KPS KPS-PA420

KPS-PA420 Digital Clamp Meter User Manual

Model: KPS-PA420 | Brand: KPS

1. Introduction

The KPS-PA420 is a compact digital clamp meter designed for measuring AC/DC voltage, AC current, resistance, continuity, and diode testing. It features a 2000-count display, a 28mm jaw opening, and a data hold function. This manual provides detailed instructions for safe and effective use of the device.

Image: KPS-PA420 Mini Digital Clamp Meter highlighting its main features: 400V AC/DC Voltage, 400A AC Current, 2KΩ Resistance, Continuity, Diode, Data Hold, and 28mm Jaw Opening.

2. Safety Information

Always adhere to safety precautions when using electrical testing equipment. This device is rated CAT. III 600V. Failure to follow safety guidelines can result in electric shock, fire, or damage to the meter.

- Do not exceed the maximum input limits for any function.
- Ensure the test leads are properly connected and in good condition before use.
- Do not use the meter if it appears damaged or if the battery cover is not properly closed.
- Always turn off the circuit power before making resistance, continuity, or diode measurements.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Keep hands behind the probe barriers when testing.

3. Package Contents

Verify that all items are present in the package:

- KPS-PA420 Digital Clamp Meter
- Carrying Case
- Test Leads (Red and Black)
- 3 x AAA 1.5V Batteries (pre-installed or separate)
- User Manual

Image: The KPS-PA420 Mini Digital Clamp Meter shown alongside its protective carrying case and a set of red and black test leads.

4. Product Features

- Digital Clamp Meter with 2000 counts display.
- Jaw opening of 28 mm (1.1").
- Measures AC/DC Voltage up to 600V.
- Measures AC Current up to 400A.
- Measures Resistance up to 2KΩ.

- Audible Continuity Warning.
- Diode Test function.
- Data Hold function to freeze readings.
- Low Battery Indicator.
- Safety Rating: CAT. III 600V.

5. Product Diagram and Controls

Familiarize yourself with the parts and controls of your KPS-PA420 Digital Clamp Meter.

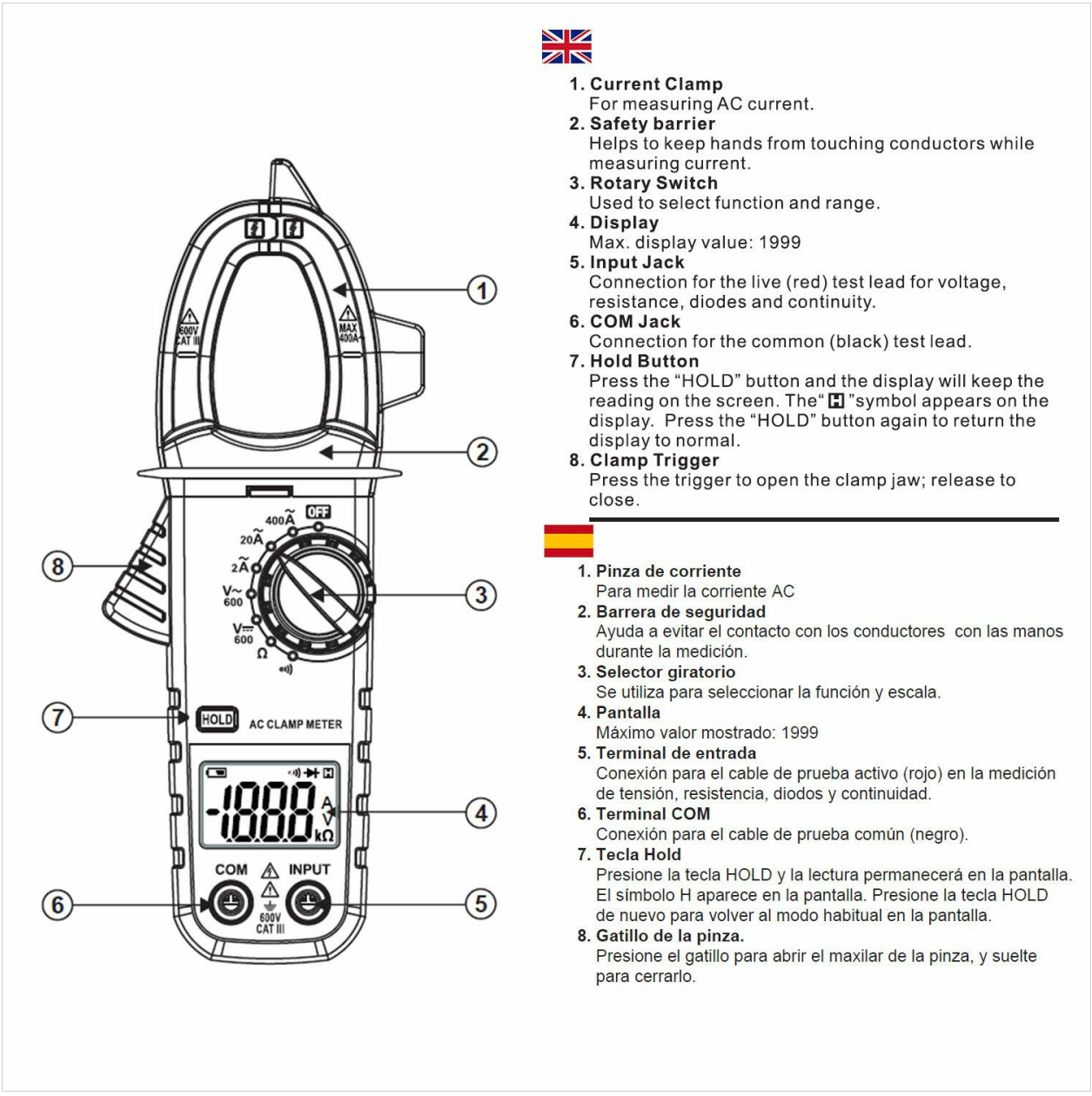
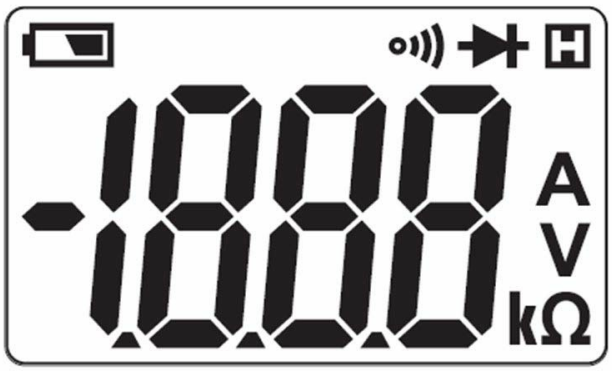


Image: Detailed diagram of the KPS-PA420 Mini Digital Clamp Meter, showing its components and their functions, including the current clamp, safety barrier, rotary switch, display, input jack, COM jack, hold button, and clamp trigger.

Display Symbols



Symbol	Description
	Low Battery
V	Volts (Voltage)
A	Amps (Current)
kΩ	kilohms (Resistance)
	Continuity
	Diode
	Display Hold
	Polarity Indicator (Negative)

Image: A table illustrating the various symbols that appear on the meter's digital display, along with their corresponding descriptions such as Low Battery, Volts, Amps, Kilohms, Continuity, Diode, Display Hold, and Polarity Indicator.

6. Setup

6.1. Battery Installation

The KPS-PA420 uses three 1.5V AAA batteries. If the low battery indicator appears on the display, replace the batteries immediately to ensure accurate readings.

1. Turn the rotary switch to the OFF position.
2. Locate the battery compartment on the back of the meter.
3. Use a screwdriver to open the battery compartment cover.
4. Insert three new AAA batteries, observing the correct polarity (+ and -).
5. Replace the battery compartment cover and secure it with the screw.

6.2. Connecting Test Leads

For voltage, resistance, continuity, and diode measurements, connect the test leads:

- Insert the black test lead into the COM (common) input jack.
- Insert the red test lead into the INPUT jack.

7. Operating Instructions

7.1. Measuring AC Current

To measure AC current, use the clamp jaw:

1. Turn the rotary switch to the **400A~** or **20A~** range.
2. Press the clamp trigger to open the clamp jaw.
3. Enclose only one conductor of the circuit with the clamp jaw. Ensure the jaw is fully closed.
4. Read the AC current value on the display.

Image: A KPS-PA420 Mini Digital Clamp Meter being used to measure AC current by clamping its jaw around a single electrical cable.

7.2. Measuring AC/DC Voltage

To measure AC or DC voltage:

1. Connect the test leads as described in Section 6.2.
2. Turn the rotary switch to the **V~** (AC Voltage) or **V=** (DC Voltage) position. Select the appropriate range (e.g., 600V).
3. Touch the test probes to the desired test points in the circuit.
4. Read the voltage value on the display.

Image: A KPS-PA420 Mini Digital Clamp Meter with its test leads connected to an electrical panel, demonstrating voltage measurement.

7.3. Measuring Resistance

To measure resistance:

1. Ensure the circuit is de-energized.
2. Connect the test leads as described in Section 6.2.
3. Turn the rotary switch to the **Ω** (Resistance) position. Select the appropriate range (e.g., 2KΩ).
4. Touch the test probes across the component or circuit where resistance is to be measured.
5. Read the resistance value on the display.

7.4. Continuity Test

To perform a continuity test:

1. Ensure the circuit is de-energized.
2. Connect the test leads as described in Section 6.2.
3. Turn the rotary switch to the **Ω)))** (Continuity) position.
4. Touch the test probes across the component or circuit. If continuity exists (resistance below a certain threshold), the meter will emit an audible beep.

7.5. Diode Test

To perform a diode test:

1. Ensure the circuit is de-energized.
2. Connect the test leads as described in Section 6.2.
3. Turn the rotary switch to the **Ω→|** (Diode) position.
4. Touch the red test probe to the anode and the black test probe to the cathode of the diode. The display will show the forward voltage drop. Reverse the probes; the display should show 'OL' (Open Loop) for a good diode.

7.6. Data Hold Function

Press the **HOLD** button to freeze the current reading on the display. Press it again to release the hold and return to live measurement.

8. Maintenance

8.1. Cleaning

Wipe the meter with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the contacts of the input jacks clean.

8.2. Battery Replacement

Refer to Section 6.1 for battery replacement instructions. Always replace all three batteries at the same time with new ones of the same type.

8.3. Storage

If the meter is not used for an extended period, remove the batteries to prevent leakage and damage. Store the meter in its carrying case in a cool, dry place.

9. Troubleshooting

- **No display or faint display:** Check battery installation or replace batteries.
- **"OL" (Overload) displayed:** The measured value exceeds the selected range. Select a higher range or ensure the circuit is within the meter's capabilities.
- **Inaccurate readings:** Check battery level, ensure test leads are properly connected, and verify the correct function and range are selected. Ensure the clamp jaw is fully closed around a single conductor for current measurements.
- **No continuity beep:** Check if the circuit is de-energized and if the resistance is above the continuity threshold.

10. Specifications

Feature	Specification
Display	2000 Counts
Jaw Opening	28 mm (1.1")
AC/DC Voltage	600V Max
AC Current	400A Max
Resistance	2KΩ Max
Continuity	Audible Buzzer
Diode Test	Yes
Data Hold	Yes
Low Battery Indicator	Yes
Power Source	3 x 1.5V AAA Batteries
Safety Rating	CAT. III 600V, IEC 61010
Item Weight	195 Grams

11. Product Demonstration Video

Your browser does not support the video tag.

Video: A short demonstration of the KPS-PA420 Mini Digital Clamp Meter in various applications, showcasing its features and ease of use for measuring AC current and voltage.

12. Warranty and Support

The KPS-PA420 Digital Clamp Meter comes with a 3-year warranty. For technical support or warranty claims, please refer to the contact information provided with your purchase or visit the official KPS website.