten connector nut by hand, and **do not spin the antenna onto the cable connector, as it may damage the antenna connector.**

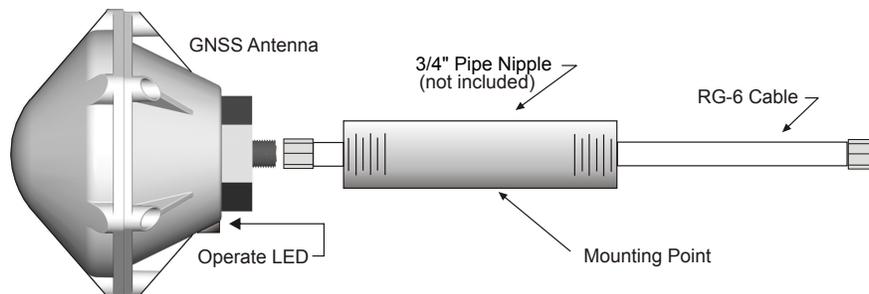


Figure 1: Suggested Antenna Mounting Assembly

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 may also purchase the antenna mounting kit available from Arbiter Systems.
4. Also available is a surge arrester that can protect the Model 1133A from induced voltages that may appear on the antenna cable.
5. Connect the antenna cable to the clock so the clock can synchronize with the GNSS.

Inlet Power Connection

Arbiter Systems does not provide a power cord for the 1133A. Because each installation is unique, the inlet power cord and connection are the responsibility of the user. Inlet power is supplied from an AC or DC power source to the three-terminal block at the right rear of the 1133A. Identification marks are there for assignment of correct polarity. **Caution:** Polarity markings are especially important for DC power sources.

Power cords should be of appropriately-rated, two or three-conductor insulated wire. Strip the wire at the 1133A end about 1/4 inch (7 mm) and Do NOT tin with solder.

System Ground

A threaded ground lug labeled **SURGE**, found near the inlet power terminal strip, is provided for electrical surges and as a safety ground. **Caution:** Always connect the chassis to a suitable system ground, otherwise dangerous voltages could appear at the 1133A.

Confirming Basic Operation

Prior to configuring the measured electrical system inputs and outputs on the 1133A, follow these steps to confirm normal operation.

1. Locked Condition: After application of line power, the 1133A should lock to the GNSS for the first time within about 25 minutes (antenna connected).

LOCKED VISIBLE=11 TRACKED=8

If the 1133A is equipped with a BNC connector for an IRIG-B synchronizing input signal, it should quickly synchronize after connecting an IRIG-B000 unmodulated signal.

2. If necessary, press the STATUS/TIME key until the display indicates the receiver condition shown above.
3. Check OPERATE and TIME SET LEDs – they are green and SHOULD be lit.
4. Check UNLOCKED and FAULT LEDs – they are red and SHOULD NOT be lit.
5. Position and Time: Press the STATUS/TIME key until the display indicates the geographical position of the GNSS antenna. Your position will be different.

LAT 35° 35' 50.18" LON 120° 41' 34.83"

6. It may be advisable to write down the longitude and latitude for future reference.
7. Other Display Indications: see Chapter 5 in the manual. If any of the display indications do not seem correct, check the operation manual, and if necessary, contact the factory technical support for help. Contact information is found at the bottom of the last page.

Communication Cable Connections

Choose a cable/connector to match the specific port being used. Use a network cable to connect to the Ethernet port. There are at least four serial connection options available to the 1133A. A special RS-232 cable and adapter are included: RJ-11 phone cable and RJ-11 to DB-9F adapter. Connection options and cables:

RS-232/485: Standard phone cable and RJ-11 to DB9F cable adapter.

Modem: Standard phone cable.

Ethernet: 10Base-T (RJ-45) to network.

For serial port locations, see Chapter 2 of the manual. Connector pin locations are specified in Table 3.2 of the Manual. After connecting the appropriate cable, PSCSV must be set up and used to begin configuring and viewing data.

Setting Up PSCSVTM Software

PSCSV is available for download from www.arbiter.com, and is designed to operate under most Windows operating systems, exclusively for use with the 1133A. Basic functions allow users to download and export various types of data. More advanced functions and complete configuration are available with the Login Name of “admin”.

Starting PSCSV

1. Download PSCSV from the Arbiter website and install on your computer.
2. Start PSCSV by clicking on the shortcut icon, or using the Start menu.
3. From the PSCSV main window, check for existing connections listed under the **Connection > Open** menu item. If none exist, select **Connection > New** to establish a new connection. See Chapter 6, Opening a Connection for further details on the connection procedures.
4. If correct serial port connection names exist, select one and open the connection.

Note 1: an open connection will be recognized by the connection name appearing in the connection window, and activation of all of the Broadcast Toolbar Icons.

Note 2: When connecting to the 1133A using an optional serial port, either connect the supplied RJ-11/DB-9F adapter directly to the computer or use a null modem cable between the adapter and computer.

Security

When a new connection to the 1133A is established, the user is automatically logged in as anon with no password. In order to gain administration level access, the connected user must log in as admin with the default password 801n60. Once logged in as admin, the default password should be changed and as many as 14 additional users can be created. See the operation manual for further information.

Configuring the Connected System

Before connecting the measured electrical system to the 1133A, consult the operation manual in Chapter 3, which provides a number of common system configurations. **Caution:** Verify that any input to the 1133A does not exceed maximum ratings - see Chapter 12 for Technical Specifications and Operating Parameters.

1. Log in under either admin or a new account that permits configuration (see above).
2. Press the STATUS/TIME key until it displays the DSP Mode information – default mode shown below. Compare this with your connected system.

3P4W3E 120V x1;C0 60HZ 5(2.5)A x1;C0

3. Verify that the DSP Mode values match the system you are measuring. Use the most accurate range for voltage and current. Wider voltage and current ranges may not measure as accurately as expected.
4. In PSCSV select **Configure Measurement Parameters > DSP Mode** to change the system configuration if the 1133A configuration does not match your system connections. DSP Mode identifies the type of electrical system, voltage range, current range and nominal frequency.
5. Verify your system connections with the connection diagrams in Chapter 3 of the manual.
6. Apply DSP Mode changes by clicking the Apply button.

Downloading Data

For simple data downloads, log in under anon. All of the broadcast functions, such as basic data–energy–harmonics–waveforms–phasors, can be downloaded under anon.

Example: Downloading Basic Data

Once logged in under anon, select **Connection > Acquire Broadcast > Basic** or click the “ABC” icon on the Broadcast toolbar.

Additional Help

For technical support, contact techsupport@arbiter.com or at one of the numbers below¹.

Document No. PD0055600B

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