SOCKET & SEE™

VIP ESI

Electrical Service Industry Voltage and Impedance Indicator

Instruction Manual & Specification

1. Safety

1.1 Equipment Markings

	Caution - refer to this instruction manual
	Safe for energized working (up to 600V)
	Product should be recycled as electronic waste
	Conformity to EU standards
CAT IV	Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation. This part of the installation is expected to have a minimum of one level of over-current protective devices between the transformer and connecting points of the measuring circuit. Due to these high short-circuit currents (above 50kA) which can be followed by a high energy level, measurements made within these locations are extremely dangerous. Great precautions shall be made to avoid any chance of a short circuit. Examples of CAT IV are measurements on devices installed before the main fuse or circuit breaker in the building installation.

1.2 Operational Safety

The VIP ESI is designed to be used by skilled persons in accordance with safe methods of work. If the VIP ESI is used in a manner not specified by Socket and See, the protection provided by it may be impaired.

Inspect the product before using. If any damage is visible; such as cracks in the casing, damage to any accessories, leads or probes, the unit should not be used.

Keep fingers behind the finger guards. Avoid touching a free prod while the other prod is in contact with an electrical circuit. Avoid obscuring the indicator LED's during use. This tester has been designed to be used with suitable PPE including insulated gloves if required.

To maintain safety, check the correct operation of the VIP ESI, both before and after use, with a true AC output proving unit such as the Socket and See SP400 or on a know live source. Check that the voltage LED's are visible in the environment of use.

2. Description

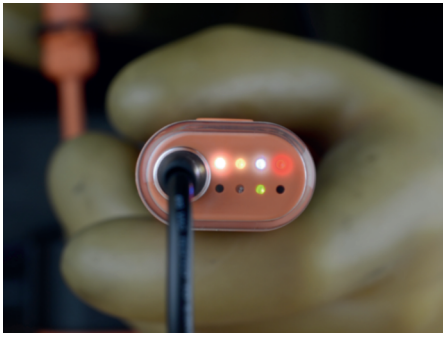
The VIP ESI is a 2 pole voltage indicator with enhanced safety features suited to the electrical supply industry.

2.1 Indicator Parts

- Colour coded voltage bar graph displays the voltage between the prods.
- **LoZ** indicator: indicates the VIP ESI is connected to a low impedance circuit.
- **HiZ** indicator: indicates the VIP ESI is connected to a high impedance circuit.

2.1.1 Bar Graph Details

50V	2 X White LED
110V	2 X Yellow
230V	2 X Blue LED
400V	2 X Red LED



The base display helps when measuring in difficult locations. It is always active.

3. Usage

3.1 General

Keep fingers behind the finger guards shown below.

Check the correct function of the VIP ESI both before and after use with a true AC output proving unit such as the Socket and See SP400.

The main body prod is interchangeable to allow fitting of either a straight or right-angle prod as needed. Unscrew the collar, pull the prod straight out from the main unit, refit and tighten using normal finger pressure. Check correct operation afterwards.

Should the straight prod on the passive probe be damaged it can also be changed. Unscrew the collar and then unscrew the prod from the probe body. Be careful not to remove the Safety Resistor Cartridge from the probe body. Screw on the replacement prod and refit the collar to finger tightness. Check correct operation afterwards.

Please note: The passive probe straight prod and main unit prods are not interchangeable.

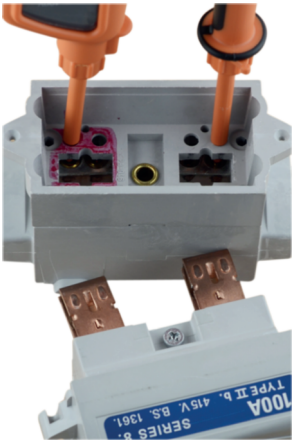
3.2 Voltage Indication

To use as a voltage indicator, touch the prods onto the circuit to be measured. The voltage between the two points of contact will be indicated immediately. If the voltage is AC Mains, its impedance will be measured. This is shown by a pulsing of the display and afterwards either HiZ or LoZ are indicated.

3.3 Impedance Indication

The VIP ESI can be used to indicate impedance and therefore prospective current. When AC Mains is detected, Impedance is measured automatically the LED's will pulse to indicate an impedance measurement is being made.

Keep the prods still during the measurement and wait for the LED's to stop pulsing.



For example, before reconnecting a supply:

- With the service cut-out fuse removed, connect the VIP ESI to the fuse terminals (in place of the fuse).
- The voltage and impedance should be measured. If the green HiZ LED illuminates, the impedance is high, (**low prospective current**) and it is safe to insert the fuse.
- If the red LoZ LED illuminates, the impedance is low, (**high prospective current**) and the installation needs further investigation.

3.4 Automatic Ghost Voltage Suppression

Ghost Voltage suppression is automatic.

Firstly they are moderately suppressed by the operating current of the VIP ESI.

Secondly the Red and Green Impedance Measurement LED's will show whether the voltage indicated has an impedance of more or less than 100Ω. Should the Green LED illuminate this would indicate a high impedance voltage but even high impedance voltages can be dangerous and further careful checks would need to be made before proceeding.

Impedance is measured when the voltage is in the range 110-400V/40-60Hz nominal. For voltages outside these limits neither the HiZ or the LoZ LED will light.

4. Maintenance and Service

If required, clean with a damp cloth and mild detergent. Do not use abrasives or solvents.

There are no user-serviceable parts.

Contact Socket and See for service and technical assistance:

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Staffordshire, UK

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Specification	
Operating Voltage Range	50 - 600V AC
LED Indication	50 - 110 - 230 - 400V LED illuminates at nominal value -15%
Withstand Voltage	600V
Operating Conditions	-10 to +55°C at 85% RH Altitude up to 2000m
Overvoltage Category	CAT IV 600V
Operating Current	< 3.5mA
Operating Duty Cycle	30s on, 240s off
Impedance Measurement	HiZ threshold 100Ω Circuit loading meets the requirement of BS EN 61010-1:2010 Figure 2.
IP Rating	IP54
Safety Compliance	BS EN 61010-2-030:2010
EMC Compliance	BS EN 61326-2-2:2013
Prods	GS38 Compliant Main unit: straight or right-angle interchangeable
Dimensions	320H x 75W x 35D (mm)
Interconnecting Cable	1.3m Silicone rubber, Double insulated, Wear indicating 690V continual rating Tested to 6.5 kV
Weight	200g
Batteries	Not required

Ordering Information	
Item	**Supplier Code**
Socket and See VIP ESI	SOC/VIPESI
Included Accessories	
Socket and See VIP ESI Straight Prod (fitted as standard to passive probe)	SOC/VIPESI-SPP
Socket and See VIP ESI Straight Prod (fitted as standard to main unit	SOC/VIPESI-SP
Socket and See VIP ESI Right Angle Prod	SOC/VIPESI-RA
Optional Accessories	
Socket and See SP400 Proving Unit	SOC/SP400
Socket and See VIP ESI Carry Case	SOC/TECCESI

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