

Naval Echo Sounder

NES-DF



The Nautel Naval Echo Sounder (NES-DF) is MIL Qualified, compact, state-of-the-art acoustic system. Its compatibility with third party transducers makes it ideal for retro-fit on existing naval vessels.

The system's bottom detection capability is enhanced by modern digital signal processing. The NES-DF's 256-colour LCD high resolution screen offers a substantially better differentiated presentation of bottom structures than conventional black/white paper recordings.

A wide range of selectable operating frequencies – 12 / 30 / 50 / 200 kHz – are offered as standard.

Synchronous operation with multiple transducers on different frequencies offers the option to integrate, process, and display environmental data such as pressure, temperature, density, salinity, and sound velocity of the water.

FEATURES

- MIL Qualified
- Nautel C-Tech CommandView visualization software
- Single or multiple transducer operation
- Fast ethernet communications port, IEEE 802.3u / 100Base-T protocols
- RS-422 interface that is compatible with NMEA 0183 standard
- Visual and audible alarms at pre-set depth, with mute function
- Start-up self testing & fault finding diagnostics
- Water depth or depth below keel (DBK) available in a variety of presentation modes

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Operating Frequency	500 Hz to 675 kHz
Operating Depth Range	0 – 1000, 2000, 3000, 4000, 8000, 12000 m
Range Scales	Configurable and selectable by operator including Selectable shallow/deep range scales, with the shallow scale set to 1/10th of deep scale, if desired
Accuracy	Maximum resolution 2 cm to 1 m, depending upon selected range scale, or less than +/- .05% of selected range scale
Discrimination	Range scales are operator selectable and may be set so that they are not smaller than 5.0 mm per meter depth on the shallow range scale and 0.5 mm per meter on the deep range scale
Pulse Length	0.1 ms to 100 ms
Mode	Active, mono-pulse and stand-by
Type of Pulse	Ping or CHIRP
Minimum Sounding Depth below Transducer	Less than 0.6 m at shallow range scale
Pulse Repetition Rate	No slower than 12 pulses per minute on deep range (3000 m), and 36 pulses per minute in shallow range
Gain Control	Operator selectable TVG and AGC for depth finding or manual control better than +/- 1% of scale end value
Sound Velocity	Adjustable from 1400 to 1600 m/sec
Transducer / Keel corrections	Adjustable from 0 to 15 m in one meter steps
Processor	XILINX Virtex 5 FPGA
Data Storage (standard)	Slim anti-shock high speed 80G SATA HDD
Touch Screen Resolution	4096 x 4096, 256 colours
Controller Interface Drivers	Serial or USB
Input Power	12 Vdc, 5 Adc
MTBF	Greater than 20,000 h
MTTR	1 h
Operating Temperature	Designed to conform to MIL-STD-810F (0° C to +50° C)
Storage Temperature	Designed to conform to MIL-STD-810F (-20° C to +85° C)
Humidity	Designed to conform to MIL-STD-810, Method 507.3 (5% to 95%, non-condensing)
Vibration	Designed to withstand MIL-STD-167-1, Type 1 (17 to 500 Hz, 3G peak to peak)
Shock	Designed to withstand MIL-S-901, Grade B, Class II (20G / peak, 11 m sec)
EMI/EMC	Designed to meet the requirements of MIL-STD-461E, Para 5.2, Table V, Code A
EMP	Designed to withstand MIL-STD-1310
Salt / Fog	Designed to resist the effects of MIL-STD-810, Method 809
Noise	Designed to operate within MIL-STD-740, Type 3
Safety	MIL-STD-882, Requirement 1
Quality and Workmanship	MIL HDBK 454, Guideline 9
Front Bezel	Designed to meet IP-65, 66, 67, NEMA-4 ratings