

PINHOLE / HOLIDAY DETECTORS PHD 1 – 20 & PHD 2 – 40



INTRODUCTION

The Sheen Pinhole/Holiday Detectors are designed to be a fully portable test instrument delivering an adjustable stabilised D.C. output voltage of 1kv to 20kv or 2kv to 40kv for the detection of Pinholes, Porosity or Holidays on a wide range of non-conductive dielectric (insulating) coatings and linings.

FEATURES

- *Lightweight and portable with built in charger unit.*
- *Clearly visible LCD display shows the test voltage to 1% accuracy.*
- *Audible and visual alarm fault indicators.*
- *Output ranges 1 – 20kv or 2 – 40kv.*
- *Coating thickness of between 60 microns to 26mm can be tested.*
- *Safety switch incorporated in the test probe handle.*
- *Power limited output for operator safety.*
- *Calibration certificate to national standards.*
- *Variable sensitivity for testing on concrete substrates or moist surfaces.*

How is the test voltage determined ?

The test voltage needs to be high enough to find a fault but not too high as to cause one. With reference to B.S.358 (Measurement of voltage with sphere gaps) it can be seen that 32,000 volts will jump across a gap of 1cm between spheres of 5cm diameter. The same voltage will jump a gap of nearly 3cm between needles. This is because the shape of the electrode effects the point at which corona discharge starts i.e. the sharper the points on the electrode the lower the voltage necessary for corona discharge to start.

Sparkover, or complete temporary breakdown of the air between the electrodes, will occur when the voltage is increased to cause localised breakdown.

This soon spreads throughout the whole of the inter-electrode space and gives the required number of ions to carry the current (this can be tens of amperes). With this sudden increase in current there is a corresponding fall in the voltage across the electrode to a very low level.

For thicker types of material in the range 1mm to 30mm the formula used in the NACE Standard RP-02-74 has been found to work well in most cases. The formula is Test Voltage = 1250 x the square root of the coating thickness in mils (0.001"), or Test Voltage = 250 x the square root of the coating thickness in microns (0.001mm).

After the test voltage has been calculated it is necessary to check that the voltage is not so high as to damage the material. The Dielectric Strength is the voltage at which the material starts to break down; this is expressed in volts per mm, normally with D.C.

TECHNICAL SPECIFICATION

	PHD 1 – 20	PHD 2 - 40
Operating range	1 – 20 kV D.C.	2 – 40 kV D.C.
Variable sensitivity	0 - 500 μ A	0 - 500 μ A
Maximum continuous current	<1mA	<1mA
Operating time (approx.)	10 hours	7 hours
Weight	6.5 Kg	6.5 Kg
Dimensions	W21cm x H12.5cm x D26.5cm	W21cm x H12.5cm x D26.5cm
Meter accuracy	+/- 1%	+/- 1%
Mains voltage for charging both models: 110V - 240V 50/60 Hz AC automatic selection.		

COMPLETE KIT INCLUDES:

- PHD 1 – 20 or 2 – 40 unit.
- Shoulder bag.
- Test probe handle with high voltage lead.
- Mains lead.
- Earth lead (5m).
- Steel drum brush.
- Trimming tool.

MAINTENANCE / CALIBRATION

The PHD Holiday Detectors are designed for minimum maintenance by the user. It is only necessary to keep the battery fully charged and check the condition of voltage cables, switches etc.

However we do recommend that the instrument be returned for re-calibration annually.

ORDERING INFORMATION

Ref. PHD 1 – 20 1 to 20Kv Pinhole/Holiday Detector
Ref. PHD 2 – 40 2 to 40Kv Pinhole/Holiday Detector

Owing to continuous development. we reserve the right to introduce improvements and modify specifications without prior notice.

Sheen INSTRUMENTS

Unit 4, St. Georges Ind. Est., Richmond Road, Kingston, KT2 5BQ England.

Tel: +44 (0) 20 8541 4333 Fax: +44 (0)20 8549 3374

Internet : www.sheeninstruments.com Email: info@sheeninstruments.com