

37DL PLUS ADVANCED ULTRASONIC CORROSION GAUGE



GENERAL DESCRIPTION

The new 37DL PLUS is an advanced nondestructive ultrasonic thickness gauge that combines powerful measurement features with sophisticated data acquisition and output capabilities for applications involving pipes, tanks, and other metal structures subject to internal corrosion or erosion. The 37DL PLUS includes many innovative features that simplify true metal thickness measurements even when the exposed surface is coated or painted. A new Thru-Coat technology measures and displays the thickness of the metal part and its coating using a 'single backwall echo'. A new oxide/scale option measures and displays the thickness of the steel and the oxide/scale build-up on the inside of boiler tubes to help predict tube life. Accuracy of high temperature thickness measurements can be improved by using the new Temperature Compensation feature that adjusts the material velocity for changes in material temperature. A new Average/Min mode saves the average or minimum of several successive thickness measurements. The new 37DL PLUS electronics bring improvements to many standard measurement features. The new A-Scan display is brighter with better contrast and visibility. Every thickness reading in a stored B-Scan can now be reviewed on the 37DL PLUS and in the Interface Program. The user can select to view (Min/Max, Alarm, or A-Scan flags) flags with Grid points. The file-based alphanumeric datalogger can use longer file names (32 character max) and ID numbers (20 character max). Grid files can be expanded by adding rows or columns or by changing the incrementing direction.

FEATURES

- New Thru-Coat™ technology measures and displays the thickness of the metal part and its coating using a 'single backwall echo'
- New Temperature Compensation feature adjusts the material velocity for changes in material temperature
- New optional Oxide/Scale feature measures and displays the thickness of the steel and the oxide/scale build-up
- New Average/Min mode saves the average or minimum of several successive thickness measurements
- New A-Scan display is brighter with better contrast and visibility
- New uses a vast array of dual element and single element contact, delay line, and immersion transducers
- New uses EMAT transducers for no-couplant steel thickness measurements through heavily scaled surfaces
- The file-based alphanumeric datalogger can use longer file names (32 character max) and ID numbers (20 character max)
- Improved: every thickness reading in a stored B-Scan can now be reviewed in the WIN37DL PLUS Interface Program and on the gauge
- Improved: select to view (Min/Max, Alarm, or A-Scan flags) flags for Grid points
- Grid files can be expanded by adding rows or columns or by changing the incrementing direction



**Making
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Accredited to BS EN ISO 9001:2000

37DL PLUS ADVANCED ULTRASONIC CORROSION GAUGE

TECHNICAL SPECIFICATIONS

Dual Element Measurement Mode:

Time interval from a precision delay after the excitation pulse to the first echo

Thru-Coat Measurement:

Measurement of true metal and coating thickness using a single backwall echo (with D7906-SM and D7908 transducers)

Thru-Paint Echo-to-Echo:

Time interval between two successive backwall echoes for elimination of paint or coating

Single Element Measurement Mode:

Mode 1: Time interval between excitation pulse to first backwall echo

Mode 2: Time interval between Delay line echo to first backwall echo with delay or immersion transducers

Mode 3: Time interval between successive backwall echoes following the first interface echo after the excitation pulse with delay line or immersion transducers

Optional Oxide/Scale Measurement:

Measure metal thickness and internal oxide/scale build-up of pipes. Oxide/scale thickness range 0.010 - 0.050" (0.25 - 1.27mm)

Thickness Range:

0.003 - 25.000 inches (0.080 - 635.00mm), depending on material, transducer surface condition, temperature, and SETUP selected

Material Velocity Range:

0.020 - 0.551 inch/ μ S
(0.508 - 13.998 mm/ μ S)

Resolution, selectable:

LOW:	0.01"
	0.1mm
STANDARD:	0.001"
	0.01mm

Battery:

6V rechargeable NiCad battery pack, or ~~ed~~-replaceable alkaline AA batteries

Battery Life:

25 hours in normal measurement mode with backlight off

Fast-Charger:

Two-hour Fast-Charger with universal voltage

Transducer Frequency Range:

2-30MHz (-3dB)

Operating Temperature:

-10 to +50°C. (+14° to 122°F)

Keypad:

Sealed color-coded keypad with tactile and audible feedback

Case:

Water-resistant, gasketed Lexan® case with sealed connectors

Liquid Crystal Display:

With backlight. Contrast keypad adjustable. Display area 4.0 x 3.39 inch (102 x 86mm)

Hazardous Area Operations:

As described by MIL-STD-810E, method 511.3, procedure 1

Rectification:

Full wave, RF, half wave positive, or half wave negative

Display Range and Delay Control

Metric/English Units

Size:
9.375 x 5.45 x 1.5"
(238 x 138 x 38mm)

Weight:
2.1 lbs. (0.95Kg)

INTERNAL DATALOGGER

Datalogger and RS-232:

The 37DL PLUS identifies, stores, recalls, clears, and transmits thickness readings, waveform images, and gauge setup information via the RS-232 serial port. Baud Rate, Word Length, Stop Bits, and Parity are adjustable from the keypad.

Maximum # of Stored Values:

Standard: 60,000 thickness readings or 4,500 waveforms with thickness readings

File Names, ID# and Comments:

32 character alphanumeric location code with 4 comments per location

File Structures:

7 standard or custom application-specific structures

Reports:

On-gauge reporting of summary with statistics, Min/Max with locations, File Comparison, and Alarm Report. Onscreen comparison of current and previous readings

STANDARD INCLUSIONS

Model 37DL PLUS Digital Ultrasonic Thickness Gauge with Waveform Verification, AC 50-60Hz or Battery Operation

- D790-SM Transducer, 5.0MHz, 0.434" (11mm) tip, temp. range -5° to 932°F
- Charger/AC adapter (100, 115, 230 VAC)
- Internal datalogger
- WIN37DL PLUS Interface program
- Test block and couplant
- RS-232 cable
- Protective pouch with neck strap
- Instruction manual
- Measurement features:
 - Thru-Coat, Echo-to-Echo
 - Thru-Paint, EMAT
 - Compatibility,
 - Min/Max Mode, Two Alarm
 - Modes, Differential Mode, BScan, Application Auto Recall, Temperature Compensation, Average/Min Mode



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