



## 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: (U8764035)** 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                         |  |
|---------------------------------|--|
| <b>Dimensions (W x H x D)</b>   | 216 mm x 140 mm x 61 mm (8.5 in. x 5.5 in. x 2.4 in.)  |
| <b>Weight</b>                   | 1.2 kg to 1.7 kg (2.8 lbs to 3.8 lbs), depending upon configuration  |
| <b>Display</b>                  | 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)  |
| <b>Operating temperature</b>    | -10 °C to 55 °C (14 °F to 122 °F)  |
| <b>Humidity</b>                 | 5% to 95%  |
| <b>Classification</b>           | Based on Class 2 specifications from the MIL-PRF-28800F handbook   |
| <b>Altitude</b>                 | Maximum operating and non-operating altitude - 4600 m (15,000 ft)  |
| <b>Hazardous area operation</b> | 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 |
| <b>Probe types</b>              | Absolute and differential in either bridge or reflection configuration. The instrument is fully compatible with Nortec PowerLink probes.   |
| <b>Alarms</b>                   | Can be set to trigger on positive or negative box, polar, or sweep alarm settings  |
| <b>Alarm modes</b>              | 1 to 3 box gates, polar, sweep, conductivity, and coating thickness  |
| <b>Trace storage</b>            | 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.       |
| <b>Program storage</b>          | Up to 200 instrument set-ups may be stored and recalled. The date and time of storage is recorded with each set-up.  |
| <b>Print out</b>                | Provides a custom configurable report header containing the display screen data and probe parameters including serial numbers (PowerLink probes only).                                     |
| Measurements                    |  |
| <b>Frequency range</b>          | 50 Hz to 12 MHz  |
| <b>Gain</b>                     | 0 dB to 90 dB in 0.1 dB steps. The horizontal and vertical gains may be adjusted separately or together.   |
| <b>Rotation</b>                 | Variable 0° to 359° in 1° steps  |
| <b>Sweep</b>                    | Variable from 0.005 s to 4 s per division  |
| <b>Low Pass filter</b>          | 10 Hz to 500 Hz and wide band  |
| <b>High Pass filter</b>         | Off or 2.0 Hz to 500 Hz, 2 pole response   |
| <b>Built-in preamplifier</b>    | 5X (14 dB) additional gain.  |
| <b>Probe drive</b>              | 2 volts, 6 volts, 12 volts   |
| <b>Variable persistence</b>     | 0.1 s to 5 s   |

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

| Power                         |  |
|-------------------------------|--|
| <b>Power requirements</b>     | 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.                           |
| <b>Available batteries</b>    | 2.4 Ahr Li-ion or 8.8 Ahr Li-ion   |
| <b>Low battery protection</b> | Display bar graph "gas gauge" indicates approximate operating time. A low battery annunciator indicates when approximately 10 minutes of operation time is left. |
| <b>Battery operating time</b> | 3 to 8 hours nominal depending on configuration and scanner usage  |

| Conductivity (Nortec 500C, 500S, and 500D only) |  |
|---|--|
| <b>Frequency</b>                                | 60 kHz or 480 kHz  |
| <b>Digital conductivity specification</b>       | 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. |
| <b>Non-conductive coating thickness</b>         | 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) |   |
|--------------------------------------|---|
| <b>Scanner compatibility</b>         | Will operate all current Nortec scanners and many other commercially available scanners                       |
| <b>Waterfall display</b>             | 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) |  |
|-----------------------------------|--|
| <b>Frequency extension</b>        | 50 Hz to 12 MHz  |
| <b>Second frequency</b>           | 25 Hz to 6 MHz, 2nd frequency is an exact division of the first frequency in ratios of   |
| <b>Display</b>                    | 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 |
| <b>High Pass filter</b>           | Available in frequency (F1) only   |

OLYMPUS NDT INC. is ISO 9001 and 14001 certified.

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