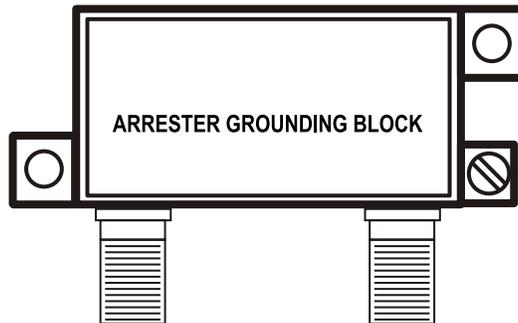


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**MODEL AS0094500**  
**SURGE ARRESTER – GROUNDING BLOCK**  
**INSTALLATION INSTRUCTIONS**



**Document No. PD0045800B**

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# 1 Introduction

These instructions cover the installation of the Arbiter Systems Model AS0094500, Surge Arrester/ Grounding Block. The AS0094500 performs two basic functions:

1. Provides a solid and reliable grounding point for the antenna system connected to a GNSS receiver;
2. Protects connected equipment from the damaging effects of atmospheric static electricity and induced voltage spikes from nearby lightning strikes or other electrical events.

## 2 Description

The Model AS0094500 is a three-terminal device with two type F connectors and one ground terminal. The type F connectors are interchangeable. One connects to the antenna and the other connects to the receiver. A screw terminal provides a connection point for an earth ground wire. The arrester is weatherproof and may be mounted outdoors provided that the cabling and type F connectors are sealed from the weather. The arrester also passes dc power to energize the antenna.

## 3 Installation

### 3.1 Mounting Location

Location is a key consideration when installing the Model AS0094500. It should be mounted as close as possible to a good earth ground, such as a grounding rod or station ground grid. The shorter the path between the arrester and the earth ground, the more effectively it will bypass the induced voltages.

### 3.2 Ground Connection

The Model AS0094500 may be grounded in two ways: (1) via the ground-wire screw connection, or (2) by hard-mounting directly to a grounded metal surface.

If grounding via the ground-wire screw connection, use the largest possible gauge wire. Hole diameter allows up to 8 AWG wire (0.129 in or 3.26 mm). This wire should be as short as possible, and connected to a good earth ground.

Alternately, the arrester may be mounted directly to a well-grounded plate within the facility.

### 3.3 Antenna and Clock Connections

The type F connectors are interchangeable. One connects to the antenna and the other connects to the receiver. Use only a low-loss, tri-shield or quad-shield 75-ohm coaxial cable – RG-6 or RG-11 are the preferred cable types. RG-59, or other similar types of coaxial cable, should be avoided due to greater signal loss and poorer shielding at the GNSS frequency (1.575 GHz).

### 3.4 Weather Sealing the Connections

To protect from weather, use only type F connectors with appropriate sealing features. Typically this includes an o-ring in the male connector that seats against the face of the female connector on the surge arrester. Also, crimped connectors frequently include a silicone gel flooding compound,

which enhances the ability of the connection to withstand the rain and humid conditions. To better seal the entire connection, cover the joint with GE Silicone II compound.

Use the proper crimping tool if using crimp-on connectors. Improper tools may not guarantee a strong and sufficiently grounded connector resulting in poor cable performance and GNSS reception. Consider purchasing RF cables of various standard and custom lengths manufactured by Arbiter Systems.

### 3.5 Suggested Mounting

Figure 1 illustrates the recommended mounting of the AS0094500 with the F-connectors facing downward. Install drip loops in the cables to reduce the likelihood of moisture penetrating the device and the structure.

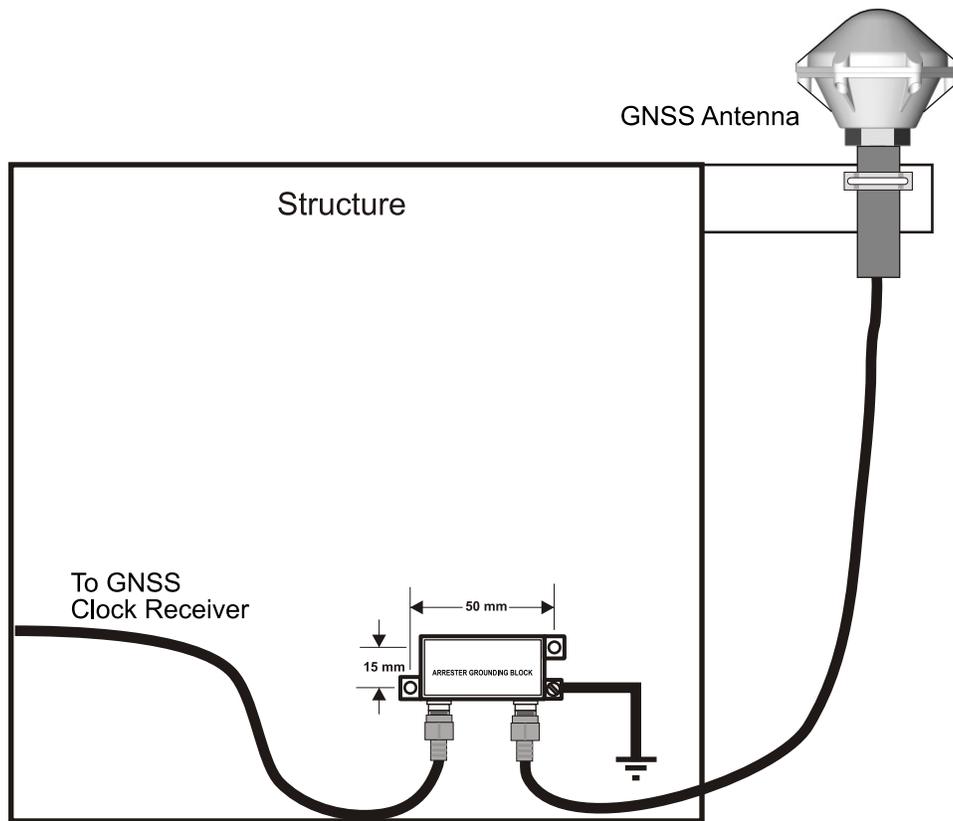


Figure 1: Suggested Mounting of the AS0094500

## 4 Physical Dimensions

|                    |   |
|--------------------|---|
| Overall:           | 59 mm x 38 mm x 18 mm (2.32 in x 1.49 in x 0.71 in) LxWxH |
| Mounting Hole Dim: | 50 mm x 15 mm   |
| Mounting Hole Dia: | 4 mm (0.157 in)   |
| F Connector Dim:   | 24 mm, center to center                                   |
| Weight:            | 48.2 g (1.7 oz)   |