

# FLOWCONTROL-SUB

**Programmable • Autonomous • 3-Way Pinch Valve**

## • High Quality Backgrounds

The FlowControl-Sub has been developed to systematically provide filtered water backgrounds to instruments for the purpose of making highly accurate measurements (for example, low concentration environments and biofouling-prone waters). The FlowControl-Sub is an essential tool for aquatic scientists to ensure high quality backgrounds in the field. FlowControl-Sub allows for efficient and uncompromised collection of high quality data.

FlowControl-Sub is a programmable, autonomous, 3-way pinch valve system (fully submersible to 500 meters), commonly used in flow-through systems, ship-based profiling systems, moored platforms, buoys, and autonomous floats and gliders.

FlowControl-Sub is designed for simple interfacing with a variety of flow-through instruments, such as **WET Labs ac-s**, and **Sequoia particle sizing instruments**.

## • Accurate Measurements

FlowControl-Sub uses standard tubing and is adaptable to 3rd party instruments, making the use of FlowControl-Sub a clean and basic integration.

### Deployment example

(profiling with an instrument package)

Upon reaching the bottom of a measurement profile, FlowControl-Sub switches valve position and diverts incoming water through a cartridge filter (typically 0.2  $\mu\text{m}$ ), resulting in measuring filtered water during the up-cast. The combined profiles of filtered and unfiltered measurements allow for high-accuracy differential measurements of particle properties (for example, absorption), over the entire profile.



SEQUOIA

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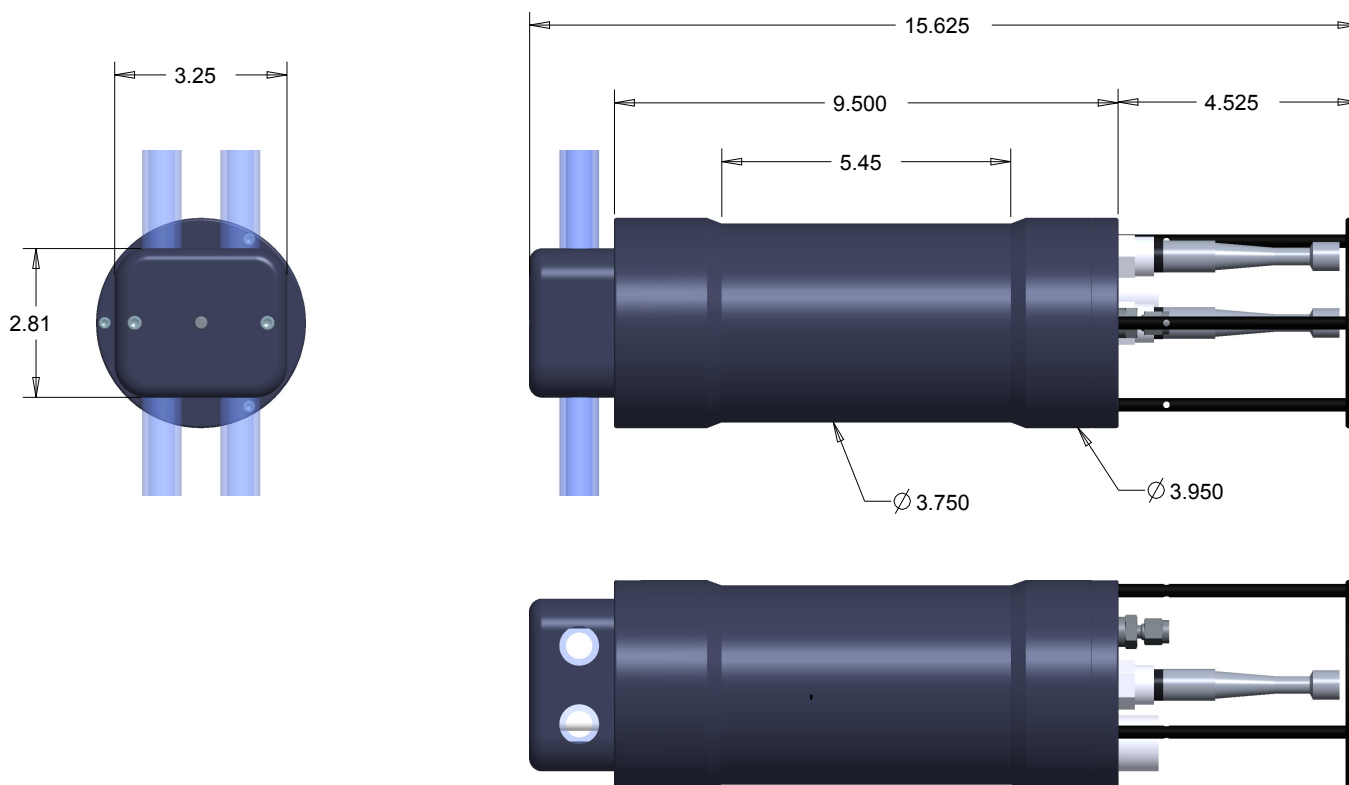
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## FEATURES

- Pinch valve design for full-port flow and easy replacement of fouled tubing
- Rapid transition of valve state (~1 s)
- Auxiliary inputs for analog sensors
- Flexible configuration of valve operation for scheduled or profiling operation, as well as start and stop conditions
- Continuous output and internal logging of valve state and depth

## SPECIFICATIONS (subject to change without notice)

- Mechanical and Environmental
- Dimensions: 15.625" (39.7 cm) L x 3.95" (10.0 cm) diameter (max)
- Weight: 6.6 lb (3.0 kg) in air
- Depth rating: 500 m
- Materials: Black-anodized aluminum pressure case, stainless steel shaft and pinching lever arms, Teflon tubing rollers, acetal resin hold down block
- Tubing: Designed for Norprene A-60-G 0.5" ID / 0.75" OD (US Plastic part # 054282)
- Electrical and Sampling
- Input power: 12-24 VDC
- Current Draw @ 12VDC: 25 mA / 40 mA / 1.2 A / 2.1 A when idling / sampling w/o auxiliary sensors / switching valve / valve motor stalled
- Serial Output: RS-232, 19200 baud, 8N1.
- Bulkhead connector: Teledyne Impulse part MCBH-5-MP
- Sample rate: 1 Hz
- Valve switch time: 1 s
- Pressure sensor: 0-750 psi @ 16 bit resolution (~1 cm resolution, 0.2% full scale accuracy)
- Thermistor: 16-bit resolution



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