



PVS5120C

Composite Portable Automatic Liquid Sampler



Sampler Optimized for Data Logger or RTU Control

Vacuum technology for better samples

Overview

The PVS5120C is a composite sampler that deposits its water samples into a nine-liter container. This sampler uses a vacuum sampler controller, the VSC100, to allow a Modbus RTU master, SDI-12 master device, simple pulse input, or Campbell Scientific PakBus data logger to control and communicate with the water sampler.

This sampler is lightweight, portable, and battery-powered. It can fit in a small-sized manhole and be suspended by a stainless-steel harness for sewer applications.

The PVS5120C can be used with a standard or large pump. The standard pump takes samples at 1.6 m/s (5.1 ft/s) for horizontal draws of 7.6 m (25 ft). The large pump takes samples at 2.2 m/s (7.1 ft/s) at 7.6 m (25 ft). Both of these velocities are typical values measured at sea level. Intake velocities will decrease as altitude increases.

Benefits and Features

- ▶ Diagnostic feedback provided to the master device: bottle number, sample number, response code/message, sampler battery voltage
- ▶ Auto deploy that automatically sets the purge and vacuum times based on hose length
- ▶ Repeatable volume collection via metering chamber
- ▶ Selectable internal or external power via three-way power switch
- ▶ One control cable for all control types
- ▶ An optional water present sensor detects the presence of water at the mouth of the sampler intake hose to ensure a sample is available

Detailed Description

The PVS5120C 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 sampler uses air pressure (up to 28 psi) to purge the tubing of excess water. The standard pump can lift as high as the large pump and is

appropriate for most applications—especially when the power budget is a concern. The large pump is appropriate for

applications with long hose distances or high lifts because it provides higher pumping velocity.

Specifications

Specialized Applications	Fits in small-sized manholes. Can be suspended by stainless-steel harness for sewer applications.
5/8 Inch ID Tubing Compatible	Yes
Sample Container	One 9 L bottle
Enclosure	LLDPE (linear low-density polyethylene), three-piece construction, and stainless-steel fittings
Cooling System	Insulated container wall, cavity space for ice
Horizontal Velocity	Refer to the " PVS5120 Intake Velocity versus Hose Length at Sea Level " plot.
Storage Temperature Range	-20° to +50°C
Operating Temperature Range	<ul style="list-style-type: none"> › 0 to 50°C (standard pump) › 0 to 40°C (large pump)
Operating Voltage	<ul style="list-style-type: none"> › 10.8 Vdc (minimum) › 16 Vdc (maximum) › 12 Vdc (nominal)
Body Case Diameter	42.8 cm (16.85 in.)
Height	<ul style="list-style-type: none"> › 80.9 cm (31.875 in.) › 96.2 cm (37.875 in.) with extended base

Weight

Sampler with Standard Pump and No Battery	10.4 kg (23 lb)
Sampler with Large Pump and No Battery	11.8 kg (26 lb)
7 Ah Battery	1.8 kg (4 lb)
17 Ah Battery	6.3 kg (14 lb)

Controller

Sampler Triggering Methods	<ul style="list-style-type: none"> › Modbus RTU Master › SDI-12 Master Device › Campbell Scientific PakBus data logger › Pulse trigger (1 to 10,000 pulses) › Time-based sampling (stand alone)
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RS-485 Communication	Can return sampler status when triggering samples via pulse or time-based control.
Backup Power Source	Internal lithium battery maintains program settings and information in case of power failure.
Multi-purpose Button	Service sampler, collect manual sample, and auto deploy
Auto Deploy	Automatically sets the purge and vacuum times based on hose length (between 25 and 100 ft)
Sampler Status/Feedback	Bottle number, sample number, response code, sampler battery voltage (available after every sample)

Vacuum System

Pinch Valve	Fixed – normally open
Purge Cycle	Adjustable from 1 to 800 s (280 s for SDI-12)
Suction Cycle	Variable (until liquid contacts level electrode in metering chamber or adjusts automatically to two times the purge time)
Horizontal Maximum Transport Distance	67 m (220 ft)
Metering Chamber Cover	<ul style="list-style-type: none"> › Nylon (standard) › Teflon (option)
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.
Discharge Hose Material	<ul style="list-style-type: none"> › Latex (standard) › Options include Teflon lined, silicon.

For comprehensive details, visit: www.campbellsci.com/pvs5120 



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