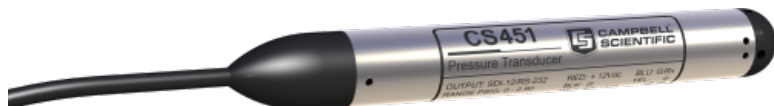


Water Level, Stage, and Flow Sensors

Pressure transducers, bubblers, shaft encoders, ultrasonics



Campbell Scientific offers a variety of sensors to measure water level, stage, and flow: pressure transducers, shaft encoders, radar ranging sensors, sonic ranging sensors, and bubblers. Users often select their sensors based on the site location, required accuracy level, and ease of installation.

CS451
Pressure Transducer



The CS451 is a pressure transducer for water-level measurements in canals, wells, ponds, harbors, lakes, streams and tanks. It has a stainless-steel case that can be submerged in most canals, wells, ponds, lakes, and streams. The CS451 outputs either a digital SDI-12 or RS-232 signal to indicate observed pressure and temperature. This output can be read by many of our dataloggers.

The CS451 replaces the CS450 transducer. The new transducers have a smaller gap between the water ports and the diaphragm so that less air is trapped that the user must remove during deployment. Trapped air causes the transducer's readings to drift as the air slowly dissolves into the water.

CS475A
Radar Water-Level
Sensor, 114.8 ft
Maximum Distance



The CS475A radar sensor monitors the water level of rivers, lakes, tidal seas, and reservoirs. The sensor is ideal for areas where submersed sensors can be damaged due to corrosion, contamination, flood-related debris, lightning, or vandalism. It emits short microwave pulses and then measures the elapsed time between the emission and return of the pulses. The elapsed time measurement is used to calculate the distance between the sensor and the target (for example, water, grain, slurry). The distance value can then be used to determine depth of the medium.

The CS475A outputs a digital SDI-12 signal to indicate distance and stage. This output is acceptable for recording devices with SDI-12 capability, including Campbell Scientific data loggers.

SR50A-L
Sonic Ranging Sensor



The SR50A Sonic Distance Sensor provides a non-contact method for determining snow or water depth. It determines depth by emitting an ultrasonic pulse and then measuring the elapsed time between the emission and return of the pulse. An air temperature measurement is required to correct for variations of the speed of sound in air.

Note: Campbell Scientific recommends model **SR50A-EE-L** for operation in extreme environmental conditions where corrosion is a concern (such as coastal regions).








CS477
Radar Water-Level
Sensor 70 m maximum
distance



The CS477 is a pulse-radar water-level sensor. Positioned directly over the water surface it determines water level by measuring the elapsed time between the emission of short microwave pulses and the return. Typical applications include water level measurements of rivers, lakes and reservoirs.

Ideal for applications where submersed sensors are not appropriate because of the risk of damage due to corrosion, contamination or flood-related debris. Maintenance costs and time are kept to a minimum with these sensors which have no moving parts.

Supplied with 10m cable as standard, other length available to order.

<p>CS456 Pressure Transducer</p> 	<p>The CS456 is a pressure transducer for water-level measurements in canals, wells, ponds, harbours, lakes, streams and tanks. It has a rugged titanium case that allows it to be used in saltwater and other harsh environments. The CS456 outputs either a digital SDI-12 or RS-232 signal to indicate observed pressure and temperature. This output can be read by many of our dataloggers. The CS456 replaces the CS455 transducer. The new transducers have a smaller gap between the water ports and the diaphragm so that less air is trapped that the user must remove during deployment. Trapped air causes the transducer's readings to drift as the air slowly dissolves into the water.</p>
<p>CRS451V Vented Water-Level Recording Sensor—Stainless Steel</p> 	<p>The CRS451V consists of a submersible water-level and water-temperature sensor with its own time clock and memory to store the collected data—in a compact stainless-steel case. This data logging capability frees users to place the sensor in remote sites and let it collect data for long periods. HydroSci software is included and elegantly supports test setup, data retrieval, and data display. Long battery life and rugged construction mean you can trust the CRS451V to collect important data. Low cost and ease of use make it a good choice in a variety of applications. The CRS456V is the same as this, but with a titanium case.</p>
<p>CRS456V Vented Water-Level Recording Sensor—Titanium</p> 	<p>The CRS456V consists of a submersible water-level and water-temperature sensor with its own time clock and memory to store the collected data—in a compact titanium case. This data logging capability frees users to place the sensor in remote sites and let it collect data for long periods. HydroSci software is included and elegantly supports test setup, data retrieval, and data display. Long battery life and rugged construction mean you can trust the CRS456V to collect important data. Low cost and ease of use make it a good choice in a variety of applications. The CRS451V is the same as this, but with a stainless-steel case.</p>
<p>CRS451 Stainless Steel - Water-Level Recording Sensor</p> 	<p>The CRS451 consists of a water-level and water-temperature sensor that has its own time clock and memory to store the collected data, in a compact stainless-steel case. This frees users to place the sensor in remote sites and let it collect data for long periods. The sensor can then be retrieved, connected to a PC via a micro-USB port, and the data transferred to the PC. HydroSci software is included and elegantly supports test setup, data retrieval, and data display. Long battery life and rugged construction mean you can trust the CRS451 to collect important data. Low cost and ease of use make it a good choice in a variety of applications.</p>
<p>CRS456 Titanium - Water-Level Recording Sensor</p> 	<p>The CRS456 consists of a water-level and water-temperature sensor that has its own time clock and memory to store the collected data, in a compact titanium case. This frees users to place the sensor in remote sites and let it collect data for long periods. The sensor can then be retrieved, connected to a PC via a micro-USB port, and the data transferred to the PC. HydroSci software is included and elegantly supports test setup, data retrieval, and data display. Long battery life and rugged construction mean you can trust the CRS456 to collect important data. Low cost and ease of use make it a good choice in a variety of applications.</p>
<p>SR50AH-L Heated Sonic Distance Sensor</p> 	<p>The SR50AH Heated Sonic Distance Sensor provides a non-contact method for determining snow or water depth. It determines depth by emitting an ultrasonic pulse and then measuring the elapsed time between the emission and return of the pulse. An air temperature measurement is required to correct for variations of the speed of sound in air. The SR50AH includes an integrated heater that prevents ice and rime from coating the transducer.</p>
<p>SR50AT-L Sonic Distance Sensor with Temperature Sensor</p> 	<p>The SR50AT-L is an acoustic distance sensor that measures the elapsed time between emission and return of an ultrasonic pulse. This measurement can be used to determine snow or water depth. The SR50AT-L includes an external temperature sensor and outputs a temperature-corrected distance reading, eliminating the need for further post-processing.</p> <p>Note: Campbell Scientific recommends model SR50AT-316SS-L for marine environments.</p>

SR50AT-316SS-L

Stainless-Steel Sonic Distance Sensor for Marine Environments with Temperature Sensor



The SR50AT-316SS is a stainless-steel version of Campbell Scientific's acoustic sensor for measuring the distance from the sensor to a target. The stainless-steel chassis allows for operation in environments where corrosion is a concern (that is, marine). It is typically used to measure snow or water depth, but it is well-suited for other uses.

The SR50AT-316SS includes an external temperature sensor and outputs a temperature-corrected distance reading, eliminating the need for further post-processing. This sensor is compatible with most Campbell Scientific data loggers.

SR50ATH-L

Sonic Distance Sensor with Heater and Temperature Sensor



The SR50ATH is a sonic distance sensor with an integrated external temperature probe and heater. Sonic sensors determine distance by emitting an ultrasonic pulse and then measuring the elapsed time between the emission and return of the pulse. The temperature probe allows the SR50AT series to output temperature-corrected values (speed of sound varies with temperature). The integrated heater prevents ice and rime from coating the transducer.

Note: Campbell Scientific recommends model [SR50AT-316SS-L](#) for marine environments.

For comprehensive details, visit: www.campbellsci.eu/water-level-stage-flow 



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