

人体综合测试仪 LFS650 说明书修改版

LFS-650 Human Body Comprehensive Tester User Manual



LFS650 产品描述

LFS-650 Product Description

检测模式与自动校正：仪器支持测手、手脚、全检三种模式。设备支持客户自行自动校正，操作方便，可用于年度检验前的自行校正。

Test Modes and Automatic Calibration: The instrument supports wrist-only, wrist-and-footwear, and full-test modes. Customer-performed automatic calibration is supported for convenient annual inspection preparation.

LFS650 测试仪可以检验操作员手腕带和防静电鞋的功能，并判断这种功能是否可以充当接地线路，确保可以作为地面设备的限流电阻。操作员手腕带和防静电鞋测试可以同时进行，无需分开测试。绿灯亮，说明测试通过。蓝，红灯亮并伴有警鸣声，说明测试失败。可能手腕带和防静电鞋都没通过，可能是其中一项没有通过。如果是防静电鞋没有通过，可能是其中一只没有通过，左脚或者右脚。如果测试失败，测试仪会显示地面设备的电阻，看是电阻

值太低还是太高。

The LFS-650 checks an operator wrist strap and ESD footwear to determine whether they provide a grounding path with current-limiting resistance. Wrist strap and footwear can be tested simultaneously. Green indicates PASS. Blue or red indication with an alarm indicates failure. Either item may fail; if footwear fails, the left or right foot may be responsible. When a test fails, the tester indicates whether the resistance is too low or too high.

测试值范围:

Test Value Ranges

手腕带: 100K-10M 750K-10M 750K-35M

Wrist strap: 100 k Ω -10 M Ω ; 750 k Ω -10 M Ω ; 750 k Ω -35 M Ω

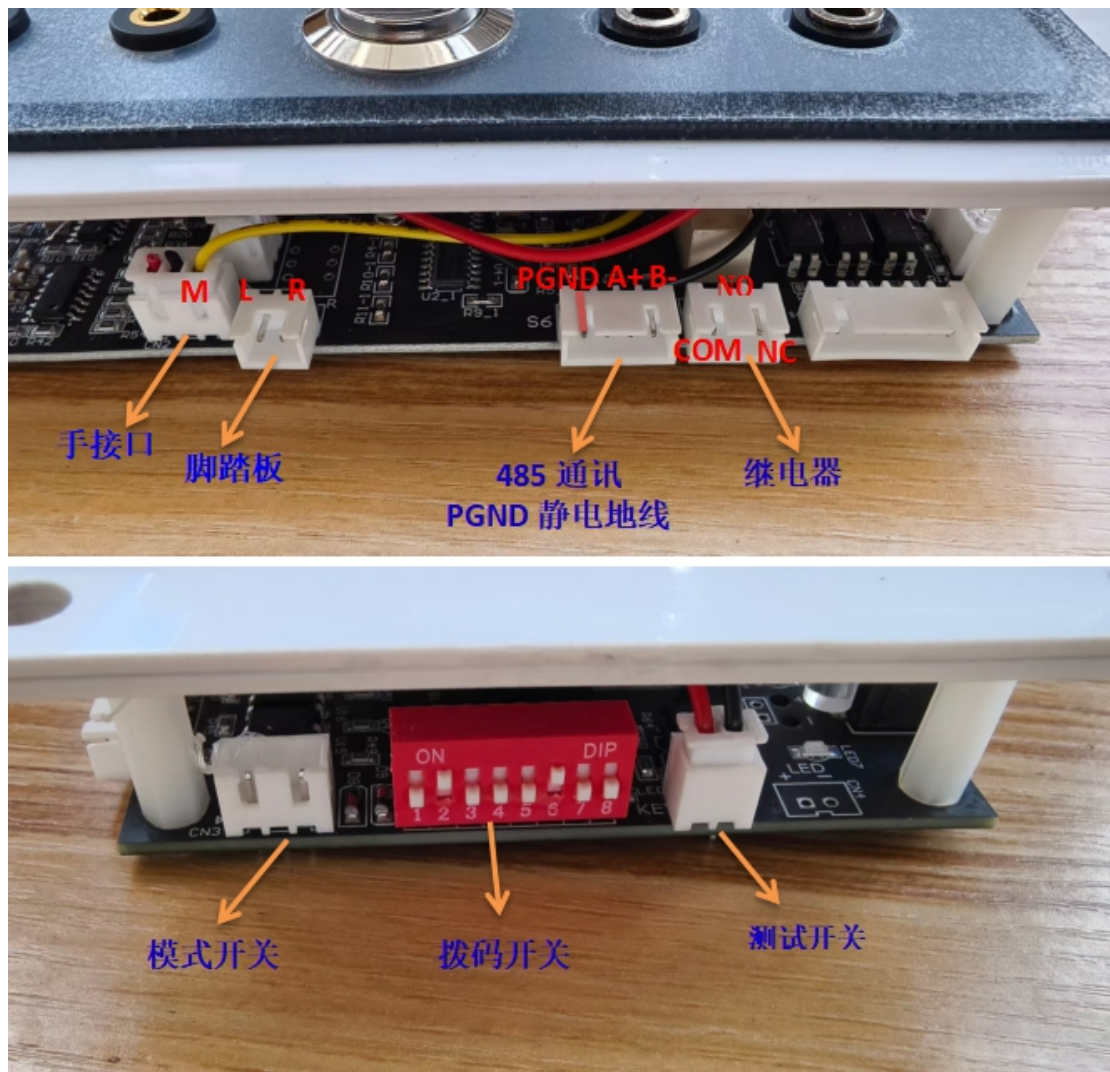
防静电鞋: 100K-35M 750k-100M 750K-1000M

ESD footwear: 100 k Ω -35 M Ω ; 750 k Ω -100 M Ω ; 750 k Ω -1000 M Ω

接口定义及说明:

Interface Definitions and Description





特点和组件

Features and Components

LFS650 特点和组件

LFS-650 Features and Components

1. 拨码开关限值：通过拨码开关设置测试仪的电阻值范围。
DIP-switch limits: Set the tester resistance range using the DIP switches.
2. 防静电鞋状态 LED 显示：显示防静电鞋的测试结果。
ESD footwear status LEDs display the footwear test result.
3. 面板设计更为简洁，人性化操作，直观明了查看测试结果。
The simplified panel design is user-friendly and makes test results easy to view.
4. 单线防静电手环插座：插入单线手环线，测试防静电手环。

Single-wire ESD wrist-strap socket: insert a single-wire wrist-strap lead to test the wrist strap.

5. 双线防静电手环插座: 插入双线手环线, 测试防静电手环。

Dual-wire ESD wrist-strap socket: insert a dual-wire wrist-strap lead to test the wrist strap.

6. 12VDC 电源插座: 插上电源适配器

6. 12V DC power socket: connect the power adapter.

7. 稳态测试开关: 手指长按此处进行测试。

7. Steady-state test switch: press and hold this area with a finger to start the test.

8. 继电器端口: 可与电子门锁, 灯, 蜂鸣器等集成。

Relay terminal: can be integrated with electronic locks, lights and buzzers.

9. 通讯接口为 485 方式, 大大减少 232 通讯的短板。

The communication interface uses RS-485, reducing the limitations of RS-232 communication.

注意: 必须所有的测试通过, 才能激活继电器

Note: the relay can be activated only after all required tests have passed.

1. 地面插座: 插将接地线插入位于测试仪底部的接地插孔中。将接地线的环形接线端与设备接地连接。该连接操作可以在测试前消除使用者自带的静电荷。

1. Ground socket: insert the grounding cable into the socket at the bottom of the tester and connect its ring terminal to equipment ground. This connection helps remove user-carried static charge before testing.

2. 脚板插座: 脚板导线的一端连在插座上, 另一端连接双重脚板。

2. Footplate socket: connect one end of the footplate cable to the socket and the other end to the dual footplate.

安装说明

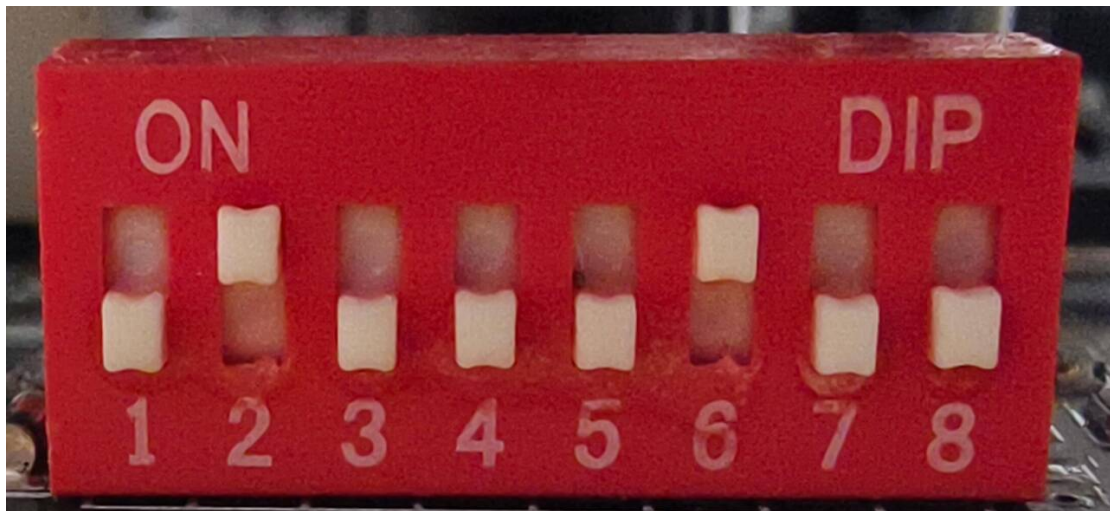
Installation Instructions

测试仪设置

Tester Settings

组合测试仪 LFS650 的底部是拨码开关，控制着防静电鞋和手腕带的电阻值。拨码开关设置以及对应的测试值如下，参考下表进行设置（如图二）

The DIP switches at the bottom of the LFS-650 control the resistance limits for ESD footwear and wrist straps. Set the switches according to the applicable values in the reference table (Figure 2).



拨码开关 1 脚上限 1G 模式切换

DIP switch 1: footwear upper-limit 1G mode selection.

拨码开关 2 脚上限 100M 模式切换

DIP switch 2: footwear upper-limit 100M mode selection.

拨码开关 3 脚上限 35M 模式切换

DIP switch 3: footwear upper-limit 35M mode selection.

拨码开关 4 手上限 10M/35M 模式切换

DIP switch 4: wrist-strap upper-limit 10M/35M selection.

拨码开关 5 手脚下限 100K/750K 模式切换

DIP switch 5: wrist and footwear lower-limit 100K/750K selection.

拨码开关 6 手和左右脚信号输出开关 打开必须手脚测试 OK 才能触发继电器，

DIP switch 6: wrist and left/right-foot output logic. When enabled, required wrist and footwear tests must pass before relay output is triggered.

关闭测试手或者左脚. 右脚 OK 触发继电器

When disabled, a passed wrist test or passed individual left/right-foot test can trigger relay output according to the selected logic.

拨码开关 7 预留功能 定义中

DIP switch 7: reserved function.

拨码开关 8 8 寸串口屏幕切换开关，关闭为 8 寸屏幕模式，打开为静电仪模式出阻值

DIP switch 8: 8-inch serial-screen selection. OFF selects 8-inch display mode; ON selects tester resistance-display mode.

操作事项

Operating Procedure

1. 当组合测试仪 LFS650 处于待机状态并准备执行测试时，测试开关周围会有一个环形的指示灯。

1. When the LFS-650 is in standby and ready for testing, a ring indicator is shown around the test switch.

2. 佩戴手腕带和/或 ESD 防静电鞋时，将手腕带电线插入到组合测试仪 LFS650 表面对应的插孔中。将脚放在每个脚板上。

2. When wearing a wrist strap and/or ESD footwear, insert the wrist-strap lead into the corresponding LFS-650 socket and place each foot on the footplate.

3. 开始测试前，用手指连接测试开关的内外接点。手指长按直到显示测试结果。测试中不要触摸任何其他金属，因为这会影响测试结果。

3. Before testing, use a finger to bridge the inner and outer contacts of the test switch. Press and hold until the result is displayed. Do not touch other metal during the test because this can affect the result.

4. 绿色 LED 灯亮说明测试结果“通过”。红色 LED 灯亮说明测试结果“低故障”。蓝灯 LED 灯亮说明测试结果“高故障”。

4. Green LED indicates PASS. Red LED indicates LOW fault. Blue LED indicates HIGH fault.

如果 ESD 测试失败，请检查您的手腕带和防静电鞋，确保它们功能正常，佩戴正确或需要更换。

If the ESD test fails, check the wrist strap and ESD footwear, ensure they function correctly and are worn correctly, or replace them if required.

注意：测试失败可能是皮肤干燥或者出汗过少造成的。对于手腕带，使用前，可以尝试涂抹被批准的耗散性护手乳液，如 Menda Reztore™ ESD 护手乳液。可以通过走一小段路出汗来提高防静电鞋的测试结果，出汗可以提高导电性。

Note: a failed test may be caused by very dry skin or insufficient perspiration. For wrist-strap testing, an approved dissipative hand lotion may be used. Walking briefly to perspire can improve ESD footwear test results because perspiration improves conductivity.

该组合测试仪 LFS650 也可用于测试工作服或者衣服，这些工作服或者衣服都是接地机制中需要进行线圈连接的操作人员穿戴的。

The LFS-650 can also be used to test grounding garments or clothing worn by operators who must be connected to the grounding system.

注：本仪器另可符合其他国家标准，由客户定制测试范围的上限及下限阻值。

Note: the instrument can be configured for other national standards. Upper and lower resistance limits may be customized by the customer.

产品安装：

Product Installation

1. 将 LFS650 测试仪固定在墙上，或者立式安装在其他位置

Mount the LFS-650 on a wall or install it on a stand in the required location.

2. 通过配套接地线将测试仪连接起来

Connect the tester using the supplied grounding cable.

3. 使用配套电缆线将测试仪和脚踏板连接

4. 通过 220V AC-12V DC 变压器输入电源

3. Connect the tester and footplate using the supplied cable. 4. Supply power through a 220V AC to 12V DC transformer.

注意事项：

Precautions

检查包装盒内物品如下：

Check that the package contains the following items:

1. 测试仪

2. 脚踏板 支架

1. Tester. 2. Footplate and support.

3. 12VDC 开关电源 (220V 输入)

3. 12V DC switching power supply (220V input).

4. 产品说明书

4. Product manual.

5. 安装连接线

5. Installation connecting cables.

补充说明：此产品可直接驱动三棍闸，可配套我们的静电机组合，实现 ESD 系统门禁功能。

Additional note: this product can directly drive a three-roller turnstile and can be combined with our ESD system to implement ESD access-control functions.

一般故障排除方法

General Troubleshooting

无任何 LED 灯亮

No LED is illuminated.

1、电源线是否连接：检查并确认电源线已连接至电源插座。

Check that the power cable is connected to the power outlet.

2、电源适配器是否坏：用万用表拨到直流档 20V 检测电源是否输出 12V，如无输出或不正确那么判定电源适配器已坏。

Check whether the power adapter is defective. Set a multimeter to the 20V DC range and verify a 12V output. If there is no output or the output is incorrect, replace the adapter.

3、如以上都没有出现那表示仪器工作不正常需送回厂商检修。

If none of the above resolves the issue, the tester is not operating correctly and should be returned to the manufacturer for service.

无法检测鞋和手环

Unable to test footwear and wrist strap.

1、仪器连接底板线是否断开：检查并确认连接线没有断开，已连接至底板螺丝上面。

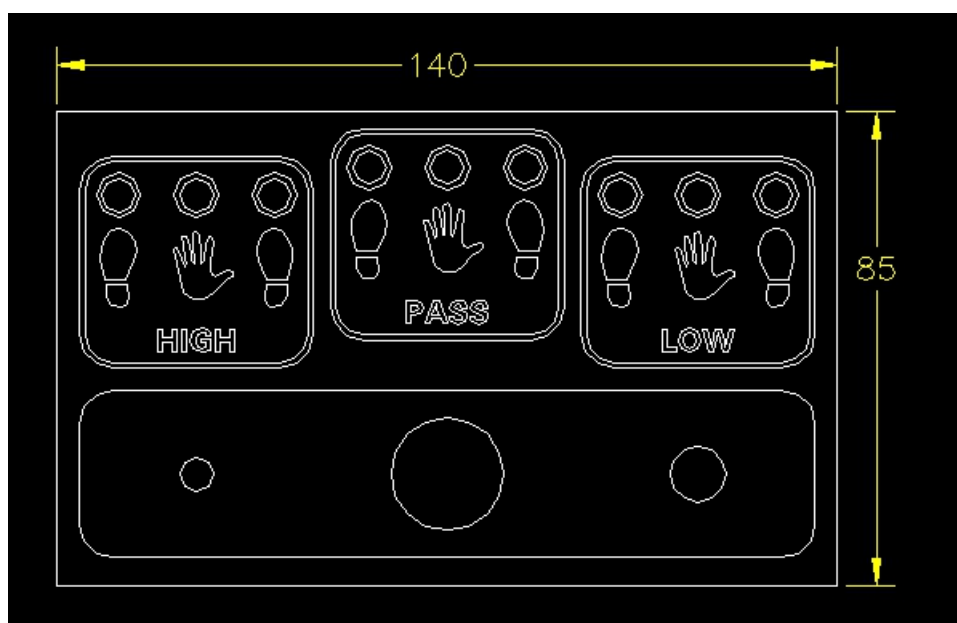
Check whether the tester-to-footplate cable is disconnected. Confirm that the cable is intact and connected to the footplate screw terminal.

2、判断可能仪器里面的连接检测双鞋的端口线脱落了。

The internal cable connected to the dual-footwear detection port may have come loose.

3、如以上都没有出现那表示仪器工作不正常需送回厂商检修。

If none of the above resolves the issue, the tester is not operating correctly and should be returned to the manufacturer for service.



保用
证书

Warranty Certificate

尊敬的用户：

Dear User,

您好！感谢选购我们的人体综合测试仪

Thank you for purchasing our human body comprehensive tester.

本公司人体综合测试仪出厂前为确保品质优良，均经过严格检查，本公司向用户保证所出品之产品性能良好及器件完整

Before leaving the factory, our testers undergo strict inspection. We guarantee proper performance and complete components.

如果您在使用过程中出现任何问题，请及时与我们公司联系，自购买之日起，凭此卡您可享受1年免费保修服务

If you encounter any problem during use, contact our company promptly. From the date of purchase, this certificate provides one year of free warranty service.

当您的仪器因维修需要运输时，请用原包装及防震保护包装，并把保用证书放在包装箱内
When the instrument must be transported for repair, use the original packaging and shock protection, and place this warranty certificate inside the package.

本保用证书由于保用产品 A、曾因错误操作、疏忽使用、意外事件或天灾人祸而引至损坏；B、曾经非本公司技术人员擅自修理或改装；C、机身号码曾被转换、除去；D、不按原厂提供之安装指示安装。本保用证书将自动失效。

合 格 证

Certificate of Conformity

产品名称：LFS650 人体综合测试仪
Product name: LFS-650 Human Body Comprehensive Tester

检验员： _____
Inspector:

生产日期： _____
Production date:

本产品经我公司品质控制部门的检验，其性能参数符合技术标准，准许出厂。
This product has been inspected by our quality-control department. Its performance parameters comply with the technical standards and it is approved for shipment.

保 修 卡

Warranty Card

客户名称： _____ 产品型号： _____
Customer name: _____ Product model: _____

联系电话： _____ 购买日期： _____
Telephone: _____ Purchase date: _____

产品机号： _____ 销 售 商： _____
Product serial number: _____ Distributor: _____