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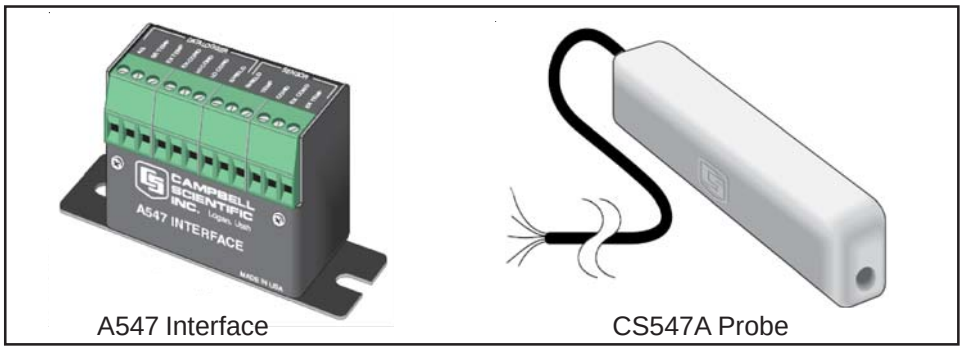
# CS547A Conductivity and Temperature Probe



A547 Interface

CS547A Probe

**For measurement of electrical conductivity, dissolved solids and temperature in fresh water**

## Description

The Campbell Scientific CS547A probe with the A547 Interface measures the electrical conductivity (EC) and temperature of water. EC is measured by three passivated cylindrical electrodes isolated from DC with capacitors. Temperature is sensed with a thermistor.

The CS547A is easy to clean and resistant to corrosion. It has rounded ends to facilitate installation and removal.

Dissolved solids can be estimated from conductivity measurements using empirical conversion factors.

For ground water applications, an optional weight and a split mesh cable grip are recommended for cables over 30m.

For correct operation there *must* be a flow of water through the sensor body.

The A547 Interface contains the required completion resistors and blocking capacitors – the probe can be used with a AM16/32B multiplexer and one A547.

## Compatibility

The output of the CS547A can be measured by all current Campbell Scientific dataloggers (except the CR200 series). The conductivity and temperature measurements require a differential and single-ended input, respectively. Two separate excitation channels are also needed.

## Ordering Information

| | |
|---|---|
| CS547A | Standard probe; please specify cable length.* |
| A547 | Interface containing completion resistors for use with the CS547. |

A weight and split mesh strain relief sleeve are available as options.

**In all cases, please specify the cable length required in metres (maximum 300).*

## Key Features

- On-line calculation of electrical conductivity
- Direct connection to datalogger
- Cable length up to 300m
- Can be used with multiplexers

## Typical Applications

- Water quality monitoring
- Calculation of stream discharge rate
- Tracking of water-borne pollutants in aquifers

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# Specifications

**Probe**

Construction: The sensor consists of three stainless steel rings mounted in an epoxy tube.

Size: (L x W x H) 89mm x 25.4mm x 19mm

Weight: 120g (with approx. 1 metre cable)

Maximum Cable Length: 300m. It is recommended that the sensor is ordered with the desired length to avoid any jointing problems; for ground water applications it is also recommended that an optional (80g) weight and cable grip are ordered for cable lengths over 30m.

Depth Rating: Maximum 300m.

pH Range: Solution pH of less than 3.0 or greater than 9.0 may damage the housing.

Cleaning: Nylon brush provided

**Conductivity Sensor**

Electrodes: Passivated 316 stainless steel with DC isolation capacitors.

Cell Constant: Individually calibrated. The cell constant ($K_c$) is given on a label near the termination of the cable.

Operating Temperature Range: 0°C to +50°C

Conductivity Range: Approx. 0.005 to 7.5mScm$^{-1}$

Accuracy:* In KCl and $Na_2SO_4$, $NaHCO_3$, and NaCl standards at 25°C
±5% of reading, 0.45 to 7.0mScm$^{-1}$
±10% of reading, 0.005 to 0.44mScm$^{-1}$

* User calibration of individual probes may improve the quoted accuracy.

**Temperature Sensor**

Thermistor: Betatherm 100K6A1

Range: 0°C to +50°C

Accuracy: ±0.4°C (worst case)

**A547 Interface:**

Size: 63.5 x 22.2 x 44.5mm

Weight: 170g

Temperature Range: -15°C to +50°C


*Multiple sensors can be measured by connecting the probes to an AM16/32B multiplexer and then connecting the multiplexer to a single A547 interface*