

Snow Depth Sensor

Model UDG01

The UDG01 acoustic snow depth sensor is manufactured by Campbell Scientific Canada and is based upon the design developed and tested by Canada's Atmospheric Environment Service. The sensor measures the elapsed time between emission, reflection, and return of an ultrasonic pulse. An air temperature measurement is required to correct for variations in the speed of sound. Measurement of low-density snow may be underestimated until consolidation occurs, typically within a day. Active snowfall or wind-driven snow may interfere with measurement accuracy.

Multiple UDG01's can be measured by one Campbell CR10* or 21X datalogger. Three datalogger Control Ports are used to communicate with the sensors; the 21X also requires analog channel 1H.

Specifications

Power Requirements: + 12 VDC

Power Consumption: 200 μ A quiescent;
65 mA (active for 0.2 s)

Output: 16-bit binary number

Effective Measurement Range: 0.6 to 10 meters

Beam Acceptance: Approx. 20°

Accuracy: ± 1 cm or 0.4% of distance to target
(whichever is greatest)

Operational Accuracy: ± 2.5 cm
(typical field conditions)

Resolution: 0.5 mm

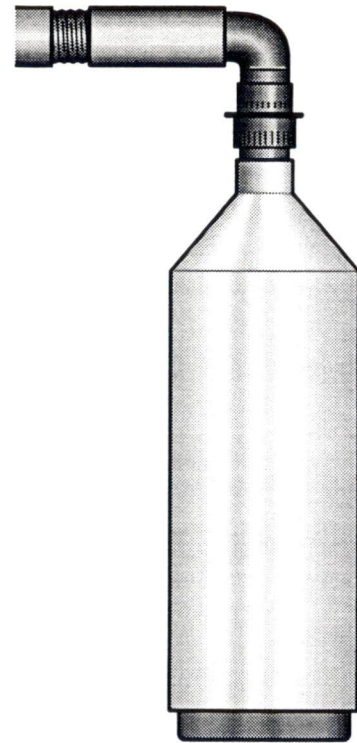
Operating Temperature: -25 to +50°C standard;
extended temperature range to -40°C
available

Operating Humidity: 5 to 95% non-condensing

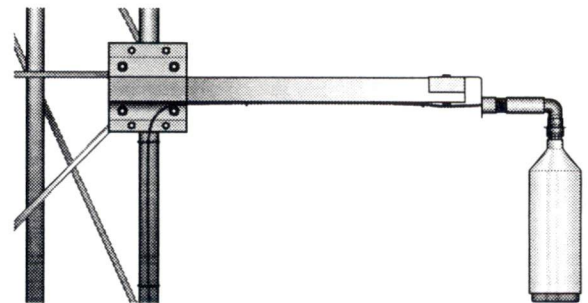
Maximum Cable Length: 1000 ft (standard is 25 ft)

Dimensions: length 23 cm
diameter 7.3 cm

Weight: 2 lbs.



Side view of UDG01 Snow Depth Sensor.



UDG01 attached to UT3 Tower with UT018 Crossarm.

**Effective 20 February 1993, a new CR10 PROM is available to measure the UDG01 with a single program instruction (108).*



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