

# Instruction Manual for Testing Clamp of Smart SMD

## 1. Introduction

This is a deft hand-held SMD instrument, which can automatically identify resistor, capacitor and diode and measure accurately.

Design of the instrument is consistent with IEC1010-I CAT II safety standards, and conformed to safety rules of the European Community.

CE regulation 89/336 (EMC electromagnetic compatibility)

Appearance design of the instrument is nice-looking, provided with solid structure, convenient use and accurate measurement. Users are expected to read the instruction manual carefully before use.

## 2. Safety rules

- Before use, check the shell is damaged or not.
- Check the testing needle is complete or not.
- This instrument can not be used as nipper to avoid damaging the testing needle.
- Do not apply any voltage to the testing needle.
- Do not use in the environment containing corrosive gas and etc.

**Notes: do not use this instrument on electrified circuit.**

## 3. Use instructions on the buttons

[1] FUNC button: this is the function selection button, and the button can enter resistor, diode and capacitor measurement under scanning status and return the scanning mode.


The instrument is installed with 3V lithium battery. Get through the power supply and the instrument enters the automatic scanning mode. The monitor displays **SCAN** symbol and ----- symbol. This means that the instrument enters the scanning testing mode. Under the scanning mode, the FUNC button is used to select the required testing function manually. Press the FUNC button for 2 seconds to turn on or turn off .

[2] HOLD button: this button is used to hold the testing data. When pressing down the button, the instrument stops refreshing the testing data and holds the current testing data. Re-press the button and return to the normal testing status.

Notes: the instrument turns off automatically (sleeping state) 10 minutes after turning on. Press any button to turn on the power at sleeping state.

## 4. Technical specifications

### 4-1 General characteristics

- Maximum display: 2999
- Automatic resistor/capacitor/diode scanning
- FUNC button is used to select the testing mode manually
- Data holding function
- Overload indication OL
- Battery under-voltage indication 
- Power supply: 3V lithium battery (CR2032), 1 piece
- Automatic turnoff: turn off automatically 10 minutes after turning on
- Working temperature and humidity: 0-40°C(32-104°F)&<80%RH
- Storage temperature and humidity: 0-50°C(32-122°F)&<85%RH
- Dimensions (L×W×H)& weight: 175×34×18.5mm, approx. 68g

### 4-2 Technical specifications

Guaranteed temperature accuracy: 23°C± 5°C, relative humidity: <70%, and guarantee period for accuracy: 1 year

Function	Range	Accuracy
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Resistor	300/3k/30k/300k $\Omega$	$\pm(1\%rdg+5dgt)$
	3M $\Omega$ /30M $\Omega$	$\pm(2\%rdg+5dgt)$
Capacitor	3nF/30nF/300nF/3uF/30uF/300uF	$\pm(3\%rdg+5dgt)$
	3mF/30mF	$\pm(5\%rdg+5dgt)$
Diode	Open circuit voltage: 2.8V, testing current: 1mA	

## 5. Testing

### 5-1 Scanning mode

The 3V lithium battery is installed. Get through the power supply and the instrument enters the automatic scanning mode. The monitor displays **SCAN** symbol and **---**symbol. The instrument can identify resistor, capacitor and diode automatically. The testing data is displayed on LCD immediately.

Notes: SMD on printing circuit board is tested, and testing must be carried out under power off, and discharge voltage in the capacitor.


### 5-2 Resistor measurement

① Under automatic mode:

Measurement range: 0.1 $\Omega$ -3.000M $\Omega$

② Press the button **FUNC** to select the resistance measurement mode, and the measurement range is increased to 30M $\Omega$ , namely 0.1 $\Omega$ -30.000M $\Omega$ .

In case of overload, **OL** is displayed.

Notes: the instrument is not provided with beeper measurement, press **FUNC** and select the symbol  and this function is 300 $\Omega$  resistance measurement function.

### 5-3 Capacitor measurement

① Automatic scanning mode: measurement range: 0.3nF-300.0uF.

② Press the **FUNC** button to enter the capacitor measurement and the range is expanded to 30.00mf, namely, 0.1nF-30.00mF.

Notes: before testing, discharge voltage on the high-voltage capacitor to avoid electric capacitor.


### 5-4 Diode testing

Automatic scanning and the **FUNC** button are used to select the testing mode.

① This function is used to test diode, triode and other uni-directional semiconductor.

② To test the positive direction voltage reduction of the diode, the **R/C/D** probe contacts the positive electrode of the tested part and the **COM** probe contacts the negative electrode, and the positive direction voltage reduction is displayed on the LCD.

## 6. Maintenance

6-1 As for replacement of battery, the battery needs to be replaced if the symbol  is displayed on the LCD.

① Open the battery cover with screwdriver.

② Take the used batter out and put into conformed battery.

Notes: specifications of the lithium battery: 3V CR2032

### 6-2 Cleaning

Wipe off dirt on the surface with soft cloth and etc. Chemical solvent is not allowed.