



Operator's Handbook
for

Compact
Wet Sponge
POROSITY DETECTOR

Complies with the requirements of:
Australian Standard AS3894.2-2002
(Wet Sponge Testing),
ASTM G62-A, NACE RPO274-98,
ASTM G6 and AS1580.485.1



CE Marked PCWI Compact Detectors comply with the requirements of EMC Directives 89/336/EEC EMC and its amending directives.

CERTIFICATE OF CALIBRATION



Model : Compact Detector
Manufacturer: PCWI Technology Pty Ltd
Serial No.:
Tolerance.: ±5%

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Newcastle - Australia
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Conformance: This detector has been tested at a series of voltages from 0 to 60,000 Volts against a Certified Meter and High Voltage Probe, Report Number 209852 / Pulse Crest Meter Report Numbers 01-01851-A, 01-01851-B, 01-01851-C, 01-04258-A, 54019, 54819 and 723 0135/03, using AS 2886-1986 as a guide. The Detector complies with PCWI Standards of Manufacture.

PCWI's Laboratory complies with the requirements of AS ISO/IEC 17025-1999 'general requirements for the competence of testing and calibration laboratories'. All calibrations are traceable to National and International Standards.

Note: It is recommended that the unit be periodically checked prior to use with a Certified PCWI Crestmeter.

SIGNED: _____
Laboratory Technician



PCWI Technology Pty Ltd ABN 96 078 337 354

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INTRODUCTION

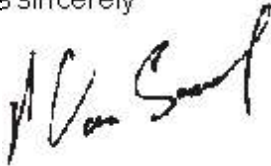
Thank you for choosing the PCWI Wet Sponge Porosity Detector for low voltage testing of coatings for the presence of pinholes. **Two models** are available: a **selectable 9, 67.5 & 90 Volt** unit; and a **fixed 67.5 Volt** unit.

PCWI have designed these instruments with care, to provide ongoing efficiency under comprehensive testing. Under reasonable care in operating, the unit will provide many years of trouble free detection.

To complement these units, PCWI maintains a comprehensive range of test analysis and Measuring Instruments for the coatings industry as well as providing appropriate Certifications.

PCWI, in a continuing desire to achieve the maximum in corrosion detection competence, welcomes user enquiries and recommendations.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Paul Van Gaal', written in a cursive style.

Paul Van Gaal

1.0 SAFETY PRECAUTIONS:



All hand-held test equipment should be operated by responsible, trained and authorised personnel.

It is essential that this Operator Handbook be read and fully understood **before** the unit is turned on.

CAUTION



The Porosity Detector puts out voltage. Should the operator accidentally make contact with the test electrode, they may experience a mild shock or zap, and in order to avoid this possibility, the wearing of rubber gloves is recommended.

Furthermore, the operator should enjoy good health and not suffer from a cardiac condition. **If the operator has a pacemaker, then they should not use this equipment.**

This equipment should only be used for the purpose for which it was designed, ie: checking the porosity, or electrical breakdown, of dielectric or insulating materials.

It is recommended that testing should be carried out well clear of personnel not involved in the testing procedure, or in such a position whereby the surprise of receiving an electric shock could cause a related accident, if for example, tests being carried out close to moving or rotating machinery, or in such an unstable position that the operator could fall and injure themselves.

It is also recommended that the Detector not be operated within close proximity of sensitive electronic apparatus, such as computer equipment.

DANGER

Do not use a Porosity Detector in any combustible or flammable atmosphere, as a test voltage can cause an arc or spark to be generated and an explosion could result.

Always consult the plant or safety officer before carrying out a test procedure.

WET SPONGE TESTING

The PCWI Wet Sponge Porosity Detector detects pinholes in coatings non-destructively up to 500µm employing the “wet sponge method”. A voltage from the battery supply is transmitted through the probe and dampened sponge attached. Since the instrument’s earth is connected to the substrate, when a flaw is encountered, the conductive path is made and the alarm sounds.

2.0 OPERATION

1. Connect the earth and probe leads to the appropriate terminals (green for earth, red for probe) on the instrument.
2. Attach the sponge to the probe handle, using the bolt & nut supplied.
3. Moisten the sponge with water: too much water will affect instrument performance. The addition of a wetting agent will assist in breaking down the surface tension. The sponge should be damp, squeeze until water ceases to drip from it.
4. Switch on and select the voltage required via the Selection switch on the front panel: 9V for coatings up to 300µm; 67.5V for coating assessment to ASTM standards, and 90V for coatings up to 500µm. **Note: the 67.5V model is a fixed voltage unit.**
5. Check that the instrument is functioning correctly by touching the sponge with the earth clip: a high-pitched note should be heard.
6. Connect the earth lead to an uncoated section of the metal substrate of the surface under test.
7. Pass the sponge over the coated surface. The presence of a pinhole is indicated by the emission of a high-pitched note from the alarm.
8. Use a corner of the sponge to more accurately locate small, porous areas.

3.0 PROBES

To replace the sponge, remove the bolt and then remove and replace the old sponge.

4.0 EARTH LEAD

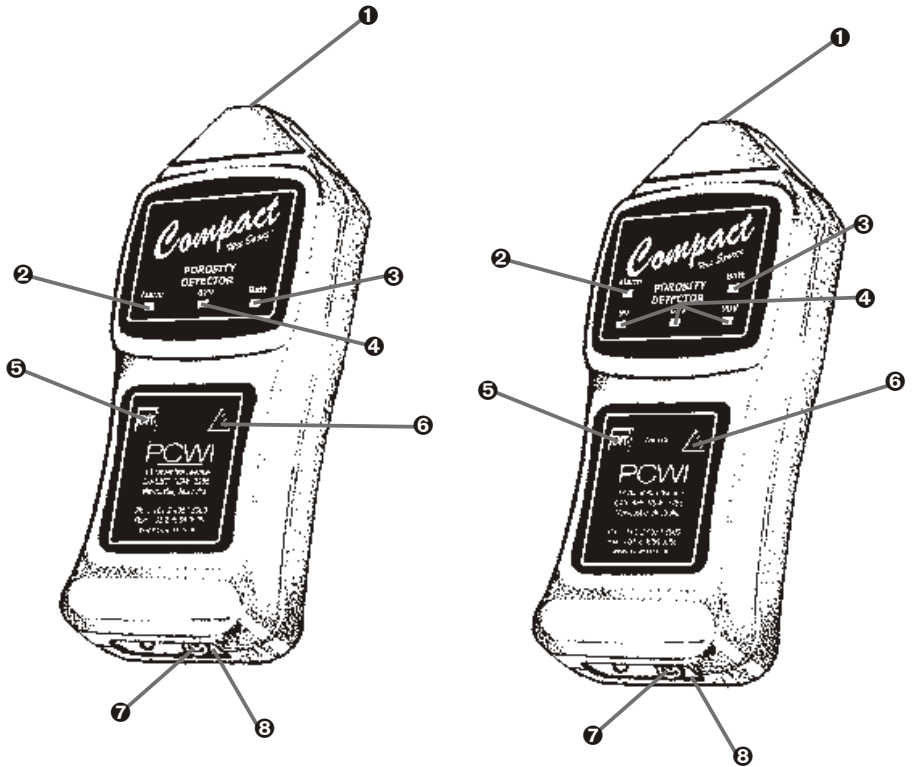


The earth lead is connected using the crocodile clip. Any length of lead can be used over and above the standard of 1500mm supplied.

5.0 SPECIFICATIONS

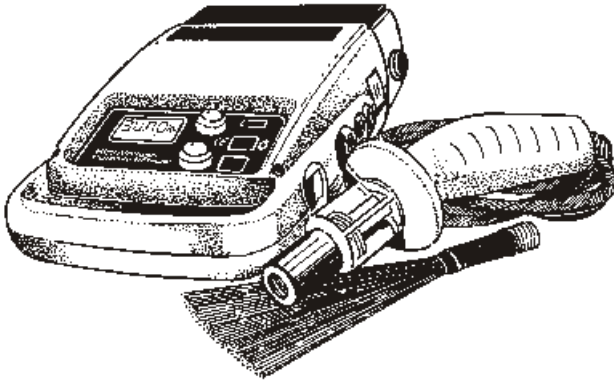
Maximum range:	500 μ m
Test voltage:	9, 67.5 and 90V or 67.5V fixed
Accuracy:	+5% to -10%
Alarm	Audible and Visual
Duration	Audible 300ms minimum
Sensitivity	The alarm will sound when the resistance drops below: 90kohm \pm 10% for 9V setting 125kohm \pm 10% for 67.5V setting 400kohm \pm 10% for 90V setting
Batt life (at 90V):	8 hours continuous - alkaline battery
Operating temp:	0°C to +50°C
Auto off time:	2min
Low Battery:	Visual Indicator

6.0 CONTROL PANEL LAYOUT



- 1 Probe Socket
- 2 Alarm
- 3 Battery Indicator
- 4 Voltage Indicator
- 5 Off Switch
- 6 On Switch/Voltage Selection
- 7 Earth Socket
- 8 Earphone socket

7.0 OTHER PCWI PRODUCTS INCLUDE: Porosity (Holiday) Detectors & Accessories

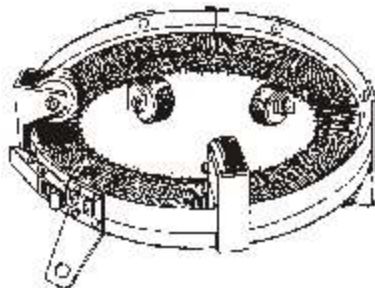
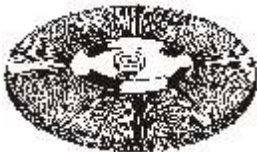
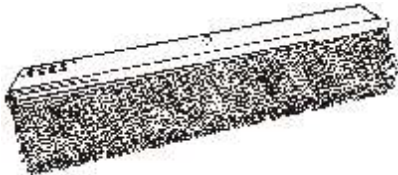


Certification via crest meters

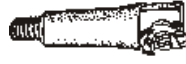
50mm (2in) to 600mm (24in) wide **flat brushes**.

25mm (1in) to 500mm (20in) Spiral wound and Disc **Internal circular pipeline brushes**.

25mm (1in) to 500mm (20in) **External circular pipeline brushes**.



60mm, 125mm, 200mm, 450mm **connectors** for flat or external pipeline brushes.



Fan Brushes

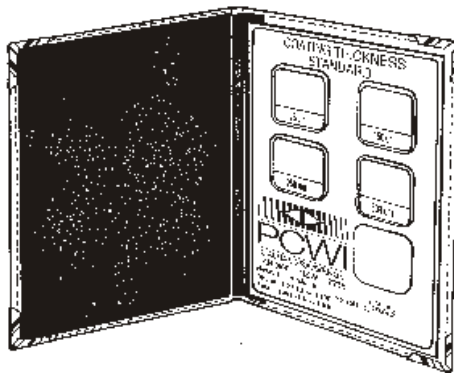


450mm covered **probe extensions**.



50mm (2in) to 1210mm (48in) **Coils** complete with ball bearing ends. Coil Joiners.

Coating Thickness Calibration **Standards**



And a **complete range** of Industrial Test & Measurement Instruments

8.0 WARRANTY

Subject to the warranty conditions below this PCWI Instrument is warranted by PCWI International Pty Ltd to be free from defects arising from faulty design, material, or workmanship for a period of 12 months from the date of original purchase by the end user or a maximum period of 15 months from dispatch to authorised distributor.

Probes and leads are warranted for 3 months. They are consumable items, and subject to wear and deterioration during use. The life of these parts can be much extended by keeping them in a dry clean condition, and storing them in suitable protective containers. During use, avoid "scrubbing" the probe along the surface of the work-piece.

WARRANTY CONDITIONS

During the warranty period listed above PCWI or it's authorized service representative will make good any defects covered by this warranty.

PCWI or it's authorised service representative will decide if there are any defects in design, material or workmanship.

This warranty only applies provided the instrument has been used in accordance with the manufacturers operating handbook recommendations.

This warranty does not cover damage, malfunction or failure resulting from misuse, neglect, abuse or used for a purpose for which it was not designed and no repairs, alterations or modifications have been attempted by other than PCWI on an authorized service.

This warranty applies only to the original user buyer.

This warranty does not cover any service that is needed after an accident, alterations, misuse, fire or floods.

This warranty is the only one given by PCWI and no one has the authority to change, or add to, the obligations and liabilities listed in it.

This warranty does not cover batteries, probe handle brushes (electrodes) and leads which are subject to wear.

During the warranty period PCWI or its authorized service representative will bear the transportation cost of the return of instrument/s repaired under warranty back to the users premises within the country of purchase.

HOW TO MAKE A WARRANTY CLAIM

Defective goods must be returned to PCWI or an authorized service representative at the Purchaser's expense. The goods must be accompanied by the Purchaser's written order describing the defect and authorising PCWI or its authorized service representative to invoice the Purchaser for any charges not covered by the warranty.

The purchasers order must also include the model and serial numbers of the instrument and address of the distributor and date of purchase.

Upon receipt at the service point the instrument will be examined to determine the nature and cause of the defect.

If the defect is covered by the warranty, a repair will be effected at PCWI's or authorized service representative expense. If the defect is not covered by the warranty, PCWI or authorized service representative will quote the Purchaser for a replacement or repair, and will not proceed until written acceptance of the quotation is received.

9.0 SERVICE AND MAINTENANCE

AUTHORISED SERVICE REPRESENTATIVE

To enable speedy "return to service" whether under warranty or otherwise, PCWI have appointed your distributor as a service centre and have provided all relevant information and recommended parts to be carried to assist distributor's technical staff carry out this essential part of the PCWI customer service.

CARE AND MAINTENANCE

This equipment is protected against hostile environments and is designed for prolonged use in the field without any special maintenance, other than routine battery recharging. However, the equipment is not totally sealed and appropriate precautions should be taken. Remember, it is a precision electronic instrument and should be treated as such. There are no internal user controls.

The equipment should only be operated by qualified personnel.

Some organic materials may attack plastic parts and cause early degradation. Contact with such materials should be avoided.

Do not operate damaged equipment.

Where the power supply is derived from internally mounted rechargeable cells and disassembly of the unit is necessary to access those batteries, **this action would void all warranty.**

SERVICE REPAIRS AND MAINTENANCE

Repairs not covered by the warranty or carried out after the warranty period, will be charged at the current hourly or set service rate, plus the cost of materials.

Goods for repair must be sent at the Purchaser's expense, and be accompanied by the Purchaser's written order describing the defect and authorising PCWI to invoice the purchaser for labour, materials and return delivery cost.

No service or repair will be undertaken until a written order is received.

BEFORE YOU CALL FOR SERVICE

Read the section on "troubleshooting" in this handbook and check the symptom, cause and solution before you call for service.

AUTHORISED SERVICE AGENT:



PCWI OFFERS

Strong technical support

In-house development and manufacturing enables us to provide strong technical support and a quick response to enquiries and orders.

Market and product knowledge

We understand technical specifications demanded by industry and recognise customer requirements are specific in relation to testing and measuring instruments.

NATA accredited laboratory in metrology

PCWI's in-house laboratory can support testing for a range of instruments enabling Certification Traceable to National Standards.

Quality systems certified to ISO9001

PCWI's Quality Management System is certified to ISO9001.

Warranties and after sales service

PCWI provides 12 months warranty for its Detectors with detailed operator instruction handbooks and after sales service. An extension of this PCWI service is provided by your local distributor.



PCWI

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PCWI Compact Wet Sponge Detector.cdr (Aug 05)
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