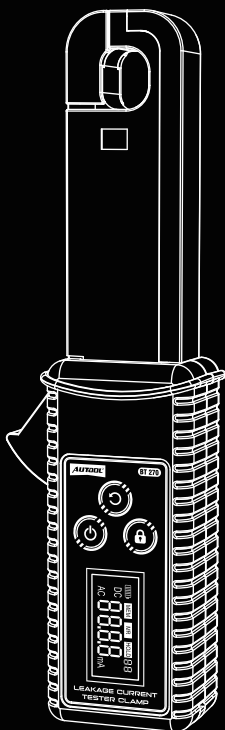


# **AUTOOL BT270**

Leakage Current Tester Clamp

User Manual

用户手册



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## CAUTIONS

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### Warning



Before using the instrument, please read this manual carefully for proper operation.

- ▶ Ensure that you stay within the specified measurement range of this clamp meter.
- ▶ Operate this clamp tester only within the defined environmental parameters.
- ▶ Exercise caution when dealing with line voltages exceeding 60V DC or 30V AC.
- ▶ Prior to commencing measurements, initiate automatic zeroing by pressing the "Zero/Backlight" button.
- ▶ Avoid storing this clamp tester in areas characterized by high temperatures, humidity, condensation, or direct sunlight for extended durations.
- ▶ Maintain the cleanliness of the contact surfaces on the

clamp tester. Although this clamp meter exhibits robust resistance to contamination, excessive dirt can compromise measurement accuracy.

- ▶ Prevent impacts to this clamp tester, particularly on the contact surfaces.
- ▶ Promptly replace the battery when it indicates low power and displays the battery symbol. If the clamp tester will not be used for an extended period, remove the battery.
- ▶ Disassembly, calibration, and maintenance of this clamp meter should only be conducted by individuals with authorized qualifications.
- ▶ In case the continued use of this clamp meter poses a safety hazard due to issues with the tester itself, immediately discontinue usage, seal it, and seek assistance from authorized institutions.

## PRODUCT INTRODUCTION

### Overview

This advanced clamp meter employs state-of-the-art digital integration technology, offering exceptional features such as automatic detection of AC/DC without the need for manual mode switching and one-touch zeroing without the hassle of manual knob adjustments. It also excels in non-contact measurements, compact design, high precision, robust interference resistance, fully automated range switching, rapid operation, and a commitment to safety and reliability.

BT270 is a precision-crafted instrument tailored for the precise measurement of automotive dark and leakage currents. It excels in quickly detecting automotive leakage currents, measuring power consumption currents, and accurately gauging motor startup currents and generator charging currents. This versatile tool is invaluable for swiftly pinpointing issues like wire breakages, electrical escapes, and improper grounding in the automotive maintenance and power maintenance industries. It enjoys wide-ranging applications in automotive repair and electrical maintenance sectors, making it an indispensable asset for professionals in these fields.

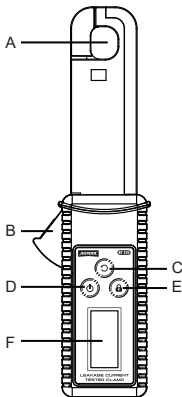
### Specification

AC/DC auto switch	Auto recognize AC or DC instead of pressing switch button manually
Auto zero	Pressing ZERO/LIGHT button instead of rotating zero knob manually
Backlight	4-digit LCD with backlight , good for using in darkness. Long press ZERO/LIGHT button to turn on/off backlight
Measure Principle	Non-contact clamp on measurement
Range	0mA~60A AC/DC
Resolution	1mA AC/DC
Accuracy	±2%rdg ±5dgt (23°C ±5°C, <75%rh)
Sampling	2 time/second
Frequency	AC: 45Hz~400 Hz
Clamp Size	16×18mm
LCD Size	35×21.5mm
Tester Size	215×61×32mm
Shift Mode	Auto Switch
Voltage	600V or below

Data Memory	99 sets, press HOLD/MEM/MR button to storage and number data for reviewing conveniently
Data Hold	Press HOLD/MEM/MR button to hold data
Data Review	Long press HOLD/MEM/MR button to enter data review, use ZERO/LIGHT and HOLD/MEM/MR button to page up or down for reviewing data. Long press HOLD/MEM/MR button to opt out
Over Range	OL displays
Auto Off	LCD screen flashes if no operation carried out in 5 minutes. Press POWER button to retain test status, otherwise the meter will be off in 30 seconds
Low Battery	Low battery will affect test accuracy. Please replace batteries if low battery sign displays
Current	Max 20mA
Temperature	-10°C~50°C
Humidity	<80%rh
Limiting Temperature Error	-10°C~0°C & 40°C~50°C, max increased error 2%rdg
Insulation	AC 3700V/rms
Safety Standard	IEC1010-1/IEC1010-2-032; Pollution Degree2; CATIII(600V)
Power	9V dry battery

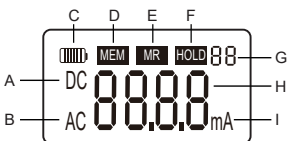
## PRODUCT STRUCTURE

### Structure diagram



<b>A</b>	Clamp	<b>B</b>	Trigger
<b>C</b>	Zero/Light Button	<b>D</b>	Power
<b>E</b>	Hold/Mem/Mr Button	<b>F</b>	LCD Screen

### Lcd Screen



A	DC	B	AC
C	Low Battery	D	Data Memory
E	Data Review	F	Data Hold
G	Data Number	H	Digit Display
I	Current Unit		

## OPERATION INSTRUCTIONS

### Operation

#### • Power On / Power Off

Press Power button to turn on / off the meter.

#### • Zero / Test

The meter can automatically recognize AC / DC and switch from each other instead of pressing switch button manually.

The meter is set to test DC current when being powered on. Press ZERO/LIGHT button to zero first, then clamp to the wires for testing. When test AC current, the meter will be auto-zero without pressing ZERO/LIGHT button.

OL sign indicates tested current is over maximum test range.

#### • Data Hold / Memory / Review

Press HOLD/MEM/MR button to hold and memorize data automatically with being numbered at the top right corner of LCD screen. 99 sets of data are available. Then press HOLD/MEM/MR button to return to test.

After turning on the meter, long press HOLD/MEM/MR button to display the latest memorized data. Press HOLD/MEM/MR button to page down for reviewing other data. Long press HOLD/MEM/MR button to opt out reviewing.

#### ⚠ NOTE

- ▶ Please long press POWER button to switch manually to test AC current which is below 25mA.

### Application

- Clamp the meter to positive or negative wire of the automotive battery, turn off all appliance and turn the key to off position. If tested quiescent current is 100mA or above, that means electric leakage exists.

#### ⚠ NOTE

- ▶ Generally when vehicle is turned off, quiescent current remains from 30 to 40mA. For European vehicles, quiescent current remains from 80 to 90mA. It depends on how many appliance installed on vehicle, the class of vehicle is higher, the quiescent current is higher.
- If quiescent current is too high, open the fuse box and pull out fuse one by one for inspection. Once quiescent current obviously drops off when one fuse is pulled out, that indicates the corresponding appliance needs to check.
- Check and repair the defective appliance. Test the quiescent current again with this meter.

#### ⚠ NOTE

- ▶ The clamp must be closed totally during test and the vehicle must be off.

- Clamp positive and negative DC wire to test DC leak current.  
(Clamp double wires)  
Clamp live and null AC wire to test AC leak current.(Clamp double wires)  
Clamp ground wire to test corresponding leak current.  
(Clamp single wire)  
Clamp main wire to test corresponding current.(Clamp single wire)

## MAINTENANCE SERVICE

Our products are made of long-lasting and durable materials, and we insist on perfect production process. Each product leaves the factory after 35 procedures and 12 times of testing and inspection work, which ensures that each product has excellent quality and performance.

### Maintenance

To maintain the performance and appearance of the product, it is recommended that the following product care guidelines be read carefully:

- Be careful not to rub the product against rough surfaces or wear the product, especially the sheet metal housing.
- Please regularly check the product parts that need to be tightened and connected. If found loose, please tighten it in time to ensure the safe operation of the equipment. The external and internal parts of the equipment in contact with various chemical media should be frequently treated with anti-corrosion treatment such as rust removal and painting to improve the corrosion resistance of the equipment and extend its service life.
- Comply with the safe operating procedures and do not overload the equipment. The safety guards of the products are complete and reliable.
- Unsafe factors are to be eliminated in time. The circuit part should be checked thoroughly and the aging wires should be replaced in time.
- Adjust the clearance of various parts and replace worn (broken) parts. Avoid contact with corrosive liquids.
- When not in use, please store the product in a dry place. Do not store the product in hot, humid, or non-ventilated places.

## WARRANTY

From the date of receipt, we provide a three-year warranty for the main unit and all the accessories included are covered by a one-year warranty.

### Warranty access

- The repair or replacement of products is determined by the actual breakdown situation of product.
- It is guaranteed that AUTOOL will use brand new component, accessory or device in terms of repair or replacement.
- If the product fails within 90 days after the customer receives it, the buyer should provide both video and picture, and we will bear the shipping cost and provide the accessories for the customer to replace it free of charge. While the product is received for more than 90 days, the customer will bear the appropriate cost and we will provide the parts to the customer for replacement free of charge.

**These conditions below shall not be in warranty range**

- The product is not purchased through official or authorized channels.

- The product is not purchased through official or authorized channels.

We AUTOOL pride ourselves on superb design and excellent service. It would be our pleasure to provide you with any further support or services.

### Disclaimer

All information, illustrations, and specifications contained in this manual, AUTOOL reserves the right of modify this manual and the machine itself with no prior notice. The physical appearance and color may differ from what is shown in the manual, please refer to the actual product. Every effort has been made to make all descriptions in the book accurate, but inevitably there are still inaccuracies, if in doubt, please contact your dealer or AUTOOL after-service centre, we are not responsible for any consequences arising from misunderstandings.

## RETURN & EXCHANGE SERVICE

### Return & Exchange

- If you are an AUTOOL user and are not satisfied with the AUTOOL products purchased from the online authorized shopping platform and offline authorized dealers, you can return the products within seven days from the date of receipt; or you may exchange it for another product of the same value within 30 days from the date of delivery.
- Returned and exchanged products must be in fully saleable condition with documentation of the relevant bill of sale, all relevant accessories and original packaging.
- AUTOOL will inspect the returned items to ensure that they are in good condition and eligible. Any item that does not pass inspection will be returned to you and you will not receive a refund for the item.
- You can exchange the product through the customer service center or AUTOOL authorized distributors; the policy of return and exchange is to return the product from where it was purchased. If there are difficulties or problems with your return or exchange, please contact AUTOOL Customer Service.

<b>China</b>	<b>400-032-0988</b>
<b>Oversea Zone</b>	<b>+86 0755 23304822</b>
<b>E-mail</b>	<b><a href="mailto:aftersale@autooltech.com">aftersale@autooltech.com</a></b>
<b>Facebook</b>	<b><a href="https://www.facebook.com/autool.vip">https://www.facebook.com/autool.vip</a></b>
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## 注意事项

### 警示

⚠ 在使用本仪器之前,请仔细阅读本手册,熟悉产品,避免造成人身伤害和仪器损坏事故。

- ▶ 任何情况下,使用仪器应特别注意安全。
- ▶ 注意不要超出仪器所规定的测量范围。
- ▶ 当线路电压大于60V DC或30V AC时,请小心使用。
- ▶ 测量前请先点按调零/背光键进行自动调零。
- ▶ 请勿于高温潮湿等场所及日光直射下长时间放置和存放仪器。
- ▶ 钳口接触平面必须保持清洁,虽然仪器已经具有较强的抗污染能力,但严重的污染会影响测量的准确度。
- ▶ 避免仪器受冲击,尤其是钳口接合面。
- ▶ 电池电量不足并显示电池符号时请及时更换电池,长时间不用仪器请取出电池。
- ▶ 拆卸、校准、维修仪器,必须由专业人员操作。

## 产品介绍

### 简介

- BT270采用最新数字集成技术,具有自动识别交直流无



需手动换挡，一键归零无需手动旋钮调零等特有功能，同时还具有非接触测量、体积小、精度高、抗干扰能力强、全自动换挡测量、快速、安全、可靠等优点。

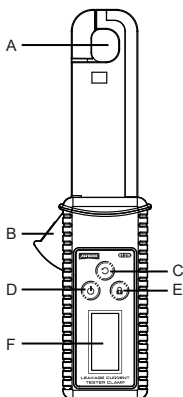
BT270专为测量汽车暗电流、漏电流等而精心设计制造，具有汽车漏电流快速检测，功耗电流检测，测量马达启动电流、发电机充电电流等作用。能快速查找如线束断裂漏电、电器逃电、线路搭铁等故障，广泛应用于汽车维修、电力检修等行业中。

## 技术参数

自动交直流换挡	自动识别交直流信号，无需手动切换交直流档位
一键自动归零	点按调零/背光键即可自动归零，无需手动旋钮进行调零
背光显示模式	4位LCD显示（带背光），方便光线不足处使用，长按调零/背光键进行开关控制，方便节能
测试方式	钳形非接触式测量
量程	0mA~60A AC/DC
分辨率	1mA AC/DC
精度	$\pm 2\% \text{rdg} \pm 5 \text{dgt}$ ( $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , 75%rh以下)
采样速率	2次/秒
频率响应	AC: 45Hz~400 Hz
钳口尺寸	16×18mm
屏幕尺寸	35×21.5mm
产品尺寸	215×61×32mm
换挡方式	自动换挡
线路电压	600V及以下线路测试
数据存储	99组，点按保持/储存/查看键自动存储并自动编号存储位置，方便查阅
数据锁定	点按保持/储存/查看键屏显数据即锁定，方便查看
数据查阅	长按保持/储存/查看键进入数据查阅，使用调零/背光和保持/储存/查看进行上下翻阅，如退出数据查阅长按保持/储存/查看键即可
超量程显示	超出量程范围显示OL
自动关机	开机5分钟不进行任何操作，LCD闪烁，如按开关键则恢复正常待测状态，否则闪烁30秒后自动关机
低电压显示	电池电压过低无法保证测量精度时，显示电池符号，应立即更换电池
工作电流	Max 20mA
工作温度	$-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$
湿度	80%rh以下
极限温度误差	$-10^{\circ}\text{C} \sim 0^{\circ}\text{C}$ 及 $40^{\circ}\text{C} \sim 50^{\circ}\text{C}$ ，误差最大增加2%rdg
绝缘强度	AC 3700V/rms (铁芯与盒之间)
适合安规	IEC1010-1/IEC1010-2-032；污染等级2；CATIII(600V)
电源	锌锰干电池 9V

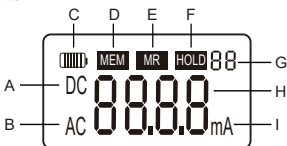
## 产品结构

### 结构图



A	钳口	B	扳机
C	调零/背光键	D	开关键
E	保持/储存/查看键	F	LCD显示

## 液晶显示屏



A	直流符号	B	交流符号
C	更换电池符号	D	数据储存符号
E	数据查看符号	F	数据保持符号
G	存储位置编号	H	LCD数字显示
I	电流单位符号		

## 操作方法

### 操作

- 开机、关机**  
 点按开关键进行开、关机操作。
- 调零、测量**  
 本设备具有自动交直流换挡功能，直接测量，无需手动切换交直流档位。  
 开机后，设备自动进入直流电流测量状态，按调零/背光键进行调零，然后钳住被测导线进行测量。如测量交流电流，设备将自动调零，不必进行调零操作。若显示“OL”符号，则表示被测线路电流超出本设备量限。
- 数据保持/储存/查看**  
 测量过程中按保持/储存/查看键，即锁定当前数据同时自动编号存储，存储位置编号显示在LCD右上角，共可存储99组数据。再按保持/储存/查看键取消锁定返回测量模式。

- 开机后长按保持/储存/查看键，进入数据查看模式，自动显示最新存储的数据，按保持/储存/查看键可实现往下翻阅存储数据功能，长按保持/储存/查看键即可退出数据查看模式。

#### ⚠ 注意

- ▶ 当被测交流电流小于25mA时，因讯号较小，用户应长按开关键手动切换至测交流电流档位进行测量。

### 现场应用

- 将本设备钳头套在汽车蓄电池正极线或者负极线上，关闭车钥匙及所有用电设备。如果测试显示静态电流大于100mA，则说明有漏电。

#### ⚠ 注意

- ▶ 一般汽车熄火后，静态电流会保持在30-40mA；欧系车会保持在80-90mA，具体根据车上电器数量确定，一般越高档车，静态电流越大。

- 如果发现静态电流过大，此时可打开车内保险盒，逐个拔掉保险丝。当发现拔掉某个保险丝后，漏电流明显回落，则说明该保险丝对应的电器异常。
- 检查并维修异常电器，再次检查静态电流是否正常。

#### ⚠ 注意

- ▶ 测试汽车暗电流时，钳口一定要完全闭合，并在冷车的状态下测试。

- 把直流线路的正负线一起钳住即测量直流漏电。（钳两根线）  
把交流的火线零线一起钳住即测量交流漏电。（钳两根线）  
把地线钳住即测量该接地线的漏电流。（钳单根线）  
把主线钳住即测量该主线路的电流。（钳单根线）

## 维修保养服务

- 您所拥有的AUTOOL产品选用持久耐用的材料，AUTOOL坚持精益求精的生产工艺，每一件产品出厂都经过35道工序及12次质检工作，从而确保每一件产品都拥有卓越的品质及性能。所以您的AUTOOL产品值得您定期维护保养，使其产品将能够长期稳定地工作。

### 维修保养

维护保养是为了保持产品性能和外观，我们建议您仔细阅读以下产品保养指南：

- 注意不要将产品与粗糙表面摩擦或揉搓产品，特别是钣金外壳。
- 对产品中需要紧固和连接的部位经常进行检查，如发现松动应及时紧固，以保证产品的安全运行。对与各种化学介质接触的产品外部和内部零件要经常进行除锈、喷漆等防腐处理，以提高产品的抗腐蚀能力，延长产品的使用寿命。

- 遵守安全操作规程，不超负荷使用产品。产品的安全防护装置齐全可靠，及时消除不安全因素。电路部分彻底检查，老化电线要及时更换。
- 定期清洗和更换易耗部件；调整各部位配合间隙和更换磨损（已坏）部件清洁时，避免产品接触带腐蚀性的液态物品。
- 不使用时，请将产品存放于干燥的位置。不要将产品存放在高温、潮湿或不通风的地方。

## 保修服务

- AUTOOL主机自客户签收日起享有3年保修期。其所含附件自客户签收日起享有1年保修期。

### 保修方式

- 根据具体的故障情况对产品进行免费修理或更换；
- 我方保证所有更换的部件、附件或产品都是全新；
- 在客户收到产品90天内出现故障同时提供视频和图片，我方承担运费并免费提供相应配件给客户更换。收到产品超过90天，客户承担相应的费用，我方免费提供配件给客户更换；

#### 以下情况不在免费保修范围：

- 非正规渠道购买AUTOOL的产品；
- 未按产品说明书要求使用和维护造成的损坏；

在AUTOOL，我们为精湛的设计和卓越的服务感到自豪。我们很乐意为您提供更多的支持或服务。

### 声明

- 偶然公司保留更改产品设计与规格的权利，届时恕不另行通知。实物外观与颜色可能与说明书中显示的有差别，请以实物为准。我们已尽最大努力力求使书中所有描述准确，但仍难免有不妥之处。如有疑问，请联系经销商或偶然售后服务中心。本公司对产品拥有最终解释权，不承担任何因误解而产生的后果。

## 退换货服务

### 退换货

- 如果您对从线上授权购物平台和线下授权经销商所购买的AUTOOL产品不满意，根据《AUTOOL全球销售条款》，您可以自收到产品之日起七日内退货；或者在产品交付之日起的30日内调换等值的其他产品。
- 退回及调换的产品必须处于完全可销售状态，并附上相关销售单单据，所有相关配件、纸质发票（如有）。
- AUTOOL将会对寄回退货的商品进行检查，以确保其处于完好无损的状态并且符合条件，相关条件详情请参阅《AUTOOL全球销售条款》。任何未通过检查的商品将退还给您，您将不会获得商品退款。
- 您可以通过客户服务中心或AUTOOL授权经销商调换产品；退换货原则为从哪里购买，就从哪里退换货。如果您退换货遇见困难或者阻碍，请联系AUTOOL客户服务中心。通过客户服务中心退换货时，我们建议您通过下面的方式进行：

<b>中国区域致电</b> 400-032-0988 / 18929303778
<b>售后微信号</b> 18929303778
<b>海外区域致电</b> +86 0755 23304822
<b>E-mail</b> aftersale@autooltech.com
<b>Facebook</b> <a href="https://www.facebook.com/autool.vip">https://www.facebook.com/autool.vip</a>
<b>YouTube</b> <a href="https://www.youtube.com/c/autooltech">https://www.youtube.com/c/autooltech</a>

- 如您的退换货得到确认，您将收到确认信息和邮件。



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RoHS  
Made in China

执行标准 / Execution standard: GB/T8218-1987