CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

# BVS4300D

## Outdoor Stationary Discrete Water Sampler

# Rugged Steel Enclosure

**Vacuum technology for better samples**

## Overview

The BVS4300D is a discrete, stationary water sampler designed to handle your extreme outdoor environments. Each of your samples is placed into a separate container. The sampler is housed in a corrosion-resistant steel enclosure with a locking door and bolted-down instrument panel.

The BVS4300D uses reliable, long-lasting, vacuum technology to draw water through its intake tubing. 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.

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

The BVS4300C is similar ro the BVS4300D, but it is a composite sampler that deposits its samples into a single container.

## Benefits and Features

- Rapid transport velocities of samples, meaning more accurate samples—even of solids
- All information easily controlled and viewable on a 2 by 16 character backlit LCD
- Optional glass-door fridge and optional heater
- Interfaces with Campbell Scientific data loggers for more measurement and control capabilities

## Detailed Description

### Vacuum Pump

The BVS4300D uses an external vacuum pump to draw water through intake tubing, instead of the traditional peristaltic pump that induces flow by squeezing flexible tubing. 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 samplers use air pressure (up to 28 psi) to purge the tubing of excess water.

## Controller/Interfacing with a Data Logger

The BVS4300D includes a programmable controller with 16-key intuitive touchpad. The controller can accept a pulse input (such as from a rain gage) or a 4 to 20 mA signal (such as from a flow meter), or the controller can 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 hydrometeorologic sensor, as well as control the sampler based on time, event, or measured conditions.

# Specifications

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|---|---|
| Specialized Applications | Outdoor, refrigerated |
| 5/8 Inch ID Tubing Compatible | Yes |
| Sample Container | ❱ One 10 L bottle, four 4 L bottles, eight 2 L bottles, or twelve 1 L bottles (super clean)<br>❱ One 8 L bottle, one 20 L bottle, or 24 0.5 L bottles (standard clean) |
| Cabinet | NEMA3R |
| Dimensions | 1.6 x 0.66 x 0.66 m (63 x 26 x 26 in.) |
| Weight with Refrigerator | 141 kg (310 lb) |
| Weight without Refrigerator | 109 kg (240 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 5 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<br>❱ Adjustable, 500 to 1000 cc |
| Horizontal Sample Transport Velocity | ❱ 1.2 m/s (4 ft/s) at 53.3 m (175 ft)<br>❱ 2.2 m/s (7.1 ft/s) at 7.6 m (25 ft)<br>❱ 1.9 m/s (6.2 ft/s) at 15.2 m (50 ft)<br>❱ 1.7 m/s (5.6 ft/s) at 22.9 m (75 ft)<br>❱ 1.5 m/s (5 ft/s) at 30.5 m (100 ft)<br>❱ 1.1 m/s (3.7 ft/s) at 61 m (200 ft)<br>❱ 0.8 m/s (2.6 ft/s) at 76.2 m (250 ft) |
| 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 | 6 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 |
| 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 |

For comprehensive details, visit: www.campbellsci.com/bvs4300d

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Campbell Scientific, Inc. | 815 W 1800 N | Logan, UT 84321-1784 | (435) 227-9120 | www.campbellsci.com
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