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OWON XDM1041

OWON XDM1041 Digital Multimeter User Manual

Model: XDM1041

1. Safety Information

Read all safety information and operating instructions before using the OWON XDM1041 Digital Multimeter. Failure to follow these instructions may result in electric shock, fire, or damage to the meter or the equipment under test.

- Do not exceed the maximum input limits for any function.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Ensure the test leads are in good condition and properly seated in the input terminals.
- Do not operate the meter if it appears damaged or if the case is open.
- Always disconnect power to the circuit and discharge all high-voltage capacitors before making resistance, continuity, diode, or capacitance measurements.
- Do not use the meter in wet environments or in the presence of explosive gases or fumes.
- Replace the fuse with the specified type and rating only.

2. Product Overview

2.1 Key Features

- **High Resolution Display:** 3.5-inch 480x320 TFT LCD with backlight.
- **Measurement Capability:** 55,000 counts for precise readings.
- **Accuracy:** DC Voltage accuracy up to 0.05%.
- **Speed:** Up to 65 readings per second for rapid measurements.
- **Dual Line Display:** Supports simultaneous display of two measurement parameters.
- **Temperature Measurement:** Compatible with K-type temperature probes (not included).
- **Data Logging:** Stores up to 1,000 data points internally, exportable to PC.
- **Connectivity:** USB and RS232 interfaces for PC communication.
- **Standard SCPI:** Supports standard SCPI commands for remote control.

2.2 Included Components



Image: The OWON XDM1041 Digital Multimeter and its accessories laid out, including test leads, alligator clips, power cord, USB cable, and user manual.

- 1 x OWON XDM1041 Digital Multimeter
- 1 x Pair of Test Leads (Red and Black)
- 2 x Alligator Clips
- 1 x Spare Fuse
- 1 x Power Cord
- 1 x USB Cable
- 1 x User Manual (English)



Image: A detailed view of the OWON XDM1041 Digital Multimeter, highlighting its large LCD screen, function buttons, and input jacks for various measurements.

3. Setup

3.1 Power Connection

1. Connect the provided power cord to the AC input socket on the rear panel of the multimeter.
2. Plug the other end of the power cord into a suitable AC power outlet.
3. Press the power button (●) on the front panel to turn on the device. The LCD screen will illuminate.

3.2 Test Lead Connection

Properly connect the test leads based on the measurement function:

- For Voltage, Resistance, Capacitance, Frequency, Diode, and Continuity measurements:
    - Insert the red test lead into the **VΩHz** input terminal.

- Insert the black test lead into the **COM** input terminal.

- For Current measurements (up to 600mA):
  - Insert the red test lead into the **mA µA** input terminal.
  - Insert the black test lead into the **COM** input terminal.

- For High Current measurements (up to 10A):
  - Insert the red test lead into the **10A** input terminal.
  - Insert the black test lead into the **COM** input terminal.

4. Operating Instructions

The OWON XDM1041 offers a variety of measurement functions accessible via the front panel buttons. The LCD screen displays measurement results, settings, and status information.



Image: The clear 3.5-inch high-resolution LCD display of the multimeter, showing a typical measurement reading.

4.1 Basic Measurements

To perform a measurement:

1. Turn on the multimeter.
2. Select the desired measurement function by pressing the corresponding button (e.g.,**V** for Voltage, **A** for Current, **Ω** for Resistance).
3. Connect the test leads to the appropriate input terminals and then to the circuit or component under test.
4. Read the measurement value on the LCD screen.

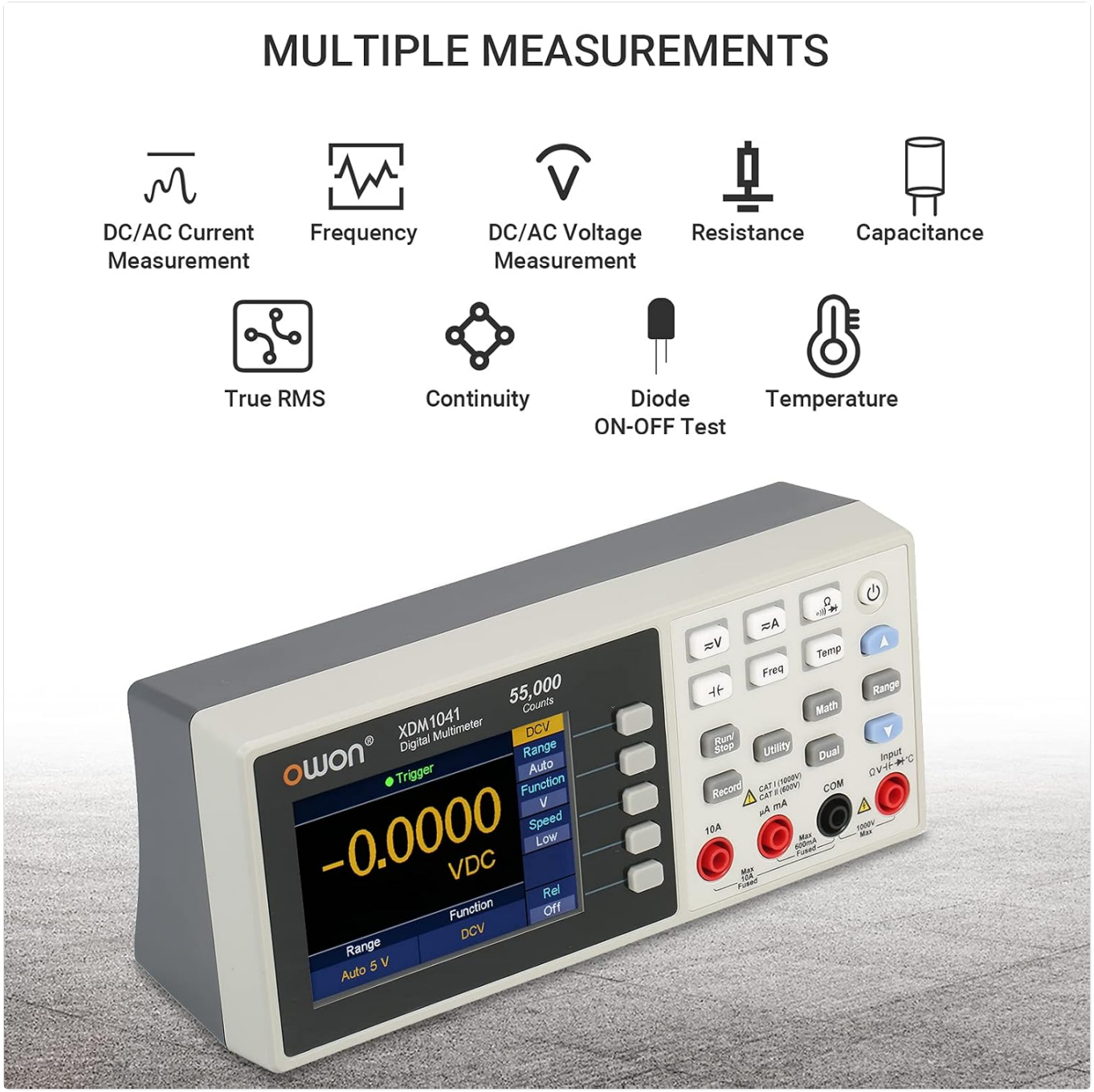


Image: Visual representation of the multiple measurement capabilities of the multimeter, including voltage, current, resistance, capacitance, frequency, diode, continuity, temperature, and True RMS.

4.2 Temperature Measurement

The XDM1041 can measure temperature using an external K-type thermocouple (not included).

1. Press the **Temp** button to enter temperature measurement mode.
2. Connect the K-type thermocouple to the input terminals (observe polarity if applicable, typically indicated on the probe).
3. The temperature reading will be displayed on the screen.



Image: The multimeter set up for temperature measurement, showing a K-type thermocouple connected and a temperature reading on the display.

4.3 Data Logging Function

The meter can record up to 1,000 data points, either manually or automatically.

1. Select the desired measurement function.
2. Press the **Record** button to access the data logging menu.
3. Use the navigation buttons to select between Manual Record or Auto Record.
4. For Auto Record, set the sampling interval (from 15ms to 9999s) and the number of points.
5. Press **Run/Stop** to start or stop recording.



Image: The multimeter's screen displaying the data record function interface, indicating options for manual or automatic recording.

Recorded data can be exported to a computer via USB for further analysis.

4.4 PC Communication

The XDM1041 can connect to a computer via USB or RS232 for remote control, data transfer, and analysis using dedicated software.

1. Install the necessary drivers and software (usually provided on a CD or available for download from the OWON website).
2. Connect the multimeter to your PC using the supplied USB cable.
3. Launch the software and establish a connection with the device.
4. You can then read measurements, control functions, and export logged data.



Image: The multimeter connected to a laptop, demonstrating its capability to communicate with a computer for data transfer and remote control.

5. Maintenance

5.1 Cleaning

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

5.2 Fuse Replacement

If the current measurement function stops working, the fuse may need replacement. Refer to the specifications for the correct fuse type and rating. To replace the fuse:

1. Turn off the multimeter and disconnect all test leads and the power cord.
2. Locate the fuse compartment (usually on the rear or bottom panel, consult the full manual for exact location).
3. Open the compartment and carefully remove the old fuse.
4. Insert a new fuse of the identical type and rating.
5. Close the fuse compartment securely.

6. Troubleshooting

- **Meter does not power on:**
  - Check if the power cord is securely connected to both the meter and the AC outlet.
  - Verify that the AC outlet is functional.
- **No reading or "OL" (Overload) displayed:**
  - Ensure test leads are correctly connected to the meter and the circuit.
  - Verify the correct function and range are selected.
  - For current measurements, check if the fuse is blown.
  - "OL" indicates the measured value exceeds the selected range or the maximum input limit.
- **Inaccurate readings:**
  - Check for proper test lead connection and good contact with the circuit.
  - Ensure the correct measurement function and range are selected.
  - Verify the battery of the device under test (if applicable).
  - Consider environmental factors like temperature or electromagnetic interference.
- **PC communication issues:**
  - Ensure the USB/RS232 cable is properly connected.
  - Verify that the correct drivers are installed on your computer.
  - Check the communication port settings in the software.

7. Specifications



Image: A graphic displaying the key technical specifications of the OWON XDM1041 Digital Multimeter.

Parameter	Value
Model	XDM1041
Display	3.5-inch TFT LCD (480x320 resolution), 55,000 counts
DC Voltage Range	50mV ~ 1000V
AC Voltage Range	500mV ~ 750V
DC Current Range	500μA ~ 10A
AC Current Range	500μA ~ 10A
Resistance Range	500Ω ~ 50MΩ
Capacitance Range	50nF ~ 50mF

Parameter	Value
Frequency Range	10Hz ~ 60MHz
Diode Test	3.000V
Continuity Test	1000Ω
Temperature Measurement	K-type, PT100 (probe not included)
Data Logging Length	1,000 points
Data Logging Duration	15ms ~ 9999.999s
Warm-up Time	30 minutes
Interface	USB, RS232
Programming Language	Standard SCPI
Item Weight	Approx. 405g / 14.29oz
Dimensions (L x W x H)	20cm x 8.8cm x 6.5cm (approximate, based on image)
Power Source	AC Power Cable



Image: A diagram illustrating the physical dimensions of the OWON XDM1041 multimeter.

8. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or visit the official OWON website. Keep your purchase receipt as proof of purchase.

OWON Official Website: www.owon.com

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