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43502
Compact Aspirated Shield

Provides More Accurate Measurements

Shades, draws ambient air past sensor

Overview

The compact, easily mountable 43502 fan-aspirated shield from R. M. Young uses a continuous blower to draw ambient air over a 43347 RTD Temperature Probe, while protecting the probe from the interference of solar radiation. As a result, you are provided with more accurate temperature and humidity measurements. Although the 43502 shield is usually used with the 43347 probe, you can use it to accommodate temperature and humidity sensors up to 0.9 in. in diameter. The mounting bracket included on the shield attaches to posts or masts up to 2 in. in diameter.

Benefits and Features

- Reduces radiation errors by shading and drawing ambient air past the sensor for more accurate measurements

Detailed Description

The 43502 fan-aspirated radiation shield is typically used with the 43347 RTD Temperature Probe to provide delta temperature measurements for air-quality applications. The 43502 employs concentric downward-facing intake tubes and a small canopy shade to isolate the temperature probe from direct and indirect radiation.

The 43347 probe mounts vertically in the center of the intake tubes. A brushless 12 Vdc blower motor pulls ambient air into the shield and across the probe to reduce radiation errors. This allows temperature to be measured with an RMS error of less than ±0.2°C. The blower operates off a 115 Vac to 12 Vdc transformer that is included with the shield.

Specifications

Operating Temperature Range	-50°C to +60°C
Aspiration Rate	5 to 11 m s^{-1} (16 to 36 fps) depending on sensor size
Ambient Temperature	< 0.2°C (0.4°F) RMS at 1000 W/m^2 intensity
Delta T	< 0.05°C (0.1°F) RMS with like shields equally exposed

Power Requirements	12 to 14 Vdc @ 500 mA (for blower)
Mounting	V-Block and U-Bolt for vertical pipe with 2.5 to 5.0 cm (1.0 to 2.0 in.) diameter

Diameter	20 cm (8 in.)
Length	33 cm (13 in.)
Weight	1.1 kg (2.5 lb)

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