TS-110

DESCRIPTION

The TS-110 Fan-aspirated Radiation Shield model includes the TS-100 shield and an ST-110-SS thermistor. The unique aerodynamic shape and rugged, low-power fan make it the first research-grade fan-aspirated shield that is practical for use on batter or solar powered stations. The shield provides excellent sensor protection and accommodates various combinations of thermistors, PRTs, and humidity probes using one of the sensor port adapter plugs. Typical applications include air temperature and humidity measurement in weather networks, often for weather forecasting, and solar energy sites. Fan-aspirated shields are also important in the precise measurement of air temperature ad humidity gradients above the land surface and in climate change monitoring

Features:

Aerodynamic Shape

A curved inlet redirects air into the shield and funnels it past the sensing area, which allows for a lower power requirement than other fan-aspirated shields on the market.

Rugged, Low-power Fan

The fan has an ingress protection rating of IP55, which minimizes moisture and dust ingress. Fan speed and power can be further reduced when environmental conditions warrant. If the fan is continuously operated at full-speed, its lifetime is rated at 50,000 hours (5.7 years). The fan includes a tachometer, which allows RPM to be monitored to detect obstruction.

Typical Applications

- Air temperature and humidity measurement in weather networks, often for weather forecasting
- The precise measurement of air temperature and humidity gradients above the land surface
- Climate change monitoring

Purchasing Options

The TS-100 is a shield only model. The TS-110 comes with a discounted, pre-installed ST-110 precision thermistor that provides ± 0.1 C uncertainty right out of the box. Also available with EE08-SS relative humidity probe (TS-120, TS-130).

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Difference among Individual Replicate Shields	Less than 0.1 C
Aspiration Rate	6 m/s at full-speed, 3 m/s at half-speed
Fan Input Voltage Requirement	10.8 to 13.2 V DC
Fan Current Draw	80 mA at full-speed, 25 mA at half-speed
IP Rating	IP55
Dimensions	220 mm height, 270 mm diameter
Mass	840 g
Warranty	4 years against defects in materials and workmanship

Case Study

The Virginia Tech Department of Geography has begun the development of regional mountaintop mesonets in the Appalachian Mountains of Virginia and West Virginia. The TS-100 is being used to house temperature sensors for each installation.

Sensor Compatibility

The shield accommodates multiple sensor options: air temperature sensors, air temperature/relative humidity probes, or combinations of both categories. For maximum accuracy we recommend redundant measurements of air temperature

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