

Product Specifications

▶ Model: PT420 20 HP

PHASE PERFECT® 480V Digital Phase Converter

The ultimate technology for converting single-phase electrical power to three-phase electrical power. In fact, the three-phase power produced by Phase Perfect® is often superior in power quality to utility supplied three-phase.

Phase Perfect® utilizes the latest advances in solid state power switching technology. Unlike rotary phase converters, it does not rely on a motor to generate a voltage. Proprietary software controls power switching devices that generate three-phase power with much more precision and efficiency. Its patented design makes it a true solid-state environment, unlike any other phase converter on the market.

POWER QUALITY

Phase Perfect® 480V produces true sinusoidal three-phase output voltages. Because the output voltage is a sine wave with very low harmonic distortion, all types of three-phase equipment can be safely powered. Input current is true sinusoidal, near unity (.99) power factor and does not produce harmonics which pollutes the power grid.

The Phase Perfect® is a logical replacement for rotary converters due to the superior cost and operating efficiencies, solid-state design (no moving parts), and long-term protection for sensitive and costly equipment.



Image Note:
System pictured above is equipped with optional MCCB disconnect and NEMA 3R rated enclosure. Other options are available.

Product Features

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Balanced 480V three-phase voltages & electronic power factor correction



98% power efficiency



NEMA 1 & NEMA 3R (indoor & outdoor) rated enclosures w/ insect guards



Automatic brownout and over-voltage protection w/ fault & overload protection



High momentary overload current capacity

- IEEE 519 Compliant
- Single-phase To Three-phase Conversion
- The Only 480V Solid-State Phase Converter - Replaces Rotary
- Patented Technology
- Superior Power Quality
- Efficient Power Consumption
- Safely Power Any 480v Equipment Within Its Rated Capacity
- Easy Setup & Installation
- Huge Cost Savings Compared To Installing Utility Three-phase Service
- Does Not Create Harmonics On Power Grid

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IEEE 519 Compliant

Optional Integrated Add-Ons

MCCB Service Rated Disconnect

Raycap Strikesorb® Surge Protection

Wiring Guidelines

Wire Sizes (Full Load - Max Power)

Ground Wire Size: 8 AWG Minimum
 Input Wire Size: 14 AWG
 Output Wire Size: 14 AWG

Torque

10-14 AWG 35 lb-in
 8 AWG 40 lb-in
 2/0 to 6 AWG 120 lb-in

Input / Output Power Terminals

Input / Output: 3/16"
 Optional MCCB Disconnect 1/8"

**Allen Wrench Required*

NOTE:

Wire used within the motor circuit and all field wiring terminals must be rated at least 75° C.

Electrical Specifications	
Rated HP	20 HP
Input Voltage	440V to 520V
Output Voltage	Equal to Input
Rated Input Current	55A
Rated Output Current	32A
Output KVA	27 KVA
Phase to Phase Voltage Balance	Less Than 1%
Momentary Overload Current (4 seconds)	175A
Standby Power Consumption	74W

Single-Phase Input	
Single Phase Characteristics	Sinusoidal 2% Total Harmonic Distortion
Power Factor	Near Unity All Load Conditions (.99)
Voltage	440-520 V
Recommended Max Single-Phase Circuit Breaker Size	100A

Three-Phase Output	
Three-Phase Power Characteristics	Sinusoidal 3% Total Harmonic Distortion
Phase-to-Phase Voltage Balance	Better than 1% (NEMA MG1 Standard for Voltage Unbalance)

Protective Functions	
Over Current	Automatic Shutdown
Under-Voltage	Automatic Shutdown <440 V
Over-Voltage	Automatic Shutdown >520 V
Internal Temperature Sensor	Automatic Shutdown

General	
Efficiency	98% Typical
Operating Temperature Range	0°C (32°F) to 50°C (122°F)
Storage Temperature	-20°C (-4°F) to 50°C (122°F)
Enclosure Specifications	Indoor: NEMA 1 Outdoor: NEMA 3R
Enclosure Dimensions	28 x 22 x 15 in.
Weight	74 lbs

Certifications



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Part Number Nomenclature

PHASE PERFECT® 480V
Digital Phase Converter

Part Number Examples:
NEMA 1 Indoor: PT407-BS
NEMA 3R Outdoor: PT407R-BS

UL508A Panel Shop
Integrated Options

Series	Input Voltage	Rated HP	Enclosure Rating	Branch Circuit Protection	Surge Arrestor
PT PHASE PERFECT® 480V Digital Phase Converter	4 480V	07 07 - 7.5 HP 10 - 10 HP 15 - 15 HP 20 - 20 HP 30 - 30 HP	[Blank] NEMA 1 Indoor Rated R NEMA 3R Rated Outdoor Type Rain / Bug Proof	B MCCB Service Disconnect	S Strikesorb® Surge Arrestor

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Line Drawing

