



Advancing the Future of Power Conversion.

DC Power Supplies

PCTI manufactures solid-state DC power supplies from 5KW to 15MW. Our power supplies can be used wherever DC power is required. PCTI's equipment provides highly reliable, clean and efficient power conversion.



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 DC power supplies 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%
1Ø: 110, 115, 120, 130, 200, 208, 230
3Ø: 208, 220, 230, 380, 415, 440, 460, 480, 575
- Frequency: 50/60Hz
- Power factor: better than 0.98 lagging from 10% to full load

Output

- Voltage range:
Standard & precision: 6V - 1,000V
- Amperage range:
Standard: 50A - 200A
Precision: 2A - 100A
- Voltage regulation (line & load):
Standard: 1%
Precision: 0.05%
- Current regulation (line & load):
Standard: 1%
Precision: 0.1%
- Ripple VRMS (maximum):
Standard: 1%
Precision: 0.5%
- Response time (typical):
Standard: 200ms*
Precision: 50ms*
*for load steps of 50 to 90% of full load

Standard Features

- Constant current control
- Constant voltage control
- Automatic crossover
- Regulated voltage
- Regulated current
- Soft start
- Automatic phase selection
- Built-in test (BIT)

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

- Overcurrent/overload*
 - Overvoltage*
 - Undervoltage*
 - Overtemperature (cabinet, semiconductor, transformer)
 - Input short circuit (circuit breaker or fusing)
 - Output short circuit*
 - Input & output surge suppression (MOVs)
 - Phase loss*
 - I2t fusing
- *via electronic circuitry

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, inhibit, current adjust, voltage adjust, fault indication (UV, OV, OC, other)

Standard Front Panel Devices

- Power on indicator
- Start/stop pushbutton
- Fault/reset pushbutton
- Voltage regulation potentiometer
- Current regulation potentiometer

Smart Panel (HMI/digital control panel)

- Output voltage
- Output amperage
- Undervoltage indicator
- TCP/IP/Ethernet interface
- Internal communication ports - USB, RJ45 (Ethernet)
- External communication ports - USB, RJ45 (Ethernet)
- 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

- Electronic phase imbalance
- Instrumentation/metering
- Paralleling
- 12, 18, or 24 pulse design
- Remote control station
- Input cables
- Output cables
- Mobile options (casters, pneumatic tires, towable, trailer- or rack-mounted, etc.)

Cooling Systems

- Forced air
- Direct water
- Closed loop water to water heat exchanger
- Heatpipe
- Natural convection
- Water-cooled
- Liquid-cooled
- Water system protection: low flow, temperature, resistivity, leak detection, low level



Shore Power



Industrial



Military



Commercial