



## CS475A-L

Radar Water-Level Sensor, 35m (114.8 ft) Maximum Distance



# Non-Contact Water Level Monitoring

FCC approved for outdoor use

## Overview

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.

## Benefits and Features

- › Meets USGS Office of Surface Water (OSW) requirements for accuracy
- › SDI-12 version 1.4 functionality
- › Makes 1 Hz measurements
- › Monitors tides for NOAA physical oceanographic real-time systems (PORTS)
- › Easy to set up and configure over USB or SDI-12
- › FCC compliant (FCC IC# MOIPULS 616263); individual FCC license not required
- › Low maintenance—no moving parts significantly reduces maintenance cost and time
- › Low power mode available
- › Rugged enough for harsh environments—IP68 rating
- › Optional display available

## Detailed Description

Features of the SDI-12 version 1.4 functionality:

- › M! commands return stage, distance, voltage, and error codes
- › SHEF coded meta data

## Specifications

|                         |          |
|-------------------------|----------|
| Measurement Description | Distance |
| Output Options          | SDI-12   |

|                   |                               |
|-------------------|-------------------------------|
| Measurement Range | 0.5 to 35 m (1.6 to 114.8 ft) |
| Accuracy          | ±2 mm (±0.0065 ft)            |



|                             |  |
|-----------------------------|--|
| Resolution                  | 1 mm (0.0033 ft)                               |
| Communications Output       | SDI-12 version 1.4                             |
| Radar Frequency             | K band (~26 GHz)                               |
| Pulse Energy                | 1 mW (maximum)                                 |
| Beam Angle                  | 10°  |
| Input Voltage               | 9.6 to 32 Vdc                                  |
| Surge Protection            | 1.5 KVA  |
| Operating Temperature Range | -40° to +80°C                                  |
| Vibration Resistance        | Mechanical vibrations with 4 g and 5 to 100 Hz |
| Mechanical Rating           | IP66/68  |
| Housing Material            | Aluminum                                       |

|                  |  |
|------------------|--|
| Horn Material    | PVDF plastic   |
| Measurement Time | » < 1.0 s (normal power mode)<br>» 60.0 s + (5 • Integration Time) + (Measurement Time) (low power mode) |
| Housing Height   | 129 mm (5.1 in.)   |
| Horn Diameter    | 115 mm (4.5 in.)   |
| Horn Height      | 122 mm (4.8 in.)   |
| Weight           | 2 kg (4 lb)  |

#### Nominal Current Drain

|                   |  |
|-------------------|--|
| Normal Power Mode | » < 7 mA (measurement state)<br>» < 5 mA (sleep state)   |
| Low Power Mode    | » < 550 µA (sleep state)<br>» < 7 mA (measurement state) |

For comprehensive details, visit: [www.campbellsci.com.au/cs475a-l](http://www.campbellsci.com.au/cs475a-l) 



Campbell Scientific Australia | 411 Baywater Road | Garbutt, QLD 4814 | +61 (0)7 4401 7700 | [www.campbellsci.com.au](http://www.campbellsci.com.au)  
 AUSTRALIA | BRAZIL | CANADA | CHINA | COSTA RICA | FRANCE | GERMANY | INDIA | SOUTH AFRICA | SPAIN | THAILAND | UK | USA

© 2021 Campbell Scientific, Inc. | 02/17/2021