The BOV

Remotely Operated Vehicle

The Benthic Observation Vehicle (BOV) is an affordable, purpose-built remotely-operated vehicle (ROV) for conducting underwater surveys and inspections in high-current environments. Its high thrust to drag ratio allows the BOV to perform and hold position in currents approaching three knots. The vehicle is composed of four DC thrusters, two 50 watt lights, color or black/white video camera, compass, depth sensor, and a tubular aluminum structural frame. Due to its small size, it is ideal for conducting pipeline surveys in pipes as small as 24 inches in diameter, for distances in excess of 1000 feet.

All data and control signals are multiplexed over dedicated twisted-pair wires, while system power is provided through separate conductors in the umbilical. The control cable is fitted with underwater connectors for ease of transport or umbilical change. Video images (color or black and white) are transmitted through a coax cable in the umbilical and displayed on a AC/DC color monitor/VCR. The vehicle is controlled by using a joystick connected to the user's PC or laptop loaded with custom Windows-based control software. A customer supplied payload of up to 30 pounds submerged weight may be added with no additional modifications.

Navigational devices (digital compass and depth sensor) are controlled and read by a dedicated microprocessor, which also provides a software-configurable interface for customer-supplied sensor packages. Analog to digital converters are included on the microprocessor board, and can accommodate custom payloads as well as a variety of optional sensor packages (conductivity, temperature, dissolved oxygen probes).

The standard BOV package includes one vehicle, 300 ft of umbilical, AC/DC monitor/VCR, control box, joystick, power cable, control software CD-ROM, spares kit, and shipping cases. Optional equipment includes a ruggedized laptop computer, 500 or 1000 ft control cable, various sensor packages, manipulator, cable reel, video overlay system for navigational data and time/date stamp, and other customer-specific options. Contact Baxley Ocean Visions for additional capabilities and options.

Specifications

Operating Depth:	300 fsw
Forward Speed:	3 knots
Reverse Speed:	2 knots
Power:	120 VAC, 600 Watts
Camera:	CCD Black/ White or Color
Lights:	Two 50 watt halogen, adjustable beam
Heading Sensor:	Digital, 1 deg. resolution
Depth Sensor:	0-250 psi pressure transducer
Control:	Topside PC-based, joystick/keyboard
Umbilical:	0.410" OD, 3,800 pound breaking strength
Conductors:	10 #18 wires, one coax for video
Dimensions:	40" length x 22" width x 17" height
Weight in air:	68 pounds less ballast or payload
Weight in seawater:	30 pounds positive, neutral with ballast
Optional Equipment:	Ruggedized laptop computer
	500 or 1000 ft umbilical
	Various sensor packages
	Manipulator/Suction pump unit
	Cable reel w/ slip rings
	Video overlay system
	Customer-specific systems

For more information please contact Bill Baxley by e-mail (baxleyw@ocean.nova.edu) or by phone at (954) 967-8105.

Baxley Ocean Visions is a privately owned ocean engineering corporation located in Hollywood, Florida providing technical support for the marine industry. A wide range of services are available which incorporate cost-effective, reliable, and innovative solutions to ocean-related problems. Capabilities include remotely operated vehicles (ROVs), research and support vessels, diving services, cable system engineering and modeling, and custom product development.

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