PRODUCT APPLICATIONS
WOOD WORKING

WOOD WORKING

Recommended Products

DXL VFD
PHASE PERFECT®

$933.50
PROJECTED ANNUAL SAVINGS

YOUR DREAM SHOP SHOULDN'T BE LIMITED

Woodworking is on the uptick, and shops are being set up in rural areas, garages, barns, and commercial spaces where three-phase power isn't readily available—or it's far too expensive to bring in. Whether you're operating cabinet saws, dust collectors, CNC routers, or edge banders, your power source shouldn't limit your shop's layout or equipment choices.

The Challenge: Limitation of Conventional Conversion Methods

While rotary and static converters are commonly used alternatives to utility three-phase power, they introduce problems for woodworking shops due to poor voltage balance and limited capacity:

- **Motor Overheating & Failure:** Inability to maintain voltage balance will cause extreme motor heat.
- **Startup Struggles:** High-inertia loads like wide belt sanders or large jointers may stall or trip due to low torque or phase imbalances.
- **Inconsistent Performance:** Voltage swings can lead to fluctuating blade and spindle speeds, impacting cut quality and consistency.
- **Unplanned Downtime:** Equipment shutdowns from power errors ("phase loss", "DC bus overvoltage") can disrupt production timelines and reduce output.
- **Damaged Electronics:** Variable frequency drives (VFDs) in CNC routers, edge banders and similar equipment are especially sensitive. Poor voltage balance causes premature failure of expensive control systems.

Modern woodworking equipment—especially those with advanced controls or safety features—requires tightly balanced, clean three-phase power. Conventional phase converters just can't keep up, leading to maintenance headaches and productivity losses.

The Solution: Phase Technologies Phase Converter or VFD

The **Phase Perfect® digital phase converter** is a solid-state solution engineered specifically to meet the demands of power-sensitive woodworking shops. Just connect to single-phase power and get utility-grade three-phase out.

Key benefits of Phase Perfect over traditional methods:

- **Low standby power draw**: Save on operating costs
- **Utility-grade three-phase output**: Protects sensitive electronics and ensures smooth operation
- **Run multiple machines at once**: Not limited to one load at a time
- **No moving parts**: Reliable, zero-maintenance design

Phase Technologies also offers woodworking professionals precise control over their machinery with American made **variable frequency drives** (VFDs).

Key benefits of Phase Technologies VFD:

- **Smooth Motor Starts:** Reduce mechanical stress and extend equipment life
- **Speed Control for Precision Work**: Dial in exact motor speeds for different materials and cuts
- **Energy Efficiency**: Only use the power you need, no idler motor
- **Quiet, Reliable Operation**: No loud clunking, humming or voltage spikes

Why Woodworking Shops Choose Phase Technologies

1. **Clean, Balanced Three-Phase Power**
   Delivers the voltage stability woodworking tools and CNC systems require for accurate, repeatable results
2. **Power for Tough Loads**
   Starts and runs high-draw equipment like dust collectors, wide belt sanders, and large table saws without tripping or lag
3. **Simple Installation**
   Install indoors or out, no complex setup or programming
4. **Minimal Maintenance**
   No motors or belt, just reliable power, day in and day out

Technical Details: Designed for Flexibility

Transformer-Friendly:
Need 208 V, 380 V, or another voltage for certain machines? Use a buck/boost transformer to adjust voltage as needed, or pair with a delta-wye transformer to support systems requiring a neutral.

Built for Longevity:
With two decades of refinement, Phase Perfect is proven in demanding environments. No moving parts means reduced failure risk, minimal maintenance, and years of dependable use.

Perfect For:

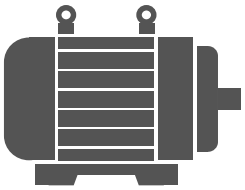
- Woodshops in rural or residential areas
- Shops without access to utility three-phase
- Garages, pole buildings, and home-based setups
- Expanding operations with multiple machines

ANNUAL SAVINGS CALCULATOR

Most importantly, **WE SAVE YOU MONEY.** No costly utility upgrades, just efficient, reliable power for your HVAC system.

$933.50/year

Typical Woodworking System Installation, Estimated Annual Savings with Phase Perfect® versus Rotary:



	Phase Perfect® Digital Phase Converter	Rotary Phase Converter
Converter Horsepower Needed	***40 HP***	*80 HP*
Max Load Amperage	***120 A***	*120 A*
Standby Power Consumption	***190 W***	*5800 W*
Idle Power Cost	***$31.62***	*$965.12*

Max Load Amperage: 120 A

Amperage rating of largest or combined load that will be connected to the Phase Perfect®

Electricity Cost (Per kWh): $0.16

The cost in cents per kilowatt/hour your utility charges you for electricity usage. You can estimate costs for your region by looking at the Average Price Chart on eia.gov.

Estimated Power On Time: 52 Weeks per Year

5 Days per Week

Number of weeks per year and days per week you anticipate needing 3 Phase power available. For example: a business with typical operating hours might be 50 weeks per year and 5 days per week, while an elevator installation would require 52 weeks per year and 7 days per week.

Estimated Standby Time: 4 Hours per Day

The number of hours per day you anticipate not drawing a significant 3 Phase load. For example: a typical business might not draw a significant load right away in the morning, during breaks, or over the lunch hour, while an elevator might be idle 20 or more hours per day.

PHASE CONVERTING | 230 V & 460 V | VOLTAGE DOUBLING
NEMA 3R OUTDOOR ENCLOSURE | 5 - 175 HP

PHASE PERFECT®

DIGITAL PHASE CONVERTERS

- World's Only Digital Phase Converter
- 2X Voltage Doubling
- Phase-to-Phase Voltage Balance
- 98.7% Efficient At Full Load
- 508A Panel Shop

Phase Conversion & Voltage Doubling

Cost Savings for Long Lead Applications

Phase conversion allows three-phase output from a single-phase input, giving you access to three-phase power anywhere. Voltage doubling eliminates the need for a transformer while minimizing motor lead wire size on 460 V systems running on a 230 V source, saving you hundreds on wire costs.

INPUT
SINGLE-PHASE
230 V / 460 V

OUTPUT
THREE-PHASE
230 V / 460 V

Panel Shop Options

- **Quiet Model**
  - Additional inductance built-in makes these models quieter than the competition
- **MCCB Service Disconnect**
  - Breaker equipped with external, service-rated, disconnect to support easy field serviceability
- **MODBUS**
  - Allows information exchange between devices for simple communication.
- **50Hz Operation**
- **On/Off Switch**
  - Allows toggling of device power without the need to remove it from the power source
- **Strikesorb Surge Protection**
  - Protect your drive from damaging input voltage spikes with a high-quality, surge protective device

PHASE PERFECT

Features

Voltage Balance Within 2%

Phase Technologies' Digital Phase Converters offer line-to-line voltages that are balanced within 2%, improving equipment performance and lifespan. A balanced voltage is one of the most important factors when considering efficiency, power output, reliability, and longevity. Even slight voltage imbalances can increase current, leading to excessive heat and motor damage.

2X Starting Capacity

With twice the starting capacity of a rotary phase converter, a single Phase Perfect Digital Phase Converter is capable of starting motors up to their stated HP. No derate required. Typically, you would choose a Phase Perfect rated above the sum of total current drawn for all connected loads. However, Phase Perfect Digital Phase Converters can be oversized, or split into multiple units, to better accommodate the available incoming power.

Utility Grade Three-Phase Output

Phase Perfect Digital Phase Converters provide a safe, clean, utility-quality three-phase output capable of starting and stopping motors across the line while running electronics such as transformers, contactors, circuit boards, lights, and heaters.

Simple Installation

With two wires in and three wires out, installation of Phase Perfect Digital Phase Converters are virtually "plug-and-play." Once installed, three-phase equipment can be easily connected to the output just like they would to a utility three-phase power supply.

Regenerative (PT, PTE)

Maximize efficiency with balanced, stable voltage to the load and full regeneration on shutdown.

Voltage Doubling Output (PTE)

Eliminates the need for a transformer converting 230 V input to a 460 V output.

Product Specifications

	Model / Part Number	HP	Rated Current (Input)	Rated Current (Output)	Input Voltage	Output Voltage	Output	Standby Power Consumption
230 V	PT007	7.5	45 A	26 A	230 V	230 V	10.8 kVA	70 W
	PT010	10	62 A	36 A	230 V	230 V	14.9 kVA	74 W
	PT020	20	111 A	64 A	230 V	230 V	26.6 kVA	80 W
	PT030	30	165 A	95 A	230 V	230 V	39.4 kVA	175 W
	PT040	40	225 A	130 A	230 V	230 V	54.0 kVA	190 W
	PT050	50	286 A	165 A	230 V	230 V	68.5 kVA	235 A
	PT060	60	329 A	190 A	230 V	230 V	78.9 kVA	260 W
	PT075	75	416 A	240 A	230 V	230 V	99.7 kVA	300 W
460 V	PT407	7.5	22 A	13 A	460 V	460 V	10.8 kVA	52 W
	PT410	10	32 A	18 A	460 V	460 V	14.9 kVA	68 W
	PT415	15	47 A	27 A	460 V	460 V	22.4 kVA	71 W
	PT420	20	55 A	32 A	460 V	460 V	26.6 kVA	74 W
	PT430	30	80 A	46 A	460 V	460 V	38.2 kVA	87 W
	PT440	40	105 A	61 A	460 V	460 V	50.7 kVA	180 W
	PT450	50	134 A	77 A	460 V	460 V	64.0 kVA	190 W
	PT460	60	157 A	91 A	460 V	460 V	75.6 kVA	220 W
	PT475	75	185 A	107 A	460 V	460 V	88.9 kVA	270 W
	PT4100	100	246 A	142 A	460 V	460 V	118.0 kVA	300 W
	PT4150	150	343 A	198 A	460 V	460 V	164.4 kVA	300 W
	PT4175	175	381 A	220 A	460 V	460 V	182.9 kVA	300 W

	Model / Part Number	HP	Rated Current (Input)	Rated Current (Output)
230 V	PTE007	7.5	45 A	26 A
	PTE010	10	62 A	36 A
	PTE015	15	90 A	52 A
	PTE020	20	111 A	64 A
2x Voltage	PTE207	7.5	45 A	13 A
	PTE210	10	62 A	18 A
	PTE215	15	94 A	27 A
460 V	PTE407	7.5	22 A	13 A
	PTE410	10	32 A	18 A
	PTE415	15	48 A	27 A
	PTE420	20	55 A	32 A

DIGITAL PHASE CONVERTERS | VARIABLE FREQUENCY DRIVES | MOTOR PROTECTION | SOFT STARTER | 508A PANEL SHOP

Our Mission

Relentlessly seek to provide Uncommon Value, solutions, innovation, and support for the industries that we serve.

10-DAY AVG. LEAD TIMES

MADE IN THE USA