



电池均衡器 HA02 用户手册

产品描述

HA02型电池均衡器用于在串联连接的蓄电池组中，保持每个蓄电池间的充放电平衡，串联连接的蓄电池在工作过程中，由于电池单体的化学成分和温度的差异，会导致两个电池的充放电会有差异。即使在电池闲置时，也会由于自放电程度不同，会导致串联连接的电池间产生不平衡。充电过程中，由于差异的存在，会使一块电池过度充电或放电，而另一块充电或放电不充分，随着的充放电过程的重复进行，这种差异会逐步强化，最终导致电池过早失效。

HA02 电池均衡器是能量转移式均衡器,能够双向对电池进行补偿，当串联连接的蓄电池间电压差超过10毫伏时，电池均衡器开始工作，电流会从电压较高的电池流向电压较低的电池，最终使电池达到平衡，可以长期连接在串联连接的蓄电池中，自动保持蓄电池的平衡状态，无需维护。

产品描述

HA02电池均衡器适用于铅酸电池、磷酸铁锂电池、镍镉或镍氢电池。电压高于 2.4V 即可工作，即电池均衡器可用于单个电池在2.4 V–12V范围的电池，同时可均衡最多 4 个电池。如果电池数量少于 4 个，可将多余的连接线空置（应避免正负极短路），不影响均衡效果，电池的连接方式不受限制，串联并联均可使用，不影响原设备的充放电工作。

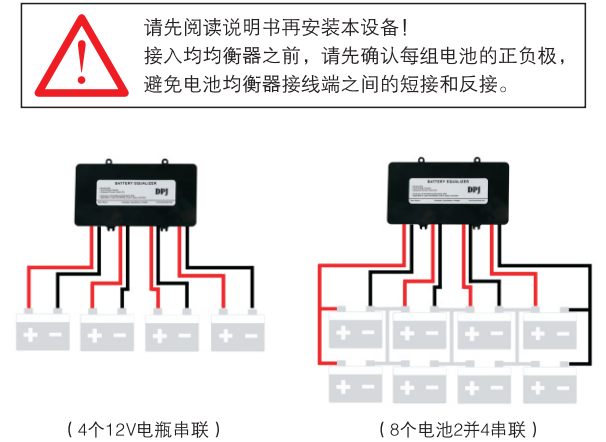
技术参数

电池标称电压	4 × (2.4V/3.6V/6V/9V/12V)
补偿电流	0–10A
待机电流	5mA(12V) 1.2mA(2.4V)
尺寸	62 × 124 × 27 mm
保护	反接保护
锁定电压值	1.8V

连接方式

请按以下顺序连接：

1. 红色线连接电池的正极，黑色线连接电池的负极。
2. 将多个电池分别按以上方式连接（连接顺序不限）。
3. 将不用的电池线处理好，避免短路。



常见问题

1. HA02电池均衡器的工作原理是什么？
HA02均衡器是能力转移式均衡。当串联连接的蓄电池间电压差超过10 毫伏时，电池均衡器开始工作,电流会从电压较高的电池流向电压较低的电池，最大补偿电流是10A。
2. HA02电池均衡器什么时候开始工作？
当2块电池电压差低于10mV的时候，电池均衡器开始工作。
3. HA02电池均衡器在充电的时候可以使用吗？放电也能均衡电压吗？
可以的，电池均衡器可以在充电、放电的时候都可以使用，都能够起到均衡电池电压的作用。
4. HA02电池均衡器能用锂电池吗？
可用铅酸电池、磷酸铁锂电池、镍镉或镍氢电池。
5. HA02电池均衡器能并联或者串联使用吗？
它可以用在2–4块电瓶并联或者串联。



Battery Equalizer HA02 User Manual

APPLICATION

HA02 battery equalizer is used for the batteries which are connected in series to keep the voltage of batteries are equal when the batteries are charging or discharging. When the batteries work in series connection, the batteries voltage maybe will be not same due to the difference of each cell chemical composition and temperature. And each battery's selfdischarge rate also different. So even the batteries not work, their voltage of series batteries will be also different. These differences will cause battery lost balance, this means maybe one battery is overloaded and the other is insufficiently charged. The voltage difference will be increased with the battery repeated charge–discharge process. This will result in premature failure of the batteries.

HA02 battery equalizer is energy transfer type equalizer, it can compensate for batteries with two sides. The equalizer starts to work when there are 10mV between two batteries. The current will flow from a higher voltage to low voltage,eventually reach equilibrium. It can connect with battery system with 24 hours , to keep the system energy balance automatically, no need manual maintenance.

APPLICATION

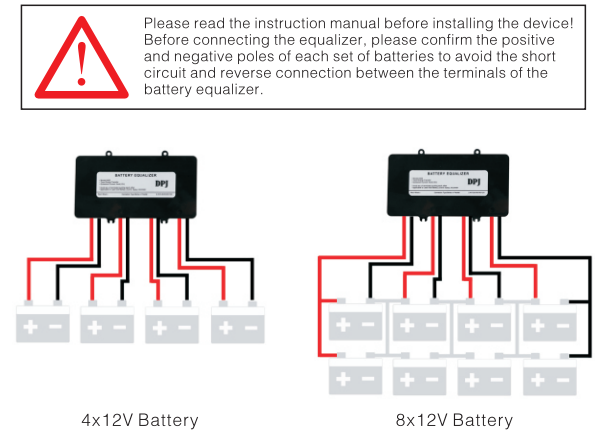
HA02 battery equalizer is suitable for lead–acid batteries(VRLA), lithium iron phosphate batteries(LFP), nickel–cadmium secondary batteries(Ni/CD), and nickel–metal hydride secondary batteries(Ni/MH). It starts work when the voltage higher than 2.4V, it means that this equalizer can be used in a single cell battery range from 2.4V to 12V. One equalizer can connect 4 batteries once a time, if battery less than the 4, the extra cable can be vacant (positive and negative terminal should be avoided), does not affect the equilibrium effects. The equalizer is not affected with battery connection way, no matter in Series or in parallel, both can work.

TECHNICAL DATA

Battery nominal voltage	4 × (2.4V/3.6V/6V/9V/12V)
Optimizing current	0–10A
Quiescent current	5mA(12V) 1.2mA(2.4V)
Dimensions	62 × 124 × 27 mm
Protection	Reverse polarity protection
Under voltage lock out	1.8V

INSTALLATION

1. The red wire connects the positive electrode of the battery. The black wire connects the negative electrode of the battery.
2. Connect multiple batteries in the above manner (unlimited connection order).
3. Dispose unused battery wires to avoid short circuits.



FAQ OF HA02 BATTERY EQUALIZER

1. What is the working principle of the HA02 battery equalizer?
The HA02 battery equalizer is a capability–transferred equalizer. When the voltage difference between the batteries connected in series exceeds 10 mV, the battery equalizer starts to operate and the current flows from the higher voltage battery to the lower voltage battery. The maximum compensation current is 10A.
2. When does the battery equalizer start working?
When the difference between the two battery voltages is less than 10mV, the battery equalizer starts to work.
3. Can the HA02 battery equalizer be used when charging or Discharging?
Yes, the battery equalizer can be used during charging and discharging, and it can balance the battery voltage.
4. Can HA02 battery equalizer use lithium battery?
it could work for lead–acid batteries, lithium iron phosphate batteries, nickel–cadmium or nickel–metal hydride batteries .
5. Can HA02 battery equalizer be used in parallel?
It can be used in parallel or in series with 2–4 batteries.