Bathy-1500
Survey Echo Sounder

Typical Transducer Depth Performance

Frequency	Beam	Depth
12 kHz	18˚	5000m
24 kHz	22˚	2000m
33 kHz	21˚	1000m
40 kHz	20˚	800m
100 kHz	9˚	400m
200 kHz	3˚	300m

ODEC offers a wide variety of transducers. Please contact the factory for information relating to your specific application, and the transducer model most effective for you.

Bathy–1500
Survey Echo Sounder

Standard Configuration

- Bathy–1500 Echo Sounder
- Transducer Impedance Matching Box
- AC Power Cable
- Operation Manual

Optional Accessories

- External Mass Storage
- External Paper Recorder
- Transducers with Cable: 12 kHz; 24 kHz; 33 kHz; 40 kHz;100 kHz; 200 kHz
- Remote Display
- Rack Mount Kit

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Specifications – Main Unit

Depth Ranges *(feet or meters)*	0-5, 0-10, 0-20, 0-40, 0-200, 0-400, 0-800, 0-2000, 0-5000 units. Manual and Auto Ranging Modes.
Phasing *(feet or meters)*	Phase and Auto Phasing at depth range of 400 units. Phase from 0-400, 200-600, 400-800, etc. up to 4600-5000 units.
Operating Modes	Single or interleaved dual frequency
Frequencies	12 kHz; 24 kHz; 33 kHz; 40 kHz; 100 kHz; 200 kHz
Resolution	1 cm or .1 ft < = 99.9 units 10 cm or .5 ft > 99.9 units
Accuracy	0-40m – ±2.5cm, 40-200m – ±5.0cm, >200m – ±10.0cm
Min Depth	< 0.5 meters; transducer dependent.
Sounding Rate	Maximum 18Hz, depth range and operating mode dependent.
Transmit Power	2 kilowatt (maximum) both Channel 1 and Channel 2
Sound Velocity	1400-1600 meters/second or 4595-5250 feet/second, user selectable in 1 unit increments.
Graphic Display	640 x 480 pixels; CCFL backlit grey scale LCD
Data Output	NMEA0183 Ver. 1.5, 2.0 and 2.1 strings: (9600 or 19200 baud, string dependent, No Parity, 8-bits, 1-Stop bit) DBT, DBS, and DPT. ODEC proprietary serial strings- ODEC HEAVE, ODEC DEPTH, and ODEC BINARY for graph data output. Backwards compatible outputs- ODOM DBT, ODOM SBT, ATLAS DESO 25. Jumper selectable RS232 / RS422.
Data input COM 1	NMEA0183 Ver. 1.5, 2.0, and 2.1 strings: (9600 or 19200 baud, No parity, 8-bits, 1 Stop bit) GLL, GGA, RMC, RMA, VTG, ZDA. ODEC Proprietary Annotation String Input ANN. Jumper selectable RS232 / RS422.
Data Input COM 2	Heave Input (TSS, TSS1 or Seatex SOUNDER format, variable input rates, 9600 or 19200, depth output string dependent). Remote Annotation, Remote Fix Mark-(ODEC proprietary or ODOM compatible). External Synchronization (sonar sync) and External Control.
External Mass (Disk) Storage	Optional adapter cable enables storage of all ASCII text data for depth, position, speed, course, annotation and parameters and/or acoustic graph information through parallel port interface to a SCSI compatible device.
Paper Hardcopy	Centronics (Parallel port) interface to TDU Series printer.
Input Power	115 / 230 VAC (switch selectable) 50 / 60 Hz; 60 watts
Dimensions	39.4 cm (15.5") width, 29.21 cm (11.5") height, and 21.59 cm (8.5") deep
Weight	10.7 kg (23.5 lbs)

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Bathy-1500
Dual Frequency Survey Echo Sounder

High resolution, dual frequency hydrographic survey echo sounder

OCEAN DATA EQUIPMENT CORPORATION

Bathy-1500 Survey Echo Sounder

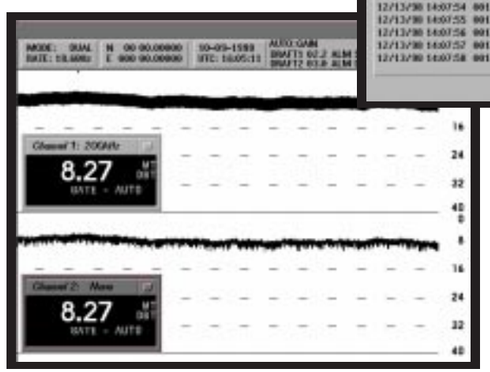
High Resolution, Dual Frequency Hydrographic Echo Sounder

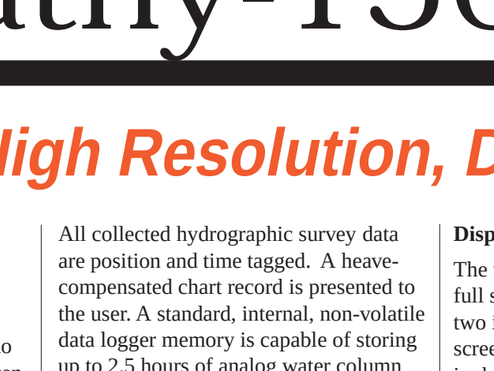
The *Bathy-1500* is the new standard in dual frequency hydrographic survey echo sounders.

This economical hydrographic survey instrument is a complete integrated echo sounding system. It interfaces to an extensive array of external peripheral devices, such as: NMEA 0183- compatible position sensor; heave sensor; external annotation source; external synchronization; mass storage device; digital data logger; remotee display; and TDU-850 thermal printers.

The ***Bathy-1500*** relies upon advanced, microprocessor-based electronics and features a backlit, grey scale graphical LCD chart display. Acoustic characteristics include superior shallow and deep water performance (minimum depth < = .5 meters @ 200 kHz; maximum depth > = 5000 meters @ 12 kHz), multiple operating frequencies, and total, *hands off* automatic modes of range / phase, receiver gain, transmit power and bottom tracking.

Bathy–1500 is one model in a family of echo sounders available from ODEC. Call or write for information concerning other echo sounder





All collected hydrographic survey data are position and time tagged. A heave-compensated chart record is presented to the user. A standard, internal, non-volatile data logger memory is capable of storing up to 2.5 hours of analog water column and 8 hours of digitized depth data for playback on the LCD display, or printing to an external device.

The ***Bathy-1500*** survey echo sounder simultaneously generates real-time thermal hardcopy chart records and stores all processed analog water column data and or an ASCII log file to a mass-storage device via a standard parallel port interface.

The instrument front panel consists of a high contrast, backlit grey scale graphical LCD display and fully-sealed input keypad. All operating parameters are at the user's finger tips, with immediate audio and visual feedback. Echo sounding video data, digitized depth, and operating status, are conveniently accessible to the operator at all times.

Display Format

The user alters display format — from full screen video data of either one of the two installed frequencies, or to a split screen representation of both frequencies in dual frequency mode (interleaved transmit). Display range and phasing is selected manually, or operated in a fully automatic mode.

Digitized Depth

Digitized depths for each frequency are prominently visible and displayed on the backlit graphical LCD in boldfaced, easy to read digits. Water depth is digitized to a resolution of one centimeter, or one-tenth of a foot below 100 units. Bottom digitizing accuracy meets or exceeds all current IHO hydrographic requirements for single beam echo sounders. A robust, bottom tracking algorithm maintains bottom lock and delivers accurate depth data over even the most difficult and varying bottom topographies.

Operating Mode

The echo sounder functions as both a single frequency and dual frequency instrument. In the single frequency mode, the user selects between the low and high frequency channel. In the dual frequency mode, the echo sounder interleaves transmits from the low and high frequency channel to offer the user two simultaneous acoustic representations of the bottom topography. Acoustic transmit rates are available to assure 100% bottom sampling coverage for all hydrographic surveys conducted.

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System Status

Operating status messages incorporate both visual and audio feedback. Data include status of echo sounding functions, as well as the status for all peripheral data acquisition functions — including position, time/date, speed, course, heave, hardcopy, mass storage, external annotation, and data download from flash memory.

Receiver Gain

The user alters receiver gain manually or selects fully-automatic gain control, which compensates independently for acoustic propagation loss at each frequency of operation. The user may also activate an interference rejection feature which allows the instrument to remove spurious acoustic noise from the graphical LCD chart representation.

Transmit Power

Fully-automatic control of 2 kW of transmit electrical power, per channel.

Sound Velocity

The user enters an average sound velocity which constitutes a two point measurement derived from a bar check.

Alarm Status

The ***Bathy-1500*** includes programmable shallow and deep water alarms with visual/audio indicators, as well as a lost bottom warning.

Offset Adjustment

The user compensates for the effects of tide/draft in the water depth measurement. This adjustment is applied to the processed data for display and data logging.

Chart Speed and Annotation

The graphical LCD display and hardcopy device operate in both manual or automatic chart speed modes.

An event mark annotation, which is presented on both the LCD display and the external printer / mass storage is activated via the front panel keypad or from an external annotation source which provides the annotation string data.

Heave Compensation

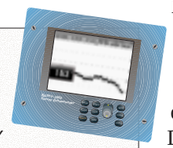
The instrument offers an interface to various heave sensor devices, to compensate digitized depth and echo sounding chart data for vertical motion effects.

Printer/Mass Storage

A parallel port external interface drives the optional TDU-850 thermal printer, as well as supported portable mass storage devices.

Communication Interfaces

The ***Bathy-1500*** interfaces to external peripheral devices via two full-duplex RS232/ RS-422 serial communication interfaces. These devices include digital data loggers, NMEA 0183-compatible position sensors, remote displays, heave sensor, external synchronization, and an external annotation source. Data transmission formats are user-selectable via menu.



Installation Options

The ***Bathy-1500*** is available as a bulkhead mount or as a rack-mount system. The user sets installation options for the following functions: acoustic frequencies of operation; units; offsets; time/date; blanking depth, output serial data formats; and LCD brightness and contrast via this menu.

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