NORTEC 500S EDDY CURRENT FLAW DETECTOR

GENERAL DESCRIPTION

The Nortec 500 Series, Olympus NDT's newest eddy current flaw detectors incorporate a full range of features: internal balance coils, VGA output connector (for heads up displays, monitors, and projectors), and a USB interface for rapid information transfer. The Nortec 500 also includes PowerLink™, for automatic probe recognition and program set-up.

The Nortec 500 improves on previous Nortec eddy current instruments and is available in three configurations. Each configuration includes digital connectivity and increased resolution with reduced noise. Internal balance coils allow use of inexpensive absolute probes without the need for external balance coil adapters. A built-in preamp adds extra gain when needed for difficult tests. VGA output allows for the addition of a optional "heads up display" allowing hands free operation. The optional remote-null adapter adds convenience by allowing the probe to be nulled and the instrument screen erased from the probe.

Where weight is critical, the smaller battery lightens the instrument to 2.8 lbs (1.2 kg) while keeping the full VGA resolution and display size. The Nortec 500S builds on the foundation of the Nortec 500 by adding digital conductivity and coating thickness measurement and the use of rotating scanners.

FEATURES

- 50 Hz - 12 MHz frequency range
- Preamplifier (0 or 14dB)
- Single Li-Ion battery, Choice of two battery configurations.
- Lightweight, 2.8 lbs to 3.8 lbs (1.2 kg to 1.7 kg) depending on configuration
- 6.5" (165 mm) color LCD (640 x 480 resolution)
- Split screen display for rotary and dual frequency applications with smart color
- Digital conductivity in International Annealed Copper Standard (IACS) or Mega Siemens per meter (MS/m)
- Non-conductive coating readings in inches or millimeters
- Multiple scanner support
- Internal balance loads for single coil probe support
- Dual frequency (Nortec 500D)
- VGA output
- Display Freeze to hold flaw signals
- PowerLinkTM technology - automatic probe recognition and instrument set-up
- Foreign Object Debris (FOD) free case design
- On-screen reference memory for go/no go applications
- On-board storage of up to 120 programs
- Waterfall display

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NORTEC 500S EDDY CURRENT FLAW DETECTOR

TECHNICAL SPECIFICATIONS

BASIC PERFORMANCE

Frequency Range:	50 Hz - 12 MHz
Gain:	0 - 90 dB in 0.1 dB steps. The horizontal and vertical gains may be adjusted separately or together.
Rotation:	Variable 0o - 359o in 1o steps
Sweep:	Variable from 0.005 - 4 seconds per division
Low Pass Filter:	10 - 500 Hz and wide band
High Pass Filter:	Off or 2 to 500 Hz, 2 pole response
Built-in Preamplifier:	5X (14 dB) additional gain.
Probe Drive:	2, 6, 12 volts
Variable Persistence:	0.1 - 5 seconds
Probe Types:	Absolute and differential in either bridge or reflection configuration. The instrument is fully compatible with Nortec PowerLink™ Probes
Alarms:	Can be set to trigger on positive or negative box, polar, or sweep alarm settings
Alarm Modes:	1-3 box gates, polar, sweep, conductivity, and coating thickness
Trace Storage:	20 traces can be stored for recall. The traces can be static or frozen and can contain up to 60 seconds of movement. The traces are stored with the date and time of capture.
Program Storage:	120 instrument setups may be stored and recalled. The date and time of storage is recorded with each set-up.
Print Out:	Provides a custom configurable report header containing the display screen data and probe parameters including serial numbers (PowerLink™ probes only).

INPUTS / OUTPUTS

Power:	2-pin connector to charge the internal batteries and operate the instrument from AC power
USB Port:	Allows interface with PC and printers
Probe Connector:	16-pin LEMO and BNC
Analog Outputs:	Horizontal and vertical outputs of both F1 and F2. +/- 5 volts, 1 volt per division (four outputs)
Alarm Outputs:	15-pin analog and alarm output connector
VGA Output:	15-pin connector

GENERAL

Dimensions:	8.5" L x 5.5" H x 2.4" D 216 mm x 140 mm x 61 mm
Weight:	2.8 to 3.8 lbs. (1.2 to 1.7 kg), depending upon configuration
Display:	5.25" x 3.9", 6.5" diagonal (133 mm x 99 mm, 165 mm) full VGA color LCD (640 x 480 pixels)
Operating Temp:	14o to 131o F (-10o to 55o C), depending on configuration
Storage Temp:	-60o to 160o F (-51o to 71o C), depending on configuration
Humidity:	5 to 95%
Classification:	Based on Class 2 specifications from the MIL-PRF-28800F handbook
Altitude:	Max operating and nonoperating altitude- 15,000 ft. (4600 m)
Hazardous Area Operation:	Safe operation as defined by Class I, Division 2, Group D as found in the National Fire Association Code (NFPA 70) Section 500 and tested using MIL-STD-810F, Method 511.4, Procedure 1

POWER

Power Requirement:	85-240 volts, 50-60Hz. Battery can be charged within the instrument or in an external charger. Charge typically takes 4 hours.
Available batteries:	2.4Ahr Li-Ion or 8.8Ahr Li-Ion
Low Battery Protection:	Display bar graph "gas gauge" indicates approximate operating time. A low battery annunciator indicates when approximately 10 minutes of operation time is left.
Battery Operating Time:	3 - 8 hours nominal depending on configuration and scanner usage.

CONDUCTIVITY

(Nortec 500S and Nortec 500D only)

Frequency:	60 kHz or 480 kHz
Digital Conductivity Specification:	Digital conductivity display from 0.9% to 110% IACS or 0.5 to 64 MS/m. Accuracy within +/- 0.5% IACS from 0.9% to 65% IACS and within +/- 1.0% of values over 62%. Meets or exceeds BAC 5651 specifications.
Non-Conductive Coating Thickness:	Can measure non-conductive coating thickness from 0" to 0.015" (0 to 0.38mm). Accuracy of +/- 0. 001" (0.025 mm) over 0.00 to 0.015" (0 to 0.38 mm) range

SCANNERS

(Nortec 500S and Nortec 500D only)

Scanner Compatibility:	Will operate all Nortec scanners and many other commercially available scanners
Waterfall Display:	60 sweeps per hole and includes an on screen readout of the distance to the defect from the start of the scan (PS-5 only)

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