



Subsea Robotics & Submersible Systems

High Power ROV's



DOER designs and builds remotely operated vehicles ranging from seven to one hundred horsepower in a variety of configurations. From systems with rigid design constraints of polar bore hole deployment to complex deep water film applications, a common architecture allows DOER to tailor systems to client needs. Building upon this proven strategy, we standardized a smaller, more compact version of our 3000m vehicles.

Ocean Explorer H2000 is a compact and capable vehicle, which like all DOER products is made in the USA. Capable, versatile, the H 2000 is based on years of practical field operations and feedback from our valued clientele.

Ocean Explorer H2000 with Sea Mantis five function manipulator

System Specifications:

Depth Rating

The vehicle is built standard for 2000m operations, 1000m option available

Dimensions

Standard dimensions in inches: 60"L x 39"W x 38"H.

Weight in Air

895 lbs/406kg

Payload

160 lbs/72.5kg

Shaft output

7.5 HP

Thrusters

The thrusters have six inch ID ducts with integrated control valves and optimized asymmetric props. Quad configuration with dual vertical thrusters (six total)

Forward thrust 327 pounds

Reverse 200 pounds

Up 187 pounds

Down 112 pounds

Lateral 137 pounds

Auto Functions

Auto Depth

Auto Heading

Auto Altitude (programmed but requires altimeter option)

Go to Depth

Go to Altitude

Go to Heading



Larger 3000m DOER System being deployed

System Specifications Continued:

Video/Data Channels

Three simultaneous video signals (NTSC/PAL)
Six data channels, 2 x RS 485 and 4 x RS232
1x Ethernet
HD Fiber ready
On Screen Overlay

Hydraulic Valve Network

Vehicles are typically equipped with a Sea Mantis five function manipulator which includes a six function valve pack (one spare). An additional six valve stations are provided each with 3500PSI @ 3GPM capability.

RS-485 Controlled Valves

Distributed network with hundreds of valve possibilities

Note that the vehicle has six auxiliary valve stations. Two are used by camera pan/tilt (one if tilt only is used). The remaining stations can be used for a wide variety of sampling devices, actuators and more.

Power Input

240/440 VAC 50/60Hz 18 KVA 3 phase power

Systems Monitoring

Voltage, current, compensator levels, power, depth, heading, control can temperature, humidity, leak detection

Control System

The control system is microprocessor based subsea with a Windows based surface interface.

Surface

Graphic User interface runs on a Windows PC

Joystick for control of the ROV

Three axis: forward/aft, port/starboard, up/down
Buttons for auto heading and up/down control

Tether

Diameter: 0.65 in (16.5mm)
4 Fiber
Rated working load: 500 lbf
Weight in Sea Water: Positive 2.5 lb/kft

Display

Vehicle control and data 19" main touch screen monitor
Systems and thruster control 12" pilot touch screen monitor

Power Distribution Unit (PDU)

Reads inputs from the GFI
Monitors power for the instrumentation
Hydraulic power unit power systems
Digital outputs: prevent PDU activation until control system is ready
Digital inputs: read contactor closures to denote power systems are active

Subsea

Main controller is a single board computer
16 digital outputs
16 digital inputs
8 analog voltage input channels with 11 bit resolution
4 high current (2A/40v) digital outputs
4 ea 12 bit resolution analog outputs (0-10 VDC, +10 VDC, or 4-20mA)
3 serial ports (2 RS-232, 1 RS-485)
Ethernet
2 expansion ports

Digital outputs to control individual power supplies and relays
Inclinometer for directional, pitch and roll.

Ground fault monitor

Detects ground faults on up to eight different channels
Direct digital outputs can be set via digital input to look at specific channels
Channel specific resistance measurement (positive and 0V or Line and Neutral for AC)

GFI

Approved GFM/GFI

Options

Various video cameras and lights, digital stills camera, lasers, sonar, CTD, cp probe, altimeter, sampling devices, tracking

All specifications subject to change



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