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PCE INSTRUMENTS PCE-DM 8 Digital Multimeter

Specifications

- Product Name: Digital Multimeter PCE-DM 8
- Measurement Functions: Voltage, Resistance, Diode/Buzzer, Capacitance, Frequency, Temperature, NCV (Non-Contact Voltage), LIVE
- Features: Data Hold, Relative Value Measurement, Auto Range Selection, Menu Navigation
- Power Supply: 2 x AA Batteries (Not Included)
- Display: LCD
- Dimensions: 150mm x 70mm x 30mm

Product Introduction

The Digital Multimeter PCE-DM 8 is a versatile device designed for measuring various electrical parameters.

Menu Introduction

- To access the menu, long-press the AUTO/MENU key for 2 seconds.
- Navigate the menu using the up, down, left, right, and confirm keys.

Buttons & Functions Introduction

Button: Function

- Voltage gear, resistance gear, diode/buzzer gear, capacitance gear, selection key; Enter the menu is the right selection key.
- Data Hold/ Relative Value key: Short press to hold/cancel data, long press for relative value mode; Enter the menu is the up selection key.
- Auto/Menu key: Short press to switch to automatic gear, long press to enter/exit menu; Enter the menu is the confirm key.
- Frequency, temperature, NCV, LIVE selection key; Enter the menu is the down selection key.
- Low current and high current selection key; Enter the menu is the left selection key.
- On/Off key: Long-press to turn on/off.

Testing Methods

Normal Mode:

1. **Automatic Gear:** Connect test pens and let the multimeter identify the signal automatically.
2. **Voltage Measurement:** Connect the red test pen to the input terminal and the black test pen to COM.
3. **Resistance Measurement:** Connect the red test pen to the input terminal and the black test pen to COM.
4. **Diode/Buzzer Test:** Connect test pens and let the multimeter identify the signal.

USER MANUAL

DIGITAL MULTIMETER

NOTICE TO USERS

- This manual provides a detailed introduction to the product. Please read this manual carefully to ensure you obtain the best state of the product.
- Do not use the instrument in flammable and explosive environments.
- Waste batteries and instruments cannot be disposed of together with household waste. Please dispose of them by the relevant national or local laws and regulations.
- If there are any quality issues with the device or if you have any questions about using the device, please contact online customer service, and we will solve it for you.

PRODUCT INTRODUCTION

- PCE-DM 8 is our newly launched 10000 count intelligent digital multimeter, with a wider measurement range and higher resolution, helping you measure more accurate values. It can accurately measure AC/DC voltage, AC/DC, 10A current, and can also be used to test conductivity, capacitance, frequency, resistance, diode, temperature, NCV, live wire, etc.
- Suitable for various fields of electronic maintenance, such as engineering, laboratories, cars, and home appliances. And it is equipped with a 2.4-inch full color TFT display screen with a resolution of up to 240 * 320, a new UI interface design, and the first monitoring mode function, enriching your use experience and making operation more convenient in various scenarios.

MENU INTRODUCTION

- Long-press the AUTO/MENU key for 2 seconds to enter the menu, and then use the

up, down, left, right, and confirm keys to browse the menu and set functions.

- Mode selection: Normal mode, recording mode, and monitoring mode.
- Threshold setting: Set the minimum and maximum thresholds for voltage, current, and temperature in monitoring mode.
- History: Store the measurement values saved in the recording mode, with a maximum of 30 records; he latest saved data is in the first record, arranged in descending order, and overwrite the oldest records after over 30 pieces of data.
- System settings: Set language, screen brightness, temperature gear, and automatic shutdown time.
- Restore factory settings: Restoring factory settings will clear all historical data and restore to factory time settings.
- Regarding: View manufacturer information, equipment model, and version number.

BUTTONS & FUNCTIONS INTRODUCTION

Button	Function
V Ω ⊣/ ⊣ •))	Voltage gear, resistance gear, diode/buzzer gear, capacitance gear, selection key; Enter the menu is the right selection key.
HOLD / REL	Data Hold/ Relative Value key: Short press this key to hold the date, and short press again to cancel; Long press this key for 2 seconds to enter the relative value measurement mode, long press again to cancel; Enter the menu is the up selection key.
AUTO / MENU	Auto/Menu key: Short press this key to switch to automatic gear; Long press and this key for 2 seconds to enter the menu, and long press again to exit the menu; Enter the menu is the confirm key.
Hz NCV / LIVE	Frequency, temperature, NCV, LIVE selection key; Enter the menu is the down selection key.
mA / A	Low current and high current selection key; Enter the menu is the left selection key.
⏻	On/Off key: Long press and hold for 2 seconds to turn on, and long press again to turn off when it is turned on.

TESTING METHODS

Normal Mode

In normal mode, it supports automatic, voltage, resistance, diode/buzzer, capacitor, high current, low current, frequency, temperature, NCV, and LIVE measurements.

Automatic measurement

1. Automatic gear is selected by default when starting in normal mode. Short-press the middle button to switch to automatic gear from other measurement gears.
   Connect the red test pen to the input terminal  and the black test pen to the input terminal COM. The multimeter will automatically identify the current measured signal based on the voltage and resistance of the measured object.
2. Automatic gear: Only voltage resistance a, nd continuity test gears are identified automatically.
3. When measuring voltage, AC/DC voltage is identified automatically.
4. When measuring, if the resistance at both ends is less than 50 Ω, the buzzer will ring.

Voltage measurement

1. Switch to the voltage gear, connect the red test pen to the input terminal,  and the black test pen to the input terminal COM.

Resistance measurement

1. Switch to the resistance gear and connect the red test pen to the input terminal  and the black test pen to the input terminal COM.
2. During measurement, the range gear will be automatically identified.

`Diode /Continuity test measurement

1. Switch to diode/continuity test mode, connect the red test pen to the input terminal,  and the black test pen to the input terminal COM. The multimeter will automatically identify the current measured signal based on the voltage and resistance of the measured object.
2. Measuring continuity test: when the resistance is less than 50 Ω, the buzzer will ring.
3. When measuring the diode, the screen displays a forward bias voltage. If the polarity of the test wire is opposite to that of the diode, or the diode is damaged, the screen displays „OL“.

Capacitance measurement

1) Switch to the capacitor gear and connect the red test pen to the input terminal, 
while the black test pen to the input terminal COM.
2) During measurement, the range gear will be automatically identified.

Frequency measurement

1. Switch to the frequency gear and connect the red test pen to the input terminal 
   while the black test pen to the input terminal COM.
2. During measurement, the range gear will be automatically identified.

Temperature measurement

1. Switch to the temperature gear and connect the red test pen to the input terminal 
   while the black test pen to the input terminal COM.

Current Measurement-low current

1. Switch to the low current range, and the maximum measured current is 999.9mA, connect the red test pen to the input terminal mA, while the black test pen to the input terminal COM.

NOTICE! If the measured current is greater than 1A, it will burn out the fuse. Please preliminarily evaluate the current situation before measuring.

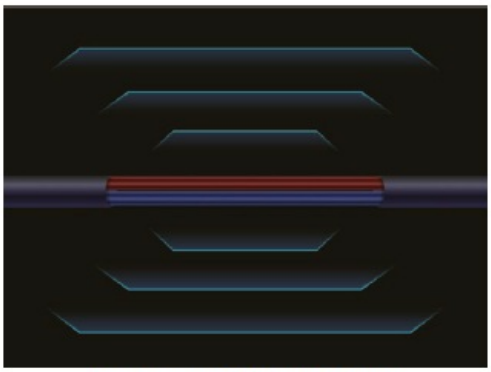
Current Measurement-high current

1. Switch to the high current range, and the maximum measured current is 9.999A. Connect the red test pen to the input terminal 10A, while the black test pen to the input terminal COM.

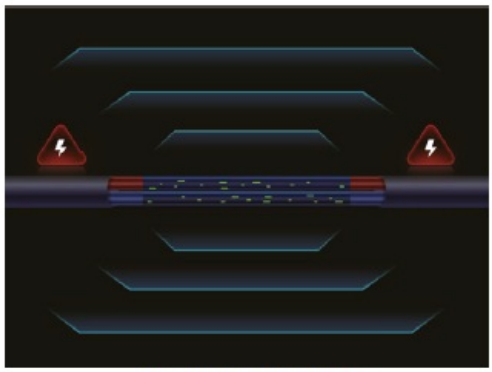
NOTICE! If the measured current is greater than 10A, it will burn out the fuse. Please preliminarily evaluate the current situation before measuring.

NCV measurement

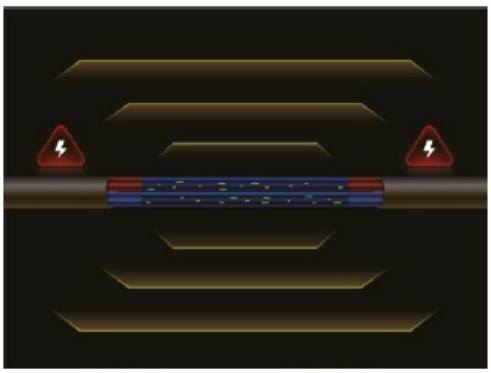
1. Switch to NCV gear.
2. At this point, slowly approach the NCV area on the top of the multimeter to the test point. If the built-in sensor senses an AC electromagnetic field, the buzzer will emit a „DiDi“ sound. The stronger the electromagnetic field, the faster the „drip“ sound, and the screen display will change synchronously, as shown in the following figure:



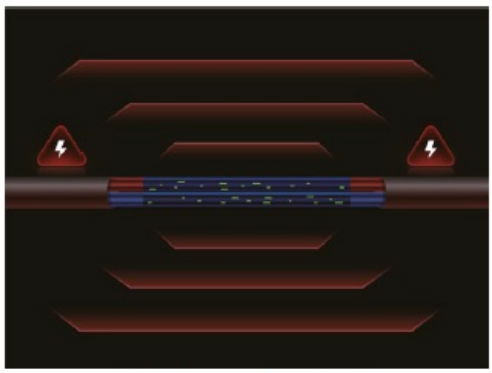
No magnetic field detected



Low magnetic field



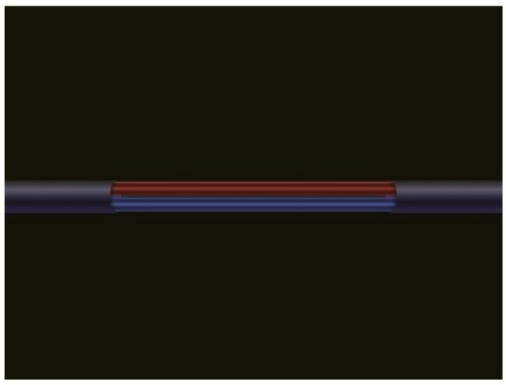
Medium magnetic field



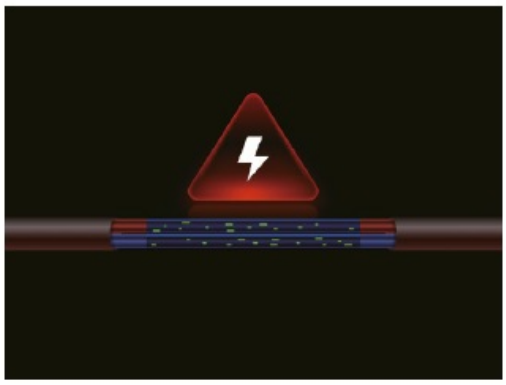
High magnetic field

LIVE measurement

1. Press the down to switch to the LIVE gear, connect the red test pen to the input terminal,  and remove the black test pen.
2. Contact the red test pen with the mains power plug. If the buzzer rings as either a live line or a neutral line, or a ground line, the screen display will change synchronously, as shown in the following figure:



Detected zero or ground wire



Detected a live wire

Recording Mode

In recording mode, it supports voltage, resistance, diode/buzzer, capacitor, high current, low current, frequency, and temperature gears.

1. The measurement methods for recording mode are the same as those for normal mode. Please read the measurement methods for the normal mode.
2. The recording mode adds real-time measurement curves, records the minimum and maximum values during measurement, and saves measurement data on top of the regular mode.
3. When measuring, press the middle button briefly. The record box on the right side of the screen will record the measured values at this time and save them to the historical record. The record box can display up to 8 sets of measured values. When it's over 8 sets, the first set of data is overwritten, and the cycle follows. The data on the yellow line represents the latest recorded measurement value.

Monitoring Mode

In the monitoring mode, it supports voltage, current, and temperature gears.

1. The measurement methods for monitoring mode are the same as those for normal mode. Please read the measurement methods for the normal mode..
2. The monitoring mode adds threshold monitoring to the normal mode, when the measured value is within the set threshold range, the buzzer will ring, and the screen display will change depending on whether the measured value is less than the set minimum threshold, or greater than the maximum threshold within the minimum and maximum thresholds, as shown in the following figure.

Less than minimum threshold

Within the minimum and maximum thresholds

Greater than maximum threshold

PARAMETERS

Function	Range	Accuracy
DC Voltage	9.999V / 99.99V / 999.9V	±(0.5% + 3)
AC voltage	9.999V / 99.99V / 750.0V	±(1% + 3)
DC current	9999uA / 99.99mA / 999.9mA / 9.999A	±(1.2% + 3)
AC current	9999uA / 99.99mA / 999.9mA / 9.999A	±(1.5% + 3)
Resistance	9.999MΩ / 999.9KΩ / 99.99KΩ / 9.999KΩ / 999.9Ω	±(0.5% + 3)
	99.99MΩ	±(1.5% + 3)
Capacitance	999.9μF / 99.99μF / 9.999μF / 999.9nF / 99.99nF / 9.999nF	±(2.0% + 5)
	9.999mF / 99.99mF	±(5.0% + 20)
Frequency	9.999MHz / 999.9KHz / 99.99KHz / 9.999KHz / 999.99Hz / 99.99Hz / 9.999Hz	±(0.1% + 2)
Temperature	(-55 … 1300°C) / (-67 … 2372°F)	±(2.5% + 5)

Diode	Yes	
Continuity test	Yes	
NCV	Yes	
LIVE	Yes	
Working conditions	Temperature	0 … 40°C
	Humidity	<75%
Storage conditions	Temperature	-20 … 60°C
	Humidity	<80%
Weight	185g	
Battery capacity	1500mAh	

NOTICE

- Before using the product, please check whether the insulation near the shell and interface is damaged.
- Please hold your fingers behind the protective device of the pen.
- When measuring the circuit to be tested, do not touch all input ports.
- Please disconnect the test probe and circuit connection before changing the gear position.
- When the DC voltage to be tested is higher than 36V and the AC voltage is higher than 25V, users should pay attention to prevention and avoid electric shock.
- Please select the correct gear for measurement to avoid damage to the instrument. When all measurements exceed the range, the screen will display „OL“.
- When the battery level is too low, a pop-up prompt will appear. Please charge it promptly to avoid affecting the measurement performance. Do not use the device while charging.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU, we take our devices back. We either reuse them or give them to a recycling company, which disposes of the devices in line with the law. For countries outside the EU, batteries and devices should be disposed of according to your local waste regulations. If you have any questions, please contact PCE Instruments.

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Frequently Asked Questions

Q: How do I change measurement modes on the PCE-DM 8?

A: To switch between measurement modes, use the respective gear selection keys on the multimeter.

Q: Can I measure capacitance with this multimeter?

A: Yes, the PCE-DM 8 supports capacitance measurement. Switch to the capacitance gear and follow the measurement instructions.

Documents / Resources

	PCE INSTRUMENTS PCE-DM 8 Digital Multimeter [pdf] User Manual PCE-DM 8, PCE-DM 8 Digital Multimeter, Digital Multimeter, Multimeter

References

- User Manual

PCE Instruments

Digital Multimeter, Multimeter, PCE Instruments, PCE-DM 8, PCE-DM 8 Digital Multimeter

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