

Portable Battery Charger

- » GP-CZ1204 Series
- » GP-CZ1206 Series
- » GP-CZ2404 Series



【Wide-Range Charging】



English

►► Product Features

- Design with Switching Mode Circuit, Safety Approval
- No spark during connecting the DC clamps. Wide charging voltage range.
- Low ripple current, prevent heat and gassing in the battery.
- High efficiency over 80%, no fan with thermal protection.
- Three options for charging current.
- Built-in Microcontroller and protections against abnormal situations.
- 6 charging steps with reviving and extending battery life time functions.
- Built-in active PFC >0.95 (optional).

►► Specification

Model	GP - CZ1204	GP - CZ1206	GP - CZ2404
Input Range	110 VAC / 230 VAC		
Input Current	110 VAC / 2.5A, 230 VAC / 1.3A (MAX)		
Charger Voltage	14.7 VDC Snow Mode	29.4 VDC Snow Mode	
	14.4 VDC Normal Mode	28.8 VDC Normal Mode	
Charge Current (Selectable)	1A for Scooter / ATV	1A for Motorcycle	1A for Bicycle
	2A for Motorcycle	4A for Car / Van	2A for Motorcycle
	4A for Car / Van	6A for Truck / RV	4A for Scooter
Battery Size & Type	3 ~ 150 Ah, 12V Lead-Acid (Wet, MF,AGM, GEL)	3 ~ 200 Ah, 12V Lead-Acid (Wet, MF,AGM, GEL)	3 ~ 150 Ah, 24V Lead-Acid (Wet, MF,AGM, GEL)
Over Thermal Protection	YES		
	Automatic power reduction at high ambient temperature.		
Polarity-Reverse Protection	YES		
	No charge and the charging LED-off.		
Short-Circuit Protection	YES		
	No charge and the charging LED-off.		
Disconnecting Protection	YES		
	Return to standby mode without charging.		
Non 12V or 24V Battery Protection	YES		
Dimension/weight	200 X 90 X 44.8 (mm) / 0.7 kg (Max)		
Operation Temp & Humidity	-20 to 50 °C / 95%		
Storage Temp / Humidity	-20 ~ +85 °C / 10 ~ 95% RH		
Safety / EMC Approval	CE / FCC / ETL / GOST / RCM		

►► Operating Instruction

- Turn off all electrical equipments, lights, or other accessories that are connected to your vehicle electrical system.
- Identify the polarity of the battery, the POSITIVE (POS, P, +) terminal and the NEGATIVE (NEG, N, -) terminal.
- Check which battery terminal is grounded (connected to chassis). The negative terminal is usually the

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English

- grounded pole.
- For charging a Vehicle, connect the POSITIVE (RED) clip of the battery charger to the POSITIVE (+) pole and then connect the NEGATIVE (BLACK) clip to the vehicle chassis or NEGATIVE pole . Make sure the NEGATIVE (BLACK) clip is not connected near a fuel-hose, Do not connect the clip to carburetor, fuel lines, or sheet-metal body parts.
- For charging a Battery, connect the RED clip to the POSITIVE pole and the BLACK clip to the NEGATIVE pole.
- Plugging AC power cord of the charger into the AC outlet, the current LED will scroll in sequence.
- Use mode switch to set a maximum charging current for your batteries .
- Snow Mode (14.7V or 29.4V) is recommended for AGM batteries or for charging when ambient temperature below zero.
- The charging LED in blinking indicates charging is in process and the LED keeps on meaning is charging on completion.
- The fault LED in blinking means an unstable battery and the LED keeps on meaning is battery out of order or charger damage.
- This charger design with an intelligent microcontroller. When Batteries are charged over 72 hours, the charger will automatically recover to the standby mode to avoid any battery damage.

►► Charging Functions and LED Signal Instructions

	This switch serves to transfer modes among Standby, scooter / ATV, motorcycle, car / van and truck / RV.
	This Switch serves to transfer modes among Snow Mode (14.7V or 29.4V) and normal mode (14.4V or 28.8V). This mode is recommended for AGM batteries or for charging at the ambient temperature below zero. Please follow the charging instructions of battery manufacturers.

CURRENT MODE FOR Model: GP - CZ1204				
Charge Mode	LED Signal	Battery Size (typical size)	Battery Size (maintenance)	Charge Times ~ 80% (typical times)
1A for Scooter / ATV (Slow mode)	Green	3 ~ 14 Ah (7 Ah)	Max 60 Ah	3 ~ 14 hrs (7 hrs)
2A for Motorcycle (Medium mode)	Green	7 ~ 32 Ah (14 Ah)	Max 100 Ah	3 ~ 16 hrs (7 hrs)
4A for Car / Van (Fast mode)	Green	20 ~ 85 Ah (55 Ah)	Max 150 Ah	5 ~ 22 hrs (14 hrs)
CURRENT MODE FOR Model: GP - CZ1206				
1A for Motorcycle (Slow mode)	Green	3 ~ 20 Ah (7 Ah)	Max 60 Ah	3 ~ 20 hrs (7 hrs)
4A for Car / Van (Medium mode)	Green	14 ~ 80 Ah (55 Ah)	Max 150 Ah	3 ~ 20 hrs (14 hrs)
6A for Truck / RV (Fast mode)	Green	20 ~ 150 Ah (95 Ah)	Max 200 Ah	3 ~ 25 hrs (16 hrs)

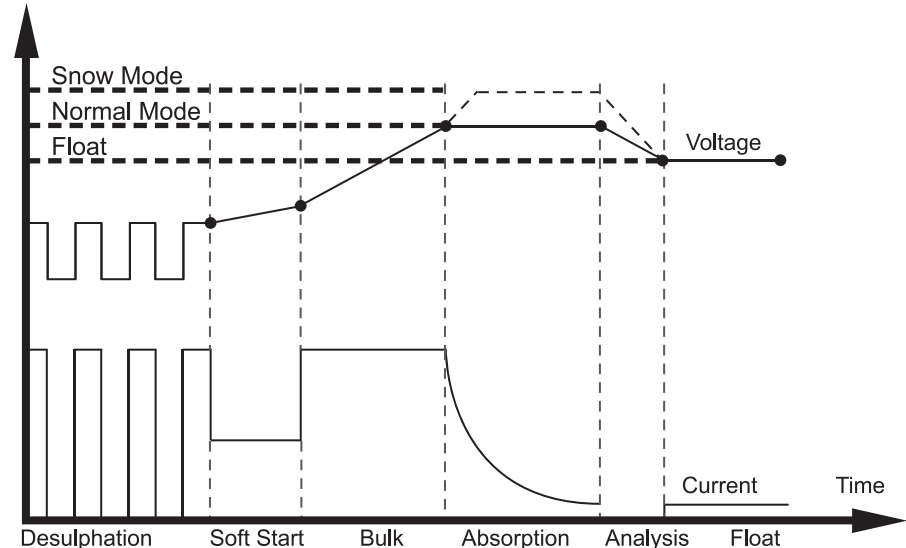
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English

CURRENT MODE FOR Model: GP - CZ2404				
Charge Mode	LED Signal	Battery Size (typical size)	Battery Size (maintenance)	Charge Times ~ 80% (typical times)
1A for Bicycle (Slow mode)	Green	3 ~ 14 Ah (7 Ah)	Max 60 Ah	3 ~ 14 hrs (7 hrs)
2A for Motorcycle (Medium mode)	Green	7 ~ 32 Ah (20 Ah)	Max 100 Ah	3 ~ 16 hrs (10 hrs)
4A for Scooter (Fast mode)	Green	20 ~ 85 Ah (50 Ah)	Max 150 Ah	5 ~ 22 hrs (13 hrs)
Changing Signal	Blue	LED off: Standby mode, LED blinking: Charging in process, LED on: Charging on completion.		
Fault Signal	Red	LED off: Functions in order, LED blinking: Unstable battery, LED on: Battery problem or charger damage.		

►► CHARGE CURVE

【CHARGING STEPS】



【STEPS EXPLANATION】

- Desulphation:**
Desulphation will pulse and revive sulphated batteries.
- Soft start:**
The charging current is limited to check the situation and features of batteries.

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English

- Bulk:**
This main charging step provides most of the energy. The charger provides a maximum output current to speed up the charging.
- Absorption:**
The terminal voltage maintains at original level and the current drops gradually. At this step the battery is usually charged to full amount.
- Analysis:**
The charger tests the charging situation of the charged battery.
- Float:**
The charger maintains a charged battery.

►► TROUBLE SHOOTING

This section will help you identifying the source and reasons of most problems that occur in charging. If you have any problem with the charger, please review this section, before contacting an authorized sales and service station.

No.	Problems	Solutions
1	No LED signal after contacting to AC outlet.	Solution 1: No AC power at outlet or AC voltage is too low. Please make sure that power is at the outlet.
2	Charging LED is off and Scooter, motorcycle, car or truck LED is on.	Solution 1: Check DC Output Short-Circuit Protection. Solution 2: Check Polarity Reverse Protection. Solution 3: Check DC clips is connected improperly. Solution 4: Check if it is not 12V or 24V battery or the battery is in short. Solution 5: Rerecheck the battery rated voltage and polarity, remove the clips, correct the mistake and then try again.
3	Press SNOW or MODE Switch and the charger doesn't respond or stays at standby mode.	Solution 1: Press and release the switch too fast. Please press and hold the switch button for a minimum of 0.2 seconds and release it. Solution 2: It could be the problem of battery damage. Please check with your battery vendor.
4	Fault LED blinking (flashing)	Solution 1: Battery has a very low voltage or battery is in short. Please recharge again. If the situation reoccurs, it means the battery is too weak. Please replace a new battery. Solution 2: That charging current is too high for the battery. Please make sure that correct charging current for your battery.
5	Fault LED On (bright light)	That means battery damage or the charger is out of order . Please recharge again: Solution 1: If the Fault LED is bright again in few minutes after restart, that means the charger is damaged. Please return to our local distributor for repair. Solution 2: After restart the Fault LED is bright again in the following two hours , that means a battery problem, please replace a new battery .
6	After charging for a long time, the charger returns to standby mode	Design With Microcontroller. The charger will count till 72 hours after charging start and returns to standby mode to avoid battery damage.

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English

►► WARNING

- Even though this charger prevent sparks during connection, we still recommend you to connect and disconnect the DC cable, after removing the AC cord from the utility outlet to reduce the risk of spark.
- Instruct the child not to try and recharge non-rechargeable batteries because of the danger of eruption.
- This charger is designed to charge 12 or 24 Voltage lead acid batteries. Do not use it to charge other kinds of batteries or for any other purpose.
- » 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.
- » The supply cord cannot be replaced. If the cord is damaged the appliance should be scrapped.
- » The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains.
- » After charging, disconnect the battery charger from the chassis connection and then the battery connection
- » WARNING: do not charge non-rechargeable batteries
- » During charging, the battery must be placed in a well ventilated area
- » The product provide with over temperature protection during normally charging condition,the output current will cycling reduce its current to ensure the product with stable temperature right.

IMPORTANT SAFETY INSTRUCTIONS

- SAVE THESE INSTRUCTIONS** — This manual contains important safety and operating instructions for battery charger Models CZ1206NU / CZ2404NU / CZ1204NU.
- Do not expose charger to rain or snow.
- Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
- To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
- An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
 - That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
 - That extension cord is properly wired and in good electrical condition; and
 - That wire size is large enough for ac ampere rating of charger as specified 18AWG size of cord.

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English

- Do not operate charger with damaged cord or plug — replace the cord or plug immediately.
- Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
- Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- WARNING — RISK OF EXPLOSIVE GASES.**
 - WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.**
 - To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary marking on these products and on engine.
- PERSONAL PRECAUTIONS**
 - Consider having someone close enough by to come to your aid when you work near a lead-acid battery.
 - Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
 - Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
 - If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
 - NEVER smoke or allow a spark or flame in vicinity of battery or engine.
 - Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
 - Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
 - Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

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English

- NEVER charge a frozen battery.
- PREPARING TO CHARGE**
 - If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
 - Be sure area around battery is well ventilated while battery is being charged.
 - Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
 - Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manufacturer's recharging instructions.
 - Study all battery manufacturer's specific precautions while charging and recommended rates of charge.
 - Determine voltage of battery by referring to car owner's manual and make sure it matches output rating of battery charger.
 - CHARGER LOCATION**
 - Locate charger as far away from battery as dc cables permit.
 - Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
 - Never allow battery acid to drip on charger when reading electrolyte specific gravity or filling battery.
 - Do not operate charger in a closed-in area or restrict ventilation in any way.
 - Do not set a battery on top of charger.
 - DC CONNECTION PRECAUTIONS**
 - Always disconnect dc output clips only after setting any charger switches to "off" position and removing ac cord from electric outlet. Never allow clips to touch each other.
 - Attach clips to battery and chassis as indicated in 15(e), 15(f), and 16(b) through 16(d).
 - FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:**
 - Position ac and dc cords to reduce risk of damage by hood, door, or moving engine part.
 - Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.
 - Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N, -) post.
 - Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see (e). If positive post is grounded to the chassis, see (f).

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English

- For negative-grounded vehicle, connect POSITIVE (RED) clip from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
 - For positive-grounded vehicle, connect NEGATIVE (BLACE) clip from battery charger to NEGATIVE (NEG, N, -) ungrounded post of battery. Connect POSITIVE (RED) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gage metal part of the frame or engine block.
 - When disconnecting charger, turn switches to off, disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.
 - See operating instructions for length of charge information.
- FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:**
 - Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, -) post.
 - Attach at least a 24-inch-long 6gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, -) battery post.]
 - Connect POSITIVE (RED) charger clip to POSITIVE (POS, P, +) post of battery.
 - Position yourself and free end of cable as far away from battery as possible — then connect NEGATIVE (BLACK) charger clip to free end of cable.
 - Do not face battery when making final connection.
 - When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.
 - A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

►► SAFETY APPROVAL



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