OWON OW18B

OWON OW18B Bluetooth Digital Multimeter User Manual

Model: OW18B

1. Introduction

The OWON OW18B is a 3-5/6 bit resolution Bluetooth Digital Multimeter designed for precise electrical measurements. It functions as a multimeter, thermometer, and data logger, offering advanced features such as True RMS, Non-Contact Voltage (NCV) detection, and a built-in flashlight. With Bluetooth 4.0 connectivity, it allows for wireless data transmission to Android, iOS, and Windows devices, enabling multi-device connection, single-display monitoring, and data analysis through charts and diagrams. The device also includes a voice broadcast function and supports offline recording for up to 7 days.

Figure 1: OWON OW18B Digital Multimeter

2. Safety Information

To ensure safe operation and avoid damage to the meter, please read this manual carefully before use. Adhere to all safety warnings and precautions.

- Always ensure the test leads are correctly connected to the appropriate input terminals for the measurement being performed.
- Do not exceed the maximum input limits for any function. The OW18B is rated for 1000V CAT III and 600V CAT IV.
- Exercise extreme caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Before measuring current, ensure the circuit is de-energized and the meter is connected in series with the load.
- Replace the battery immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter if it appears damaged or if the case is open.
- Use only specified replacement parts when servicing the meter.
- Keep fingers behind the probe barriers during measurements.

3. Product Overview

The OWON OW18B features a robust design with a clear digital display and an intuitive rotary dial for function selection. Key components include:

- **LCD Display:** Shows measurement readings, units, and function indicators.
- **Function Rotary Switch:** Selects measurement modes (Voltage, Current, Resistance, etc.).
- **Input Jacks:** Terminals for connecting test leads (VΩHz, mA, 20A, COM).
- **Buttons:** For range selection, data hold, backlight, flashlight, and NCV activation.
- **Kickstand:** Allows for hands-free operation.

Figure 2: OWON OW18B with integrated kickstand for convenient viewing.

4. Setup

4.1 Battery Installation

The OW18B requires a 9V battery for operation.

1. Ensure the multimeter is powered off.
2. Locate the battery compartment cover on the back of the device.
3. Unscrew the retaining screw(s) and remove the cover.
4. Connect a new 9V battery to the battery clips, observing correct polarity.
5. Place the battery into the compartment and replace the cover, securing it with the screw(s).

4.2 Test Lead Connection

Connect the test leads to the appropriate input jacks based on the desired measurement:

- **COM Jack:** Always connect the black test lead to the COM (Common) jack.
- **VΩHz Jack:** Connect the red test lead for Voltage, Resistance, Frequency, Capacitance, Diode, and Continuity measurements.
- **mA Jack:** Connect the red test lead for current measurements up to 600mA.
- **20A Jack:** Connect the red test lead for current measurements up to 20A.

4.3 Bluetooth App Connection

The OW18B supports Bluetooth 4.0 for wireless data transmission to a mobile application (Android/iOS) or Windows software.

1. Download the official OWON multimeter application from your device's app store (e.g., Google Play Store, Apple App Store) or the OWON website for Windows software.
2. Ensure Bluetooth is enabled on your mobile device or computer.
3. Power on the OW18B multimeter.
4. Open the OWON application. The app should automatically detect and connect to the OW18B. Follow any on-screen prompts for pairing if necessary.
5. Once connected, you can view real-time measurements, log data, and analyze trends within the application.

5. Operating Instructions

5.1 Power On/Off and Function Selection

To power on the multimeter, rotate the function switch from "OFF" to the desired measurement function. To power off, rotate the switch back to "OFF".

5.2 Voltage Measurement (AC/DC)

1. Connect the black lead to the COM jack and the red lead to the VΩHz jack.
2. Rotate the function switch to the V~ (AC Voltage) or V- (DC Voltage) position.
3. Touch the test probes to the circuit points where voltage is to be measured.
4. Read the voltage value on the display. The meter supports True RMS for AC measurements.

5.3 Current Measurement (AC/DC)

Caution: Never connect the meter in parallel to a voltage source when measuring current. This can damage the meter and pose a safety risk.

1. **For mA:** Connect the black lead to COM and the red lead to the mA jack.
2. **For 20A:** Connect the black lead to COM and the red lead to the 20A jack.
3. Rotate the function switch to the A~ (AC Current) or A- (DC Current) position.
4. Open the circuit where current is to be measured and connect the meter in series.
5. Read the current value on the display.

5.4 Resistance, Continuity, Diode, and Capacitance Measurement

1. Connect the black lead to COM and the red lead to the VΩHz jack.
2. Rotate the function switch to the Ω (Resistance),→| (Diode), or •))) (Continuity) position. Use the "Select" button to cycle through these functions if they share a single switch position.
3. For resistance, connect probes across the component. For continuity, a beep indicates a continuous circuit. For diode, connect across the diode. For capacitance, connect across the capacitor.
4. Read the measurement on the display.

5.5 Frequency and Duty Cycle Measurement

1. Connect the black lead to COM and the red lead to the VΩHz jack.
2. Rotate the function switch to the Hz/% position.
3. Connect the probes to the signal source.
4. Read the frequency (Hz) or duty cycle (%) on the display.

5.6 Temperature Measurement

The OW18B includes a K-type thermocouple for temperature measurements.

1. Ensure the multimeter is off.
2. Connect the K-type thermocouple to the VΩHz and COM jacks, observing polarity.
3. Rotate the function switch to the °C/°F position.
4. Place the thermocouple tip on or near the object whose temperature is to be measured.
5. Read the temperature on the display. Use the "Select" button to switch between Celsius and Fahrenheit.

5.7 Non-Contact Voltage (NCV) Detection

The NCV function allows for detection of AC voltage without direct contact.

1. Rotate the function switch to the NCV position.
2. Move the top front part of the multimeter close to the conductor or outlet.
3. The meter will emit an audible beep and the NCV indicator light will flash, indicating the presence of AC voltage.

5.8 Flashlight Function

The built-in flashlight illuminates dark work areas.

- Press the flashlight button (often labeled with a lightbulb icon) to turn the flashlight on or off.

Figure 3: OWON OW18B demonstrating the flashlight function.

5.9 Data Logging and Voice Broadcast

When connected via Bluetooth to the OWON app, the multimeter can log data and provide voice broadcast of readings.

- **Data Logging:** Activate logging within the mobile application. The meter also supports built-in offline recording for up to 7 days, which can be retrieved via the app.
- **Voice Broadcast:** Enable this feature in the app settings to hear readings audibly, which can be useful in situations where viewing the display is difficult.

6. Maintenance

6.1 Cleaning

Wipe the meter's case with a damp cloth and mild detergent. Do not use abrasives or solvents. Ensure the meter is powered off and disconnected from any circuits before cleaning.

6.2 Battery Replacement

Refer to Section 4.1 for battery installation instructions. Replace the 9V battery when the low battery indicator appears on the display.

6.3 Fuse Replacement

If the current measurement function fails, the fuse may need replacement.

1. Ensure the multimeter is powered off and all test leads are disconnected.
2. Open the battery compartment cover as described in Section 4.1.
3. Locate the fuse(s) inside the compartment. The OW18B typically uses two fuses: a fast-acting 600mA/250V fuse for the mA range and a fast-acting 20A/250V fuse for the 20A range.
4. Carefully remove the blown fuse and replace it with a fuse of the exact same type and rating.
5. Replace the battery compartment cover and secure it.

6.4 Storage

When not in use for extended periods, remove the battery to prevent leakage. Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.

7. Troubleshooting

Problem	Possible Cause	Solution
Meter does not power on.	Dead or incorrectly installed battery.	Check battery polarity and replace with a new 9V battery if necessary.
No reading or "OL" (Overload) displayed.	Incorrect function selected, open circuit, or measurement exceeds range.	Verify function switch position, check circuit continuity, or select a higher range if available.
Current measurement not working.	Blown fuse.	Replace the appropriate fuse as described in Section 6.3.
Bluetooth connection issues.	Bluetooth off on device, app not running, or interference.	Ensure Bluetooth is enabled on your mobile device, restart the app, and ensure the multimeter is within range.
Data logging files not found on phone.	App storage permissions, incorrect save path, or app specific issue.	Check app permissions for storage access. Consult the app's help section or OWON support for specific file locations. Ensure the app is updated to the latest version.

8. Specifications

Feature	Detail
Model	OW18B
Display	3-5/6 bit resolution, 6000 counts
True RMS	Supported
Non-Contact Voltage (NCV)	Supported
Bluetooth	BT 4.0 wireless transmission
Data Logging	Built-in offline record (up to 7 days), app-based logging
Voice Broadcast	Supported
Flashlight	Integrated
Temperature Test	K-type thermocouple included
Power Source	9V Battery (not included)
Dimensions (L x W x H)	19.60 x 8.85 x 5.60 cm / 7.72 x 3.48 x 2.2 inches
Product Weight	0.30 kg / 0.66 lbs (approx.)
Manufacturer	LILLIPUT (Brand: OWON)
Safety Rating	1000V CAT III, 600V CAT IV

9. Warranty and Support

For warranty information, technical support, or service inquiries, please contact the manufacturer or your authorized dealer. Keep your purchase receipt as proof of purchase.
For the latest software updates and additional resources, please visit the official OWON website.