



MG2, MG2-XT, and MG2-DL

These small affordable ultrasonic thickness gages are primarily designed for inspectors and maintenance engineers responsible for measuring the remaining thickness of internally corroded pipes, tanks, and other metal structures. Lightweight and ergonomically designed for easy one-hand operation, these gages provide cost-effective measurement solutions in many applications that require quick inspection of materials suspected of metal wall thinning.

Olympus NDT is known worldwide as a manufacturer of innovative, state-of-the-art ultrasonic testing products. We also believe that our customers deserve thickness gages that truly combine quality, accuracy, and ease of operation at affordable prices. We have accomplished this with three rugged models: the MG2, MG2-XT, and MG2-DL. Each offers a range of practical measurement features to solve a wide variety of thickness gaging problems. Even better, they all have in common being manufactured by a company that takes pride in having the best customer support network in the industry.

Features

- **Measurements from one side!**
Ultrasonic thickness gages make instant digital measurements by transmitting sound into a material from one side, making it unnecessary to cut the corroded part.
- **Lightweight and pocket-size**
These handheld gages are small enough to fit in a toolbox or inside your pocket. They are ideal for quick inspections in hard-to-reach areas.
- **Intuitive, color-coded keypad**
You can directly access many important measurement features for time-saving operation. Strategically located keys are grouped together by color for easy operation.
- **Large LCD with backlight**
The large numerals make it easy to read thickness measurements. In addition, you can easily view the electroluminescent backlit display from total darkness to bright sunshine.
- **MG2-XT and MG2-DL are available with THRU-COAT[®], B-scan and optional Live A-scan with Waveform Adjust**

Choose From Three Units

MG2

The MG2 offers many basic features such as Min/Max Mode that measures and recalls the minimum thickness at a fast 20 readings per second, Freeze Mode to instantly capture critical thickness, and Zero Compensation to ensure optimal transducer performance. Various other features make this handheld gage an affordable unit for quick spot measurements.

MG2-XT

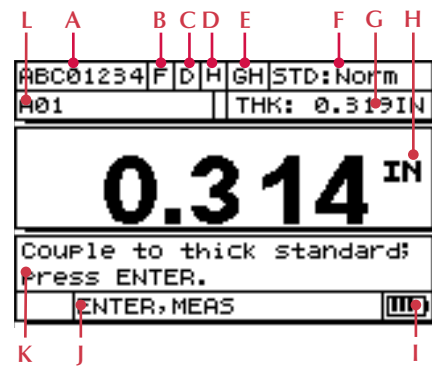
The MG2-XT has all of the features of the MG2 plus much more! B-scan, Gain Adjust, Auto Sensitivity Optimizations, Echo-to-Echo, Thru-Coat, Differential Mode, Hi-Low Alarm, and the optional live A-scan are added features to provide you with more measurement capabilities in tough applications. This gage is ideal when you make thickness measurements on coated or painted surfaces.

MG2-DL

The MG2-DL is the most advanced unit of our new MG2 Series gages. It includes all of the features found in the MG2-XT plus a versatile file-based alphanumeric data logger that employs incremental, sequential, 2-D and GridView grid file formats. Using the optional GageView Interface Program you can transfer your data bi-directionally to and from your PC and gage. The MG2-DL is the answer if you're looking for an affordable gage with unique measurement capabilities such as Thru-Coat and Gain Adjust.

COMPARISON CHART	MG2-DL	MG2-XT	MG2
Thickness Range .020"-25.00" (0.50-635.0 mm)	✓	✓	✓
Thickness Display Resolution up to 0.001" (0.01 mm)	✓	✓	✓
Automatic Probe Recognition	✓	✓	✓
High Temperature Capabilities	✓	✓	✓
Fast Measurement Rate of 20 per second	✓	✓	✓
Min/Max Mode	✓	✓	✓
Freeze Mode	✓	✓	✓
Zero Compensation Mode	✓	✓	✓
Display Hold/Blank	✓	✓	✓
Inches/Millimeters Mode	✓	✓	✓
Live A-scan with Waveform Adjust (optional)	✓	✓	-
Gain Adjust	✓	✓	-
B-scan	✓	✓	-
Auto Sensitivity Gain Optimization	✓	✓	-
Differential Mode	✓	✓	-
Hi-Low Alarm	✓	✓	-
Thru-Coat	✓	✓	-
Echo-to-Echo	✓	✓	-
Internal Datalogger	✓	-	-
2-D Grid	✓	-	-
GridView	✓	-	-
GageView PC Interface Program (optional)	✓	-	-
Plastic Carrying Case	✓	✓	-

Display



- A. File Name²
- B. Freeze Mode
- C. Differential Mode¹
- D. Hi-Low Alarm¹
- E. Gain Adjust¹
- F. Measurement Rates
- G. Previous Thickness²
- H. Current Measurement
- I. Battery Life
- J. Available Keys
- K. User Help
- L. ID#²

¹ Features provided with the MG2-XT and MG2-DL

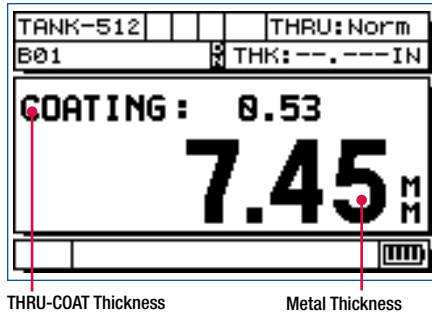
² Features provided with the MG2-DL



Practical Measurement Features (MG2-XT and MG2-DL Only)

Thru-Coat®

With this patented technology, the gage simultaneously displays the thickness of the coating and the true metal thickness, using a single backwall echo. Each measurement is adjusted for their calibrated material sound velocity. Thru-Coat measurements use the D7906-SM and D7908 transducers.



THRU-COAT Thickness

Metal Thickness

Live A-scan with Waveform Adjust

This optional live A-scan mode allows the user to view the ultrasound waveform (or A-scan) directly on the gage's display, verify the thickness reading, or make manual adjustments to gain and blanking settings to maximize measurement performance for challenging applications. This helpful option has the following features: Manual Gain Adjust, Extended Blanking, Echo Blank Range and Delay.

Gain Adjust

This feature is very helpful when making measurements on sound-attenuating materials such as cast metals:

- Preset Gain Adjust to High, Low, or Standard
- Manual Gain Adjust can be set in 1 dB increments (Live A-scan mode only)

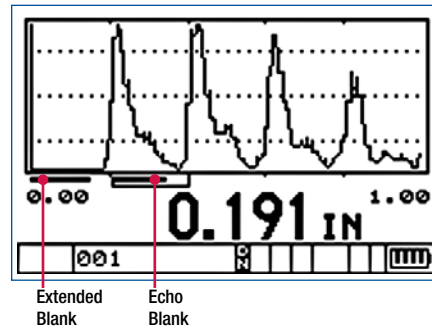
Extended Blanking

Allows blanking of unwanted echoes due to material surface "noise" from rough or irregular surfaces (Live A-scan mode only).

Echo-to-Echo

The gage displays the true metal thickness and ignores the thickness of the coating layer, using multiple backwall echoes:

- Auto Echo-to-Echo
- Manual Echo-to-Echo (Live A-scan mode only) that allows:
 - Gain Adjust
 - Extended Blanking
 - Echo Blanking



Extended Blank

Echo Blank

B-scan Corrosion Mapping

The MG2-XT and MG2-DL offer the B-scan feature that converts live thickness readings into cross-sectional images drawn on the display. This standard feature is a very helpful in applications when it is desired to review how the thickness is changing over a distance. When the user activates the B-scan feature it starts drawing the cross-sectional thickness when the transducer makes contact with the material. The Freeze Min function can be used to display the Minimum thickness of the scanned area. Up to 350 B-scan images can be stored in the MG2-DL's data logger.



High Temperature Surfaces

The MG2-XT and MG2-DL are ideally suited for making stable thickness measurements on hot material surfaces, up to 932°F or 500°C, with the D790 series transducers (D790, D790-SM, D790-RL, D790-SL). The Zero Compensation feature on the MG2 Series enhances the accuracy of the readings on hot surfaces by compensating for temperature changes in the transducer delay line due to thermal drift.



D790 Transducer



Data Collection For Fast And Reliable Documentation

Internal Data Logger

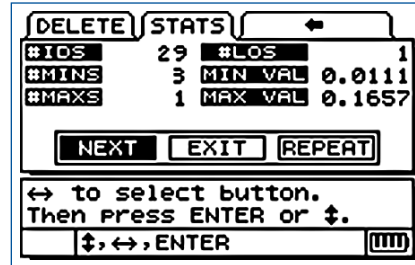
The powerful MG2-DL internal data logger allows you to store, recall, and transmit 8000 thickness readings along with their Identification Codes. With the optional live waveform mode these gages can also store 350 wave forms with thickness readings. All stored information can be transmitted from these units to your computer for statistical analysis.

Alphanumeric Identification Codes

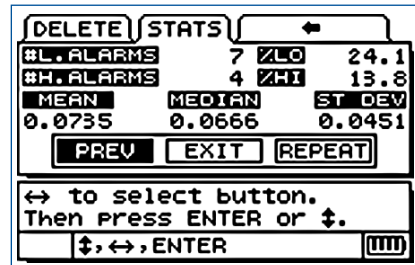
You can assign an eight character file name and up to ten alphanumeric ID numbers to each stored thickness measurement. Each thickness reading is fully documented with parameter information such as material sound velocity, transducer data, and measurement mode.

On-board Statistics Calculator

The Model MG2-DL internal data logger features an on-board statistical calculator to generate reports that can be transmitted directly to your printer.



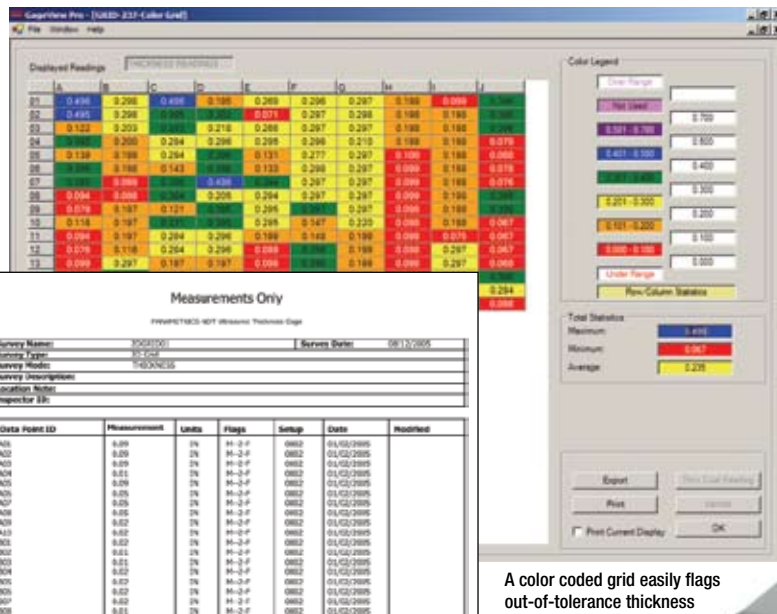
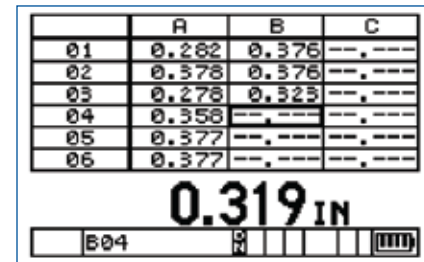
Statistic report showing Minimum and Maximum values.



Statistic report showing Hi/Low Alarms, Mean, Median and Standard Deviation.

GridView

The GridView feature (only available on the MG2-DL) permits viewing of stored thickness data in a Grid or Expanded Liner format. It allows the user to easily review and navigate saved thickness data in a Row and Column grid by simultaneously displaying the grid positions along with the current thickness reading.



This printed measurement report contains measurement, ID and other parameters.

GageView

The optional GageView Interface Program, a Windows-based application, collects, creates, prints, and manages data from the MG2-DL.

- Datasets and Surveys creation
- Downloading and uploading thickness surveys to and from the gages
- Stored data editing
- Viewing Dataset and Survey file information including thickness readings, gage setup values, and transducer setup values
- Exporting Surveys to spreadsheets and other programs

- Collecting snapshot screens
- Printing reports such as Thickness, Setup Table, Statistics, and Color Grid
- Upgrading operating software
- Drag and drop to Excel spreadsheet

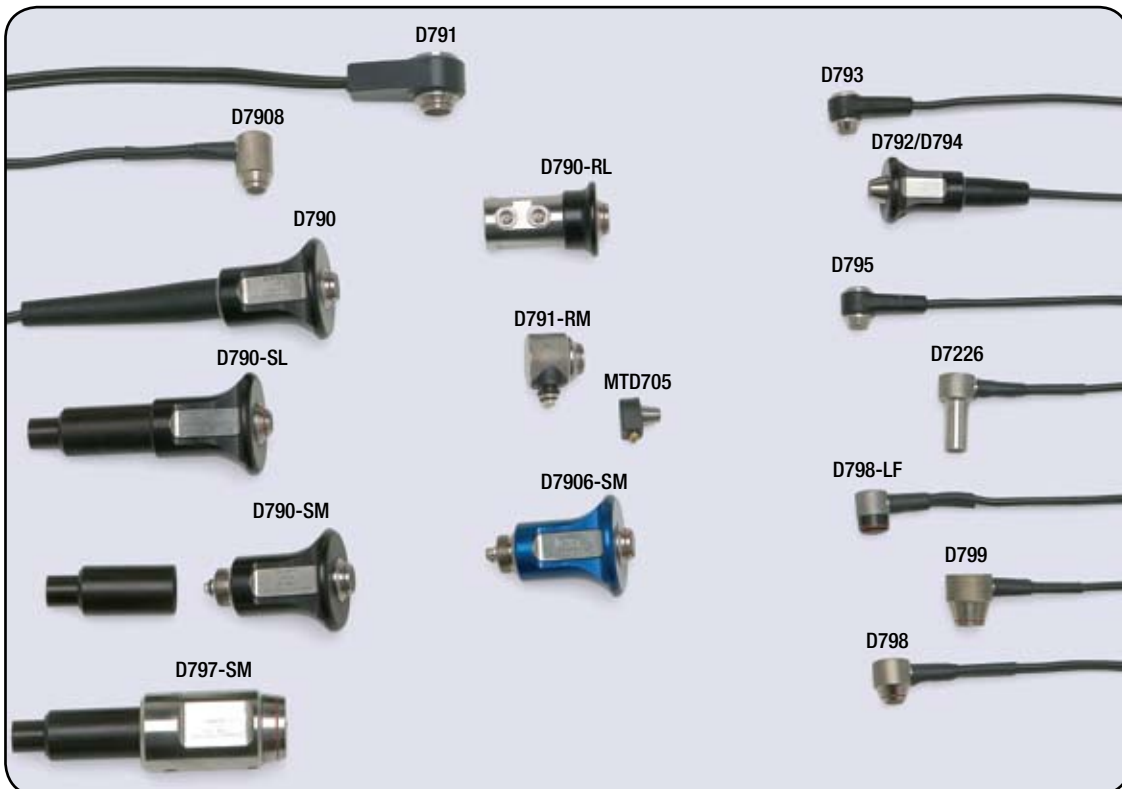


A color coded grid easily flags out-of-tolerance thickness conditions.

Transducers with Automatic Probe Recognition

Each MG2 series gage is compatible with our complete line of easy interchangeable dual element transducers that vary in frequencies, diameters, and temperature capabilities to deal with virtually every application.

Transducer Part Number	Frequency MHz	Tip Diameter	Cable	Connector Location	Range in Steel	Temperature Range	Wand	Holder (with wand)
D790 D790-SM D790-RL D790-SL	5.0	0.434" 11 mm	Potted LCMD-316-5B ⁺ LCLD-316-5G ⁺ LCLD-316-5H	Straight Straight Rt. Angle Straight	0.040" - 20" 1.0 - 508 mm	-5 to 932°F -20 to 500°C	F152 F152 — F152	F152A F152A — F152A
D791	5.0	0.434" 11 mm	Potted	Rt Angle	0.040" - 20" 1.0 - 508 mm	-5 to 932°F -20 to 500°C	F153	—
D791-RM	5.0	0.434" 11 mm	LCMD-316-5C	Rt Angle	0.040" - 20" 1.0 - 508 mm	-5 to 752°F -20 to 400°C	—	—
D792 D793	10	0.283" 7.2 mm	Potted	Straight Rt. Angle	0.020" - 1" 0.5 - 25 mm	32 to 122°F 0 to 50°C	F150 F151	F150A —
D794 D795	5.0	0.283" 7.2 mm	Potted	Straight Rt. Angle	0.030" - 2" 0.75 - 50 mm	32 to 122°F 0 to 50°C	F150 F151	F150A —
D797 D797-SM	2.0	0.900" 22.9 mm	Potted LCMD-316-5D	Rt. Angle Straight	0.150" - 25" 3.8 - 635 mm	-5 to 752°F -20 to 400°C	—	—
D7226 D798-LF	7.5	0.350" 8.9 mm	Potted	Rt Angle	0.028" - 4" 0.71 - 100 mm	-5 to 300°F -20 to 150°C	—	—
D798 D798-SM	7.5	0.283" 7.2 mm	Potted LCMD-316-5J	Rt Angle Straight	0.028" - 4" 0.71 - 100 mm	-5 to 300°F -20 to 150°C	—	—
D799	5.0	0.434" 11 mm	Potted	Rt Angle	0.040" - 20" 1.0 - 500 mm	-5 to 300°F -20 to 150°C	—	—
D7906-SM	5.0	0.434" 11 mm	LCMD-316-5L	Straight	0.040" - 2.0" 1.0 - 50 mm	32 to 122°F 0 to 50°C	—	—
D7908	7.5	0.283" 7.2 mm	Potted	Rt. Angle	0.028" - 1.5" 0.71 - 37 mm	32 to 122°F 0 to 50°C	—	—
MTD705	5.0	0.200" 5.1 mm	LCLPD-78-5	Rt Angle	0.040" - 0.75" 1.0 - 19 mm	32 to 122°F 0 to 50°C	—	—



MG2 Specifications*

Measurements

Measurement Mode: Pulse echo with dual element transducers

Thickness Measurement Range: 0.020 to 25.00 inch (0.50 to 635.0 mm)

Thickness range depends on material, transducer, surface condition, temperature

Material Velocity Calibration Range: 0.0200-0.7362 in/ μ sec (0.508- 18.699 mm/ μ sec).

Display Modes

- Digital Thickness Readout
- Cross-sectional B-scan
- A-scan or Waveform (optional)
- DB Grid (MG2-DL only)

Thickness Display Resolution:

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

Measurement Rates:

Standard Rate: 4 per second.
Fast Rate: 20 per second.

Min/Max Mode: Measures and recalls minimum or maximum thickness at 20 measurements per second.

Freeze Mode: Freezes display to instantly capture critical thickness. Minimizes transducer couplant lift-off error and facilitates High Temperature measurements.

Automatic Probe Recognition: Automatically recognizes the listed Panametrics-NDT transducer types. Adjusts internal parameters and corrects V-path error.

Zero Compensation: Compensates for transducer temperature and zero offset.

Display

Display Hold/Blank Mode: Display holds or blanks after measurement.

Electroluminescent Display Back Lighting: Selectable as "On" or "Auto On"

Receiver Bandwidth: 1-18 MHz (-3 dB)

Metric/English Mode: Metric or English

Display Languages: English, French, German, Spanish, Italian, and other custom languages

Power Supply

Battery: 3 AA alkaline batteries

Operating Time: 150 hours typical battery life, 30 hours continuous with backlight on

Low Battery Indicator: Continuously indicates battery status

Battery Saver:

Auto Power Off/Continuous On

General

Environmental IP-65 Compliant:

Splash-proof, impact-resistant case. Sealed, color-coded keypad with tactile and audible feedback.

Operating Temperature Range: -10°C to +50°C, +14°F to 122°F.

Size: 3.31" W x 6.0" L x 1.56" H (84 x 152.4 x 39.6 mm)

Weight: 12 oz. (0.34 kg)

MG2-XT and MG2-DL

Additional Specifications

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: Displays the true metal thickness and ignores the thickness of the coating layer, using multiple backwall echoes.

- Auto Echo-to-Echo
- Manual Echo-to-Echo (Live A-scan mode only) that allows:
 - Gain Adjust
 - Extended Blanking
 - Echo Blanking

Gain Adjust:

- Preset Gain Adjust to High, Low or Standard
- Manual Gain Adjust can be set in 1 dB increments (Live A-Scan mode only).

Extended Blanking: Allows blanking of unwanted echoes due to material surface "noise" from rough or irregular surfaces (Live A-scan mode only).

Auto Sensitivity Gain Optimization:

Allows the normal measurement sensitivity to be automatically increased or decreased depending on the thickness and material noise level.

Alarm Mode: Programmable Hi-Low set points with audible and visual indicators

Differential Mode: Displays the difference between the actual thickness measurement and a user-set reference value.

Live A-scan with Waveform Adjust:

Optional live A-scan mode allows the user to view the ultrasound waveform (or A-scan) directly on the gage's display. Has the following features: Manual Gain Adjust, Extended Blanking, Echo Blank Range and Delay.

MG2-DL Internal Datalogger

Datalogger: The MG2-DL will identify, store, recall, clear, and transmit thickness readings and gage setup information via the USB Port.

Max. # of Stored Values: Over 8,000 thickness readings or 350 waveforms with thickness readings (with Waveform option)

Stored Data Documentation: Each saved thickness reading is fully documented with measurement status flags and a setup number that identifies parameters such as velocity, transducer, etc.

File Name Length: 8 alphanumeric characters

Identification Codes: 10 character alphanumeric Identification Code system identifies or locates stored data.

4 File Templates: Incremental, Sequential, 2D Grid, and Manual from PC

Standard Inclusions

Model MG2 Digital Ultrasonic Thickness Gage, Wrist Strap, Test Bar, Couplant, Instruction Manual, Plastic Carrying Case (MG2-XT and MG2-DL models) and a Two Year Limited Warranty. Standard packages include a dual element transducer.

Optional Accessories

2214E: 5-Step Test Block, English units

2214M: 5-Step Test Block, Metric units

MG/EW: Extended Warranty

MG2/RPC: Protective rubber boot

GageView: PC interface program for the MG2-DL

MG2/XTRETRO: Convert a MG2 into a MG2-XT

MG2XT/DLRETRO: Convert a MG2-XT into a MG2-DL

MG2/DLRETRO: Convert a MG2 into a MG2-DL

MG2/WF: Live A-scan with Waveform Adjust for MG2-XT and MG2-DL only (not available for MG2).

USB/ADP-115 AC-115: Power Supply

USB/ADP-230 AC-230: Power Supply
For additional accessories such as holders, wands, and couplants, please consult Olympus NDT.

 PANAMETRICS-NDT™

OLYMPUS®

www.olympusNDT.com

info@olympusNDT.com

OLYMPUS NDT

48 Woerd Avenue • Waltham, MA 02453 • USA
Tel.: (1) 781-419-3900 • Fax: (1) 781-419-3980
12569 Gulf Freeway • Houston, TX 77034 • USA
Tel.: (1) 281-922-9300 • Fax: (1) 952-487-8877

OLYMPUS NDT U.K. LTD.

12 Nightingale Close • Rotherham, South Yorkshire S60 2AB • UK

OLYMPUS SINGAPORE PTE. LTD.

491B River Valley Road 12-01/04, Valley Point Office Tower, 248373 • Singapore

OLYMPUS AUSTRALIA PTY. LTD.

PO Box 985 • Mount Waverley, VIC 3149 • Australia

