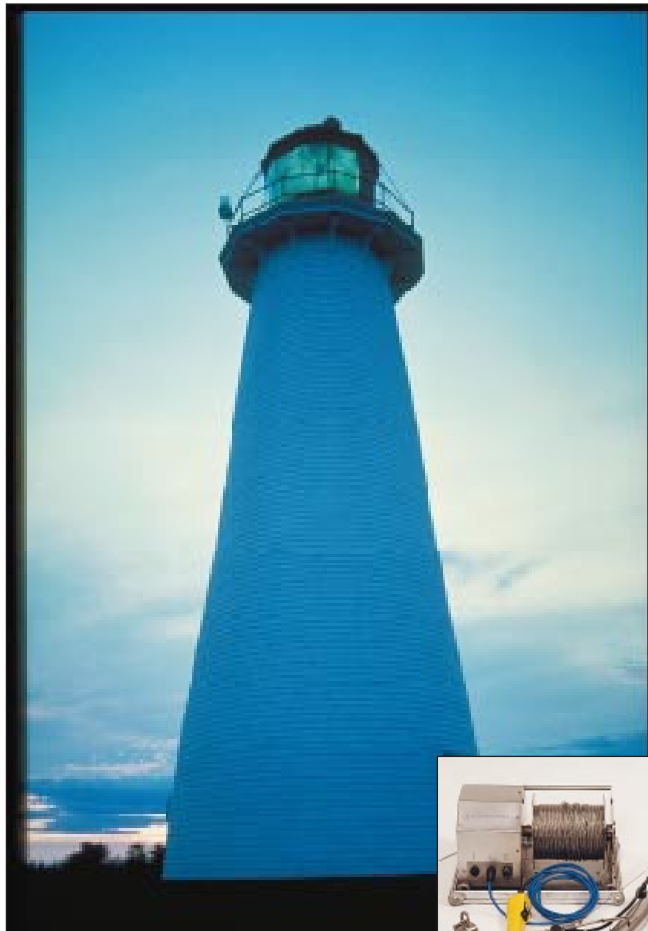


WHEN IT'S ALL ABOUT GETTING THE RIGHT SIGNAL



SIDE SCAN SONAR SYSTEM

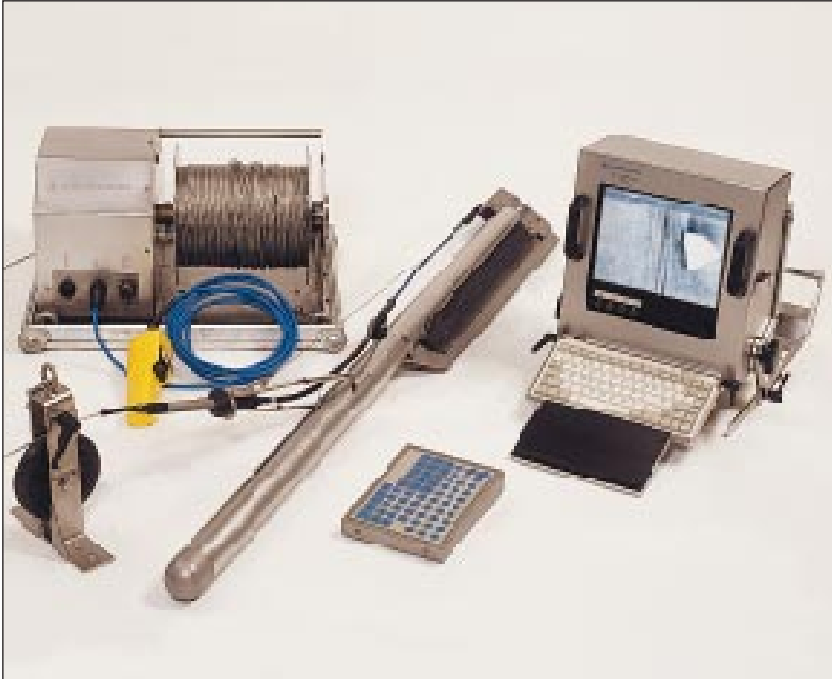


E-SEA SCAN 800

A WAVE OF USEFUL PRODUCTS



E-SEA SCAN 800



E-SEA SCAN 800 FEATURES

- Robust design in stainless steel
- Portable
- PC technology, including storage on optical disk
- External keypad for quick use function
- Direct on-screen dimensioning
- Annotation functions, including positions from a GPS and depth from an echo sounder
- Output to external monitor
- Output to line scan recorders
- Output to ink-jet / laser printers
- NMEA-0183 navigation input
- AC and DC supply
- Automatic measurement of the towfish altitude
- Towfish proximity alarm

SIDE SCAN SONAR SYSTEM

The compact and robust design of the E-Sea Scan 800 makes it the perfect portable side scan sonar system, and the relative light weight of the system makes it reasonable to send it from one survey area to another via air cargo. The E-Sea Scan 800 is also installed in large survey vessels because of its high degree of sophistication and the use of the latest PC technology.

TYPICAL HYDROGRAPHIC APPLICATIONS ARE:

- Off-shore oil and gas
- In-shore and off-shore
- Dredging operations
- Coast guard and salvage operations
- Diving operations
- Rivers
- Lakes
- Canals
- Harbours
- Docks
- Environmental surveys
- Geological surveys
- Hydrographic surveys
- Wreck hunting

PERFORMANCE

The standard E-Sea Scan 800 side scan sonar system consists of a towfish, a towcable, an E-Sea Winch for the towcable, and an E-Sea Scan 800 deck unit for data acquisition and data processing.

TOWFISH

The E-Sea Scan 800 towfish has a unique sonar transducer configuration, which produces powerful, flat-topped transmit and receive beams. This reduces surface reflections to a minimum and results in images of a very high quality. The angle of the transducers are adjustable. Furthermore, the towfish altitude is measured automatically.

A break-away mechanism prevents damage to the towfish in case it hits the seabed, and a safety link ensures that it is not lost.

Four models of the E-Sea Scan 800 towfish are available:

- 1) E-Sea Scan 800 HD (High Definition) with a 325 kHz transducer.
This model produces high resolution images and will typically cover a distance up to 150 metres on each side of the towfish.
- 2) E-Sea Scan 800 WT (Wide Track) with a 102 kHz transducer.
This model allows for covering a wider area of the seabed, up to 400 metres on each side of the towfish. The image quality is good enough to distinguish larger objects such as wrecks and cars.
- 3) E-Sea Scan 800 DF (Dual Frequency) with a combined 102 and 325 kHz transducer.
This model combines the advantages of both models allowing for a wide area of the seabed to be covered as well as for high resolution images to be produced when objects of interest are found.
- 4) E-Sea Scan 800 EDF (Extended Dual Frequency), 325 and 650 kHz transducer.
This model produces high resolution images, and the 650 kHz function gives even more detailed images. At 325 kHz the towfish still covers a distance up to 150 metres, however, at 650 kHz it will cover up to 50 metres.

All four towfish models are available either in a battery version or in an externally powered version. The battery version is for use with a fibre optical towcable and both rechargeable as well as standard alkaline batteries are accepted. The externally powered version is for use with a kevlar coax towcable and it is powered directly from the E-Sea Scan 800 deck unit.

TOWCABLE

The E-Sea Scan 800 was originally designed with a fibre optical towcable in mind. In spite of its diameter of only 3.2 mm, this fibre optical towcable is tremendously strong. Its drag is only one fourth of the drag of a conventional towcable and twist torque is virtually eliminated. The fibre optical towcable can be up to 600 metres long, which typically allows for surveying down to a depth of 200 metres.

A kevlar coax towcable is available for use in shallow water such as canals and harbours.

E-SEA WINCH

Two models of the E-Sea Winch are available:

- 1) The electrically operated E-Sea Winch is designed for the fibre optical towcable and is operated by remote control.
- 2) The manually operated E-Sea Hand Winch is designed for the kevlar coax cable.

DECK UNIT

The E-Sea Scan 800, deck unit, is highly reliable in all environments thanks to its robust design in stainless steel. It is splash proof and portable. Inside the robust casing is a powerful computer, where the advanced software, ScanMaster 800, is installed.

Data is displayed on screen in real time and is also stored on an optical disc. The use of optical discs allows for instant access, replay and editing. The optical discs can either be archived or they can be re-used. An ordinary hard disc drive is used for backup, and - if desired - conversion of data into Q-MIPS. Hard copies can be produced on a wide selection of printers.

The flat panel TFT display of the deck unit is easily read, even in bright sunlight. The display can be adjusted to show images in a range of different colours or in black and white.

Object dimensions (length, width, height) can be measured directly, just by pointing at them with the mouse. Furthermore, by means of the GPS input and the echo sounder input, both the geographic position as well as the depth of the sea can be displayed on screen.

A proximity alarm is built into the deck unit and is activated if the towfish gets too close to the seabed.

OPTIONS

- 1,500 metre option
- Towfish test adapter cable
- ROV version
- Additional lengths of towcable
- Customisation of Navigation Data Interface
- External monitor
- Printer or line scan recorder
- PC replay system
- Pay-out counter with display on the deckunit



E-Sea Hand Winch for kevlar coax towcable



Pulley block with payout counter



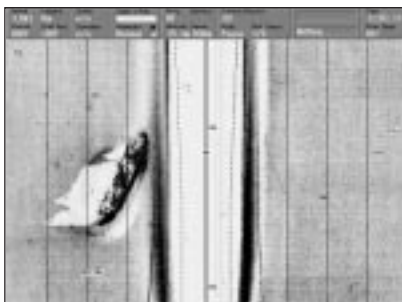
E-Sea Scan 800, deck unit



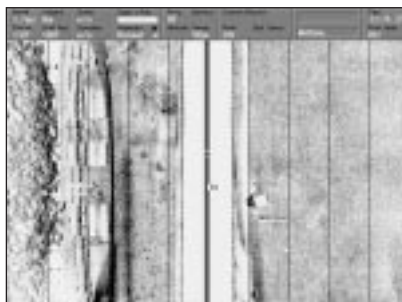
E-Sea Scan 800 towfish



Remote function key pad



Wreck



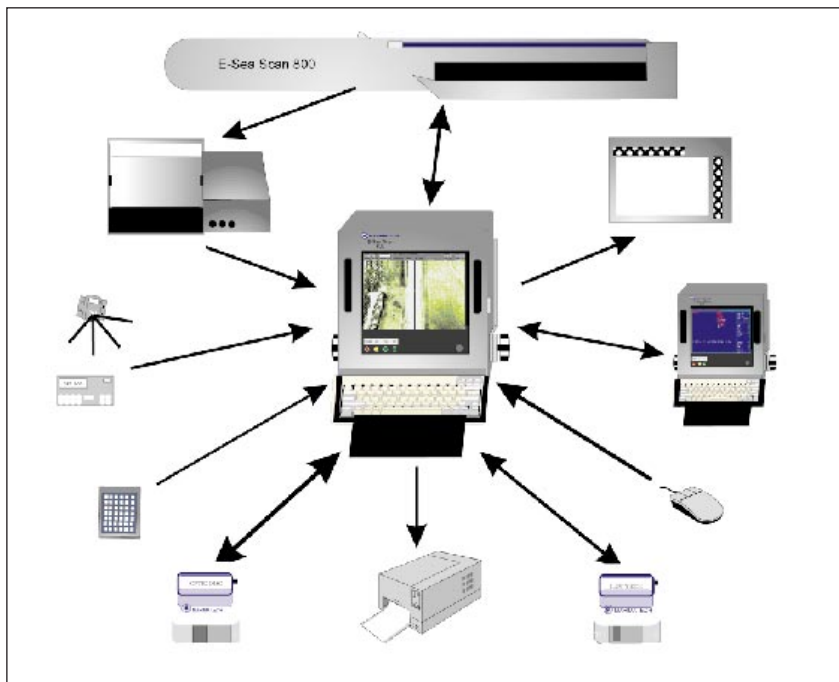
Ship wreck



Seabed image, including GPS positions

A WAVE OF USEFUL PRODUCTS

SPECIFICATION AND PERFORMANCE DATA



Winch

E-Sea Winch (for Fibre optical towcable):
 Water tight stainless steel construction
 Water tight cable plugs
 Electrically powered (24V DC)
 Remotely controlled
 Towcable capacity 600 metres
 Median reeling speed: 1 m/sec
 Operating temperature: -10 to 45°C
 Storage temperature: -20 to 55°C

E-Sea Hand Winch (for kevlar coax towcable):
 Water tight stainless steel construction
 Water tight cable plugs
 Manually powered
 Towcable capacity 100 metres
 Operating temperature: -10 to 45°C
 Storage temperature: -20 to 55°C

E-Sea Scan 800, deck unit

Required voltage is either 18 to 36V DC or 85 to 260V AC. Simultaneous connection to AC and DC is possible.
 Maximum 65 Watts.
 Humidity, maximum: 90%, non-condensing
 Operating temperature: 0 to 45°C
 Storage temperature: -25 to +70°C

Towfish

Stainless steel construction
 Input dynamic range = 96 dB (=16 bit)
 Maximum depth: 500 metres
 (optionally 1,500 metres)
 Operating speed: 2 - 6 knots
 Maximum towing speed: 12 knots
 Maximum speed while recording: 6 knots
 Adjustable beam depression: 10° and 20°
 Pulse length optimised to range
 Environment, operating: -10 to 45°C
 Environment, storage: -20 to 55°C

HD Towfish, 325 kHz operation:

Horizontal 2-way beam width: 0.3°
 Vertical, asymmetric beam width: 70°
 Ranges: 50 / 75 / 100 / 125 / 150 metres
 (swath is twice range settings)

WT Towfish, 102 kHz operation:

Horizontal 2-way beam width: 0.9°
 Vertical, asymmetric beam width: 50°
 Ranges: 100 / 200 / 250 / 300 / 400 metres
 (swath is twice range settings)

DF Towfish, same as HD and WT combined

EDF Towfish, same as HD plus:

Range, 650 kHz: 25/50 metres
 (swath is twice range settings).

Towcable

Fibre optical towcable:
 Stainless steel double armoured
 Fibre optical core
 Outside diameter: 3.2 mm
 Rated strength: 0.67 tonne
 Length: 150 / 300 / 450 / 600 metres

Kevlar coax towcable:
 Coaxial core
 Outside diameter: 7.0 mm
 Rated strength: 0.25 tonne
 Length: 50 / 100 metres

Dimensions	Towfish	E-Sea Winch	E-Sea Hand Winch	E-Sea Scan 800, deck unit
Height	160 mm	320 mm	380 mm	350 mm
Width	1,390 mm	370 mm	900 mm	320 mm
Depth	135 mm	510 mm	400 mm	280 mm
Weight	18 kg	25 kg	16 kg	18 kg

Dimensions	Transport container	Transport container	Transport container	Transport container
Height	220 mm	370 mm	440 mm	400 mm
Width	1,480 mm	450 mm	990 mm	500 mm
Depth	195 mm	570 mm	450 mm	300 mm
Weight	10 kg	11 kg	9 kg	9 kg

150 m of fibre optical towcable, diameter 3.2 mm, weighs 7 kg.

50 m of coax kevlar towcable, diameter 7.0 mm, weighs 4 kg.

Specifications may be changed without notice. 04/99.

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A W A V E O F U S E F U L P R O D U C T S

