



CS477-L

Radar Water-Level Sensor



Non-Contact Water Level Monitoring

FCC approved for outdoor use

Overview

The CS477 is a radar-ranging sensor that monitors water level of rivers, lakes, tidal seas, and reservoirs. It can measure distances up to 70 meters. The CS477 outputs a digital SDI-12

signal to indicate distance and stage. This output can be read by many of our data loggers.

Benefits and Features

- › FCC approved for outdoor use (FCC ID number MOIPULS616263)
- › Ideal for areas where submersed sensors can be damaged due to corrosion, contamination, flood-related debris, lightning, or vandalism
- › Compatible with most Campbell Scientific data loggers
- › Low maintenance—no moving parts significantly reduces maintenance cost and time
- › Low power consumption
- › Rugged enough for harsh environments—NEMA rated 4X
- › Wide operating temperature range (-40° to +80°C)

Detailed Description

The CS477 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 (e.g., water, grain, slurry). The distance value can then be used to determine depth.

Specifications

Compliance	FCC approved for outdoor use (FCC IC number M01PULS616263)	Accuracy	±15 mm (±0.6 in.) over entire measurement range
Measurement Range	400 mm to 70 m (16 in. to 230 ft)	Resolution	1 mm (0.04 in.)
		Output Options	SDI-12

Radar Frequency	~26 GHz
Electromagnetic Compatibility	Emission to EN 61326; Electrical Equipment Class B
Pulse Energy	1 mW (maximum)
Beam Angle	8°
Input Voltage	9.6 to 16 Vdc
Surge Protection	1.5 KVA
Temperature Sensitivity	<ul style="list-style-type: none"> › Maximum 5 mm (over the entire temperature range of -40° to +80°C) › Average T_k is 2 mm/10 K
Vibration Resistance	Mechanical vibrations with 4 g and 5 to 100 Hz
Housing Rating	NEMA 4x

Housing Material	Aluminum, coated IP66/68
Horn Material	316L stainless steel
Typical Sleep Current Drain	4.7 mA (with 12 V power supply)
Typical Measurement Current Drain	14 mA (with 12 V power supply)
Side Cap Diameter	8.6 cm (3.4 in.)
End Cap Diameter	8.6 cm (3.4 in.)
Horn Diameter	9.5 cm (3.7 in.)
Horn Length	43.0 cm (16.9 in.)
Head Width	13 cm (5 in.)
Total Length	58.5 cm (23 in.)
Weight	4.3 kg (9.4 lb)

For comprehensive details, visit: www.campbellsci.com/cs477-radar-water-level 



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