

PROVING UNITS



INSTRUCTION MANUAL

PD430

PD440

PD690 Mk2

PD700



GENERAL SAFETY INFORMATION: Always read before proceeding.

Warning

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.

In order to avoid the danger of electrical shock, it is important that proper safety measures are taken when working with voltages exceeding 30V AC RMS, 42V AC peak or 60V DC.

This product must only be used by a competent person capable of interpreting the results under the conditions and for the purposes for which it has been constructed. Particular attention should be paid to the Warnings, Precautions and Technical Specifications. Always check the unit is in good working order before use and that there are no signs of damage to it. Do not use if damaged.

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

Please keep these instructions for future reference. Updated instructions and product information are available at: www.martindale-electric.co.uk

REMEMBER: SAFETY IS NO ACCIDENT

MEANING OF SYMBOLS:



Equipment complies with relevant EU Directives



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



Caution - risk of electric shock



Caution - risk of danger & refer to instructions



Equipment protected by double or reinforced insulation (Class II).

Thank you for buying one of our products. For safety and full understanding of its benefits please read this manual before use. Technical support is available from 01923 441717 and support@martindale-electric.co.uk.

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1. INTRODUCTION

1.1 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.

1.2 Description

PD430 & PD440

The PD430 & PD440 are portable battery powered proving units for the testing of contact type voltage detectors up to 440V.

The PD430 is a dual voltage proving unit which generates 50V for 3 seconds and then generates 440V. The PD440 generates 440V only.

PD690 & PD700

The PD690 & PD700 are portable battery powered proving units for the testing of contact type voltage detectors up to 700V.

The PD700 is a dual voltage proving unit which generates 50V for 3 seconds and then generates 700V. The PD690 generates 700V only.

MODEL	Low Voltage	High Voltage	Low Voltage LED	High Voltage NEON	High Current LED	Low Battery LED
PD700	50V	700V	✓	✓	✓	✓
PD690		700V		✓		✓
PD430	50V	440V	✓	✓		✓
PD440		440V		✓		✓

1.3 Accessories

All units come with the following accessories:

- ◆ 6 x 1.5V alkaline batteries LR6/AA.
- ◆ Instructions.

1.4 Battery Installation

Refer to Section 4.1 (Battery Replacement) for the battery installation instructions for all units.

2. PRODUCT SPECIFIC SAFETY INFORMATION

2.1 Precautions

These products have been designed with your safety in mind, but please pay attention to the following warnings and cautions before use.

Warning

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

Warning

Do not use if the battery cover is not fitted.

Warning

Limit the test time to less than 10 seconds.

Warning

Do not short the output terminals.

Caution

Remove the batteries when not in use for an extended period, to avoid corrosion from leaking batteries.

Caution

Avoid severe mechanical shock or vibration and extreme temperature.

3. OPERATION

Caution

Always make sure the precautions and limitations of the unit being tested are observed. If necessary refer to the specification of the unit being tested.

Also refer to the graph of typical output voltage under various load conditions at the rear of these instructions.

3.1 Proving Unit LED indications

LED illuminated	Model	Indicates
Low Voltage	PD430 & PD700	50V output at proving unit terminals for approx. 3 seconds.
High Voltage	All models	High voltage output at proving unit terminals.
Low Battery	All models	Proving unit batteries are low. Replace batteries.
High Current *	PD700	UUT current consumption > 5mA.

* Typically Martindale voltage indicators draw < 3.5mA but other manufacturers' instruments may vary.

3.2 Proving a Test Lamp, Voltage Tester/Indicator, DMM etc.

Place one probe of the unit under test into the left hand socket of the proving unit until it makes contact with the terminal. Place the other probe into the right hand terminal of the proving unit and gently press down.

On the PD440 and PD690 the high voltage indicator will illuminate.

On the PD430 and PD700 the low voltage indicator will illuminate for 3 seconds, then the high voltage indicator.

Observe that all the required indicators on the unit under test illuminate, then withdraw the probe from the right hand terminal first, and then the left.

Do not operate the proving unit for periods longer than 10 seconds.

If none of the proving unit LED's illuminate when performing the above tests check the condition of the proving unit batteries. Replace if required (see section 4.1).

3.3 Test Lamp, Voltage Tester/Indicator Cables

During the above tests, emphasis should also be placed upon the flexing of the UUT cable along its length, and particularly at the entry points to the hand held elements, to confirm that the cable has not fractured.

It may be necessary to perform this test a number of times so as not to operate the proving unit for longer than 10 seconds in any one test episode.

4. MAINTENANCE

4.1 Battery Replacement

Remove the rear battery cover by unscrewing the screw at the end of the cover. The screw is captive but once it is loose the cover can be slid downwards beyond the bottom end of the unit and lifted clear.

Fit 6 new LR6 (MN1500) 1.5V alkaline batteries, observing correct polarity.

Replace the battery cover by positioning it into the rear casing slots and sliding it upward into position, then tighten the screw. Do not over-tighten.

Note: Do not mix old and new batteries.

4.2 Cleaning

The unit may be cleaned using a soft dry cloth. Do not use moisture, abrasives, solvents, or detergents, which can be conductive.

4.3 Repair & Service

There are no user serviceable parts in this unit other than those that may be described in section 4. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside the guarantee period.

Before the unit is returned, please ensure that you have checked the unit and batteries.

4.4 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.

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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 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

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decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

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Specification PD430 & PD440 Proving Unit

PD430

**Output Voltage:**

first output = 50V nominal
second output = 440V nominal (see graph)
50Hz nominal

Operating Temperature Range:

-10 to 40C at max. 70% RH

Batteries: 6 x LR6 (MN1500) 1.5V Alkaline batteries or equivalent (included)

Dimensions: 143 x 84 x 50mm

Weight: 400g approx with batteries

PD440

**Output Voltage:**

output = 440V nominal (see graph)
50Hz nominal

Operating Temperature Range:

-10 to 40C at max. 70% RH

Batteries: 6 x LR6 (MN1500) 1.5V Alkaline batteries or equivalent (included)

Dimensions: 143 x 84 x 50mm

Weight: 400g approx with batteries



Specification
PD690 & PD700
Proving Unit

PD690



Output Voltage:
700V nominal (see graph)
50Hz nominal
Operating Temperature Range:
-10 to 40C at max. 70% RH

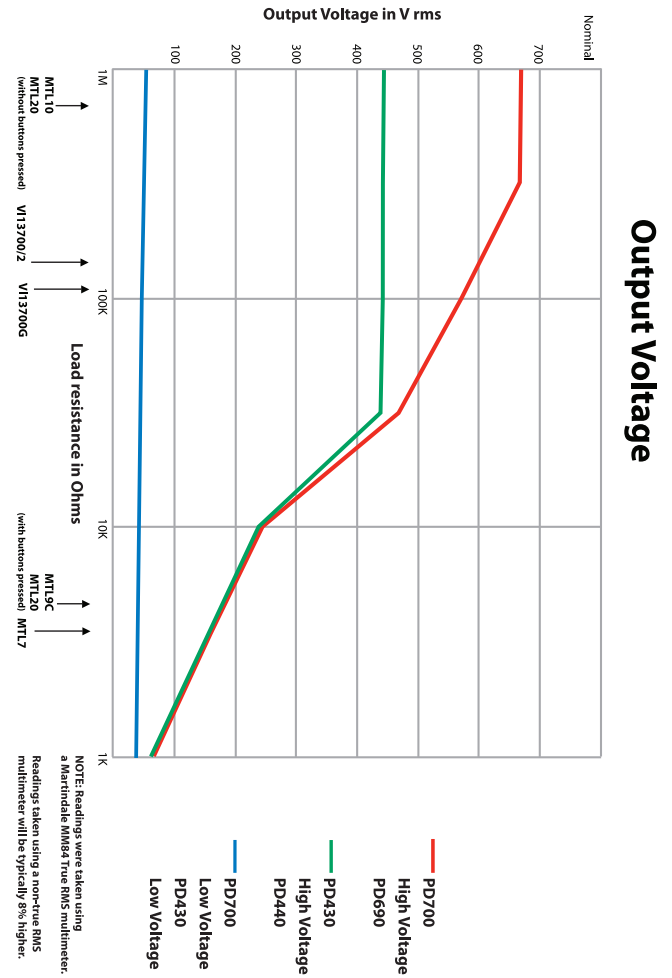
Batteries: 6 x LR6 (MN1500) 1.5V Alkaline batteries or equivalent (included)
Dimensions: 143 x 84 x 50mm
Weight: 400g approx with batteries

PD700



Output Voltage:
first output = 50V nominal
second output = 700V (see graph)
50Hz nominal
Operating Temperature Range:
-10 to 40C at max. 70% RH

Batteries: 6 x LR6 (MN1500) 1.5V Alkaline batteries or equivalent (included)
Dimensions: 143 x 84 x 50mm
Weight: 400g approx with batteries



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- Test Leads
- Voltage Indicators
- Specialist Metrohm Testers (4 & 5kV)
- Specialist Drummond Testers



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