Ambient Weather SRS100 and SRS100LX Pagoda Temperature and Humidity Radiation Shield

1. Introduction

This instruction manual will take you step-by-step through the process of assembling and mounting Ambient Weather SRS100 and SRS100LX Pagoda Temperature and Humidity Radiation Shield.

SRS100LX

SRS100

The SRS100 and SRS100LX temperature and humidity radiation shields are low cost solutions for protecting temperature and relative humidity sensors. They consist of seven (SRS100) or nine (SRS100LX) molded plastic plates and mounting arm. The wedge-shaped plates provide maximum airflow around the sensor while at the same time minimizing direct exposure to sunlight. The passive shield is shaped to allow natural air convection around the sensor so that the air temperature inside the shield is a good representation of the outside air. The shield also provides protection from rain and
snow.

The SRS100 and SRS100LX radiation shields fit most temperature and humidity sensors sold by Ambient Weather. Order the SRS100LX for larger sensor installations.

The SRS100 and SRS100LX are designed with a highly reflective white surface to reflect the sun's direct radiation. The multi-plate design allows for maximum airflow. The mounting arm can be mounted to any vertical surface. U-Bolts are included to mount to any pole.

2. Part's List

The SRS100 part's list is shown in Table 1.

Part	Quantity	Description
A	1	Top Plate
B	3	Solid Plates
C	3	Middle Plates
D	1	Mounting Bracket
E	2	1" U-Bolts
F	4	1/2" Mounting Arm Hex nuts (large)
G	3	11/32" Stop Hex nuts (small)
H	2	U-Bolt Washers
I	3	Wing Nuts
J	4	1 5/8" Fence Post Mounting Screws (large)
K	3	1" Mounting Arm Screws (small)
L	1	Sensor Mounting Post
M	2	7 ½" Zip Ties
N	3	8" All Thread Screws

Table 1

The SRS100LX part's list is shown in Table 1.

Part	Quantity	Description
A	1	Top Plate
B	3	Solid Plates
C	5	Middle Plates
D	1	Mounting Bracket
E	2	1" U-Bolts
F	4	5/16" Mounting Arm Hex nuts (large)
G	3	11/32" Stop Hex nuts (small)
H	2	U-Bolt Washers
I	3	Wing Nuts
J	4	1 5/8" Fence Post Mounting Screws (large)
K	3	1" Mounting Arm Screws (small)
L	1	Sensor Mounting Post
M	2	7 ½" Zip Ties
N	3	10 ¾" All Thread Screws

Table 2

The parts listed above are shown in Figure 1.

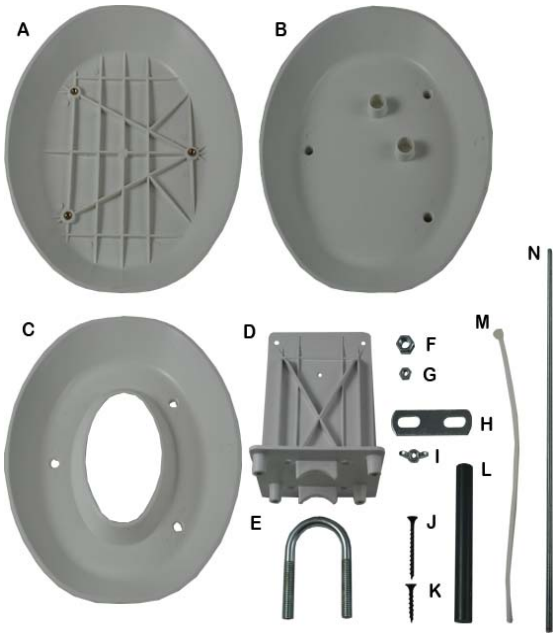

Figure 1

3. Dimensions

SRS100 Dimensions

Inner Dimensions (WxLxH) SRS100: 2.5" x 4.3" x 4.4"
Outer Dimensions (WxLxH) SRS100: 7.4" x 9.2" x 9.6"

SRS100LX Dimensions

Inner Dimensions (WxLxH) SRS100LX: 2.5" x 4.3" x 7.4"
Outer Dimensions (WxLxH) SRS100LX: 7.4" x 9.2" x 10.9"

4. Tools and Materials Needed

- 5/16” Wrench
- Drill with 3/16” Drill Bit to drill pilot holes if attaching radiation to a vertical post

5. Location Tips

- The radiation shield must be placed away from large radiant heat sources, such as sun exposed buildings.
- The radiation shield should be placed in an open area to insure unrestricted air flow or wind.
- Do not install over or near sprinklers. Continuous moisture may damage the temperature sensor.

6. Installation Options

There are two different mounting configurations for the radiation shield:

- Pole or metal pipe with outside diameter between 1” and 1 ½”
- On the side of a wooden post

7. Installation

Step 1. Screw the three all thread screws (N) into the top plate (A), as shown in Figure 2.

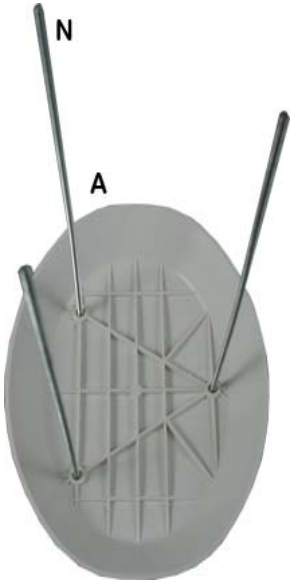

Figure 2

Step 2: Place one of the solid plates (B) over the top plate (A) by aligning the holes with the thread screws (N), as shown in Figure 3.

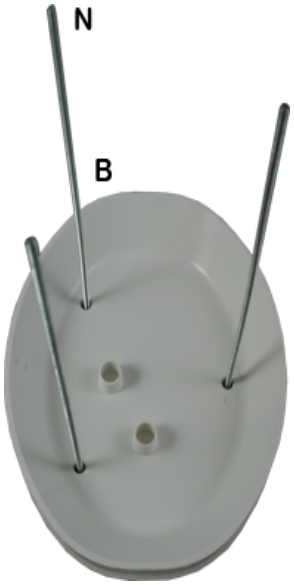

Figure 3

Step 3: Slide all of the middle plates (C) over the thread screws (N), as shown in Figure 4.

Figure 4

Step 4: Connect the sensor included with your weather station to the sensor mounting post (L) with the zip ties (M), as shown in Figure 5.

Figure 5

Step 5: Place the sensor mounting post (L) into the center guide of the solid plate (B).

Thread the stop nuts (G) over the thread screws (N) and hand tighten. This separates the upper shield assembly from the lower shield assembly, allowing easy access for sensor maintenance and battery replacement.

Run any sensor cables outside of the top plate, as shown in Figure 6.

Figure 6

Step 6: Slide the remaining two solid plates (B) over the thread screws (N) and hand tighten the entire assembly with the wing nuts (I) until the radiation assembly is even, compressed and tight on all sides, without overstressing the plastic, as shown in Figure 7.

Figure 7

Step 7: (pole mount only, skip this step for post mount). Locate the four U-Bolt mounting holes on the back panel of the mounting bracket (D).

Attach the U-Bolts (E), U-Bolt Washers (H) and Hex Nuts (F) as shown in **Figure 8**. Finger tighten the assembly around the mounting pole. With a level, make sure the radiation shield is level, and tighten the hex nuts with a wrench. Do not overstress the plastic mounting bracket.

Figure 8

Step 8: Note: If mounting to a post, it is recommended you proceed to Step 10 first before completing this step.

Connect the mounting bracket (D) to the top plate (A) with the three mounting arm screws (K), as shown in Figure 9.

Figure 9

Step 9: Pole Mount. Finger tighten the assembly around the mounting pole with the U-Bolts (E). With a level, make sure the radiation shield is level, and tighten the hex nuts (F) around the pole with a wrench, as shown in Figure 10.

Figure 10

Step 10. Post Mount. We recommend you connect the mounting bracket (E) to the post first before attaching the top plate (D).

Attach the mounting bracket (D) to your mounting post with the mounting screws (J), as shown in Figure 11. Attach the radiation shield assembly top plate (A) to the mounting bracket (D).

Figure 11