

PC104-3 & PC105-3 3-PHASE SOCKET TESTER



Instruction Manual



MARTINDALE
● ● ● ELECTRIC

Keeping You Safe



ALWAYS READ THESE INSTRUCTIONS BEFORE PROCEEDING

Thank you for using one of our products. For safety and full understanding of its benefits please read this manual before use.

Technical support is available from +44 (0)1923 441717 and support@martindale-electric.co.uk.

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1. SAFETY INFORMATION: Always read before proceeding.

REMEMBER: SAFETY IS NO ACCIDENT

These instructions contain both information and warnings that are necessary for the safe operation and maintenance of this product. It is recommended that you read the instructions carefully and ensure that the contents are fully understood. Failure to understand and to comply with the warnings and instructions can result in serious injury, damage or even death.

Particular attention should be paid to the Warnings, Precautions and Technical Specifications.

Please keep these instructions for future reference. Updated instructions and product information are available at:

www.martindale-electric.co.uk

1.1 Meaning of Symbols and Markings



Caution - risk of danger & refer to instructions



Caution - risk of electric shock



Equipment protected by double or reinforced insulation (Class II)



Equipment complies with relevant EU Directives



Equipment complies with relevant UK Conformity Assessed marking



End of life disposal of this equipment should be in accordance with relevant EU Directives



Three-phase alternating current

Measurement Category III (CAT III) is applicable to test and measuring equipment connected to the distribution part of the building's low-voltage MAINS installation.

1.2 Precautions

This product has been designed with your safety in mind, but please pay attention to the following warnings and cautions before use.

Warning

In order to avoid the danger of electrical shock, it is important that proper safety measures are taken when working with voltages exceeding the extra low voltage (ELV) limit of 50V (25V) AC RMS or 120V (60V) DC. The values in brackets apply to restrictive voltage ranges (for example in the medical or agricultural sector).

Where applicable other safety measures such as the use of protective gloves, goggles etc. should be employed.

The product(s) must only be used by a skilled and competent person who is familiar with the relevant regulations, the safety risks involved and the consequent normal safe working practices, and under the conditions and for the purposes for which it has been constructed and specified.

Before use check the unit for cracks or any other damage. Make sure the unit is free from dust, grease and moisture. Also check any associated leads and accessories for damage. **Do not** use if damaged.

Always verify the unit is functioning correctly on a known correctly-wired live socket before and after use. Do not use the unit if the unit does not give the correct indications.

The socket tester is not intended to determine if circuits being tested are dead. The correct testing methods should be used to do this.

If the indicators do not illuminate, this does not necessarily mean all three phases under test are dead. Two phases and the earth/neutral could be open circuit, but one phase could still be live.

If the equipment is used in a manner not specified by Martindale Electric, the protection provided by the equipment may be impaired.

 **Caution**

Avoid severe mechanical shock or vibration and extreme temperature.

2 INTRODUCTION

2.1 Inspection

Examine the shipping carton for any sign of damage. Inspect the unit and any accessories for damage. If there is any damage then consult your distributor immediately.

2.2 Description

The PC104 & PC105 are 3-phase socket testers intended to check CEE 4 & 5 pin, 16A, 32A & 63A sockets.

The PC104 checks for phase presence, phase sequence and PE presence.

The PC105 also checks for neutral presence.

The table below shows the model number and the CEE socket type tested.

Model No	Socket Type Tested
PC104-16	16A/3P+E
PC105-16	16A/3P+N+E
PC104-32	32A/3P+E
PC105-32	32A/3P+N+E
PC104-63	63A/3P+E
PC105-63	63A/3P+N+E











2.3 Accessories (included)

Instructions

3. OPERATION

3.1 Testing a 3-Phase Socket

Plug the PC104 or PC105 into the socket to be tested and refer to the table below, or the front decal of the unit, to determine the wiring condition of the socket under test.

PC104 Indication	PC105 Indication	Wiring Condition
		Socket is wired correctly. Phase sequence is L1, L2, L3. PE & Neutral are present. L1, L2 & L3 flash green in a clockwise direction. PE & N illuminate green.
		Phases wired incorrectly. Phase sequence is L1, L3, L2. L1, L2 & L3 flash red in an anti-clockwise direction.
		Phase L1 is missing. L2 & L3 flash red.
		Phase L2 is missing. L1 & L3 flash red.
		Phase L3 is missing. L1 & L2 flash red.
		PE is missing. PE illuminates red. <small>(On the now superseded Mk2 versions, PC104-2 and PC105-2, the PE LED is extinguished in the case of missing PE and is not lit red)</small>
NA		Neutral is missing. N illuminates red.

The PC104 & PC105 also indicate the wiring condition by sounding a buzzer according to the table below:

Condition	Buzzer Indication
Correct socket wiring, phase sequence correct	Continuous tone
Phases wired incorrectly, phase sequence incorrect	Slow intermittent tone
Phase, PE or neutral missing	Fast intermittent tone

Note: The interchanging of the neutral wire (N) with the earth (PE) cannot be recognised by this device.



Warning

Where a socket is found to have a wiring error, maintenance should only be carried out by a competent electrician who is familiar with the relevant regulations and the safety risks involved.

3.2 Wiring Colour Coding

In April 2004 the colour coding of UK wiring was harmonised with the IEC wiring colour code. Table 2 shows the old UK colour code and the new IEC colour code.

	Earth	Neutral	Line 1	Line 2	Line 3
Old UK Colours	Green/ Yellow	Black	Red	Yellow	Blue
New IEC	Green/ Yellow	Blue	Brown	Black	Grey

4. MAINTENANCE

4.1 Cleaning



To reduce the risk of surface leakage, this instrument must be kept in a clean condition.



Prior to cleaning, ensure that the instrument is disconnected from any voltage source.

If contamination is found, clean with a damp soft cloth and if necessary a mild detergent. Do not use abrasives, abrasive solvents, or detergents which can cause damage to the unit. If a mild detergent is used, the unit should subsequently be thoroughly cleaned with a water dampened soft cloth. After cleaning, dry and allow to remain in a dry environment for 2 hours before use.

4.2 Repair & Service

There are no user serviceable parts in this unit. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside the guarantee period.

4.3 Storage Conditions

The instrument should be kept in warm dry conditions away from direct sources of heat or sunlight, and in such a manner as to preserve the working life of the unit. It is strongly advised that the unit is not kept in a tool box where other tools may damage it.

5. WARRANTY AND LIMITATION OF LIABILITY

This Martindale product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is 2 years and begins on the date of receipt by the end user. This warranty extends only to the original buyer or end-user customer, and does not apply to fuses, disposable batteries, test leads or to any product which, in Martindale's reasonable opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation, handling or storage.

Martindale authorised resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Martindale.

Martindale's warranty obligation is limited, at Martindale's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to Martindale within the warranty period.

This warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Martindale shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.

Since some jurisdictions do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any part of any provision of this warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

Nothing in this statement reduces your statutory rights.



ELECTRICAL SPECIFICATIONS

Input voltage range: 360 to 440V AC (Phase to Phase)

$U_n = 400V (+/-10\%)$

Input frequency: 50Hz or 60Hz

Input current: $I_{L1} = I_{L2} = I_{L3} = 15mA \text{ max}$

GENERAL SPECIFICATIONS

Power: From circuit under test

Dimensions: 152(L) x 81(W) x 35(D) mm

Weight: 240g approx. (without plug)

Includes: Instructions

SAFETY:

BS EN 61010-1, CAT III 300V

Class II Double Insulation

ENVIRONMENTAL:

Suitable for indoor use, and outdoor use in dry weather conditions only

Altitude: Up to 2000m

Operating Temperature: 0°C to + 40°C

Humidity: $\leq 80\%RH$ up to 31°C, decreasing linearly to 50%RH at 40°C

Ingress Protection: IP40

Pollution Degree: 2

EMC:

Conforms to BS EN 61326-1, BS EN 61326-2-2

Check out what else you can get from Martindale:

- 18th Edition Testers
- Accessories
- Cable Locators
- Calibration Equipment
- Continuity Testers
- Digital Clamp Meters
- Digital Multimeters
- Electricians' Kits
- Environmental Products
- Full Calibration & Repair Service
- Fuse Finders
- Labels
- Microwave Leakage Detectors
- Multifunction Testers
- PAT Testers & Accessories
- Phase Rotation Testers
- Proving Units
- Safe Isolation Kits
- Socket Testers
- Specialist Drummond Testers
- Thermometers & Probes
- Test Leads
- Voltage Indicators

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