

Array Solutions
Single-Wire Single-Direction Beverage Antenna System
Model SWSD-1

Introduction

The SWSD-1 is a single-wire, single direction Beverage Antenna System. The SWSD-1 consists of a receiver matching transformer assembly, and a 10-watt non-inductive termination resistor assembly. Both the matching transformer and termination assemblies are designed to mount to a 1" OD galvanized water pipe available from any home improvement store. For improved grounding, there are provisions to connect both assemblies to separate ground rods as well. The SWSD-1 interfaces to your receiver via standard 50-ohm cable.

Specifications

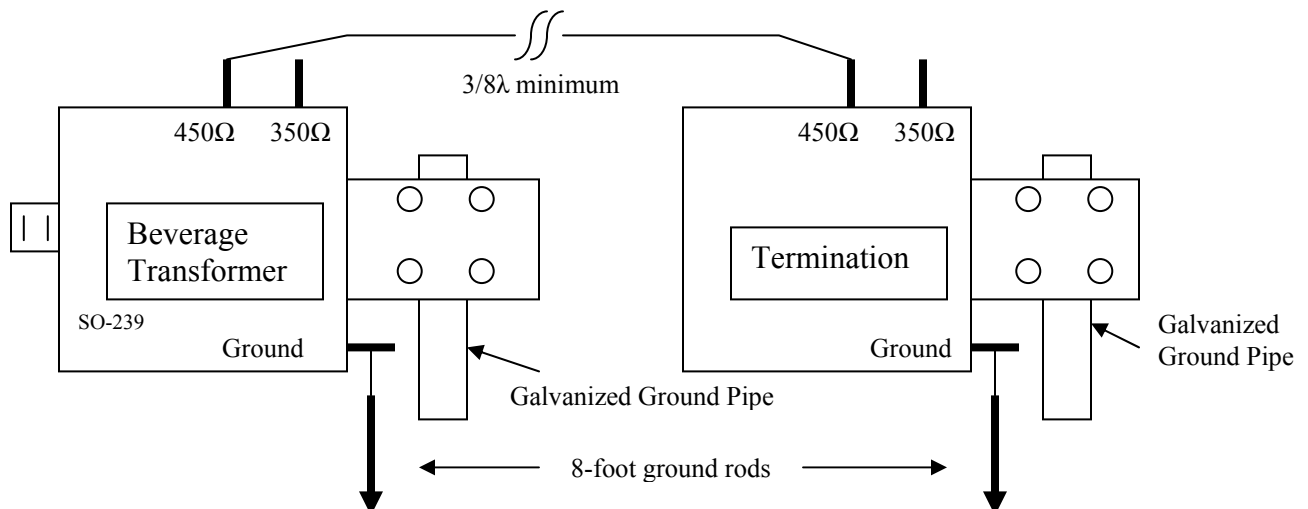
- 1.8-30 MHz operation
- Transformer assembly gas discharge tubes minimize lightning damage
- 450 Ω and 350 Ω antenna impedance interfaces for optimum operation
- 10-watt termination resistors for improved lightning susceptibility
- Rugged NEMA 4X housing for long-life
- U-bolt grounding mounting assembly for easy installation

Components Required But Not Supplied

- Two 1"OD x 2'(minimum) galvanized water pipes for mounting or Two 5/8"D x 8' copper-clad steel ground rods may be used or radial counterpoise wires (where ground rods will not work like rocky or coral island soils.
- 20-gauge or larger antenna wire at least 3/8 wavelength long at your lowest operating frequency.
- Insulators and supports to support the antenna wire 3 to 10 feet above ground.

Installation

Both the matching transformer and the terminating resistor assemblies are designed to be mounted to a 1"OD galvanized pipe that can simply be pounded into the ground. The typical installation is shown below:



The galvanized mounting pipes are connected to the Beverage ground connector and, as such, do provide a Beverage ground. Water Pipes are easy to drive into the ground and will make great contact with soils. They seem to be less expensive than ground rods anymore. But ground rods may be also used. The U-bolts are directly connected to the antenna ground system inside the boxes. A convenient stainless bolt is provided to also assist in grounding to ground rods, or perhaps a ground radial system which is used for the Beverage antenna when ground rods will not work, such as a coral island. A ground counterpoise can be made by attaching one or two $\frac{1}{4}$ WL wires to this terminal.

For optimum antenna matching, two impedance interfaces are provided on the SWSD-1 Beverage Transformer and Termination assemblies. Antenna heights of 3-4 feet will work best with the 350 ohm impedance interface. The more typical Beverage antenna height of 8-10 feet will work best with the 450 ohm impedance interface. In all cases, you will need to provide insulated antenna supports along the antenna run. When the antenna system has been installed, it can be simply tested using an antenna analyzer connected to the SO-239 connector on the Beverage Transformer assembly. You should see a relatively constant SWR across your frequency bands of interest. Finally, the SWSD-1, like any other Beverage antenna system, is designed as a receiving antenna. You may transmit into the transformer to determine VSWR as well but do not transmit into the SWSD-1 with more than 10-watts (the power rating of the terminating resistor assembly).