

# elcometer<sup>®</sup> MTG4 Material Thickness Gauge

Conforms to the following standards : ASTM E797, EN 14127, EN15317

With their ergonomic, rugged design, accurate and easy to use menus in multiple languages, the Elcometer MTG (Material Thickness Gauge) range of ultrasonic thickness gauges are ideal for measuring and recording material thickness and sound-velocity on a variety of substrates, in a wide range of industrial applications.



## Features

- Pulsed-Echo (P-E) and Echo-Echo ThruPaint™ (E-E) measurement modes
- 1-Point, Material and Factory calibration options
- Pre-set measurement rate of 4 readings per second
- USB data output to PC or similar device

With a choice of calibration options and measurement modes, the MTG4 is ideal for taking readings on a wide range of coated and uncoated materials.

As well as all the features of the MTG2, the MTG4 has two calibration options. Using an uncoated sample of test material of a known thickness, the gauge can be calibrated using 1-Point calibration. Alternatively, the user can select one of 39 pre-set materials stored within the gauge including; aluminium, steel, stainless steel, cast iron, plexiglass, PVC, polystyrene and polyurethane.

Echo-Echo ThruPaint™ (E-E) measurement mode enables readings to be taken on coated materials with a thickness range up to 25mm. In Echo- Echo ThruPaint™ mode, the coating thickness is ignored and the material thickness from the top surface of the material to the material density boundary is displayed. For further information on measurement modes, see the separate leaflet.

Compatible with ElcoMaster™ software, individual readings can be downloaded via USB to PC or similar device for further analysis.

## Easy

The MTG range of ultrasonic thickness gauges have been designed specifically to make them easy to use, calibrate, take readings and create inspection reports.

## Accurate

With a measurement accuracy of  $\pm 1\%$  up to 500mm in Pulsed-Echo (P-E) mode and 25mm in Echo-Echo ThruPaint™ (E-E) mode, accurate and repeatable readings can be taken on smooth, rough and curved, coated or uncoated surfaces. The stability indicator provides a visual indication of both the strength and reliability of the ultrasonic signal.

## Efficient

The MTG4 has a set measurement repetition rate of 4Hz (4 readings per second).

## Rugged

With a scratch and solvent resistant display, sealed, heavy duty and impact resistant design - dust and waterproof equivalent to IP54 - the MTG range is suitable for use in the harshest of environments.



## Packing List

- Elcometer MTG4 gauge
- 5MHz 1/4" right angle transducer
- couplant
- wrist harness
- screen protector
- protective case
- 2 x AA batteries
- calibration certificate
- operating instructions



## The Display

All gauges have a fully customisable, scratch and solvent resistant colour LCD display. Measurement modes available include Pulsed-Echo (P-E), Echo-Echo ThruPaint™ (E-E) and Velocity mode (for more information on measurement modes, see page 19). A choice of measurement units are available, depending on the measurement mode selected. A stability indicator shows clearly both the strength and reliability of the ultrasonic signal.

## Technical Specifications

	MTG2	MTG4	MTG6	MTG8
Easy to use menu structure in multiple languages	•	•	•	•
Tough, impact, waterproof and dust resistant equivalent to IP54	•	•	•	•
Bright colour screen with permanent backlight	•	•	•	•
Scratch and solvent resistant display; 2.4" (6cm) TFT	•	•	•	•
Large positive feedback buttons	•	•	•	•
USB power supply via PC	•	•	•	•
Low battery indicator	•	•	•	•
Ambient light sensor, with adjustable brightness	•	•	•	•
Emergency light	•	•	•	•
Tap awake from sleep	•	•	•	•
Gauge software updates <sup>1</sup> via ElcoMaster™ Software	•	•	•	•
2 year gauge warranty <sup>2</sup>	•	•	•	•
Limits: user definable audible & visual pass/fail warnings				•
<b>Measurement Mode</b>				
Pulsed Echo (P-E)	•	•	•	•
Echo-Echo ThruPaint™ (E-E)		•	•	•
Velocity Mode (VM)			•	•
<b>Measurement Rate</b>				
4, 8, 16Hz	4Hz	4Hz	4, 8, 16Hz <sup>3</sup>	4, 8, 16Hz <sup>3</sup>
<b>Thickness Range<sup>4</sup></b>				
P-E: 0.63-500mm	•	•	•	•
E-E: 2.54 - 25.40mm		•	•	•
<b>Velocity Range</b>				
			1250 - 10,000m/s	
<b>Measurement Accuracy<sup>5</sup></b>				
	±1% or ±0.1mm		±1% or ±0.05mm	
<b>Measurement Units (selectable)</b>				
	mm		mm or m/s	
Repeatability / Stability Indicator	•	•	•	•
<b>Display Mode:</b>				
Reading	•	•	•	•
Selected statistics			•	•
Scan thickness bar graph			•	•
Run Chart			•	•
Readings and Differential				•
B-Scan cross sectional display				•
<b>Selectable Reading Resolution</b>				
Lo; ie 0.1mm, 10m/s	•	•	•	•
Hi; ie 0.01mm, 1m/s			•	•
<b>On Screen Statistics</b>				
Number of readings n; mean average $\bar{x}$ ; standard deviation $\sigma$			•	•
Lowest reading Lo; Highest reading Hi				•
Low limit value				•
High limit value				•
Number of readings below low limit				•
Number of readings above high limit				•
Nominal Value $\bar{x}$				•

Range

•

**Calibration Options**

Zero set: using the integral zero disc	•	•	•	•
1 - point		•	•	•
2 - point			•	•
Material selection; present choice of 39 materials		•	•	•
Factory; resets to the factory calibration		•	•	•
Velocity (speed of sound)			•	•
Known thickness value			•	•

**Calibration lock: with optional PIN code unlock**

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**Test calibration feature**

• •

**Calibration memories: 3 - programmable memories**

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**Measurement outside calibration warning**

• •

**Data Logging**

Number of readings			1,500	100,000
Number of batches			1	1,000
Reading save function			•	•
Sequential batching; a listed-based storage of readings			•	•
Grid batching; reading storage in a 2 dimensional array				•
Fixed batch size mode; with batch linking				•
Obstruct entry; add 'obstruct' label into grid location				•
Delete last reading			•	•
Date & time stamp			•	•
Review, clear & delete batches			•	•
Alpha numeric batch names; user definable				•
Copy batches and calibration settings				•
Live reading trend graph in batching mode				•
Batch review graph				•

**Data Output**

USB; to computer	•	•	•	•
Bluetooth® to computer, Android™ & iOS devices			•	•

**ElcoMaster™ software**

• •

**Transducer Probe Type**

Dual element

**Auto transducer recognition**

• • • •

**Auto V-path correction**

• • • •

**Battery Type**

2 x AA

**Battery Life (approximate)**

Approx 15 hours continuous use at 1 reading per second

**Operating Temperature**

-10 to 50°C

**Size (w x h x d)**

145 x 73 x 37mm

**Weight (including batteries, without transducer)**

210g

**Part Number (with Transducer)<sup>6</sup>**

MTG2-TXC      MTG4-TXC      MTG6DL-TXC      MTG8BDL-TXC

**Part Number (gauge only)**

MTG4      MTG6DL      MTG8BDL

1 Internet connection required

2 The Elcometer MTG range is extendable within 60 days from date of purchase, free of charge to two years via [www.elcometer.com](http://www.elcometer.com)

3 User selectable default setting in scan mode is 16 Hz

4 Dependent on the material being measured and the transducer being used

5 Whichever is the greater

6 5MHz 1/4" right angle transducer supplied