



Eddy Current Flaw Detectors

The Nortec 500 Series 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 four configurations. Each configuration includes a USB port 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 display to be projected or viewed on a standard computer screen.

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 1.2 kg (2.8 lbs) while keeping the full VGA resolution and display size.

The Nortec 500 delivers basic single frequency eddy current inspection including external outputs.

The Nortec 500C adds digital conductivity and coating thickness measurement capability in addition to basic single frequency eddy current inspection.

The Nortec 500S builds on the foundation of the N500C and adds the ability to use rotating scanners.

The Nortec 500D adds dual frequency capabilities to all the functions of the N500S.

Features

- 50 Hz to 12 MHz frequency range
- Pre-amplifier (0 or 14 dB)
- Single Li-Ion battery, choice of two battery configurations: 2.4 Ahr or 8.8 Ahr
- Lightweight, 1.2 kg to 1.7 kg (2.8 lbs to 3.8 lbs) depending on battery configuration
- 165 mm (6.5 in.) full VGA color LCD (640 x 480 resolution)
- On-board storage of up to 200 programs
- On-screen reference memory for go/no go applications
- Internal balance loads for single coil probe support
- Display Freeze to hold flaw signals
- PowerLink technology - automatic probe recognition and instrument set-up
- Foreign Object Debris (FOD) free case design
- VGA output

Optional Accessories

- Protective rubber boot: (U8764035)** 1020328
- Chest harness: (U8140055)** EP4/CH
- External battery charger: (U8767085)** 3720308
- Extra li-ion battery**
- 2.4 Ahr - (U8902014) 9522195
- 8.8 Ahr - (U8760012) 0146689

Features	500	500C	500S	500D
Single Frequency Capabilities	✓	✓	✓	✓
Digital Conductivity		✓	✓	✓
Coating Thickness Measurement		✓	✓	✓
Rotating Scanner Support			✓	✓
Spilt Screen Display			✓	✓
Dual Frequency Capabilities				✓

Nortec 500, 500C, 500S and 500D Specifications*

General	
Dimensions (W x H x D)	216 mm x 140 mm x 61 mm (8.5 in. x 5.5 in. x 2.4 in.)
Weight	1.2 kg to 1.7 kg (2.8 lbs to 3.8 lbs), depending upon configuration
Display	133 mm x 99 mm, 165 mm diagonal (5.25 in. x 3.9 in., 6.5 in.) full VGA color LCD (640 x 480 pixels)
Operating temperature	-10 °C to 55 °C (14 °F to 122 °F)
Humidity	5% to 95%
Classification	Based on Class 2 specifications from the MIL-PRF-28800F handbook
Altitude	Maximum operating and non-operating altitude - 4600 m (15,000 ft)
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
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 to 3 box gates, polar, sweep, conductivity, and coating thickness
Trace storage	Up to 200 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	Up to 200 instrument set-ups 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).
Measurements	
Frequency range	50 Hz to 12 MHz
Gain	0 dB to 90 dB in 0.1 dB steps. The horizontal and vertical gains may be adjusted separately or together.
Rotation	Variable 0° to 359° in 1° steps
Sweep	Variable from 0.005 s to 4 s per division
Low Pass filter	10 Hz to 500 Hz and wide band
High Pass filter	Off or 2.0 Hz to 500 Hz, 2 pole response
Built-in preamplifier	5X (14 dB) additional gain.
Probe drive	2 volts, 6 volts, 12 volts
Variable persistence	0.1 s to 5 s

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 V, 1 V per division (four outputs)
Alarm outputs	15-pin analog and alarm output connector
VGA output	15-pin connector

Power	
Power requirements	85 V to 240 V, 50 Hz to 60 Hz. Battery can be charged within the instrument or in an external charger. Charge typically takes 4 hours.
Available batteries	2.4 Ahr Li-ion or 8.8 Ahr 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 to 8 hours nominal depending on configuration and scanner usage

Conductivity (Nortec 500C, 500S, and 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 mm to 0.38 mm (0 in. to 0.015 in.). Accuracy of 0.025 mm (+/- 0.001 in.) over 0 mm to 0.38 mm (0.00 in. to 0.015 in.) range

Scanners (Nortec 500S and 500D only)	
Scanner compatibility	Will operate all current 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

Dual Frequency (Nortec 500D only)	
Frequency extension	50 Hz to 12 MHz
Second frequency	25 Hz to 6 MHz, 2nd frequency is an exact division of the first frequency in ratios of
Display	Frequency 1 (F1) only, frequency 2 (F2) only, sum of F1 and F2, difference between F1 and F2, split screen with selected combinations of F1 and F2 and mixed frequencies
High Pass filter	Available in frequency (F1) only

OLYMPUS NDT INC. is ISO 9001 and 14001 certified.

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