

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.



IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY INSTRUCTIONS

1.1 PERSONAL PRECAUTIONS

- ✓ When using this multimeter, please observe all normal safety rules concerning:
Protection against the dangers of electrical current.
Protection of the meter against misuse.
- ✓ Full compliance with safety standards can only be guaranteed if used with the test leads supplied. If necessary, they must be replaced with genuine Sealey leads with the same electrical ratings. Failure to do so will invalidate the warranty.
- ✗ **DO NOT** use leads if damaged or if the wires are bared in any way.

1.2 GENERAL SAFETY INSTRUCTIONS

- ✓ Familiarise yourself with the application and limitations of the multimeter as well as the potential hazards.
IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN.
- ✓ When the meter is connected to a circuit, **do not** touch unused meter terminals.
- ✓ When the magnitude of the value to be measured is unknown, set the range selector to the highest value available.
- ✓ Before commencing testing, follow instructions below and select the correct input sockets, function and range on the multimeter.
- ✓ Before rotating the rotary switch to change functions, disconnect the test leads from the circuit under test.
- ✓ Take care when working with voltages above 60V DC or 30V AC rms. Keep fingers behind the probe barriers whilst measuring.
- ✗ **DO NOT** test voltages above 600V - the circuitry of the multimeter may be destroyed.
- **WARNING! NEVER** connect the multimeter to a voltage source / live circuit when the rotary switch is set to any other function apart from Voltage testing
- **WARNING! NEVER** perform resistance, transistor, diode or continuity measurements on live circuits.
- ✗ **DO NOT** use the multimeter in a potentially explosive atmosphere.
- ✓ Ensure that the rear cover is in place and fastened before using the multimeter.
- ✓ Before attempting to insert transistors for testing, ensure that test leads have been disconnected.
- ✓ Components should not be connected to the transistor socket or capacitor socket when taking voltage measurements with the test leads.
- If any abnormal readings are observed, the multimeter must be checked out by an authorised technician.
- ✓ When not in use, store the multimeter carefully in a safe, dry, childproof location out of direct sunlight. Storage temperature range -10°C to 50°C.

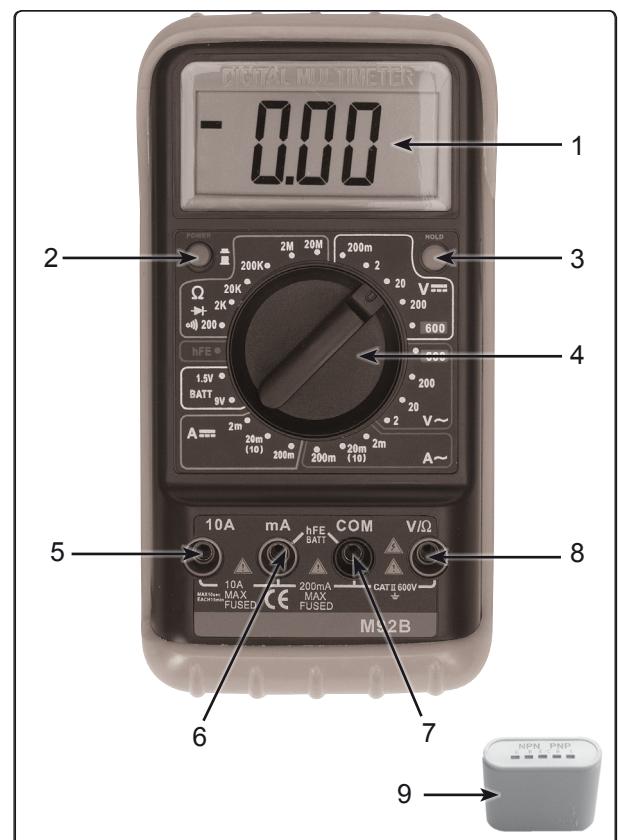
2. FEATURES

Quality tradesman's multimeter with easy to read 26mm LCD display. Features protective rubber boot, probe storage and integral stand. Supplied with probe test leads.

Function	Measures	Red Lead Connection	Input Limits
V ----	DC Voltage	V/Ω	600V DC
V ~	AC Voltage	V/Ω	600V AC (sine)
A ----	DC Current	mA or 10A	10A DC
A ~	AC Current	mA or 10A	10AAC
Ω	Resistance	V/Ω	20M Ω
BATT	Battery Checker	mA	9.0V
∅ (200)	Audible Continuity	V/Ω	—
► (2k)	Diode Verification Mode	V/Ω	—
hFE	Transistor Verification Mode	mA	—

Features:

1. LCD Display
2. On/Off Button
3. Hold Button
4. Rotary Switch
5. 10A Socket
6. mA Socket
7. COM Socket
8. V/Ω Socket
9. Transistor Testing Socket



3. OPERATION

- **WARNING!** Ensure that you read, understand and apply the safety and operational instructions before connecting the multimeter. Only when you are sure that you understand the procedures, is it safe to proceed with testing. Operating temperature range 0°C to 40°C.
- If the battery sign $\ominus +$ appears on the display, it indicates that the battery power is low and must be replaced, see section 5.2.
- NOTE:** when the figure '1' is displayed, it indicates an over-range situation and a higher range needs to be selected.
- Use the hold button to hold the displayed test reading, press button again to return to normal setting.
- Switch on the multimeter each time immediately before measuring and turn it off when completed.

3.1. MEASURING VOLTAGE

- 3.1.1. Connect the black test lead to the COM input socket and the red test lead to the V/Ω input socket.
 - 3.1.2. Set the rotary switch to the required V ---- (DC) or V ~ (AC) range and connect test leads across the device or circuit under measurement.
 - 3.1.3. Turn on the power to the device or circuit, the voltage measured will be displayed. The polarity of the red test lead connection will be indicated when measuring DC voltages.
- NOTE:** At low voltage settings, the display may show fluctuating readings when the probes are not connected, due to the sensitivity of the multimeter. If a circuit of over 600V is accidentally measured, the buzzer will sound as a warning.

3.2. MEASURING CURRENT

- 3.2.1. Connect the black test lead to the COM input socket and the red test lead to either the mA input socket for measuring a maximum of 200mA or the 10A input socket for measuring a maximum of 10A.
 - 3.2.2. Set the rotary switch to the required A ---- (DC) or A ~ (AC) range (note: the 10A setting in brackets) and connect test leads in series with the circuit under measurement, open the circuit and the current measured will be displayed.
- NOTE:** The polarity of the red lead connection will be indicated when measuring dc current.

3.3. MEASURING RESISTANCE

- 3.3.1. Connect the black test lead to the COM input socket and the red test lead to the V/Ω input socket (the polarity of the red lead is '+').
- 3.3.2. When checking in-circuit resistance, ensure that the circuit under test has all power removed and all capacitors have been fully discharged.
- 3.3.3. Set the rotary switch to the required Ω range and connect the test leads across the resistance under measurement. The resistance measured will be displayed.
- 3.3.4. When measuring resistance over 1MΩ, the meter may take a few seconds to get a stable reading. This is normal for high resistance measurements.

3.4. DIODE TESTING

- 3.4.1. Connect the black test lead to the COM input socket and the red test lead to the V/Ω input socket (the polarity of the red lead is '+').
- 3.4.2. Set the rotary switch to the \rightarrow position and connect the red probe to the anode and the black probe to the cathode of the diode under test. The display will show the forward voltage drop of the diode. If the probes are reverse connected, a figure '1' will be displayed.

3.5. TRANSISTOR TESTING

- 3.5.1. Determine whether the transistor to be tested is NPN or PNP type and locate the Emitter, Base and Collector leads. Insert leads of the transistor into the correct sockets in the external transistor testing socket. Connect the black lead to the COM input socket and the red lead to the V/Ω input socket. Insert the probes correctly into the external tester. Set the rotary switch to the hFE position.
- 3.5.2. The display will show the approximate hFE value at test conditions of base current 10µA and Vce 2.8V.

3.6. AUDIBLE CONTINUITY TEST

- 3.6.1. Connect the black test lead to the COM input socket and the red test lead to the V/Ω input socket (the polarity of the red lead is '+').
- 3.6.2. Set the rotary switch to the \ominus position and connect the test leads across the two points of the circuit under test. If continuity exists (i.e. resistance less than about 30Ω) the built-in buzzer will sound.

3.7. BATTERY TESTING

- 3.7.1. Connect the black test lead to the COM input socket and the red test lead to the mA input socket.
- 3.7.2. Set the rotary switch to the appropriate battery voltage position (1.5V or 9V). Touch the probes onto the terminals of the battery to be tested, the display will show the voltage of the battery (a negative voltage will be shown if the probes are reversed).



4. SPECIFICATION

AC VOLTAGE			AC CURRENT			RESISTANCE		
Range	Accuracy	Resolution	Range	Accuracy	Resolution	Range	Accuracy	Resolution
2V	±0.8% of reading ±5 digits	1mV	2mA	±1.2% of reading ±3 digits	1µA	200Ω	±1.0% of reading ±8 digits	0.1Ω
20V	±0.8% of reading ±5 digits	10mV	20mA	±2.0% of reading ±3 digits	10µA	2kΩ	±1.2% of reading ±8 digits	1Ω
200V	±0.8% of reading ±5 digits	100mV	200mA	±2.0% of reading ±3 digits	100µA	20kΩ	±1.2% of reading ±8 digits	10Ω
600V	±1.2% of reading ±4 digits	1V	10A	±3.0% of reading ±7 digits	10mA	200kΩ	±1.2% of reading ±8 digits	100Ω
Input impedance: 10MΩ for all ranges. Frequency Range: 40Hz to 1kHz Overload Protection: 220V rms ac for 200mV range and 600V dc or ac for other ranges. Indication: Average (rms of sine wave).			Overload protection: Fuse 1: 500mA/250V Indication: Average (rms of sine wave). Maximum Input Current: Fuse 2: 10A/250V (10A up to 15 seconds). Measuring Voltage Drop: 200mV. Frequency Range: 40Hz to 1kHz.			Maximum open circuit voltage less than 750mV. Overload protection: 220V dc/ac rms on all ranges.		

DC VOLTAGE			DC CURRENT			BATTERY TEST		
Range	Accuracy	Resolution	Range	Accuracy	Resolution	Range	Accuracy	Current
200mV	±0.8% of reading ±4 digits	100µV	2mA	±0.8% of reading ±4 digits	1µA	1.5V	±0.8% of reading ±2 digits	60mA
2V	±0.8% of reading ±4 digits	1mV	20mA	±0.8% of reading ±4 digits	10µA	9.0V	±0.8% of reading ±2 digits	12mA
20V	±0.8% of reading ±4 digits	10mV	200mA	±1.2% of reading ±5 digits	100µA			
200V	±0.8% of reading ±4 digits	100mV	10A	±2.0% of reading ±5 digits	10mA			
600V	±1.2% of reading ±4 digits	1V	Overload protection: Fuse 1: 500mA/250V Maximum Input Current: Fuse 2: 10A/250V (10A up to 15 seconds). Measuring Voltage Drop: 200mV.					
Input impedance: 10MΩ for all ranges. Overload Protection: 600V dc or peak ac on all ranges. Overload Protection: 200V rms ac for 200mV range and 600V dc or ac for other ranges.								

AUDIBLE CONTINUITY TEST		TRANSISTOR hFE TEST (External test socket)		DIODE TEST			
Range	Description	Range	Description	Test Condition	Range	Description	Test Condition
	Buzzer sounds if resistance is less than 30 Ohms	hFE	Displays approximate hFE value (1-1000) of transistor.	Base current approximately 10µA. VCE approximately 2.8V.		Displays approximate forward Voltage of Diode	Forward DC current approximately 1mA. Reversed DC voltage approximately 2.8V
Open Circuit Voltage approximately 2.8V							

5. MAINTENANCE

- WARNING!** Before attempting to open the case, ensure that the test leads have been disconnected from the multimeter and that it is switched off to avoid electric shock hazard.
- 5.1. Changing a fuse. The fuses are located on the back of the circuit board. To gain access to the fuses, remove the protective rubber boot and the two screws from the rear of the multimeter. Lift off the rear cover, replace the appropriate fuse and re-assemble in reverse order.
- WARNING! ALWAYS** replace a fuse with one of the correct rating.
Fuse 1: 500mA/250V
Fuse 2: 10A/250V
- 5.2. If the battery sign appears on the LCD display, it indicates that the battery must be replaced. Repeat the steps detailed in section 5.1 to remove the rear cover, replace the battery (9V PP3) and re-assemble in reverse order.
- 5.3. Clean the multimeter's casing using a slightly dampened cloth and mild detergent - do not use any abrasives or solvents. Clean the inside of each terminal using a swab soaked in isopropyl alcohol, use a new swab to apply a light coat of machine oil to each terminal.
- 5.4. If the multimeter is to be stored for a long period of time, remove the battery first to avoid any damage.

Environmental Protection.



Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycle centre and disposed of in a manner which is compatible with the environment.



When the product is no longer required, it must be disposed of in an environmentally protective way.

Battery Removal.



- See Section 5.2.
- Remove and dispose of according to local authority guidelines.

Parts support is available for this product. To obtain a parts listing and/or diagram, please log on to www.sealey.co.uk, email sales@sealey.co.uk or phone 01284 757500.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

IMPORTANT: No liability is accepted for incorrect use of this product.

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.



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