elcometer

Elcometer 331 Covermeters & Half-Cell Meters

Can be used in accordance with Test Methods:
ACI 318, ASTM C876-91, BS1881:201*, **BS1881:204, BS8110,** CP 110*, **DGZfP:B2, DGZfP:B3, DIN 1045, EC2, SIA 262, SS-EN 206, Concrete Society Technical Report 60, UNI 10174**

An easy to use gauge that quickly and accurately locates/orientates reinforcement bars in concrete and measures the depth of cover over the rebar.

Designed to meet IP65 this rugged waterproof gauge can be used in the harshest of environments

User Friendly

- Easy to transport and store
- Ergonomically shaped case for comfort
- Single handed operation: All functions can be accessed & controlled through 4 simple keys/buttons

Accurate

- Locate and determine orientation of rebar quickly, easily & accurately
- Up to 240,000 readings can be stored on the gauge for detailed reporting
- Memory and data logging with data output to PC or direct to printer
- Graph Plotting allows an immediate visual indication of results

Reliable

- Stainless Steel rebars can be located by the THD Model
- Battery packs can be charged in the unit or externally. Additional batteries allow continued use

Tough

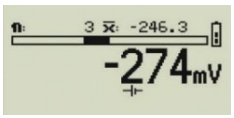
- Specifically designed for use on-site
- Rugged, waterproof IP65 case provides protection against the elements
- Backlit screen for viewing in dark environments

Efficient

- Rebar locator, concrete covermeter and half-cell measurement all available in a single gauge - (selected models)
- Intuitive menus enable each gauge to be used straight from the box

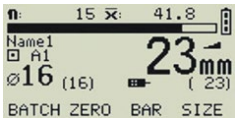
Powerful

- Links to Covermaster™ Software
- Ultimate data management tool to store cover & half cell readings and produce professional reports
- On Screen graphic display provides visual assessment of readings allowing identification of areas of low concrete cover or potential areas of corrosion

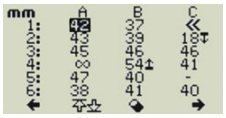


Cover Display Screen

- Alternative / Typical Data Review Screen View
- Backlit screens for use in dark conditions
- Easy to use menus, in multiple languages to enable access to all data needed whilst on site

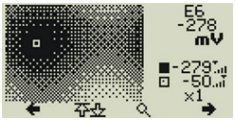


- without constant reference to the instruction book
- Alternative view shows the typical display when using the deep cover search head
- Bar size and depth of cover can be input manually to suit specific requirements
- Typical data review screen clearly displays where readings are below or above a user
- specified tolerance, where a reading has not been taken
- Units of measurement can be displayed in mm or inches for cover, or mV for Half-Cell



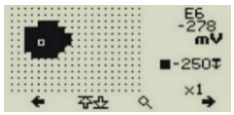
Half-Cell Mode

- Typical Screen View
- Elcometer 331 Model BH/SH/TH/THD can read both Cover and Half-Cell Values
- Elcometer 331 Model B can read Cover Values only
- Data logging information displayed on screen
- Menu soft keys are visible in Elcometer 331 Model SH and TH



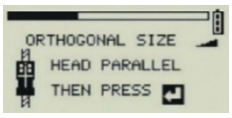
Graphics Plot Mod

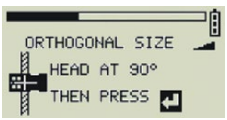
- eHalf-Cell Mode - the gauge indicates the areas with the most potential for corrosion
- Covermeter mode - the gauge indicates the depth of cover
- Black indicates most potential for corrosion
- White indicates least potential for corrosion with varying greyscale shade in between
- Zoom feature allows the user to take a closer look at different areas that are of interest



Threshold View

- Ideal method for a simple pass or fail analysis
- Once the threshold value has been set, anything before the value is shown in black,
- while anything over the value is shown in white





Autosizing and Orthogonal Function

- Autosizing automatically estimates the size of rebar and the depth of cover
- If this estimated figure differs greatly from your expected rebar size or you do not know the expected rebar size, the orthogonal size function provides an of bar size
- accurate measurement
- The step by step directions for orthogonal function on the covermeter make the accurate
- sizing of bars quick and easy

Data Logging Feature

- Simple Data Management on the Elcometer 331 Models SH, TH and THD
- The Elcometer 331 Model SH can store up to 10 batches of 1,000 cover or half-cell readings, with batch statistics, ready for evaluation and report generation using Covermaster™ Software package
- The Elcometer 331 TH and THD models have user definable memory batches with either linear or grid batch data logging modes. (Linear batching is where data is stored in a batch one reading after another)
- Grid batches allow data to be stored in a 'spreadsheet format' with each cell relating to the survey area typically mapped out on the structure prior to inspection. The grid batch feature facilitates fast surveying for both cover and half-cell readings. Problem areas that do not fall within specification can be immediately identified and marked directly on the concrete
- Cover and half-cell readings can be recorded and 'overlaid' in each grid location

Powerful Statistics Feature

- Continually calculates and displays the statistical analysis of readings as they are taken. So, while the covermeter is in use, you are always informed and know exactly how your site survey is progressing
- Statistics values are also calculated for the readings within each batch and these values are stored in the batch along with all individual readings

* Standards not in bold have been superseded but are still recognised in some industries

Technical Specification

Product Features					
Model	B	BH	SH	TH	THD
Covermeter /rebar location	■	■	■	■	■
Half-Cell measurement		■	■	■	■
Rebar orientation	■	■	■	■	■
Depth of cover	■	■	■	■	■
Large cover (thickness) reading mm or inches	■	■	■	■	■
Large graphics display with backlight	■	■	■	■	■
Multiple language menu structure	■	■	■	■	■
Signal strength bar	■	■	■	■	■
Interchangeable heads with LED & keypad	■	■	■	■	■
User selectable bar range sizes & numbers	■	■	■	■	■
Rugged waterproof case (IP65)	■	■	■	■	■
Adjustable beep volume & earphone socket	■	■	■	■	■
Measurement sound modes					
Locate (tone increases as head approaches rebar)	■	■	■	■	■
Under Cover (tone only sound for low cover)			■	■	■
Maxpip™ (tone only as head passes rebar centre)			■	■	■
Large half cell reading mV		■	■	■	■
Automatic bar size estimate			■	■	■
Orthogonal bar size calculation			■	■	■
RS232 Output - direct to printer or PC			■	■	■
Covermaster™ Software			■	■	■
Statistics			■	■	■
Minimum & maximum cover limits			■	■	■
Date & Time			■	■	■
Memory			■	■	■
Linear batch memory			10 linear batches of 1,000 readings each	Up to 200 batches of 1000 readings#	Up to 200 batches of 1000 readings#
Grid batch memory				Up to 240,000 readings#	Up to 240,000 readings#
User certified batch size				■	■
Graphics plot				■	■
Threshold plot				■	■
Stainless steel measurement mode					■

Linear batch mode: up to 200 batches of 1,000 readings each Grid batch mode: up to 1,000 batches, maximum number of readings: 240,00

Part Number	Description	Certificate
W331B---4	Elcometer Covermeter Model B	
W331BH--4	Elcometer Covermeter and Half-Cell Meter Model BH	o
W331SH--4	Elcometer Covermeter and Half-Cell Meter Model SH	o
W331TH--4	Elcometer Covermeter and Half-Cell Meter Model TH	o
W331THD-4	Elcometer Covermeter and Half-Cell Meter Model THD	o
Power supply	7.4V battery pack provides up to 32 hours of continuous use (20 hrs if backlight is on)	
	Rechargeable in 4 hours either inside or outside the gauge using an external charger	
Operating Temperature	0 to 50°C	
Dimensions	230 x 130 x 125mm	
Weight	1.6kg	

o Optional Calibration Certificate available

Elcometer 331 Search Heads & Half-Cell Probes

Part Number	Description
TW33119124-1A	Elcometer 3312 Standard Search Head
TW33119124-2A	Elcometer 3312 Narrow Pitch Search Head
TW33119171A	Elcometer 3312 Deep Cover Search Head
TW33119223-1A	Elcometer 3312 Borehole Probe 0 - 40cm
TW33119223-2A	Elcometer 3312 Borehole Probe 0 - 100cm
TW33119223-3A	Elcometer 3312 Borehole Probe 0 - 16"
TW33119223-4A	Elcometer 3312 Borehole Probe 0 - 40"
TW331CUKIT	Elcometer 3312 Half Cell Probe Kit Cu/CuSO4 (Cannot be used with Model B)
TW331AGKIT	Elcometer 3312 Half Cell Probe Kit Ag/AgCl (Cannot be used with Model B)
TW33119688-1	Elcometer 3312 Half Cell Probe Cu/CuSO4 (Cannot be used with Model B)
TW33119688-2	Elcometer 3312 Half Cell Probe Ag/AgCl (Cannot be used with Model B)
TW33120014D	Elcometer 3312 High Tensile and Stainless Steel Dual search head (Only with the Model THD)

Packing List

(battery in the Covermeter)

(battery removed)

Standard Items

Rechargeable Battery Pack
Charger (UK, US & EU)
Earphone
Shoulder Strap
Plastic Carry Case
Operating Instructions

Model B

Concrete Covermeter
Standard Search Head
Search Head Connecting Cable

Model BH, SH, TH & THD

Concrete Covermeter with Half-Cell function
Search Head connecting Cable

Model SH, TH & THD

Also supplied with Covermaster™ Software and PC cable.

* Search Heads and Half-Cell Probes are not included as standard and must be ordered separately

Accessories

Standard Search Head

Design to meet most of your measurement requirements.

Part Number	TW33119124-1A
Range	40mm bar 15mm to 95mm
	8mm bar 8mm to 70mm
Dimensions	155 x 88 x 42mm
Sensing area	120 x 60mm

Narrow Pitch Search Head

Accurately measures the cover thickness when the gaps (pitch) between each of the rebars are close together.

Part Number	TW33119124-2A
Range	40mm bar 8mm to 80mm
	8mm bar 5mm to 60mm
Dimensions	155 x 88 x 42mm
Sensing area	120 x 60mm

Deep Cover Search Head

The ideal search head for accurately measuring rebars that are deep within the structure.

Part Number	TW33119171A
Range	40mm bar 35mm to 180mm
	8mm bar 25mm to 160mm
Dimensions	170 x 94 x 54mm
Sensing area	160 x 80mm

Dual Search Head for high tensile and stainless steels

The search head specifically designed to locate high tensile and stainless steel.

Part Number	TW33120014D
Range	40mm bar 35mm to 180mm
	8mm bar 25mm to 160mm
Dimensions	170 x 94 x 54mm
Sensing area	160 x 80mm

Borehole Probe

The solution for locating tendon ducts and multiple layers of rebar lying deep within the concrete.

Part Number	
Metric	Imperial
TW33119223-1A Short	TW33119223-3A Short
TW33119223-2A Long	TW33119223-4A Long
Measurement depth	Short Probe: 0 - 40cm
	Long Probe: 0 - 100cm
Approximate detection ranges	Tendon duct (70mm diameter): up to 90mm

Half-Cell Kit

Consisting of either a copper electrode in a copper sulphate solution or a silver electrode in a sodium chloride solution, each half cell is a sealed unit - no need to mix chemicals.

Supplied with a 25m / 80' cable, every half-cell probe is guaranteed for 5 years.

Description	Part Number
Copper/Copper Sulphate	TW331CUKIT
Silver/Silver Chloride	TW331AGKIT

Extension Cable 100m / 325ft

The extension cable for use with the half-cell kits gives the flexibility to take readings in difficult to reach areas.

Part Number	TW33119683

Verification Block

The verification block allows the user to check the calibration of their gauge in order to ensure maximum measurement accuracy.

Part Number	TW33119218

Extension Arm Kit

This kit allows the user to scan bridge decks and floor areas using the hand-held search heads from a standing position. Both the standard or narrow pitch search head can be attached to the extension arm.

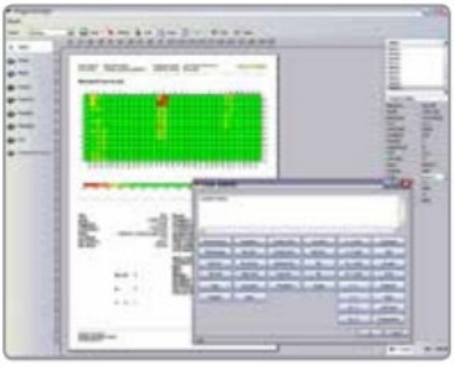
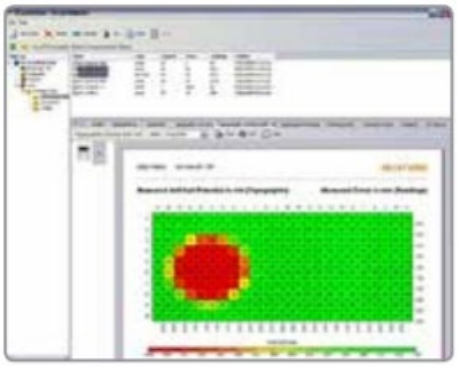
Part Number	TW33119222

Elcometer 331 CoverMaster Software

Elcometer's CoverMaster™ software will manage your data efficiently and effectively.

Data is transferred quickly into the CoverMaster™ software data management system via RS232 connection. Both Covermeter and half-cell readings can be stored together with associated photographs, Word documents, Excel spreadsheets and other files.

CoverMaster™ software is supplied free of charge with all Elcometer 331 models that have batch data storage ie SH, TH & THD.

Features

- Data easily translated into a typographic view giving you all the information you need at a glance
- Data for each reading can be presented in colour or can be shown in greyscale, complete with reading values in each grid
- Site survey data from both cover and half cell measurements can be shown on the same typographic (or gradient) chart
- Reports can be fully customised allowing corporate logos, photos and memos to be added providing a fully comprehensive report for clients
- All survey information in one place, CoverMaster™ links directly with Excel™, Word™ and PowerPoint™ files, it is simple to analyse and assess your results
- CoverMaster™ - one platform for the storage of data, notes, photographs, PDF files for the creation of comprehensive reports