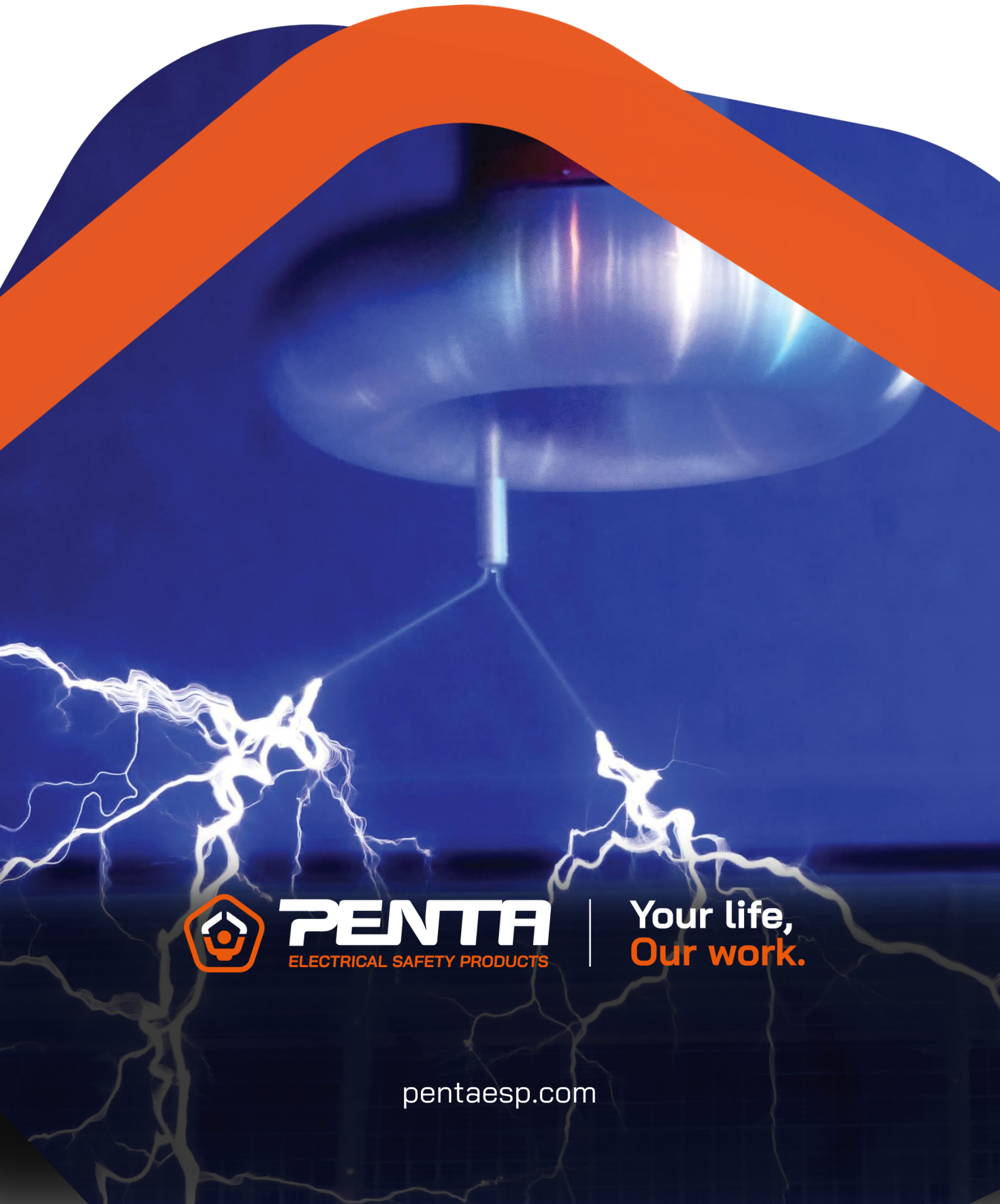


VOLTAGE DETECTORS & DISCHARGE RODS CATALOGUE



PENTA
ELECTRICAL SAFETY PRODUCTS

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The Westminster DS/MS/VA voltage detector comprises five main components: contact, extension, adaptor, main body and handles, each rated to suit specific applications which are as follows:

- **Contact** to establish a connection with live conductors, available as either a pointer, mushroom or "Y" type contact to suit specific application.
- **Extension** manufactured and tested to suit the application voltage and provide calibrated capacitance to operate the detector. Available from four types of extension to suit specific voltage ranges, which can be attached in line to the main body or at an angle using an adaptor.
- Two types of **Adaptors** are available, these connect the extension to the main body of the detector.
 - A **90-degree adaptor** is available for application where it is preferential to stand directly below the contact point with the extension at the right angle to the main body, allowing a clear view of the application to the conductor/ busbar or when testing inside "spouts".
 - Alternatively, a **60-degree adaptor** is also available for applications where it is preferential to hold the detector at an inclined angle perpendicular to the conductor/ busbar, to improve visibility of the detector.
- **The main body** houses the voltage detector and battery.
- **Handle** provides suitable insulation from the voltage being tested and also provides storage for the main body when not in use. Two types of handle are available to suit the operating voltage.

PRODUCT BENEFITS

- Robust construction
- Lightweight
- Full ranges of accessories
- Audible and visual warning
- 3.3kV up to 36kV operating ranges
- Fully interchangeable component design
- Insulation tested
- Main body stowage within the insulated handle

Models Available	
Handle A	Up to 12,000 Volts
Handle B	Up to 36,000 Volts
Extension A	Up to 12,000 Volts
Extension B	Up to 36,000 Volts
Extension C	Up to 3,300 Volts
Extension D	For steelwork only





VOLTAGE DETECTORS & DISCHARGE RODS

DS/MS/VA VOLTAGE DETECTOR

ASSEMBLY INSTRUCTIONS

The detector should be assembled prior to use, selecting the appropriate handle and contact extension for the voltage of the equipment to be tested. Details are given on the main body of the detector.

Withdraw the main body from its storage position within the handle. Screw the adaptor (if required) into the top of the main body, then screw the extension into the adaptor/main body, ensuring correct orientation. Screw the contact onto the extension. Depress the button at the bottom of the main body of the detector. After a short delay the twin LED's should begin to flash and the buzzer should start to sound intermittently. Fit the handle to the detector main body and tighten the locking screw on the securing collar.

Disassembly is a reversal of the above.

INSTRUCTIONS FOR USE

Before use, correct operation of the detector must be varied using the MD proving unit. The components should be checked to ensure that they are clean and free of contaminants such as heavy dust deposits, oil/ grease, dirt or especially metal lings. Inspect the components for scratches or marks upon the surface which may compromise their insulation properties.

These instructions should be read in conjunction with site safety instructions and PPE should be used in accordance with these. Following assembly and testing of the detector, the equipment should be held by the black handle ensuring that hands are NOT above the limiting collar as per labelling. The detector should emit an intermittent 'beep' and flash when NO voltage is present. The detector should be carefully raised to the conductor and the contact probe pressed to it. If the beep changes to a continual tone and the LED's remain illuminated, the detector has indicated the conductor is 'LIVE'.

Care must be taken not to contact the conductor below the limit ring upon the extension as this may damage the equipment.

The detector should be carefully withdrawn (again keeping hands below the limiting collar). After the detector returns to its beeping/ flashing state it can be handled and either re-applied to another conductor or switched off. Ensure that all site safety procedures are observed for access, safe use and removal from site.

TESTING

The detector should be held in one hand and the MD proving unit's metal probe pressed against the contact. The rubber button on the proving unit should then be depressed (which illuminates the adjacent LED on the proving unit). When contact is made the intermittent signal should change to a continuous tone and the LED's become continually lit. If the contact is broken the unit should hold the signal only for a short period of time.

WARNING

The output of the proving unit is of high potential and could give a nasty shock when energised.

The detector should be tested and calibrated annually to ensure its repeated satisfactory operation. PENTA Electrical Safety Products are able to offer this service and will repair damaged equipment upon a quotation basis.

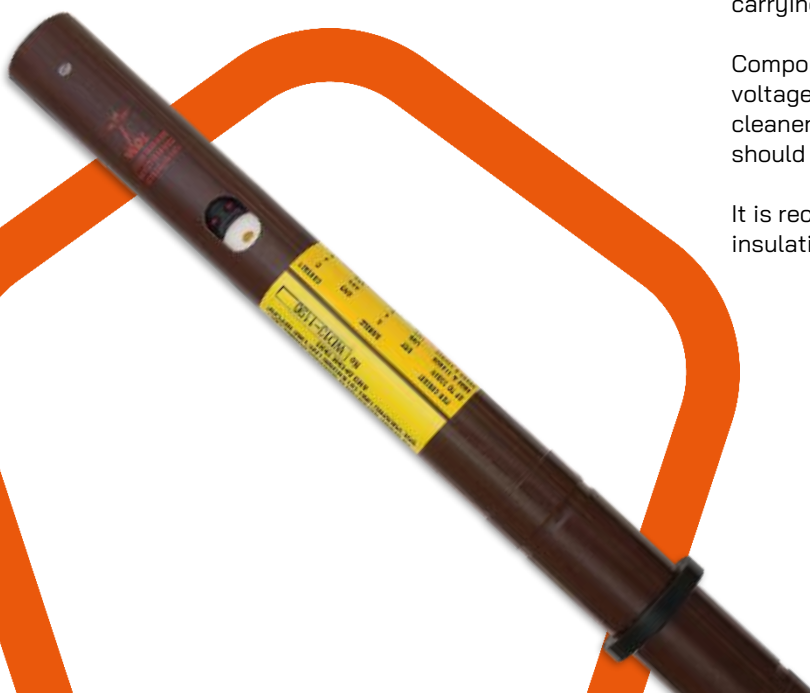
STORAGE AND CARE OF VOLTAGE DETECTOR

Periodically it will be necessary to change the battery in the detector and the proving unit. The battery in the detector is housed in the main body and access is gained by loosening the grub screw and removing the switch/battery housing. The batteries in the proving unit can be changed by removing the four screws from the top of the unit and unclipping the battery holder from its ying lead.

The detector and associated parts should be stored in a dry atmosphere away from airborne contaminants, in its carrying/storage bag.

Components should be cleaned with a suitable high voltage equipment cleaner: solvent and salt based cleaners must be avoided. All damaged components should be replaced or returned for repair.

It is recommended that detectors are calibrated and insulation tested annually.





VOLTAGE DETECTORS & DISCHARGE RODS

DS/MS/VA VOLTAGE DETECTOR

Part Number	Contact	Extension	Adaptor/ Elbow	Main Unit	Handle	Working Voltage
EFV-17005/1	11kV Mushroom	C	60°	Yes	A	3.3kV
EFV-17005/2	11kV Mushroom	C	90°	Yes	A	3.3kV
EFV-17005/3	11kV Pointer	C	60°	Yes	A	3.3kV
EFV-17005/4	11kV Pointer	C	90°	Yes	A	3.3kV
EFV-17006/1	11kV Mushroom	A	60°	Yes	A	5-12kV
EFV-17006/2	11kV Mushroom	A	90°	Yes	A	5-12kV
EFV-17006/3	11kV Pointer	A	60°	Yes	A	5-12kV
EFV-17006/4	11kV Pointer	A	90°	Yes	A	5-12 kV
EFV-17007/1	33kV Mushroom	B	60°	Yes	B	10-36kV
EFV-17007/2	33kV Mushroom	B	90°	Yes	B	10-36kV
EFV-17007/3	33kV Pointer	B	60°	Yes	B	10-36kV
EFV-17007/4	33kV Pointer	B	90°	Yes	B	10-36kV
EFV-17008/1	11kV Mushroom	D	60°	Yes	A	<11kV
EFV-17008/2	11kV Mushroom	D	90°	Yes	A	<11kV
EFV-17008/3	11kV Pointer	D	60°	Yes	A	<11kV
EFV-17008/4	11kV Pointer	D	90°	Yes	A	<11kV

Part Number	Accessory Description	Notes
EFV-17025	BL Daylight Shield	Fit to the main body for use in bright lighting conditions
EFV-17009	MD Proving Unit	Battery-powered handheld unit
EBB-14510 35kV	Carrying Bag	For containing Handle B and Extension B
EMV-17027	Y Contact	For application to small round conductors

VOLTAGE DETECTOR DS/MS/VA

Accessories are available as follows;

BL DAYLIGHT SHIELD

To aid visibility of the flashing LED's against a background of bright sunlight, etc. A shield is available which shrouds the LED's, easing identification of their state.

DAYLIGHT SHIELD

Fitted to main body to aid visibility of twin Light Emitting Diodes when used in bright lighting conditions. Should one light emitting diode fail the other will continue to function.

MD PROVING UNIT

To prove the function of the DS/MS/VA unit, this battery powered portable test unit can be used to test the detector prior to being used on site.

CARRYING BAG

To protect the DS/MS/VA detector and ease transportation on site this carrying bag is manufactured from fabric reinforced PVC. Two bags are available, for either the standard testers with Handle A and extension A or for the 10-35kV tester with Handle B and Extension B.





/ DS/MS/VA TESTER 5-12kV

Voltage detector consisting of Westminster 12kV Bag, DS/MS/VA 11kV Pointer, Contact Extension 'A', Handle 'A', 90-degree Adapter and Main Body with audible & visual indication.

***Please note the image includes optional extras such as daylight shield, 60-degree elbow, Y probe and 11kV mushroom.**



Reference	Catalogue Number
EFV-17006/4	393022



/ 11kV 'Y' CONTACT PROBE (3.3kV – 12kV)

For application to small round conductors.

Reference	Catalogue Number	Material	Length
EMV-17027	383816	Aluminium	25mm



/ POINTER

For use with DS/MS/VA voltage detector. Available as 11kV or 33kV type.

Reference	Catalogue Number	Material	Length
EMV-17023 (11kV)	383814	Aluminium	35mm
EMV-17024 (33kV)	383815		



/ MUSHROOM

Mushroom probe for use with a DS/MS/VA voltage detector. Available as 11kV or 33kV type.

Reference	Catalogue Number	Material
EMV-17021 (11kV)	383812	Aluminium
EMV-17022 (33kV)	383813	



VOLTAGE DETECTORS & DISCHARGE RODS

DS/MS/VA VOLTAGE DETECTOR



/ 60° DEGREE ADAPTOR

For use with all ranges of DS/MS/VA voltage detectors. Fitted between the main body and extension.

Reference	Catalogue Number
EAV-17020	383007



/ 90° DEGREE ADAPTER

For use with all ranges of DS/MS/VA voltage detectors. Fitted between the main body and extension.

Reference	Catalogue Number
EAV-17019	392921



/ CONTACT EXTENSIONS

For use with all ranges of DS/MS/VA voltage detectors.

Reference	Catalogue Number	Type
EFV-17013	383391	Type 'A' 5-12kV
EFV-17015	383393	Type 'B' 10-36kV
EFV-17016	383394	Type 'C' 3.3kV
EFV-17017	383395	Type 'D' Steelwork



/ DS/MS/VA MAIN BODY ASSEMBLY

Main unit with audible and visual indication, battery- powered. Should one light-emitting diode fail the other will continue to function.

Reference	Catalogue Number
EFV-17004	383389



VOLTAGE DETECTORS & DISCHARGE RODS

DS/MS/VA VOLTAGE DETECTOR



/ HANDLE

Handle for use with DS/MS/VA detector available as 5-12kV or 10-36kV types. The main body of the unit can be stored within the handle when not in use to offer protection and easy transportation.

Reference	Catalogue Number	Type
EFV-17012	383390	Handle 'A' (12kV Max)
EFV-17014	383392	Handle 'B' (36kV Max)



/ DAYLIGHT SHIELD

DS/MS/VA daylight shield designed to cover DS/MS/VA LEDs to prevent the sun from blocking the view of the operator. Fitted to the main body to aid visibility of the twin light Emitting Diodes when used in bright lighting conditions.

Reference	Catalogue Number
EFV-17025	383396



/ PVC CARRYING BAG

To protect the 10-36kV DS/MS/VA detector and ease transportation on-site this carrying bag is manufactured from reinforced PVC with two bags for either the standard tester with handle A and extension A or for the 10-36kV tester with handle B and Extension B.

Reference	Catalogue Number	Length	Material
EBB-14510	383019	4' 6 Long x 1' 3 High x 6 Thick	Green Coated Nylon



/ WESTMINSTER 12KV BAG

To protect the DS/MS/VA detector and ease transportation on-site this carrying bag is manufactured from reinforced PVC.

Reference	Catalogue Number	Length	Material
EBB-17026	383021	710mm Long x 155mm Wide (with Velcro fastenings on all flaps).	Blue PVC Fabric Reinforced PVC



The Westminster Capacitor Discharge Rods are used for the removal of electrostatic charge from disconnected circuits, before undertaking maintenance work.

Manufactured from 1.2 metre-long lightweight insulating tubing and fitted with a dischargeable hook. The connection to earth is facilitated by a 4-metre-long earth cable with earthing (crocodile) clip. Models are available with a discharge limiting resistor for use upon capacitors.

PRODUCT BENEFITS

- Robust construction
- Lightweight tubing
- Available with Discharge Limiting Resistor
- Bonded Handguard Included
- Insulation Tested
- Contact Hook Type Fitment



/ WDL ER15 CAPACITOR DISCHARGE RODS

Westminster Detectors ER15 earth discharge rod for use up to 15kV.

Reference	Catalogue Number
EFC-17300	392971

/ WDL ER35 CAPACITOR DISCHARGE RODS

Westminster Detectors ER35 earth discharge rod for use up to 35kV.

Reference	Catalogue Number
EFC-17301	389644

/ WDL ERR15 CAPACITOR DISCHARGE RODS

Westminster Detectors ERR15 earth discharge rod for use up to 15kV with limiting resistor.

Reference	Catalogue Number
EFC-17302	389645

/ WDL ERR35 CAPACITOR DISCHARGE RODS

Westminster Detectors ERR35 earth discharge rod for use up to 35kV with limiting resistor.

Reference	Catalogue Number
EFC-17303	389646



VOLTAGE DETECTORS & DISCHARGE RODS
CAPACITOR DISCHARGE RODS

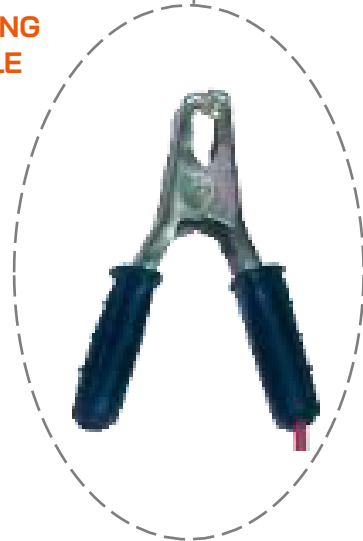
ALUMINIUM
CONTACT
HOOK



4m LONG
CABLE



SPRING ACTION
RUGGED EARTH
CLIP



BONDED HAND
LIMITING COLLAR





VOLTAGE DETECTORS & DISCHARGE RODS

NSI-11 TEMPORARY EARTH BOND KIT

The PENTA Electrical Safety Products range of equipment for use in Substations has a proven history of many years of service in the electricity supply industry. As well as supplying a standard range of approved equipment, PENTA Electrical Safety Products can also design innovative solutions for any portable earthing requirements. PENTA Electrical Safety Products is the primary manufacturer of the renowned NSI24 and NSI11 kits and a supplier to National Grid.

/ Below are four types of NSI-11 Temporary Earth Bond Kits available.



/ CAP. CONTINUITY LEAD KIT

Capacitor continuity lead kit comprising two off insulated clamps suitable for 48mm conductor fitted with 10sqmm C.U.

Reference	Catalogue Number
EFC-19302	389665



/ CAPACITOR DISCHARGE ROD (1m LEAD)

Discharge stick assembly with insulated clamp suitable for 40mm Dia conductors with 1m red PVC insulated copper cable.

Reference	Catalogue Number
EFC-19301	389649



/ DAISY CHAIN DISCHARGE ROD ASSEMBLY

Daisy chain Discharge rod to NSI11
1m lead between discharge rods.
6m lead to earth end clamp.

Reference	Catalogue Number
EFC-17327	389647



VOLTAGE DETECTORS & DISCHARGE RODS

NSI-11 TEMPORARY EARTH BOND KIT



/ 50sqmm SHORT CIRCUIT LEAD

Special lead for CME equipment - 500mm Long hole to hole centers. With 450mm of arctic orange 50sqmm lead fitted with a special lug standard 50mm sleeve at each end.

Reference	Catalogue Number
MISC-00274	391685

The Westminster MD proving unit is a product designed to test the function of the Beacon and DS/MS/VA detector. This battery-powered portable test unit should be used to test the Voltage Detector before and after being used on-site, to confirm that the Voltage Detector is in working order.

The MD Proving Unit is designed to produce a high voltage output at a high frequency, making the unit safe for operating. The high voltage coil is encased within an epoxy resin shell, which protects the circuitry from contaminants and damage.

PRODUCT BENEFITS

- Simple to use
- Hand-held
- Lightweight
- Compact
- Warning LED
- Battery-powered
- Standard size AA batteries
- Splash-proof case
- Protection Rating IP54



/ MD PROVING UNIT

Battery operated handheld unit for use with a DS/MS/VA (suitable for all types) to prove voltage detector functionality before applying to work voltage/ line.

Reference	Catalogue Number
EFV-17009	393023



/ OPERATING INSTRUCTIONS

The Westminster Beacon Voltage Detector is a capacitive type of voltage detector and is designed for use on a.c. electrified lines. There are two types in the Beacon series, the 5- 12 kV voltage detector and the 10 - 36 kV voltage detector. The thresholds for which are calculated from 10% of the maximum working voltage and 45% of the minimum working voltage.

The Westminster Beacon Voltage Detectors are designed to be used with customers' existing operating sockets and earthing poles, although these can be purchased along with the beacon if required. The testers are colour coded, yellow for the 10- 36 kV and red for the 5- 12 kV for easy identification.

The Westminster Beacon voltage detector must be checked for proper operation before and after use. Press the black ON button, and the green LED will light up and remain illuminated for 5 minutes. The detector cannot be turned off until the cycle has finished. This function prevents the battery from discharging accidentally. Press the TEST button to prove the testers function using the internal test facility.

With both visible and audible indication, the Westminster Beacon voltage detector is designed for indoor and outdoor use. Easy to use and includes a facility for self-checking. For transportation of the device, its contact probe and pole fitting a sturdy case is also provided.

PRODUCT BENEFITS

- Visible and audible detection
- Suitable for fitting to standard operating pole heads
- Battery operated (easy change)
- Rugged construction
- Twin LED indication
- Lightweight
- Easy to use
- Supplied in a sturdy carry case

BUILT-IN TEST FUNCTION

A test function is built-in to prove the Beacon Voltage detector circuitry before and after use. When the detector is switched on it will illuminate the green 'stand by' state LED. The green stand by state LED will be extinguished by pressing the black test button and replaced with the red LED followed by a continuous audible sound signal. When the test button is released the indicator should return to the green standby state.

Specification	Voltage Operating Range	Threshold Voltage	Product Number
<ul style="list-style-type: none">• BS EN 16243.1• EN 61326-1• CIS PR11• IEC 61000-4-2	<ul style="list-style-type: none">• 5- 12kV• 10-36kV	<ul style="list-style-type: none">• 1.2- 2.25kV• 3.6- 4.5kV	<ul style="list-style-type: none">• EFV-17200• EFV-17201
European Design Registration Number		001170591-0001	



/ WD BEACON 10-36kV VOLTAGE DETECTOR



Reference	Catalogue Number	Voltage Operating Range	Threshold Voltage
EFV-17201	393024	10- 36kV	3.6- 4.5kV



/ WD BEACON 5-12kV VOLTAGE DETECTOR

Reference	Catalogue Number	Voltage Operating Range	Threshold Voltage
EAV-17200	389480	5- 12kV	1.2- 2.25kV



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