PCTI

Advancing the Future of Power Conversion.

Frequency Converters

PCTI manufactures solid-state frequency converters from 3.5KVA to 2MVA. We offer a wide variety of configurations to meet any application, such as ground power, ship board, shore power, and more. Our state-of-the-art technology allows us to achieve the lowest total harmonic distortion available globally (1%).

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 frequency converters 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.

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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: 36V, 115/200V, or 208/120V
- Frequency: 400Hz, 50Hz, or 60Hz ±0.05% crystal controlled
- Power ratings: 15 to 320KVA
- Regulation: 1% independent phase regulation from combined no load to full load at rated input voltage change
- Control technology: digitally synthesized pulse width modulation
- Transient response: 40ms for 50/60Hz, 500ms for 400Hz, 90% load change on any phase or combination of phases
- Wave shape: sinewave
- Crest factor: 1.41 + 0.1
- THD: less than 2% THD, 1% on any single frequency, less than 4% for non-linear loads
- Current limit: 110% of load
- Power factor: 0.8 lead to 0.8 lag. Continuous zero lead to zero lag at full-rated output without risk to unit
- Overload capacity: 110% for 1 hour, 125% for 10 minutes, 150% for 2 minutes, 200% for 20 seconds (optional), 300% for 6 seconds (optional)

Standard Features
- Pure sinewave
- Lightest weight in industry
- High efficiency for low operating costs (92% or better)
- Automatic line drop compensation

Environmental/Mechanical
- NEMA/IP enclosure ratings: NEMA 12 (IP20), NEMA 3R (IP54), NEMA 4 (IP55), NEMA 4X (IP56), other ratings available upon request
- Cooling: forced air
- Altitude: up to 10,000ft. without derating
- Operating temperature: 0°C - 50°C
- Storage temperature: -40°C - 65°C
- Humidity: up to 98% non-condensing
- Acoustical noise: 65BA max at 1 meter

Protection
- Input short circuit via circuit breaker with enclosure door interlock
- Input phase loss
- Phase rotation
- Overvoltage shutdown
- Undervoltage shutdown
- Overcurrent shutdown
- Overtemperature shutdown
- Load imbalance (greater than 25%) shutdown

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
- Voltage trim adjust ±10%
- Start pushbutton
- Stop/reset pushbutton
- Fault indicator

Smart Panel (HMI/digital control panel)
- 1Ø or 3Ø output voltage
- 1Ø or 3Ø output amperage
- Undervoltage indicator
- Overvoltage 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
- MIL-STD-704F
- UL 1012
- CE compliant

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
- Input cables
- Output cables with plug
- Parallel and load sharing
- E&F interlock status indicator
- 28V bypass mode indicator
- 12- or 18-pulse input rectification for low input current
- Push to test indicators
- 28.5VDC output (specify amps or power rating)
- Elapsed time meter
- Mobile options available

PCTI

Shore Power | Industrial | Military | Commercial