



SnowVue10

Digital Snow-Depth Sensor



High Sensitivity and Low Noise

For best-in-class performance

Overview

The SnowVue™10 is a digital, ultrasonic snow-depth sensor that provides continuous and accurate snow-depth measurements with its advanced spectrum analysis and best-in-class, wide-band transducer. With its low-power requirement and low-maintenance design, the SnowVue 10 is suitable for most alpine and remote installations. The SnowVue

10 also features Campbell Scientific's total uptime diagnostic package to provide you with critical sensor performance measurements such as internal humidity, temperature, sensor level (tilt), measurement quality, and incoming voltage. An external air temperature sensor is required to correct for the changes in sound velocity due to changes in temperature.

Benefits and Features

- › Snow-depth measurements with low noise and high precision
- › Low power usage for remote solar applications
- › Exceptional reliability with advanced diagnostics
- › SDI-12 v.1.4 output compatible with current Campbell Scientific data loggers

Detailed Description

The SnowVue 10 uses a wide-band, ultrasonic transducer to create sound pulses that are reflected off the snow surface. By measuring the two-way travel time of the pulse, the distance to the snow surface can be precisely calculated using

advanced spectrum analysis. Because the speed of sound through air varies with the air temperature, an accurate air temperature measurement is required to correct for this change.

Specifications

Power Requirements 9 to 18 Vdc

Quiescent Current Consumption < 300 μ A

Active Current Consumption › 210 mA (peak)

› 14 mA (average at 20°C)

Measurement Time › 20 s (maximum)
› 5 s (typical)



Warm-Up Time	2 s
Output	SDI-12 (version 1.4)
Measurement Range	0.4 to 10 m (1.3 to 32.8 ft) distance from sensor
Snow Depth	0 to 9.6 m (0 to 31.5 ft)
Accuracy	<ul style="list-style-type: none"> » 0.2% of distance to target » <i>Accuracy specification is for still air with uniform temperature between the sensor and a flat, solid target. Air movement, temperature gradient along the sonic path, snow density, and differences between actual and measured temperature can affect the accuracy. An external temperature compensation is required.</i>
Resolution	0.1 mm

Required Beam Angle Clearance	30°
Operating Temperature Range	-45° to +50°C
Survivability Temperature Range	-55° to +80°C (will resume normal operation when sensor returns to operational temperatures)
Humidity Range	0 to 100% (non-condensing)
Sensor Body Material	Corrosion-resistant, type III anodized aluminum
Sensor Connector	M12, male, 4-pole, A-coded
Cable Type	Polyurethane sheathed, screened cable
Cable Diameter	4.8 mm (0.19 in.)
Maximum Cable Length	60 m (197 ft)
Sensor Length	9.9 cm (3.9 in.)
Sensor Weight	293 g (0.65 lb)

For comprehensive details, visit: www.campbellsci.com/snowvue10 

