

**SOCKET  
& SEE™**





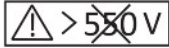
**IRC PRO**  
Insulation and Continuity  
Tester

## Instruction Manual & Specification



# 1. Safety

## 1.1 Equipment Markings

	Caution - refer to the instruction manual.
	Construction is double insulated.
	Product should be recycled as electrical waste.
	Conforms to EU standards.
	Prohibited to use on Electrical Systems which use voltages above 550V.
<b>CAT IV 300V</b>	<p>Measurement Category IV is applicable to testing and measuring circuits at the origin of the installations supply. They are utility level checks. This part of the installation is expected to have a minimum of one level of over-current protective device between the transformer and connecting points of the measuring circuit. This tester's voltage rating for CAT IV location is 300V where the voltage is Phase (line) to Earth.</p>
<b>CAT III 500V</b>	<p>Measurement Category III is applicable to testing and measuring circuits connected after the source of the building's low-voltage MAINS installation. This part of the installation is expected to have a minimum of two levels of over-current protective devices between the transformer and connecting points of the measuring circuit.</p> <p>Examples of CAT III are measurements on devices installed after the main fuse or circuit breaker fixed within the building installation. Such as distribution boards, switches and socket outlets.</p> <p>This tester's voltage rating for CAT III location is 500V where the voltage is Phase (line) to Earth.</p>

## **1.2 Operational Safety**

The IRC PRO is designed to be used by skilled persons in accordance with safe methods of work. If the IRC PRO is used in a manner not specified by Socket & 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.

Do not operate the IRC PRO with the battery cover off as this will compromise the insulated safety barrier.

To maintain safety, ensure serviceability and to monitor accuracy of the IRC PRO the tester should be checked on a checkbox such as the Socket & See CB400 at regular intervals.

Although fully protected against accidental connection to a live circuit, the IRC PRO should only be used on dead circuits. If accidentally connected to a live circuit the Volts Present will flash and an audible alarm will sound. Testing will be inhibited.

## **2. Description**

The IRC PRO is a digital continuity and insulation resistance tester.

### **2.1 Features**

- Insulation Test (250V, 500V, 1000V)
- Continuity Test
- Buzzer
- Continuity Null
- Hands Free function
- Mute
- Voltage Present LED
- Auto switch off function for battery preservation

## 2.2 Indication

The white display backlight will illuminate when switching on and during testing. To preserve battery life the backlight will switch off after approximately 4 seconds of inactivity. The unit will automatically power off after approximately 3 minutes of inactivity. To switch the tester back on after auto power off, press any button..



\*LCD is shown indicating a blown fuse.

## 3. Usage



\* The IRC PRO is shown in 1000 V

### **3.1 Battery Installation**

Unit requires 4 x AA batteries.

Ensure that all test leads are removed before installing batteries. Remove the rubber over mould and battery cover on the reverse of the unit. Install the new batteries ensuring correct polarity as indicated. After installing batteries and before use ensure the battery cover and over mould are correctly fitted, switch on the unit and check for correct operation.

Dispose of used batteries as per the local authorities guidelines.

### **3.2 Operation**

#### **Continuity Null**

To ensure greater accuracy when performing continuity tests, a lead null should be carried out. This will ensure that test lead resistance is taken into account when testing. Turn the rotary dial to the continuity position, short the positive and negative test leads together, then press the continuity null button. The test lead resistance will be shown on the screen and further continuity testing will take into account the test lead resistance. The test leads will remain nulled until the tester is powered off or a new continuity null is carried out. The continuity null function will null test leads up to the value of  $5\Omega$ .

#### **Continuity**

Turn the rotary dial to the continuity position. Apply test leads to the resistance to be measured and press the test button. To ensure accurate results, the test leads should be nulled.

#### **Buzzer**

The buzzer function is used for quick and easy “belling out”. Turn the rotary dial to the buzzer function and apply the test leads to the resistance to be measured. If a resistance of less than  $50\Omega$  is measured, a single tone will sound and  $>50\Omega$  will be displayed on the screen. There is no need to press the test button. Once the test leads have been removed from the resistance being measured, the tester will make a dual tone and the screen will display  $>50\Omega$ .

## **Insulation**

Turn the rotary dial to the required test voltage. Push the test button. During the test the LCD will indicate the test voltage being applied. The result will then be shown. During insulation testing do not touch the jaws of any clips or the prod tips as they will become energised.

## **Hands Free**

Hands free operation is available for continuity or insulation functions. Select the function required with the rotary dial. Press the hands free button. HANDSFREE will be displayed. Once the test button is pressed, the tester will continue to perform the selected test until the hands free is deselected, the test button is pressed or the unit is powered off.

## **Mute**

To select mute press and hold the button for 3 seconds. When mute is selected audible tones during testing will be switched off. Safety critical warning tones such as accidental connection to an energised circuit will remain active.

## **Safety Fuse**

The IRC PRO has a user replaceable safety fuse. If the broken fuse indication is displayed on the screen, the fuse can be located by removing the battery cover. Ensure that all test leads are removed. Remove the rubber over mould and battery cover on the reverse of the unit. Using a flat blade screwdriver, lift out the fuse carrier. Replace the fuse with a Type F 500mA 600V Fast Blow ceramic fuse. After replacing the fuse and before use, ensure the battery cover and over mould are correctly fitted. Switch on the unit and check for correct operation.

## **4. Maintenance and Service**

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

With the exception of the batteries there are no user serviceable parts. Contact Socket & See for parts and technical assistance.

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<b>Specification</b>		
<b>Continuity test range accuracy</b>		
<b>Range</b>	<b>Tolerance (@ 20°C)</b>	
0.00 to 9.99 Ω	± (3% + 2 digits)	
10.0 to 99.9 Ω	± (3% + 2 digits)	
100 to 19.99 kΩ	± (3% + 2 digits)	
Open circuit Voltage	>4V, <10V	
Zero offset adjust (test lead null)	5Ω	
Typical test time (2Ω)	>2 seconds	
Hazard Warning LED	>25V	
<b>Insulation test range accuracy</b>		
<b>Test Voltage</b>	<b>Ranges (Auto Range)</b>	<b>Tolerance (@20°C)</b>
250V	0.01 to 9.99 MΩ	± (3% + 1 digits)
	10.0 to 99.9 MΩ	± (3% + 1 digits)
	100 to 199 MΩ	± (6% + 1 digits)
500V	0.01 to 9.99 MΩ	± (3% + 1 digits)
	10.0 to 99.9 MΩ	± (3% + 1 digits)
	100 to 199 MΩ	± (3% + 1 digits)
	200 to 499 MΩ	± (6% + 1 digits)

1000V	0.01 to 9.99 MΩ	± (3% + 1 digits)
	10.0 to 99.9 MΩ	± (3% + 1 digits)
	100 to 399 MΩ	± (3% + 1 digits)
	400 to 999 MΩ	± (6% + 1 digits)

### Insulation output voltage

Voltage	Load	Output Current	Tolerance
250 V	250 kΩ	1 mA	-10% +20%
500 V	500 kΩ	1 mA	-10% +20%
1000 V	1 MΩ	1 mA	-10% +20%
Short circuit current (into 2 kΩ)			< 2 mA
Typical test time (10 MΩ)			< 2 seconds

Power Supply	4 x AA LR6 Batteries
Battery Life	50 Hours
Overvoltage category	CAT III 500V CAT IV 300V
Operating Temperature	0 - 40°C
Storage Temperature	-10 to 60°C
Operating Humidity	80% @ 31°C to 50% @ 40°C
Safety Compliance	BSEN 61010-2-030:2010
EMC Compliance	BSEN 61326-2-2:2013
Performance Standard	BSEN 61557-1:2007 BSEN 61557-2:2007 BSEN 61557-4:2007
Probes	GS38 Compliant
Dimensions (mm)	180mm x 85mm x 50mm
Weight (g)	Approximately 450g