

Seaeye Falcon



THE SEAEYE FALCON is a portable, powerful and versatile ROV intended for professional inspection, observation and survey operations in coastal or inshore waters. Falcon can be hand launched and operated to its maximum depth of 300m. This system requires only a single phase A/C power supply. Falcon incorporates technology that has been proven in Seaeye ROVs used in the demanding environment of the international offshore oil and gas industry. Innovations include a distributed intelligence control system and magnetically coupled brushless DC thrusters, which produce 50kg of thrust providing an unbeaten 1:1 power to weight ratio.

Features

- 300 metre depth rating, 16 kilo payload
- Magnetically coupled brushless DC thrusters with velocity feedback loop
- 4 vectored and 1 vertical thruster
- 50 kgf thrust with 1:1 power to weight ratio
- Distributed intelligence control system
- Integral system diagnostics
- High resolution colour camera on 180° Tilt Platform
- Variable intensity 150 watts of lighting
- Auto heading and depth, compass and rate gyro
- Portable surface control system with video overlay and daylight readable display
- Low drag umbilical
- Single phase input, universal 100-270 VAC at 2.5 kw



Seaeye

Seaeeye Falcon

Seaeeye Falcon is the first ROV from Seaeeye Marine produced specifically with professional coastal and inshore operators in mind. This ROV incorporates Seaeeye's proven offshore technology with innovations never before seen on portable open frame systems.

New magnetically coupled brushless DC thrusters and a distributed intelligence control system with self diagnostics have been developed for **Seaeeye Falcon** and incorporated into a light weight frame that takes its design cues from the Seaeeye Tiger and Seaeeye Lynx. New composite materials have been used for the first time in the core lift frame to reduce weight by more than 50 per cent.

The vectored thruster configuration achieves a 1:1 power to weight ratio with 50 kilos of thrust from a vehicle that only weighs 50 kilos. Seaeeye Falcon has a payload of 16 kilos and draws only 2.5 kva at full power.



SPECIFICATIONS

THE VEHICLE

Vehicle Specifications

Max. Working Depth:	300 msw
Length:	1000 mm
Height:	500 mm
Width:	600 mm
Launch Weight:	50 kg or 62 kg with additional buoyancy
Core Frame:	Composite Materials
Lift Point:	316 SS
Main Construction:	Polypropylene
Buoyancy:	Closed cell foam blocks under a quick release polypropylene shell
Payload:	4 kg or 16 kg with additional buoyancy
Thruster Configuration:	4 x vectored and 1 vertical
Thrust Forward:	50 kgf
Thrust Lateral:	28 kgf
Thrust Vertical:	13 kgf
Forward Speed:	> 3 knots

Standard Camera Specification

Colour Camera:	480 TVL, 0.2 LUX (F1.4)
Lens:	3.8 mm aspherical
Camera Tilt Mechanism:	± 90°, accepts 2 cameras

Lighting Specification

2 x 75 watt Tungsten Halogen, remote brilliance control and individually fused

Navigation

Auto Heading:	Solid state rate gyro
Auto Depth:	Depth sensor - feet/metres
Compass Accuracy:	± 2°
Depth Sensor Accuracy:	± 0.5% of full scale deflection
Gyro Accuracy:	0.1 °/s
Surface Update Rate:	≥ 40 ms

Propulsion

All Seaeeye brushless DC thrusters have drive electronics with velocity feedback for precise and rapid thrust control. A fast PID control system and a solid-state rate gyro for enhanced azimuth stability also prevents overshoot on a change of heading. Seaeeye Falcon's thrusters are magnetically coupled brushless DC units each capable of 13 kgf thrust at 320W or a combined forward thrust of 50 kgf. For an ROV weighing only 50 kilos this represents an impressive 1:1 power to weight ratio.

Control System

A distributed intelligence control system comprising a multi-drop network which allows up to 128 devices to be connected together on a single RS485 serial network. Each device connected to the network, be it a thruster, light, compass or a future option, contains a microprocessor and interface electronics and is called a 'node'.

These 'nodes' are controlled by a master processor in the Surface Unit and are fully isolated to maximise system reliability. Each node is connected to the Network's Star Point at the ROV junction box. The Star Point is a printed circuit board that provides each node with its own fused power supply and telemetry. This modular approach eliminates the need for a complex central electronics pod and significantly reduces the number of subsea connectors used.

Control System Diagnostics

Each node is automatically tested when the system is powered up with fault alarms provided on the video overlay. Local diagnostics are also provided for each node in the Junction Box with colour coded LEDs that confirm fuse and telemetry status.

The ROV Junction Box

Contains the Network Star Point and the video line-driver.

SURFACE EQUIPMENT

Power Requirements

Single Phase A/C, Universal Input: 100-270 VAC, 2.5 kw.

Compatible with Generators fitted with auto voltage regulation

Surface Unit

The Falcon's power supply unit, processors and video systems are rack mountable and supplied in portable enclosures. The power supply unit provides a galvanically isolated 500VDC output protected by a L.I.M.. All equipment is fitted into a splash proof, portable transit case. An optional IP68 water proof unit is available.

Hand Control Unit

Falcon's Hand Control Unit in a rugged case contains all the vehicle controls. An IP68 unit is available as an option.

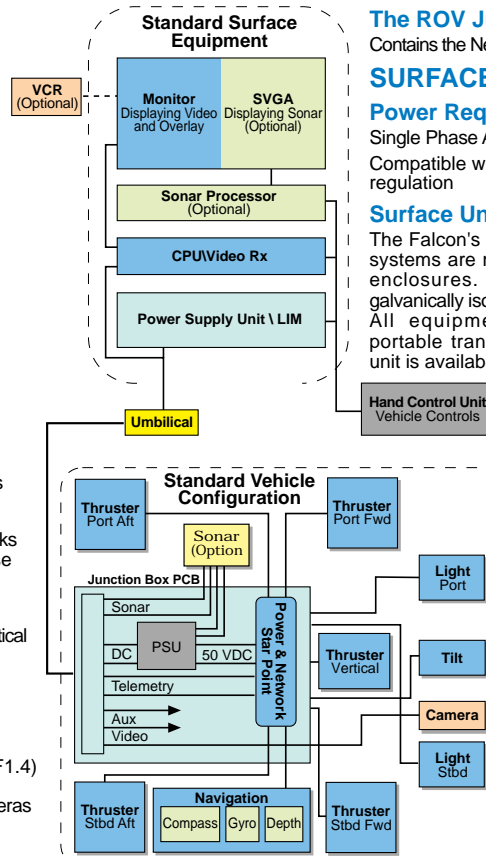
The controls include:

3 Axis Joystick:	Proportional horizontal control
Rotary:	Vertical control (dive/surface)
Rotary:	Thruster power
Rotary:	Lights intensity
Switches:	Auto functions
Switches:	Vehicle power
Switches:	Auxiliary Functions
Switches:	Manipulator / other options

Video Overlay

The video overlay system displays the following information to the pilot:

Compass heading and depth
Camera tilt position
Auto pilot function status
Tether turns counter
Free text using a QWERTY keyboard
Date and time



OPTIONAL EQUIPMENT

- Spares kit
- Sonar system
- Additional camera
- CP probe - contact or proximity
- Single function manipulator
- Pilot/technician training

UMBILICAL CABLE

A choice of neutrally buoyant in fresh water or thinner, slightly heavy umbilical cable is offered.

Diameter:	11 mm	13.1 mm
Breaking strain:	525 kg	530 kg
Wt. in air:	100 kg/km	134 kg/km
Wt. in seawater:	7.3 kg/km heavy	Buoyant
Wt. in fresh water:	Slightly Heavy	Neutral

Min. bend radius: 150mm (Dynamic) 197mm (Dynamic)

Composition: 1 x Screened Twisted Pairs for Video
1 x Screened Twisted Quad for Telemetry and Sonar
2 x Power conductors
1 x Insulated ground wire

Note: Specifications may change without prior notice

Seaeeye

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