

## CG100 Corrosion Thickness Gauges

### Features

- Range of display & measurement options: Pulse-Echo, Echo-Echo, Pulse-Echo Temp, Comp Mode (PETP), Coating Only Mode (CT), Pulse-Echo Coating Mode (PECT)
- Manual or automatic gain control (AGC) with adjustable 110dB range
- Gate control
- Threshold adjustment
- 64 User defined setups
- Multiple language display
- Multiple calibration and material selection options
- High speed scan mode: 250 readings per second (CG100100B and CG100BDL), 50 readings per second (CG100ABDL and CG100ABDL+)
- Differential and minimal thickness alarm modes
- Data storage capability: 4GB internal memory
- ElcoMaster® data management software



The most advanced in the Elcometer NDT range, these easy to use corrosion gauges provide inspectors with all the features necessary to accurately measure the material and coating thickness at the same time.

Offering a full range of measurement modes including: Pulse-Echo Temp Comp Mode (PETP) and Coating Only Mode (CT) to Pulse-Echo Coating Mode (PECT), the CG100 range allows the inspector to choose the right tool for the job.

Featuring manual or automatic gain control (AGC) with adjustable 110dB range to increase the amplitude of the received echo to suit the material properties, the CG100 series are ideal gauges for all applications.

Built-in Gates allow users to set the measurement parameters either on or between waveforms, bypassing any surface echoes or noise from the material.

Threshold adjustment allows users to adjust the sensitivity of the gauge to detect signals with lower amplitudes.

The CG100BDL, CG100ABDL & CG100ABDL+ stores up to 4GB worth of readings with individual waveforms in alpha numeric batches with full data logging and firmware updates via USB data output to ElcoMaster® data management software.

With its high contrasting colour display the CG100ABDL+ has a refresh rate of 60Hz providing users with an instant measurement response.

For a full range of transducers, please refer to the Dual Element Transducers data sheet.

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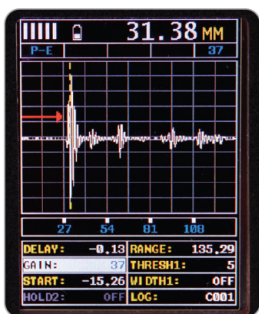
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Specifications

Model & Part Number	CG100B	CG100BDL
Display Mode: Material thickness digits display B-Scan cross sectional display Combined B-Scan and digits display Scan bar display Coating thickness display A-Scan display	• • • •	• • • •
Measurement Mode <sup>1</sup>	PE, PETP (Temp Compensation), EE (ThruPaint™), EEV, CT (Coating) & PECT	PE, PETP (Temp Compensation), EE (ThruPaint™), EEV, CT (Coating) & PECT
Measurement Rate Manual: Scan mode Scan bar display	8 readings per second 250 readings per second 10 readings per second	8 readings per second 250 readings per second 10 readings per second
Measuring Range <sup>2</sup>	PE: 0.63 - 1219.2mm (0.025 - 48") PETP: 0.63 - 1219.2mm (0.025 - 48") EE: 2.54 - 152.4mm (0.100 - 6.0") EEV: 2.54 - 25.4mm (0.100 - 1.0") CT: 0.01 - 2.54mm (0.0005 - 0.100") PECT: 0.63 - 1219.2mm (0.025 - 48") PECT: 0.01 - 2.54mm (0.001 - 0.100")	PE: 0.63 - 1219.2mm (0.025 - 48") PETP: 0.63 - 1219.2mm (0.025 - 48") EE: 2.54 - 152.4mm (0.100 - 6.0") EEV: 2.54 - 25.4mm (0.100 - 1.0") CT: 0.01 - 2.54mm (0.0005 - 0.100") PECT: 0.63 - 1219.2mm (0.025 - 48") PECT: 0.01 - 2.54mm (0.001 - 0.100")
Measurement Accuracy <sup>2</sup>	0.01mm (0.001 inches)	0.01mm (0.001 inches)
Measurement Resolution	0.01mm (0.001 inches)	0.01mm (0.001 inches)
Velocity Calibration Range	309.88 - 18542m/s (0.0122 - 0.7300 in/μs)	309.88 - 18542m/s (0.0122 - 0.7300 in/μs)
Additional Features: High speed scan mode Differential mode Limit alarm mode	• • •	• • •
B-Scan display speed	Variable: 10 to 200 readings per second	Variable: 10 to 200 readings per second
Flaw Mode		
Calibration Setups	64 user-definable setups transferrable to and from a PC archive	64 user-definable setups transferrable to and from a PC archive
Gates		
Damping		
Pulsar Type	dual square wave pulsers	dual square wave pulsers
Gain	automatic gain control (AGC) with 110dB range (limited), or selectable gain: vlow, low, medium hi or vhi	automatic gain control (AGC) with 110dB range (limited), or selectable gain: vlow, low, medium hi or vhi
Timing	Precision TCXO timing with single shot 100 MHz 8 bit ultra low power digitizer	Precision TCXO timing with single shot 100 MHz 8 bit ultra low power digitizer



PE

Pulse - Echo Mode

The normal display mode, measures the total thickness from the base of the transducer probe to the material density boundary (typically the back wall). Ideal for pit and flaw detection.



PETP

Pulse - Echo Temp Comp Mode

Similar to the PE mode, PETP takes into account and compensates for the variations in measurement caused by temperature variations.

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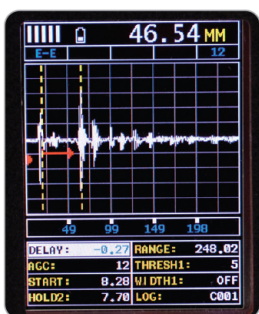
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**CG100 Corrosion Thickness Gauges**

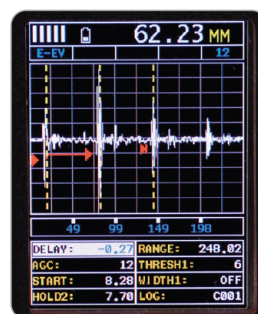
CG100ABDL	CG100ABDL+	Model & Part Number
<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> <p>+ Rectified, - Rectified, Full Waveform (RF)</p>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> <p>+ Rectified, - Rectified, Full Waveform (RF)</p>	<p><b>Display Mode:</b>            Material thickness digits display            B-Scan cross sectional display            Combined B-Scan and digits display            Scan bar display            Coating thickness display            A-Scan display</p>
PE, PETP (Temp Compensation), EE (ThruPaint™), EEV, CT (Coating) & PECT	PE, PETP (Temp Compensation), EE (ThruPaint™), EEV, CT (Coating) & PECT	<b>Measurement Mode<sup>1</sup></b>
8 readings per second 250 readings per second 10 readings per second	8 readings per second 250 readings per second 10 readings per second	<b>Measurement Rate</b> Manual: Scan mode Scan bar display
PE: 0.63 - 30,480mm (0.025 - 1200") PETP: 0.63 - 30,480mm (0.025 - 1200") EE: 2.54 - 152.4mm (0.100 - 6.0") EEV: 2.54 - 25.4mm (0.100 - 1.0") CT: 0.01 - 2.54mm (0.0005 - 0.100") PECT: 0.63 - 30,480mm (0.025 - 1200") PECT: 0.01 - 2.54mm (0.001 - 0.100")	PE: 0.63 - 30,480mm (0.025 - 1200") PETP: 0.63 - 30,480mm (0.025 - 1200") EE: 2.54 - 152.4mm (0.100 - 6.0") EEV: 2.54 - 25.4mm (0.100 - 1.0") CT: 0.0127 - 2.54mm (0.0005 - 0.100") PECT: 0.63 - 30,480mm (0.025 - 1200") PECT: 0.01 - 2.54mm (0.001 - 0.100")	<b>Measuring Range<sup>2</sup></b>
0.01mm (0.001 inches)	0.01mm (0.001 inches)	<b>Measurement Accuracy<sup>2</sup></b>
0.01mm (0.001 inches)	0.01mm (0.001 inches)	<b>Measurement Resolution</b>
0.001mm (0.0001") switchable	0.001mm (0.0001") switchable	<b>Velocity Calibration Range</b>
<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>	<b>Additional Features:-</b> High speed scan mode Differential mode Limit alarm mode
adjustable display speed	adjustable display speed	<b>B-Scan display speed</b>
Basic prove-up flaw detection using single element angle beam transducers	Basic prove-up flaw detection using single element angle beam transducers	<b>Flaw Mode</b>
6 factory & 64 user-definable setups transferrable to and from a PC archive	6 factory & 64 user-definable setups transferrable to and from a PC archive	<b>Calibration Setups</b>
3 fully adjustable gates: start, stop, width & threshold	3 fully adjustable gates: start, stop, width & threshold	<b>Gates</b>
Adjustable damping (50-1500 ohms)	Adjustable damping (50-1500 ohms)	<b>Damping</b>
dual square wave pulsers	dual square wave pulsers	<b>Pulsers Type</b>
manual, automatic gain control (AGC) with 110dB range (limited),	manual, automatic gain control (AGC) with 110dB range (limited),	<b>Gain</b>
Precision TCXO timing with single shot 100 MHz 8 bit ultra low power digitizer	Precision TCXO timing with single shot 100 MHz 8 bit ultra low power digitizer	<b>Timing</b>



**EE**

**Echo - Echo Mode**

Also known as the ThruPaint™ Mode, EE ignores the coating thickness, displaying the material thickness from the top surface of the material to the material density boundary.



**EEV**

**Echo - Echo Verify Mode**

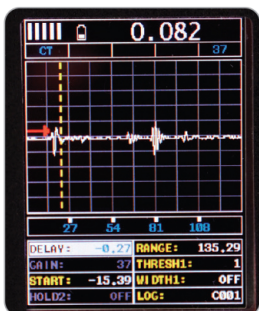
The echo-echo verify mode measures by comparing the values between 3 reflections and is commonly used to eliminate errors from surface coatings and to make measurements in multiple layered materials.

<sup>1</sup> PE: Pulse-Echo Mode, PETP: Pulse-Echo Temperature Compensation Mode, EE: Echo-Echo (ThruPaint™) Mode, EEV: Echo-Echo Verify, CT: Coating Thickness Mode, PECT: Pulse-Echo, Coating Thickness Mode; See page 3 for further information

<sup>2</sup> Measuring range & accuracy depends on material, surface conditions and the transducer selected

## Specifications

Model & Part Number	CG100B	CG100BDL
Memory and Data logging		<ul style="list-style-type: none"> <li>4GB worth of data</li> <li>Sequential and grid logging</li> <li>Alpha numeric batch identification</li> <li>OBSTRUCT indicates inaccessible locations</li> </ul>
Calibration Options	single, two point, velocity & material type	single, two point, velocity & material type
Transducer Probe Type	dual element	dual element
Transducer Frequency Range	1 - 10MHz	1 - 10MHz
Transducer Recognition	automatic & manual - selectable from a list	automatic & manual - selectable from a list
V-path / dual path error correction	automatic	automatic
Probe Zero	automatic & manual (via integrated probe disk)	automatic & manual (via integrated probe disk)
Display	1/8 VGA (grayscale) 62 x 45.7mm (2.4 x 1.8 inches) viewable area	1/8 VGA (grayscale) 62 x 45.7mm (2.4 x 1.8 inches) viewable area
Display Refresh Rate	25Hz	25Hz
Units (selectable)	mm or inches	mm or inches
Backlight	on / off / auto	on / off / auto
Repeatability / Stability Indicator	•	•
Power	3 x AA alkaline and via USB	3 x AA alkaline and via USB
Battery Life (approximate)	Alkaline - greyscale 35hrs, colour 12hrs Nicad - greyscale 10hrs, colour 12hrs Ni-MH - greyscale 35hrs, colour 12hrs	Alkaline - greyscale 35hrs, colour 12hrs Nicad - greyscale 10hrs, colour 12hrs Ni-MH - greyscale 35hrs, colour 12hrs
Low Battery Indicator	•	•
Battery Save Mode	auto	auto
Operating Temperature	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)
Size (w x h x d)	63.5 x 165.0 x 31.5mm (2.5 x 6.5 x 1.24 inches)	63.5 x 165.0 x 31.5mm (2.5 x 6.5 x 1.24 inches)
Weight (including batteries)	383g (13.5oz)	383g (13.5oz)
Aluminium case design with gasket sealed end caps, waterproof membrane keypad	•	•
Transducer Connector Type	LEMO	LEMO
Interface	USB	USB
Packing List	Elcometer NDT CG100B gauge, couplant, carry case, user manual, test certificate, 3 x AA batteries	Elcometer NDT CG100BDL gauge, couplant, carry case, user manual, test certificate, 3 x AA batteries, ElcoMaster™ 2.0 software, transfer cable



## CT

## Coating Only Mode

Displays the thickness of the coating applied to the material.



## PECT

## Pulse - Echo Coating Mode

Displays both the material thickness (PE) and the coating thickness (CT) at the same time.

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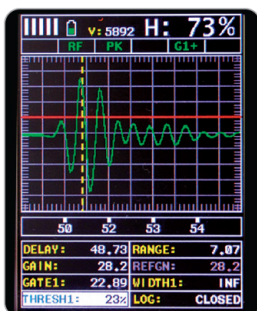
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## CG100 Corrosion Thickness Gauges

CG100ABDL	CG100ABDL+	Model & Part Number
<ul style="list-style-type: none"> <li>12GB worth of data</li> <li>Sequential and grid logging</li> <li>Alpha numeric batch identification</li> <li>OBSTRUCT indicates inaccessible locations</li> </ul>	<ul style="list-style-type: none"> <li>12GB worth of data</li> <li>Sequential and grid logging</li> <li>Alpha numeric batch identification</li> <li>OBSTRUCT indicates inaccessible locations</li> </ul>	Data logging
single, two point, velocity & material type	single, two point, velocity & material type	Calibration Options
dual element & flaw prove up	dual element & flaw prove up	Transducer Probe Type
1 - 10MHz	1 - 10MHz	Transducer Frequency Range
automatic & manual - selectable from a list	automatic & manual - selectable from a list	Transducer Recognition
automatic	automatic	V-path / dual path error correction
automatic & manual (via integrated probe disk)	automatic & manual (via integrated probe disk)	Probe Zero
1/8 VGA (grayscale) 62 x 45.7mm (2.4 x 1.8 inches) viewable area	1/4 VGA AMOLED colour display 57.6 x 43.2mm (2.27 x 1.78 inches) viewable area	Display
25Hz	60Hz	Display Refresh Rate
mm or inches	mm or inches	Units (selectable)
on / off / auto	adjustable brightness	Backlight
•	•	Repeatability / Stability Indicator
3 x AA alkaline and via USB	3 x AA alkaline and via USB	Power
Alkaline - greyscale 35hrs, colour 12hrs Nicad - greyscale 10hrs, colour 12hrs Ni-MH - greyscale 35hrs, colour 12hrs	Alkaline - greyscale 35hrs, colour 12hrs Nicad - greyscale 10hrs, colour 12hrs Ni-MH - greyscale 35hrs, colour 12hrs	Battery Life (approximate)
•	•	Low Battery Indicator
auto	auto	Battery Save Mode
-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	Operating Temperature
63.5 x 165.0 x 31.5mm (2.5 x 6.5 x 1.24 inches)	63.5 x 165.0 x 31.5mm (2.5 x 6.5 x 1.24 inches)	Size (w x h x d)
383g (13.5oz)	383g (13.5oz)	Weight (including batteries)
•	•	Aluminium case design with gasket sealed end caps, waterproof membrane keypad
LEMO	LEMO	Transducer Connector Type
USB	USB	Interface
Elcometer NDT CG100ABDL gauge, couplant, carry case, user manual, test certificate, 3 x AA batteries, ElcoMaster™ 2.0 software, transfer cable	Elcometer NDT CG100ABDL+ gauge, couplant, carry case, user manual, test certificate, 3 x AA batteries, ElcoMaster™ 2.0 software, transfer cable	Packing List



### FLAW MODE

#### Basic Flaw Mode

Basic prove-up flaw detection using single element angle beam transducers is available on the CG100ABDL and CG100ABDL+ corrosion thickness gauges.

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