



SR50A-EE

Anodized Sonic Distance Sensor for Extreme Environments



Rugged

Corrosion-resistant chassis and transducer

Overview

Note: This product has limited availability. Please consider the [SnowVue™10 Digital Snow-Depth Sensor](#) for snow-depth measurements and the [TempVue™20 Pt100 Digital Air Temperature Sensor](#) or [HygroVue™10 Digital Temperature and Relative Humidity Sensor with M12 Connector](#) for air temperature measurements.

The SR50A-EE is an anodized version of Campbell Scientific's acoustic sensor for measuring the distance from the sensor to the snow surface. The sensor has been designed to operate in

extreme environmental conditions where corrosion is a concern (such as coastal regions). The SR50A-EE features an aluminum body that has been treated with a Type III, hard-anodizing process (MIL-A-8625 Type III) that delivers best-in-class corrosion and wear resistance.

To properly calculate snow depth from the measured distance, an air temperature measurement is required to correct for variations of the speed of sound in air. This sensor is compatible with most Campbell Scientific data loggers.

Benefits and Features

- › Type III, hard-anodized body for increased resistance to corrosion and wear
- › Open-faced transducer for increased corrosion resistance and decreased maintenance
- › Non-contact method for determining snow depth
- › Wide operating temperature range
- › Designed for coastal or corrosive environments
- › User-selectable options for output
- › Uses a multiple echo processing algorithm to help ensure measurement reliability
- › Compatible with most Campbell Scientific data loggers

Detailed Description

The SR50A-EE was designed to meet the stringent requirements of measuring depths and uses a multiple echo processing algorithm to help ensure measurement reliability.

SDI-12, RS-232, and RS-485 output options are available for measuring the SR50A-EE. Campbell Scientific's MD485 interface

can be used to connect one or more SR50A-EE sensors in RS-485 mode to an RS-232 device. This can be useful for sensors that require lead lengths that exceed the limits of either RS-232 or SDI-12 communications. The [SR50AH](#) is available with a heater option for locations where rime ice is a problem.



Specifications

Measurement Time	< 1.0 s
Output Options	SDI-12 version 1.3, RS-232, RS-485 (output options selected by configuring internal jumpers)
Baud Rates	1200 to 38400 bps (RS-232, RS-485 modes)
Power Requirements	9 to 18 Vdc (typically powered by data logger's 12 Vdc power supply)
Measurement Range	0.5 to 10 m (1.6 to 32.8 ft)
Beam Acceptance	~30°
Resolution	0.25 mm (0.01 in.)
Accuracy	±1 cm (0.4 in.) or 0.4% of distance to target (whichever is greatest). Requires external temperature compensation.
Operating Temperature Range	-45° to +50°C
Compliance	CE compliant

Length	10.1 cm (4.0 in.)
Diameter	7.5 cm (3 in.)
Weight	362.9 g (12.8 oz) without cable
Cable Weight	250 g (8.2 oz) for a 4.57-m (15-ft) cable

Maximum Cable Length

-NOTE- Cable lengths greater than 60 m require a heavier gage wire if the power supply drops below 11 Vdc.

SDI-12	60 m (200 ft)
RS-232	60 m (200 ft) Baud rates ≤ 9600 bps
RS-485	300 m (984 ft)

Power Consumption

Active	250 mA (typical)
Quiescent SDI-12 Mode	< 1.0 mA
Quiescent RS-232/RS-485 Modes	› < 2.0 mA (> 9600 bps) › < 1.25 mA (≤ 9600 bps)

For comprehensive details, visit: www.campbellsci.com/sr50a-ee 