



Advancing the Future of Power Conversion.

Battery Chargers

PCTI manufactures solid-state high-current battery chargers from 5KW to 2MW. Our standard battery charger includes a battery eliminator, float and equalize adjustments, manual equalize timer, automatic shutdown and restart under a variety of fault conditions, and low ripple.



WHY PCTI?

PCTI strives to provide the most innovative and up-to-date equipment. We have been manufacturing highly reliable power electronics for diverse industrial and military applications for over 27 years.

Since our inception, PCTI has never had an equipment return for failure to operate.



SOLID-STATE VS. ROTARY

Solid-state equipment is less expensive than rotary equipment and has a longer lifetime.

Rotary equipment and diesel engines present higher operating and capital costs. Solid-state equipment significantly reduces all costs, such as: capital, operating, and maintenance. Solid-state equipment also has less operating noise, zero emissions, and produces no pollutants. It is cheaper to run an electrical cable to a solid-state unit than to pay for the fuel and maintenance costs associated with diesel and rotary units.



DESIGNED & BUILT TO LAST

Our products are at work in hundreds of industrial, commercial, research, transit, and military applications. Each unit is precision engineered to meet your specific application.

Ruggedization options can protect against even the most aggressive of environments, including harsh marine salt air and arid desert environments.

SUPERIOR DSP TECHNOLOGY

All of our battery chargers are equipped with a sophisticated control system utilizing digital signal processor (DSP) control based on IGBT PWM technology.

PCTI's DSP technology provides several performance-increasing benefits, including:

- ✓ Real-time calculation, transformation, data collection, decision-making, and more
- ✓ Capability to anticipate changes in the system and adapt for performance optimization
- ✓ Increased reliability based on a single control board solution
- ✓ Ease of updating, changing, or modifying the equipment's functionality or application (even after installation)
- ✓ Real-time data logging

Our equipment is able to be monitored, tested, and operated via state-of-the-art DSP-based embedded control systems for real-time performance.



Specifications

Input

- Voltage: +10%, 50/60Hz
1Ø: 110, 115, 120, 130, 200, 208, 230
3Ø: 208, 220, 230, 380, 415, 440, 460, 480, 575
- Frequency: 60Hz
- Power factor: 0.7 minimum

Output

- Voltage: 48V, 80V, 125V, 250V to 600V and others as requested
- Current: 50A to 50,000A
- Current limit adjust: 90% to 120% of full-rated output to be maintained
- Voltage adjust: +5% of rated output voltage for any load variation from 0 to 100% with separate equalize and float voltage settings
- Efficiency: 85% minimum

Standard Features

- 6-pulse or 12-pulse thyristor bridge rectifier
- Soft start with batteries disconnected
- Automatic restart to float mode after loss and restoration of AC input power
- Manual selection of float or equalize charge mode
- Float voltage control per NEMA PE-5 depending on battery type
- Equalize voltage control per NEMA PE-5 depending on battery type
- Battery charger can act as a DC power supply with batteries disconnected
- Built-in test (BIT)
- Ethernet/IP

Environmental/Mechanical

- NEMA/IP enclosure ratings: NEMA 12 (IP20), NEMA 3R (IP54), NEMA 4 (IP55), NEMA 4X (IP56), other ratings available upon request
- Operating temperature: -5°C - 40°C
- Storage temperature: -10°C - 65°C
- Humidity: up to 90% non-condensing

Protection

- AC input circuit breaker
- AC and DC surge protection up to 5,000 volts
- Automatic equalize control automatically places charger in float mode after an AC power failure or charger shutdown
- Overcurrent/overload: 125% for 2 hours
- Overvoltage
- Overtemperature
- Input & output MOVs

Remote Capability / Computer Interface

- Analog signals: 4mA - 20mA, 0V - 5V, 0V - 10V
- Computer interface: Ethernet/IP, Modbus TCP, SNMP, CANbus, IEEE 488.2 / GPIB, RS232, RS485
- Functions: start/stop, reset, fault, current adjust, voltage adjust, fault indication

Standard Front Panel Devices

- Power on indicator
- Run indicator
- Current/voltage trim adjust
- Start/stop pushbutton
- Reset pushbutton
- Fault indicator
- Input circuit breaker

Smart Panel (HMI/digital control panel)

- Output voltage
- Output amperage
- Undervoltage indicator
- Overvoltage indicator
- Overcurrent indicator
- Overtemperature indicator
- TCP/IP/Ethernet interface
- Internal communication ports - USB, RJ45 (Ethernet)
- External communication ports - USB, RJ45 (Ethernet)
- Float/equalize mode
- Elapsed time meter
- Summary fault indicators
- Output current limit adjust

Codes and Standards

- IEC
- NEMA
- NEC
- IEEE
- MIL-SPEC

DSP Control Technology

- Increased performance
- One programmable chip with the functionality of conventional control components
- SCR preregulator to achieve high efficiency, low ripple, precise regulation, and low output noise
- Coarse and fine adjustments are available for both current and voltage
- Event and data logging to continuous monitor equipment operating status as well as internal control parameters

Options

- DC output breaker
- Optional alarm conditions (consult factory)
- Remote/local selector switch
- Output diode for reverse polarity protection
- Battery temperature compensation
- Battery discharge back into power line
- Blocking diode to block feedback through the charger during AC power failure or other shutdown conditions
- Equalize timer 0 to 24 hours
- Parallel and load sharing
- Delayed start (charge during off-peak hours)
- Ground fault protection and/or detection
- Emergency mushroom power off pushbutton
- 12- or 18-pulse input rectification for low input current
- Active input current filter
- Push to test indicators
- Mobile options available



Shore Power



Industrial



Military



Commercial