

## 30W Green Adaptor with Charging Function

- Universal AC input / Full range
- Class II power (without earth pin)
- **No load power consumption < 1W**
- Constant current and voltage (CC, CV mode)
- High reliability
- Suitable for high surge current equipment
- Protections: Short circuit / Overload / Over voltage / Over temp.
- 2 color LED indicator for charging status
- Fully enclosed plastic case
- 2 years warranty



AC input voltage range ..... 90~264VAC; 127~370VDC  
 Overload protection ..... 90%~110% constant current mode and over 300% pulsing mode  
 Over voltage protection ..... 110%~135% rated output voltage  
 Withstand voltage ..... I/P-O/P: 3kVAC, 1minute  
 Working temperature ..... 0~+50°C (refer to output derating curve)  
 Safety standards ..... UL60950-1, CSA 22.2, TUV EN60950-1 approved  
 EMC standards ..... EN55014-1, EN61000-3-2,3, EN61000-4-2,3,4,5,6,11  
 Length of output cable ..... 120cm of UL1185, 16AWG for 4.2~8.4V  
 180cm of UL1185, 18AWG for 14.3~28.6V  
 Standard DC plug ..... P1J: 2.1x5.5x11mm / C+, tuning fork type

Order No.	Output	R&N	Effi.
GC30□-0P1J	4.2V, 0~4.00A	50mV	55%
GC30□-1P1J	5.6V, 0~3.99A	50mV	70%
GC30□-11P1J	7.2V, 0~3.00A	80mV	74%
GC30□-2P1J	8.4V, 0~3.00A	80mV	76%
GC30□-4P1J	14.3V, 0~2.09A	100mV	78%
GC30□-5P1J	16.8V, 0~1.60A	100mV	78%
GC30□-6P1J	28.6V, 0~1.04A	150mV	80%

□ = B / U / E ; B: IEC320-C8, U: American 2P, E: European 2P

## 120W Green Adaptor with Charging Function



AC input voltage range ..... 85~264VAC; 120~370VDC  
 Overload protection ..... 90~110% constant current, auto-recovery  
 Over voltage protection ..... 105%~135% shut down O/P voltage, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC  
 Working temperature ..... -30~+70°C (refer to derating curve)  
 Safety standards ..... UL1012 (GC120Axx-AD1 only), EN60950-1 approved  
 EMC standards ..... EN55022 class B, FCC part 15 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11  
 Length of output cable ..... 120cm of UL2464, 18AWGx 4C  
 Standard DC plug ..... Power DIN 4P with lock type (R7B)

Model No.	Output	Effi.
GC120A12-□	13.6V, 7.5A	86.5%
GC120A24-□	27.2V, 4.42A	90.0%
GC120A48-□	54.4V, 2.21A	91.0%

□ = R7B / AD1 ; R7B= 4 pin power din, AD1= Anderson connector

## 160W Green Adaptor with Charging Function



AC input voltage range .... 85~264VAC; 120~370VDC  
 Overload protection ..... 90%~110% constant current, auto-recovery  
 Over voltage protection .... 105%~135% rated output voltage, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC  
 Working temperature ..... -30~+70°C (refer to derating curve)  
 Safety standards ..... UL1012(GC160Axx-AD1 only), EN60950-1 approved  
 EMC standards ..... EN55022 class B, FCC part 15 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11  
 Length of output cable ..... 120cm of UL2464, 18AWGx 4C  
 Standard DC plug ..... Power DIN 4P with lock type (R7B)

Model No.	Output	Effi.
GC160A12-□	13.6V, 10.0A	89.0%
GC160A24-□	27.2V, 5.89A	92.5%
GC160A48-□	54.4V, 2.95A	94.0%

□ = R7B / AD1 ; R7B= 4 pin power din, AD1= Anderson connector

## 218W & 326W Green Adaptor with Charging Function



	GC220	GC330
Case (mm)	210x85x46	220x95x46
Connector		

AC input voltage range ..... 90~264VAC; 127~370VDC  
 Overload protection ..... 90%~110% constant current, auto-recovery  
 Over voltage protection ..... 105%~135% rated output voltage, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC  
 Working temperature ..... -30~+60°C (refer to output derating curve)  
 Safety standards .... GC220: TUV EN60950-1, UL1012 (GC220Axx-AD1 only) approved  
 GC330: TUV EN60950-1, UL60950-1 approved  
 EMC standards ..... EN55022 class B, FCC part 15 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11  
 Length of output cable ..... 100cm of UL2464, 16AWGx 4C  
 Standard DC plug ... GC220: Power DIN 4P with lock type (R7B)  
 GC330: 4P/6.35mm pitch, AMP 1-480702-0 (power supply side); AMP 1-480703-0 (customer side)

### GC220 Series

Model No.	Output	Effi.
GC220A12-□	13.6V, 13.5A	89.0%
GC220A24-□	27.2V, 8A	92.5%
GC220A48-□	54.4V, 4A	93.0%

□ = R7B / AD1 ; R7B= 4 pin power din, AD1= Anderson connector

### GC330 Series

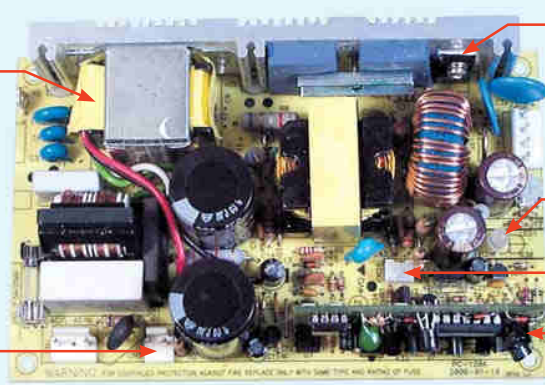
Model No.	Output	Effi.
GC330A36-C4P	40.8V, 8A	93.5%
GC330A48-C4P	54.4V, 6A	93.5%



PCB Type: 144x 90x 35 mm  
External Case Type: 180x 96x 49 mm

Power Factor Correction Choke

115 / 230 Selectable



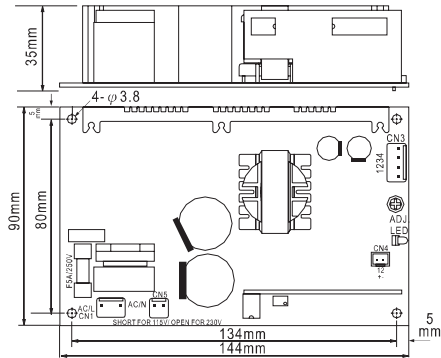
Output Diode of Charger

2 Color LED Indication

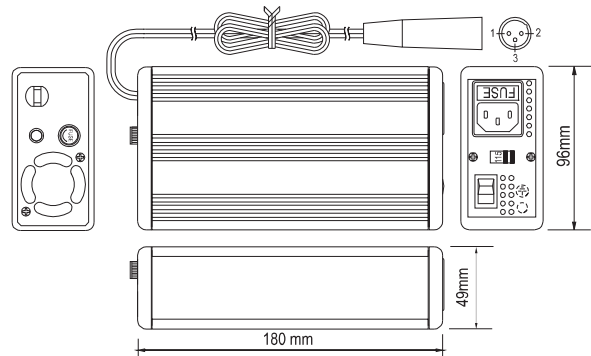
Fan Connector

Fast Charging Circuit (A/B Selectable)

### P.C.B. Dimension



### Case Drawing



### Features

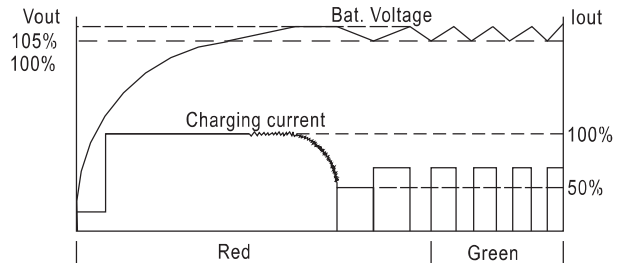
- AC input range selectable by switch
- Passive PFC, PF> 0.65(option)
- Protection for deeply discharged battery
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Charger for lead-acid batteries
- Built-in ON/OFF power switch
- 3 poles AC inlet with fuse holder
- Charging type can be selected (option)
- 2 color LED loading indicator
- EN60335 approved
- Low cost, high reliability
- Open frame models available (without safety approval)
- 2 years warranty

### General Specification

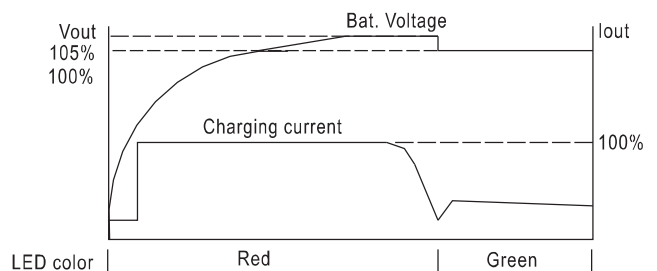
AC input voltage range .....88~132VAC/ 176~264VAC selectable by switch  
AC inrush current (max.) ....Cold start, 25A at 115VAC, 50A at 230VAC  
Overload protection .....90%~110% constant current limiting ,auto-recovery  
Over voltage protection ..... 108%~127% rated output voltage  
Setup, rise, hold up time ....1000ms, 50ms, 16ms at full load and 230VAC  
Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, O/P-FG: 0.5kVAC, 1 minute  
Working temperature .....-10~+45°C, derating curve may vary for different models  
Safety standards .....UL60950-1, TUV EN60950-1, EN60335-1, EN60335-2-29(except for 55.2V) approved  
EMC standards .....EN55022 class B, EN61000-4-2,3,4,5,6,8,11, EN61000-3-2,3  
DC output cable ..... 6 ft. of SPT-2, 18AWGx2C  
Standard output connector ... XLR 3P, male type  
Packing .....1.1kg ; 16pcs / 17.9kg / 1.47CUFT (without PFC)  
1.24kg ; 16pcs / 20.1kg / 1.47CUFT (with PFC)

Model No.	Output	Tol.	R&N	Effi.
P□-120□-13□	13.8V, 0~7.2A	±3~±8.5%	150mV	73%
P□-120□-27□	27.6V, 0~4.3A	±1~±8.0%	200mV	79%
P□-120□-54□	55.2V, 0~2.2A	±1~±7.5%	250mV	79%

### Charging Curve



Type A: pulse charger (detect on bat. voltage)



Type B: 2 section voltage charger (detect on charging current)

### Order Information

P **A** - 120 P - 13 C

A: Pulse charge  
B: 2 section voltage charge

P : Open P.C.B.  
C : With case

P: With PFC  
N: None PFC

13: 13.8V  
27: 27.6V  
54: 55.2V

### 108W~216W Desktop Power Supply or Charger



CASE: 909 150x 140x 75 mm

- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage / Over temp.
- 3 color LED loading indicator
- Battery under / over voltage and polarity protection (ESC only)
- Cooling by free air convection (120W)
- Built-in DC fan with fan ON/OFF auto control at 50°C (240W)
- 2 years warranty

AC input voltage range ..... 88~132VAC / 176~264VAC selectable by switch  
 AC inrush current ..... Cold start, 40A at 230VAC  
 DC adjustment range ..... 13.5V: 12~15V, 27V: 24~30V, 54V: 48~56V  
 Overload protection ..... 105%~135% fold back current limiting, auto-recovery  
 Over voltage protection ..... 115%~135% rated output voltage  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, 1minute  
 Working temperature ..... -10~+60°C (refer to output derating curve)  
 Safety standards ..... CSA 61010-1 approved  
 EMC standards ..... EN55022/B, EN61000-3-2,3, EN61000-4-2,3,4  
 Packing ..... 1.38kg ; 8pcs / 12.0kg / 1.1CUFT (120W)  
 1.5kg ; 8pcs / 13.0kg / 1.1CUFT (240W)

#### ESC/P-120 Series

Model No.	Output	Tol.	R&N	Effi.
ESC-120-13.5	13.5V, 0~8A	±2%	120mV	81%
ESC-120-27	27V, 0~4A	±1%	150mV	83%
ESC-120-54	54V, 0~2A	±1%	400mV	84%
ESP-120-13.5	13.5V, 0~8A	±2%	120mV	81%
ESP-120-27	27V, 0~4A	±1%	150mV	83%
ESP-120-54	54V, 0~2A	±1%	400mV	84%

#### ESC/P-240 Series

Model No.	Output	Tol.	R&N	Effi.
ESC-240-13.5	13.5V, 0~16A	±2%	120mV	81%
ESC-240-27	27V, 0~8A	±1%	150mV	84%
ESC-240-54	54V, 0~4A	±1%	400mV	85%
ESP-240-13.5	13.5V, 0~16A	±2%	120mV	81%
ESP-240-27	27V, 0~8A	±1%	150mV	84%
ESP-240-54	54V, 0~4A	±1%	400mV	85%

### 230W Single Output Battery Charger



190x 96x 49 mm

- 3 stage charging
- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Over voltage / Over temperature
- 2 color LED loading indicator
- Built-in remote ON-OFF control
- Fan ON/OFF control
- Low cost, high reliability
- 2 years warranty

AC input voltage range ..... 90~264VAC; 127~370VDC  
 AC inrush current (max.) .. Cold start, 50A at 230VAC  
 Over voltage protection .... 102%~125% shut off, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, O/P-FG: 0.5kVAC  
 Working temperature ..... -20~+50°C (refer to output derating curve)  
 Safety standards ..... UL1012(PB-230xx-AD1 only), EN60950-1 approved  
 EMC standards ..... EN55022 class B, EN61000-4-2,3,4,5,6,8,11, EN61000-3-2,3  
 Packing ..... 1.21Kg ; 12pcs / 15.5kg / 1.29CUFT

Model No.	Output	Effi.
PB-230-12□	14.4V, 0~16A	81.5%
PB-230-24□	28.8V, 0~8A	85.5%
PB-230-48□	57.6V, 0~4A	86.0%

□ = Blank, AD1; Blank= XLR 4P, male type, AD1= Anderson connector

### 300W Single Output Battery Charger



CASE: 801B 253x 135x 48.5 mm

- Optimal 3 stage charging characteristic
- AC input range selectable by switch
- Passive PFC compliance to EN61000-3-2 class A (option)
- Protections: Reverse polarity / Short circuit / Over voltage / Over temperature
- Charger for lead-acid batteries
- Built-in ON/OFF power switch
- 3 poles AC inlet (IEC 320-C14)
- 2 color LED loading indicator
- Built-in remote ON/OFF control
- Cooling by free air convection
- 3 years warranty

AC input voltage range ..... 90~132VAC / 180~264VAC selectable by switch  
 AC inrush current (max.) .. Cold start, 60A at 230VAC  
 Over voltage protection ..... 108%~125% rated output voltage  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, 1 minute  
 Working temperature ..... -10~+50°C (refer to output derating curve)  
 Safety standards ..... IEC60335-2-29 CB approval by TUV (except for 48V), UL60950-1 approved  
 EMC standards ..... EN55022 class B, EN61000-4-2,3,4,5,6,8,11, EN61000-3-2,3 (P type)  
 Packing ..... 1.45kg ; 6pcs / 9.7kg / 0.95CUFT

Model No.	Output (20 min.) / (Continuous at 25°C)	Effi.
PB-300□-12	14.4V, 20.85A / 12.5A	85%
PB-300□-24	28.8V, 10.50A / 6.25A	86%
PB-300□-48	57.6V, 5.3A / 3.20A	88%

□ = P: with PFC; N: non PFC

### 360W Single Output Battery Charger



CASE: 801A 253x 135x 48.5 mm

- Optimal 3 stage charging characteristic
- AC input range selectable by switch
- Passive PFC compliance to EN61000-3-2 class A (option)
- Protections: Reverse polarity / Short circuit / Over voltage / Over temperature
- Charger for lead-acid batteries
- Built-in ON/OFF power switch
- 3 poles AC inlet (IEC 320-C14)
- 2 color LED loading indicator
- Built-in remote ON/OFF control
- Cooling by built-in DC fan
- 3 years warranty

AC input voltage range ..... 90~132VAC / 180~264VAC selectable by switch  
 AC inrush current (max.) .. Cold start, 60A at 230VAC  
 Over voltage protection .... 108%~125% rated output voltage  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, 1 minute  
 Working temperature ..... -20~+60°C (refer to output derating curve)  
 Safety standards ..... IEC60335-2-29 CB approval by TUV (except for 48V), UL60950-1 approved  
 EMC standards ..... EN55022 class B, EN61000-4-2,3,4,5,6,8,11, EN61000-3-2,3 (P type)  
 Packing ..... 1.5kg ; 6pcs / 10kg / 0.95CUFT

Model No.	Output	Effi.
PB-360□-12	14.4V, 24.3A	85%
PB-360□-24	28.8V, 12.5A	86%
PB-360□-48	57.6V, 6.25A	87%

□ = P: with PFC; N: non PFC

### 600W Single Output Battery Charger



CASE: 805C 230x 158x 67 mm

- 2/3/8 stage smart charger for lead-acid batteries
- Microprocessor controlled power management
- Universal AC input / Full range
- Built-in active PFC function
- Protections: Reverse polarity / Short circuit / Over voltage / Over temperature
- Built-in temp. compensation function
- Status signal sent by relay contacts
- 3 color LED loading indicator
- Built-in remote ON-OFF control
- Fan speed control (depend on charging current)
- Charging curve can be modified for different battery applications (optional)
- 3 years warranty

AC input voltage range ..... 90~264VAC; 127~370VDC  
 AC inrush current (max.) .. Cold start, 50A at 230VAC  
 Over voltage protection .... 112%~125% shut off, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 2kVAC, O/P-FG: 0.5kVAC  
 Working temperature ..... -20~+60° C (refer to output derating curve)  
 Safety standards ..... TUV EN60335-1, EN60335-2-29(except for 48V), EN60950-1(48V only), UL1012 approved  
 EMC standards ..... EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11  
 Connection ..... IEC inlet for input; copper pillars for output  
 Packing ..... 2.2kg ; 6pcs / 14.2kg / 1.76CUFT

Model No.	Output	Effi.
PB-600-12	14.4V, 0~40.0A	86%
PB-600-24	28.8V, 0~21.0A	87%
PB-600-48	57.6V, 0~10.5A	89%

### 600W Single Output Battery Charger



CASE: 228A 280x 144x 48.5 mm

- 3 stage charging characteristic
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Built-in active PFC function
- No load power consumption < 0.5W at remote OFF
- High efficiency up to 95.5%
- Protections: Short circuit / OVP / OTP
- Fanless design, cooling by free air convection
- Vo and Io can be adjusted through internal potentiometer
- Aluminum case and filling with heat-conducted glue
- Withstand 5G vibration test
- Charger for lead-acid batteries
- 3 color LED loading indicator
- 5 years warranty

AC input voltage range ..... 90~264VAC; 127~370VDC  
 AC inrush current (max.) .. Cold start, 70A at 230VAC  
 DC adjustment range ..... -20%~+5% rated output voltage  
 Current adjustment range ..50%~100% rated output current  
 Over voltage protection .... 112%~142% shut off, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 2kVAC, O/P-FG: 1.5kVAC  
 Working temperature ..... -40~+70° C (refer to output derating curve)  
 Safety standards ..... UL60950-1, TUV EN60950-1 approved  
 EMC standards ..... EN55022 conduction class B, radiation class A EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11  
 Connection ..... +7P/11mm pitch terminal block with cover

Model No.	Output	Effi.
HEP-600C-12	14.4V, 0~35.0A	93.5%
HEP-600C-24	28.8V, 0~21.0A	94.5%
HEP-600C-48	57.6V, 0~10.5A	95.5%

### 1000W Single Output Battery Charger



CASE: 804B 300x 184x 70 mm

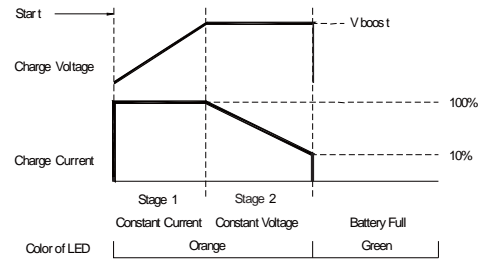
- 2/3/8 stage smart charger for lead-acid batteries
- Microprocessor controlled power management
- Universal AC input / Full range
- Built-in active PFC function
- Protections: Reverse polarity / Short circuit / Over voltage / Over temperature
- Built-in temp. compensation function
- Can be connected to 2 battery banks
- Status signal sent by relay contacts
- 3 color LED loading indicator
- Built-in remote ON/OFF control
- Fan speed control
- Charging curve can be modified for different battery applications (optional)
- 3 years warranty

AC input voltage range ..... 90~264VAC ; 127~370VDC  
 AC inrush current (max.) .... Cold start, 50A at 230VAC  
 Over voltage protection ..... 110%~125% shut off, re-power on to recover  
 Withstand voltage ..... I/P-O/P: 3kVAC, I/P-FG: 2kVAC, 1 minute  
 Working temperature ..... -20~+60° C (refer to output derating curve)  
 Safety standards ..... UL60950-1, TUV EN60950-1 approved  
 EMC standards ..... EN55022 class B conducted, EN61000-4-2,3,4,5,6,8,11, EN61000-3-2,3  
 Connection ..... IEC inlet for input; copper pillars for output  
 Packing ..... 3.5kg ; 4pcs / 15kg / 1.83CUFT

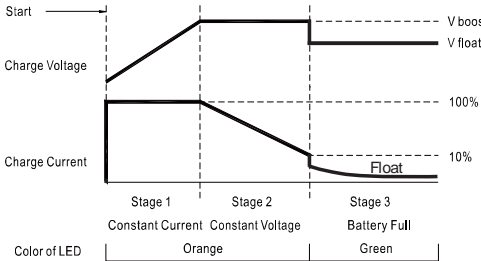
Model No.	Output	Effi.
PB-1000-12	14.4V, 60.0A	85%
PB-1000-24	28.8V, 34.7A	88%
PB-1000-48	57.6V, 17.4A	89%

### Built-in Charging Curves for PB-600 and PB-1000

#### 2-Stage Charging Curve



#### 3-Stage Charging Curve



#### 8-Stage Charging Curve

