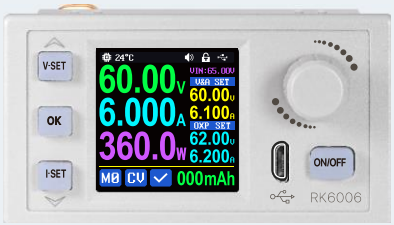
恒压恒流数控电源使用说明

Constant Voltage and Constant CurrentDC Power Supply Instruction

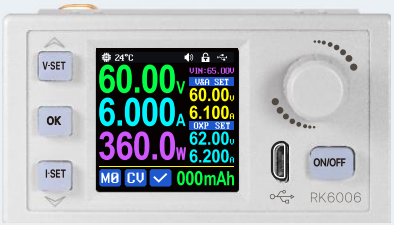
型号:RK6006-C

Model:RK6006-C



RK6006中文说明

点击进入



RK6006 Instruction In English

CLICK VIEW

恒压恒流数控电源使用说明

型号:RK6006-C

修订时间：2025.04.29

尊敬的用户，感谢您购买由杭州睿登科技有限公司出品的恒压恒流数控电源，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：本说明书对应固件版本 V1.09，不同固件版本下，界面或操作可能会有不同，使用时请注意。建议升级为最新固件，获取更好的使用体验。

1.1 配件清单

	
RK6006 整机一台	X15A 输出线一套
	
备用保险丝一只	Micro 通信线一条

目录

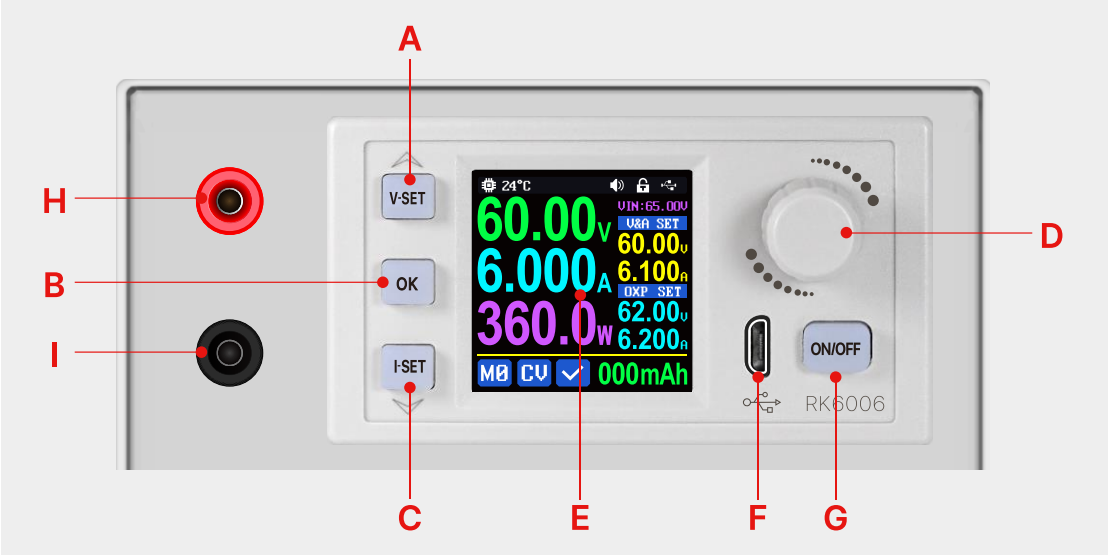
1.2 产品技术指标

产品型号	RK6006-C
输入电压范围	100-120V/200-240V AC
输出电压范围	0-60.00V
输出电流范围	0-6.000A
输出功率范围	0-360.0W
输出电压设定与回读分辨率	0.01V
电流设定与回读分辨率	0.001A
输出电压设定与回读精度	±(0.3%+3 个字)
输出电流设定与回读精度	±(0.5%+5 个字)
输出纹波典型值	100mV VPP①
产品工作温度范围	-10℃~40℃
外置温度传感器测量范围	-10℃~100℃/0℉~200℉
外置温度传感器测量误差	±3℃/±6℉
恒压模式响应时间	2ms（0.1A-5A 负载）
恒压模式负载调整率	±(0.1%+2 个字)
恒流模式负载调整率	±(0.1%+3 个字)
容量记录范围	0-9999.99Ah
能量记录范围	0-9999.99Wh
容量与能量统计误差	±2%
过温保护	系统温度>90℃
屏幕亮度设置	0-5 共 6 级
显示屏幕	1.54 寸 240*240 彩色液晶显示屏
含包装重量	约 1.3kg
产品尺寸	20*11.5*5.7cm
USB/蓝牙通信	标配

①：纹波测量方法：测量输出端子处，连接 0.1uF 电容，示波器 X1 档，交流耦合，20MHz 限制，使用大功率电阻作为负载。

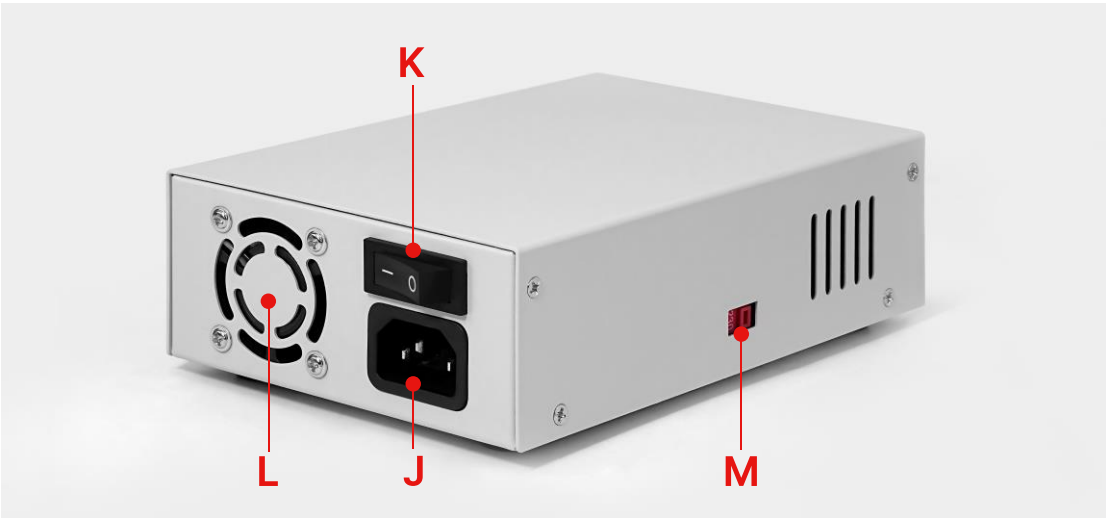
1.3 面板说明

1.3.1 前面板



A：电压设置/向上	F：micro USB 接口
B：确认键/设置键	G：输出开关键
C：电流设置/向下	H：电源输出正极
D：编码电位器	I：电源输出负极
E：屏幕	

1.3.2 后面板

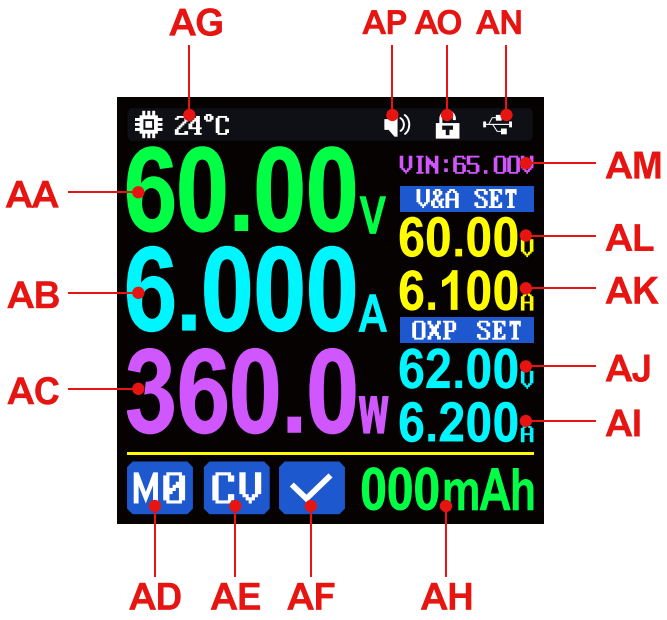


J：输入电源接口	L：散热风扇
K：开关	M：110V/220V 切换开关

1.4 操作说明

上电后首先显示开机图片，然后进入主界面。

1.4.1 主界面



AA:输出电压实际值	AI:输出过流保护设定值
AB:输出电流实际值	AJ:输出过压保护设定值
AC:输出功率实际值	AK:输出电流设定值
AD:当前数据组	AL:输出电压设定值
AE:恒压恒流状态指示	AM:DC 输入电压
AF:保护状态指示	AN:通信接口指示
AG:系统温度	AO:按键锁定状态指示
AH:循环显示区	AP:按键声音状态指示

当 AG:系统温度大于 90℃,AF:保护状态指示显示OTP并关闭输出。

AH:循环显示区中容量、能量、~~外置传感器温度~~（本机无此配件）循环显示。开机后容量能量累积，关机后清零。

1.4.2 操作说明

菜单操作中，红色处或光标处或蓝色反显处为当前选中菜单，按动编码电位器切换菜单，按动 OK 进入菜单，按动上下键切换选项，旋转编码电位器修改设定，再次按动 OK 键保存设置。按住V-SET键上电恢复出厂默认设置，按住I-SET键上

电恢复出厂校准值，按住 OK 键上电进入 boot 模式。

1.4.2.1 主界面电压电流设置

主界面电压电流设置操作说明视频:https://qr17.cn/CRVeMC

主界面下按动 ON/OFF 键可以打开或关闭输出，输出打开状态下 ON/OFF 键亮绿灯提示。

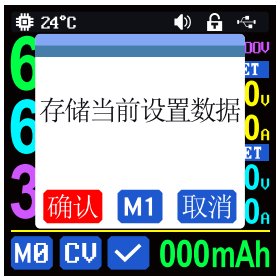
按动 I-SET 键设定 AK:**输出电流设定值**，输出打开状态下转动编码电位器可以直接调整输出值，按动编码电位器更改光标位置。

按动 V-SET 键可以设定 AL:**输出电压设定值**，方法类似 AK:**输出电流设定值操作**。

长按 I-SET 键或 V-SET 键可以设定 AI:**输出过流保护设定值**或 AJ:**输出过压保护设定值**，方法类似输出电流设置。如果需要过流关断功能，AI:**输出过流保护设定值**应大于 AK:**输出电流设定值**。

电源处于恒压状态下 AE:**恒压恒流状态指示** CV 提示，当处于恒流状态下 CC 提示；电源正常状态下 AF:**保护状态指示** ✓ 提示，当 AB:**输出电流实际值**大于 AI:**输出过流保护设定值**(OCP)后，电源自动关闭输出，并 OCP 提示，当 AA:**输出电压实际值**大于 AJ:**输出过压保护设定值**(OVP)后，电源自动关闭输出，并 OVP 提示，当 AG:**系统温度**大于 90℃，电源自动关闭输出，并 OTP 提示。

1.4.2.2 快捷存储和调出



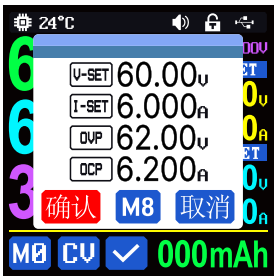
图一

快捷存储调出操作说明视频：https://qr17.cn/EUSYkF

主界面下长按 OK 键，可以将当前 AL:**输出电压设定值**、AK:**输出电流设定值**、AJ:**输出过压保护设定值**、AI:**输出过流保护设定值**，存储为快捷调用(如图一)，默认数据组为 M1，旋转编码电位器可以更改数据组，按 OK 键确认，左下角 AD:**当前数据组** M1 提示。

主界面下长按编码电位器可以快捷调出存储的数值(如图二)，默认数据组为 M1，旋转编码电位器可以更改数据组如 M8，按动 OK 键 AL:**输出电压设定值**、AK:**输出电流设定值**、AJ:**输出过压保护设定值**、AI:**输出过流保护设定值**覆盖，左下角 AD:**当前数据组** M8 提示，再次手动改变设置值后变为 M0 提示。

M0为上电默认数据组，修改设定后按动 OK 或其他按键光标消失时自动记忆至数据组M0。



图二

1.4.2.3 系统设置

系统设置操作说明视频：https://qr17.cn/EJQY6h

主界面下按动 OK 键进入系统设置菜单(如图三)，最下面红色显示图标为主菜单选中位置，按动下键进入子菜单，蓝色底色为子菜单选中位置，旋转编码电位器改变设置，按动 OK 键可返回到系统设置菜单，此时按动编码电位器可以切换主菜单。

图三

主界面下按动 OK 键进入系统设置菜单，按动上下键选择子菜单。

Settings 子菜单:（如图三）

系统语言出厂默认为英文，也可以简体中文、法语、德语、俄语中选择；

调出输出出厂默认关闭，快捷调出时自动关闭输出，打开后，快捷调出后自动打开输出；

开机输出出厂默认关闭，开机时输出为关闭，打开后开机后自动打开输出；

开机图片出厂默认打开，开机后会首先加载开机图片，然后进入**主界面**，关闭后开机后直接进入**主界面**；

按键声音出厂默认打开，AP:**按键声音状态指示**提示，按动按键会有短促的滴滴声，关闭后，AP:**按键声音状态指示**提示，按键静音；

图四

背光亮度出厂默认为 4，可以在 0-5 之间设置；(如图五四)

测量速度出厂默认为低，可以设置低中高三档，对应的是**输出电压电流实际值**的刷新率；

最大功率出厂默认为 380W，可以在 0-380W 之间设置，对应可以设置的最大功率，**最大功率**默认为电压优先模式，当设定电压电流乘积超过最大功率，系统自动将

AK:**输出电流设定值**减小，可以匹配小功率前级电源时使用，推荐设置值为前级电源的额定功率*95%;（不用调整）

温度单位出厂默认为℃，可以在℃和℉之间切换；

旋转屏幕出厂默认为 0，可以设置为 0、90、180、270，设置后按两次 OK 键并重启后屏幕方向旋转。

Communication 子菜单：（如图五）

图五

AN:通信接口指示出厂默认为 USB，也可以在 BT、TTL、RS485 中切换，USB 指 F：micro USB 接口，设置后 AN:**通信接口指示**提示，通信时提示；BT 指蓝牙通信，设置后 AN:**通信接口指示**提示，与 APP 通信时提示；TTL 与 RS485 功能暂时没有开放；

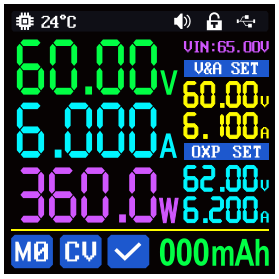
设备地址默认为 001，可以在 001-255 之间选择；通信速率和设备地址必须和上位机软件或手机 APP 端保持一致。通信功能具体详见本说明书上位机和 APP 中连机部分。

图六

1.4.2.4 主界面风格设置

主界面风格设置操作说明视频:https://qr17.cn/Fkjt69

主界面下按动 OK 键进入系统设置菜单，然后再按动编码电位器键进入(如图六)主界面风格设置主菜单，按动下键进入 Layout 子菜单：



图七

数字字体默认为 NORM，旋转编码电位器键可以在 NORM 和 Seg1 和 Seg2（如图七）中选择；

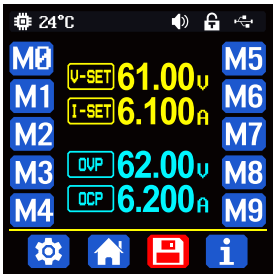
按动下键进入 Custom Colors 子菜单：（如图九）

图八

输出电压、输出电流、输出功率、输入电压、电压设置、电流设置、过压设置、过流设置、容量累计、能量累计、电池温度中每个独立的项目可以设置单独的颜色，颜色可以在红、绿、蓝、白、黄、品红、青色、浅蓝、灰色、棕色、橙色、黄绿色、蓝绿色、粉色、栗色十五个颜色中选择，选择颜色后，打开自定义颜色，设置生效(如图九)。

图九

1.4.2.5 快捷数据组设置



图十

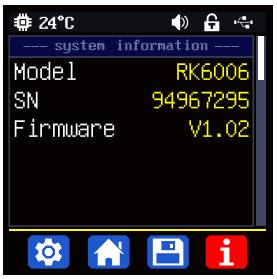
存储数据设置操作说明视频:https://qr17.cn/E9uBTC

主界面下按动 OK 键进入系统设置菜单，然后再两次按动编码电位器键进入(如图十)

存储设置主菜单：

按动下键进入菜单选择数据组，按动编码电位器键进入设置，此时数字上有光标，旋转编码电位器修改数值，按动编码电位器修改光标位置，按动上下键选择参数。此时按动 OK 键可返回上层菜单选择数据组，再次按动 OK 键返回到主菜单，再次按动 OK 键返回到主界面。

1.4.2.6 系统信息



图十一

系统信息操作说明视频:https://qr17.cn/CY4QtE

主界面下按动 OK 键进入系统设置菜单，然后再按动三次编码电位器键进入(如图十一)

系统信息主菜单：

Model:产品型号，SN:产品串号，Firmware:固件版本。

安卓手机 App 使用说明

2.1 手机 App 软件安装

本软件仅支持 Android5.0-Android12.0 系统使用，如必须使用软件功能，请先预装测试。软件使用 BT 功能，需申请定位服务，请同意并打开定位，手机 App 请从文件管理器中打开安装。本说明书对应软件版本 1.0.20，不同版本会稍有不同，建议升级为最新软件，获取更好的使用体验。

2.1.1App 的下载

APP 下载链接:http://www.ruidengkeji.com/apk/Ruideng_V1.0.14.apk

国内用户需通过浏览器直接下载到电脑，解压后将 apk 文件通过手机助手或者文件管理器导入到手机目录中，然后手机文件管理器中打开 apk 文件。可以使用谷歌 play 的用户请通过谷歌 play 搜索如不会下载或无法下载可以找客服人员索取下载链接。

2.2 安装完成

安卓 App 安装联机过程视频：https://qr17.cn/EUs89x

2.2.1 软件更新

点击 App 图标，App 启动后，系统会自动后台检测 App 版本是否有更新，新版本会弹框提醒更新，谷歌 play 下载的 App 需要手动检测新版本。

2.2.2App 界面显示

安装完成，App 主界面显示如下图，中间为主界面，左侧为设定界面，右侧为连接成功界面。

BA:左侧菜单	BB:添加设备	BC:返回
BD:菜单	BE:曲线图表	BF:输出电压实际值
BG:输出电流实际值	BH:输出功率	BI:直流部分电压
BJ:输出电压设定值	BK:输出电流设定值	BL:输出开关键
BM:保护状态指示	BN:按键锁定状态	BO:恒压恒流状态
BP:旋钮	BQ:光标向左	BR:光标向右
BS:设定	BT:背光亮度	BU:系统温度
BV:快捷调出	BW:产品型号	BX:产品串号
BY:固件版本		

2.2.3APP 的使用

安卓 App 操作过程视频：https://qr17.cn/EYcTq0

2.2.3.1APP 操作

BF:输出电压实际值等同于 AA:输出电压实际值；BG:输出电流实际值等同于 AB:输出电流实际值；BH:输出功率等同于 AC:输出功率；BI:直流部分电压等同于 AM:直流部分电压；BJ:输出电压设定值等同于 AL:输出电压设定值；BK:输出电流设定值等同于 AK:输出电流设定值；BL:输出开关键等同于 G：输出开关键；BM:保护状态指示等同于 AF:保护状态指示；BN:按键锁定状态等同于 AO:按键锁定状态指示；BO:恒压恒流状态等同于 AE:恒压恒流状态指示；BU:系统温度等同于 AG:系统温度；

点击 BA:左侧菜单可以设定语言以及设备地址；点击 BB:添加设备可以添加

RK6006，搜索后添加，配对码为 1234，配对成功返回主界面设备列表中选择 RK 数控系列。

点击右上角中 BD:**菜单**的**分享**即可将电压电流曲线导出成表格文件，最长可以记录 24 小时的文件。

BE:**曲线图表**,可以通过点击 BF:**输出电压实际值**、BG:**输出电流实际值**、BH:AC:**输出功率**、BI:**直流部分电压**控制图表显示的曲线，同时可以显示两种曲线。

点击 BJ:**输出电压设定值**设置输出电压，用右侧 BP:**旋钮**调整大小，然后用左右箭头调整光标位置，然后点击 BS:**设定**确认设置。点击 BL:**输出开关键可**以控制电源输出开关，功能等同于产品的**输出开关键**。

点击 BT:**背光亮度**可以设定产品屏幕背光亮度点击 BV:**快捷调出**可以快捷调出 1-9 号数据组。

注：1：因安卓手机种类繁多，因此在个别品牌或者一种品牌的不同比例屏幕上 UI 界面显示不一样。

2:应用程序权限要求,允许程序安装时必要权限(允许后台运行,允许使用蓝牙，允许操作文件夹，允许读取应用列表等)而且在安装完毕后还要在手机中设置程序的权限：允许后台运行、锁屏不清理、允许自启动等(持续记录数据时防止系统强制退出 APP)。

苹果手机 APP 使用说明

3.1 手机 APP 软件安装

3.1.1APP 的下载

苹果 APP 仅支持 IOS10.0-14.3，iphone6 以上机型，在苹果商店搜索“RuiDeng”下载。如必须使用软件功能，请先预装测试。软件使用 BT 功能，需申请定位服务，请同意并在设置-隐私中打开定位。本说明书对应软件版本 1.1.16，建议升级为最新软件，获取更好的使用体验。

3.2 安装使用

首次启动软件，系统可能会申请定位如下图，选择“使用 APP 时允许”。

苹果 APP 安装联机过程视频：https://qr17.cn/DhA7Kt

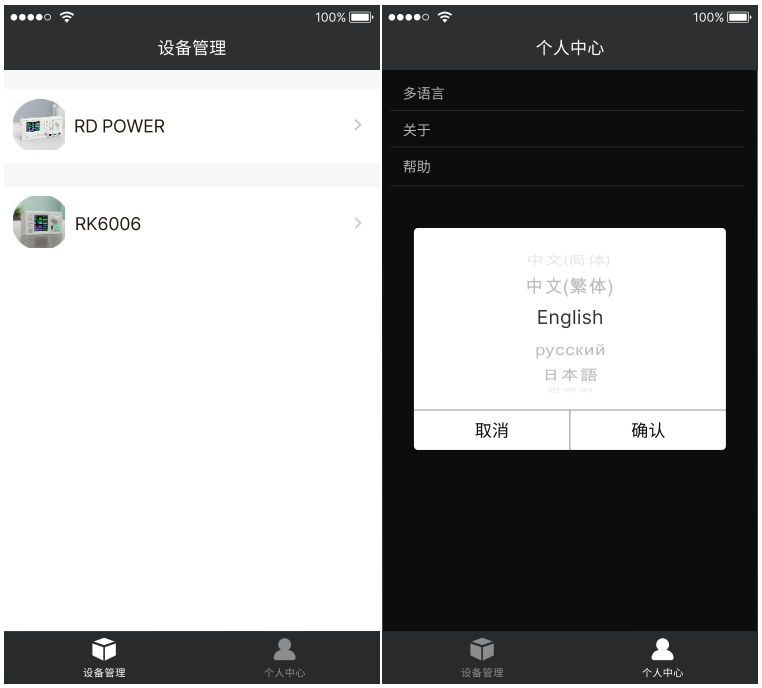
安装完成，手机 APP 图标如图：

3.2.1 软件更新

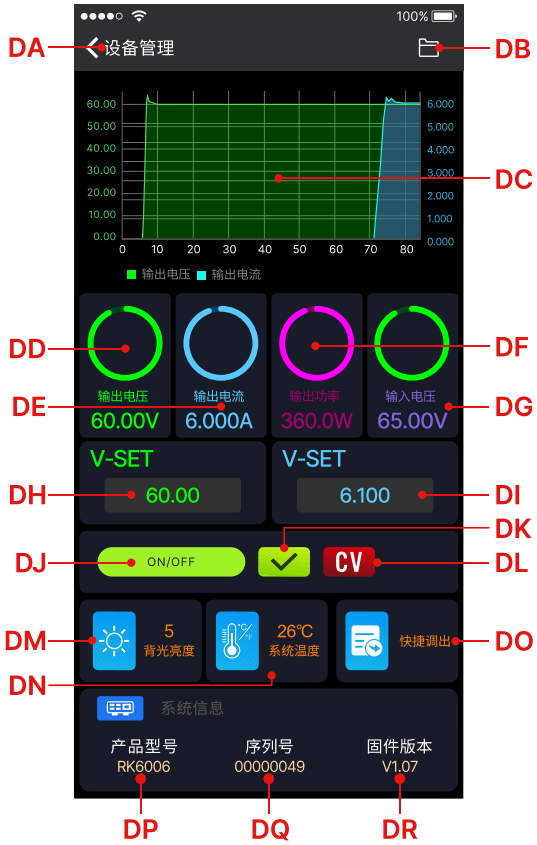
您可从苹果商店获取最新的软件，当软件有更新时，打开后会提示版本更新。

3.2.2APP 界面显示

打开后界面默认在设备管理选项显示下图，点击个人中心选项可以设定语言，如右图。



软件运行时自动搜索 RK6006 产品，点击 RK6006 界面如图：



DA:返回	DB:导出曲线
DC:曲线图表	DD:AA:输出电压实际值
DE:AB:输出电流实际值	DF:AC:输出功率
DG:AM:直流部分电压	DH:AL:输出电压设定值
DI:AK:输出电流设定值	DJ:输出开关键
DK:AF:保护状态指示	DL:AE:恒压恒流状态指示指示
DM:背光亮度	DN:AG:系统温度
DO:快捷调出	DP:产品型号
DQ:序列号	DR:固件版本

3.2.3APP 的使用

苹果 App 操作过程视频：https://qr17.cn/EmtK1y

3.2.3.1 手机 APP 功能

DD:输出电压实际值等同于 AA:输出电压实际值；DE:输出电流实际值等同于 AB:输出电流实际值；DF:输出功率等同于 AC:输出功率；DG:直流部分电压等同于 AM:直流部分电压；DH:输出电压设定值等同于 AL:输出电压设定值；DI:输出电流设定值等同于 AK:输出电流设定值；DJ:输出开关键等同于 G：输出开关键；DN:系统温度等同于 AG:系统温度；

点击右上角中 DB:菜单的分享即可将电压电流曲线导出成表格文件，最长可以记录 24 小时的文件。

DC:曲线图表，可以通过点击 DD:输出电压实际值、DE:输出电流实际值、DF:AC:输出功率、DG:直流部分电压控制图表显示的曲线，同时可以显示两种曲线。

点击 DH:输出电压设定值设置输出电压，DI:输出电流设定值设置输出电流。点 DJ:输出开关键可以控制电源输出开关，功能等同于产品的输出开关键。

点击 DM:背光亮度可以设定产品屏幕背光亮度点击 DO:快捷调出可以快捷调出 1-9 号数据组。

上位机软件的安装使用说明

安装软件需求：win7-win10 系统，带有网络连接的电脑。

本软件由杭州睿登科技有限公司开发，不带有病毒，如果杀毒软件提示请允许它的所有功能，否则会影响软件的正常运行。PC 上位机软件仅支持 win7-win10 系统，软件可能存在不兼容问题，如确切需要请先预装测试后购买产品。本说明书对应软件版本 1.0.0.15，本版本以下不支持 RK6006，建议升级为最新软件以期获取更多功能。

RK6006 数控电源资料主下载链接：http://www.ruidengkeji.com/ziliaoxiazai

4.1 软件安装

上位机安装视频：https://qr17.cn/DmvzPp

4.1.1 驱动安装

驱动安装指导视频：http://www.wch.cn/videos/ch340.html

首次使用需要先安装驱动程序，win10 系统可以直接连接产品网络搜索驱动，win7 打开 http://www.wch.cn/downloads/CH341SER_EXE.html 下载安装驱动，然后用 microUSB 线连接产品等待电脑安装驱动完成。安装完成后，右键点击【此电脑】>【管理】>【设备管理器】>【端口】，如果有 USB-SERIAL CH340（COMXX）说明驱动安装成功。如果没有反应，检查 USB 口和 micro 数据线。

win7sp1 的用户可能会出现感叹号，按照下面链接进行操作

http://www.wch.cn/downloads/InstallNoteOn64BitWIN7_ZH_PDF.html

4.1.2 安装软件

将压缩包解压到电脑 D 盘中，首先运行 Net framework4.7.2.exe 安装.net 环境（如果提示已安装或安装了更高版本，可以跳过），然后直接运行 RidenPowerSupply.exe 上位机软件。文件夹其他文件运行所需，不要删除。

4.2 软件的使用

4.2.1 上位机联机

双击桌面上的图标“Riden Power Supply”就可以打开上位机软件。

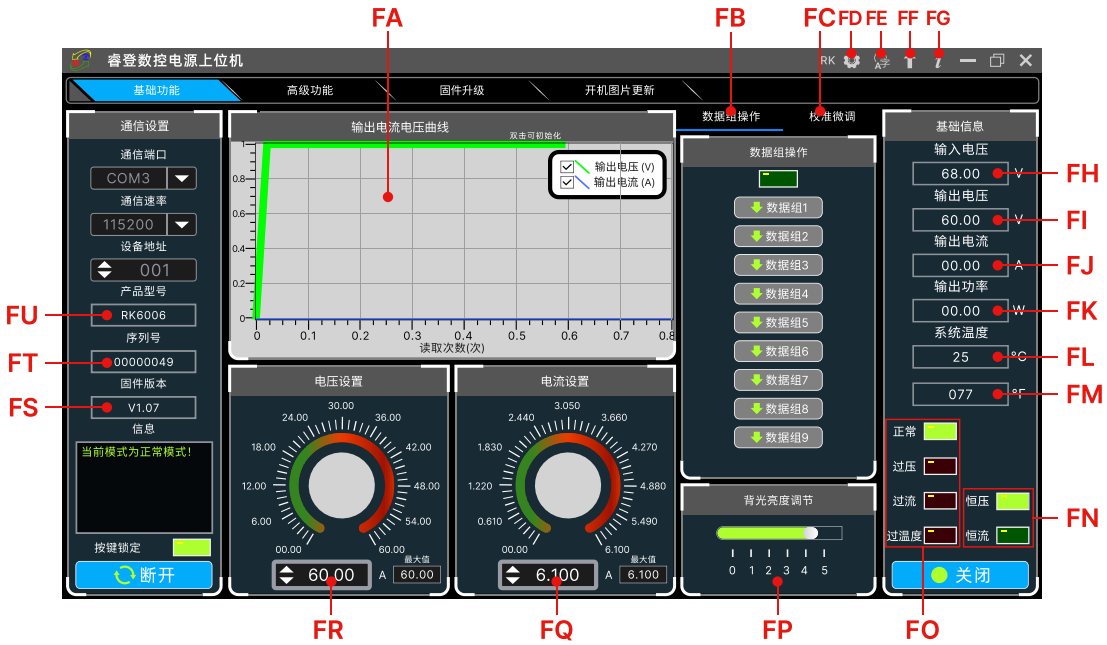
4.2.2 软件使用介绍

上位机使用视频：https://qr17.cn/CDe6Au

选择好**通信端口、波特率、从机地址**（默认为 001），点击右上角图标 **FD：RK/DPS/RD 切换**选择“RK”后点击“**联机**”开始通信，联机成功后会自动锁定数控电源按键，意外断开 3 秒后电源按键自动解锁，同时“**联机**”按钮变为“**断开**”；点击“**打开**”可以打开数控电源输出，同时按钮变为“**关闭**”。

4.3 功能介绍

上位机软件界面主要有**基础功能、固件升级、Logo 升级、检查版本更新及语言的选择**等。



FA：电压电流曲线	FB：快捷调出	FC：校准微调
FD：RK/DPS/RD 切换	FE：语言选择	FF：软件更新
FG：关于	FH：直流部分电压	FI：输出电压实际值
FJ：输出电流实际值	FK：输出功率实际值	FL：系统温度（℃）
FM：系统温度（℉）	FN：恒压恒流状态	FO：保护状态
FP：背光亮度	FQ:输出电流设定值	FR：输出电压设定值
FS：固件版本	FT：序列号	FU：产品型号

4.3.1 基础功能

FH:直流部分电压等同于 AM:直流部分电压；FI:输出电压实际值等同于 AA:输出电压实际值；FJ:输出电流实际值等同于 AB:输出电流实际值；FK:输出功率实际值等同于 AC:输出功率实际值；FL:系统温度等同于 AG:系统温度；FN:恒压恒流状态等同于 AE:恒压恒流状态指示；FQ:输出电流设定值等同于 AK:输出电流设定值；FR:输出电压设定值等同于 AL:输出电压设定值；

上位机的基础功能包括：电压电流的设置、快捷输出、校准微调、亮度调节及电压电流曲线导出，在 FQ:输出电流设定值　FR:输出电压设定值处可以旋转滚轮调整设置或输入数字可以改变设置电压电流，按钮上方图表会显示实时的电压电流曲线。在曲线图上滚动滚轮可以实现缩放，双击曲线自适应窗口，右键可以清除曲线或者将曲线导出成图片或 excel。

4.3.2 校准微调

校准微调需要拥有六位半以上的万用表的专业电子人士操作；校准微调会改

变系统设置，误操作可能会超出硬件极限值导致损坏，由此导致的损坏不纳入保修范围！产品的极限误差一般会比标称误差小很多，当误差接近甚至大于标称误差时，请首先确认测量仪器是否准确。

点击**校准微调**输入密码“168168”可以进入校准微调界面或者保存校准微调数据（输入此密码即代表接受上述红字协议），联机后读取校准数据，通过点击箭头实现微调数值。根据一次函数 y=kx+b，常数 b 相当于零点值，斜率 k 相当于比例值，调整这两个数值就能尽量去接近实际测量的数值。

校准微调操作视频：https://qr17.cn/CGxhFz

将输出电压设置为 1V，调整电压输出零点使万用表显示接近 1V，将输出电压设置为 30V（半量程），调整输出电压比例值使万用表显示值接近 30V；同理设置为 0.1A 和 3A（半量程）可以校准电流输出零点和电流输出比例；将输出电压设置为 1V 调整回读电压零点使 RK6006 显示电压值与万用表测量值一致，同理设置 30V 可以校准回读电压比例值，同理设置为 0.1A 和 3A 可以校准电流回读零点和电流回读比例（此部分不提供技术支持，看不懂的客户请自行丰富相关知识）。

4.3.3 高级功能

高级功能可以按照表格中的设定值变换输出电压电流，每步时间 1-9999s 可调，最多 200 步，可以自动输出也可手动输出，编程输出或者其他操作过程中不能切换界面，必须停止后才能切换。

4.3.4RS485 多机通信

暂不支持。

4.3.4 固件升级

固件升级操作视频：https://qr17.cn/FnL7Ni

首先按住ENTER键给 RK6006 供电，进入 boot 模式，连接好电脑，待模式信息中提示产品为 boot 模式后点击“**固件升级**”，弹出固件升级提示框，然后点击“**立即升级**”即可。

产品可以在正常模式下升级固件，如果不能正常启动时或者出现功能异常，数据错乱等情况下，须进入 Boot 模式升级。

4.3.5 开机图片更新

开机图片更新操作视频：https://qr17.cn/CwF8Se

点击“**开机图片更新**”，弹出升级提示框，开机图片必须是 240*240 分辨率，点击“**选择图片**”，（安装包内提供了一些 Logo 样张可以测试），点击“**图片导入**”即可，更新完成会自动重启。

点击图片处理可以将非标准分辨率的图片处理为 240*240 分辨率，处理之后保存，再次点击导入即可。

4.3.6 软件更新

点击 FF:**软件更新**，系统会自动后台检测是否有新版本，如有新版本会弹框提醒更新。

4.3.7 语言的选择

点击 FE:**语言选择**，可以设置中文、英文、法语、德语四种语言。

4.3.8 关于

点击 FG:**关于**，可查看当前软件版本号、发布时间及版权信息等。

Constant Voltage and Constant Current

DC Power Supply Manual

Model: RK6006-C

Date: 2023. 6. 27

Dear users, thank you for purchasing the constant voltage constant current DC power supply produced by Hangzhou Ruideng Technology Co., Ltd. In order to let you know more about the full function of this product, get a better experience and avoid misuse. Please read this instruction carefully before using it. Keep it for future reference.

Note: This instruction is corresponding to firmware V1.07, the page and operation may be different under different firmware versions, please pay attention when using it. We do recommend you to download the latest firmware for better experience.

1.1 Accessory list

	
RK6006-C *1	X15A output cable*1
	
Backup fuse*1	Micro USB cable*1

Table of Contents

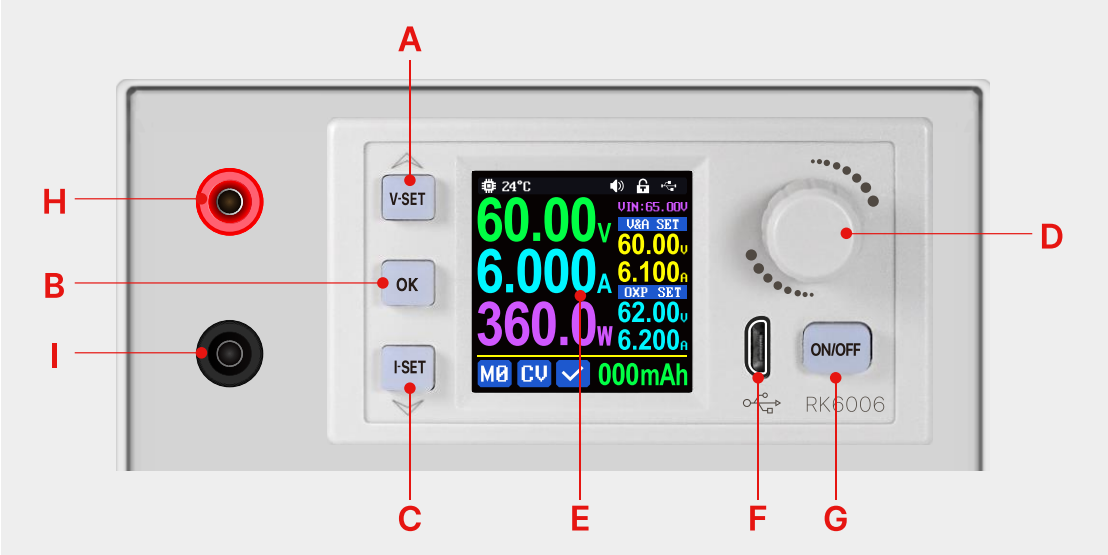
1.2 Technical Parameter

Model	RK6006-C
Input voltage range	100-120V/200-240V AC
Output voltage range	0-60.00V
Output current range	0-6.000A
Output power range	0-360.0W
Output voltage setting/reading resolution	0.01V
Output current setting/reading resolution	0.001A
Output voltage setting/reading accuracy	±(0.3%+3 digits)
Output current setting/reading accuracy	±(0.5%+5 digits)
Output ripple typical	100mV VPP①
Working temperature range	-10℃~40℃
External sensor Temperature detection range:	-10℃~100℃/0℉~200℉
External sensor Temperature detection accuracy:	±3℃/±6℉
External sensor parameter	10K NTC B3950
Constant voltage mode response time	2ms（0.1A-5A load）
Constant voltage mode load regulation	±(0.1%+2 digits)
Constant current mode load regulation	±(0.1%+3 digits)
Capacity measurement range	0-9999.99Ah
Energy measurement range	0-9999.99Wh
Constant voltage mode response time	±2%
Over-temperature protection	System temperature >90℃
Screen brightness setting	0-5(6 level in total)
Screen	1.54 inch 240*240 LCD display
Weight(with package)	About 1.3kg
Product dimension	200*115*57mm
Support USB/Bluetooth communication	yes

①:Ripple measurement method: noise and ripple are measured at X1 range, AC coupling, 20 MHz of bandwidth on your oscilloscope with a 0.1uF parallel capacitor at the output terminals

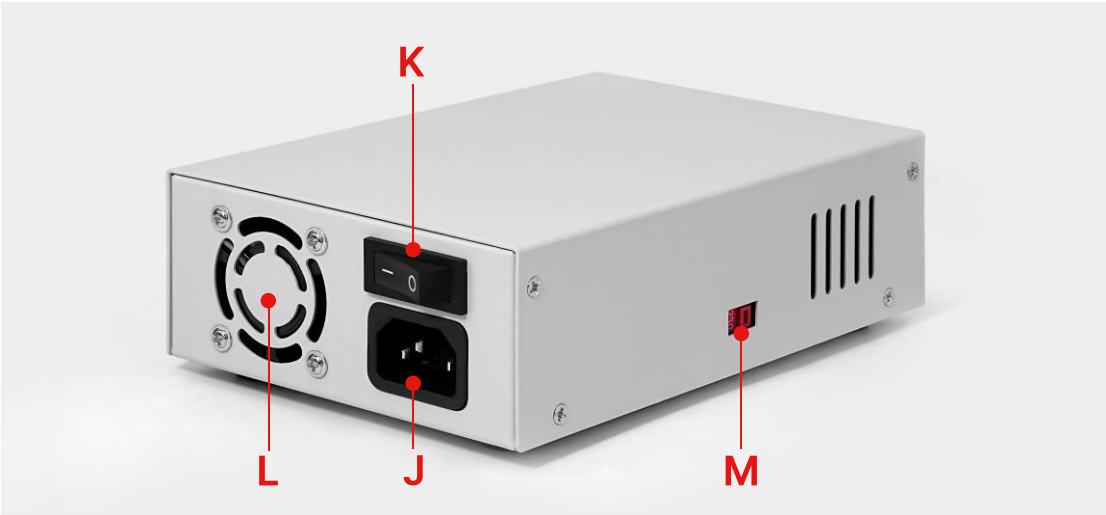
1.3 Panel Instruction

1.3.1 Front Panel



A: Voltage setting/Up Arrow	B: Confirm Button/Set Menu
C: Current setting / Down Arrow	D: Rotary Knob
E: Screen	F: Micro USB Port
G: Output ON/OFF Key	H: Output Terminal +
I: Output Terminal -	

1.3.2 Rear Panel

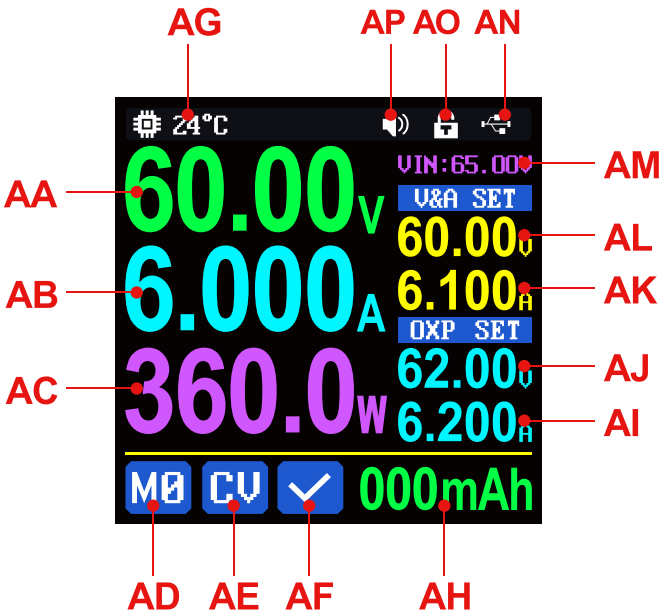


J: AC power inlet socket	K: Power Switch
L: Heat Dissipation Fan	M: AC Selector(110V/230V AC)

1.4 Operation Instruction

After power-on, it will show startup picture first, and then shows the main page.

1.4.1 Main Page



AA: Actual output voltage value	AB: Actual output current value
AC: Actual output power value	AD: Current data group
AE: Constant voltage Constant current status indicator	AF: Protection status indication
AG: System temperature value	AH: Cyclic display area
AI: Over-current protection setting value	AJ: Over-voltage protection setting value
AK: Output current setting value	AL: Output voltage setting value
AM: Input voltage value	AN: Communication interface icon
AO: Button lock status icon	AP: Beeper ON/OFF status icon

When the **AG: system temperature value** is greater than 90℃, protection status indication display OTP and close output.

In the cyclic display area, capacity, energy are displayed cyclically. Capacity and energy accumulation after power on, zero after power off, external temperature sensor needs 10K NTC B3950 if you need that.

1.4.2 Operation Introduction

In the menu operation, the icon in red, the value with cursor or the option with base color is the currently selected menu, press the rotary knob to switch the menu, press OK to confirm or enter, press the direction button to move the cursor, rotate the rotary knob to change the setting, press the OK button again to save the

setting. Press and hold the V-SET button and power on to restore the factory default settings, press and hold the I-SET button and power on to restore the factory calibration value, press and hold OK and power on to enter the boot mode.

1.4.2.1 Main Page Output Voltage and Current Setting

Output voltage and current setting operation video：

https://youtu.be/C3qL3OIkNBo

At the main page, you can press the ON/OFF key to turn on or turn off the output, when the output is turned on, the ON/OFF key shows in green.

Press I-SET button to set the **AK: output current value**, you can rotate rotary knob to adjust the output value, press the rotary knob to move the cursor.

Press V-SET button to set the **AL: output voltage value**, the operation way is similar to output current setting.

Press and hold I-SET button to set the **AI: over-current protection value;** Press and hold V-SET button to set the **AJ: over-voltage protection value**. The operation way is similar to output current setting. If you want to set the over-current auto shut down function, your **AI: over-current value** should be higher than the **AK: Current setting value**.

When the device is under constant voltage mode, it will show CV at **AE: Constant voltage Constant current status indicator**, and it will show CC when under constant current mode; when the device works normally it will show ✓ at **AF: protection status indication**, when the **AB: actual output current value** is higher than the **AI: over-current protection value(OCP)**, the output will be cut off automatically, and show OCP, when the **AA: actual output voltage value** is higher than the **AJ: over-voltage protection value(OVP)**, the output will be cut off automatically, and show OVP, when the system temperature is higher than 80℃, the output will be cut off automatically, and show OTP.

1.4.2.2 Data Group Quick Store and Recall

Data group quick store and recall operation video：

https://youtu.be/7bW9UcJY17o

Press and hold OK button, you can store the **AL: output voltage value, AK: output current value, AJ: over-voltage protection value, AI: over-current protection value** into fast store and recall data group (as shown in Figure 1), M1 is the default data group, rotate the rotary knob to change the data group, press OK button to confirm, it will show M1 on the bottom left to show the **AD: current data group**.

Figure 1

Press and hold the rotary knob to quick recall the stored setting in the data group(as shown in Figure 2), M1 is the default data group, rotate the rotary knob to change the data group like M8, press the OK button and the **AL: output voltage value, AK: output current value, AJ: over-voltage protection value, AI: over-current protection value** will be overwritten, it will show M8 on the bottom left to show the **AD: current data group**, change the settings manually again it will show M0.

M0 is the default data group, when you edit the settings and press OK button or the cursor disappears, it will be stored into M0 automatically.

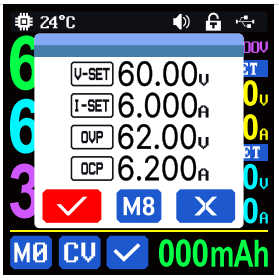


Figure 2

1.4.2.3 System Setting

System setting operation video：
https://youtu.be/YaDcW2voC7Q

Press OK to enter the system setting menu(as shown in figure 3), the icon in Red shows the menu being chosen, press I-SET to enter the sub-menu, the option in blue is the option being chosen, you can rotate the rotary knob to change setting, Press OK to return to System Setting menu and you can press rotary knob to select menu.

Press OK at main page to enter the system setting menu,press direction key to choose the sub-menu.

Settings Sub-menu(figure 3,4):

System language is is set to English by factory default. You can also set Simplified

Chinese, French, Germany and Russian language;

Take Out is set to OFF by factory default, when recall a data group, it will keep the previous output status, when set it ON, it will output directly whe

n recall a data group.

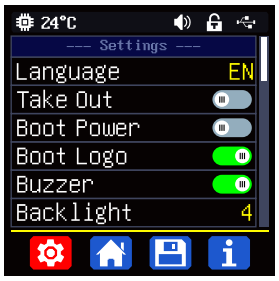


Figure 3

Boot Power is set to OFF by factory default, when boot the device the output is cut off, when set it on, it will automatically turn on the output after booting.

Boot Logo is set to ON by factory default, when boot the device, it will show the boot logo first, then enter the main interface, when set it OFF, it will enter the main interface directly.

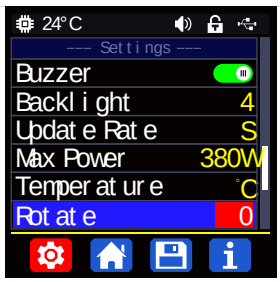


Figure 4

Buzzer is set to ON by factory default,it will show on the top at **AP: Beeper ON/OFF status icon**, and you can hear the beep when press the button. When set it OFF, it will show at **AP: Beeper ON/OFF status icon**, there will not be beep when press the button.

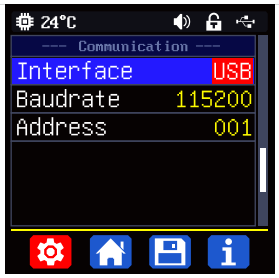


Figure 5

Backlight is set to level 4 by factory default, it can be set between level 0-5.

Update Rate is set to Low by factory default, you can set it S(low)/M(middle)/H(high), it is the fresh rate of the real output voltage and current.

Max Power is set to 380W by factory default, you can set it between 0-380W, it is the max output power. The max output is default voltage priority mode, when the setting voltage*setting current is higher than the max power, the device will automatically decrease the output current setting value. When used together with low power power source, it is recommended to set the value as the rated power of the power source*95%.

Temperature unit is ℃ by factory default, it can be switched between ℃ and ℉.

Rotate is set to 0 by factory default, you can set it to 0, 90, 180, 270, after setting, reboot the device, the display will rotate.

Communication Sub-menu(figure 5):

Interface is set to USB by factory default, shows at **AN: Communication interface icon**, you can also set it to Bluetooth/TTL/RS485, USB means the **F: Micro USB Port**, you can see at **AN: Communication interface icon** on the top when set it USB,

and when the communication starts, it will show ; You need to insert a Bluetooth board to use the Bluetooth function, and it will show at **AN: Communication interface icon** on the top, and when the communication starts, it will show ; TTL and RS485 is not available now;

Address is set to 001 by default, you can set it between 001 and 255;

The Baud rate and address on the device should be same with the information on PC software or APP. You can see more communication at PC software and APP section in the manual.

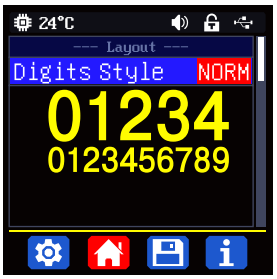


Figure 6

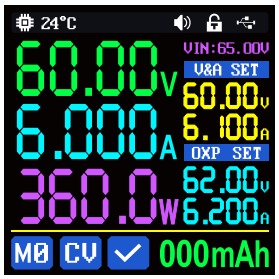


Figure 7

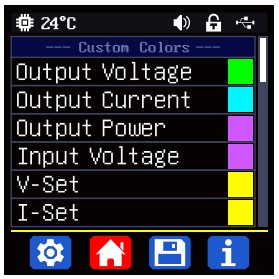


Figure 8

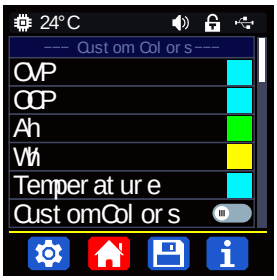


Figure 9

1.4.2.4 Main Page Display Style Setting

Main interface display style setting operation video:

https://youtu.be/kpFtPQGhBmc

You can press OK to enter the system setting menu, then press rotary knob and it will be switched to Layout menu(as shown in figure 6): you can press down arrow key to enter the Layout sub-menu.

Layout Sub-menu:

Digits Style is set to NORM by default, you can rotate the rotary knob and select NORM, Seg1 and Seg2(as shown in figure 7).

Press down arrow key to the Custom Colors page.

Custom Colors(figure 8,9):

You can set the the display colors for output voltage, output current, output power.....as shown in figure 8 and figure 9. After change the color, you need to turn on the Custom Colors option to apply the settings(as shown in figure 9).

1.4.2.5 Storage Data Setting

Data group setting in manual operation video:

https://youtu.be/7GYv6B40dGk

Press OK to enter the system setting menu, then press rotary knob twice and it will be switched to data group menu(as shown in figure 10):

Press I-SET to enter the menu and choose the data group, press the rotary knob to setting page, you can see there is cursor on the digit, rotate the rotary knob to change the setting, press the rotary knob to move the cursor, press the ↑ and ↓ button to select the option. You can press OK button to return to data group choosing menu, press OK button again to the main menu, press OK a third time to return to the main display interface.

1.4.2.6 System Information

Press OK to enter the system setting menu, then press rotary knob 3 times and it will be switched to system menu.(as shown in figure 11).

Model is the device name, SN is product serial number, Firmware is the firmware version

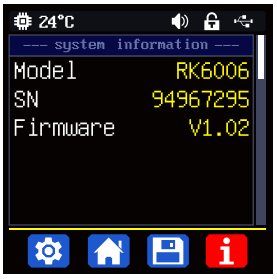


Figure 11

Android APP Instruction

2.1 Mobile Phone APP Installation

Only RK6006-BT supports Bluetooth connection. This App only supports Android 5.0 to Android 12.0 operating system, and there may be incompatibilities problems between APP and operating system, please install and test the software before buying the product. It will apply for Bluetooth function and location service, please agree and turn on the location service. After downloading the mobile APP zip-file, please install the APP from file manager. Don't install or remove Bluetooth module when the device is powered on, otherwise it will be damaged. This instruction is made for version 1.0.17, there will be little difference between different versions, and we do recommend you to download the latest APP for better experience.

2.1.1 APP Download

You can download the APP in Google Play by searching "**Ruideng tech**". V1.0.17
If you cannot find the app, contact the seller to get it.

2.2 Installation Introduction

2.2.1 APP Update

Click the APP icon, After the APP starts, it will automatically detect whether there is a new version, and it will remind you by popping the window. You need to check if there is a new version by manual detecting. If you download the APP from Google Play, you need to detect new version by yourself.

2.2.2 APP Interface Display

When finish the installation and succeed in connection, it will show the main page as shown in the picture below. The middle is the main interface, the left is the setting interface, and the right is the connection success interface.

BA: sidebar	BB:add device	BC: return
BD:menu	BE:curve	BF:actual output voltage
BG:actual output current	BH:actual output power	BI:input voltage
BJ: preset voltage value	BK: preset current value	BL: ON/OFF button
BM:protection status indication	BN: keypad lock indication	BO: CC/CV status indicator
BP:setting wheel	BQ: move cursor to left	BR: move cursor to right
BS: set button	BT: screen brightness	BU:system temperature
BV: data group quick recall	BW:device	BX:product SN number
BY: product firmware version		

2.2.3 APP Operation

2.2.3.1 APP operation

BF:actual output voltage equals to AA: Actual output voltage value; BG:actual output current equals to AB: Actual output current value; BH:actual output power equals to AC: Output power; BI:input voltage equals to AM: Input voltage. BJ: preset voltage value equals to AL: Output voltage preset value; BK: preset current value equals to AK: Output current preset value; BL: ON/OFF button equals to G: Output Power Button; BM:protection status indication equals to AF: Protection status indication; BN: keypad lock indication equals to AO: Button lock status icon; BO: CC/CV status equals to AE: Constant voltage Constant current status indicator; BU:system temperature equals to AG: System temperature.

Click **“BA”**, you can set the language and device address in the sidebar.

Click **“BB”**, you can add RK6006, search and add, the code is 1234, after matching, you can return to the main interface to choose RK series.

Click **“BD”** to exports the voltage-current curve to excel file, up to 24 hours document can be recorded.

“BE” is curve, you can display two curves at the same time by clicking **BF**: Output voltage actual value, **BG**: Output current actual value, **BH**: Output power, **BI**: Input voltage control chart.

Click **“BJ”** to set the output voltage, and use the wheel **“BP”** to adjust the value, the **“BQ”**, **“BR”** to change the position of cursor, click **“BS”** to set the parameter. .

Click **“BL”**: Output on/off key, can control the power supply output, the function is equivalent to the output on/off button of the product.

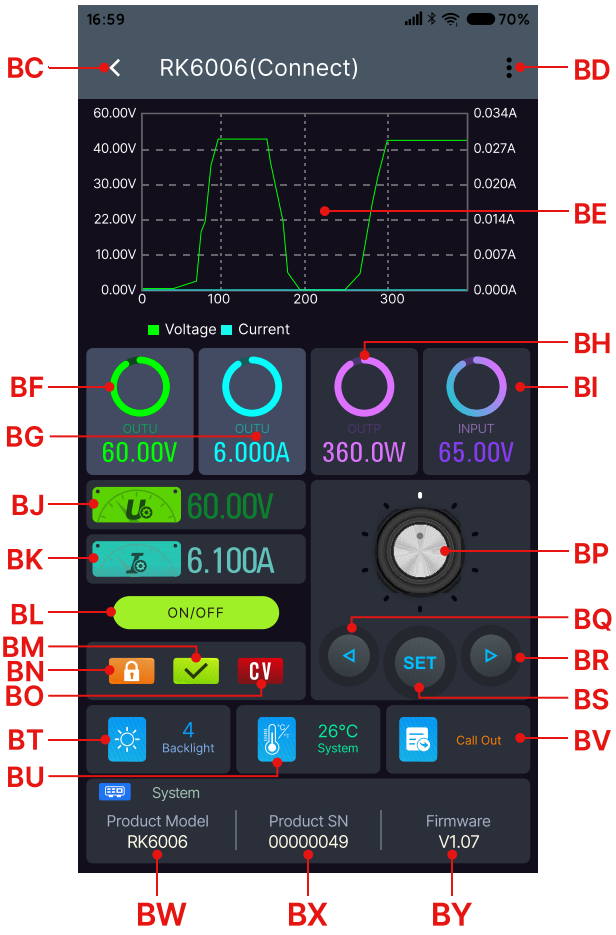
Click **“BT”**: Backlight brightness, you can set the backlight brightness of the product screen

Click **“BV”**: Quick recall can quickly recall the data group 1-9.

NOTE:

1. There are many kinds of Android phone, so the user interfaces maybe different on some brand phones or different scales of the same brand.

2. Application permission requirements, allow the necessary permissions when the APP is installed (allow background running, using Bluetooth, operation on the folder, reading the application list, etc.) and also set the permissions of the APP after installation: Allow background running, never shut down when lock screen, allow self-starting (it is used to prevent the system from forcibly exiting the APP when recording data), etc.



IOS APP Instruction

3.1 Mobile Phone APP Installation

Bluetooth connection only supported for RK6006-BT.

3.1.1 APP Download

Apple APP only supports IOS10.0-14.3, iphone6 and above models, search for "Ruideng tech" in the Apple store to download. If you must use the software function, please pre-install the test first. To use the Bluetooth function of the software, you need to apply for location service. Please agree and turn on location in Settings-Privacy. This manual corresponds to the software version 1.1.16, it is recommended to upgrade to the latest software for a better user experience.

3.2 Installation and Operation

When the software is started for the first time, the system may apply for position and Bluetooth function, please allow all the permission from the APP.

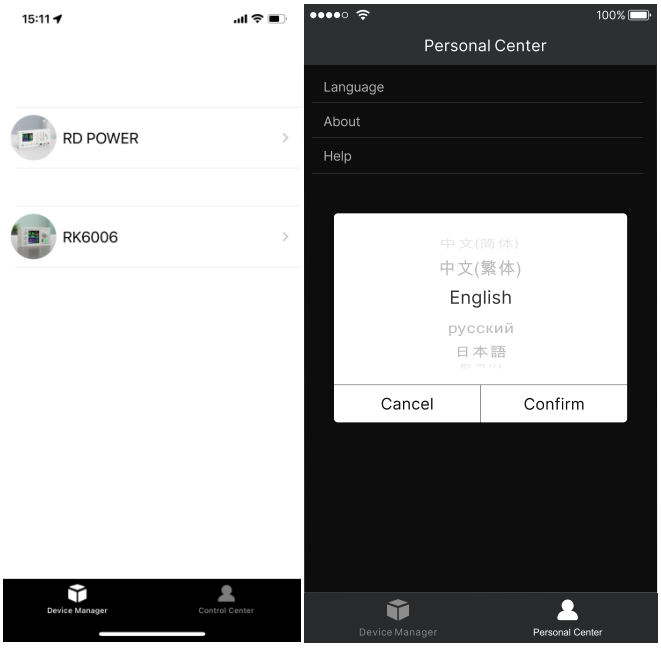
After installation, you can see this APP logo

3.2.1 APP Update

You can get the latest software from the Apple Store. When the software is updated, you will be prompted to update the version.

3.2.2 UI Introduction

When you turn on the app, you can see the device management in the picture below left, you can set the language in the control center as displayed blow right .



It will show RK6006-BT automatically, You can see the user interface as shown in Picture below.

DA: connect/disconnect	DJ: output ON/OFF button
DB: export data to mobile phone	DK: protection status indication
DC: data curve	DL: constant voltage/ constant current status indicator
DD: actual output voltage	DM: screen brightness
DE: actual output current	DN: system temperature
DF: actual output power	DO: data group quick recall
DG: input voltage measurement value	DP: model being connected
DH: preset voltage value	DQ: product SN number
DI: preset current value	DR: product firmware

3.2.3 APP Operation

DD:actual output voltage equals to AA: Actual output voltage value; DE:actual output current equals to AB: Actual output current value; DF:actual output power equals to AC: Output power; DG:input voltage equals to AM: Input voltage; DH: preset voltage value equals to AL: Output voltage preset value; DI: preset current value equals to AK: Output current preset value; DJ: ON/OFF button equals to G: Output Power Button; DN:system temperature equals to AG: System temperature.

Click **“DB”** to exports the voltage-current curve to excel file, up to 24 hours document can be recorded.

“DC” is curve, you can display two curves at the same time by clicking **DD**: Output voltage actual value, **DE**: Output current actual value, **DF**: Output power, **DG**: Input voltage control chart.

Click **“DH”** / ”**DI**” text label and enter the value to set the output voltage/ output current, then click at the blank area to return, if you enter a value exceeds the limit, it cannot be applied. Click **“DB”** to exports the voltage-current curve to excel file, up to 24 hours document can be recorded.

Click **“DM”**: Backlight brightness, you can set the backlight brightness of the product screen

Click **“DO”**: Quick recall can quickly recall the data group 1-9.

PC Software Installation and Operation Instruction

Requirement: Win 7-Win10 system and the computer has Internet connection.

This PC software is designed by Hangzhou Ruideng technology CO., LTD, it has no virus, if your anti-virus software prompts for a virus warning, please allow all its features, otherwise it will affect the normal operation of the software. PC software supports Win7-Win10 system, and there may be incompatibilities problems, if you really need it, please install and test the software before buying the product. This instruction is made for version 1.0.0.15, there will be little difference between different versions, the version below does not support RK6006. and we do recommend you to download the latest software for better experience.

4.1 Software Download

RK6006 digital power supply file download link:
https://drive.google.com/drive/folders/1V9CMtTBnc4Ww-sNHrabN8522YPYQcrNI?usp=sharing

4.1.1 Unzip Files

The first time you use this software, you need to install the driver program first, you need to click CH341SER to install the driver, right click PC-management-device management-port, see if there is USB-SERIAL CH340(COMXX), if you see that, it means installation is successfully, then insert a Micro USB cable into RK6006 and wait for the computer to install the driver.

4.1.2 Unzip Files

Unzip the file to Disk(D) of the PC. You need to run Net framework4.7.2.exe to install the .Net environment, then click RidenPowerSupply.exe directly to use the software, please do not delete any files.

Name	Date modified	Type	Size
Logo	2021/1/3 16:25	File folder	
Net framework4.7.2.exe	2019/11/1 16:39	Application	1,400 KB
RidenPowerSupply.exe	2021/1/3 17:22	Application	16,911 KB

4.2.1 Software Connection

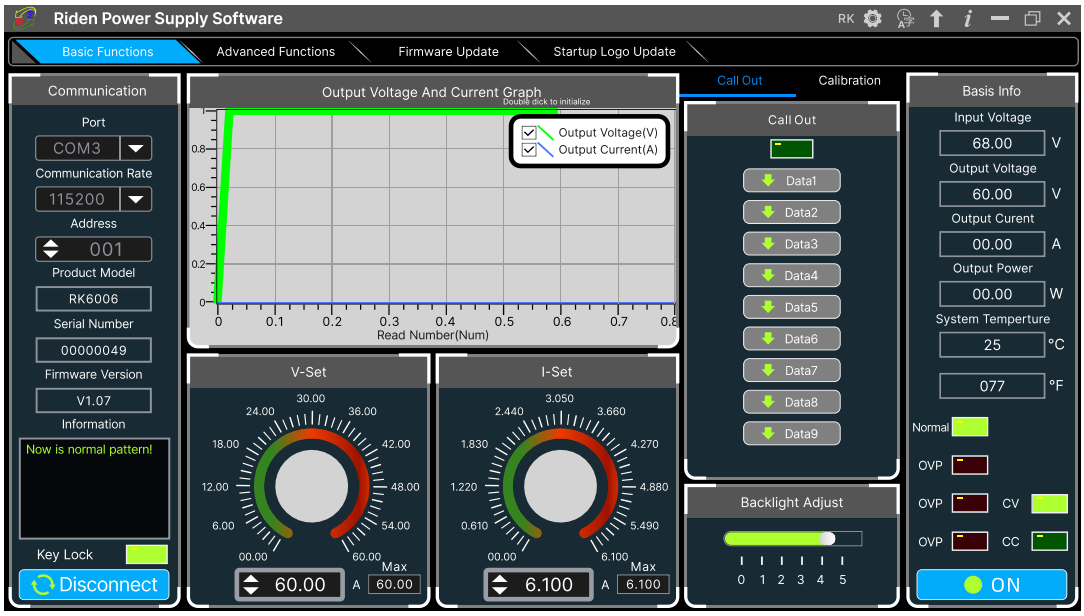
Double click **RidenPowerSupply.exe** to run the PC software.

RidenPower Supply

4.2.2 PC Software Operation Instruction

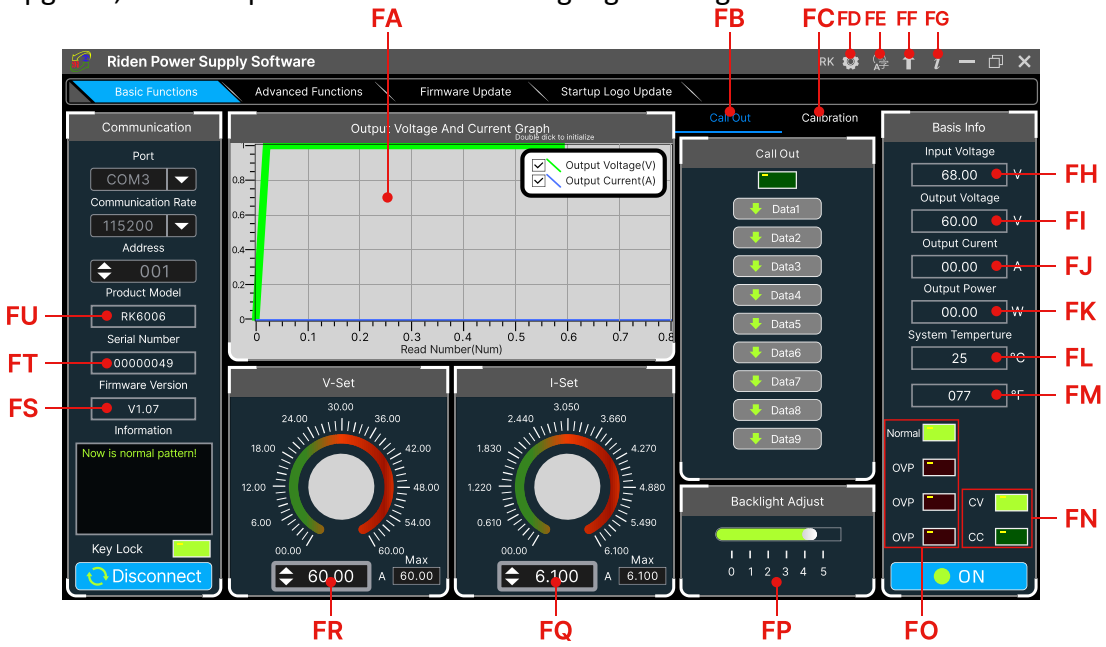
Choose the right communication port, baud rate, slave address (default 001),

click **“CONNECT”** to start communication. If the communication succeeds, the power supply button will be locked automatically, the buttons will automatically unlock after 3 seconds of accidental disconnection, and the **“CONNECT”** turns to **“DISCONNECT”**; Click **“ON”** to turn on the output of the power supply, and it will turn to **“OFF”**.



4.3 Functions Introduction

The PC software interface mainly has basic functions, firmware upgrade, Logo upgrade, version update detection and language setting...



FA: Voltage-Current Curve	FB: Data Group Quick Recall
FC: Calibration	FD: RD//RK/DPS series switch
FE: Language	FF: Software Update
FG: About	FH: Input voltage
FI: Actual Output Voltage	FJ: Actual Output Current
FK: Actual Output Power	FL: System Temperature(℃)
FM: System Temperature(℉)	FN: Constant Voltage/ Constant Current Status
FO: Protection Status Indication	FP: Screen Brightness Setting
FQ: Output Current Preset value	FR: Output Voltage Preset value
FS: Firmware Version	FT: Serial Number
FU: Product Model	

FH: Input voltage equals to AM: Input voltage; FI: Actual Output Voltage equals to AA: Actual output voltage value; FJ: Actual Output Current equals to AB: Actual output current value; FK: Actual Output Power equals to AC: Output power; FL: System Temperature equals to AG: System temperature; FN: Constant Voltage/ Constant Current Status equals to AE: Constant voltage Constant current status indicator; FQ: Output Current Preset value equals to AK: Output current preset value; FR: Output Voltage Preset value equals to AL: Output voltage preset value.

4.3.1 Basic Functions

The basic functions of PC software: **voltage/current preset, data group quick recall, calibration fine tuning, brightness setting, voltage and current curve exporting**. You can rotate the wheel or enter the value to set the **FQ: Output Current Preset value** and **FR: Output Voltage Preset value**, the graph above the button shows the real-time voltage and current curve. You can zoom in and out the curve by using the mouse wheel, double click the curve to auto adjusts the axis, you can right click on the curve to clean the curve or export the curve data to picture or excel.

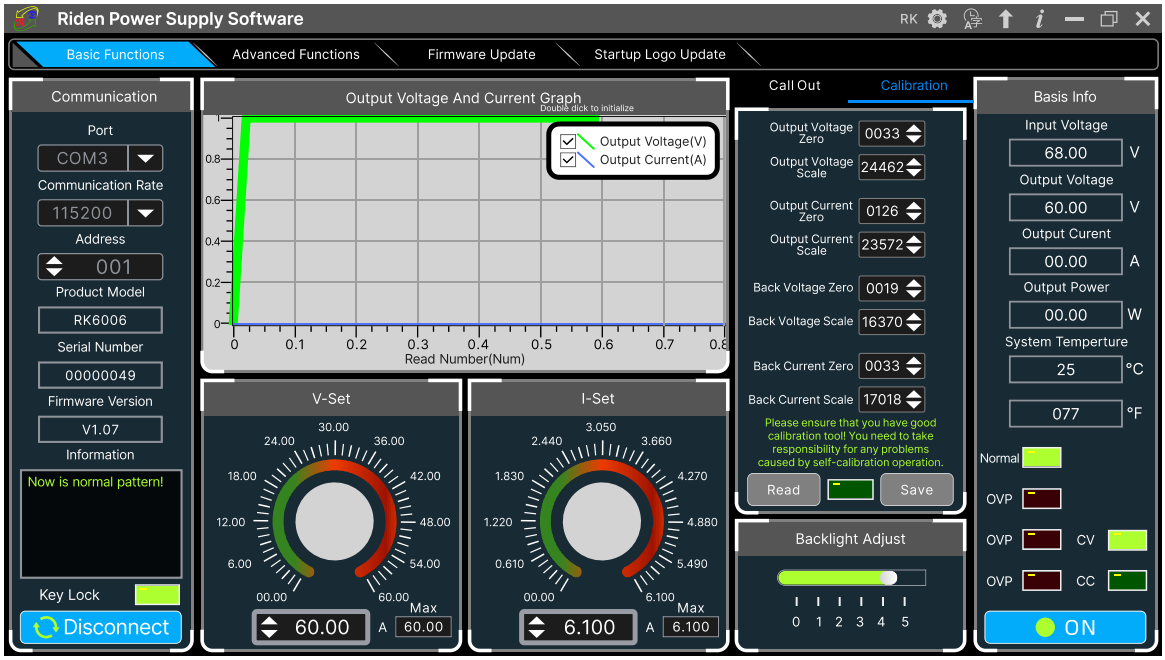
4.3.2 Calibration

The calibration fine-tuning function needs to be operated by a professional electronic person who has more than Six and a half digit multimeter. It will change the system setting, incorrect operation may exceeds the hardware limit and cause damage, and the resulting damage is not covered in the warranty! The limit error of the product is generally much smaller than the nominal error, when the error is close to or even higher than the nominal error, you need to check if the measuring instrument is accurate.

Click **“Calibration”** and enter the password “168168”, you can enter the Calibration Fine Tuning page or save the adjustment data(if you enter the password, by default you have accepted the above red letter agreement). It can read the calibration data after connection; click the arrow to fine tuning the data. According to the linear function y=kx+b, the constant b is equivalent to the zero value, the slope k is equivalent to the proportional value, adjust this two values so that the data will be close to the real test value.

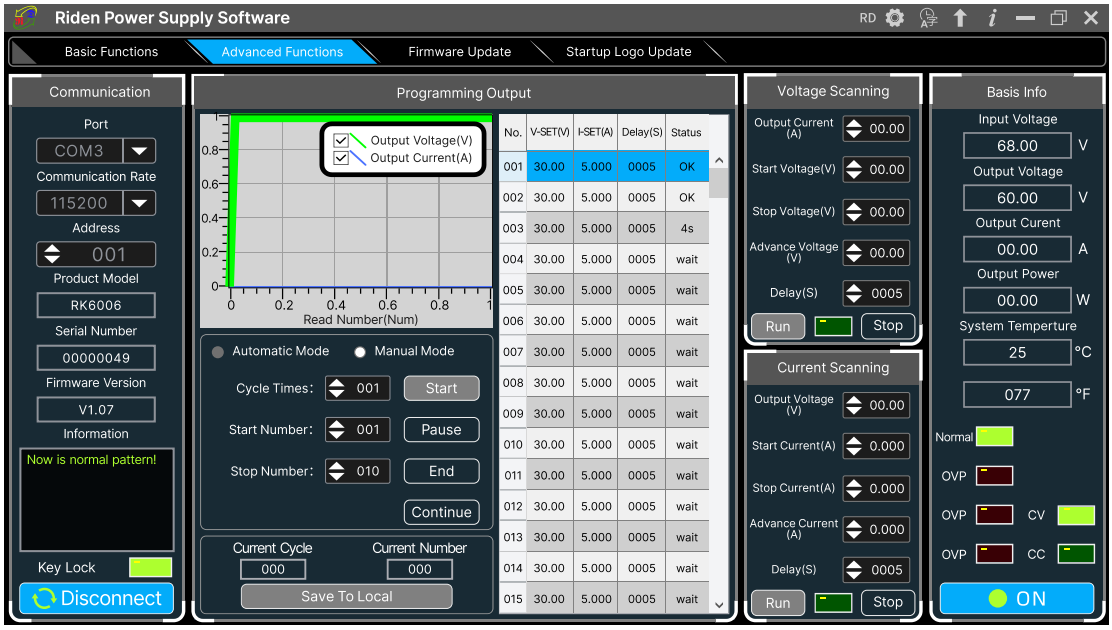
Set the output voltage at 1V, adjust the output voltage zero point to make the multimeter display close to 1V, and then set the output voltage at 30V, adjust the output voltage proportional value to make the multimeter display close to 30V. In the same way you can set 0.1A and 3A output current to calibrate the zero point and proportional value of the output current.

Set the output voltage at 1V and calibrate the actual output voltage zero point to make the actual output voltage displayed on RK6006 close to the value on multimeter. You can set 30V and calibrate the proportional value of actual output voltage. In the same way you can set 0.1A and 3A to calibrate the zero point and proportional value of the actual output current. (This section does not provide technical support. If you do not understand, please check the related information).



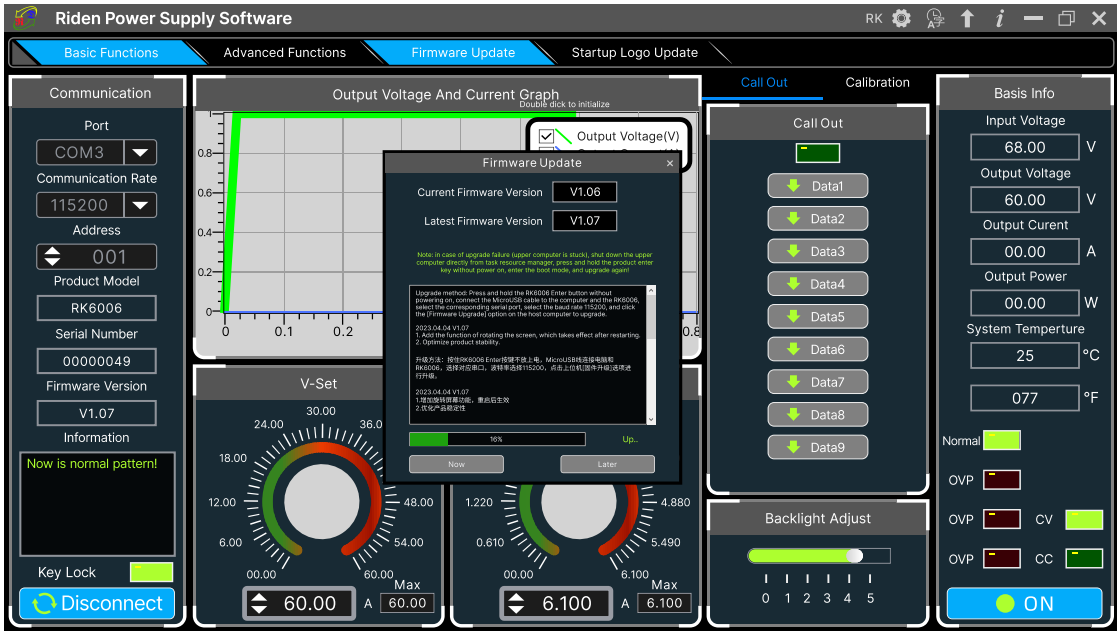
4.3.3 Advanced Function

You can set the output voltage and current by chart in the advanced function page, you can set every step between 1 and 9999 seconds, you can set 200 steps max, it can output automatically or manually. You cannot choose other operation page when it performs programming output or other operations, you can only switch other page when it ends.



4.3.4 Firmware Update

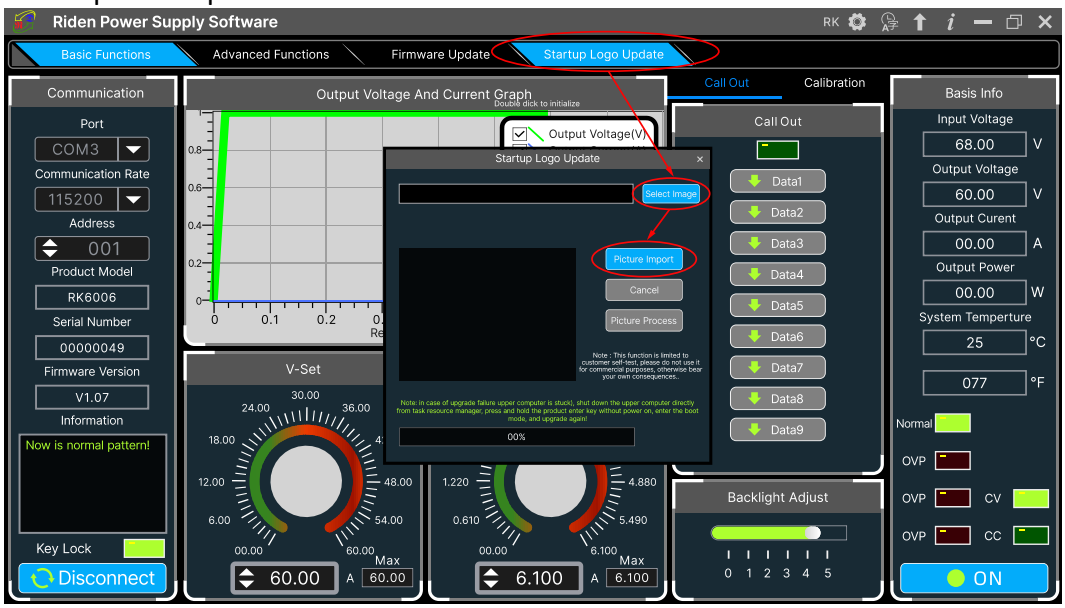
Press and hold ENTER and power on RK6006, enter the boot mode, then connect it to computer, there will be “boot mode” in the mode information text box, then click **“Firmware Update”**, a firmware update prompt will pop up on the interface, and click “**Now**” to upgrade. (You can update the firmware under the normal mode, if it cannot be started up normally, you should press and hold the **“ENTER”** button and power on, update it under boot mode. It doesn’t support firmware update under Bluetooth connection mode).



4.3.5 Boot Logo Update

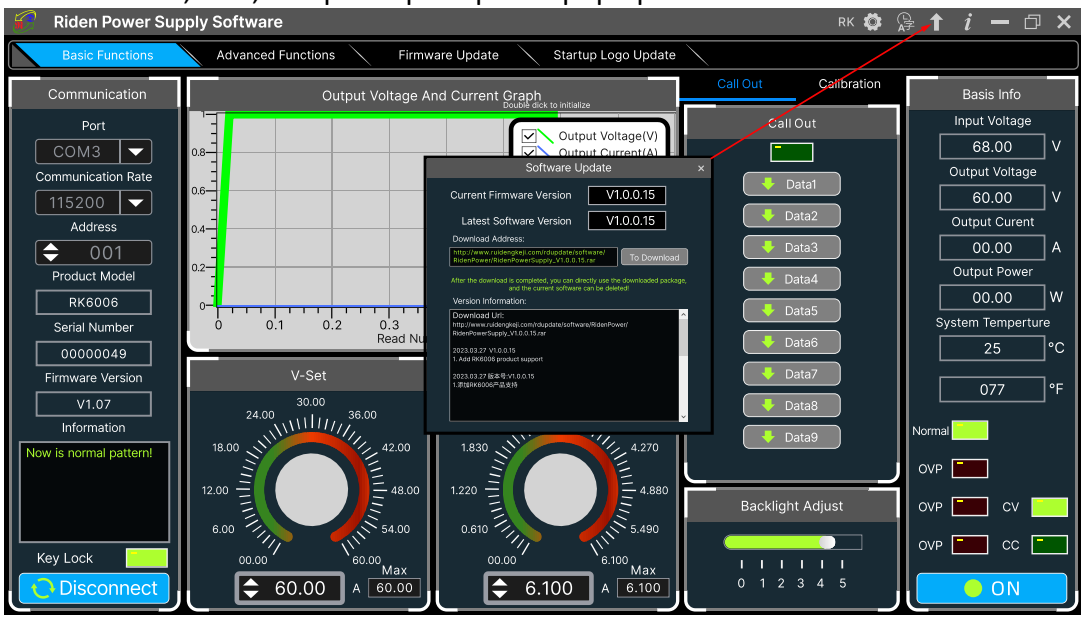
Click **“Start Logo Update”**, a Logo upgrade prompt will pop up on the page, please select a picture. Some logo samples can be used in the installation package.

Click “**Picture Process**” to make non-standard picture into 240*240 picture, save and import the picture.



4.3.6 Version Update Detection

Click **“FF”(“Software Update”),** the software will automatically detect if there is a new version, if so, an update prompt will pop up on the interface.



4.3.7 Language Setting

Click **“FE”(“Language”)**, a language setting prompt will pop up on the interface, you can choose Simplified Chinese, English, France and German.

4.3.8 About

Click **“FG”(“About”)**, you can check the version number, publish time and copyright Information.