

Can be used in accordance with: Australian Standard AS3894.2

ASTM G6, ASTM G62-A, ASTM 5162-A NACE SP 0188 & NACE TM0384

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





WARNING

This Equipment generates a high voltage and should be used with care. Please consult these operating instructions before use.

CONTENTS

| 1.0 | Safety Precautions | 4 |
|-----|-------------------------|-----|
| 2.0 | Operation | 5 |
| 3.0 | Probes | 6 |
| 5.0 | Specifications | 6 |
| 6.0 | Control Panel Layout | 7 |
| 7.0 | Other PCWI Products | 8-9 |
| 0.8 | Warranty | 10 |
| 9.0 | Service and Maintenance | 11 |

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; and a fixed 67.5 volt unit.

PCWI have designed this instrument with care, to provide ongoing efficiency under comprehensive testing. Under reasonable care in operation, 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

NV Sand

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 \mathbf{L} length of lead can be used over and above the standard of 1500mm supplied.

5.0 SPECIFICATIONS

| Maximum range: | 500µm |
|---------------------|---------------------------------------|
| 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 ±10% |
| Batt life (at 90V): | 8 hours continuous - alkaline battery |
| Operating temp: | 0°C to +50°C |
| Low Battery: | Visual Indicator |

6.0 CONTROL PANEL



7.0 OTHER PCWI PRODUCTS



Porosity (Holiday) Detectors and Accessories

Crest Meter



Brushes & Coils

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.

50mm (2in) to 1765mm (72in) Coils complete with ball bearing ends.



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

Coil Joiners Fan Brushes

Additional Accessories Spare slip-out power packs. 7m Earth lead with clamp. 10m trailing Earth lead (1m plastic encased). Spare neon light holders and neon's

See www.pcwi.com.au for more details.



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 distributors.

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 authorised 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 authorised 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 authorised 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 authorised 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 authorised 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 authorised 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

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.

Calibration laboratory

PCWI's in-house laboratory supports testing for a range of instruments operating in accordance with ISO/IEC 17025. All certification is Traceable to National & International Standards of Measurement.

Quality systems certified to ISO9001

PCWI's Quality Management System is certified to ISO9001 and audited by SAI Global.

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.



