OPERATION MANUAL

Tester SA9083

Main Features:

Large, easy to read dial
Measuring ranges arranged for operator sequence testing
Line Reversal B-A Switch
Water and Shock Resistant ABS Plastic Case
Meter/Battery Check
Cost Effective Design
Ease of Use
Enables identification of telephone / line jack capacitor and estimation of line length
Long Working Life
One Year Warranty

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Issue 2.01; 29/08/2012

Introduction

The Tester SA9083 is a battery powered, multi-range, analogue portable instrument. It is primarily intended for use by faultsmen for maintenance testing of telecommunication lines and equipment, subscriber installations connected to exchanges where faultsmen do not have access to a test desk, or where the testing equipment at the local exchange is not staffed during normal working hours. It has three input terminals, a range selector switch and a dual purpose push-button reversing switch (B-A changeover/ test cell).

Package Contents

Tester SA9083
Lead set
Instruction sheet
Housed in equipment case

Meter/Battery Check

With a 6LR61 (PP3) battery fitted, turn the rotary selector switch to **`Ohms x 100`**. The **red LED** should illuminate.
Connect the red and black leads to the Tester.
Short the leads together, the meter needle should give a full scale deflection.
If not fit a new battery and repeat.

Types of Test

AC volts across the pair
AC volts on either leg
DC volts across the pair
DC volts on either leg
Battery contacts, either leg
Earth contacts, either leg
Short circuits rectified or not
Disconnection, one or both legs
Ballistic test (capacitor discharge)
Insulation resistance (low) across the pair or to earth

AC Volts

Set the rotary selector switch to **`250V AC`**.
Connect the black lead to a good earth and use the red lead to test each leg of the pair. Remove the black lead from earth and test across the pair.

STOP WORK IF AC VOLTS DETECTED
Any pair with AC volts, no matter how small must be reported.

DC Volts

Set the rotary selector switch to `**250V DC**`.
Connect the black lead to a good earth and use the red lead to test each leg of the pair.
Remove the black lead from earth and test across the pair.
Repeat for `**50V DC**` and `**5V DC**`.
This test indicates the presence of voltages which may damage the Tester.

Battery Contacts

Set the rotary selector switch to `**Batt B**`.
Connect leads across the pair and to earth, any movement of the meter needle indicates a voltage is present on the 'B' leg.
Press the `**B-A change**` button, any movement of the meter needle indicates a voltage present on the 'A' leg.

Earth Contacts

Set the rotary selector switch to `**Earth B**`.
Connect leads across the pair and to earth, any movement of the meter needle indicates an earth is present on the 'B' leg.
Press the `**B-A change**` button, any movement of the meter needle indicates an earth is present on the 'A' leg.

Insulation Resistance

Set the rotary selector switch to `**Ohms x 100**`.
Connect leads across the pair.
Take a reading from the top scale.
Any movement of the meter needle indicates low insulation resistance. Sometimes a polarised (rectified) fault occurs where a reading can be obtained in one direction only therefore it is important to press the `**B-A change**` button to check the other direction.

Loops/Conductor Resistance

Set the rotary selector switch to `**Ohms Loop**`.
Connect leads across the pair, a loop or short circuit can be identified by a deflection of the meter needle.
A loop or short circuit can also be identified by a full scale deflection when using the `**Ohms x 100**` range.

Disconnections

If a disconnection is suspected (i.e. not picking up expected line conditions) to establish if the 'A' or 'B' leg is disconnected follow the procedure given below:

Set the rotary selector switch to `**Ohms x 100**`.

Connect the red lead to the 'A' leg and the black lead to earth.

Press the `**B-A change**` button and note the amount of meter needle deflection.

Connect the red lead to the 'B' leg and press the `**B-A change**` button noting the amount of meter needle deflection.

Compare the two deflections, if there is any noticeable difference then the leg with the smallest amount of deflection may not be going as far as the other leg.

Ballistic Test

This test is used when testing into a customers premises and can identify either a 700 type capacitor, an Network Termination Equipment or an Line Jack Unit.

Set the rotary selector switch to `**Ohms x 100**`.

Connect the red and black leads across the pair to be tested. Press the `**B-A change**` button.

1. If the meter needle deflects to about half full scale and returns quickly you are testing into a 700 type capacitor.
2. If the meter needle deflects only slightly and returns slowly you are testing into an Network Termination Equipment or an Line Jack Unit.

Characteristics

Ranges	
Range 1	0-250V AC
Range 2	Battery test B (50V DC)
Range 3	Earth test B (3kΩ-3MΩ)
Range 4	Ohms x 100 (3kΩ-3MΩ)
Range 5	Ohms Loop (3kΩ-3MΩ)
Range 6	0-250V DC
Range 7	0-50V DC
Range 8	0-5V DC
Range 9	0-5A DC
Range 10	0-500mA DC
Range 11	0-50mA DC
Range 12	Mega Ohms (5kΩ-5MΩ)

Ingress Protection	IP54

Accuracy	
Generally	to IEC51-7
DC ranges	± 2.5%
AC ranges	± 2.5%
Resistance ranges	± 10%

Electromagnetic Compatibility (EMC)	
Emissions	Bs6527 (En55022) class B
Susceptibility	IEC801 Parts 2,3 & 4
(EN50082-1)	
Two Class Index variation	

Battery	
	6LR61 (PP3)

Dimensions	
Height x Width x Depth	150 x 98 x 70 mm

Weight
365 g nett

Supplied by: