



# 手持激光测距卷尺

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## Laser Distance Tape

### 用户手册

User Manual



SW-TM40A SW-TM60A



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中 文 ----- 01~17

English ----- 18~34

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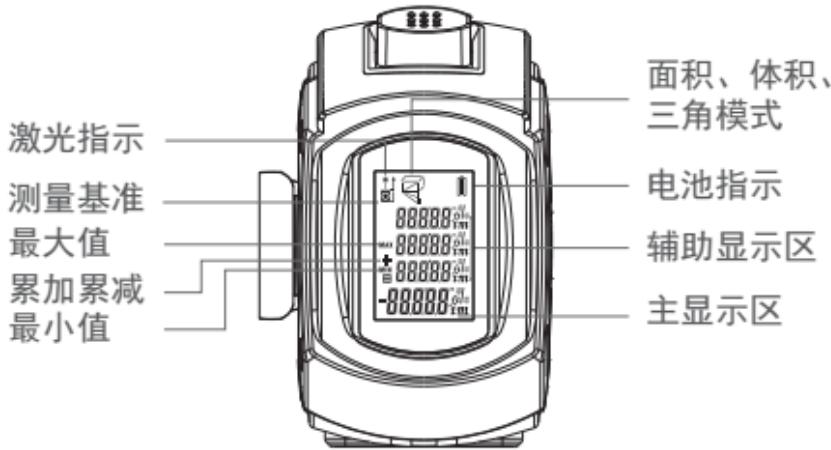


# 用 户 须 知

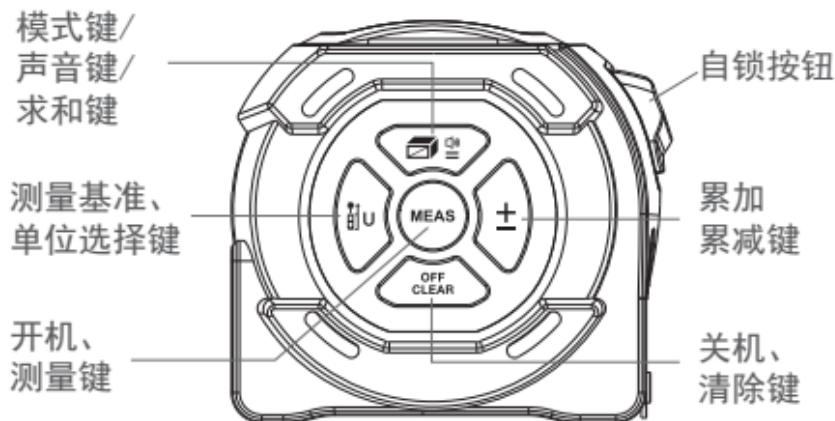
- ◆ 本手册详细介绍了产品的使用方法、注意事项以及相关事项，在使用产品之前，请详细阅读手册，以便发挥产品的最佳效能。
- ◆ 不要在易燃、易爆的环境中使用仪器。
- ◆ 报废的仪器不可与生活垃圾一同处理，请按国家或者当地的相关法律规定处理。
- ◆ 仪器出现任何的质量问题，或对使用仪器有任何疑问时，请及时联系当地经销商或深达威厂家，我们将第一时间为您解决。

**专业铸造品质 品质成就品牌**

## 显示屏



## 按键



## 锂电池

内置3.7V 850mAh锂电池供电，不可拆装。仪器自带充电电路，具有明晰的欠压指示、充电指示。

电池充电：充电头要用质量好的充电头，DC5V 1A输出，建议用手机充电头充电。

电池用过一段时间后容量不足时，开不了机或开机后，电池符号空白闪烁显示，需要及时充电。插入USB充电，电池符号条形柱滚动显示 ，充满电后会显示 ，且闪烁。

## 电池保养

长时间不使用时，先把产品充满电，并每半年再充电一次，以免电池放电损坏。

## 启动仪器、菜单设置

### 启动仪器和关闭仪器

关机状态下，按  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  键2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

长按 **键**，进入测量单位调整状态，可重置当前测量单位，本机默认的单位为：0.000m，该仪器提供了6种单位可供选择。

### 测量单位：

	长 度	面 积	体 积
1	0.000 m	0.000 m <sup>2</sup>	0.000 m <sup>3</sup>
2	0.00 m	0.00 m <sup>2</sup>	0.00 m <sup>3</sup>
3	0.0 in	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
4	0 1/16 in	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
5	0'00" 1/16	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
6	0.00 ft	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>

## 测量基准设置

短按 **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。

## 声音开启/关闭

仪器提供声音提示功能，用户可根据需求，打开或关闭声音提示功能。默认状态下，声音提示功能为开，长按  键，关闭声音提示功能，再长按  键，开启声音提示功能。



声音开



声音关

## 自助校准功能

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，再按  键开机，松开  键，直到屏幕出现‘CAL’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。

## 距离测量、面积、体积、勾股间接测量

### 单次测量

待测模式下按  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/最小测量值。

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  键进行第一条边测量（长）

按  键进行第二条边测量（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，还可以按  键清除本次测量结果  
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，还可以按 **OFF CLEAR** 键清除本次测量结果重新测量。

按 **OFF CLEAR** 键两次退出体积测量状态，进入长度测量模式。

## 墙面面积测量

按  键三次，屏幕显示 ，根据提示完成下列操作：

按  测量键，测得墙面的高度；

按  测量键，测得墙面1的宽度1；

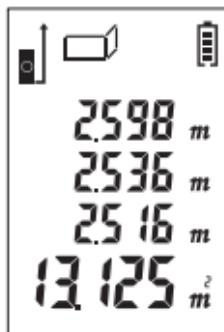
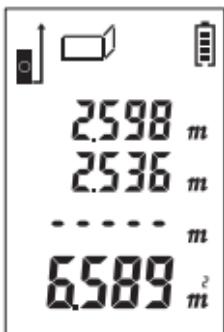
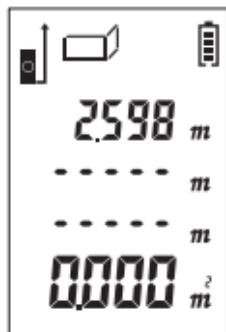
仪器会自动计算墙面的面积=高度×宽度1；

按  测量键，测得墙面2的宽度2；

仪器会自动计算墙面的

面积总和=高度×（宽度1+宽度2）

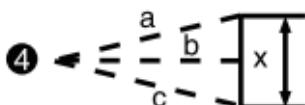
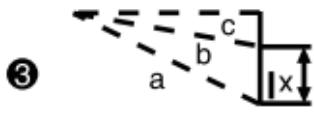
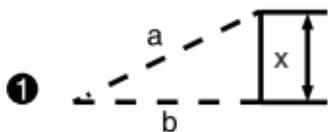
依次类推，按  测量键，测得墙面n的宽度n；  
面积总和=高度×（宽度1+宽度2+……+宽度n）；



在测量过程中，还可以键入 **OFF CLEAR** 键，清除本次测量结果重新测量。

显示区无数据时，按 **OFF CLEAR** 键，退出面积测量状态，进入长度测量模式。

## 勾股定理间接测量



仪器预设有四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 测量斜边和直角底边，间接测量直角边的高度  
仪器短按 **MEAS** 键四次，进入测高模式，屏幕显示： 斜边闪烁

按 **MEAS** 键依屏幕提示测出斜线的长度 (a)

按 **MEAS** 键测出另一条虚线直角边的长度 (b)

仪器自动计算出实线直角边的高度 (x)

② 测量直角三角形两直角边，间接测量斜边长度  
短按  键五次，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)

③ 短按  键六次，屏幕显示：  斜边闪烁

按  键依屏幕提示先测出一条虚线的长度 (a)

按  键测出中间一条虚线边的长度 (b)

按  键测出另一条虚线边的长度 (c)

仪器自动计算出实线三角形一条边的长度 (x)

④ 短按  键七次，屏幕显示：  斜边闪烁

按  键依屏幕提示测出一条虚线边的长度 (a)

按  键测出如图虚线边的长度 (b)

按  键测出如图另一条虚线斜边的长度 (c)

仪器自动计算出实线直角边的长度 (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Err5。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。

## 累加累减功能：

单段距离测量可通过加/减运算进行累加或累减操作。

用户在测量单段距离得到一次测量结果后，再通过 **±** 键进入累加累减功能选择：

短按 **±** 键，屏幕显示“+”，进入累加测量模式，屏幕显示上次测量值与当次测量值的累加值。

再次短按 **±** 键，屏幕显示“-”，进入累减测量模式，屏幕显示上次测量值与当次测量值的差值。

累加累减模式通过 **±** 键循环选择。

不仅距离可累加累减，面积和体积也可进行累加累减。

下面举例说明面积的累加累减功能，体积的累加累减与此类似。

面积累加：测量第一个面积，得到结果如下图1所示。

然后按下 **±** 键，再测量第二个面积，得到结果如下图2所示，在左下角会显示一个加号。最后，按下 **SUM** 键得到两次面积求和的结果，结果如图3所示。

多次累加累减：累加/累减模式下，继续测量多个面积/体积，仪器会自动累计多个结果，按下 **SUM** 键将显示最终结果。测量过程中，累加累减可任意切换。



图1



图2



图3

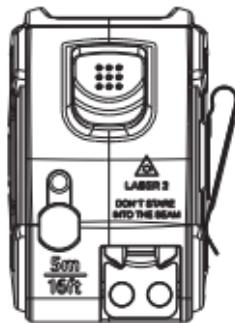
## 提示信息

使用过程中，主显示区可能会出现如下提示信息：

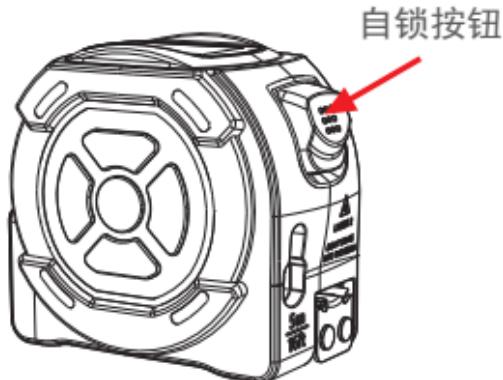
信息	原因	解决方法
Err	超出距离测量范围	让仪器在量程范围内使用
Err1	信号过弱	测量反射能力强的目标点
Err2	信号过强	测量反射能力弱的目标点
Err3	电池电压过低	对电池进行充电
Err4	超出工作温度范围	让仪器在指定环境中使用
Err5	勾股测量违规	重新测量，确保斜边大于直角边

### 自锁功能

尺带拉出，自动锁定，避免回弹伤手。



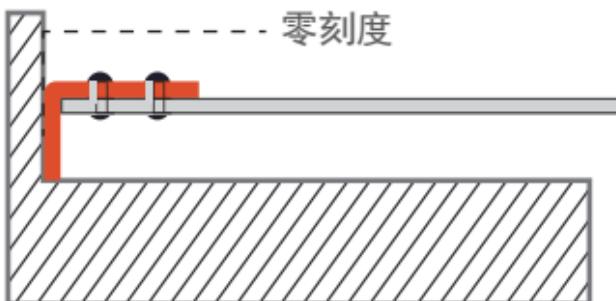
按压后，尺带自动回收。



## 活动尺钩（带磁铁）

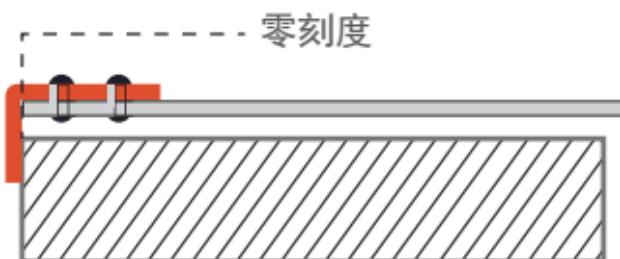
### 测量方法一：顶量

尺钩是活动的，顶住测量体测量，尺钩右移去掉尺钩误差，以尺钩顶端为0点。



### 测量方法二：钩量

扣住测量体测量，尺钩左移去掉尺钩误差，以尺钩底端为0点。



## 技术参数

### 激光测距仪参数

项目	SW-TM40A	SW-TM60A
测量范围	0.05~40m	0.05~60m
距离测量精度	$\pm(2\text{mm}+d*1/10000)$ (注1)	
测量单位选择	m/in/ft	
连续测量功能	有	
面积体积测量	有	
勾股测量功能	有	
墙面面积测量	有	
加减测量功能	有	
声音提示	有	
激光类型	2级630~670nm, <1mW	
自动切断激光	20秒	
自动关机	150秒	
电池容量	3.7V 850mAh锂电池	
满电工作时间	8000次	
充电规格	Type-C DC 5V 0.5A	
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	
外形尺寸	87x79x58mm	

注1：“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或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。

## 钢尺参数

项目	
最大测量距离	5m
最小刻度	1mm
尺带宽度	19mm
尺带厚度	0.16mm
单位	公英制
尺带材质	65锰钢
尺钩	活动带双面磁铁
自锁功能	有

## 仪器使用日常保养

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，不可用带有腐蚀性液体清洁仪器。可按照擦拭光学器件表面的方法擦拭激光器窗口和聚焦镜。

## 装机清单

购买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	彩盒	个	1	
3	说明书	本	1	
4	保修合格证	张	1	
5	挂绳	条	1	
6	锂电池	个	1	内置不可拆卸
7	Type-C线	根	1	

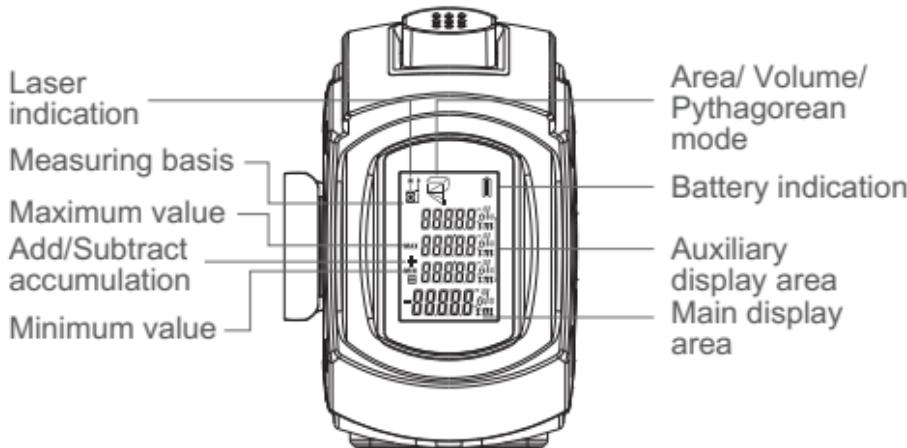
# User Instructions

1. This manual introduces application method, attentions and other items about the product in detail. Please read it intently to operate the meter efficiently.
2. Do not use it inflammable and explosive circumstance.
3. Do not throw away the electrical waste with normal household waste, please dispose it by national or local related law and regulations.
4. If there are any quality problems or any doubts about how to operate, please contact the retailer or us, we will solve it as soon as possible.

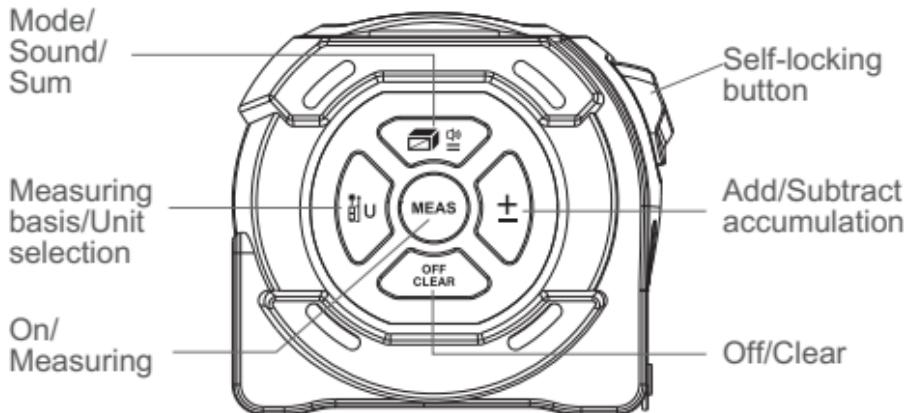
Professional casts quality and good quality gets reputation

## Product Description

### LCD



### Keys



## Product Description

The built-in 3.7V 850mAh lithium battery is non-removable. The instrument has its own charging circuit, with clear undervoltage indication and charging indication.

**Battery charging:** The charging head should be of good quality and DC5V 1A output. It is recommended to use the mobile phone charging head for charging.

The instrument shall be charged in time when running out of battery or its battery symbol shows blank and flashes after being turned on due to its insufficient battery capacity. Insert USB to charge, and the battery symbol scrolls display . When fully charged, it will display and flash.

## Battery Maintenance

When you don't use the device for a long time, charge the product fully and recharge it every six months to avoid battery damage.

## Start the Instrument/ Menu Setting

### Turn on/off the Instrument

Under off state, press , then the instrument and laser start simultaneously, and the instrument enters the measurement mode.

Under on state, long press for 2s to turn off the instrument. The instrument will automatically shut down without any operation within 150s.

## Unit Setting

Long press  to choose the current measurement unit. The default unit is 0.000m. There are 6 units for selection.

Measurement unit:

	Length	Area	Volume
1	0.000 m	0.000 m <sup>2</sup>	0.000 m <sup>3</sup>
2	0.00 m	0.00 m <sup>2</sup>	0.00 m <sup>3</sup>
3	0.0 in	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
4	0 1/16 in	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
5	0'00" 1/16	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>
6	0.00 ft	0.00 ft <sup>2</sup>	0.00 ft <sup>3</sup>

## Measuring Basis Setting

Short press  to switch the front-end basis and back-end basis, and the default measuring basis is the back-end basis.

## 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.

## Sound on/off

User can turn on or off the sound prompt function according to the demand. By default, the voice prompt function is enabled. Long press  to turn off the sound prompt function. Then long press  to enable the sound prompt function.



Sound on



Sound off

## Self-calibration Function

The instrument is equipped with the self-calibration function to ensure the accuracy of it.

Calibration method: On off state, press  , then press  to turn it on. Release  until "CAL" and a twinkling figure are showed at the display, then the instrument enters self-calibration mode.

At this time, user can adjust the figure by  and  according to the error of the instrument. The adjustment range is -9~9mm.

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.

Finally, press  to save the calibration result.

# Distance, Area, Volume, Indirect Pythagorean Measurement

## Single Measurement

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

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

## Area Measurement

Press  once, the screen will display  with a flashing side. Complete the following operations as prompted:

Press  to measure the first side (width)

Press  to measure the second side (length)

The instrument will automatically calculate the area, and the results will be displayed at the major display area.

The auxiliary display area displays the measured values of the length and width of the rectangle.

During measurement, user can also press  to clear the measurement results and re-measure.

Press  twice to exit the area measurement mode and enter the length measurement 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  to measure the first side (width)

Press  to measure the second side (length)

Press  to measure the third side (height)

The instrument will automatically calculate the volume, and the results will be displayed at the major display area. The auxiliary display area displays the measured values of the length, width and height of the cube.

During measurement, user can also press  to clear the current measurement results and re-measure.

Press  to exit the volume measurement mode and enter the length measurement mode.

## Metope Area Measurement

Press  three times till  shows at the display. Complete the following operations as prompted:

Press  once for the height of the wall;

Press  again for the width 1 of wall 1;

The instrument will automatically calculate the area of the wall:

Area=Height  $\times$  Width 1

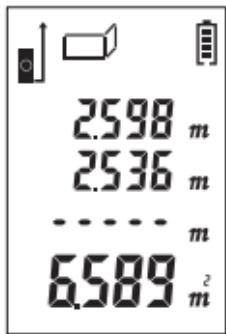
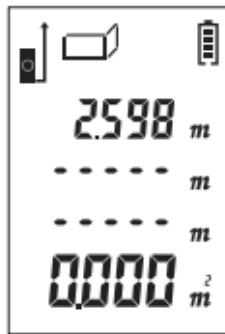
Press  again for the width2 of wall 2;

The instrument will automatically calculate the total area of the wall:

Total area = Height  $\times$  (Width 1+ Width 2)

By analogy, press  to measure the width(n) of the wall (n);

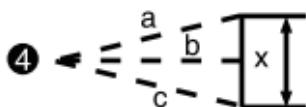
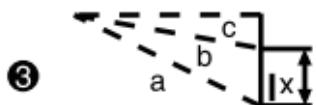
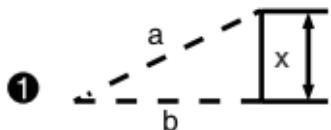
Total area = Height  $\times$  (Width 1+ Width 2+... + Width n)



During measurement, user can also press  to clear the current measurement results and re-measure.

Press  to exit the area measurement mode and enter the length measurement mode.

## Pythagorean Measurement



The instrument has four modes of measuring the unilateral distance of a triangle by Pythagorean theorem, which is convenient for users to measure indirectly in specific complex environment.

1. Measure the two sides of a right triangle to indirectly measure the length of its height

Press  four times to enter the height measurement mode, and the display will show a  with hypotenuse flickering.

Press  to measure the first side (a);

Press  to measure the second side (b);

The instrument will automatically calculate the length of the height(x).

2. Measure the two right sides of a right triangle to indirectly measure the length of its hypotenuse

Press  five times, and the display will show a  with its leg flickering.

Press  to measure the length of the dotted line (a);

Press  to measure the length of the dotted line (b);

The instrument will automatically calculate the length of the hypotenuse(x).

3. Press  six times, and the display will show a  with hypotenuse flickering

Press  to measure the length of the dotted line (a);

Press  to measure the length of the middle dotted line (b);

Press  to measure the length of the dotted line (c);

The instrument will automatically calculate the length of the side(x).

4. Press  seven times, and the display will show a  with hypotenuse flickering

Press  to measure the length of the dotted line (a);

Press  to measure the length of the dotted line (b);

Press  to measure the length of the dotted line (c);

The instrument will automatically calculate the length of the leg(x).

Legs must be shorter than hypotenuse, or there will be "Err 5" showed at screen. In order to guarantee the accuracy, please make sure all measurements are started from the same points and in the order of hypotenuse and legs.

## Function of Add/Subtract Accumulation

Single-segment distance measurements can be added or subtracted accumulatively by the addition/subtraction operation. After measuring a single distance and getting a measurement result, the user can enter the selection of add accumulation or subtract accumulation function by pressing the  key:

Press  and the screen displays "+" to enter the add accumulation measurement mode. The screen displays the accumulated value of the last measurement and the current measurement.

Press  again, and the screen displays "-" to enter the subtract accumulation measurement mode. The screen displays the difference between the last measurement and the current measurement.

Add/Subtract accumulation mode is circularly selected by pressing .

It is not only distance that can be added or subtracted accumulatively, but also area and volume. The following examples illustrate the function of add and subtract accumulation of area, and the function of volume is similar.

Area accumulation: Measure the first area and get the result as shown in Figure 1 below. Then press the  key and measure the second area. The result is as shown in Figure 2. A plus sign will be displayed in the lower left corner. Finally, press  to get the result of two area summations, as shown in Figure 3.

Multiple add and subtract accumulation: In the add/subtract accumulation mode, if you continue to measure multiple areas/volumes, the instrument will automatically accumulate multiple

results. Press  to display the final result. During the measurement process, the add accumulation and subtract accumulation can be switched arbitrarily.

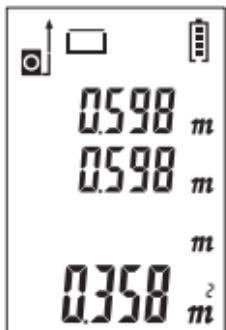


Figure 1



Figure 2

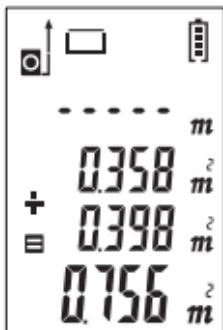


Figure 3

## Prompt Information

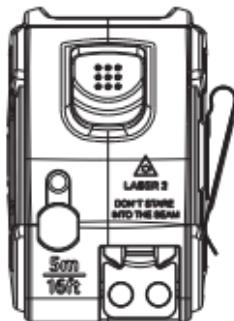
During use, the following prompt information may appear on the major display area:

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	Charge the battery.
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.

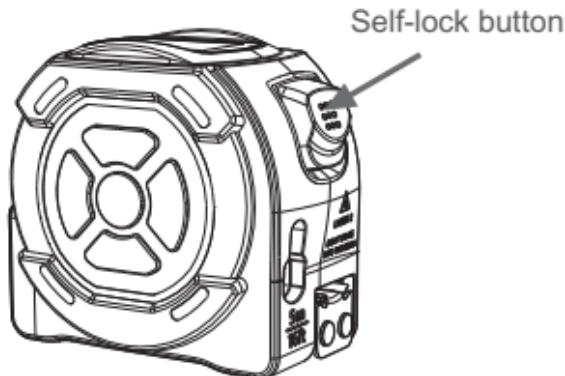
## Function Description

### Self-lock Function

After the ruler belt is pulled out, it will be automatically locked to prevent it from bouncing back and injuring hands.



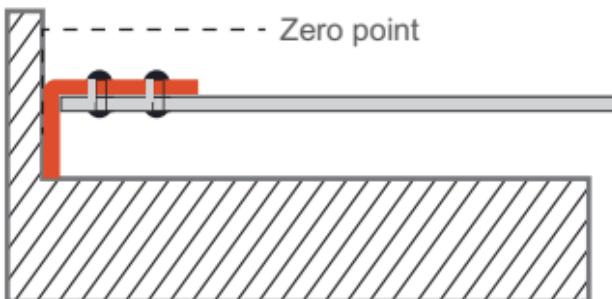
After pressing, the ruler belt automatically retracts.



## Movable Ruler Hook (with magnet)

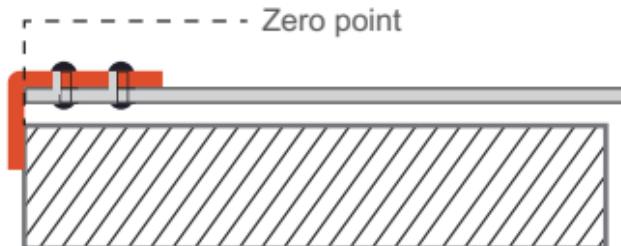
### Measurement method 1: Top measurement

Ruler hook is movable. Take the top of the ruler hook as the zero point, measure the object with ruler hook against the object, and move the ruler hook to the right to reduce the error.



### Measurement method 1: Hook measurement

Take the bottom end of the ruler hook as the zero point, buckle the object for measurement, and move the ruler hook to the left to reduce the error.



## Technology Specifications

ITEM	SW-TM40A	SW-TM60A
Measurement Range	0.05~40m	0.05~60m
Precision	$\pm(2\text{mm}+d^*1/10000)$ (Note1)	
Measurement Unit	m/in/ft	
Continuous Measurement	yes	
Area/Volume Measurement	yes	
Pythagorean Measurement	yes	
Metope Area Measurement	yes	
Add/Subtract Accumulation	yes	
Voice Prompt	yes	
Laser Type	Class 2, 630~670nm, <1mW	
Automatically Cut off Laser	20s	
Auto Power-off	150s	
Battery	3.7V 850mAh Li-ion Battery	
Battery Life	8000 times for single measurement for one full charge	
Charging Specification	Type-C DC 5V 0.5A	
Storage Temperature	-20°C~60°C	
Working Temperature	0°C~40°C	
Storage Humidity	20%~80%RH	
Dimension	87x79x58mm	

Note1: "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.

## Ruler Specification

Item	
Maximum Measuring Range	5m
Minimum Scale	1mm
Tape Width	19mm
Tape Thickness	0.16mm
Unit	inch metric
Tape Material	65 manganese steel
Ruler Hook	Movable, double sided magnet
Self-lock Function	yes

## 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 place the meter in the box 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	Tape	PC	1	
2	Color Box	PC	1	
3	User Manual	PC	1	
4	Strap	PC	1	
5	Li-ion Battery	PC	1	Built-in, non-removable
6	Type-C Cable	PC	1	



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