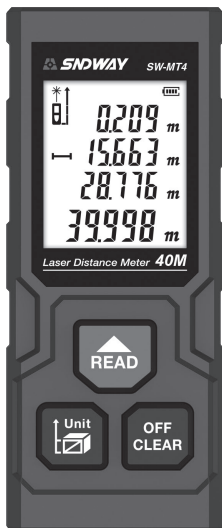


深达威[®]手持式激光测距仪 用户手册





产品执行标准: GB/T 14267-2009



2016L197-44

安全条例

初次使用仪器前，请先仔细阅读安全条款和操作指南

- ⚠ 在使用仪器之前请仔细阅读本手册中的所有操作指南和安全条例，没有按照本手册所指引的操作方法使用仪器有可能会造成仪器的损害、影响测量精度、对使用者或第三者的人身伤害。
- ⚠ 不要用任何方式自行打开或修理仪器，严禁非法改装或改变仪器激光发射器的性能。请妥善保管仪器，不要放置在儿童可以接触到的地方，避免无关人员的使用。
- ⚠ 严禁用仪器激光器照射自己或他人的眼睛及身体其他部位，严禁将激光器照射在高反光的物体表面上。
- ⚠ 仪器电磁辐射可能对其他设备和装置造成干扰，请不要在飞机或医疗设备附近使用本仪器，不要在易燃、易爆的环境中使用仪器。
- ⚠ 仪器更换的废旧电池和报废的仪器不可与生活垃圾一同处理，请按国家或者当地的相关法律规定处理废旧电池和报废仪器。
- ⚠ 仪器出现任何的质量问题，或对使用仪器有任何疑问时请及时联系当地经销商或深达威仪器厂家，我们将第一时间为您解决。

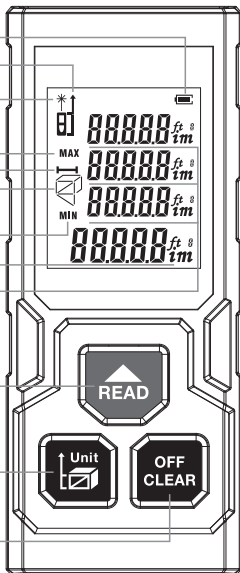
感谢您购买 **SNOWAY** 深达威® 仪器 手持式激光测距仪系列产品！

专业铸造品质 品质成就品牌

显示屏、按键

● 显示屏

- 电量指示
- 测量基准
- 激光发射指示
- 最大值指示
- 长度模式
- 面积/体积/
三角模式
- 最小值指示
- 主显示区
- 辅显示区



● 按键

- 开机、测量键
- 面积/体积/
三角模式/基准/
单位选择键
- 关机、清除键

安装电池

● 安装更换电池



- 打开仪器背部的电池门，按照极性指示正确放入电池，并关闭电池门。
- 仪器使用1.5V AAA的电池。
- 长时间不使用仪器时，请取出电池，以避免电池腐蚀仪器主机。


启动仪器、功能设置

● 启动仪器和关闭仪器

关机状态下，按 **READ** 键，仪器和激光同时启动，仪器进入待测模式。

开机状态下，长按 **OFF CLEAR** 键3秒关闭仪器。150秒内未对仪器进行任何操作，仪器将自动关闭。

● 单位设定

激光关闭状态下，长按  键，切换单位。

测量单位：

	长 度	面 积	体 积
1	0.000 m	0.000 m ²	0.000 m ³
2	0.0 in	0.00 ft ²	0.00 ft ³
3	0.00 ft	0.00 ft ²	0.00 ft ³

● 测量基准设置






激光打开状态下，长按  键进行设置前端基准和末端基准的相互转换，系统默认为末端基准。

● 背光灯开启/关闭


本仪器背光灯为自动开和关。仪器在键入任一按键后，背光灯会持续打开15秒，15秒后，仪器无操作将自动关闭背光灯，以节省电源。


自助校准功能和声音开关





为保证仪器的精准度，提供了自助校准功能。

校准方法：在关机状态下，持续按住  键，再短按  键开机，松开  键，直到屏幕出现‘CRL’下端有闪烁的数字，进入自助校准模式。此时用户可根据仪器的误差用   键对这个数值进行调整。
调整范围为：-9~9mm。



例如：实际距离为3.780m

若本机测量值为3.778m，比实际值小2mm，则可进入校准模式，用  键将校准值在现有基础上上调2mm。


若本机测量值为3.783m，比实际值大3mm，则可进入校准模式，用  键将校准值在现有基础上下调3mm。



调整完毕后，按  键保存校准结果，进入声音开关设置，屏幕显示“Sound”下端有闪烁的字母，短按  或  设置声音开关，“ON”为声音开，“OFF”为声音关。设置完成后，按  退出设置。

单次测量



待测模式下短按  键，仪器激光发射，锁定测量点。再按  键进行单次距离数据的测量，测量结果显示在主显示区。


连续测量


待测模式下长按  键，进入连续测量状态，屏幕上辅助显示区会显示此次连续测量过程中的最大测量值和最小值。

主显示区会显示当前测量值，短按  键或  键退出连续测量模式。

面积测量


按  键一次，屏幕会显示 ，长方形一条边闪烁。根据提示完成下列操作：

按  键进行第一条边的测量（长）



按  键进行第二条边的测量（宽）


仪器会自动进行面积运算，结果显示在主显示区。辅助显示区显示长方形的长和宽的测量值。


在测量过程中，还可以键入  清除本次测量结果重新测量。

按  键两次，退出面积测量状态，进入长度测量模式。

体积测量

按  键二次，系统进入体积测量状态，仪器进入体积状态，屏幕上会有一个立方体闪烁 ，根据提示完成下列操作：


按  键进行第一条边的测量（长）

按  键进行第二条边的测量（宽）

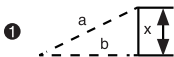
按  键进行第三条边的测量（高）

仪器会自动进行体积运算，结果显示在主显示区。辅助显示区显示立方体的长宽高的测量值。

在测量过程中，还可以键入  清除本次测量结果重新测量。

按  键两次，退出体积测量状态，进入长度测量模式。

勾股定理间接测量




仪器预设有两种利用勾股定理测量三角形单边距离模式，方便用户在特定复杂环境下进行间接测量。

① 测斜边和底，间接测量高度

仪器短按  键三次进入该三角间接测量模式：

按  键依屏幕提示先测出虚线斜边的长度(a)


按  键测出虚线直角边(底边)的长度(b)

仪器自动计算实线直角边(高)的长度(x)

② 测量直角三角形两直角边，间接测量斜边长度

点击  键四次，屏幕显示： 直角边闪烁

按  键依屏幕提示测出一条虚线的长度(a)

按  键测出另一条虚线角边的长度(b)

仪器自动计算实线斜边的长度(x)

勾股测量模式下，直角边必须小于斜边长度仪器才能计算，否则仪器会显示错误信号提示。在勾股测量模式下，为保证测量的精度，须确保从同一个起始点测量，并按斜边、直角边测量顺序测量。

提示信息

使用过程中，主显示区可能会出现如下提示信息：

信息	原因	解决方法
Err	超出距离测量范围	让仪器在量程范围内使用
Err1	信号过弱	测量反射能力强的目标点
Err2	信号过强	测量反射能力弱的目标点
Err3	电池电压过低	更换电池
Err4	超出工作温度范围	让仪器在指定环境中使用
Err5	勾股测量违规	重新测量，确保斜边大于直角边

技术参数

项目	SW-MT4
距离测量范围	0.05-40m
距离测量精度	$\pm(2\text{mm}+d*1/10000)^*$
连续测量功能	✓
面积体积测量	✓
勾股测量功能	✓
最大/最小值	✓
自助校准功能	✓
激光等级	II
激光类型	2级 630-670nm, <1mW
自动切断激光	20秒(单次测量)
自动关机	150秒
最大电池寿命	4000/8000次(碳性/碱性电池)
声音提示	✓
存储温度范围	-20°C~60°C
工作温度范围	0°C~40°C
存储湿度	20%~80% RH
使用电池	2节1.5V AAA
外形尺寸	104x43x25.5mm

* “d” 表示实际距离

** 在恶劣环境下如:阳光过于强烈。环境温度波动过大,反射面反射效果较弱,电池电量不足的情况下测量结果会有较大的误差,此种情况配合目标反射板使用效果更佳。

仪器日常保养

- 禁止将仪器长期放置在高温高湿的环境中储存，长期不使用仪器时，请取出电池并把仪器放置在随机的仪器套内放在阴凉干爽处存放。
- 请保持仪器表面清洁，可用湿的软布擦拭表面灰尘，不可用带有腐蚀性洗液清洁仪器。可按照擦拭光学器件表的方法擦拭激光器窗口和聚焦镜。

装箱清单

购买仪器时请按下列清单认真检查仪器所有附件是否完整？

项目	名称	单位	数量	备注
1	主机	台	1	
2	AAA电池	节	2	
3	说明书	本	1	内含保修合格证
4	彩盒	个	1	

保修条例

1. 顾客自购买产品之日起本公司提供1年保修服务。
2. 以下情况不在保修之列：
 - ◎ 人为损坏或使用保管不当引起的损坏
 - ◎ 非经本公司授权的服务机构私自维修、改装或拆卸而导致的故障或损坏
 - ◎ 私自涂改购机凭证、合格证/保修卡
 - ◎ 显示屏（LCD）损坏
 - ◎ 机身编号被删改的产品
3. 保修时必须提供填有产品型号、机身编号、购买日期的保修卡。
4. 本保修卡只适用于中国境内，维修时请出示保修卡。
5. 保修卡遗失恕不补发，敬请妥善保管。
6. 对维修是否享受本公司承诺的服务，最终裁决权在本公司指定的各地维修中心。

合格证

执行标准：GB/T 14267-2009

检验结果：_____


检 验 员：_____

合格

QC02

售后保修卡

本证请于购机后向经销单位盖章方为有效，过期作废，谢谢合作！

产品型号		经销单位盖章
产品名称		
经销单位		
使用单位		
地 址		
发票日期		

维修部分填写

日 期	
保修项目	
摘 要	
维 修 员	

深达威科技（广东）股份有限公司

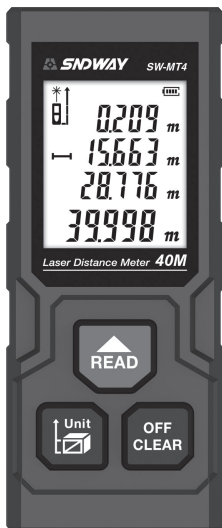
地 址：东莞市虎门镇虎门团结路58号深达威科技园
全国咨询服务热线：400-125-6969

网 址：www.sndway.com 电 话：0769-85265688

邮 箱：market@sndway.com

Laser Distance Meter







User Manual





Safety Regulations

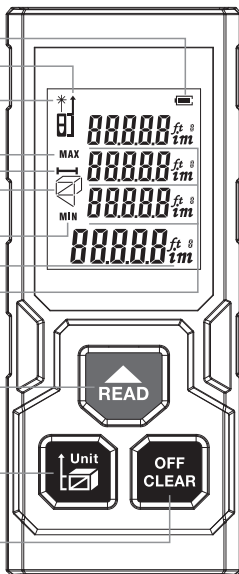
Please read the safety regulations and operation guide carefully before operating.

-  Please read all of the operational guide and safety regulations in this manual before operation . Improper operations without complying with this manual may cause damage to the device, influence on measurement result or cause personal injury to the user or a third party.
-  The instrument is not allowed to disassemble or repair in any ways. It is forbidden to do any illegal modification or performance change for laser emitter. Please keep it out of reach of children and avoid being used by any irrelevant person.
-  It is strictly prohibited to shoot eyes or other parts of body with the laser. It is not allowed to take the laser to shoot the surface of any highly reflective objects.
-  Due to electromagnetic radiation interference to other equipment and devices, please don't use the meter in the plane or around medical equipment, don't use it in inflammable, explosive environment.
-  Discarded batteries or meter device should not be processed just like household garbage, please handle them in line with related law and regulations.
-  Any quality issues or any questions on the meter, please contact local distributors or manufacturer in time, we are ready to offer solutions for you.

Display / Button

● Display

- Power Supply
- Reference Point
- Laser on
- Maximum
- Length
- Area, Volume and Pythagorean
- Minimum
- Major Display
- Auxiliary Display

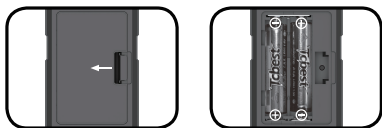


● Button

- Turn on/Measuring
- Area/Volume/Pythagorean Mode/Reference Point/Unit Switch
- Turn off/Remove

Batteries Installation


● Battery Installation and Replacement



- Open the battery door on the back of device, and place batteries according to correct polarity, then close the battery door.
- 1.5 V AAA battery is applied to the meter.
- If not used for a long time, please take out the batteries to avoid battery corrosion to meter body.

Start the Instrument / Menu Setting

● Turn on/off the Instrument

Under off state, press  , device and laser get started simultaneously and the device enters the measurement mode.

Under on state, long press  for 3 seconds to turn the device off. The device can also be shut off without any operation within 150 seconds.


● Unit Setting

When the laser is turned off, long press  to switch the measurement unit.

Measurement units:

	Length	Area	Volume
1	0.000m	0.000 m ²	0.000 m ³
2	0.0 in	0.00 ft ²	0.00 ft ³
3	0.00 ft	0.00 ft ²	0.00 ft ³

● Changing Reference Point






When the laser is turned on, long press  to change the reference point. The default reference point is the terminal baseline.


● Backlight on/off

The backlight is set to turn on and off automatically. The backlight will be on for 15 seconds if any key is pressed. The backlight will automatically turn off if there is no operation within 15 seconds to save power.


Self-Calibration / Sound on/off


Self-calibration function is provided to ensure the precision of the device.





First, make sure the device is power off, long press  then press  to start the device. Next, loose  when "CAL" and a twinkling figure show at the display. Then the device enters self-calibration mode. At this time, the user can adjust the figure by  and  according to the error of the instrument.

The adjustment range is -9~9mm. Finally, long press  to save the setting.



For example, the actual distance is 3.780m.

If the measured value is 3.778m, 2mm smaller than the actual value, the calibration value can be adjusted up by 2mm on the existing basis with  through the calibration function.


If the measured value is 3.783m, 3mm larger than the actual value, the calibration value can be lowered by 3mm on the existing basis with  through the calibration function.

After the adjustment, press  to save the calibration result and enter the setting of sound. When the blinking letters "Sound" is displayed at the bottom of the screen, short press  or  to set the sound. "ON" indicates the sound is on, and "OFF" indicates the sound is off. Finally, press  to exit the setting.

Single Measurement



Under the test mode, press , and the instrument emits laser to lock the measuring point. Press  again for single distance measurement, and the measurement result will be displayed in the major display area.

Continuous Measurement


Under the test mode, long press  to enter the continuous measurement mode, and the maximum and minimum measured values measured in the continuous measurement process will display in the auxiliary display area.

The current measurement value will display in the main display area. Short press  or  to exit the continuous measurement mode.


Area Measurement


Press ,  shows at the screen. One of the side of rectangle blinks at the display, please follow the below instructions for area measurement:

Press  once for length


Press  again for width


The device automatically calculates the area and shows the result in the major display area. The measuring results of the length and width of the rectangle will be showed in the auxiliary display area.

Press , clear off the result and measure again if necessary.


Press  again to exit the mode.


Volume Measurement

Press  twice to enter volume measurement mode.


A  will show at the top of the screen. Please follow the below instruction for volume measurement:


Press  for length

Press  again for width

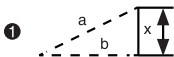
Press  thirdly for height

The device automatically calculates the volume and shows the result in the major display area. The measuring results of the length, width and height of the cube will be showed in the auxiliary display area.

Press , clear off the result and measure again if necessary.



Press  again to exit the mode.


Pythagoras



There are two Pythagoras modes which is convenient for indirect measurement in a specific complex environment.

1. Calculate the second leg by measuring the hypotenuse and another leg.



Short press  three times to enter Pythagoras mode, the hypotenuse of  blinking.

Press , measure the length of hypotenuse (a)


Press , measure the length of one leg (b)

Device automatically calculates the length of another leg (x)

2. Calculate the hypotenuse by measuring the length of two legs.

Short press  four times, when one leg of  is blinking.

Press , measure the length of one leg (a)

Press , measure the length of another leg (b)

Device automatically calculates the length of hypotenuse (x)

Legs must be shorter than hypotenuse, or there will be "err" showed at screen. In order to guarantee the accuracy, please make sure all measurements are started from the same point and in the order of hypotenuse and legs.

Tips

During use, the following prompts may be displayed in the major display area:

Prompt	Cause	Solution
Err	Out of the measurement range	Use the device within the measurement range
Err1	Signal is too weak	Choose the surface with stronger reflection. Use the reflecting plate.
Err2	Signal is too strong	Choose the surface with weaker reflection.
Err3	Low battery voltage	Replace batteries
Err4	Beyond working temperature	Use the device in the specified temperature.
Err5	Pythagoras measuring breaks the rules	Re-measure and ensure that hypotenuse is longer than legs.

Technology Specifications

ITEM	SW-MT4
Working Range	0.05-40m
Precision	$\pm(2\text{mm}+d*1/10000)$ *
Continuous Measurement	√
Area/Volume Measurement	√
Pythagorean Measurement	√
Min/Max Value	√
Self-Calibration	√
Laser Level	II
Laser Type	630-670nm,<1mW
Automatically Cut off Laser	20s (single measurement)
Auto Power-off	150s
Battery Life	4000 / 8000 times (carbon-zinc battery / alkaline battery)
Voice Prompt	√
Storage Temperature	-20°C~60°C
Working Temperature	0°C~40°C
Storage Humidity	20%~80%RH
Battery	2x1.5V AAA
Dimension	104x43x25.5mm

* "d" indicates the actual distance.

** In harsh environment, such as: sunlight is too strong, the ambient temperature fluctuates excessively, the reflection effect of the object's surface is weak, the battery is low, the measurement results will have a large error, so a reflecting plate is needed.

Instrument Maintenance

- The meter should not be stored in high temperature and humid environment for a long time. If it is not used very often, please take out the battery and place the meter in the portable bag and store it in cool and dry place.
- Please keep the device surface clean. Use a soft wet cloth to wipe the dust on the surface. Do not use corrosive liquid to clean the device. Use the same method as wiping optical devices to wipe the meter and focusing mirror.

Packing List

Please check if all accessories are complete according to the following list.

No.	Item	Unit	QTY	Note
1	Meter	pc	1	
2	User Manual	pc	1	
3	Gift Box	pc	1	

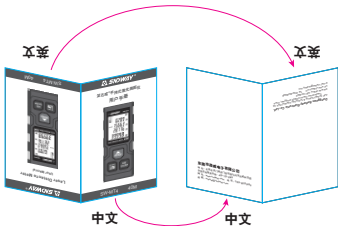
Sndway Technology (Guangdong) Co., LTD

Add: Sndway Science & Technology Industrial Park, 58
Tuanjie Road, Humen 523930, Dongguan, China

Service Hotline: 400-125-6969

Web: www.sndway.com Tel: 0769-85265688

E-mail: market@sndway.com



尺寸: 70x110mm

印刷: 单黑

装订: 骑马钉装订

注: 从正面翻为中文, 第1页-公司地址信息页
从反面翻为英文, 第1页-公司地址信息页
若有空白页, 优先放在中英文封面的背面,
再考虑地址信息页背面, 中英文公司信息页要
在同一张上 (如上示意图)