

KOD BATTERYCHARGER

UNIT 110V 150A

CHARGING SOLUTIONS POWERING PROGRESS





INTRODUCTION

At KODN General Electric Solution, we are introducing our new 110V 150A Battery Charger Unit designed for fast, reliable, and efficient charging of industrial battery banks. This charger delivers 110V DC output with up to 150A continuous current and is built to operate safely with advanced protection against overvoltage, overload, and short circuits. Its user-friendly interface ensures easy monitoring and control, while its robust design makes it suitable for power plants, substations, railways, oil and gas facilities, and other demanding environments. With high efficiency, long service life, and minimal maintenance requirements, this charger ensures batteries remain fully charged and ready to deliver power whenever needed, reinforcing our commitment to powering critical systems with reliable and efficient electrical solutions.

T & C's Apply. Product Specifications, Images and Details subject to change without prior notice.





General

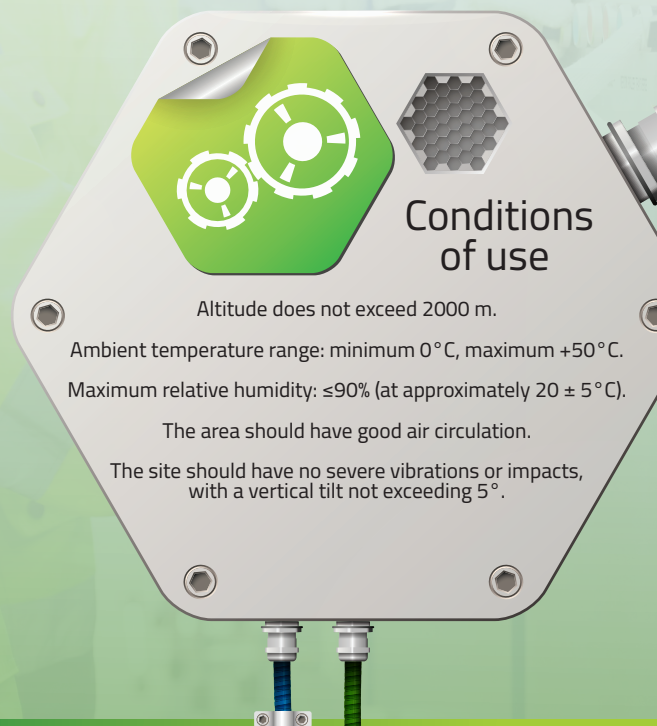
This DC power supply is specifically designed for charging nickel-cadmium battery banks. The system utilizes a programmable logic controller (PLC) as its central control unit, featuring an LCD display for user interaction. It allows digital configuration of charging current, voltage, and timing while providing real-time monitoring and recording of charging parameters.

The main circuit employs a single-phase full-bridge control design with a programmable integrated trigger circuit. Using fully digital pulse-width and phase-shift modulation, the system eliminates the need for manual trigger adjustments while delivering high reliability, precise pulse symmetry, excellent noise immunity, and rapid response.

Designed for simplicity and safety, the unit offers fully automated operation with comprehensive protection features.

Rated parameters

Input voltage	3AC 380V $\pm 10\%$ + IN
Output voltage range	99–150 VDC
Float charging voltage	138 VDC (adjustable DC 20–160 V)
Battery charging current	65 A DC
DC output voltage	DC 110 V
Output current	DC 0–150 A
Voltage accuracy	$\leq 1\%$ (with battery)
Noise level	≤ 60 dB (measured at 1 meter before and after closing the door)
Cooling mode	Self cooling + air cooling
Working mode	Automatic operation and manual charging
Dimension	H2260 mm $\times$ W800 mm $\times$ D600 mm
Standard compliance	IEC 60146
Protection class	IP21
Features included	Protection, control, and annunciator





Working principle

The device's main circuit uses a single-phase thyristor full-bridge rectifier with a digital trigger system. The 380V AC input is converted to DC power, and upon receiving a charge command from the control center, it begins charging the battery bank.

The SCR trigger system operates digitally by comparing the output voltage and current feedback signals with reference values through an isolation amplifier. The resulting error signal undergoes analog-to-digital conversion, feeding into the logic processing unit along with other control inputs. The logic unit then calculates and generates the final trigger pulses in real time, ensuring accurate and reliable operation.

Since an industrial control computer (PLC) is used as the control center, operators can easily initiate and manage the battery charging process via a user-friendly touchscreen human-machine interface.



install

When the charger arrive installation site, open the case carefully. Attention not to damage the device and the screen surface, with special attention to the glass material. Check the packing list, check whether the accessories are complete. Check whether the device is loose, with special attention to the fastening screws of the live part.

The device should be placed in a cool, dry and ventilated place and has sufficient room for maintenance, and at the same time should be far away from the heat source and easy to produce sparks.



Connection

After installation, open the front and back door to inspection equipment internal wiring and fasteners whether loose and fall off, if there is, please tighten or connect up.

Before and the battery connection should check the battery's total voltage and positive, negative polarity, to ensure the correctness of the battery connection. Open the back door, and connect the AC input wiring and DC output wiring to the corresponding positions according to the marks. Don't reverse connection or wrong connection, otherwise it will not be able to start normally.



Operation Instructions and Power-Up Procedure

This PLC-controlled system uses a touch panel for settings and monitoring. It offers two modes: manual (for setup/maintenance at up to 160V DC; requires disconnected loads) and automatic (providing stable 110V DC with smart charge management).





Fault

Fault Phenomenon	Possible Cause	Corrective Action
Touch screen communication failure	Loose connection between touch screen and PLC	Securely reconnect the communication cable
Charger fails to start	Incorrect input phase sequence	Swap phases A and C of the input power
AC power interruption	Tripped circuit breaker or no AC supply	Reset AC input breaker or restore power
Bus grounding fault	Insulation failure in busbar	Locate and eliminate grounding point
Overvoltage condition	Output exceeds setpoint	Reduce output voltage or adjust overvoltage alarm threshold
Undervoltage condition	Output below minimum level	Increase output voltage or modify undervoltage alarm setting

MODBUS Communication Protocol Specifications

RS485 serial communication Character format: 10-bit frame (1 start bit, 8 data bits, no parity, 1 stop bit)

Data Register Map (32-byte)

MODBUS Address	Parameter	Data Type	Format	Access	Remarks
000000H	Charging Voltage	Word	Unsigned BIN	Read-only	1 decimal place
000001H	Charging Current	Word	Unsigned BIN	Read-only	1 decimal place
000002H	Charge Capacity Value	Word	Unsigned BIN	Read-only	1 decimal place
000003H	Total Charge Capacity	Word	Unsigned BIN	Read-only	1 decimal place
000004H	System Status	Word	Unsigned BIN	Read-only	0=Stop, 1=Fault, 2=Equalize, 3=Float
000005H	Control Command	Word	Unsigned BIN	Write-only	1=Start, 0=Stop
000006H-000008H	Reserved	-	-	-	-

1. Remote Control (Function Code 06H) - Write Command

Address	Function Code	Start Address	Data Length	CRC Check
01H	06H	0007	0008H	CRC 16

2. Remote Monitoring (Function Code 03H) - Read Command

Address	Function Code	Start Address	Data Length	CRC Check
01H	03H	0001	0008H	CRC 16

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