

210mm

105mm

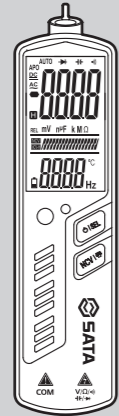
65mm

325mm



### 多功能笔式万用表 Multifunctional Pen-Multimeter

03080



使用说明书 \ User's Manual

中文 EN

SATA 03080

### 安全注意事项

⚠ 使用此仪表时应特别注意, 不当的使用可能造成电击或损坏仪表。在使用中应遵循通常的安全规程及完全遵守使用手册所规定的安全措施。

为了充分地利用仪表的功能和确保安全操作, 请仔细阅读并遵循本说明书的使用方法。

请遵循安全操作指南, 保证安全使用仪表。

适当的使用和保护, 仪表将给你令人满意的服务。

- 使用仪表时, 用户必须遵守标准的安全规则: 通用的防电击保护 防止误用仪表
- 接收仪表后, 检查是否在运输中损坏。
- 在粗劣的条件下保存、装运后, 检查并确认仪表是否损坏。
- 表笔必须处于好的状态。在使用之前, 检查表笔的绝缘是否损坏, 导线的金属丝是否裸露。

- 使用时, 必须使用正确的功能及量程。
- 不要超过各量程的保护范围指示值进行测量。
- 在仪表连接测量电路的时候, 不要接触表笔顶端(金属部分)。
- 在测量时, 若被测电压高于60 VDC或30 VAC(有效值), 应保持手指头始终在表笔护指装置之后。
- 若测量端电压超过400 VDC或400 VAC时, 不要测量电压。
- 不要带测量电阻及线路通断, 以及电容档位。
- 在电阻及线路通断测试量程, 应小心避免将仪表连接电压源。
- 不要在爆炸性的气体、蒸汽或灰尘附近使用本仪表。
- 如果注意到仪表有任何异常或故障, 因停止使用。
- 除非仪表底壳在原位完全紧扣, 否则不应使用仪表。
- 不要在阳光直射、高温、高潮湿的情况下储存或使用仪表。

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### 产品功能介绍

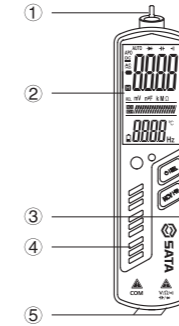
- 自动量程
- 全量程过载保护
- 显示: 采用黑晶高亮大屏幕液晶显示器, 最大读数为5999。
- 数据保持功能
- 自动关机功能(3分钟)
- NCV测量功能
- 手电筒照明功能
- 电池低电压显示
- 外形尺寸: 约162x40.2x18.5mm
- 重量: 约71克。
- 附件: 测试棒一付, 充电线一根, 使用说明书一份。

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### 产品描述

#### 产品外观描述



序号	说明
1	非接触感应探头
2	液晶显示屏
3	Type-C USB充电口
4	NCV档位指示灯 绿/红/黄
5	表笔输入端口

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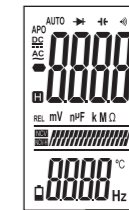
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### 按键及界面说明

HOLD 按键: 数据保持  
SEL 按键: 电源开关/功能转换  
NCV 按键: NCV/手电筒

LED全显符号说明

符号	说明
DC	直流电压
AC	交流电压
⏻	低电量显示
▶▶	二极管
⚡	电容
🔔	蜂鸣通断
Hz	频率
°C	摄氏单位
kΩ	电阻单位
mV	电压单位
nF	电容单位
APD	自动关机模式



### 使用功能简述

1. 交直流电压/频率/电阻/连通性检测

1.1 将表笔接入仪表输入端口按POWER/SEL键开机, 仪表显示 AUTO 模式工作状态。

1.2 将笔表并连接到待测电路、电源、电阻仪表自动判别交流电压、直流电压、电阻, 并自动显示交流信号频率值。

1.3 当被测量电阻小于50Ω时, 内置蜂鸣器发声。

1.4 从显示屏读取测量结果, 并可通过模拟条查看数值的动态变化。

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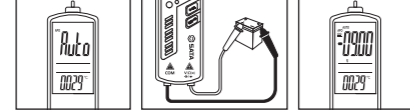
### 警告:

- 不要输入高于400V的电压, 显示更高电压值是可能的, 但可能会有损坏仪表的危险

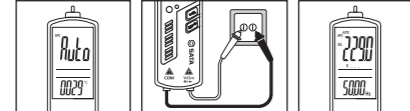
- 测量高电压时, 要格外小心, 以避免触电

- 在完成所有测量操作后, 要断开表笔与被测电路的连接

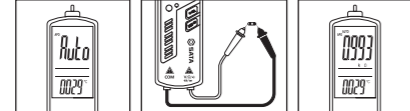
#### 直流电压检测



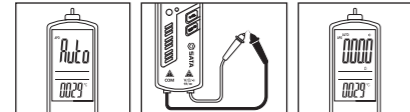
#### 交流电压、频率检测



#### 电阻检测



#### 连通性检测



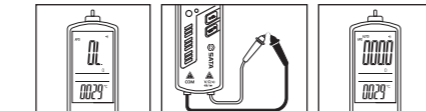
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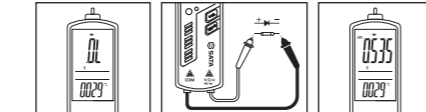
### 二极管检测、电容检测、连通性检测

- 将表笔接入仪表输入端口, 按POWER/SEL键开机。
- 按POWER/SEL键切换到连通性检测。
  - 当被测量电阻小于50Ω时, 内置蜂鸣器发声。
- 再按POWER/SEL键切换到二极管检测。
- 正向测量: 将红测试棒接到被测二极管正极, 黑测试棒接到被测二极管负极, 即显示二极管的正向压降的近似值;
  - 反向测量: 将红测试棒接到被测二极管负极, 黑测试棒接到被测二极管正极, 即显示“OL”;
  - 完整的二极管测试包括正反双向测量, 如果测量结果与上述不符, 说明该二极管是坏的。
- 再按POWER/SEL键切换到电容检测。
  - 将两测试棒跨接在被测电容上, 液晶屏显示被测电容数值。
  - 当测量电容时, 要确认被测电路所有电源已关闭, 而且所有电容都已完全放电时, 才可进行, 不可测量在线电容。

#### 连通性检测



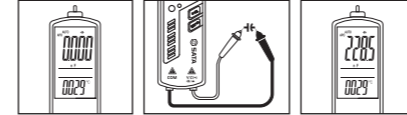
#### 二极管检测



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### 电容检测



#### 3. 插座零火线判断和墙体带电体测试

- 按POWER/SEL键开机。
- 将仪表非接触电压感应区靠近(小于5mm)交流电压的火线, 仪表屏幕圆弧形灯条亮起, 越靠近交流电压的火线, 圆弧形灯条数值越高, 蜂鸣器发出更高等级的报警声。
- 按NCV按键, 切换至高灵敏度模式测试, 可探测50~1000 V带电的导线。越靠近交流电压的火线, 圆弧形灯条数值越高, 蜂鸣器发出更高等级的报警声。

#### 警告:

- 非接触交流电压和火线探测操作可能会受到插座设计、绝缘厚度及类型不同等因素的影响。即使没有指示, 电压任然可能存在。不要完全依靠非接触电压探测器来判断导线是否存在电压。

- 外部环境的干扰源(如闪光灯, 马达等), 可能会误触发非接触电压探测。

#### 插座零火线检测



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### 技术指标

功能	量程	分辨率	精度	过载保护
直流电压	6V/60V/400V	0.001V	±(0.5%rdg+5dgt)	400V DC/AC RMS
交流电压	6V/60V/400V	0.001V	±(1.2%rdg+10dgt) 50Hz-60Hz	
频率	40-1000Hz	0.1Hz	±(1.0%rdg+5dgt)	
电容	99.9nF/9.999 μF /99.99μF/999.9μF	0.1nF	±(3.0%+10d)	
电阻	600Ω	0.1Ω	±(1.0%rdg+5dgt)	
	6kΩ/60kΩ/ 600kΩ/6MΩ	1Ω	±(0.8%rdg+5dgt)	
通断测试	小于50Ω发声			
二极管	开路电压: 3.2V			
室温	±3°C			
NCV (AC90-1000V)	低范围的1/3模拟棒显示器, 绿色LED灯, 蜂鸣器4Hz的声音			
	中档2/3模拟棒显示器, 绿色+黄色LED灯, 蜂鸣器8Hz的声音			
	高范围全模拟棒显示器, 绿色+黄色+红色LED灯, 蜂鸣器16Hz的声音			
NCV 高灵敏度模式 (AC30-1000V)	低范围的1/3模拟棒显示器, 绿色LED灯, 蜂鸣器4Hz的声音			
	中档2/3模拟棒显示器, 绿色+黄色LED灯, 蜂鸣器8Hz的声音			
	高范围全模拟棒显示器, 绿色+黄色+红色LED灯, 蜂鸣器16Hz的声音			

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### 维护保养

- 定期使用湿布和少量洗涤剂清洁仪表外壳, 请勿用研磨剂或化学溶剂。输入插座如果弄脏或者潮湿可能会影响读数。

- 如果A线仪表有异常, 请立即停止使用并来辉校准维修。

- 本产品自购买之日起, 即可享受一年保修服务。次保修不包括由于意外事故、疏忽、滥用、改造、污染及操作环境异常而导致的损坏。

通用型号 / Model

03080

版本号 / Version No

V-SE-03080-202206

世达工具 (上海) 有限公司

SATA TOOL (SHANGHAI) LIMITED

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### 多功能笔式万用表 Multifunctional Pen-Multimeter

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### Safety Precautions

Special care should be taken when using this meter, improper use may cause electric shock or damage to the meter. In use, the user should follow the usual safety procedures and fully comply with the safety measures stipulated in the user manual. In order to make full use of the instrument's functions and ensure safe operation, please read and follow the instructions carefully.

Please follow the safety operation guide to ensure safe use of the instrument. Properly used and protected, meters will give you satisfactory service.

- When using the meter, users must comply with the standard safety rules: Universal electric shock protection Prevent misuse of meters
- After receiving the instrument, check whether it is damaged during transportation.
- After storage and shipment in poor condition, check and confirm whether the instrument is damaged.
- The pen must be in good condition. Before use, check whether the insulation of the pen is damaged and whether the metal wire of the wire is exposed.

- Correct function and range must be used when using.
- Do not exceed the indicated value of the protection range of each range.
- When the meter is connected to the measuring circuit, do not touch the top of the pen (metal part).
- During measurement, if the measured voltage is higher than 60 VDC or 30 VAC(RMS), always keep your finger behind the stylus finger guard.
- Do not measure voltage when the terminal voltage exceeds 400 VDC or 400 VAC.
- Do not measure resistance, line connection, and capacitor tap position with electricity.
- Be careful not to connect the meter to the voltage source in the resistance and line connection test range.
- Do not use the meter near explosive gas, steam or dust.
- If you notice any abnormality or malfunction of the instrument, stop using it.
- Instrument should not be used unless the instrument bottom is fully locked in place.
- Do not store or use the meter in direct sunlight, high temperature, high humidity.

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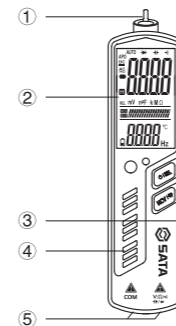
### Product Function Introduction

- Automatic range
- Full range overload protection
- Display: black crystal highlighting large LCD display board, maximum reading is 5999.
- Data retention
- Automatic shutdown function (3 minutes)
- NCV measurement function
- Flashlight lighting function
- Battery low voltage display
- Dimensions: about 162x40.2x18.5mm
- Weight: about 71 grams.
- Accessories: one test stick, one charging cable and one instruction manual.

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### The Product Description

#### Product Appearance Description



No.	instructions
1	Non-contact sensing probe
2	Liquid crystal display
3	Type - C charging port
4	NCV gear indicator green/red/yellow
5	Pen input port

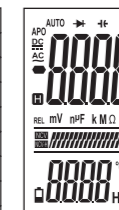
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### Buttons and interface description

HOLD Button: Data hold  
SEL Key: power switch/function conversion  
NCV Key: NCV/ flashlight

#### LED full display symbol description

Symbol	Instructions
DC	Dc voltage
AC	Ac voltage
Low power display	Low power display
Diode	Diode
Capacitance	Capacitance
The buzzer on and off	The buzzer on and off
Hz	Frequency
Celsius units	Celsius units
Resistor unit	Resistor unit
Voltage unit	Voltage unit
Capacitance unit	Capacitance unit
Automatic shutdown mode	Automatic shutdown mode



#### Function Description

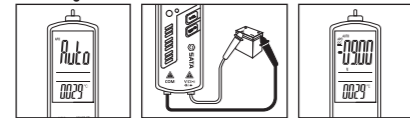
- Ac/DC voltage/frequency/resistance/connectivity detection  
1.1 Connect the pen to the input port of the instrument. Press the POWER/SEL key to start the instrument, and the instrument displays AUTO Mode Working status.
- 1.2 Connect the pen meter to the circuit under test, power supply and resistance meter to automatically identify ac voltage and straight Current voltage, resistance, and automatically display ac signal frequency value.
- 1.3 When the measured resistance is less than 50  $\Omega$ , the built-in buzzer sounds.
- 1.4 Read the measurement result from the display screen, and view the dynamic change of the value through the simulation bar.

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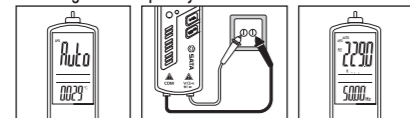
### Warning

- Do not input voltage higher than 400V. Displaying higher voltage values is possible, but there may be a risk of damaging the meter
- Take extra care when measuring high voltages to avoid electric shock
- Disconnect the pen from the circuit under test after completing all measurement operations

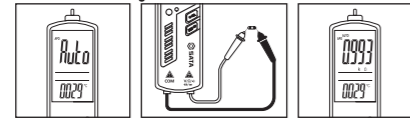
#### DC voltage detection



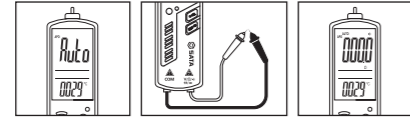
#### AC voltage and frequency detection



#### Resistance testing



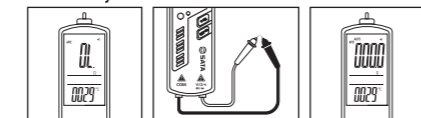
#### Connectivity detection



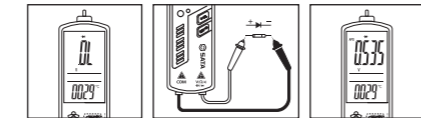
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- Diode detection, capacitance detection, connectivity detection
- Connect the stylus to the input port of the instrument and press the POWER/SEL key to start the instrument.
- Press the POWER/SEL key to switch to connectivity detection.
  - When the measured resistance is less than 50  $\Omega$ , the built-in buzzer sounds.
- Press the POWER/SEL key again to switch to diode detection.
- Forward measurement: the red test rod is connected to the positive pole of the diode under test, and the black test rod is connected to the negative pole of the diode under test, that is, the approximate value of the forward pressure drop of the diode is displayed.
  - Reverse measurement: connect the red test rod to the negative pole of the diode under test, and the black test rod to the positive pole of the diode under test, that is, display "OL".
  - The complete diode test includes positive and negative measurements. If the measurement results do not match the above, the diode is broken.
- Press the POWER/SEL key to switch to capacitor detection.
  - Connect the two test rods across the measured capacitance, and the LCD screen displays the measured capacitance value.
  - When measuring the capacitance, ensure that all the power supply of the circuit under test is off and all the capacitors are fully discharged. Do not measure the online capacitance.

#### Connectivity detection

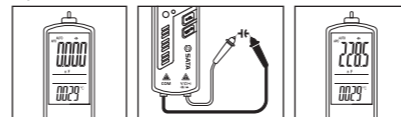


#### Diode detection



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#### Capacitance detection

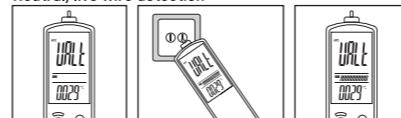


- Zero-live wire judgment of socket and live body test of wall
- 1 Press the POWER/SEL key to POWER on.
- 2 Close the non-contact voltage sensing area of the instrument to the live line of AC voltage (less than 5mm), and the lamp bar on the instrument screen will light up. The closer it is to the live line of AC voltage, the higher the value of the lamp bar will be, and the buzzer will send out a higher frequency alarm sound.
- 3 Press THE NCV button to switch to the high-sensitivity test mode, which can detect the charged wires of 30 - 1000 V. The closer to the ac voltage line, the higher the value of the arc lamp bar, the higher the buzzer alarm sound.

#### Warning:

- Non-contact AC voltage and live wire detection operations may be affected by factors such as socket design, insulation thickness and type. Voltage may still exist even without indication. Do not rely solely on a contactless voltage detector to determine the presence of voltage on a wire.
- External interference sources (such as flash, motor, etc.) may trigger non-contact voltage detection by mistake.

#### Neutral/live wire detection



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#### Technical indicators

Function	Range	Resolution ratio	Accuracy	Overload protection
DC voltage	6V/60V/400V	0.001V	$\pm(0.5\%rdg+5dgt)$	400V DC/AC RMS
AC voltage	6V/60V/400V	0.001V	$\pm(1.2\%rdg+10dgt)$ 50Hz-60Hz	
Frequency	40-1000Hz	0.1Hz	$\pm(1.0\%rdg+5dgt)$	
Capacitance	99.9nF/9.999 $\mu$ F /99.99 $\mu$ F/999.9 $\mu$ F	0.01nF	$\pm(4.0\%+10d)$	
	600 $\Omega$	0.1 $\Omega$	$\pm(1.0\%rdg+5dgt)$	
Resistance	6k $\Omega$ /60k $\Omega$ / 600k $\Omega$ /6M $\Omega$	1 $\Omega$	$\pm(0.8\%rdg+5dgt)$	
	60M $\Omega$	1k $\Omega$	$\pm(3.0\%rdg+20dgt)$	
On off test	Less than 50 $\Omega$ sound			
Diode	Open circuit voltage: 3.2V			
室温	$\pm 3$ C			
NCV (AC90-1000V)	Low range 1/3 analog stick display, green LED light, buzzer for 4Hz sound			
	Mid range 2/3 analog stick display, green + yellow LED lights, buzzer 8Hz sound			
	High range full analog stick display, green + yellow + red LED lights, buzzer 16Hz sound			
NCV High sensitivity mode (AC30-1000V)	Low range 1/3 analog stick display, green LED light, buzzer for 4Hz sound			
	Mid range 2/3 analog stick display, green + yellow LED lights, buzzer 8Hz sound			
	High range full analog stick display, green + yellow + red LED lights, buzzer 16Hz sound			

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#### Maintenance

- Clean the meter case regularly with a damp cloth and a small amount of washing. Do not use abrasive or chemical solvents. Dirty or wet input sockets may interfere with readings.
- If there is something wrong with the instrument on line A, please stop using it immediately and calibrate it for repair.
- This product can enjoy one year warranty service from the date of purchase. This warranty does not cover damage caused by accident, negligence, abuse, alteration, contamination or abnormal operating conditions.

通用型号 / Model

03080

版本号 / Version No

V-SE-03080-202206

世达工具 (上海) 有限公司

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