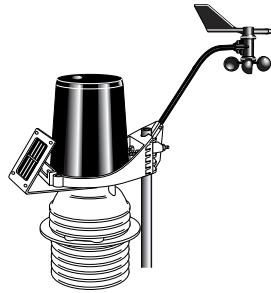


DAVIS

FAN-ASPIRATED RADIATION SHIELD

For Vantage Pro™ or Vantage Pro Plus™

ADDENDUM TO THE
INTEGRATED SENSOR SUITE
INSTALLATION MANUAL

The Vantage Pro Integrated Sensor Suite (ISS) with the Fan-Aspirated Radiation Shield uses a combination of fan-aspiration and passive shielding to minimize the effects of solar radiation-induced temperature error.

Fan-Aspirated ISS Addendum Overview

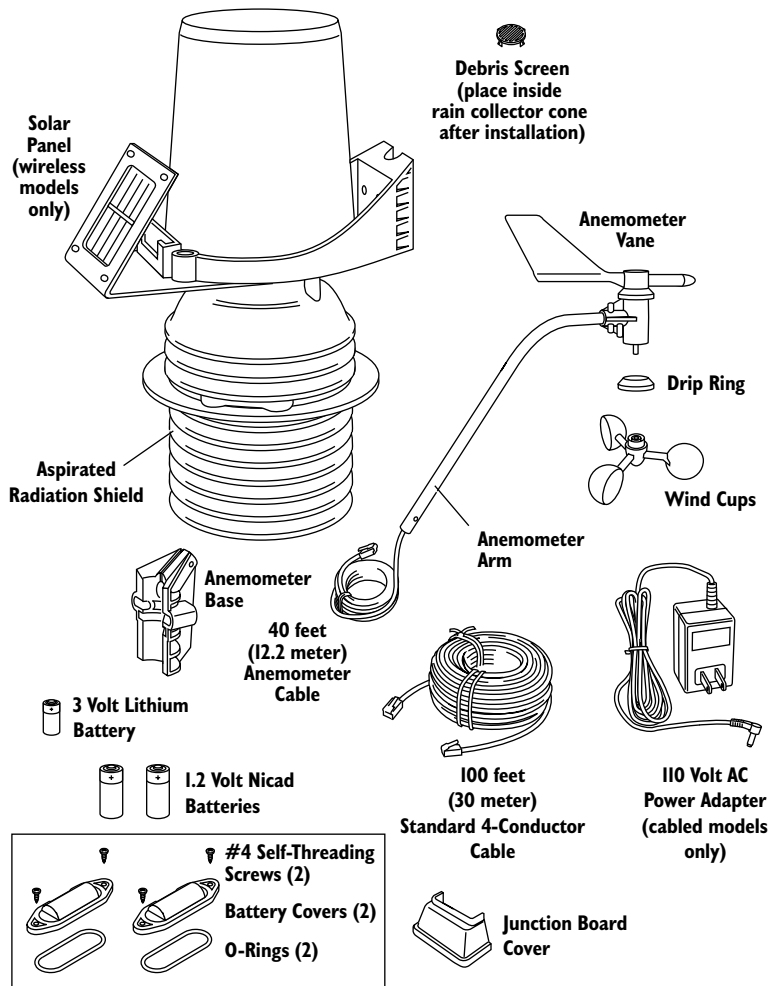
This addendum provides additional information specific to the installation and use of the fan aspirated radiation shield only, and is intended to be used in conjunction with the "Integrated Sensor Suite Installation Manual."

The Table below shows the location of the information required to install and maintain your Fan-Aspirated ISS.

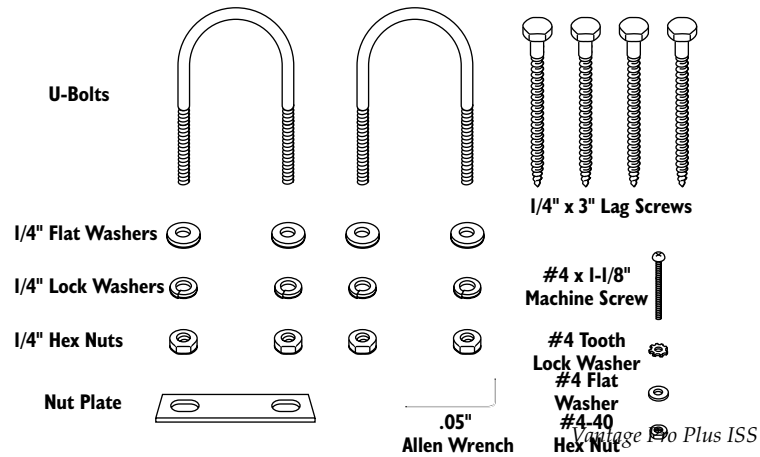
<u>SECTION/PROCEDURE</u>	<u>FAN ASPIRATED ADDENDUM</u>	<u>ISS INSTALLATION MANUAL</u>
Tools for Setup		X
Preparing the Anemometer		X
Disassembling the Radiation Shield	X	
Making Terminal Block Connections	X	
Powering ISS and Testing Communications		X
Powering and Testing the Fan	X	
Reassembling the Radiation Shield	X	
Preparing the Rain Collector		X
Choosing a Site for the ISS		X
Mounting the ISS		X
Additional Mounting Options		X
Fan-Aspirated ISS Options	X	
Fan-Aspirated ISS Maintenance	X	
Fan-Aspirated ISS Troubleshooting	X	
Fan-Aspirated ISS Specifications	X	

Components

The Fan-Aspirated ISS includes these components:



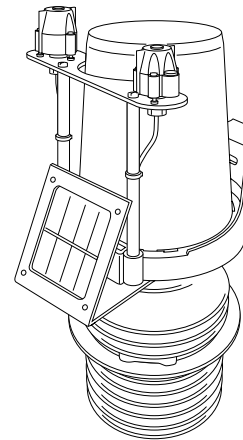
The hardware shown here is provided for assembly and mounting:



Additional Components on Vantage Pro Plus

Vantage Pro Plus includes an ultraviolet (UV) sensor and a solar radiation sensor. These two sensors are on the rain collector side of your ISS.

Note: Please make every effort when handling your ISS not to touch the small white diffusers on top of the UV and solar radiation sensors. Oil from the skin will reduce their sensitivity. Clean the diffusers using ethyl alcohol on a soft cloth (NOT rubbing alcohol).



Tools for Installation

Refer to this section in your ISS Installation Manual.

Preparing the Anemometer

Refer to this section in your ISS Installation Manual.

Disassembling the Radiation Shield

The radiation shield must be disassembled in order to make necessary cable connections and to install batteries in the wireless version of the ISS, which is solar powered.

The ISS sensors are connected by cables to the **Sensor Interface Module (SIM)**, located inside the radiation shield. The SIM contains electronics which measure and store weather values for transmission to the console via cable or radio waves. The radiation shield's white plastic plates protect the SIM from sun and other sources of radiated and reflected heat, and from precipitation.

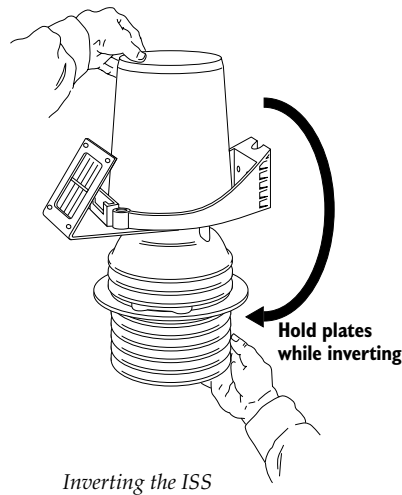
Before installing the ISS, the radiation shield must be disassembled in order to perform the following tasks:

- ◆ Verify that the rain sensor cable is connected to the SIM
- ◆ Connect the anemometer sensor cable to the SIM
- ◆ Connect the console cable to the SIM (cabled versions only)
- ◆ Make power connections to the ISS
- ◆ Install batteries in the SIM and Fan Plate (wireless versions only)
- ◆ Change the transmitter ID for wireless communication, if necessary
- ◆ Verify that your console is receiving and displaying data

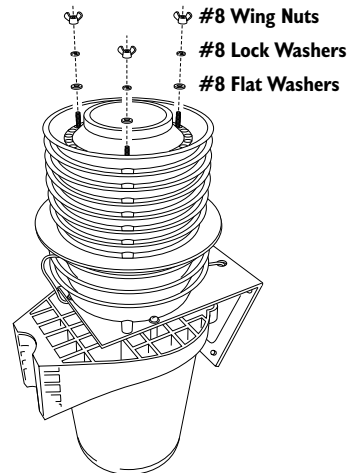
Opening the Radiation Shield

Open up the radiation shield by separating the top and bottom parts as shown in the following illustrations.

1. Turn the rain collector side of the ISS upside down.

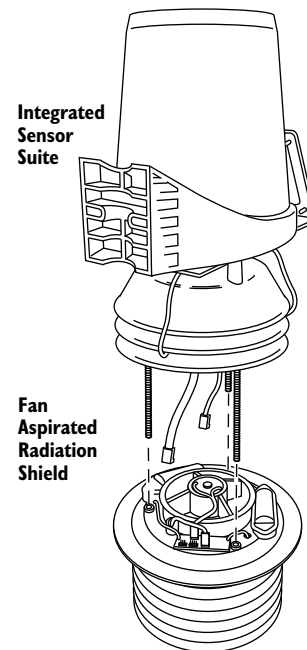


2. Remove the three wing nuts, lock washers and flat washers located on the underside of the radiation shield.
3. Turn the ISS right-side up with the rain collector on top.



Removing the Wing Nuts

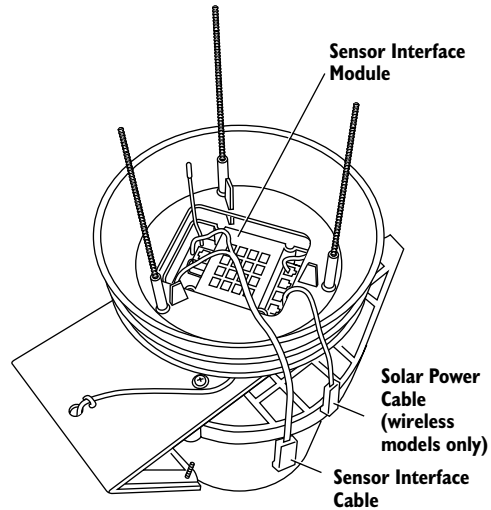
4. Hold onto the rain collector and left off the top part of the ISS, exposing the fan plate on the bottom part of the radiation shield.



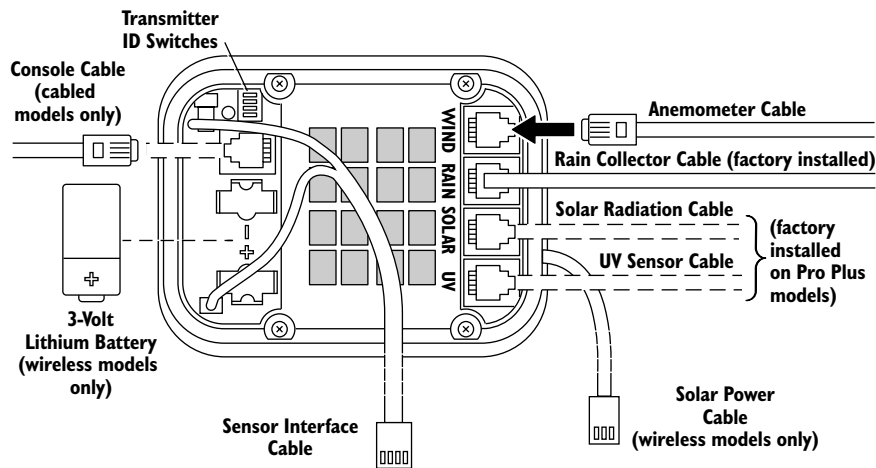
Separating the Radiation Shield

Verifying Sensor Connections:

1. Locate the SIM inside the radiation shield.
2. Verify that the rain sensor cable is plugged into the receptacle labeled "RAIN" on the SIM.
3. If you have a Vantage Pro Plus, verify that the UV and solar radiation sensors are plugged into the SIM.



Locating the ISS SIM



ISS SIM Connections!

Connecting Anemometer to SIM

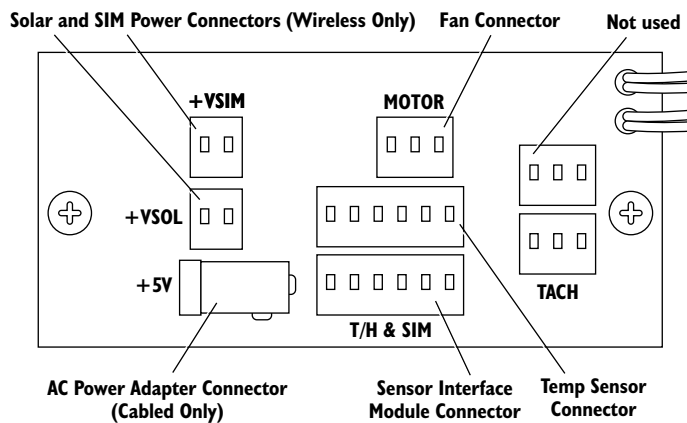
Refer to this section in your ISS Installation Manual.

Cabled Vantage Pro: Powering the ISS and Testing Communication with the Console

Refer to this section in your ISS Installation Manual.

Cabled Vantage Pro: Powering the Fan

1. Locate the Junction Board on the fan plate.
2. Connect the AC-power adapter to the +5V connector on the Junction Board.
3. Plug the AC-power adapter into an AC outlet.
4. Check to see that the fan is turning.
5. Unplug the AC power adapter from the AC outlet until it has been mounted.
6. Secure the AC power cable to the fan plate with the supplied cable clip.



Junction Board Connections

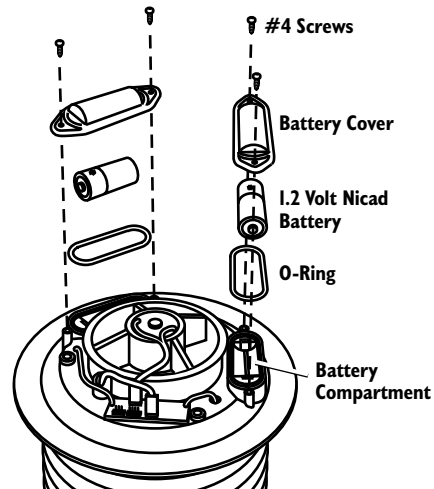
Wireless Vantage Pro: Powering the ISS and Testing Communication with the Console

Refer to this section in your ISS Installation Manual.

Wireless Vantage Pro: Powering the Fan

Installing the Batteries

1. Insert the O-ring in the groove around the edge of each battery compartment.
2. Insert a NiCad battery in each compartment, matching the plus sign on the battery with the plus sign in the battery compartment.
3. Verify that the fan is working.
4. Remove the batteries unless you are ready to install the ISS in it's final location. Otherwise, the batteries will discharge from powering the fan.
5. Attach the battery covers to the battery compartments using two #4 x 3/8" (9.5 mm) screws each.



*Installing the Batteries
(Wireless Vantage Pro Only)*

Reassembling the Radiation Shield

1. Check all SIM and Junction Board cable connections.
2. Install the Junction Board Cover as show below.
3. Place the flat washers, lock washers and plastic wing nuts over the studs.
4. Finger-tighten the wing nuts until they hold the radiation shield plates firmly in place.

Preparing the Rain Collector

Refer to this section in your ISS Installation Manual.

Choosing a Site for the ISS

Refer to this section in your ISS Installation Manual.

Mounting the ISS

Refer to this section in your ISS Installation Manual.

Additional Mounting Options

Refer to this section in your ISS Installation Manual.

Fan-Aspirated ISS Options

Low-Current Fan Unit

The optional low-current fan unit uses less power than the standard fan. This allows the solar-powered Fan-Aspirated ISS to run for a longer period of time during low-light conditions. It is recommended for use in extreme latitudes during the Winter months, in climates that experience extended periods of cloudy weather, or for any location with limited solar exposure.

Fan-Aspirated ISS Maintenance

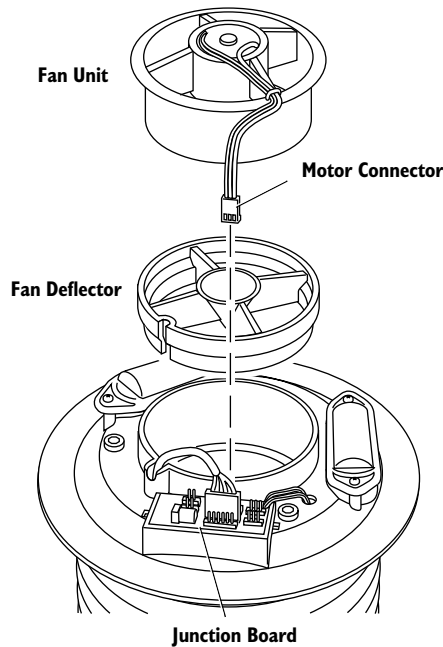
- ◆ **Keep the surfaces clean as the Fan-Aspirated Radiation Shield is less effective when the surfaces are dirty. Remove dust from the solar panel and the screen with a damp cloth.**
- ◆ **Remove any debris that obstructs air flow between the radiation shield parts e.g., leaves, twigs, webs, and nests.**
- ◆ **Avoid spraying insect killer of any kind into the radiation shield as this may damage the sensors and the shield.**
- ◆ **Change the battery annually (solar models only) and also remove any debris lodged inside the unit at this time.**

Replacing Batteries

1. Retrieve your Fan-Aspirated ISS and place on a stable work surface.
2. Disassemble the Radiation Shield (See page 3).
3. Remove the old battery
4. Install a new battery
5. Assemble the Radiation Shield (See page 8).
6. Mount the Fan-Aspirated ISS in it's previous location.

Replacing the Motor

1. Retrieve your Fan-Aspirated ISS and place on a stable work surface.
2. Disassemble the Radiation Shield (See page 3).
3. Remove the Junction Board Cover.
4. Lift the Fan Unit from the Radiation Shield.



5. Unplug the Motor Connector from the Junction Board.
6. Install the replacement motor in the Radiation Shield.
7. Plug the Motor Connector into the Motor Terminal on the Junction Board.
8. Assemble the Radiation Shield (See page 8).
9. Mount the Fan-Aspirated ISS in it's previous location.

Fan-Aspirated ISS Troubleshooting

If you are unable to solve a problem with your Fan-Aspirated Radiation Shield, please call Davis Technical Support. We'll be glad to help. Most questions can be answered while you're on the phone. You can also email us for support, or visit our website. Sorry, we are unable to accept collect calls.

Contacting Davis Instruments

(510) 732-7814 for Technical Support, Monday – Friday, 7:00 a.m. – 5:30 p.m. Pacific Time.

(510) 732-9229 For callers outside the USA or Canada.

(510) 670-0589 Fax to Customer Service or Tech Support.

www.davisnet.com Copies of User Manuals are available on the "Support" page. Watch for FAQs and other updates. Subscribe to the e-newsletter.

support@davisnet.com E-mail to Technical Support.

sales@davisnet.com E-mail to Customer Service.

info@davisnet.com General e-mail.

Note: Please do not return items to the factory for repair without prior authorization.

Fan-Aspirated ISS Specifications

Aspiration Rate 215 feet/min. (1.1 m/s)

Radiation-Induced Temperature Error 0.5°F (0.3°C)
[At solar noon, insolation = 1040 W/m²]
(Reference: RM Young model 43408)

Note: The above error specification is an estimate, based on data from a solar-powered model, which has a measured error of 0.6°F at the above conditions and an aspiration rate of 190 ft/min vs. the rate of 215 ft/min in model 7750.

Temperature range –40 to 140° Fahrenheit (–40 to 60° Celsius)

ISS Primary Power Input

Wireless ISS solar panel

Cabled ISS receives power from Vantage Pro Console

ISS secondary power (Wireless Only) CR-123A 3-volt lithium battery (approx. two years battery life.)

Fan Primary Power Input

Wireless ISS solar panel

Cabled ISS AC power adapter, 5VDC, 200 mA, regulated

Fan secondary power (Wireless Only) 1 or 2 - 1.2 Volt NiCad C-cells

Draft 07/02/01

FCC Part 15 Class B Registration Warning

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Reorient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ◆ Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved in writing by Davis Instruments may void the user's authority to operate this equipment.

Product Numbers: 6151, 6151C, 6161, 6161C

Davis Instruments Part Number: 7395.152
Fan-Aspirated Radiation Shield Addendum to the Integrated Sensor Suite Installation Manual
Draft Manual (7/2/01)

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