

# Owner's Manual

## Warning & Danger

### SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

 This manual contains important safety and operating instructions – read before using charger.

**Warning:** Use charger only with an algorithm selected that is appropriate to the specific battery type. Other usage may cause personal injury and damage. Lead acid batteries may generate explosive hydrogen gas during normal operation. Keep sparks, flames, and smoking materials away from batteries. Provide adequate ventilation during charging. Never charge a frozen battery. Study all battery manufacturers specific precautions, ie. maximum charge rates and if cell caps should be removed while charging.

**Danger:** Risk of electric shock. Connect charger power cord to an outlet that has been properly installed and grounded in accordance with all local codes and ordinances. A grounded outlet is required to reduce risk of electric shock – do not use ground adapters or modify plug. Do not touch uninsulated portion of output connector or uninsulated battery terminals. Disconnect the AC supply before making or breaking the connections to the battery. Do not open or disassemble charger. Do not operate this charger if the AC supply cord is damaged or if the charger has received a sharp blow, been dropped, or otherwise damaged in any way—refer all repair work to the manufacturer, or qualified personnel. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

### INFORMATIONS IMPORTANTES DE SÉCURITÉ

 Ce manuel contient des instructions importantes concernant la sécurité et le fonctionnement.

**Attention:** Utiliser le chargeur seulement avec un algorithme approprié au type spécifique de batterie. D'autres types de batteries pourraient éclater et causer des blessures ou dommages. Les batteries peuvent produire des gaz explosifs en service normal. Ne jamais fumer près de la batterie et éviter toute étincelle ou flamme nue à proximité des batteries. Fournissez une ventilation adéquate du chargement. Ne jamais charger une batterie gelée. Prendre connaissance des mesures de précaution spécifiées par le fabricant de la batterie, p. ex., vérifier s'il faut enlever les bouchons des cellules lors du chargement, et les taux de chargement.

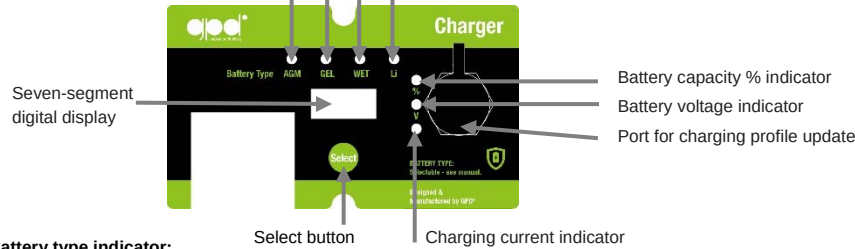
**Danger:** Risque de chocs électriques. Ne pas toucher les parties non isolées du connecteur de sortie ou les bornes non isolées de la batterie. Toujours connecter le chargeur à une prise de courant mise à la terre. Déconnectez la source AC avant de faire ou défaire les connexions à la batterie en chargement. Ne pas utiliser le chargeur si le cordon d'alimentation AC est endommagé ou si le chargeur est abîmé suite à une chute ou autre incident. Ne pas ouvrir ni désassembler le chargeur – référer toute réparation aux personnes qualifiées. Cet appareil n'est pas destiné à un usage par des personnes (dont les enfants) avec des facultés motrices, sensorielles ou mentales réduites, ou ayant une expérience et des connaissances insuffisantes, à moins qu'elles sont sous la supervision ou reçoivent les instructions sur l'utilisation de l'appareil d'un répondant garant de leur sécurité. Les enfants devraient être surveillés afin qu'il ne jouent en aucun temps avec l'appareil.

## Operation Instructions

### 1. LED indicator and seven-segment digital display

Connect the charger to the battery. Turn on the mains. The charger enters the charging mode (the battery type indicator shows the default battery type). The status indicator - % Percent, Battery Voltage, Charging Current and the seven-segment digital display will show the charging status.

Battery type indicators



#### 1.1 Battery type indicator:

**AGM indicator is on:** current battery type is AGM battery

**WET indicator is on:** current battery type is Lead Acid battery

**Operation method:** Press & hold the Select button for 5 seconds to release, the default charging profile code flickers on the digital display. Light press 1 second to release, switch the charging profile code, such as selecting the charging curve code, holding the Select key for 5 seconds, flashing the charging profile code, releasing the button, and completing the battery setting. If you need to change, please repeat the above operation.

**Note:** Each operation interval is 5 seconds. If the operation interval exceeds 5 seconds, it will automatically return to the default setting.

#### 1.2 Status indicator and seven-segment digital display:

**% Percent:** Battery capacity % indicator. i.e. 10, 20, 30..... 100 (%)

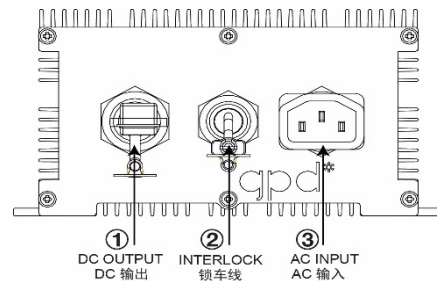
**Battery Voltage (V):** Battery voltage indicator. i.e. 24.0(V)

**Charging Current (A):** Charging current indicator. i.e.15 (A)

### 2 The instruction for cable connection:

1 Connect the battery. 2 Interlock Cable (When charger is charging, the interlock cables will form an open circuit with no voltage. When charger is not charging, the interlock cable will form a short circuit with no voltage).

3. Connect AC input wires. **Warning:** Assure the battery connection cable is well connected with the charger before it is connected to the battery. Otherwise, the battery short circuit may occur and cause personal injury or damage to the battery.



## Fault Indicator

| fault code | Fault Cause                                                                                                                                                                            | Solution                                                                                                                                                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E01        | The battery is not well connected or battery reversely connected or battery damaged.                                                                                                   | 1) Check battery connection is correct.<br>2) Check charger connection is correct.<br>3) Check each battery is good..                                                                                                                                   |
| E02        | Abnormal AC Power Input (Voltage).                                                                                                                                                     | 1) Check AC input cord is connected between charger and AC outlet.<br>2) Make sure AC plug is tightly inserted into AC outlet.                                                                                                                          |
| E03        | Charger High Temperature Protection.                                                                                                                                                   | 1) Charger shuts down and enters protection mode due to charger/environmental temperature is too high. Please place the charger in a well-ventilated environment.<br>2) Disconnect the charger and wait for 15-20mins before reconnecting for charging. |
| E04        | Battery High Temperature Protection.                                                                                                                                                   | 1) Charger will reduce current even stop charging to prevent the battery from overheating when battery temperature exceeds the preset value.<br>2) When the battery temperature drops, the charger will restart automatically.                          |
| E05        | 1) Discharging activities during charging cycle.<br>2) Battery low voltage detected during charging cycle.<br>3) Output current is too high (E05 will reappear even after unit reset). | 1) Make sure no discharging activity during charging operation.<br>2) Reset charger (disconnect AC power and reconnect for a 2nd charge cycle).<br>3) If E05 reappear within 10 minutes, please return charger to factory for repairing.                |
| E06        | Battery Voltage is too high.                                                                                                                                                           | Check and assure that the correct output battery voltage is connected.                                                                                                                                                                                  |
| E07        | Internal error in product.                                                                                                                                                             | Return to the factory for repairing.                                                                                                                                                                                                                    |

## Maintenance Instructions

- Do not expose charger to oil, dirt, mud or direct heavy water spray when cleaning vehicle.
- The enclosure of the charges has been tested successfully to IEC 60529, meeting IP66.
- If the detachable input power supply cord set is damaged, replace with a cord that is a safety approved detachable cord, 3 conductor, 1.5 mm<sup>2</sup> minimum, and rated appropriate for use in the country of destination and, on the other end, an output grounding type IEC 60320 C14 plug.

## Product Specifications

| Model                     |                       | GPCC1524                         | GPCC1724      | GPCC2724         | GPCC3012        | GPCC1348         |
|---------------------------|-----------------------|----------------------------------|---------------|------------------|-----------------|------------------|
| DC Output                 | Voltage-Range(V)      | 0-34V                            | 0-34V         | 0-34V            | 0-17V           | 0-68V            |
|                           | Current-Range(V)      | 0-15A                            | 0-17A         | 0-27A            | 0-30A           | 0-13A            |
|                           | Output Power(W)       | 510W                             | 578W          | 918W             | 510W            | 884W             |
|                           | Power Error(%)        | 1%                               |               |                  |                 |                  |
|                           | Applicable to Battery | AGM, WET, GEL, Lithium           |               |                  |                 |                  |
|                           | Reverse Polarity      | Electronic protection-auto-reset |               |                  |                 |                  |
| AC Input                  | Short Circuit         | Electronic protection-auto-reset |               |                  |                 |                  |
|                           | Voltage-Range(V)      | 100-240V                         |               |                  |                 |                  |
|                           | Frequency(Hz)         | 50-60Hz                          |               |                  |                 |                  |
|                           | Current-max(A)        | 4.5A                             | 5A            | 7A               | 4.5A            | 7.5A             |
| Full Load AC Power Factor |                       | >0.98                            |               |                  |                 |                  |
| Dimensions                |                       | 21.8*15.2*8.1cm                  | 21.8*18*8.1cm | 21.8*15.2*13.2cm | 21.8*15.2*8.1cm | 21.8*15.2*13.2cm |
| Weight                    |                       | 2.8KG                            | 2.8KG         | 3.6KG            | 2.8KG           | 3.6KG            |
| Operating Temperature     |                       | -40℃~+65℃                        |               |                  |                 |                  |
| Storage Temperature       |                       | -40℃~+70℃                        |               |                  |                 |                  |

## Battery category and program code contrast table

| Numbering | Manufacturer | Battery Model           |
|-----------|--------------|-------------------------|
| b01       | Generic      | Common type of Flooded  |
| b06       | Trojan       | Trojan 30XHS            |
| b46       | Fullriver    | DC85-12                 |
| b47       | Fullriver    | DC115-12_(Float-Mode)   |
| b48       | Discover     | EV31A-A                 |
| b77       | US Battery   | US 27DC XC2             |
| b78       | Super B      | SB12V160E-ZC            |
| b79       | Trojan       | 24TMX                   |
| b80       | Trojan       | 27TMH                   |
| b81       | Fullriver    | DC115-12_(3-Stage-Mode) |

# 使用说明书

## 一、警告信息

请在使用本产品前详细阅读使用说明书，理解这些安全指导,并保存好此说明书以方便取阅。

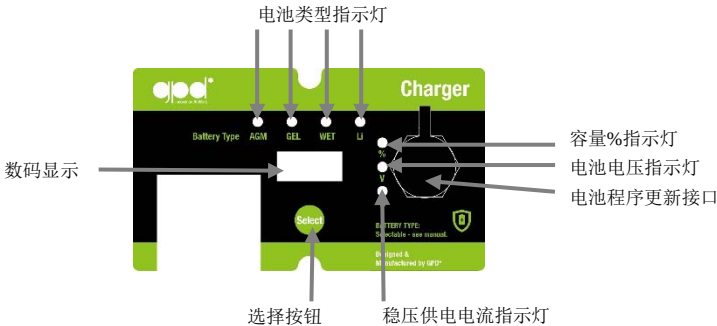
警告：只可以使用稳压电源系统中可选择的稳压供电程序来选取适当的电池类型。其它的使用可能会造成人身伤害或稳压电源的损坏。在稳压供电的过程中，铅酸电池可能产生爆炸性的氢气，请远离火花、火焰。或易燃易爆的物体。在稳压供电过程中，保持通风良好，在有对流的环境下工作。不可充冰冻电池。阅读所有电池厂商的注意事项，比如：稳压供电速度及可单独稳压供电或不可单独稳压供电的电池单元。

危险：冒电击的危险，连接稳压电源输入线的插座必需是按当地安规条例安装有地线的插座，接地良好的插座减少电击的危险。不能接转接器或更改过的插头。不要用手接触稳压电源输出端非绝缘部分和电池端非绝缘部分。当稳压电源正在稳压供电时，需要断开 AC 线，才可以终止电池连接。不可打开或拆散稳压电源。假如 AC 线损坏或是稳压电源被重击、跌落地下，以及其它的任何情况下损坏，都不可使用稳压电源。有关修理工作，请让有相关资格证的人员进行。有精神缺陷或缺乏使用经验和安全知识者勿用此机器，除非在专人监督和指导下安全使用。不可让小孩使用稳压电源。

## 二、操作说明

### 1. LED 指示灯和数码显示

将稳压电源与电池连接好，接通市电，稳压电源进入稳压供电模式（电池类型指示灯显示默认电池类型）；状态指示灯: % Percent, Battery Voltage, Charging Current 及数码显示会循环显示稳压供电状态。



#### 1.1 电池类型指示灯：

AGM 指示灯亮：当前电池类型为 AGM 电池

GEL 指示灯亮：当前电池类型为 GEL 电池

WET 指示灯亮：当前电池类型为 WET 电池

Li 指示灯亮：当前电池类型为 Lithium 电池

操作方法：1.按住 Select 键 5 秒松开，数码显示默认电池曲线代码闪烁；轻按 1 秒松开，切换电池曲线代码，如选定电池曲线代码，按住 Select 键 5 秒，电池曲线代码快闪，松开按键，电池设置完成。如需更改请重复以上操作。

注：每次操作间隔时间为 5 秒，如操作间隔时间超过 5 秒，会自动回默认设置状态。

#### 1.2 状态指示灯及七段数码显示：

% 容量%指示灯：显示当前供电%，数码显示具体百分比值:10 20 30..... 100 (%)

V 电池电压指示灯：显示当前供电的电池电压，数码显示具体电压值: 24.0 (V)

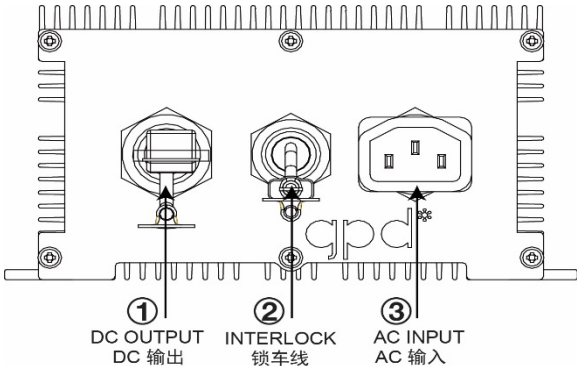
A 稳压供电电流指示灯：显示当前电池的稳压供电电流，数码显示具体电流值: 15 (A)

## 2. 接线示意图

1 连接电池正负极

2 稳压供电锁车线（在稳压供电时，稳压供电锁车线为开路，无电压；不稳压供电时，稳压供电锁车线为短路，无电压）

3 连接 AC 市电



警告：在将电池连接线连接到电池的过程中，请确保电池不被短路，否则可能会造成人身伤害及电池损坏的危险。

## 三、故障显示

| 错误代码 | 故障原因                                                       | 排除办法：                                                                                 |
|------|------------------------------------------------------------|---------------------------------------------------------------------------------------|
| E01  | 输出没接电池或接反，短路，坏节。                                           | 1)检查电池组是否连接正确。<br>2)检查稳压电源是否连接正确。<br>3)检查电池组中的单个电池是否损坏。                               |
| E02  | 市电不正常（电压。）                                                 | 1)检查 AC 电源线是否连接在稳压电源和 AC 插座之间。<br>2)确保 AC 插头紧插在 AC 插座上无松动。                            |
| E03  | 稳压电源高温保护。                                                  | 1)稳压电源内部或环境温度过高，稳压电源将关闭并进入高温保护模式。请把稳压电源放在通风良好的环境工作。<br>2)断开稳压电源，等 15-20 分钟后再重新连接稳压电源。 |
| E04  | 电池高温保护。                                                    | 1)当电池温度超过预设值后,稳压电源会关闭输出,防止电池继续过热。<br>2)当电池温度下降后,稳压电源会自动重启。                            |
| E05  | 1)充电过程中放电。<br>2)充电过程中，电池电压太低。<br>3)输出电流太高（在重启机器后，E05 仍出现）。 | 1)在充电过程中，确定没有放电。<br>2)重启充电器（断开 AC 电源，重启充电器进行充电）。<br>3)如果重启充电器 10 分钟内再次出现 E05，退回维修。    |
| E06  | 电池电压过高。                                                    | 检查并确保连接正确的输出电池电压。                                                                     |
| E07  | 机器内部错误。                                                    | 退回返修。                                                                                 |

## 四、保养建议

1.洗车时，请勿将稳压电源暴露在有油、污垢、淤泥的场所或用高压水枪直射稳压电源。

2.稳压电源通过 IEC 60529 测试，且符合 IP66 等级。

3.如果可拆卸的输入线损坏，请使用符合安规认证及工业适用等级最小 1.5 平方毫米的 3 芯电源线，线的一端，带地线并符合国家标准的插头，另一端，接地类型 IEC60320C14 的插头。

## 五、产品规格参数

| 型号    |         | GPCC1524               | GPCC1724      | GPCC2724         | GPCC3012        | GPCC1348         |
|-------|---------|------------------------|---------------|------------------|-----------------|------------------|
| DC 输出 | 电压范围    | 0-34V                  | 0-34V         | 0-34V            | 0-18v           | 0-68V            |
|       | 电流范围    | 0-15A                  | 0-17A         | 0-27A            | 0-30A           | 0-13A            |
|       | 最大功率    | 510W                   | 578W          | 918W             | 510W            | 884W             |
|       | 功率误差%   | 1%                     |               |                  |                 |                  |
|       | 适用电池    | AGM, WET, GEL, Lithium |               |                  |                 |                  |
|       | 极性接反    | 自动保护                   |               |                  |                 |                  |
|       | 短路      | 自动保护                   |               |                  |                 |                  |
| AC 输入 | 电压范围    | 100-240V               |               |                  |                 |                  |
|       | 频率      | 50-60Hz                |               |                  |                 |                  |
|       | 最大电流    | 4.5A                   | 5A            | 7A               | 4.5A            | 7.5A             |
|       | 满载时功率因数 | >0.98                  |               |                  |                 |                  |
| 尺寸    |         | 21.8*15.2*8.1cm        | 21.8*18*8.1cm | 21.8*15.2*13.2cm | 21.8*15.2*8.1cm | 21.8*15.2*13.2cm |
| 重量    |         | 2.8KG                  | 2.8KG         | 3.6KG            | 2.8KG           | 3.6KG            |
| 工作温度  |         | -40℃~+65℃              |               |                  |                 |                  |
| 存放温度  |         | -40℃~+70℃              |               |                  |                 |                  |

## 六、电池曲线对应表

| 曲线编号 | 电池品牌       | 电池型号                    |
|------|------------|-------------------------|
| b01  | Generic    | Common type of Flooded  |
| b06  | Trojan     | Trojan 30XHS            |
| b46  | Fullriver  | DC85-12                 |
| b47  | Fullriver  | DC115-12 (Float-Mode)   |
| b48  | Discover   | EV31A-A                 |
| b77  | US Battery | US 27DC XC2             |
| b78  | Super B    | SB12V160E-ZC            |
| b79  | Trojan     | 24TMX                   |
| b80  | Trojan     | 27TMH                   |
| b81  | Fullriver  | DC115-12 (3-Stage-Mode) |