Dorman 85357

Dorman 85357 Digital Multimeter Instruction Manual

Model: 85357 | Brand: Dorman

1. Introduction

The Dorman 85357 Digital Multimeter is a portable, battery-powered instrument designed for measuring various electrical parameters. This device is suitable for use in laboratories, factories, and for general household applications. It offers reliable and accurate readings for DC voltage, AC voltage, DC current, resistance, transistor hFE, diode testing, and continuity checking.

2. Safety Information

To ensure safe operation and to avoid damage to the meter, please observe the following safety rules:

- Always ensure the meter is in good working condition before use.
- Do not apply voltage or current that exceeds the maximum specified limits for the meter.
- Exercise extreme caution when working with live circuits. High voltage can cause electric shock.
- Never connect the meter to a voltage source when the function switch is set to Resistance, Diode, or Continuity.
- Always disconnect the test leads from the circuit before changing the function or range.
- Replace the battery immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter if the battery cover is not properly closed.

3. Package Contents

Verify that all items are present and in good condition:

- 1 x Dorman 85357 Digital Multimeter
- 1 x Set of Test Leads (Red and Black)
- 1 x 9V Battery (may be pre-installed or separate)
- 1 x Instruction Manual

4. Product Overview

Figure 1: Dorman 85357 Digital Multimeter with included test leads. The image shows the yellow multimeter unit with its LCD display, rotary switch, and input jacks, alongside the red and black test leads.

The Dorman 85357 Digital Multimeter features a clear LCD display for reading measurements, a central rotary switch for selecting functions and ranges, and multiple input jacks for connecting test leads.

Key Components:

- **LCD Display:** Shows numerical readings, units, and other indicators.
- **Rotary Switch:** Used to select the desired measurement function (DCV, ACV, DCA, Resistance, hFE, Diode, Continuity) and range.
- **'VΩmA' Jack:** Input for voltage, resistance, and current measurements (except 10A). Connect the red test lead here.
- **'COM' Jack:** Common input for all measurements. Connect the black test lead here.
- **'10ADC' Jack:** Input for high DC current measurements (up to 10A). Connect the red test lead here for 10A measurements. This input is unfused.
- **hFE Socket:** For testing NPN and PNP transistors.

5. Setup

5.1 Battery Installation

If the battery is not pre-installed or needs replacement:

1. Ensure the multimeter is turned OFF.

2. Locate the battery compartment on the back of the unit.
3. Remove the screw(s) securing the battery cover and open it.
4. Connect a new 9V battery to the battery clip, observing correct polarity.
5. Place the battery inside the compartment and replace the cover, securing it with the screw(s).

5.2 Connecting Test Leads

For most measurements (voltage, resistance, and current up to 200mA):

- Insert the red test lead into the 'VΩmA' jack.
- Insert the black test lead into the 'COM' jack.

For 10A DC current measurements:

- Insert the red test lead into the '10ADC' jack.
- Insert the black test lead into the 'COM' jack.

6. Operating Instructions

Always select the appropriate function and range before connecting the test leads to the circuit. If the measurement value is unknown, start with the highest range and work downwards.

6.1 Measuring DC Voltage (DCV)

1. Connect the test leads as described in Section 5.2 (red to 'VΩmA', black to 'COM').
2. Set the rotary switch to the desired DCV range (e.g., 1000V, 200V, 20V, 2000mV, 200mV).
3. Connect the test leads across the component or circuit to be measured, observing polarity.
4. Read the voltage value on the LCD display.

6.2 Measuring AC Voltage (ACV)

1. Connect the test leads as described in Section 5.2 (red to 'VΩmA', black to 'COM').
2. Set the rotary switch to the desired ACV range (e.g., 750V, 200V).
3. Connect the test leads across the AC voltage source. Polarity is not critical for AC measurements.
4. Read the voltage value on the LCD display.

6.3 Measuring DC Current (DCA)

Caution: Never connect the meter in parallel with a voltage source when measuring current. This can blow the fuse or damage the meter.

1. Determine the expected current. For currents up to 200mA, connect red to 'VΩmA'. For currents up to 10A, connect red to '10ADC'. Black always connects to 'COM'.
2. Set the rotary switch to the desired DCA range (e.g., 10A, 200mA, 20mA, 2000µA, 200µA).
3. Open the circuit where current is to be measured and connect the meter in series with the load.
4. Read the current value on the LCD display.

6.4 Measuring Resistance (Ω)

Caution: Ensure the circuit is de-energized and all capacitors are discharged before measuring resistance.

1. Connect the test leads as described in Section 5.2 (red to 'VΩmA', black to 'COM').
2. Set the rotary switch to the desired Resistance range (e.g., 2000kΩ, 200kΩ, 20kΩ, 2000Ω, 200Ω).
3. Connect the test leads across the component to be measured.

4. Read the resistance value on the LCD display.

6.5 Diode Test

1. Connect the test leads as described in Section 5.2 (red to 'VΩmA', black to 'COM').
2. Set the rotary switch to the Diode symbol.
3. Connect the red test lead to the anode and the black test lead to the cathode of the diode. The display will show the forward voltage drop.
4. Reverse the test leads. The display should show 'OL' (Open Loop) for a good diode.

6.6 Continuity Test

1. Connect the test leads as described in Section 5.2 (red to 'VΩmA', black to 'COM').
2. Set the rotary switch to the Continuity symbol.
3. Connect the test leads across the circuit or component.
4. If continuity exists (resistance below a certain threshold), the meter will emit an audible beep. The display will also show the resistance value.

6.7 Transistor hFE Test

1. Set the rotary switch to the 'hFE' position.
2. Identify if the transistor is NPN or PNP.
3. Insert the transistor leads (Emitter, Base, Collector) into the corresponding holes in the hFE socket.
4. Read the hFE value (DC current gain) on the LCD display.

7. Maintenance

7.1 Cleaning

Wipe the meter with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the meter dry.

7.2 Battery Replacement

When the battery symbol appears on the LCD display, the battery needs to be replaced. Refer to Section 5.1 for battery installation instructions.

8. Troubleshooting

Problem	Possible Cause	Solution
No display or faint display	Low battery or no battery installed	Replace or install a new 9V battery (refer to Section 5.1)
Incorrect readings	Incorrect range selected; poor test lead connection; damaged test leads	Select appropriate range; ensure secure connections; inspect and replace test leads if damaged
'OL' or '1' displayed	Overload (measurement exceeds selected range); open circuit (for continuity/resistance)	Select a higher range; check for open circuits or broken wires
No continuity beep	Resistance too high; open circuit	Check the circuit for breaks; ensure component is conductive

9. Specifications

- **Model:** 85357
- **Manufacturer:** Dorman - Conduct-Tite
- **Country of Origin:** USA
- **Dimensions (L x W x H):** 3.81 x 14.61 x 22.23 cm (1.5 x 5.75 x 8.75 inches)
- **Weight:** 136.08 grams (0.3 lbs)
- **Power Source:** 9V Battery (included)
- **Measurement Type:** Multimeter
- **Included Components:** 1 Digital Multimeter, 1 Set of Test Leads, 1 Battery, Instruction Manual
- **DC Voltage Ranges:** 200mV, 2000mV, 20V, 200V, 1000V
- **AC Voltage Ranges:** 200V, 750V
- **DC Current Ranges:** 200µA, 2000µA, 20mA, 200mA, 10A (unfused)
- **Resistance Ranges:** 200Ω, 2000Ω, 20kΩ, 200kΩ, 2000kΩ
- **Diode Test:** Yes
- **Continuity Test:** Yes (with audible buzzer)
- **Transistor hFE Test:** Yes (NPN/PNP)

10. Warranty and Support

For warranty information or technical support regarding your Dorman 85357 Digital Multimeter, please refer to the contact information provided by your retailer or visit the official Dorman website. Keep your purchase receipt as proof of purchase.

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