

elcometer® 266 DC Portable Holiday Detector

Can be used in accordance with: ISO 2746,
ANSI/AWWA C 213, AS3894.1, ASTM D4787, ASTM D5162, ASTM G 6, ASTM G 62, BS1344-11,
EN14430, JIS G3491, JIS G3492, NACE RP0274, NACE RP 04901, NACE RP0188

The premature corrosion of a substrate is often due to the failure of its coating. Major causes of failure are flaws in the finished coating, these include **pinholes, holidays, inclusions, thin spots and bubbles**. The consequent cost of repairs, loss of production and contamination of the process can be considerable. Early inspection of coating flaws will prevent the expense and inconvenience of failure.



At a glance:

- Safer, easier & more reliable testing than ever before
- Avoids coating damage by limiting current
- Ideal for field, site or laboratory testing

Features

The Elcometer 266 has been specifically designed to revolutionise high voltage DC testing of coatings by making it safer, easier and more reliable than previously possible.

- **Current limiting to avoid coating damage:** When the Elcometer 266 detects a flaw, and sparks, the current flow reduces to a low level, minimising risk to both the user & the coating.
- **Automatic voltage calculator:** No need for lookup tables, simply enter the coating thickness value and select the standard & the gauge will automatically set the voltage.
- **Safety hand grip:** Ensures that high voltage can only be generated when the handle is being held.
 - Specialised ribbing provides superior protection while an optional second hand grip is ideal for two handed use.
 - Dual safety switch on handle to avoid accidental switch on
- **Voltage adjustable using the keypad:** No need for screwdriver:
 - 0.5kV - 1kV in 50V steps
 - 1kV to 30kV in 100V steps
- **Internal jeep tester:** Removing the need for 2 gauges. The closed loop system with internal voltmeter guarantees the voltage output at all times.
- **Specialised handle design:** Extended ribbing on the handle provides an effective barrier between the high voltage and the user.
- **Rugged and waterproof to IP65:** Rugged, waterproof IP65 case is sealed against the elements.
- **Accurate sensitivity adjustment:** Allows use on metallised or slightly damp coatings.
- **Rechargeable & replaceable battery packs:** Battery packs can be charged inside or outside the gauge for continued use
- **Interchangeable handles:** 0.1–5kV, 0.1–15kV or 0.1–30kV adjustable in 0.1kV steps.
- **Adapter as an accessory:** Enables use of accessories from other manufacturers

Features displayed visually



No need to use look up tables with the integrated voltage calculator. Enter the test standard and the coating thickness and the gauge will automatically program the correct voltage.



Interchangeable Probe Handles:

- 500 - 5,000 Volts
- 500 - 15,000 Volts
- 500 - 30,000 Volts



Large, backlit display enables easy viewing even in dark environments. When a flaw is detected the backlight also flashes.



Internal calibrated jeep tester and closed loop system ensures that the generated test voltage is accurately measured and continuously controlled, regardless of climatic conditions.



The optional second hand grip is designed for two handed use without compromising its safety. Ideal for testing pipes and tank floors.



Adjust voltage via keypad on the gauge, no need for screwdrivers.

Sensitivity to current can be manually preset or automatically adjusted by the gauge for partially conductive coatings.



Elcometer 266 can be used with the accessories from the following gauges:

- Elcometer 236 & Elcometer 136
- Models AP, APS, AP/S1 & AP/S2
- Models 780, 785 & 790
- Models 10/20 & 14/20



Rechargeable battery packs can be charged inside or outside the gauge. Batteries are fully charged within 4 hours and provide up to 40 hours continuous use between charges.



Bright LEDs on the handle, as well as a loud audible alarm, clearly indicate if the gauge is on (Red) and when a spark is detected (Blue).



The easy to use menu driven displays can be viewed in multiple languages for optimum versatility.

Safety Features



2-stage safety switch ensures that if the Elcometer 266 handle is not gripped, the handle will switch off.



The extended ribbing provides extra protection to the user and has been specifically designed to meet standard EN61010. High voltage testing has never been safer.



The speaker on the gauge clearly emits a ticking noise to indicate that there is voltage at the handle.



A loud audible alarm is activated when a spark is detected. The beep volume can also be adjusted to ensure it can be heard - even in noisy environments.

Technical Specifications

Model	D266----2		
Voltage	Range of Coating Thickness		
0 - 5kV handle	0 – 1.6 mm		
0 - 15kV handle	0 – 3.75 mm		
0 - 30kV handle	0 – 7.5 mm		
Waterproof IP65 case			
High voltage output accuracy	±5% or ±50V below 1000 Volts		
Measured current flow accuracy	±5% of full scale		
Display resolution	100 Volts, 1μA		
Output current	0 - 100 μA maximum		
Operating temperature	0°C to 50°C		
Power supply	Internal rechargeable lithium ion battery, fully charged within 4 hours		
Typical battery life (backlight off)	DC5: 40 hours	DC15: 20 hours	DC30: 10 hours
Typical battery life (backlight on)	DC5: 20 hours	DC15: 15 hours	DC30: 8 hours
Instrument case	High impact ABS		
Earth lead length	10m		
Dimensions	520 x 370 x 125mm		
Weight	Base unit (including battery pack): 1.2kg Handle: 0.6kg		

Packing list

Elcometer 266 DC Holiday Detector including :

- lithium battery
- curly connection cable for high voltage handle
- 10m earth signal return lead with crocodile clip
- battery charger and mains cable
- band brush
- shoulder strap
- tough plastic carrying case
- operating instructions

The Elcometer 266 DC Holiday Detector does not include the handle, select the part number for your required handle voltage from the part numbers listed below.

Part Numbers

Model	Description	Part Number
Elcometer 266	Elcometer 266 DC Holiday Detector	D266----2
Handles	Elcometer 266 DC5 Handle	T26620033-1
	Elcometer 266 DC15 Handle	T26620033-2
	Elcometer 266 DC30 Handle	T26620033-3

Typical Applications

The Elcometer 266 is ideal instrument to use when testing :

- Insulating coating on oil, gas and water pipelines made from metal or concrete.
- Bitumen or epoxy on concrete eg. storage tanks, water and sewage treatment facilities.
- Flexible membranes on concrete bridge decks
- Vitreous enamel on steel eg. chemical reactors or storage tanks
- High voltage testing of insulation

The sensitivity can be adjusted to ignore stray current flow so that only the flaws are detected.

Test Method - High Voltage Holiday Detection

The High Voltage Detection Technique locates flaws in insulating coatings on conductive substrates. A power supply within the instrument generates a high DC Voltage which is supplied to a suitable probe. An earth voltage return lead from the instrument is connected to an uncoated area of the metal of the test substrate.

As the probe is passed over the coated surface, a flaw is indicated by a spark at the contact point with an audible alarm in the detector and a visual alarm in the probe handle.

Note: This principle uses the principle of an electric current conducting through a material. When a spark occurs, the circuit is closed and the alarm sounds indicating a flaw. Varying the DC Voltage varies the distance a spark will "jump" to the metal substrate. The maximum distance a spark will jump is dependant on the dielectric strength of free air.

Pinhole & Porosity Detection

Premature corrosion of a substrate is usually due to the failure of the coating. A major cause of failure is the presence of flaws in the finished coating.

Collectively referred to as a coating's porosity the main types of flaw are described below:

Runs & Sags : The wet coating moves under gravity leaving a thin dry film.

Cissing : Occurs when a coating does not re-flow to cover the voids generated by air bubbles being released from the surface of the coating.

Cratering : Occurs when the substrate is wet or if the coating has poor flow characteristics, thus creating voids in the coating.

Pinholes : Caused either by air entrapment which is then released from the surface, or by the entrapment of particulates (dust, sand etc) which do not stay in place.

Over Coating : If too much coating is applied to a substrate, as the coating cures it can crack from internal stresses of the coating.

Under Coating : Areas not coated, or the coating flows away from the particular edges, corners or a substrate and welds. Furthermore over a rough surface profile, insufficient coating may leave the profile's peaks exposed.

NB : The High Voltage Technique can be used to locate flaws in coatings on concrete. As most concrete conducts electricity (due to moisture inherent in concrete), the Elcometer 266 can be used.