Our new ECHO series represents an entirely new platform of ultrasonic thickness gages combining corrosion and precision gaging into one tough, small package. Model Distinction is simple; ECHO 9 is our corrosion gage (.020”-23” in steel), ECHO 7 (.006-23”) is our precision gage, and ECHO 8 (.006-23”) is the ultimate combination of both corrosion and precision in the same package. The new ECHO series can non-destructively measure the thickness of any engineering material.

In its most popular configuration, the ECHO 9 series is an extremely capable hand held ultrasonic thickness gage for measuring the wall thickness of primarily metal structures subject to corrosion. ECHO 9 can easily be upgraded to an ECHO 8 to include precision mode and utilize a multitude of single element transducers.

The ECHO 9 has a remarkable sunlight readable 3.5” color display, up to 32 Gb of micro sd memory, built-in rechargeable high capacity Li-Ion battery all packaged in a custom case designed for IP67 rating. Don’t worry, the ECHO series is fully capable of field upgrades directly from the keypad. You will never be stuck with an obsolete product or experience any downtime.

Features and Benefits:
- Fast/Min and Fast/Max displays minimum, maximum or both simultaneously with actual thickness at 25 Hz
- Compatible with a wide variety of Danatronics dual and single element transducers
- Multiple languages
- Datalogger interfaces with Microsoft Excel
- Designed for IP67
- Made in the USA

Typical Applications for ECHO 9 Series:
- Boiler tubes
- Pressure vessels
- Storage tanks
- Ship hulls
- Pipes

For more information, visit our website at www.danatronics.com. To arrange a demonstration call us at 978-777-0081 or email sales@danatronics.com.
### Product Specifications ECHO 9

**Size:** Length 7.25” x Width 4.00” x Height 2.00” (184mm x 101.6mm x 50.8mm)

**Weight:** 1.15 lbs (.52 kg) with internal Li-Ion battery, 1.0 lb (.45 kg) with optional Alkaline tray including 3 AA batteries

**Display:** 3.5” high resolution color display, 320 x 240 pixels (1/4 VGA), sunlight readable, including multiple color choices

**Backlight:** Light Emitting Diode (LED) backlight. Includes variable light intensity, indoor and outdoor modes

**Temperature (Gage operating):** -4 to 122°F (-20 to 50°C)

**Calibration:** A 5-step test block

**Pulser:** 150V, Square Wave

**Range:** Thickness range depends on gage type, probe selection and material conditions. Typical range in corrosion mode, .020”-23” (.508 - 584 mm)

**Measurement Rate:** .0001” in Precision mode

**Material Velocity Range:**
- **Model:** .0200 in/sec .762 in/ s (0.508-18.699 mm/ s)

**Batteries:** Standard 3.7 V Li Ion internally rechargeable battery (16-20 hours) or optional alkaline tray for 3 AA batteries (8-12 hours)

**Data XL:** Interface program to send and receive stored readings, latest firmware and application set up files as two way communication from ECHO to computer

**USB:** USB 2.0

**Stored Setups:** Storage and recall of calibration and set up files

**Memory:** Internal memory standard on all models. For Datalogger models 2GB micro SD card standard and expandable up to 32GB

**Gain:** Low, Standard and High for gages without waveform. 20-94 db in 1 db increments

**Zoom:** Automatically centers echoes in the center of the display independent of material thickness

**Units:** English, Metric, Microseconds

**Temperature correction:** Software to correct for varying sound speed as a function of entered temperature

**Languages:** English, French, German, Spanish, Italian, Russian, Czech, Finnish, Chinese, Japanese, Hungarian

**Fast Min/Max:** Displays minimum, maximum or both simultaneously with actual thickness at 25 Hz

**Alarms:** Gage vibrates and beeps. Displays changes color based on alarm condition

**Transducers:** Single, dual, delay lines, contact, immersion Click for Transducer Chart (www.danatronics.com/transducerchart.html)

**Measurement Types:** Main bang to first backwall echo, echo to echo and velocity mode (displays acoustic sound speed based on entered thickness)

**Freeze Mode:** Direct access to freeze display (ideal for high temperature applications)

**Hold Mode:** Holds display to retain last thickness reading

**Warranty:** Limited 2 year warranty under normal use on parts and labor for gage. Optional Dan-A-Care to add up to 3 more years

**Shut off:** selectable auto shut off 1-31 minutes or never shut off

**Differential Mode:** Displays the difference from actual thickness measurement in absolute or percentage of a user entered reference value

**Resolution:** .001” or .010” as corrosion gage and .001” or .0001” in Precision mode

**Transport case:** Hard Plastic with high density molded foam cut out for gage and most accessories

**Certifications:** CE certified, RHOS compliant, designed for IP67

**Accessory Mount:** ECHO 9 includes a 1/4x20 standard connection point on the back of the unit to allow for a multitude of accessories including a magnetic pipe attachment and a Gorilla Pod

**Standard Inclusions:** ECHO 9 series ultrasonic thickness gage, DKS-337, 5MHz, .375 inch diameter transducer with potted cable, 2oz bottle of couplant, operation manual, Data XL interface program, USB cable, Charger Adapter, Transport Case *A transducer is included with each model. Contact Danatronics for details

**Available Software Options:** Datalogger with B-scan, Live waveform, Precision mode, Oxide scale, Coating thickness

**Hardware Options:** EZ Scan Bscan Encoder, Bluetooth, Alkaline battery tray, rubber boot

### Table of Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>ECHO 9</th>
<th>ECHO 9W</th>
<th>ECHO 9DL</th>
<th>ECHO 9DLW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echo to Echo</td>
<td>Measures the metal thickness only (ignores paint and coatings)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Re-Certificaiton Reminder</td>
<td>Automatically notifies user when annual calibration is due</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Range</td>
<td>Adjustment of manual range control or auto zoom tracking to center echos independent of selected range</td>
<td>0</td>
<td>✓</td>
<td>0</td>
<td>✓</td>
</tr>
<tr>
<td>Rectification</td>
<td>RF, Half Wave Positive, Half Wave Negative and Full Wave Rectification</td>
<td>0</td>
<td>✓</td>
<td>0</td>
<td>✓</td>
</tr>
<tr>
<td>Live Waveform (A-scan)</td>
<td>Full Adjustments for gain in 1db step or AGC. Main bang blank, blank after first received echo, rectification and range</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Datalogger</td>
<td>Internal datalogger with removable sd card, alpha-numeric, editable, 20 character ID, 32 character filename in linear, 2D, 3D grid or boiler files with export to excel</td>
<td>0</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B-scan (Non-Encoded)</td>
<td>Displays a cross section of the test piece</td>
<td>0</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B-scan (Encoded)</td>
<td>Displays a cross section of the test piece using the EZ Scan magnetic wheel linear access encoder</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Auto Calibration</td>
<td>Automatically performs a two-point calibration using a 5-step test block</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stored Setups</td>
<td>Stores unlimited application set-up</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Temperature Correction</td>
<td>Corrects thickness value for sound speed variance at elevated temperatures</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Administrator Lock</td>
<td>Ability to assign password to lock various functions</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Coating Thickness</td>
<td>Displays coating and substrate thicknesses simultaneously</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Oxide Scale</td>
<td>Simultaneously displays the thickness of the oxide layer and boiler tube thickness</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Angle Beam</td>
<td>Displays trig functions for angular distance, surface and depth (not to be used as a flaw detector)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rubber Boot</td>
<td>Custom Rubber Boot with built in bail and 4 point chest harness</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

O = Software Options that are field upgradable. Encoded B-Scan requires additional hardware modifications.