U
I
OVP
OTP
USB
RS232
CAN

外壳类型 1 / Enclosure type 1 EA-BCI 812-20 R

- 宽范围输入电压90...264 V带PFC
- 输出功率：320 W 至 1500 W
- 输出电压有12 V，24 V与48 V
- 充电电流高达60 A
- 适合于：Li-Ion和Pb，NiCd，NiMH
- 温控充电特性
- 可编程充电特性
- 电源模式
- 图形显示器显示所有数值与状态
- 有短路保护和反接保护
- 有过压保护(OVP)
- 有过温保护(OT)
- 可自动检测的远程感测端
- 模拟接口
- 自然风冷却*或温控风扇制冷**
- 可选件数字接口卡

- **Wide range input 90...264 V**
- **Output power ratings: 320 W up to 1500 W**
- **Typical charging voltages 12 V, 24 V and 48 V**
- **Charging currents up to 60 A**
- **Suitable for: Li-Ion and Pb, NiCd, NiMH**
- **Temperature controlled charging**
- **Programmable charging profiles**
- **Power supply mode**
- **Graphic display for all values and status**
- **Short-circuit and reverse polarity protection**
- **Overvoltage protection (OVP)**
- **Overtemperature protection (OT)**
- **Remote sense with automatic detection**
- **Analog interface**
- **Natural convection for cooling* or temperature controlled fan ****
- **Optional, digital interface cards**

概要
EA-BCI 800 R系列是一款由单片机控制的电池充电器。它具有几乎满足所有需求的多种功能和特点。

图形显示器上的清晰菜单快速、简便地指导用户进行正确的设置。本系列通过可选数字接口可编程、遥控和监控。这样可管理、分析和评估一个或多个电池的所有相关数据。

充电曲线文档
EA-BCI 800 R系列非常适合充Li-Ion电池，也可充铅性、NiCd、NiMH电池。用户可针对特定电池类型轻易配置所需充电曲线。

输出
本系列分别有5 A至60 A充电电流，320 W至1.5 kW功率的多个型号。

远程感测输入端
内置感测输入端可直接连到电池上，以补偿连线上的压降，输出调整后的电压给负载。如果输入端已接上负载，本充电器会自动纠正输出电压，确保电池获得准确所需的电压。

General
The microprocessor controlled battery chargers of the series EA-BCI 800 R have a multitude of functions and features covering all needs.
The clear menu in the graphic display provides a fast and simple guide to correct settings. The chargers can be programmed, remotely controlled and monitored using the optional digital interface cards. Thus all the data for one or more batteries can be administered, analysed and evaluated.

Charging profiles
The chargers in the EA-BCI 800 R series are very suitable for Lithium ion batteries. But also lead, NiCd or NiMH batteries can be charged. The required charging profiles are easily configured by the user for specific batteries.

Output
Chargers with charging currents from 5 A up to 60 A and powers from 320 W up to 1.5 kW are available.

Remote sense
The built-in sensing input can be connected directly to the battery to compensate voltage drops along the power cables and put out the voltage to the load as adjusted. If the sense input is connected to the load, the battery charger will correct the voltage automatically, in order to ensure that the accurate required voltage is available on the battery.

* 600 W以下型号
** 1 kW以上型号

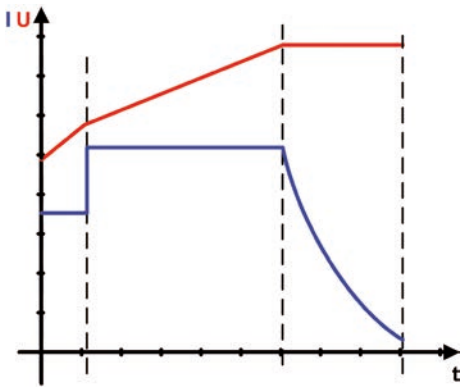
* Models up to 600 W
** Models from 1 kW

锂离子电池的充电循环阶段

针对锂离子电池，可编程修复充电、预充、快充和峰值充电的各项参数。

可编程的参数有：比如充电电压、电流、时间、温度补偿。

按此种方式每个电池可单独充电，从而使使容量和寿命得到最大优化。



还可在允许的可调宽范围内编辑几乎任何电池参数，该项特征使得本产品成为任何类型锂电池的理想充电器。

Charging cycles for Lithium ion batteries

For Lithium ion batteries the parameters for maintenance charge, precharge, fast charge and peak charge are programmable.
Charging voltage, current, time, temperature compensation are some examples of the parameters which can be programmed.
In this way every battery can be individually charged and the capacity and life are optimized.

The possibility to edit virtually any battery parameter within a wide adjustment range makes the chargers ideal for any type of Lithium batteries.

铅酸电池的充电阶段

本产品可用4个充电循环阶段来充液态、GEL或AGM铅酸电池，或者5个循环阶段来充，包含存储和刷新模式。

Charging profile for lead-acid batteries

The devices use either a 4-stage charging cycle for charging lead-acid batteries with liquid, gel or felt soaked (AGM) electrolyte, or a 5-stage cycle which includes a storage and refresh mode.

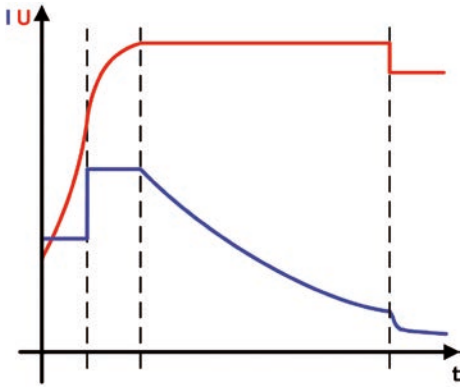
铅酸电池的四个充电阶段

电池接到充电器上后，单片机检测电池极性和电压，确定是否开始充电。如果电池极性错误或完全过放(<0.2 x U_{Nom}) ，则不开始充电。针对过放的电池(>0.2 至 <0.9 x U_{Nom})，则以减小后的电流开始**预充循环阶段**。

然后紧接着**快充阶段**，以全电压和最大电流进行，直到充电电流下降到输出电流的80%以下。

接着进入**补充阶段**，以恒压进行，直到电流下降到额定充电电流的15%，或已完成12个小时充电时间而结束。

第四阶段是**涓充阶段**，此时一直保持给电池充电。



Four step charging for lead-acid batteries

After connecting the battery, the microprocessor checks the polarity and voltage of the battery, and determines if and when the charging process should begin. False polarity or complete discharge (<0.2 x U_{Nom}) will not be charged. Deeply discharged batteries (>0.2 to <0.9 x U_{Nom}) start with a **precharge cycle** and reduced current.
This stage is followed by a **boost charge**, using full power and maximum current until the charging current sinks below 80% of the nominal current.
There follows an **absorption charge** at constant voltage until either the current has fallen below 15% or a charging time of 12 hours is reached.
The fourth stage is a **trickle charge** in which the total charge in the battery is kept constant.

铅酸电池的五个充电阶段

如果电池长时间与充电器相连，且没有释放任何能量，24小时后存储的电量会减少。此时以较低电压对闲置电池进行储存充电，可以延长电池寿命。定期的维护充电可修复电池以补偿自放电释放的电量。

Five step charging for lead-acid batteries

If a battery remains connected to a charger for a long period without delivering any energy, the maintenance charge is reduced after 24 hours. This storage charge with reduced voltage for an unused battery leads to a longer battery life. At regular intervals the maintenance charge refreshes the battery to compensate for auto discharge.

温度补偿充电循环

电池充电时建议装一温度感测器，它能根据电池的温度调节电压，从而限制危险气体的释放以及过充。

针对NiCd 和 NiMH电池，该温度感测器不仅可以帮助识别充满状态，还可防止危险气体的释放。

Temperature compensated charging cycles

It is recommended that a temperature sensor is used for lead-acid battery charging. The charging voltage can then be adjusted to the temperature of the battery thus limiting the emissions of dangerous gases and overcharging.
For NiCd and NiMH batteries a temperature sensor can help not only with fully-charged recognition, but also as protection against dangerous gas emission.

模拟接口

模拟输入脚上有温度补偿功能。想要监控充电电压和电流，需在模拟输出脚接上0 V...10 V电压。此外，还有数个数字输入脚和输出脚，可用来控制和监控产品状态。

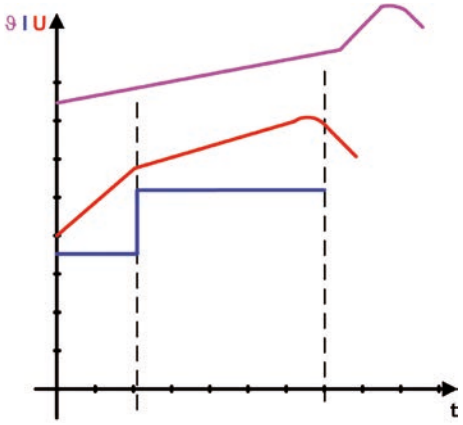
Analog interface

An analog input for temperature compensation is available. For monitoring the charging voltage and current, analog outputs are available with voltages of 0 V...10 V. Several digital inputs and outputs are available for controlling and monitoring the status.

LNiCd和NiMH电池的充电循环阶段

针对NiCd 和 NiMH电池，可对预充、主充和后续充进行编程。另外，充满识别条件可选择ΔU 或ΔT或两者的结合。

可编程参数有，例如：充电电压、电流、时间、温度补偿。按此种方式每个电池都可单独充电，从而使充满容量和寿命达到最优。由于对电池充电器所有参数进行编程的特点，使得产品适合所有类型的NiCd 和 NiMHH电池。

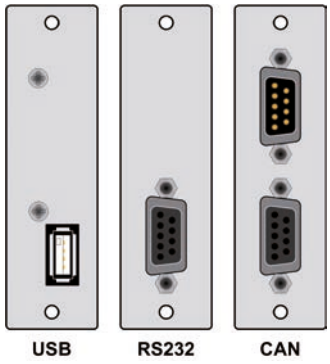


Charging cycles for NiCd and NiMH batteries

For NiCd and NiMH batteries the parameters for precharge, main charge and post charge are programmable. In addition the recognition of fully-charged can be selected as either ΔU or ΔT or as a combination of both.
Charging voltage, current, time, temperature compensation are some examples of the parameters which can be programmed. In this way every battery can be individually charged and the capacity and life optimised. The possibility of programming the battery charger for all parameters makes it suitable for all types of NiCd and NiMH batteries.

可选项

- 经RS232，CAN或USB隔离数字接口可远程控制和监控本产品。在产品前方有一接口卡插槽。也可见136页。针对客户自己的编程，还有LabView VIs。

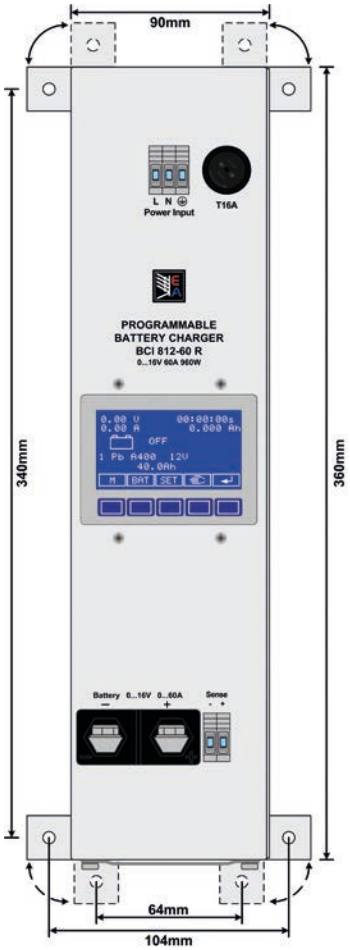


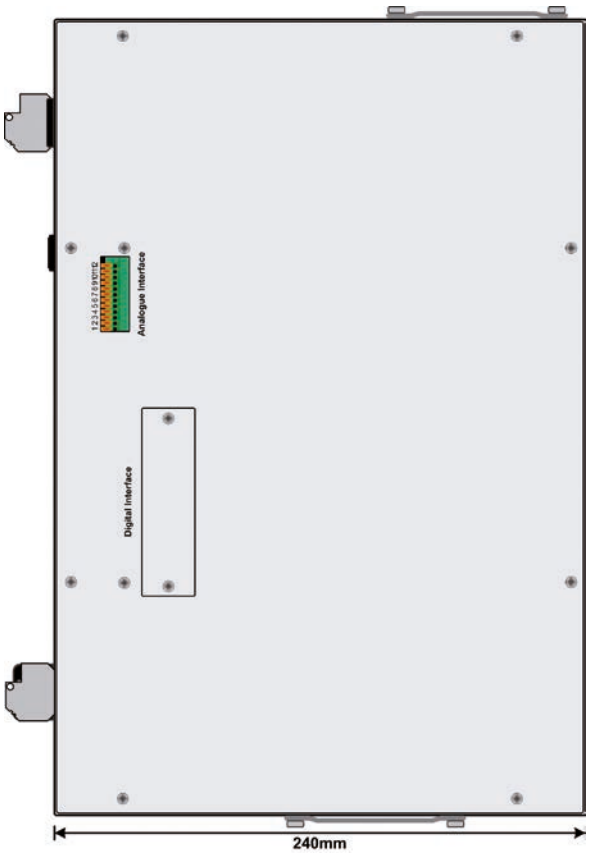
Options

- The devices are remotely controllable via isolated, digital interface cards for RS232, CAN or USB. There is an interface slot available on the devices. Also see page 136. LabView VIs are also available for custom programming.

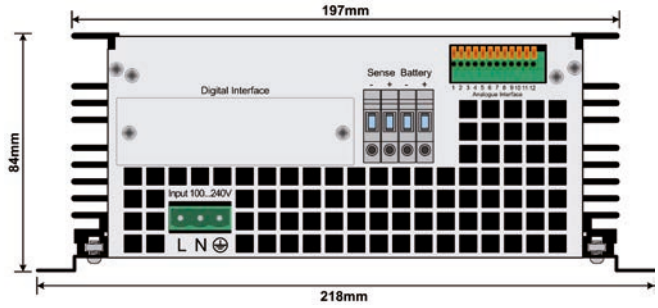
技术参数	Technical Data	Series EA-BCI 800 R / 系列
AC输入电压	**Input voltage AC**	90...264 V, 1ph+N
-频率	- Frequency	45...65 Hz
-功率因数	- Power factor	>0.99
输出：DC电压	**Output: Voltage DC**	
-精确度	- Accuracy	<0.2%
- 0-100% 的负载调整率	- Load regulation 0-100% load	<0.05%
- ±10% ΔU_{AC}的线性调整率	- Line regulation ±10% ΔU_{AC}	<0.02%
-负载10%-100%调整需时	- Regulation 10-100% load	<2 ms
-过压保护值	- Overvoltage protection	可调 / adjustable
输出：电流	**Output: Current**	
-精确度	- Accuracy	<0.2%
- 0-100% 的负载调整率	- Load regulation 0-100% load	<0.15%
- ±10% ΔU_{AC}的线性调整率	- Line regulation ±10% ΔU_{AC}	<0.05%
过压类别	Overvoltage category	2
污染等级	Pollution degree	2
保护级别	Protection class	1
模拟编程	Analog programming	启动，停止，温度感测 / Start, Stop, Temperature sensor
制冷方式	Cooling	320 W-640 W：自然通风；自1000 W起：风扇 / Models 320 W-640 W: Convection, models from 1000 W: Fan
安规标准	Standards	EN 60950, EN 61326, EN 55022 级别 B / Class B
工作温度	Operation temperature	0...50°C
储存温度	Storage temperature	-20...+70°C
相对湿度	Relative humidity	<80%, 无凝露 / <80%, non-condensing

型号	充电电压	充电电流	功率	U纹波	I纹波	尺寸 WxHxD	安装尺寸 WxHxD	外壳类型	重量	订购编号
Model	**Charging voltage**	**Charging current**	**Power**	**Ripple U**	**Ripple I**	**Dimensions WxHxD**	**Installation dimensions WxHxD**	**Enclosure type**	**Weight**	**Ordering number**
BCI 812-20 R	12 V	max. 20 A	320 W	<40 mV_{PP}	<60 mA_{PP}	218x163x83 mm	218x190x85 mm	1	2.2 kg	27150401
BCI 824-10 R	24 V	max. 10 A	320 W	<100 mV_{PP}	<35 mA_{PP}	218x163x83 mm	218x190x85 mm	1	2.2 kg	27150402
BCI 848-05 R	48 V	max. 5 A	320 W	<150 mV_{PP}	<12 mA_{PP}	218x163x83 mm	218x190x85 mm	1	2.2 kg	27150403
BCI 824-20 R	24 V	max. 20 A	640 W	<100 mV_{PP}	<65 mA_{PP}	218x163x83 mm	218x190x85 mm	1	2.2 kg	27150404
BCI 848-10 R	48 V	max. 10 A	640 W	<150 mV_{PP}	<25 mA_{PP}	218x163x83 mm	218x190x85 mm	1	2.2 kg	27150405
BCI 812-40 R	12 V	max. 40 A	640 W	<10 mV_{PP}	<19 mA_{PP}	90x360x240 mm	90x370x265 mm	2	6.5 kg	27150406
BCI 812-60 R	12 V	max. 60 A	1000 W	<10 mV_{PP}	<19 mA_{PP}	90x360x240 mm	90x370x265 mm	2	6.5 kg	27150407
BCI 824-40 R	24 V	max. 40 A	1500 W	<10 mV_{PP}	<19 mA_{PP}	90x360x240 mm	90x370x265 mm	2	6.5 kg	27150408
BCI 824-60 R	24 V	max. 60 A	1500 W	<10 mV_{PP}	<19 mA_{PP}	90x360x240 mm	90x370x265 mm	2	6.5 kg	27150409
BCI 848-40 R	48 V	max. 40 A	1500 W	<10 mV_{PP}	<19 mA_{PP}	90x360x240 mm	90x370x265 mm	2	6.5 kg	27150410





外壳类型 2
Enclosure type 2



外壳类型 1
Enclosure type 1