

ECHO Series

Hand-Held Ultrasonic Thickness Gages
for Corrosion and Precision Applications



- Simple to Operate
- Hand Held
- Field Upgradeable Options
- Corrosion and Precision Modes
- Live A-scan
- Made in the USA

A Totally New Platform of Ultrasonic Thickness Gages

Our new ECHO series represents a totally new platform of ultrasonic thickness gages combining corrosion and precision gaging into one tough, small package... The perfect size of fit and function! Hold the ECHO in your hand and you will agree no detail has been overlooked and the ergonomics are unmatched by any thickness gage in the industry! The new ECHO series comes in 3 configurations; ECHO 9, ECHO 8 and ECHO 7. ECHO 9 is our corrosion gage using dual transducers, ECHO 7 is our precision gage with 1 micron resolution using single element transducers and ECHO 8 is the ultimate unit combining both dual and single element transducers.

The new ECHO series can non-destructively measure essentially any engineering material thickness. 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 can easily be upgraded to precision mode to utilize single element transducers.

The ECHO series 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. Not sure which model to choose? Don't worry, the ECHO series is fully capable of field upgrades directly from the keypad so you will never be stuck with an obsolete product or experience any downtime. ECHO Series can measure from .020" to 23" in steel in corrosion mode or as thin as .006" in steel when configured as a precision gage.



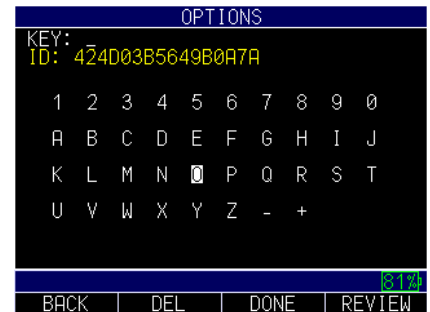
ECHO Series Standard Features

- Compatible with a wide variety of Danatronics and common competitor dual and single element transducers
- Change color and VIBRATE on alarm (ideal for inspections in loud environments)
- 27 Hour battery life with hi-capacity re-chargeable battery pack via the USB port
- Wide thickness range (.006" to 23" depending on gage type, material and transducer)
- Inches, mm or μ Sec
- Multiple languages
- Velocity mode
- Fast Min/Max mode to display actual thickness and minimum and maximum at the same time
- Gain, range, rectification, blank adjustments with live waveform
- Datalogger 2 Gb micro SD card standard expandable to 32 Gb
- Datalogger interfaces with Microsoft Excel
- Designed for IP67
- Made in the USA
- Simple one hand operation
- Field upgradeable software options

ECHO Series Standard Inclusions

Includes transducer (DKS537, dual 5.0 Mhz, .375" with potted 3 foot cable for corrosion gages; for precision gages, a probe up to 10 Mhz with a lemo to microdot cable are included), 2 Gb micro SD card, Li-ion battery, battery charger, transport case, manual with data XL, USB cable, echo-to-echo to ignore coatings. Our most advanced models include custom rubber boot.

Call with your ID and payment to unlock any additional features.



ECHO Series Software Options

Software options are all field upgradeable with many advantages:

- Options are activated via the keypad...no need to plug into a computer
- Only takes less than one minute
- No shipping cost
- No downtime
- Never worry about buying an obsolete unit
- Less initial outlay of capital

Datalogger

(includes B-scan) internally store millions of thickness readings with ID location and send readings to Microsoft Excel via our Data XL interface program.

Oxide Scale

Simultaneously displays the wall thickness of the boiler tube thickness as well as the internal oxide scale at their independent velocities. Knowing the thickness of the boiler tube can greatly improve the efficiency and extended life of the tube.

Live Waveform

Displays the live A-scan for echo verification and real time control of range, gain, rectification and blanks.

Corrosion Mode

Uses dual transducers to measure remaining wall thickness on primarily steel structures subject to corrosion.

Angle Beam Software

Available on ECHO 8 and ECHO 9, displays trig functions of detected echo for angular distance, surface and depth.

NOTE: Not meant to be a code compliant ultrasonic flaw detector due to vertical linearity and display update rate.

Precision Mode

Allows for the use of single element transducers along with up to 2,700 stored application setups with 1 micron resolution (.0001" or .001mm).

ECHO 9 Corrosion Thickness Gage

Our ECHO 9 is our premier corrosion thickness gage with a wide thickness range, able to be used with a variety of dual transducers as well as a selection of single element and angle beam probes. Similar to our precision thickness gages, ECHO 9 can save and store custom setups.

Typical Applications

- Boiler tubes
- Pressure vessels
- Storage tanks
- Ship hulls
- Pipes
- Steel beams on bridges

Standard Features

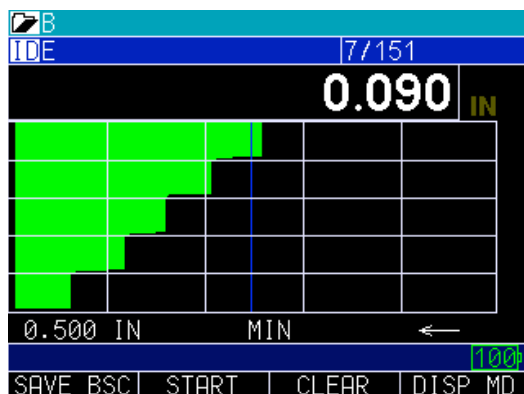
- Compatible with a wide variety of Danatronics dual and single element transducers
- Wide thickness range (.020" to 23" depending on gage type, material and transducer)
- Coating Thickness and substrate thickness displayed simultaneously on gage with live waveform
- High temperature probes available up to 950F/509C (intermittent use)
- Temperature correction
- File compare features shows old readings along with new readings for datalogger versions (real-time corrosion monitor)
- Available angle beam option



ECHO 9 – Base model includes Echo to Echo



ECHO 9W – Includes Waveform, Coating Thickness



ECHO 9DL – Includes Datalogger, B-scan, Temperature Correction



ECHO 9DLW – Includes Waveform, Datalogger, B-scan, Coating Thickness, Temperature Correction

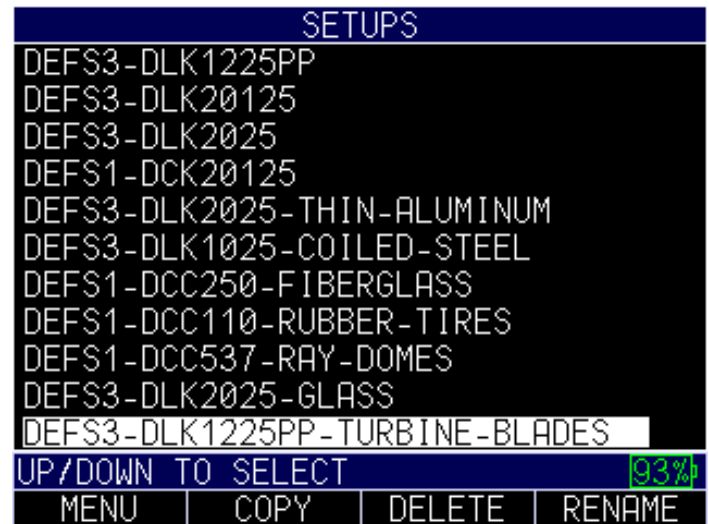
ECHO 7 Precision Thickness Gage

ECHO 7 hand-held ultrasonic thickness gages are designed for use with single element contact, delay line and immersion transducers to provide the maximum thickness range and up to 1 micron resolution. ECHO 7 can save up to 2,700 custom applications setups allowing the operator to quickly and easily switch transducers and setups on the fly for unique and separate tasks.



Standard Features

- .006-20" range in steel
- 1 micron resolution (0.0001" or 0.001 mm)
- single element, contact, delay line and immersion transducers (1-25 MHz)
- Store and recall up to 2,700 setups
- Multiple modes for challenging applications
- 30 Mhz bandwidth
- Squarewave Pulser
- Zoom Auto Tracking



Typical Applications

- Castings
- Turbine blades
- Plastic parts including bottles, pipes, trays and toys
- Coil steel and automotive body panels
- Fiberglass and gel coatings
- Velocity verification for ductile and gray iron (Velocimeter)
- Aluminum, glass, ceramics, zinc and more



ECHO 8 Corrosion and Precision Thickness Gage

ECHO 8 represents our most capable ultrasonic thickness gage combining both dual and single element probes into one small instrument. Quickly switch transducers and “gage type” to essentially non-destructively measure any engineered material. The ECHO series can keep track of up to 2,700 stored setups, so switching from materials with different thicknesses and alarm values is simple.

Typical Applications

- Inspection Companies—all-purpose gage for measuring any engineered material thickness
- Airplane Inspection (thin aluminum, plastic windows, and rubber tires)
- Marine Surveyors (fiberglass & steel)



Standard Features

- Includes all features from the ECHO 7 and ECHO 9
- Switch from dual to single element transducers
- Switch resolution from .01” to .001” to .0001”
- Store and recall up to 2,700 applications setups
- Rechargeable batteries good for more than 24 hr.
- ECHO 8DLW includes custom rubber boot with stand



ECHO series in A and B-Scan with EZ Scan magnetic wheel encoder



Environmentally Tough, Ergonomically Superior!



Environmentally Tough!

The ECHO series was designed from the ground up. With more than 85 combined years in designing, manufacturing and using hand held ultrasonic thickness gages, Danatronics left no detail uncovered. From its new case designed for IP67, to its easy to read sunlight readable 3.5" color display, you will find the ECHO series combines practical features with a simple, clean design built for years of field service and durability.

Ergonomically Superior!

With its new 3.5" sunlight readable display, The ECHO series offers many display formats to suit any age operator and reduce fatigue. So whether you want to view the largest possible numbers or would prefer more text on screen, ECHO has you covered.

ECHO is also perfectly balanced and makes holding it in one hand possible and simple... no clumsy joy sticks or second functions



Easy to hold and operate in one hand

needed. There is even a world's first vibrate on alarm to inform the operator any pre-set thickness threshold has been tripped which is great for tired operators and testing in loud environments.

Hardware Options

- Rubber boot with chest harness with built-in finger strap and bail (stand)
- Magnetic wheel encoder
- Footswitch
- Remote power bank
- Magnetic pipe stand

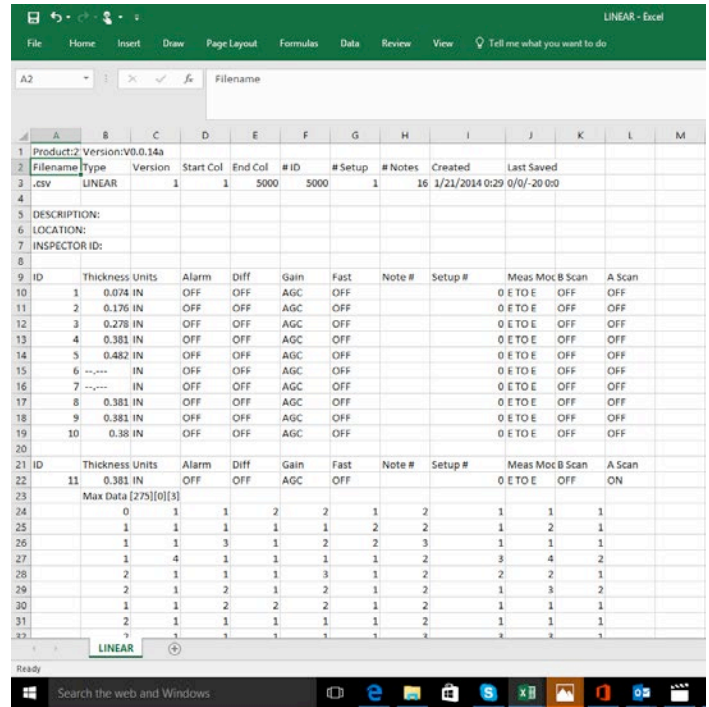


Data XL and Data XL PRO

At Danatronics we believe managing your saved data should be simple. As such, we include with every thickness gage a free interface program we call Data XL. Data XL saves readings to .csv files that can be used in any spreadsheet program such as Microsoft Excel or Google Sheets.

Here are some advantages:

- Write custom batch programs
- Simple double click the file to be transfer and Microsoft Excel with all i.d.'s and readings are displayed
- Create file and send them to the ECHO
- Merge files using Data XL
- Saved stored application setuups can be sent to the ECHO or multiple ECHO units to ensure reliability and repeatability
- Update firmware (latest version of operating software is available on the support tab of www.danatronics.com)
- Send Bit Maps (screen shots) to further document your inspections



Data View - BSCAN.CSV

ID	Thickness	Units	Alarm	Diff	Gain	Fast	Note #	Setup #	Meas Mode	B Scan	A Scan
0001	0.078	IN	OFF	OFF	AGC	OFF	1	1	STD	START	OFF
0002	0.077	IN	OFF	OFF	AGC	OFF	1	1	STD	BODY	OFF
0003	0.102	IN	OFF	OFF	AGC	OFF	1	1	STD	BODY	OFF
0004	0.062	IN	OFF	OFF	AGC	OFF	1	1	STD	BODY	OFF
0005	0.102	IN	OFF	OFF	AGC	OFF	1	1	STD	BODY	OFF
0006	0.276	IN	OFF	OFF	AGC	OFF	1	1	STD	BODY	OFF
0007	0.159	IN	OFF	OFF	AGC	OFF	1	1	STD	BODY	OFF

View A Scan | View B Scan | MIN | Copy Id Rows to Clipboard

BSCAN.CSV - ID # 0001 THK 0.078 IN

1.000 IN

Setup

Type	Value
Units	IN
Velocity	0.23300
Diff Type	OFF
Diff Ref	0.500
Alarm Type	OFF
Low Alarm	0.157
High Alarm	0.500
Alarm %	20
BS Range	1.000
Gain	31

Notes

NO COMMENTS

Copy Graph to Clipboard | Print Graph | Print Page | Close

The optional Data XL Pro does all of the above plus allows the transfer of A-scan and B-scan for the ultimate in computer software reporting.

Danatronics Transducers

The ECHO series comes loaded with a default list of probes to solve a vast variety of applications for any non-destructive testing wall thickness of most engineering materials.

So, if you are measuring, boiler tubes, pressure vessels, ship hulls, bridges, coil steel, aluminum, plastic bottles, toys, trays and anything in between...we have the probe for you..

Dual Transducers

Standard Dual Transducers

ECHO Model	Part No.	Range in Steel	Echo to Echo Range in Steel	Freq.	Diameter	Temperature Range	Connector Type
8, 9	DK-250	0.100"-20" (2.5mm-508mm)	0.200"-2" (5.08mm-50.8mm)	2.25 MHz	0.500"/12.7mm	32-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DK-525	0.040"-20" (1mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.250"/6.35mm	32-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DK-537	0.040"-20" (1mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.375"/9.52mm	32-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DKS-537	0.040"-20" (1mm-508mm)	0.100"-0.750" (2.54mm-19.05mm)	5.0 MHz	0.375"/9.52mm	32-100F/0-38C	Right Angle Potted - Lemo 00
8, 9	DK-550	0.040"-20" (0.76mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.500"/12.7mm	32-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DK-718	0.030"-2" (0.76mm-50.8mm)	0.060"-1" (1.52mm-25.4mm)	7.5 MHz	0.187"/4.75mm	32-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DK-718LPM*	0.050"-2" (1.25mm-50.8mm)	N/A	7.5 MHz	0.187"/4.75mm	32-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DK-1025	0.020"-2" (0.5mm-50.8mm)	0.060"-1" (1.52mm-25.4mm)	10.0 MHz	0.250"/6.35mm	32-392F/0-200C	Right Angle Potted - Lemo 00

*LPM = Low Profile Mini; probe height 16mm, top dia. 12mm

Composite Dual Transducers

ECHO Model	Part No.	Range in Steel	Echo to Echo Range in Steel	Freq.	Diameter	Temperature Range	Connector Type
8, 9	DC-110	0.200"-20" (5.08mm-508mm)	Not Recommended	1.0 MHz	1"/25.4mm	10-160F/-12-70C	Right Angle Potted - Lemo 00
8, 9	DC-175	0.150"-20" (3.81mm-508mm)	Not Recommended	1.0 MHz	0.750"/19.05mm	10-160F/-12-70C	Right Angle Potted - Lemo 00
8, 9	DC-250	0.100"-20" (2.5mm-508mm)	0.200"-2" (5.08mm-50.8mm)	2.25 MHz	0.500"/12.7mm	10-160F/-12-70C	Right Angle Potted - Lemo 00
8, 9	DC-525	0.030"-20" (0.76mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.250"/6.35mm	10-160F/-12-70C	Right Angle Potted - Lemo 00
8, 9	DC-537	0.040"-20" (1mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.375"/9.52mm	10-160F/-12-70C	Right Angle Potted - Lemo 00
8, 9	DC-550	0.030"-20" (0.76mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.500"/12.7mm	10-160F/-12-70C	Right Angle Potted - Lemo 00

Dual Echo To Echo Transducers

ECHO Model	Part No.	Range in Steel	Echo to Echo Range in Steel	Freq.	Diameter	Temperature Range	Connector Type
8, 9	DK537EE	0.040"-20" (1mm-508mm)	0.080"-1.5" (2mm-38.1mm)	5.0 MHz	0.375"/9.52mm	31-392F/0-200C	Right Angle Potted - Lemo 00
8, 9	DK-718EE	0.030"-1.5" (0.76mm-38.1mm)	0.060"-1.0" (1.5mm-25.4mm)	7.5 MHz	0.187"/4.75mm	31-392F/0-200C	Right Angle Potted - Lemo 00

Dual High Temp Transducers

ECHO Model	Part No.	Range in Steel	Echo to Echo Range in Steel	Freq.	Diameter	Temperature Range	Connector Type
8, 9	DHT-537	0.040"-20" (1mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.375"/9.52mm	-5 to 950F -20 to 509C	Straight Microdot requires detachable cable
8, 9	DHT-537RM	0.040"-20" (1mm-508mm)	0.080"-2" (2mm-50.8mm)	5.0 MHz	0.375"/9.52mm	-5 to 950F -20 to 509C	Right Angle Microdot requires detachable cable

Quick Change Composite Element Angle Beam Transducers

Available in: Diameter: 1/4", 3/8" & 1/2"; Frequencies: 1.0, 2.25, 3.5, 5.0, 7.5 & 10.0 MHz; Standard Wedges: 30°, 45°, 60°, 70°



Danatronics Transducers

Contact Transducers

Standard Contact

ECHO Model	Part No.	Range in Steel Class 1	Range in Steel Class 2	Range in Steel Class 3	Range in Plastic	Freq.	Diameter	Temperature Range	Connector Type*
7, 8	DCK-250	0.100"-20" (2.54mm-508mm)	n/a	n/a	n/a	2.25 MHz	0.500" 12.7mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-525	0.040"-20" (1mm-508mm)	n/a	n/a	n/a	5.0 MHz	0.250" 6.35mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-537	0.040"-20" (1mm-508mm)	n/a	n/a	n/a	5.0 MHz	0.375" 9.52mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-550	0.080"-20" (2mm - 508mm)	n/a	n/a	n/a	5.0 MHz	0.500" 12.7mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-718	0.030"-10" (.76mm - 254mm)	n/a	n/a	n/a	7.5 MHz	0.187" 4.75mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-1025	0.020"-2" (.5mm - 50.8mm)	n/a	n/a	n/a	10.0 MHz	0.25" 6.35mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-1025HR	0.020"-1" (.5mm - 25.4mm)	n/a	n/a	n/a	10.0 MHz	0.25" 6.35mm	32-392F 0-200C	Right Angle Microdot
7, 8	DCK-20125	0.016"-1" (.4mm - 25.4mm)	n/a	n/a	n/a	20.0 MHz	0.125" 3.175mm	32-392F 0-200C	Right Angle Microdot

Contact Composite

ECHO Model	Part No.	Range in Steel Class 1	Range in Steel Class 2	Range in Steel Class 3	Range in Plastic	Freq.	Diameter	Temperature Range	Connector Type*
7, 8	DCC-110	0.300"-20" (7.62mm - 508mm)	n/a	n/a	n/a	1.0 MHz	1" 25.4mm	10-160F -12-70C	Right Angle Microdot
7, 8	DCC-175	0.300"-20" (7.62mm - 508mm)	n/a	n/a	n/a	1.0 MHz	0.750" 19.05mm	10-160F -12-70C	Right Angle Microdot
7, 8	DCC-250	0.100"-20" (2.54 - 508mm)	n/a	n/a	n/a	2.25.0 MHz	0.500" 12.7mm	10-160F -12-70C	Right Angle Microdot
7, 8	DCC-537	0.040"-20" (1mm-508mm)	n/a	n/a	n/a	5.0 MHz	0.375" 9.52mm	10-160F -12-70C	Right Angle Microdot

Delay Line Transducers

Delay Line Standard

ECHO Model	Part No.	Range in Steel Corrosion Mode	Range in Steel Class 2	Range in Steel Class 3	Echo to Echo Range in Steel	Range in Plastic	Freq.	Diameter	Temperature Range	Connector Type*
7, 8, 9	DLK-525	0.080"-0.750" (2mm-19mm)	0.025-0.500" (6.35mm - 12.7mm)	0.020"-0.375" (0.5mm - 9.5mm)	0.025" - 0.400" (0.635mm-10.16mm)	0.010"- 0.150" (0.254mm - 3.81mm)	5.0 MHz	0.25" 6.35mm	32-122F 0-50C	Right Angle Microdot
7, 8, 9	DLK-1025	0.080"-0.750" (2mm-19mm)	0.020"-0.500" (0.5mm - 12.7mm)	0.015"-0.375" (0.38mm - 9.5mm)	0.025" - 0.400" (0.635mm-10.16mm)	0.010"-0.150" (0.254mm - 3.81mm)	10.0 MHz	0.25" 6.35mm	32-122F 0-50C	Right Angle Microdot
7, 8, 9	DLK-1225PP-SM	0.080"-0.300" (2mm-7.62mm)	0.020"-0.200" (0.5mm - 5.08mm)	0.015"-0.125" (0.38mm - 5.08mm)	0.020" - 0.200" (0.508mm-5.08mm)	0.015"-0.060" (0.15mm - 1.52mm)	12.0 MHz	0.080" 2mm (tip dia)	32-122F 0-50C	Right Angle Microdot
7, 8, 9	DLK-1225PP-RM	0.080"-0.300" (2mm-7.62mm)	0.020"-0.200" (0.5mm - 5.08mm)	0.015"-.125" (0.38mm - 5.08mm)	0.020" - 0.200" (0.508mm-5.08mm)	0.015"-0.060" (0.15mm - 1.52mm)	12.0 MHz	0.080" 2mm (tip dia)	32-122F 0-50C	Right Angle Microdot
7, 8	DLK-2025	n/a	0.015"-0.300" (3.81mm - 7.62mm)	0.006"-0.200" (0.152mm- 7.62mm)	n/a	0.003"-0.100" (0.076mm - 2.54mm)	20 MHz	0.25" 6.35mm	32-122F 0-50C	Right Angle Microdot
7, 8	DLK-20125	n/a	0.015"-0.200" (3.81mm - 7.62mm)	0.006"-0.200" (0.152mm- 7.62mm)	n/a	0.003"-0.100" (0.076mm - 2.54mm)	20 MHz	0.125" 3.175mm	32-122F 0-50C	Right Angle Microdot

Delay Line Composite

ECHO Model	Part No.	Range in Steel Class 1	Range in Steel Class 2	Range in Steel Class 3	Range in Plastic	Freq.	Diameter	Temperature Range	Connector Type*
7, 8	DLC-525	n/a	0.040"-0.500" (1mm - 12.7mm)	0.030"-0.375" (0.762mm-9.5mm)	0.020"-0.200" (0.5mm - 5.08mm)	5.0 MHz	0.375" 9.52mm	32-122F 0-50C	Right Angle Microdot



*Right Angle Microdot - requires additional cable

Specifications

GENERAL

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

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 (2 qty)

Bandwidth: 0.5-30 Mhz (-3dB)

Measurement Rate: 4 Hz or 25 Hz.

Pulser: 150V, Square Wave

Range: Thickness range depends on gage type, probe selection and material conditions. Typical range in corrosion mode, .020 - 23" (.076 - 584 mm). Typical range in precision mode, .006-23" (.152 -584 mm) in steel, as low as .003" (.076 mm) in plastic

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/ μ S (0.508-18.699 mm/ μ S)

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

Batteries: Standard 3.7 V Li Ion internally rechargeable battery (11-27 hours; Standard mode of 4Hz and 74% brightness: 27 hour continuous operation, Fast mode at 25Hz, continuous measurements in echo to echo mode: 11 hours) or optional alkaline tray for 3 AA batteries

Shut off: selectable auto shut off 1-31 min. or never shut off

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

Certifications: CE certified, RHOS compliant, designed for IP67

Standard Inclusions: ECHO series ultrasonic thickness gage, a transducer (ECHO 9 - DKS-537, ECHO 7,8 - choice of transducer up to 10mhz), transducer 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 based on exact inclusion per model

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

DISPLAY

Display: 3.5" high resolution color TFT display, 320 x 240 pixels (1/4 VGA), sunlight readable, including multiple color pallets

Backlight: Light Emitting Diode (LED) backlight. Includes variable light intensity.

DATALOGGER

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

Stored Application Setups: Storage and recall of 2,700 calibration and set up files

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 (excel). Saved readings are .csv files and directly interfaces with Microsoft Excel.

USB: USB 2.0

MEASUREMENTS

Gain: Low, Standard, High, and Automatic Gain Control (AGC). 20-94 db in 1 db increments for gages with waveform.

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

Units: English, Metric, Microseconds

Fast Min/Max: Displays minimum and maximum simultaneously with actual thickness at 25 Hz.

Alarms: Gage beeps and display changes color based on alarm condition

Vibrate: Gage can be set to vibrate on alarm (ideal for loud environments)

Transducers: Single, dual, delay lines, contact, immersion (depends on gage type)

ECHO 9 Measurement Types: ECHO 9 corrosion gage: Main bang to first backwall echo, echo to echo and velocity mode (displays acoustic sound speed based on entered thickness)

ECHO 7 & 8 Measurement Types: A precision gage: Class 1, Main bang to first back wall echo, Class 2, Interface echo to first backwall and Class 3, echo to echo after interface echo... Class 2 and 3 use high frequency single element delay lines or immersion probes, 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

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

Resolution: .001" or .010" (.01mm or .1mm) as corrosion gage and .0001" or .001" (.001mm or .01mm) as a precision gage

ACCESSORIES

ECHO-MBH: Magnetic ball head/pipe stand for ECHO series (attaches to 1/4x20 standard connection point on the back of the unit)

ECHO RB: Rubber boot available with padded wrist strap, 4 point chest harness, chest harness, built in bail (stand) with locking position and finger strap for easy one hand operation. ECHO RB is included with ECHO 7,8 or 9 as DLW models

ECHO-ABP: Alkaline Battery Pack (3- AA) for ECHO series. Battery life 3 Hours

ECHO-RPP: Remote Power Pack plugs into USB port to provide power/recharge to ECHO series

HARDWARE/SOFTWARE

Hardware Options: EZ Scan B-Scan encoder, Bluetooth, foot switch

Field Upgradeable Software Options: Datalogger with B-scan, Live waveform, Precision mode, Corrosion mode, Oxide scale, Angle Beam

Data XL Pro Software: allows sending of A and B-scan images to computer for advanced reporting

Item	SpecificatiOn	ECHO 9 Corrosion Gage				ECHO 7 Precision Gage				ECHO 8 Corrosion and Precision Gage			
		ECHO 9	9W	9 DL	9 DLW	ECHO 7	7W	7 DL	7 DLW	ECHO 8	8W	8 DL	8 DLW
Scan Mode	4 or 25 Hz. displays actual and min or max at same time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Memory	2 Gb micro SD included, expandable to 32 Gb	○	○	✓	✓	○	○	✓	✓	○	○	✓	✓
Alarms	Display color changes and can vibrate on alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Illuminating Keypad	Translucent F keys, red, yellow, green for alarm, blue for charging	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Velocity Mode	Displays material sound speed after entered known thickness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Echo To Echo	Ignores coatings	✓	✓	✓	✓	*	*	*	*	✓	✓	✓	✓
Range	Can adjust range from zoom, 0.5, 1, 2.5, 10, 23"	○	✓	○	✓	○	✓	○	✓	○	✓	○	✓
Rectification	Half +, half -, full rf	○	○	○	✓	○	○	○	✓	○	○	○	✓
Live Waveform (A-Scan)	Displays live waveform	○	✓	○	✓	○	✓	○	✓	○	✓	○	✓
Datalogger	Alpha numeric 20 character ID, 32 character file, linear, 2d, 3d and boiler	○	○	✓	✓	○	○	✓	✓	○	○	✓	✓
B-Scan	Displays time based cross section of material under test	○	○	✓	✓	○	○	✓	✓	○	○	✓	✓
B-Scan Encoder	Displays encoded cross section of material under test	○	○	○	○	*	*	*	*	○	○	○	○
Dual Probe Use	Wide variety of dual transducers from 1 to 10 Mhz.	✓	✓	✓	✓	*	*	*	*	✓	✓	✓	✓
Single Element Probe	Wide variety of single element transducers from 1 to 20 Mhz	LTD	LTD	LTD	LTD	✓	✓	✓	✓	✓	✓	✓	✓
Stored Setups	Store up to 2,700 custom applications with file naming	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coating Thickness	Displays substrate and coating thickness simultaneously	○	✓	○	✓	○	✓	○	✓	○	✓	○	✓
Temperature Correction	Corrects for sound speed difference at elevated temperatures	○	✓	✓	✓	○	✓	✓	✓	○	✓	✓	✓
Alkaline Battery Tray	Ability to swap in 3 AA batteries	○	○	○	○	○	○	○	○	○	○	○	○
Rubber Boot	Custom rubber boot with built-in bail and 4 point chest harness	○	○	○	✓	○	○	○	✓	○	○	○	✓

*available with software upgrade to ECHO 8

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

LTD = Limited, see transducer chart



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