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› FKM TS-18B Digital Clamp Meter Multimeter Tester User Manual

FKM TS-18B

FKM TS-18B Digital Clamp Meter User Manual

Model: TS-18B

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of the FKM TS-18B Digital Clamp Meter. This True-RMS 6000 counts auto-ranging multimeter is designed for measuring AC current, AC/DC voltage, frequency, duty cycle, resistance, capacitance, diode, continuity, and temperature. It also features Non-Contact Voltage (NCV) detection and live/zero wire discrimination, making it suitable for various electrical troubleshooting tasks in household, automotive, and industrial settings.



Image 1.1: The FKM TS-18B Digital Clamp Meter shown with its included test leads, thermocouple, batteries, and storage bag.

2. SAFETY INFORMATION

Read all safety warnings and instructions carefully before using this instrument. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- This instrument complies with IEC61010-2-032 safety standards, CAT III 600V, and Pollution Class 2.
- Do not exceed the maximum input values specified for each measurement range.
- Always ensure the test leads are properly connected and the function switch is set to the correct range before making measurements.
- When measuring AC current with the clamp jaw, clamp only **one** of the wires, not the entire power cord. Clamping both wires will result in an inaccurate reading as the magnetic fields cancel each other out. The clamp jaw is exclusively for current measurement; do not use it to measure voltage.
- Exercise caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC, as these pose a shock hazard.
- Replace batteries immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter if it appears damaged or if the test leads are compromised.

Correct AC Clamp Digital Multimeter Operation

For accurate readings, Clamp Only One of The Wires,
Not the Whole Power Cord

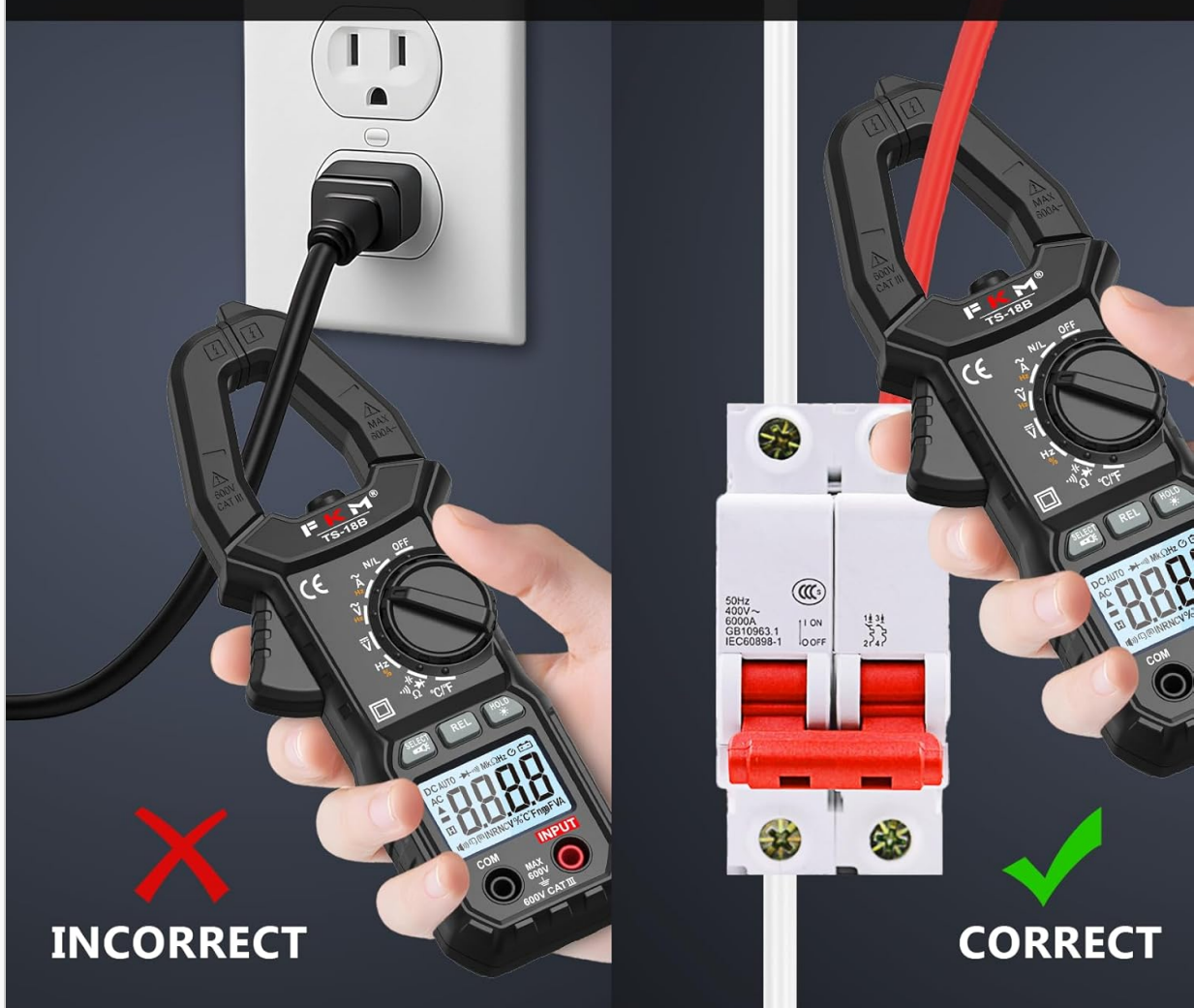


Image 2.1: Illustration of the correct method for measuring AC current by clamping only a single conductor, not the entire power cord.

3. PRODUCT OVERVIEW

3.1 Components

FKM TS-18B Panel introduction



Image 3.1: Labeled diagram of the FKM TS-18B Clamp Meter, indicating the NCV sensor probe, clamp body light, lever for jaw opening/closing, rotatory range selector, relative measurement button, data hold/backlight button, LCD, COM terminal, and input terminal.

- **Clamp Jaw:** Used for non-contact AC current measurement. Maximum opening size is 25mm.
- **NCV Sensor Probe:** Detects non-contact voltage.
- **Rotary Range Selector:** Used to select measurement functions.
- **LCD Display:** Shows measurement readings, units, and indicators.
- **Input Terminals (COM, INPUT):** For connecting test leads for voltage, resistance, capacitance, diode, continuity, frequency, and temperature measurements.
- **Buttons:** SELECT/Flashlight, REL (Relative Measurement), HOLD/* (Data Hold/Backlight).
- **LED Flashlight:** Illuminates the measurement area.

3.2 Key Features

- True-RMS 6000 Counts Display
- Auto-ranging for simplified operation
- Measures AC Current, AC/DC Voltage, Frequency, Duty Cycle, Resistance, Capacitance, Diode, Continuity, Temperature
- Non-Contact Voltage (NCV) Detection

- Live/Zero Wire Discrimination
- Backlit LCD and LED Flashlight for low-light conditions
- Data Hold function to freeze readings
- Relative Measurement (REL) mode
- Low Battery Indicator
- Automatic Power-Off after 15 minutes of inactivity



Image 3.2: Visual representation of the FKM TS-18B's multiple functions, including AC/DC Voltage, AC Current, NCV, Frequency, Resistance, Capacitance, Diode, True RMS, Temperature, Flashlight, Relative Measurement, HD Backlight, and Automatic Shutdown.

4. SETUP

4.1 Battery Installation

1. Ensure the meter is turned OFF and test leads are disconnected.
2. Locate the battery compartment on the back of the meter.
3. Use a screwdriver to open the battery cover.
4. Insert two 1.5V AAA batteries, observing correct polarity.

5. Replace the battery cover and fasten the screw tightly.

6000 Counts Measurement Accuracy is Guaranteed

• High precision • Large measurement range • More reliable

FKM Clamp Meter

Others

6000 Counts

- Maximum Display: 5999(e.g. **5.999V**)
- Measure **2.1V**
→ Display **2.100 V**
(Resolution **0.001V**)
- Measure **2.012A**
→ Display **2.012A**
(Resolution **0.001A**)

VS

2000 Counts

- Maximum Display: 1999(e.g. **1.999V**)
- Measure **2.1V**
→ Display **2.10V**
(Resolution **0.01V**)
- Measure **2.012A**
→ Display **02.01A**
(Resolution **0.01A**)





Image 4.1: Instructions for replacing the batteries in the FKM TS-18B, showing the location of the battery compartment and the use of AAA batteries.

5. OPERATING INSTRUCTIONS

Turn the rotary range selector to the desired function. Connect test leads to the COM and INPUT terminals as required for the measurement type.

5.1 AC Current Measurement

- Set the rotary switch to the 'A~' position.
- Open the clamp jaw using the lever.
- Enclose only one conductor of the circuit within the clamp jaw. Ensure the conductor is centered.
- Read the AC current value on the LCD.

5.2 AC/DC Voltage Measurement

- Set the rotary switch to the 'V~' (AC Voltage) or 'V=' (DC Voltage) position.
- Insert the black test lead into the COM terminal and the red test lead into the INPUT terminal.
- Connect the test probes across the circuit or component to be measured.
- Read the voltage value on the LCD.

Wide Used Smart Digital Multimeter

Solve various electrical issues accurately and reliably



AC Voltage



DC Voltage



AC Current



Image 5.1: The FKM TS-18B demonstrating measurements of AC Voltage using test leads, DC Voltage from a battery, and AC Current using the clamp jaw on a single wire.

5.3 Resistance, Capacitance, Diode, Continuity Measurement

- Set the rotary switch to the ' Ω /C/Diode/Continuity' position. Use the SELECT button to cycle through these functions.
- Insert the black test lead into the COM terminal and the red test lead into the INPUT terminal.
- Connect the test probes across the component. For resistance and capacitance, ensure the component is de-energized.
- For continuity, a buzzer will sound if resistance is below a certain threshold.
- Read the value on the LCD.

Non-Contact Voltage Tester

Safety design, with buzzer sound



High Voltage
Louder, faster beeps

Low Voltage
Weaker, slower beeps

Image 5.2: The FKM TS-18B showing measurements for Resistance, Capacitance, Continuity (Buzzer), and Diode testing using test leads.

5.4 Frequency (Hz) and Duty Cycle (%) Measurement

- Set the rotary switch to the 'Hz/%' position.
- Insert the black test lead into the COM terminal and the red test lead into the INPUT terminal.
- Connect the test probes across the circuit where frequency or duty cycle is to be measured.
- Read the frequency or duty cycle value on the LCD. Use the SELECT button to switch between Hz and %.

Smart Clamp Multimeter Tester

Measures frequency (Hz) and duty cycle accurately



Image 5.3: The FKM TS-18B displaying measurements for Frequency (Hz) and Duty Cycle (%).

5.5 Temperature Measurement

- Set the rotary switch to the '°C/°F' position.
- Insert the thermocouple into the INPUT and COM terminals, observing polarity.
- Place the thermocouple probe at the point where temperature is to be measured.
- Read the temperature value on the LCD. Use the SELECT button to switch between Celsius and Fahrenheit.

Temperature Measurement Range: -40~1832°F(-40~1000°C)



Image 5.4: The FKM TS-18B measuring temperatures of hot liquid, an air conditioner vent, and ice using the included thermocouple.

5.6 Non-Contact Voltage (NCV) Detection

- Set the rotary switch to the 'NCV' position.
- Move the NCV sensor probe (top of the clamp jaw) close to the conductor or outlet.
- The meter will emit an audible beep and the LCD will show dashes ('---' or '----') with increasing frequency as voltage is detected.

Non-Contact Voltage Tester

Safety design, with buzzer sound



High Voltage
Louder, faster beeps

Low Voltage
Weaker, slower beeps

Image 5.5: The FKM TS-18B performing Non-Contact Voltage (NCV) detection near an electrical outlet, indicating voltage presence with sound and visual cues.

5.7 Live/Zero Wire Discrimination

- Set the rotary switch to the 'N/L' position.
- Insert the red test lead into the INPUT terminal.
- Touch the red probe to the wire to be tested.
- The meter will indicate if it is a Live or Zero wire.

5.8 Data Hold and Backlight

- Press the 'HOLD/*' button briefly to freeze the current reading on the display. Press again to release.
- Press and hold the 'HOLD/*' button for approximately 2 seconds to turn the backlight ON or OFF. The backlight automatically turns off after 30 seconds to conserve power.

5.9 Automatic Power-Off

The meter will automatically power off after approximately 15 minutes of inactivity to conserve battery life. To reactivate, turn the rotary switch to OFF and then back to the desired function, or press any button.

Easy to Read LED Backlit Display & Flashlight

The unit powers off automatically when staying idle for over 15 minutes to save power



Auto Shut Down

(The backlit screen will automatically turn off after being on for 30 seconds)



Image 5.6: The FKM TS-18B showing its backlit display and activated LED flashlight, highlighting its readability in dim conditions and the auto-shutdown feature.

6. MAINTENANCE

6.1 Cleaning

Wipe the meter's casing with a damp cloth and mild detergent. Do not use abrasives or solvents. Ensure the meter is dry before use.

6.2 Battery Replacement

Refer to Section 4.1 for detailed instructions on battery replacement. Always replace both batteries with new 1.5V AAA batteries when the low battery indicator appears on the display.

7. TROUBLESHOOTING

- **No Display/Meter Not Turning On:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate Readings:**

- Ensure the correct function is selected on the rotary switch.
 - Verify test leads are securely connected and not damaged.
 - For AC current, ensure only one wire is clamped.
 - Check for external interference or strong magnetic fields.
- **"OL" Display:** Indicates an overload or out-of-range measurement. Select a higher range if available, or verify the circuit conditions.
 - **Blinking Display:** May indicate a low battery condition. Replace batteries.

8. SPECIFICATIONS

Feature	Specification
Model Number	TS-18B
Display	6000 Counts, True-RMS
AC Current Range	Up to 600A (AC only)
AC/DC Voltage Range	Up to 600V
Resistance Range	Up to 60MΩ
Capacitance Range	Up to 60mF
Frequency Range	10Hz to 10MHz
Temperature Range	-40°F to 1832°F (-40°C to 1000°C)
Power Source	2 x 1.5V AAA Batteries (included)
Safety Rating	IEC61010-2-032, CAT III 600V, Pollution Class 2
Clamp Opening Size	25mm (1 inch)
Auto Power-Off	Approx. 15 minutes

9. PACKAGE CONTENTS

The FKM TS-18B Digital Clamp Meter package includes:

- 1 x FKM TS-18B Digital Clamp Meter
- 1 x Pair of Test Leads
- 1 x Thermocouple
- 2 x AAA Batteries
- 1 x Instruction Manual (this document)
- 1 x Storage Bag



Image 9.1: Visual representation of the FKM TS-18B package contents, including the meter, test leads, thermocouple, batteries, and carrying case.

10. WARRANTY AND SUPPORT

FKM provides lifelong service and technical support for the TS-18B Digital Clamp Meter. For any questions, technical assistance, or warranty claims, please contact FKM customer support through the retailer where the product was purchased or visit the official FKM website.