

# DANATRONICS

ECHO 9 | ECHO 9W | ECHO 9DL  
ECHO 9DLW

ECHO SERIES

## ECHO 9-SERIES HAND-HELD ULTRASONIC THICKNESS GAGE

- SIMULTANEOUS LIVE COLOR A-SCAN AND THICKNESS DISPLAY
- 3.5" SUNLIGHT READABLE COLOR DISPLAY
- FIELD UPGRADEABLE SOFTWARE OPTIONS INCLUDING DATALOGGER WITH B-SCAN, LIVE WAVEFORM AND PRECISION MODE (.0001" OR .001MM)



### 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](http://www.danatronics.com). To arrange a demonstration call us at **978-777-0081** or email [sales@danatronics.com](mailto:sales@danatronics.com).

DANATRONICS  
N D T  
Made/Easy

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



# Product Specifications ECHO 9

Specifications are subject to change for product improvement without notice

**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 122F (-20 to 50C)

**Package:** Designed for IP67 rating, custom,  
splash-proof, high impact plastic with illuminating  
rubber keypad for go/no-go testing

**Transducer Connector Type:** Lemo 00 (2qty)

**Bandwidth:** 0.5-30 Mhz (-3dB)

**Measurement Rate:** 4 Hz or 25 Hz.

**Pulsar:** 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)

**Calibration:** Cal zero, Cal velocity, Two-point calibration  
or Auto Calibration performs a two-point calibration using  
a 5-step test block

**Material Velocity Range:**

.0200 in/usec-.7362 in/ uS (0.508-18.699 mm/ uS)

**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 echos 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. Display changes color  
based on alarm condition

**Transducers:** Single, dual, delay lines, contact,  
immersion Click for Transducer Chart  
([www.danatronics.com/transducerchart.html](http://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-537, 5MHz, 0.375 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

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

0 = Software Options that are field upgradeable. Encoded B-Scan requires additional hardware modifications.