

## Sealion 3000 Deepwater Work Class ROV



Sealion 3000 is a robust 125hp work class ROV system with a full 3000m depth capability. It incorporates a number of enhanced operational and engineering features which specifically address the demands of deepwater operations. Key “deepwater” design features included:

■ Robust side entry TMS with 1150m excursion capability ■ Launch & Recovery System (LARS) rated for 10Te SWL at Sea State 6 and capable of high recovery speed ■ Real time monitoring of umbilical dynamic loading ■ Continuous full duty cycle operation at full depth or in shallow water without the risk of umbilical overheating ■ High bandwidth fibre optic multiplexer optimised for complex deepwater survey

Sealion 3000 is a highly flexible system suitable for all types of drill support, construction support, IRM, survey and subsea intervention tasks, some examples are listed below:-

- Torque/linear override tools & hot stabbing
- Lift lines attachment/guide wire replacement
- Disc grinders/cutters/chop saw
- Debris removal/dredging
- Water jetting & wire brush cleaning
- Installation and removal of AX/VX rings
- Placement & recovery of acoustic beacon
- Flow line pull-in / Jumper Installation
- Intervention tasks with TDU/FLOT
- General/close visual inspection/ Still photography
- Flooded member detection/CP Measurement
- Wall thickness measurement/crack detection
- Multibeam swathe bathymetry survey
- Sub-bottom profiler & side scan survey
- Trench profile, Pre-lay & Post-lay survey
- Touch down monitoring / Grout bag operation
- Boom cameras/profilers pipeline survey
- Sub-bottom pipe/cable detection/tracking

The system is operated from a fully air conditioned A60 rated (designed for rapid upgrade to zoned area compliance) 20ft x 8ft control cabin certified by Lloyds Register of shipping. The cabin has a separate piloting and high voltage area where all electrical distribution functions are remotely monitored and controlled from a Supervisory Control & Data Acquisition (SCADA) computer. The SCADA system performs logging and trending of critical system parameters giving an unprecedented level of diagnostic capability.

The A-frame based LARS is equipped with a snubber providing motion damping on all three axes. The snubber assembly has vertical travel of 0.8m to facilitate safe and precise landing of TMS+ROV on deck. The LARS is fitted with a motion reference unit (MRU) and load cell to allow real time monitoring of dynamic loading (G-force) acting on the umbilical. This information is displayed and logged in real time with the SCADA system allowing operators to make considered assessments of prevailing operating conditions versus LARS capability.

# Sealion 3000 Deepwater Work Class ROV

## DEPTH AND POWER RATING

Depth 3000MSW  
Power 125 HP

## PHYSICAL CHARACTERISTICS

Length | Width | Height 2700mm | 1400mm | 1950mm  
Weight in Air 2400kg  
Through frame lift 5000kg  
Payload 150kg (with standard buoyancy)

## THRUST

Eight thrusters provide the following at 225 bar system pressure:-  
Forward/Lateral 550 kg  
Vertical 350 kg

## SPEED

Forward/aft 3.5 / 2.8 knots  
Lateral 2.8 knots  
Vertical up/down 1.5 / 2.2 knots

## MANIPULATORS

Type 2 x 7-function rate controlled  
Reach 1.6m  
Lift capacity 50kg  
Rotate torque 108Nm (79lbf.ft)  
Jaw gripping force 80-85kg at 175bar

## CAMERAS

The vehicle can be fitted with up to 10 cameras, of which four can have full focus/zoom controls. Expandable to sixteen if required.

## LIGHTS

3 x 600W or 6 x 300W quartz halogen lamps on three dimmer channels. 3 x 100W HID lights on three non-dimmable channels.

## PAN & TILT UNIT

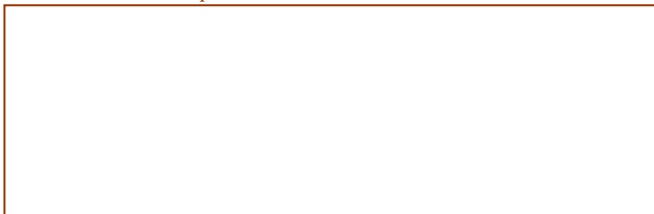
High torque heavy duty hydraulic rate control unit with  $\pm 135^\circ$  pan/tilt travel and speed adjustment.

## VEHICLE CONTROL SYSTEM



Vehicle control is performed by a real time control system housed in the main control pod which communicates with the surface control unit (SCU) via full duplex fibre optics links. The user friendly SCU runs on MS Windows platform. Advanced diagnostic system and help screens are included.

For more information, please contact:



www.fugro.com

## VEHICLE AUTO CONTROL ROUTINES

Auto Depth  $\pm 100$ mm Auto Altitude  $\pm 100$ mm Auto Heading  $\pm 1.5^\circ$

## NAVIGATION GYRO COMPASS & PICTH / ROLL SENSOR

Gyro Type Bendix King KGS 305 with flux valve  
Gyro Accuracy  $\pm 1^\circ$  unaffected by magnetic interference  
Pitch & Roll CDL Minitilt, Range  $360^\circ$ , Accuracy  $0.05^\circ$

## DEPTH SENSOR

Primary Transducer Type Digi quartz 8CB4000-I / 0 – 4000m  
Resolution/Accuracy 0.1m / 0.01%  
Backup Transducer Type Druck PDCR810 / 0 – 2000m  
Resolution/Accuracy 0.1m / approx. 0.1%

## ECHO SOUNDER

Type SIMRAD 1007 Digital Altimeter  
Frequency/Range 200kHz / 300m max (30m default setting)

## OBSTACLE AVOIDANCE SONAR

Type SIMRAD MS1071 6000m Digital Sonar  
Frequency/Range 675Khz / 0.5 - 100m

## FIBRE OPTICS MULTIPLEXER

Two completely independent fibre optics systems provide the following capabilities:

- 10 video channels (expandable to 16)
- 18 x RS232 serial, 4 x RS485/422 1 X ARCNET serial channels
- 2 x high bandwidth multibeam echo sounder channels

## PLUG & PLAY SURVEY SENSOR CONNECTIVITY

Survey JB and comms sensor pod facilitate plug & play sensor connectivity by having connectors pre-configured for serial comms and switchable power supply for the following sensors:

- Doppler Velocity Log
- Motion Reference Unit 1
- Motion Reference Unit 2
- Feedback Manipulator
- Survey Gyro
- 3 X Spare Sensors
- Pipe Tracker
- Bathy Sensor Pod
- Profiler
- Multibeam Echo Sounder 1
- Multibeam Echo Sounder 2

## SKID INTERFACE JUNCTION BOX (OPTIONAL)

The optional skid interface JB can facilitate twelve digital/analog channels, one counter channel, one 10A@110V supply, one 10A@24V supply and three HID light channels. These facilities will satisfy virtually any work skid monitoring and control requirements.

## TETHER MANAGEMENT SYSTEM

The 3000m rated side entry TMS exhibits design features optimised for deepwater operation. Excursion range of 1150m is achieved using  $\varnothing 30$ mm OD tether. Dual redundant fiber optics communication ensures fault tolerant operation.

## SYSTEM POWER REQUIREMENTS

Total system (ROV, Control cabin, Workshop cabin, LARS) power demand is 350KVA. 500KVA rated generator is recommended.

## ELECTRICAL SAFETY FEATURES

- Line insulation monitors & ELCB
- Isolated HV areas where electrical distribution panels are remotely monitored and controlled
- Personnel safety lockout system
- Separate fibre optics & electrical junction boxes
- Thermal switches on transformer cores

## LAUNCH & RECOVERY SYSTEM

The 10Te SWL (Sea State 6) rated LARS is suitable for ultra deep water (4000m) as well as shallow water operation. The powerful winch can achieve maximum recovery speed of 90 m/min and hold 4500m of  $\varnothing 32$ mm umbilical. The advanced 3D motion damper and sophisticated condition monitoring system ensure safe operation.

