Campbell SCIENTIFIC

# CVS4200C

## Indoor Stationary Composite Water Sampler

# Accurate, Reliable

**Vacuum technology for better samples**

## Overview

The CVS4200C is a composite, stationary water sampler designed for indoor use. All samples are combined into a single container. The sampler uses reliable, long-lasting, vacuum technology. This sampling method results in faster sample draws and less disturbance of the sample contents. There is also less wear on the tubing, resulting in less frequent maintenance.

The CVS4200D differs from the CS4200C in that it is a discrete sampler that places each sample into a separate container.

Vacuum technology benefits over peristaltic pump samplers:

- Accurate sample volumes
- Rapid transport velocities mean more-representative samples
- Less disturbance of sample
- Minimal wear on the tubing, resulting in less-frequent maintenance
- Reduced cross-sample contamination

## Detailed Description

The CVS4200C is an indoor stationary water sampler that deposits its water samples into one container. It uses an external vacuum pump to draw water through intake tubing, instead of the traditional peristaltic pump that induces flow by squeezing flexible tubing.

Advantages of the vacuum pump method include faster sampling rates, better vertical lifts, longer sampling distances, and less maintenance. Because the vacuum method disturbs the water samples less, they better represent the original water solution, especially if the solution has high concentrations of suspended solids. To prevent cross contamination, the sampler use air pressure (up to 28 psi) to purge the tubing of excess water.

The controller that comes with the CVS4200C can accept a pulse input (for example, from a rain gage), a 4 to 20 mA signal (such as from a flow meter), or initiate a sample on a timed basis. The sampler can also be interfaced with our data loggers. Our data loggers can measure nearly any turbidity, water level, or hydrometeorological sensor, as well as control the sampler based on time, event, or measured conditions.

## Specifications

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| Specialized Applications | Indoor, refrigerated |
| 5/8 Inch ID Tubing Compatible | Yes |

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|---|---|
| Sample Container | ❱ One 10 L bottle (super clean)<br>❱ One 9 L bottle or one 20 L bottle (standard clean) |
| Enclosure | Nema 1 general purpose, 14 gage steel enclosure (upper control section only) with polyester-based powder paint for corrosion resistance |
| Dimensions | ❱ 1.39 x 0.53 x 0.56 m (4.58 x 1.75 x 1.83 ft) with refrigerator<br>❱ 0.59 x 0.43 x 0.48 m (1.92 x 1.42 x 1.65 ft) without refrigerator |
| Weight with Refrigerator | 68 kg (150 lb) |
| Weight without Refrigerator | 32 kg (70 lb) |

## Supply Voltage

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|---|---|
| Sampling System | 115 Vac/60 Hz or 12 Vdc |
| Refrigeration and Heating Units | 115 Vac/60 Hz |

## Vacuum System

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|---|---|
| Pinch Valve | Fixed – normally open |
| Purge Cycle | Adjustable from 1 to 99 s |
| Suction Cycle | Variable (Adjusts automatically to double the input value of the purge time setting or until liquid contacts level electrode in metering chamber.) |
| Sample Volume | Adjustable, 50 to 500 cc or Adjustable, 500 to 1000 cc |
| Horizontal Sample Transport Velocity | ❱ 1.3 m/s (4.2 ft/s) at 30.5 m (100 ft) for 5/8 in. system<br>❱ 2.2 m/s (7.1 ft/s) at 7.6 m (25 ft) for 3/8 in. system<br>❱ 1.5 m/s (5 ft/s) at 30.5 m (100 ft) for 3/8 in. system<br>❱ 0.8 m/s (2.6 ft/s) at 76.2 m (250 ft) for 3/8 in. system<br>❱ 1.5 m/s (5 ft/s) at 7.6 m (25 ft) for 5/8 in. system<br>❱ 0.7 m/s (2.4 ft/s) at 76.2 m (250 ft) for 5/8 in. system |
| Horizontal Maximum Transport Distance | 76.2 m (250 ft) |
| Metering Chamber Cover | Nylon |
| Volume Control Tube | 316 stainless steel |
| Metering Chamber Level Electrode | 316 stainless steel |
| Intake Hose Material | Nylon-reinforced PVC |
| Discharge Hose Material | Latex |

## Controller

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|---|---|
| Display | 2 x 16 character backlit LCD |
| Touchpad | 16 key (with multi-level menu) |
| Start Delay | Disabled, Time/Day, Pulse Count, 4 to 20 mA (0 to 100 pulses/min.), External Contact, Level Control |
| Sample Initiation | Disabled, Time/Day, Pulse Count, 4 to 20 mA (0 to 100 pulses/min.), External Contact, Level Control |
| Program Type | Composite, Multi-Composite, Consecutive, Daily Cycle, Timed Step |
| Clock | Real-time clock and operating system |
| Direct Function Keys | Manual sample, Manual purge, Manual bottle advance, Restart |
| Alarm Outputs (Independent) | Cycle abandoned (pulse output), Sample Fault, Container Full |
| Status Outputs | Sample taken (pulse output) |
| Switches | Run/off (SPST toggle), On/off (5 A lighted breaker); Heater on/off; Refrigerator on/off |
| Available Displays | Real time clock, Process timing, Process controls, Pulse counting, Event response, Multi-level description, Flashing prompts, Diagnostics |
| Automatic Displays | Container Full, Fault Interrupt Alternating Time Stamp, Cycle(s) abandoned |

For comprehensive details, visit: www.campbellsci.com/cvs4200c

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