智能电子负载使用说明

适用型号：**LD25/LD35**

Instructions for USB Intelligent electronic load

Applicable Model: LD25/LD35

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　　尊敬的用户，感谢您购买由睿登科技有限公司出品的智能电子负载，为了让您更快了解本产品的全部功能，获得更好的使用体验，避免出现误操作，使用前请仔细阅读本说明并保留好，以便日后查阅。

注：

本产品无反接保护，输入极性不可接反，否则产品永久损坏，无法修复。

产品技术参数

产品型号	LD25	LD35
额定工作电压	DC4-25.0V	
最大放电功率	25W	35W
额定工作电流	0.25-4.00A（当风扇不工作时可以最低恒流到 0.05A）	0.25-5.00A（当风扇不工作时可以最低恒流到 0.05A）
风扇转速	含油智能温控风扇，转速5800±10%RPM	液压轴承智能温控风扇，转速 8000±10%RPM
应用建议	充电器、电源等生产厂家长期放电或对产品批量老化测试建议选择 LD35（LD25 不适用）	
恒流精度	±（1％+3 个字）	
散热方式	智能温控风扇+全铝散热片	
工作环境温度	-10℃-40℃	
调节电位器	精密多圈可调电位器	
显示类型	4 位 LED 数码管	
扩展接口	Micro USB 接口、Type-C 接口	
产品重量	约 57g	
产品尺寸	84x41x28mm	

注：说明以 LD25 为例，其他适用型号通用。

产品结构
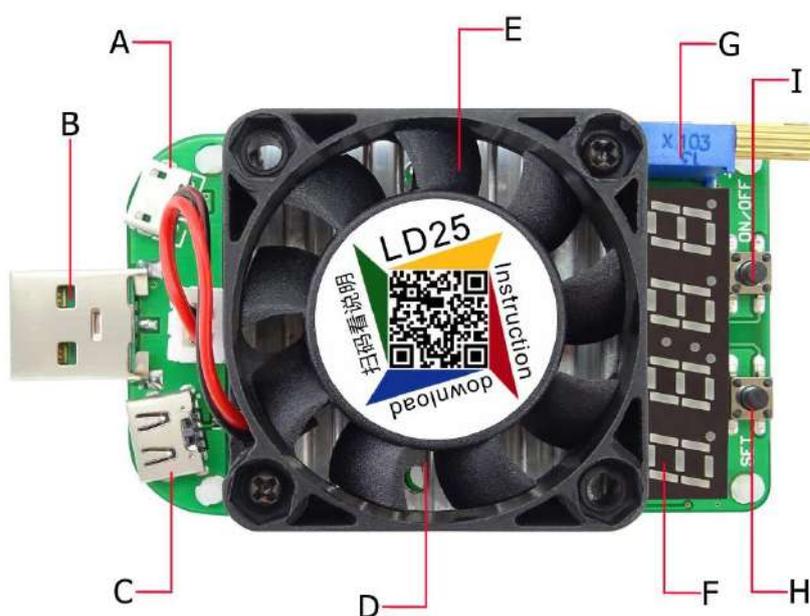
A. Micro USB 接口：最大电流 2A

B. USB 公头接口（加宽电源线，5A 大电流）

C. Type-C 接口：最大电流 4A

D. 全铝散热片

E. 智能温控风扇

F. 4 位 LED 数码管

G. 精密多圈可调电位器

H. "SET"键：短按切换显示状态/长按设定负载解除保护后的输出恢复方式

I. "ON/OFF"键：短按关闭或者打开输出/长按设定开机时默认打开或关闭输出

功能说明

A. 保护功能

OVP 过压保护（25V-30V 过压保护，超过 30V 后永久损坏；过压保护，数码管显示 OVP，如图 1）

图1

OTP 过温保护（负载温度大于 80℃，数码管显示 OTP，如图 2）

图2

OPP 过功率保护（功率大于 25W，数码管显示 OPP，如图 3）

图3

B. 设定负载在解除保护条件后手动或者自动恢复正常工作

C. 查看负载电压值、电流值、功率值

D. 智能温控风扇，当功率大于 10W 或者温度大于 40℃风扇自动启动。

E. 精密可调电位器，可以精确调整电流，精确至 0.01A，不会因为手误瞬间调整出过大电流损坏电源。

F. 自由设定开机状态，默认打开或者关闭状态。

操作说明

在 4-25.0V 范围内给负载通电(注：输入极性不可接反，否则永久损坏，无法修复)，负载数码管闪烁提醒电流设定值，等待输出，短按"ON/OFF"键，打开负载输出，开始正常工作。

1. 调整输出电流大小

旋转电位器，可以调整电流，顺时针旋转数据增大，逆时针反之。据情况需要，电位器可实现粗调也可细调，细调可精确至 0.01A 准确调整。

2. 调整数码管显示状态

短按"SET"键可以调节数码管显示状态，默认显示输出电流数据，短按 SET 键可依次调整数码管在*.**A、**.*P、**.*V 循环显示。

3. 打开或者关闭负载输出

短按"ON/OFF"键，即可打开或者关闭负载输出。

4. 设置开机时负载状态（打开或者关闭输出，出厂默认关闭状态）

长按"ON/OFF"键，可自由设定负载开机输出状态。长按"ON/OFF"键，若数码管显示"--ON"，如图，则在下次开机时，负载会自动打开输出；若长按"ON/OFF"键，数码管显示"-OFF"，如图，则在下次开机时，负载数码管会闪烁提醒上次关机时电流数值，短按"ON/OFF"键，即打开输出。

5. 设定负载解除保护后的输出恢复方式。

长按"SET"键，调整负载解除保护后的恢复方式。长按"SET"键，若数码管显示"--ON"，如图， 则在保护状态下，解除保护条件后，负载自动恢复正常工作；长按"SET"键，若数码管显示"-OFF"，如图， 解除保护条件后，数码管仍显示保护状态，短按"ON/OFF"键闪烁提醒当前设定电流，再短按"ON/OFF"键恢复正常工作。

注：请认真查看移动电源的输出电流，普通移动电源电流一般较小，负载使用时电流要调小。

应用场景

辅助测量 Micro USB 充电线好坏的测试
辅助测量 Type-C 充电线好坏的测试
辅助测量充电器输出电流能力的好坏
充电器工厂批量老化测试使用

Instructions for USB Intelligent electronic load

*-**Model: LD25***

Dear Customer,

Thank you for purchasing this USB electronic load from Hangzhou Ruideng Technologies Co., Ltd. Prior to using this product we recommended that you briefly familiarize yourself with these instructions. In order to ensure the correct operation and use of the device. We also advise that you keep these instructions in a safe place for future reference as may be needed.


NOTE:

This product has no reverse connection protection, the input polarity cannot be reversed, otherwise the product is permanently damaged and cannot be repaired.

Technical Parameters:

Product Model	LD25	LD35
Rated operational voltage	DC4-25.0V	
Max discharging power	25W	35W
Rated operational current	0.25-4.00A (when fan don't work, the minimum constant current is 0.05A)	0.25-5.00A (when fan don't work, the minimum constant current is 0.05A)
Fan Speed	Oil bearing intelligent temperature control fan，speed 5800±10%RPM	Hydraulic bearing intelligent temperature control fan，speed 8000±10%RPM
Application	Application suggestions: Charger, power supply and other device manufacturers want long-term discharge or batch aging test of products, please choose LD35 (LD25 is not applicable)	
Constant current resolution	±（1％+3 digits）	
Heat dispatch method	Intelligent temperature control fan + All aluminum fan	
Working temperature	-10℃-40℃	
Adjustable potentiometer	Precision multiloop adjustable potentiometer	
Display mode	4 bit LED tube	
Expansion port	Micro USB port、Type-C port	
Product weight	About 57g	
Product size	84x41x28mm	

Note: Description taking an example of LD25, other applicable models are universal.

Product Structure
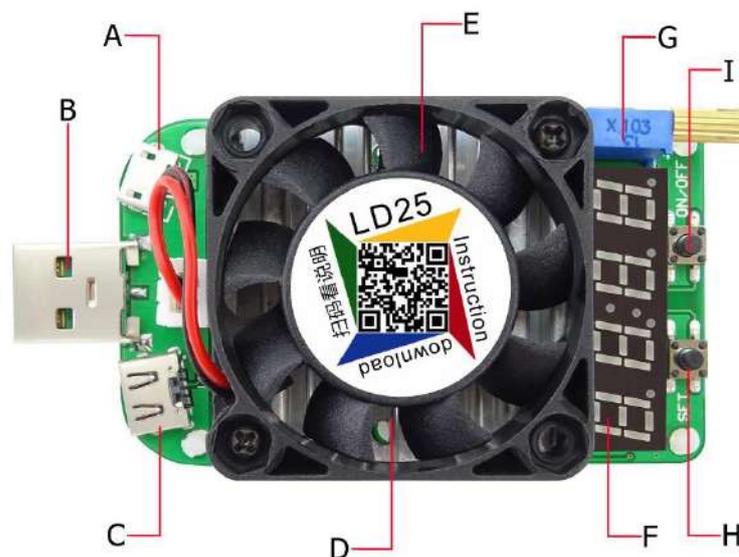
A. Micro USB port：MAX current 2A
B. USB male port (widened power wire，MAX current 5A）
C. Type-C port：MAX current 4A
D. All aluminum heat sink
E. Intelligent temperature control fan
F. 4 Bit LED tube
G. Precision multiloop adjustable potentiometer
H. "SET" button：press "SET" to switch display status, Press and hold the button to set the load output recovery mode after protection removed.
I. "ON/OFF" button: press the button to open or close output. Press and hold the button to set the boot default status of open or close.

Function Introduction:

a. Protection function:

OVP (over-voltage protection): there is OVP at 25-30V; it will be damaged permanently over 30V.at OVP, LED show OVP, as picture 1 show)

picture 1

OTP(over-temperature protection): load temperature is over 80℃, the LED show OTP, as picture 2 show.

picture 2

OPP(over-power protection): the power is over 25W, the LED show OPP, as picture 3 show.

b. Set output recovery mode after load entering protection status, manual or automatic

picture 3

c. View the voltage value, current value and power value of the load.

d. Intelligent temperature control fan. When the power is over 10W or the temperature is over 40℃, the fan will start.

e. Precision multiloop adjustable potentiometer: you can adjust the current precisely, upto 0.01A. so you don't need to adjust a big current mistakenly to damage the power supply. So the power supply will not be damaged due to mistakenly adjustment

f. you can set default boot status freely, open or close.

Operation Instruction

The load is powered at the range of 4-25.0V (the input polarity cannot be reversed, otherwise the product is permanently damaged and cannot be repaired), the LED will be flashing to remind current setting value, waiting for output. Press ON/OFF button, open output to start work.

1. Adjust output current value.

Turning the rotary control clockwise increases the value and anticlockwise decreases the value. According to the needs of the situation, the potentiometer can realize coarse adjustment or fine adjustment. The fine adjustment can be accurate to 0.01A.

2, Adjust LED display status

Press "SET" to adjust the LED display status, default display output current value. Press "SET"

button to display *.**A、**.*P、**.*V followed by recycling.

3. Open or close load output

　　Press "ON/OFF" button, you can open or close load output

4, Set load default boot status (open or close status, Factory default close status)

　　Press and hold "ON/OFF" button to set load default boot status freely. Press and hold "ON/OFF" button, if the LED will display "--ON", as picture 4, the load will open output when power on next time; If the LED display"-OFF", as picture 5 show, the LED will display current value flashing at last shutdown when power on next time, then press "ON/OFF" button to open output.

picture 4

picture 5

5, Set the load output recovery mode after protection removed.

　　Press and hold "SET" button to set output recovery mode after protection removed. Press and hold "SET" button, if the LED will display "--ON", as picture 4, and the protection was removed, the load will recover to work; If the LED display"-OFF", as picture 5 show, and the protection was removed, the LED still show protection status, then press "ON/OFF 'button, the display will display present setting current flashing, then press "ON/OFF' button again, the load recover to work.

NOTE:　Please check the output current of power bank carefully. The current of the general power bank is generally small, so adjust smaller current when the load was used.

Application

Assist to measure Micro USB cable good or not

Assist to measure Type-C cable good or not

Assist to measure output current capacity of charger good or not

The usage of large batch ageing test at the charger factory