CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

BVS4300C and BVS4300D

Outdoor Stationary Water Samplers

BVS4300D

Rugged Steel Enclosure

Vacuum technology for better samples

Overview

The BVS4300C and BVS4300D outdoor, stationary water samplers are designed to handle extreme environments. They include corrosion-resistant steel enclosures with locking doors and bolted-down instrument panels. The samplers use reliable, long-lasting, vacuum technology to draw water through their intake tubing.

The BVS4300C is a composite sampler that deposits its water samples into one container. The BVS4300D is a discrete sampler that deposits its water samples into multiple containers.

Benefits and Features

- Rapid transport velocities of samples (horizontal draws 76.2 m (250 ft) at 0.8 m s^{-1} (2.5 ft s^{-1}), meaning more accurate samples, even of solids
- All information is easily controlled and viewable on a 2 by 16 character backlit LCD
- Composite or discrete models available
- Optional glass-door fridge and optional heater*
- Interfaces with Campbell Scientific dataloggers for more measurement and control capabilities

Options*

- Quick connect terminals
- Refrigerator
- Heater
- Integral battery and charger
- Pressure/vacuum gage
- Water detection probe
- Common fault relay
- Sample success relay
- External valve control
- Circulation fan
- Standard or insulated NEMA3R cabinet
- Warranty options: three or five year
- Chamber: Acrylic or glass (standard or sanitary)
- BVS4300C size options: 3/8 in. ID system or 5/8 in. ID system (the BVS4300D Discrete Sampler is a 3/8 in. ID system only)
- BVS4300C container options: 9 L or 20 L Nalgene bottle, 10 L glass bottle; overflow options available
- BVS4300D container options: 24 0.5 L plastic bottle, four 4 L glass bottles, eight 2 L glass bottles, 12 l L glass bottles; overflow options available

Technical Details

Vacuum Pump

The BVS4300C and BVS4300D samplers use an external vacuum pump to draw water through intake tubing, instead of the traditional peristaltic pump that induce 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. See our vacuum pump water samplers in action at:

www.youtube.com/watch?v=wi4dxFTw-ks

Controller/Interfacing with a Datalogger

The BVS4300C and BVS4300D include a programmable controller with 16-key intuitive touch pad. The controller can accept a pulse input (e.g., rain gage), a 4 to 20 mA signal (e.g., flow meter), or initiate a sample on a timed basis. See a demonstration of the programmable controller at:

www.youtube.com/watch?v=yRr80Lm-5Hs

The sampler can also be interfaced with our dataloggers. Our dataloggers can measure nearly any turbidity, water level, or hydrometeorologic sensor, as well as control the sampler based on time, event, or measured conditions.

Specifications

- Refrigerated Weight: 141 kg (310 lb)
- Non-Refrigerated Weight: 109 kg (240 lb)
- Height: 1.6 m (63 in.)
- Width: 0.66 m (26 in.)
- Depth: 0.66 m (26 in.)
- Cabinet: NEMA3R (insulation available as an option)

Vacuum System

- 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)
- 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: ordered as a common accessory. Campbell Scientific offers PVC hose with 25 ft and user-specified lengths. Intake end can have a lead sinker or stainless-steel strainer. Sampler end can have a clamp or quick connect termination
- Intake Hose Material: nylon reinforced PVC
- Discharge Hose Material: latex

Supply Voltage

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

Controller

- 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; diagnostic

Horizontal Velocity

System Size	Distance						
	7.6 m (25 ft)	15.2 m (50 ft)	22.9 m (75 ft)	30.5 m (100 ft)	53.3 m (175 ft)	61 m (200 ft)	76.2 m (250 ft)
3/8 in. system	2.2 m s^{-1} (7.1 ft s^{-1})	1.9 m s^{-1} (6.2 ft s^{-1})	1.7 m s^{-1} (5.6 ft s^{-1})	1.5 m s^{-1} (5 ft s^{-1})	1.2 m s^{-1} (4 ft s^{-1})	1.1 m s^{-1} (3.7 ft s^{-1})	0.8 m s^{-1} (2.6 ft s^{-1})
5/8 in. system (BVS4200C only)	1.5 m s^{-1} (5 ft s^{-1})	1.4 m s^{-1} (4.7 ft s^{-1})	1.3 m s^{-1} (4.3 ft s^{-1})	1.28 m s^{-1} (4.2 ft s^{-1})	1.1 m s^{-1} (3.7 ft s^{-1})	1 m s^{-1} (3.3 ft s^{-1})	0.7 m s^{-1} (2.4 ft s^{-1})