SNDWAY

深达威®涂层测厚仪

COATING THICKNESS METER

用户手册

User Manual

SW-6300A　　SW-6300B

CE

产品执行标准：DB44/T 1207-2013　GB/T 4956-2003
GB/T 4957-2003

用户须知

初次使用仪器前，请先仔细阅读用户须知

一、不要用任何方式自行打开或修理仪器，严禁非法改装仪器。请妥善保管仪器，不要放在儿童可以接触到的地方，避免无关人员的使用。

二、仪器电磁辐射可能对其它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。

三、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。

四、超过保修期的本公司产品出现故障，可以交由本公司维修产品，按公司规定收取维修费用。

五、凡因用户自行拆装本公司产品、因运输、保管不当或未按产品说明书正确操作造成产品损坏，以及私自涂改保修卡，无购货凭证，本公司均不能予以保修。

六、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。

概述

本仪器通过金属底材磁性和涡流特性，能够准确分辨出底材的属性。本仪器采用高精密探头，能精准地测量出磁性底材表面的非磁性覆盖层厚度(如油漆，橡胶，珐琅等)，以及非磁性金属底材表面的非导电覆盖层(如油漆，橡胶等)的厚度。

本仪器通过不断的测试和改善，以各大工业复杂环境为标准，研发出来的涂层测厚仪，能准确，快速，无损伤地测量出覆盖层的厚度，适用于各大工业车间，实验室和户外环境。

特点

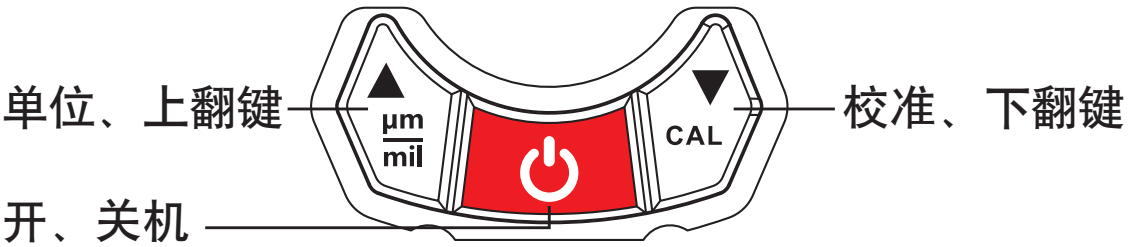
- 反显段码屏
- 中文语音播报（限B款）
- 内置850mAh锂电
- 测量直接显示覆层厚度和底材材质
- 用户自助多点校准
- 5分钟自动关机

使用范围

底材材质	覆盖层材质	是否可测量
磁性金属，如铁、钴、镍等	非磁性金属，如铜、铝、锌等 非导电物质，如油漆、陶瓷等	可以测量
非磁性金属，如铜、铝、锌等	非导电物质，如油漆、陶瓷等	可以测量
磁性金属，如铁、钴、镍等	磁性金属，如铁、钴、镍等	不可测量
非磁性金属，如铜、铝、锌等	磁性金属，如铁、钴、镍等 非磁性金属，如铜、铝、锌等	不可测量
弱磁性不锈钢	磁性金属，如铁、钴、镍等 非磁性金属，如铜、铝、锌等	不可测量

功能说明与按键

其中Fe为磁性材质，NFe为非磁性材质



主界面

主界面，不显示 "CAL"	
	短按开机 长按关机
	短按转换单位μm或mil
	长按进入校准

校准模式

在主界面下，长按  键进入校准模式，右下角显示 "CAL"	
	短按退出校准 长按关机
	短按调整校准值 长按切换校准点，1（0μm）、2（50μm）、 3（100μm）、4（250μm）、5（500μm）、 6（1000μm）共6个点循环切换
	短按短按调整校准值 长按切换校准点，1（0μm）、2（50μm）、 3（100μm）、4（250μm）、5（500μm）、 6（1000μm）共6个点循环切换

锂电池充电和保养

- 产品内置3.7V 850mAh 锂电池供电，不可拆卸。
- 当产品不能开机或者开机后显示  ，请及时充电。
- 请使用DC5V，大于1A的充电适配器对产品充电，充电接口为Type-C。（建议使用手机充电器）
- 充电时，电池符号滚动显示。充满电后，电池符号变为满格  。

注意：长时间不使用时，先把产品充满电，并每半年再充电一次，以免电池损坏。

仪器一般测量流程

- 开机：参考【仪器的开机和关机】。
- 校准：底材材质和厚度不同时，须重新校准，才能正确测量。参考【仪器校准】。
- 测量：校准之后，才能正确测量材质和厚度的底材上的覆层厚度，参考【基本测量】。

仪器的开机和关机

● 短按 ⏻ 开机

图示1 靠近金属底材开机是不正确的

图示2 远离金属底材开机是正确的

用户需在远离金属材质至少5cm的地方按 ⏻ 键开机，或开机后迅速提升仪器离开底材。靠近金属材质开机，仪器会“嘀…嘀…嘀…”连续报警。因仪器在开机瞬间会进行校准平衡，靠近金属开机，可能影响仪器正常使用。

● 长按 ⏻ 键关机

● 仪器5分钟无操作自动关机

仪器校准

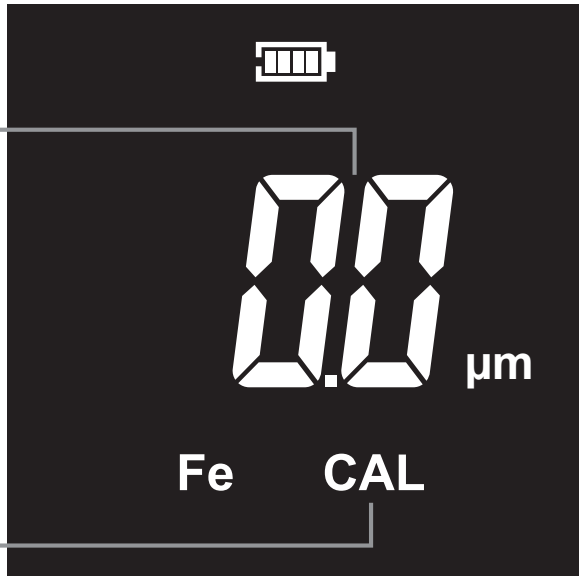
本仪器出厂时根据标准底材(随机的铁块和铝块)，已校准好基准数据。用户如需对特定材料进行测量，请对需要测量的底材进行校准片校准，以保证数据的准确性。

● 校准片校准

校准片校准通过用不同规格的校准片对底材进行多点校准，以保证仪器在不同特性的底材上测量时数据的正确性。

基本操作：

A.长按 CAL 键，屏幕右下角显示"CAL"，进入校准模式，见下图：



②校准点对应的厚度值

共6个点

1 (0μm)　2 (50μm)
3 (100μm)　4 (250μm)
5 (500μm)　6 (1000μm)

注：除零点外，其它点可以根据校准片厚度值调整数值

①校准模式

B.此时屏幕主显示区显示校准厚度值“0.0”，表示校准零点。在磁性金属底材或者非磁性金属底材上测量一次，仪器发出“滴滴”两声，零点校准完成，仪器自动跳到下一个校准点。

C.此时屏幕主显示区显示“50.0”（注：可能是45~55之间的某个值），表示校准50μm。把50μm校准片（可能是50μm上下的某个厚度值）堑到刚才校准零点用的底材上，先对比仪器校准值是否和校准片一致，如果不一致，可按 ▲μm/mil 键或 ▼CAL 键调整到同样数值后，再测量一次，50μm校准完成，并自动跳到下一个校准点。

D.参考上一步（C），继续校准3（100μm）、4（250μm）、5（500μm）、6（1000μm）。校准完第6点（1000μm），自动退出校准模式。

E.如果只想对某个点进行校准，可在校准模式下，长按 ▲μm/mil 和 ▼CAL 键切换校准点。校准模式下，按 ⏻ 键退出校准模式。

注意：

1.校准一个周期（6个点）只能使用同一种底材，中途更换底材可能导致数据不准确。

2.校准非磁性底材（如铝片）的时候，要远离磁性材料（如铁片），否则可能导致数据不正确。

** 当退出校准模式时，仪器显示"Err"，代表校准数据有误。仪器校准数据会自动恢复上一次校准数据，请按 ⏻ 键返回主界面并选用符合标准的校准片和底材重新校准。

基本测量

A.准备待测试件。

B.将仪器放置在空置的空间，远离金属材质开机。

C.开始测量：将仪器垂直轻压在待测量件上，蜂鸣器发出“滴”一声，并完成测量，仪器会把数据显示在主显示区，迅速把仪器移开待测件5cm以上，约1秒钟后便可进行下一次测量。

单位设置

在主界面短按 

键，可快速切换um和mil单位

转换关系：

1mil=25.4μm;

1μm=0.03937mil;

技术参数

项目	SW-6300A	SW-6300B
测量范围	磁性0~1200μm; 非磁性0~1200μm	磁性0~1700μm; 非磁性0~1700μm
语音播报	无	中文语音播报
分辨率	0.1μm @ (0~99.9μm); 1μm @ (100~1700μm)	
示值误差	±(2+2%*H)μm @ (0~500μm) ±(2.5%*H)μm @ (500~1700μm)	
最小测量区域	磁性25x25mm; 非磁性25x25mm	
最小曲率	凸面5mm; 凹面30mm	
最小底材厚度	磁性0.2mm; 非磁性0.05mm	
显示屏	反显段码屏	
电池规格	3.7V 850mAh锂电池	
充电规格	DC5V 0.8A Type-C接口	
工作温湿度	0˚C~50˚C, 10%~80%RH	
存储温湿度	-10˚C~60˚C, 10%~70%RH	
外形尺寸	104x63x28mm	

仪器日常保养

- 禁止将仪器长期放置在高湿的环境中储存，长期不使用仪器时，请把仪器装入布包盒，并存放在干爽阴凉处。

- 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。

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	布包盒	个	1	
3	Type-C数据线	条	1	
4	说明书	本	1	
5	保修合格证	张	1	
6	彩盒	个	1	
7	铁基材	块	1	
8	铝基材	块	1	
9	校准片	片	5	
10	小PP盒	个	1	装基材与校准片

检验员：　　日期：

USER INSTRUCTIONS

Please read this manual carefully before your first utilization

1. By any means, do not disassemble or repair the meter; reforming illegally is not allowed. Keep it properly away from children and irrelevant people.
2. Do not use it nearby planes or medical instruments which could be interfered by electromagnetic radiation of this meter. Do not use it in combustiable, explosive places.
3. Do not throw away the battery with the normal household waste, please dispose it by nation or local related laws and regulations.
4. The broken-down meter which is beyond the warranty time could be handed over to the company for repairing according to its charging standards.
5. The warranty service is not available for any of the below situations: disassembling the product by yourself; transportation damage; improper safekeeping; all kinds of wrong operations without looking over the manual and altering warranty card.
6. If there are any troubles on quality, or any doubts about utilization, please contact the local agent or us, we will solve it as soon as possible.

Introduction

- Based on the magnetism and the eddy current feature of metal substrate, the meter can distinguish the property of metal substrate precisely. With high-precise probe, the meter can accurately measure the non-magnetic coating thickness on magnetic substrate surface(like, the coating of painting, rubber and enamel, etc.), and the non-conducting coating thickness on non-magnetic metal substrate surface(like, the coating of painting, rubber, etc.).

- Researched with constant testing and improvement, the basic standard of complex environments of all kinds of major industries, the end comes to the final meter, it can measure the coating thickness accurately, rapidly and un-harmfully, suitable for all kinds of major industrial workshops, labs and outside environment.

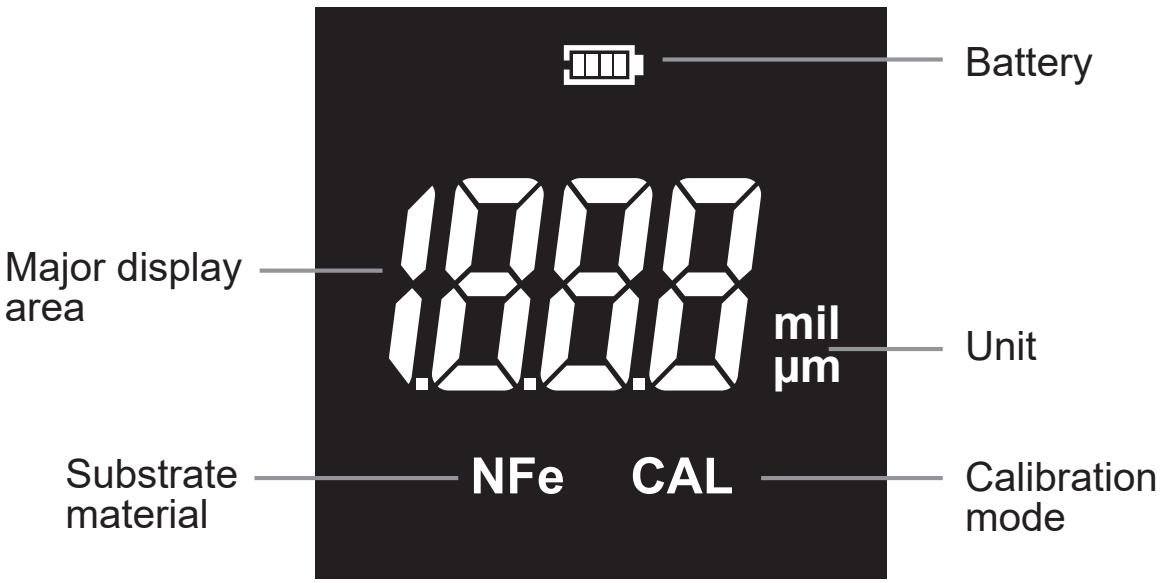
Product Feature

- Reverse video segment LCD
- Built-in 850mAh lithium battery
- Directly display the coating thickness and substrate material
- Self-service multi-point calibration
- Auto power-off after 5 minutes

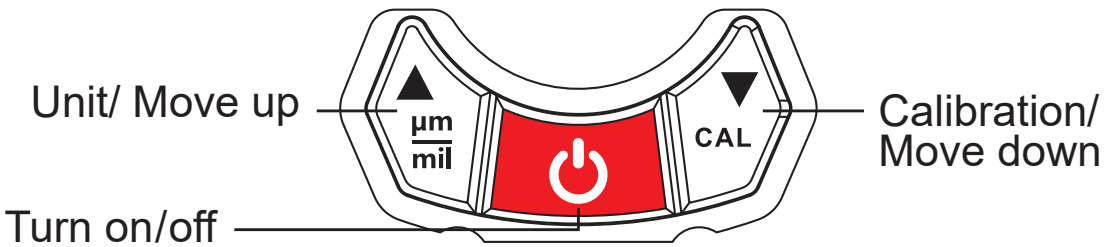
Application

Substrate material	Coating material	Mea-surable
Magnetic metals (iron, cobalt, nickel, etc)	Non-magnetic metals: (copper, aluminum, zinc, etc); Non-conductive material (paint, ceramics, etc)	Yes
Non-magnetic metals (copper, aluminum, zinc, etc)	Non-conductive material (paint, ceramics, etc)	Yes
Magnetic metals (iron, cobalt, nickel, etc)	Magnetic metals (iron, cobalt, nickel, etc)	No
Non-magnetic metals (copper, aluminum, zinc, etc)	Magnetic metals (iron, cobalt, nickel, etc); Non-magnetic metals (copper, aluminum, zinc, etc)	No
Weakly magnetic stainless steel	Magnetic metals (iron, cobalt, nickel, etc); Non-magnetic metals (copper, aluminum, zinc, etc)	No

Functions and Keys



Fe is magnetic material, and NFe is non-magnetic material.



Major display area

"CAL" is not displayed on the main screen.	
	Short press to power on Long press to power off
	Short press to switch units between μm and mil.
	Long press to enter calibration

Calibration mode

On the home screen, long press the  key to enter the calibrating mode, on the lower right corner shows "CAL"	
	Short press to exit calibration Long press to power off
	Short press to adjust the calibration value, long press to switch the calibration point,1 (0μm), 2 (50 μm), 3 (100 μm), 4 (250 μm),5 (500 μm), 6 (1000 μm) in total
	Short press to adjust the calibration value, long press to switch the calibration point,1 (0μm), 2 (50 μm), 3 (100 μm), 4 (250 μm),5 (500 μm), 6 (1000 μm) in total

Li-on Battery Charging and Maintenance

- The built-in 3.7V 850mAh lithium battery is non-removable.
- The instrument shall be charged in time when running out of battery or its battery symbol shows  after being turned on due to its insufficient battery capacity.
- Use the charging adapter of the DC5V 1A to charge the product. The charging port is Type-C. (Mobile phone charger is recommended)
- When charging, the battery symbol scrolls display. When fully charged, it will display 

General Measuring Process

- Power on: refer to [Power on/off]
- Calibration: When the substrate material and thickness are different, it must be recalibrated to measure correctly. Reference [Instrument Calibration]
- Measurement: only after calibration can the coating thickness on the substrate be measured correctly, refer to [Basic Measurement].

Power on/off

- Short press to power on

Figure 1:Wrong

Figure 2:Right

The least 5cm is necessary distance between the meter and the metal substrate for turning the meter on, or the other way is to lift the meter away from the metal substrate quickly after turning the meter on. The meter will sound the warning in succession "beep...beep...beep" if turning it on nearby the metal substrate. The operation of turn-on nearby the metal substrate could affect the meter's regular measuring, because the meter will go through the calibration balance the moment its turn-on.

- Long press to power off
- The device will automatically power off if no operation is performed within 5 mins.

Instrument Calibration

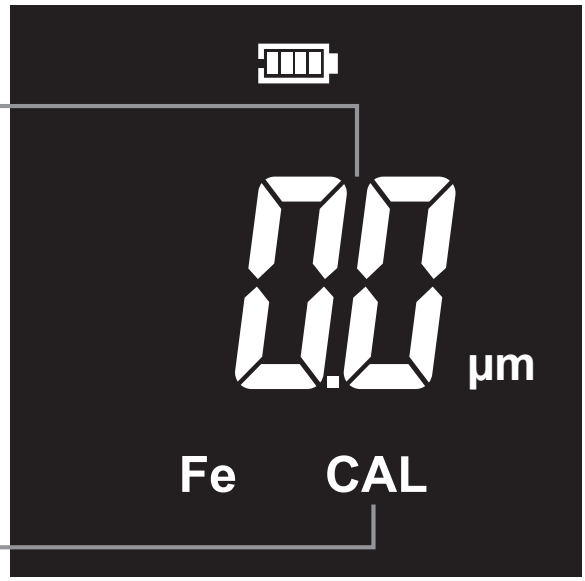
The instrument has been calibrated according to the standard substrate (random iron and aluminum blocks). If users need to measure specific materials, please calibrate the substrate to be measured to ensure the accuracy of data.

● Calibration Sheet

In order to ensure the correctness of the data measured by the instrument on substrates with different characteristics, the multi-point calibration of substrates with different specifications is carried out.

Basic operation:

A. Long press ▼CAL , " CAL " is displayed in the lower right corner of the screen, and the instrument enters the calibration mode, as shown below:



② The thickness value corresponding to the 6 calibration points:

1 (0μm) 2 (50μm)
3 (100μm) 4 (250μm)
5 (500μm) 6 (1000μm)

Note: Except zero, other points can be adjusted according to the calibration sheet thickness value

① Calibration mode

B. “0.0” is displayed in the main display area of the screen, indicating the calibrating zero. When the magnetic metal substrate or non-magnetic metal substrate is measured once, the instrument will give two "di", the zero point calibration is completed, and the instrument will automatically jump to the next calibration point.

C. “50.0” is displayed in the main display area of the screen (note: the value may range from 45 to 55), indicating calibrating 50um. Cut the 50um calibration sheet (maybe a certain thickness value around 50μm) onto the substrate used for the calibration of the zero point just now, first compare whether the calibration value of the instrument is consistent with the calibration sheet, if not, you can press the ▲ μm/mil or ▼CAL to adjust to the same value, and then measure again. The 50um calibration is completed and automatically jumps to the next calibration point.

D. Refer to the previous step (C), continue to calibrate 3(100μm), 4 (250μm), 5 (500μm), 6 (1000μm). After the 6th point (1000μm) is calibrated, the calibration mode is automatically withdrawn.

E. If you only want to calibrate a certain point, you can long press ▲ μm/mil and ▼CAL to switch the calibration point in calibration mode. In calibration mode, press ⏻ to exit the calibration mode.

Note:
1. Only the same substrate can be used for a calibration cycle (6 points). Replacing the substrate during the calibration may lead to inaccurate data.

2. When calibrating non-magnetic substrates (such as aluminum sheets), keep away from magnetic materials (such as iron sheets). Otherwise, data may be incorrect.

*** When exiting the calibration mode, the instrument shows "Err" , indicating that the calibration data is incorrect. The instrument will automatically recover the last calibration data, please press ⏻ to return to the main interface and select the calibration sheet and substrate that meet the standard for recalibration.

Basic Measurement

A. Prepare the test object.

B. Place the instrument in an empty space away from metal materials.

C. Start the measurement: press the instrument vertically and gently on the part to be measured, the buzzer will emit a "di" sound, and the measurement is completed. The instrument will display the data in the main display area, quickly move the instrument away from the part to be measured by more than 5cm, and the next measurement will be performed after about 1 second.

Unit Setting

Under main interface, press ▲ μm/mil to quickly switch the unit um and mil. Conversion relationship:

1mil=25.4μm;

1μm=0.03937mil;

Specification

Model	SW-6300A	SW-6300B
Measuring Range	Magnetic 0~1200μm; Non-magnetic 0~1200μm	Magnetic 0~1700μm; Non-magnetic 0~1700μm
Voice Broadcast	No	
Resolution	0.1μm @ (0~99.9μm); 1μm @ (100~1700μm)	
Reading Error	±(2+2%*H)μm @ (0~500μm) ±(2.5%*H)μm @ (500~1700μm)	
Minimum Measuring Area	Magnetic 25x25mm Non-magnetic 25x25mm	
Minimum Curvature	Convexity 5mm; Concave 30mm	
Minimum Substrate Thickness	Magnetic 0.2mm; Non-magnetic 0.05mm	
LCD	Reverse video segment LCD	
Battery Specification	3.7V 850mAh Li-ion	
Power Supply	DC5V 0.8A Type-C	
Storage Temperature/ Humidity	0˚C~50˚C, 10%~80%RH	
Working Temperature/ Humidity	-10˚C~60˚C, 10%~70%RH	
Dimension	104x63x28mm	

Instrument Maintenance

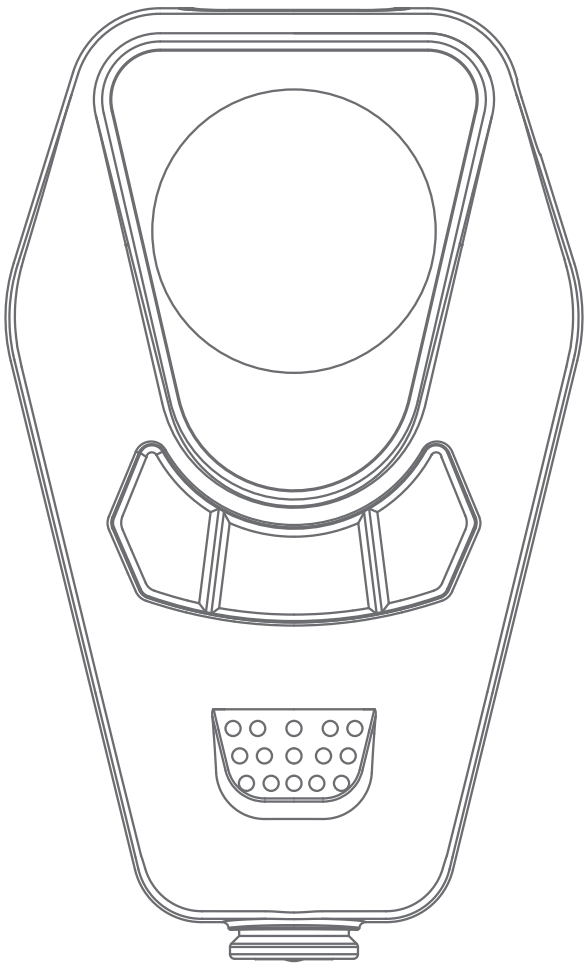
- The meter should not be stored in high temperature and humid environment for a long time. If it is not used very often, please place the meter in the box and store it in cool and dry place.
- Please keep the device surface clean. Use a soft wet cloth to wipe the dust on the surface. Do not use corrosive liquid to clean the device

Packing List

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

No.	Item	Unit	QTY	Note
1	Meter	PCS	1	
2	Cloth Box	PCS	1	
3	Type-C Cable	PCS	1	
4	User Manual	PCS	1	
5	Color Box	PCS	1	
6	Iron Substrate	PCS	1	
7	Aluminum Substrate	PCS	1	
8	Calibration Sheet	PCS	5	
9	PP Box	PCS	1	Place substrate and calibration sheet

Inspector: Date:



深达威科技（广东）股份有限公司

Sndway Technology (Guangdong) Co., LTD

地 址：东莞市虎门镇虎门团结路58号深达威科技园

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

全国咨询服务热线/Service Hotline：400-125-6969

电 话/Tel：0769-85265688

网 址/Web：www.sndway.com

邮 箱/E-mail：market@sndway.com