

CH02L Product Manual

Medium-Low Voltage Traction Battery Charger



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1. Precautions

1. AC Input, Charging Output, and Cable Precautions:

(1)The products should use a 10A, 16A, or higher-rated 3-prong socket that complies with safety standards. The copper wire used for the AC cable should match the rating of the AC socket. If the cable is long, a thicker, flame-retardant cable that meets safety standards should be selected accordingly.

(2)Protective Grounding:Do not disconnect the ground wire of the charging socket from the earth. Do not damage the grounding terminal of the charging plug. Failure to comply may result in electric shock and pose a risk of personal injury.

(3)The cable connecting the charging socket to the battery must meet the safety requirements of the charger's output current. Otherwise, excessive voltage drop may affect charging performance or even cause fire hazards.

(4)Regularly inspect AC plugs and sockets, as well as DC charging plugs and sockets, for poor contact or damage. Replace any faulty components immediately to avoid abnormal charger operation or fire hazards.

(5)Regularly check AC and DC cables for aging or damage. If found, replace them promptly to prevent electric shock, fire, or other accidents.

(6)If any power cord, plug, socket, or related component is damaged, it must be replaced by the manufacturer or authorized service personnel to avoid accidents.

2. Users are strictly prohibited from modifying wiring, functions, or other components without prior consent from our company.

3. Do not open the unit. The integrated charger contains high-voltage components. Non-professional personnel must not open the enclosure.

4. It is recommended that users perform dust removal on the unit's exterior at least once every six months.

5. Operate strictly in accordance with the user manual. Any consequences caused by improper or unauthorized use shall be the sole responsibility of the user. The company shall not be held liable under any circumstances.

6. The charger must be installed horizontally inside the vehicle and must maintain at least a 10 cm clearance from surrounding objects to ensure proper heat dissipation.

7. The charger must be compatible with the battery to avoid damage. Before connecting the charger output to the battery, ensure the battery switch is turned off.**Reversing battery polarity is strictly prohibited. Do not connect any vehicle-mounted power device with reversed polarity, as this may result in severe damage!**

8. If the unit emits unusual noises, smoke, or other abnormal signs during operation, immediately disconnect the power supply and contact qualified service personnel for inspection and repair.

9. Specific parameters shall be subject to the drawings or technical agreement.

2. Product Overview

The CH02L product is designed for medium-low voltage electric systems and is used for charging power batteries. It is suitable for 48V/72V low-voltage electrical appliances and can be used with various battery systems including lead-acid, lithium-ion, and nickel-metal hydride batteries.

The CH02L series intelligent charger is developed in accordance with national charger standards and specially designed for electric vehicles. This product adopts a dual-system integrated design, offering advantages such as high power density, excellent heat dissipation performance, and long service life. The charging system converts AC power into high-voltage DC power to charge the vehicle's energy storage device.

This product features stable charging performance, high conversion efficiency, safety, reliability, and strong vibration resistance. It also provides comprehensive protection functions including output short-circuit, output over/under-voltage, input over/under-voltage, and over-temperature protection.

- ✓ 100% factory functional testing and full-load aging test.
- ✓ Comprehensive protection features with temperature compensation.
- ✓ IP66 protection rating with automotive-grade resistance to vibration and shock.
- ✓ Digitally controlled power supply with dual software and hardware protection, supporting customizable control strategies.

3. Technical Specifications

3.1 Electrical Characteristics of the Charging System

Parameter	CH02L-4825	CH02L-7220	CH02L-9615
Input Voltage (AC)	Voltage Range: 100~240V/ Frequency Range: 45~60Hz / Single-phase, three-wire system		
Maximum Input Current	12A		
Power Factor	≥0.98		
Rated Output Voltage (DC)	48V	72V	96V
Maximum Output Voltage (DC)	74V	96V	128V
Output Current	0~25A	0~20A	0~15A
Output Power	1350W@220V 1100W@120V	1400W@220V 1100W@120V	
Output Voltage Accuracy	± 1V		
Output Current Accuracy	± 0.5A		
Maximum Efficiency	≥93%		
Input Under-Voltage (AC)	100V		
Input Over-Voltage (AC)	240V Shutdown		
Output Over-Voltage (DC)	74V	96V	128V
Output Under-Voltage (DC)	18V Shutdown	20V Shutdown	
Output Short-Circuit Protection	Shutdown, self-recovery after fault elimination		
Over-Temperature Protection	75°C Power limitation, 95°C Shutdown		
Communication Function	CAN (Optional)		

3. Technical Specifications

3.2 Environmental Characteristics

Item	Value	Unit	Remarks
High Operating Temperature	55	°C	
Low Operating Temperature	-30	°C	
High Storage Temperature	80	°C	
Low Storage Temperature	-40	°C	
Humidity	5-95	%	
Altitude	≤ 2000	m	
Cooling Method	Air-cooled		
Protection Rating	IP66		
Noise Level	≤65	dB	Measured at 1.5 meters, A-weighted
Vibration Resistance	Complies with QC/T 413-2002, Section 3.12		

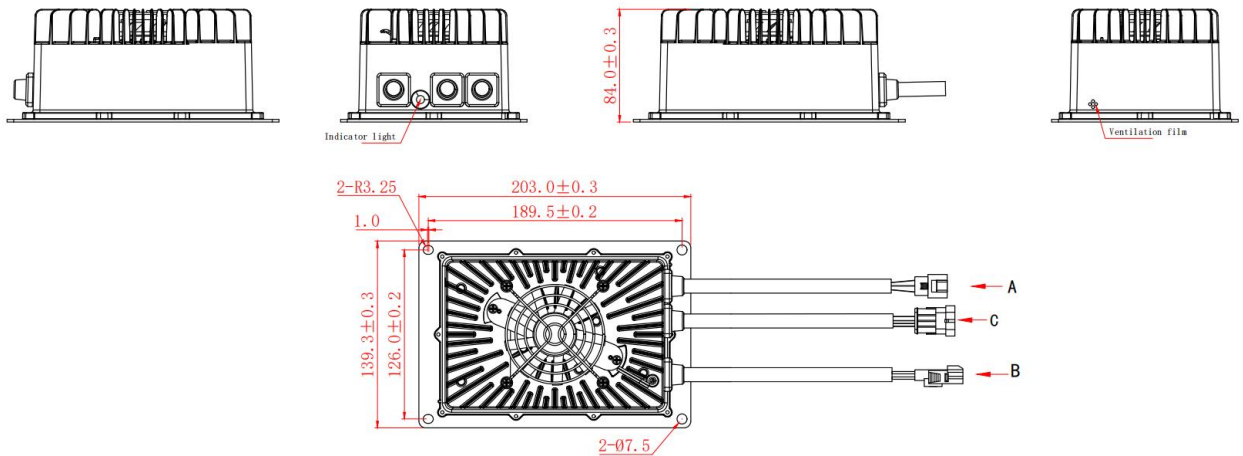
3.3 Electrical Safety Features

Parameter		Specification	
Dielectric Strength	Input – Output	≤10mA@1500VAC/1min	No breakdown or flashover. (Input shorted; Output shorted)
	Input – Ground		
	Output – Ground	≤10mA@1000VDC/1min	
Insulation Resistance	Input – Output	≥20MΩ@1000VDC	No breakdown or flashover. (Input shorted; Output shorted)
	Input – Ground		
	Output – Ground		
Grounding Resistance		<0.1Ω	
Surge Protection		AC input terminal must withstand ≥ 5 kA、8/20 μs surge waveform, ±5 times, 1 min interval	

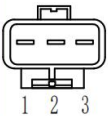
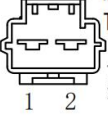
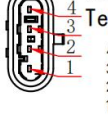
4. Installation Dimensions and Interface Definitions

4.1 Installation Dimensions

The structural dimensions and installation dimensions of the vehicle-mounted unit are shown in the figure below.



4.2 Interface Definitions

INPUT	OUTPUT	SIGNAL
 Model: DJ7031-4.8-11 (Male) Terminal: DJ614-4.8*0.8C 1. Connect to (L) Brown wire 2. Connect to (PE) Yellow-green wire 3. Connect to (N) Blue wire 1 2 3	 Model: DJ7021-8-11 (Male) Terminal: DJ611F-8.0*0.8E 1. Connect to battery - (Black wire) 2. Connect to battery + (Red wire) 1 2	 Model: DJ7041-1.5-11 (Male) Terminal: DJ611-1.5A 4. CAN_L Gray wire 3. CAN_H Black wire 2. 12V- Black wire 1. 12V+ Red wire 1 2 3 4
View A: AC Input	View: B DC Output	View:C CAN Signal

The system interface consists of three parts: charger input (INPUT), charger output (OUTPUT), and signal interface (SIGNAL). The signal interface (SIGNAL) provides optional connections for charging indicator, CAN communication, 12V 0.5A wake-up power supply, and interlock signal lines.



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