Elcometer PTG8 Ultrasonic Precision Thickness Gauge

Can be used in accordance with:
EN14127, EN15317

The PTG8 is the top of the range gauge with all the features and functionality necessary for measuring, with precision, material thickness on virtually any material.

With a user definable display, users can choose to view readings, statistical information, bar graph together with the highest (Hi); lowest (Lo); and average (x); reading or a run chart; a trend graph of the last 20 readings.

Measurement Mode

In Scan Mode, readings can be taken at a rate of 16Hz (16 readings per second) over a large surface area. When the transducer is lifted off the surface, the average, lowest and highest thickness values are displayed.

Calibration Options

The PTG8 allows users to store into memory up to three calibrations. Once saved the user can select a calibration without the need to re-calibrate the gauge, ideal for users who are measuring a variety of materials or thicknesses.

Using the gauge's alpha-numeric function, calibration memories can be re-named to suit the calibration setting.

Display Modes

The PTG8 has user definable upper and lower limits with audible and visual pass/fail warnings. Limits can be set for individual readings or for each batch. If a measurement is taken which falls outside set limits, the reading value and the limit icon turns red, the red LED flashes and the alarm beeps.

The PTG8 has Differential Mode; once a user defined nominal thickness value is set, the gauge displays the measured thickness together with the variation from the set nominal value thus indicating areas of the material which are thinner or thicker than expected.

The PTG8 offers B-Scan, a time based, cross sectional 2 dimentional graphical view of the material under test, ideal for relative depth analysis. The zoom of the B-Scan reading can either be set to automatic or can be defined by the user to focus on areas of interest.

Data Logging

The PTG8 can store 100,000 readings in up to 1,000 sequential or grid type batches. Using grid batching, readings are stored in a spreadsheet type format. The Obst feature, allows the user to record an obstruction within the grid.

Data Output

Compatible with ElcoMaster®, PC & Mobile Apps, readings can be downloaded via USB or Bluetooth® to PC, iOS or Android™ devices for further analysis and reporting.

Features

- Interface Echo (I-E) Echo-Echo (E-E)) & Plastic Mode (PLAS) measurement modes
- Measurement range from 0.15mm to 25.40mm
- 2-Point, 1-Point, Material & Factory Calibration options
- Three user programmable calibration memories
- User selectable measurement rate; 4,8,16 readings per second
- User selectable reading resolution; 0.1mm or 0.01mm
- Scan Mode
- Readings, selected statistics, Bar Graph, Run Chart, B-Scan & Differential Mode
- Gauge memory; stores upto 100,000 readings in up to 1,000 sequential or grid batches
- User definable upper and lower limits with audible & visual pass/fail warnings
- USB and Bluetooth® data output to ElcoMaster® and ElcoMaster® Mobile Apps

Introducing the Precision Thickness Gauge PTG

Ergonomic, rugged, accurate and easy to use, the Elcometer NDT PTG range of Ultrasonic Precision Thickness Gauges are ideal for measuring and recording material thickness from just 0.15mm to 25.4mm.

Easy

The PTG 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 ±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 PTG8 has a user selectable measurement rate of 4, 8 and 16 Hz (4, 8 or 16 readings per second). The unit also has a high speed scan mode allowing 140+ readings per minute to be taken on large surface areas.

Powerful

The PTG8 has data-logging functionality. The unit stores up to 100,000 readings in up to 1,000 sequential or grid type batches, with alpha-numeric batch naming. Compatible with ElcoMaster® and ElcoMaster® Mobile Apps, data can be downloaded via USB or Bluetooth® direct to PC, iOS* or Android™ mobile devices for instant report generation.

Rugged

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

Technical Specifications

				PTG6-TXC	PTG8BDL-TXC
Part Number (with Transducer)[1]					
Part Number (gauge only)				**PTG6**	**PTG8BDL**
Easy to use menu structure in multiple languages				■	■
Tough, impact, waterproof and dust resistant equivalent to IP54				■	■
Bright colour screen with permanent backlight				■	■
Ambient light sensor, with adjustable brightness				■	■
Scratch and solvent resistant display; 2.4" (6cm) TFT				■	■
Large positive feedback buttons				■	■
USB power supply via PC				■	■
Gauge software updates2 via ElcoMaster® Software				■	■
2 year gauge warranty[3]				■	■
Limits: 40 definable audible & visual pass/fail warnings					■
Measurement Rate				4, 8, 16Hz	4, 8, 16Hz[4]
Measurement Mode	**Range[5]**	**Accuracy[6]**			
Echo-Echo (E-E)	0.15-10.15mm	±0.015mm (0.15-2.99mm)		■	■
		±0.5% (3.00-10.15mm)	±0.5%		
Interface Echo (I-E)	1.65-25.40mm	±0.015mm (1.65-2.99mm)		■	■
		±0.5%(3.00-25.4mm)	±0.5%		
Plastic Mode (PLAS)	0.15-5.00mm	±0.015mm (0.15-2.99mm)		■	■
		±0.5% (3.00-5.00mm)	±0.5%		
Measurement Units				mm	mm
Repeatability / Stability Indicator				■	■
Display Mode					
Reading				■	■
Selected statistics					■
Scan thickness bar graph					■
Run Chart					■
Readings and Differential					■
B-Scan cross sectional display					■
Selectable Reading Resolution					
Lo; 0.1mm				■	■
Hi; 0.01mm				■	■
Statistics					
Number of readings,n; Mean average, x ; Standard deviation, σ.					■
Lowest reading, Lo; Highest reading, Hi					■
Low / high limit value					■
Reading Range Value					■
Nominal Value					■
Number of readings below low limit					■
Number of readings above high limit					■
Calibration Options					
1 - point				■	■
2 - point				■	■
Material selection; 39 preset materials[7]				■	■
Factory; resets to the factory calibration				■	■
Velocity (speed of sound)				■	■
Calibration Features					
Calibration lock; with optional PIN Lock				■	■
Test calibration feature				■	■
Calibration memories: 3 programmable memories					■
Measurement outside calibration warning					■
Data Logging					
Number of readings					100

Number of batches		1,000
Sequential batching		■
Grid batching		■
Fixed batch size mode; with batch linking		■
Obstruct entry; add 'obst' into grid location		■
Delete last reading		■
Date & time stamp		■
Review, clear & delete batches		■
Alpha numeric batch names; user definable		■
Batch review graph		■
Data Output		
USB to PC	■	■
Bluetooth® to PC, Android™ & iOS devices		■
ElcoMaster® software	■	■
Transducer Probe Type	■	■
Single Element		
Auto transducer recognition	■	■
Auto V-path correction	■	■
Battery Type[8]	2 x AA	
Battery Life[8]	Alkaline: 15 hours	
	Lithium: 28 hours	
Operating Temperature	-10 to 50°C	
Size (w x h x d)	145 x 73 x 37mm	
Weight (including batteries)	210g	

1 PTG supplied with 15MHz 1/4" Microdot right angle single element transducer
2 Internet connection required
3 The Elcometer MTG range is extendable within 60 days from date of purchase, free of charge to two years
4 User selectable default setting in scan mode is 16Hz
5 Dependent on the material being measured and the transducer being used
6 On steel
7 See separate page for lists of preset materials
8 Supplied with Alkaline, Lithium and rechargeable can be used with the gauges, continuous use at 1 reading per second

Large easy to read measurements

Cross Sectional 2D- B-Scan, ideal for relative depth analysis

In scan mode the gauge takes readings at a rate of 16 Hz per second

I-E | E-E | PLAS | 4 Hz | 8 Hz | 16 Hz | B-Scan

Displays explained

The MTG range has a choice of measurement modes allowing the user to select the most appropriate for their application.

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.

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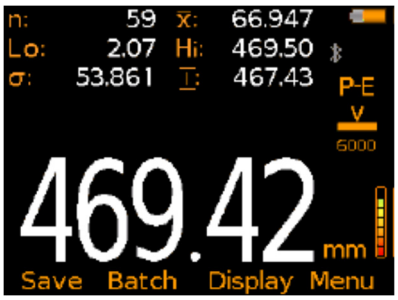
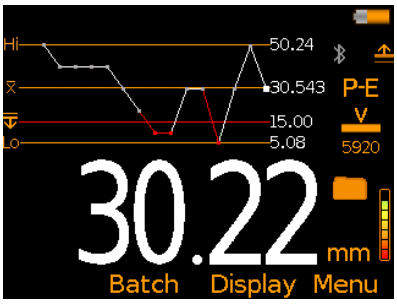


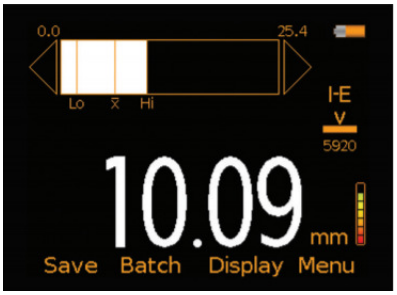
On Screen Statistics

Up to 8 statistical values can be displayed from a choice of number of readings (η) , lowest, highest and average reading (Hi, Lo, ẋ,), standard deviation (σ), low and high limit values, nominal value and range.



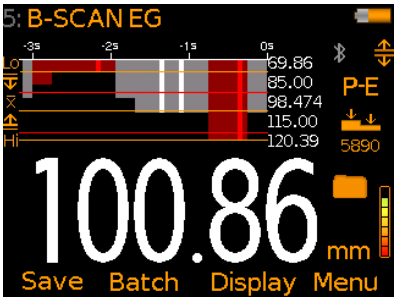
Run Chart

A trend graph of the last 20 readings, showing the variation in material thickness over the test area. The graph is updated automatically as each reading is taken and any readings outside the set and enabled limits are displayed in red thus allowing the user to easily identify areas where corrosion may be present or the material is too thick for purpose.



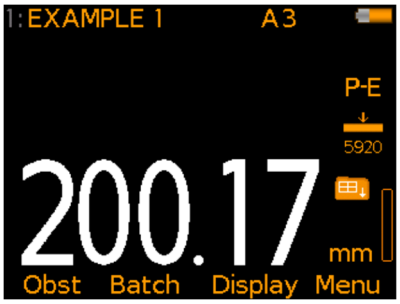
Bar Graph

Bar Graph An analogue representation of the current measurement value together with the highest (Hi), lowest (Lo) and average (x) reading. The graph is updated automatically when each reading is taken.



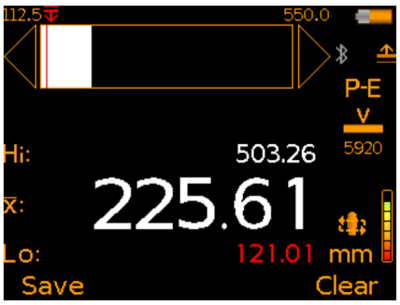
B-Scan Reading

A time based, cross sectional 2D block, graphical view of the material under test, ideal for relative depth analysis. The zoom of the B-Scan reading can be set automatically or can be defined by the user to focus on areas of interest.



Sequential or Grid Batching

The MTG8 can store 100,000 readings in up to 1,000 sequential or grid type, alpha-numeric batches, together with date and time stamp and reading location*. Users have the option to view batch readings, statistics and a graph of all readings stored with the batch. The obstruction feature (Obst)*, allows the user to record areas where measurements could not be taken.

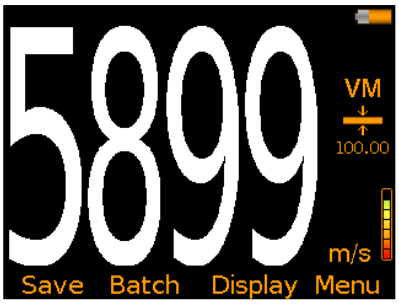


Scan Mode

When enabled, users can slide the transducer over a large surface area whilst the gauge takes readings at a rate of 16 Hz (16 readings per second). During each scan, the live thickness is displayed together with an analogue bar graph showing the thickness relative to the set nominal and any user defined limits, with audible and visual warnings if any readings fall outside set limits. When the transducer is lifted off the surface, the average, lowest and highest thickness value is displayed making scan mode ideal for checking a sample's overall uniformity.

Differential Mode

Once a user defined nominal thickness value has been set, the gauge displays the measured thickness together with the variation from the set nominal value thus indicating areas of the material which are thinner or thicker than expected.



Velocity Mode (VM)

Velocity mode measures the speed of sound of materials and is ideal for determining the homogeneity of a material/alloy and the correct velocity of a material for calibration.

Plastic Mode

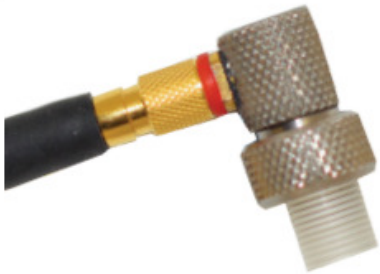
Plastic mode is specifically designed for measuring very thin plastics.

Transducers

The PTG range of intelligent single element transducers has an automatic transducer recognition which ensures correct probe identification even when the transducer is changed.

				Suitable for measuring				Suitable for
Part Number	**Probe Diameter**	**Probe Characteristic**	**Damping**	**Thin Plastics**	**Steel**	**Aluminium**	**Titanium**	**PTG6 PTG8**
15.0 MHz Single Element Transducer								
TXC15M0CM	1/4"	Right Angle	S	■	■	■	■	■
20.0 MHz Single Element Transducer								
TXC20M0CM	1/4"	Right Angle	S	■	■	■	■	■

Packing List



Elcometer PTG8 Ultrasonic Precision Thickness Gauge
15MHz 1/4" Microdot right angle single element transducer
Couplant
Wrist Strap
3 x Screen Protector
Protective Case
Plastic Transit Case
2 x AA Batteries
Calibration Certificate
Two year Warranty Extension Card
Operating Instructions

Video

YouTube Video - How to measure thin materials accurately using the Elcometer PTG8 Ultrasonic Thickness Gauge
(Click on the image to the left to view the video)

When it comes to measuring the thickness of small, thin, or intricate components, how do you quickly and non-destructively measure the thickness of the material, when you don't have access to both sides. Typically, using an ultrasonic precision thickness gauge.

Accessories

Calibration Standards

Calibration blocks are available as a set or individually, allowing users to select the most appropriate thickness for their application. Elcometer calibration standards are manufactured from 4340 steel to a tolerance of ± 0.1% of the nominal thickness and are supplied complete with calibration certificates. The nominal thicknesses below are in mm.

Calibration Standard Sets

Part Number	Description	Nominal Thickness Range	Nominal Thicknesses
T920CALSTD-SET1	Calibration Standard Set	2-30mm	2, 5, 10, 15, 20, 25 & 30mm
T920CALSTD-SET2	Calibration Standard Set	40-100mm	40, 50, 60, 70, 80, 90 & 100mm
T920CALSTD-HLD	Calibration Holder; for thicknesses up to 100mm		

Individual Calibration Standards

Part Number	Nominal Thickness mm
T920CALSTD-2	2
T920CALSTD-5	5
T920CALSTD-10	10
T920CALSTD-15	15
T920CALSTD-20	20
T920CALSTD-25	25
T920CALSTD-30	30
T920CALSTD-40	40
T920CALSTD-50	50
T920CALSTD-60	60
T920CALSTD-70	70
T920CALSTD-80	80
T920CALSTD-90	90
T920CALSTD-100	100

Ultrasonic Couplant

Elcometer has developed a viscous gel to work on both horizontal and vertical surfaces. The temperature range for regular couplant is -15 to 104°C. The Elcometer high temperature gel has a range of up to 398°C for use with high temp transducers.

Part Number	Description	Volume
T92015701	Ultrasonic Couplant	120ml
T92015701-5	Ultrasonic Couplant; Pack of 5 Bottles	120ml
T92024034-7	Ultrasonic Couplant	300ml
T92024034-8	Ultrasonic Couplant	500ml
T92024034-3	Ultrasonic Couplant	3.8l
T92024034-9	High Temperature Couplant	60ml
T92024034-10	High Temperature Couplant 398°C; Pack of 2	60ml

Transducer Adaptors

This adaptor allows dual element, 'non-intelligent' and other transducers with Lemo Connectors from Elcometer and other manufacturers to be used with the MTG product range.

Part Number	Description	Suitable for	
		PTG6	PTG8
T92025657	Transducer Adaptor Single Element[2]	•	•

2 This adaptor allows single element, 'non-intelligent' and other transducers with Lemo Connectors from Elcometer and other manufacturers to be used with the PTG product range.

Delay Lines

Each single element transducer is supplied complete with 9mm and 12mm acrylic delay lines suitable for measuring on steel, aluminium and titanium. If measuring on thin plastics using Plastic Mode (PLAS), a graphite delay line must be used.

Part Number	Description
T92016528	Acrylic Delay Line; ¼" Dia x 9mm
T92016529	Acrylic Delay Line; ¼" Dia x 12mm
T92023853-4	Graphite Delay Line; ¼" Dia

ElcoMaster® Data Management Software

(see separate Datasheet for more info)

Professional inspection reports provide a competitive advantage in today's industrial environment.

ElcoMaster® Data Management Software is a fast, easy to use software solution for all your reporting requirements.

It's not just taking measurements but what you do with the collected data that matters.

As inspectors can spend up to 30% of their work week producing reports, ElcoMaster® saves time and money by producing professional bespoke reports in seconds - even when out on site.

- **Easy to connect -** Using the ElcoMaster® gauge wizard, connecting a gauge & downloading data (via Bluetooth or USB) is fast and easy
- **Import existing reports -** Scan your existing report into ElcoMaster® and drag & drop all your data where you want it, then simply save and print
- **Export, print or send -** Export, print, .pdf or email directly from ElcoMaster® at the click of a button
- **Cloud -** Multi-site access through secure cloud

ElcoMaster® gives you the power to review your data and produce professional reports quickly and easily. Internal wizards guide you through each step, from connecting a gauge to generating a report.

ElcoMaster® Mobile for iPhone and Android™ allows users to Transfer live readings or batches from Elcometer Bluetooth® gauges to mobile phones, tablets or PC's

Android™ Made for iPod iPhone iPad available with Bluetooth compatible with ElcoMaster