



CS725

Snow Water Equivalent Sensor



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## Rugged, Reliable

Passive no-contact detector, ideal replacement for snow pillow

### Overview

The CS725 measures snow-water equivalent (SWE) by passively detecting the change in naturally occurring electromagnetic energy from the ground after it passes through snow cover. It is mounted above the ground and has no contact with the snow. As the snow pack increases, the sensor detects the attenuation of the electromagnetic energy from the ground, and SWE can be calculated. The measurement area of the CS725 is 50 to 100 square meters (540 to 1,075 square feet), making it an excellent replacement sensor for the traditional snow pillow and snow scale.

Common applications for the CS725:

- › Hydroelectric power forecasting and hydropower potential forecasting (Read the "[Northern Canada: Hydroelectric Power Forecasting](#)" case study.)
- › Seasonal run-off management
- › Flood forecasting and risk management
- › Irrigation planning and management

### Benefits and Features

- › Non-contact measurement
- › Excellent replacement for traditional snow-pillow sensors
- › Does not cause the melt of light snow
- › Greatly reduces the need for site visits
- › No site preparation or earthworks required for set-up
- › Performance not affected by rainfall or snowfall
- › Effective with any type of snow or ice
- › Will not cause snow drifting
- › Seven-year maintenance cycle
- › No antifreeze chemicals used (i.e., glycol)

### Detailed Description

The CS725 uses an innovative, non-contact method of measuring snow water equivalent (SWE). It passively detects the change in naturally occurring electromagnetic energy (mainly from the decay of  $^{40}\text{K}$ ) from the ground after it passes through snow cover.

As SWE changes, the amount of energy that penetrates the snow pack changes—regardless of what state of the water (that is, liquid or frozen). A sensor installed above the ground prior to the first snowfall will have a base-line measurement of the electromagnetic energy coming from the ground. As snow accumulates and energy is attenuated, the SWE value will




increase. The CS725 has an internal processor that determines the SWE and sends this information to a datalogger or

communication device via RS-232.

## Specifications

Measurement Range	600 mm maximum water equivalent
Accuracy	» $\pm 15$ mm (from 0 to 300 mm) » $\pm 15\%$ (from 300 to 600 mm)
Resolution	1 mm
Coverage Angle	60°
Operating Temperature Range	-40° to +40°C
Power Requirements	11 to 15 Vdc
Power Consumption	180 mA

Output Format	RS-232 (1200 to 115200 bps)
Cable Type	Four conductor, two-twisted pair, 22 AWG, Santoprene jacket
Maximum Cable Length	30 m (98.43 ft)
Diameter	12.7 cm (5 in.)
Length	62 cm (24.4 in.)
Main Body Weight	9 kg (20 lb)
Collimator Weight	25 kg (55 lb)
Total Weight	34 kg (75 lb)

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For comprehensive details, visit: [www.campbellsci.com/cs725](http://www.campbellsci.com/cs725) 



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