



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

The 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 voltage. Proprietary software controls power switching devices that generate three-phase power with much more precision and efficiency. The patented design makes it unlike any other phase converter available on the market.



### Power Quality

The Phase Perfect® produces true sinusoidal three-phase output voltages balanced to within <2% under all load conditions. Because the output voltage is a sinewave with 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 can pollute the power grid.

### Regenerative Power Capability

The Phase Perfect® Digital Phase Converter handles regenerative power by passing clean, balanced power back onto the single-phase line when three-phase loads are in a generating mode. Most other power switching converters waste regenerative power by burning it up with braking resistors. Putting regenerative power back onto the line saves electrical power and even allows the Phase Perfect to operate continuously as a three-phase to single-phase converter.

### Versatility

The Phase Perfect® can safely power virtually any three-phase application within its rated capacity. It can power resistive and capacitive loads as well as motor or inductive loads. Its power quality makes it ideal for powering demanding loads such as CNC machine equipment, submersible pumps and other voltage sensitive applications. The Phase Perfect PT Series can operate with 60 Hz input. *(Note: For 50 Hz applications - call us for a custom quote)*

### Easy Installation & Operation

The Phase Perfect® is available with built-in contactor and an optional adjustable solid state overload relay, which allows it to function as a motor starter for most single-motor applications. It also has a control circuit and terminals, which allows an external switch to control both the converter and the load. Installation is straightforward and simple and can usually be accomplished in minutes with a minimum of additional equipment required.

### Economy

Utility three-phase service can cost thousands of dollars to install, even when three-phase lines are nearby. The Phase Perfect® is an affordable alternative that provides better phase balance than most utilities will specify for their service. It also protects three-phase equipment from damage due to under-voltage, over-voltage and single-phasing that can occur with AC mains power. It is intentionally designed to rugged, reliable and is 98.7% efficient.



**What's New**

- Now 98.7% efficient at full load
- Lower standby losses
- Voltage balance within 2%
- Compared to rotary phase converters, 82% quieter
- NEW! PERFECTStart™ - Has proprietary control algorithm that prevents overcurrent tripping
- NEMA 1 indoor & NEMA 3R outdoor options available
- 240V models - now up to 75 HP
- 480V Models - now up to 100 HP

**Specifications**

**General**

Output Voltage.....	Approximately equal to input voltage
Output Voltage Unbalance.....	≤2%
Operating Temperature Range.....	-10°C (14°F) to 50°C (122°F)
Storage Temperature.....	-20°C (-4°F) to 60°C (140°F)
Efficiency.....	98.7%
Short Circuit Rating.....	10kA
Noise.....	73 dBA
Start Delay On Power Up.....	2 sec
Enclosure Rating .....	NEMA 1 or NEMA 3R

**Input Power Terminals**

PT007, PT010, PT020, PT407, PT410, PT415, PT420, PT430, PT440, PT450.....	<b>Wire Size</b>	<b>Torque</b>
	2/0 – 6 AWG	120 in-lb
	8 AWG	40 in-lb
	10 - 14 AWG	35 in-lb
 PT030, PT040, PT460, PT475, PT4100.....	<b>Wire Size</b>	<b>Torque</b>
	350 kcmil - 6 AWG	275 in-lb
 PT050, PT060, PT075.....	<b>Wire Size</b>	<b>Torque</b>
	500 kcmil - 4 AWG	375 in-lb



**Specifications** (Continued)

**Output Power Terminals**

PT007, PT010, PT020, PT030, PT040, PT407, PT410, PT415, PT420, PT430, PT440, PT450, PT460, PT475, PT4100.....	<b>Wire Size</b> 2/0 – 6 AWG 8 AWG 10 - 14 AWG	<b>Torque</b> 120 in-lb 40 in-lb 35 in-lb
PT050, PT060, PT075.....	<b>Wire Size</b> 350 kcmil - 6 AWG	<b>Torque</b> 275 in-lb

**Ground Wire Sizes**

	<b>Wire Size</b>
PT007.....	10 AWG
PT010, PT405, PT407, PT410, PT415, PT420, PT430.....	8 AWG
PT020, PT440, PT450, PT460.....	6 AWG
PT030, PT040, PT475.....	4 AWG
PT050, PT060, PT4100.....	2 AWG
PT075.....	2 AWG

**Recommended Breaker Sizes**

<i>240V Models</i>	<b>Horsepower</b>	<b>Recommended Breaker Size</b>
PT007.....	7.5 HP	60 A
PT010.....	10 HP	80 A
PT020.....	20 HP	150A
PT030.....	30 HP	225 A
PT040.....	40 HP	300 A
PT050.....	50 HP	400 A
PT060.....	60 HP	500 A
PT075.....	75 HP	600A

<i>480V Models</i>	<b>Horsepower</b>	<b>Recommended Breaker Size</b>
PT407.....	7.5 HP	30 A
PT410.....	10 HP	40 A
PT415.....	15HP	60 A
PT420.....	20 HP	70 A
PT430.....	30 HP	100 A
PT440.....	40 HP	150 A
PT450.....	50 HP	175 A
PT460.....	60 HP	200 A
PT475.....	75 HP	250 A
PT4100.....	100 HP	400 A



**Agency Approvals / Compliance**

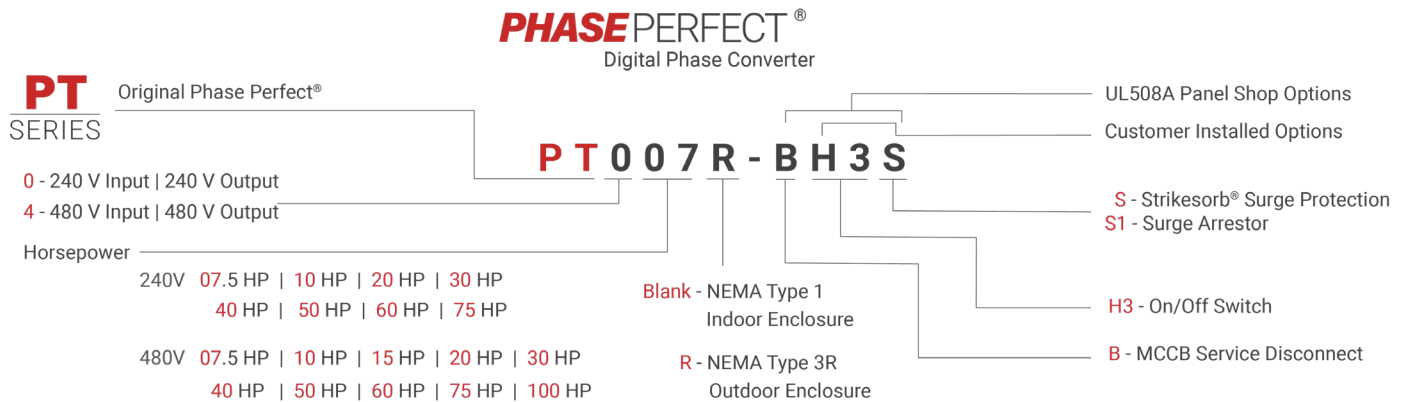
**ETL listed to the following:**

1. Conforms to UL STD 61800-5-1  
(Standard for Adjustable Speed Electrical Power Drive Systems)
2. Certified to CSA STD C22.2 NO.274  
(Canadian Standards Association pertaining to the installation and maintenance of electrical equipment in Canada)

File No: 3187280



**Nomenclature**





**Model Specifications**

**240V Models**

Model / Part Number	PT007	PT010	PT020	PT030	PT040	PT050	PT060	PT075
Rated Horsepower	7.5 HP	10 HP	20 HP	30 HP	40 HP	50 HP	60 HP	75 HP
Output kVA	10.8 kVA	14.9 kVA	26.6 kVA	39.4 kVA	54.0 kVA	68.5 kVA	78.9 kVA	99.7 kVA
Input Voltage	187 - 260 V	187 - 260 V	187 - 260 V	187 - 260 V	187 - 260 V	187 - 260 V	187 - 260 V	187 - 260 V
Output Voltage	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input
Phase-to-Phase Voltage Balance	<2%	<2%	<2%	<2%	<2%	<2%	<2%	<2%
Maximum Steady-State Output	26 A	36 A	64 A	95 A	130 A	165 A	190 A	240 A
Standby Power Consumption	70 W	74 W	80 W	175 W	190 W	235 W	260 W	300 W
Efficiency	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%
Installed Optional Breaker Size	60 A	80 A	150 A	225 A	300 A	400 A	500 A	600 A

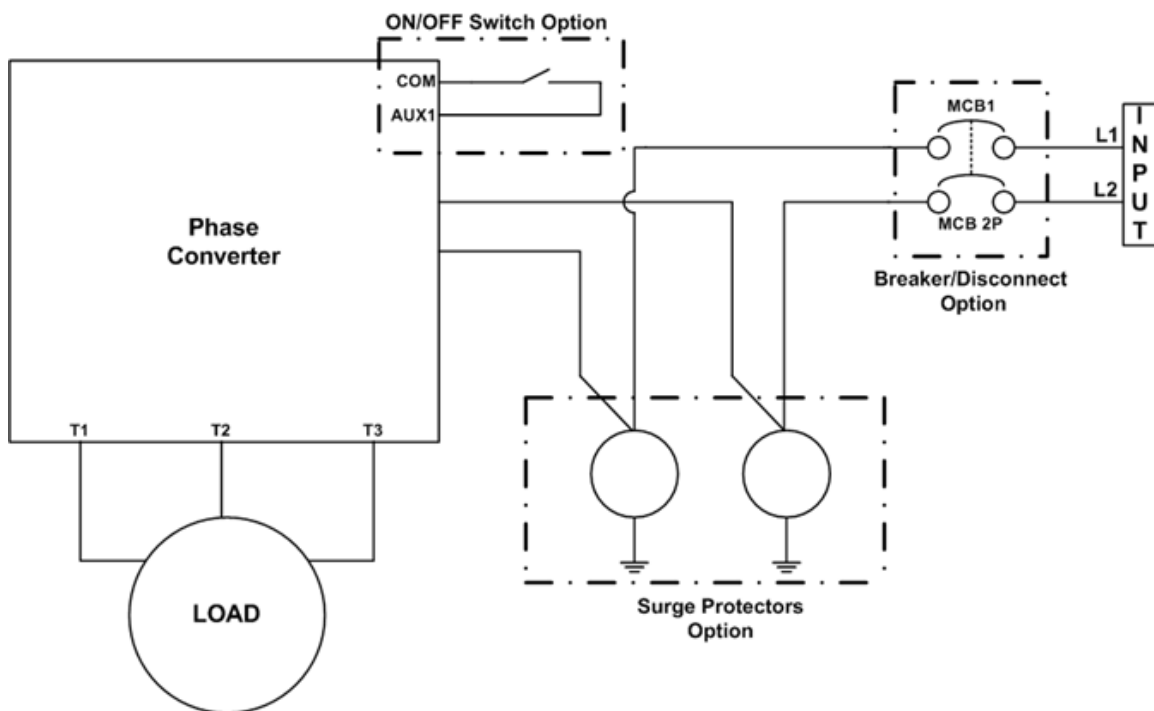
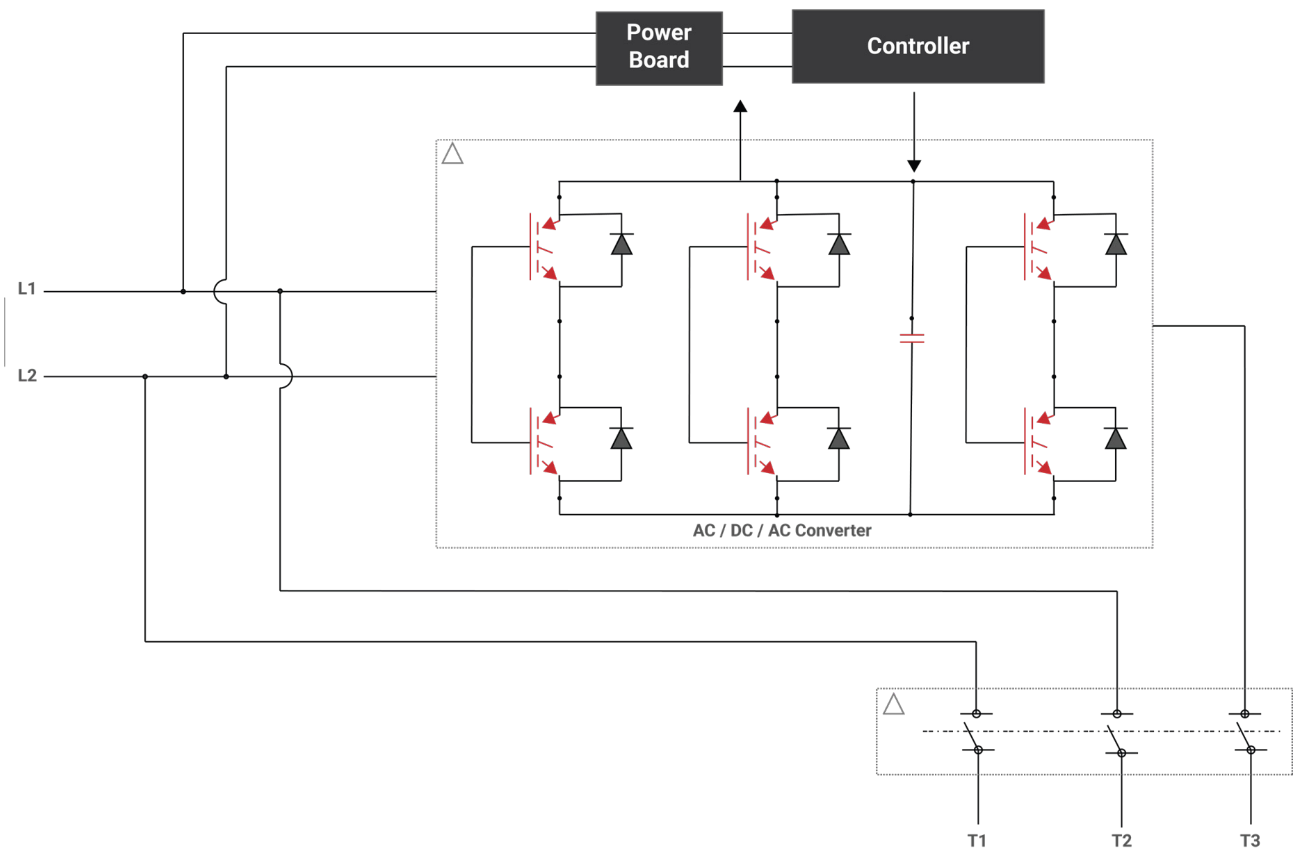
**480V Models**

Model / Part Number	PT407	PT410	PT415	PT420	PT430	PT440	PT450	PT460	PT475	PT4100
Rated Horsepower	7.5 HP	10 HP	15 HP	20 HP	30 HP	40 HP	50 HP	60 HP	75 HP	100 HP
Output kVA	10.8 kVA	14.9 kVA	22.4 kVA	26.6 kVA	38.2 kVA	50.7 kVA	64.0 kVA	75.6 kVA	88.9 kVA	118.0 kVA
Input Voltage	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V	440 - 520 V
Output Voltage	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input	Equal To Input
Phase-to-Phase Voltage Balance	<2%	<2%	<2%	<2%	<2%	<2%	<2%	<2%	<2%	<2%
Maximum Steady-State Output	13 A	18 A	27 A	32 A	46 A	61 A	77 A	91 A	107 A	142 A
Standby Power Consumption	52 W	68 W	71 W	74 W	87 W	180 W	190 W	220 W	270 W	300 W
Efficiency	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%	98.7%
Installed Optional Breaker Size	30 A	40 A	60 A	70 A	100 A	150 A	175 A	200 A	250 A	400 A

**Dimensions & Weight**

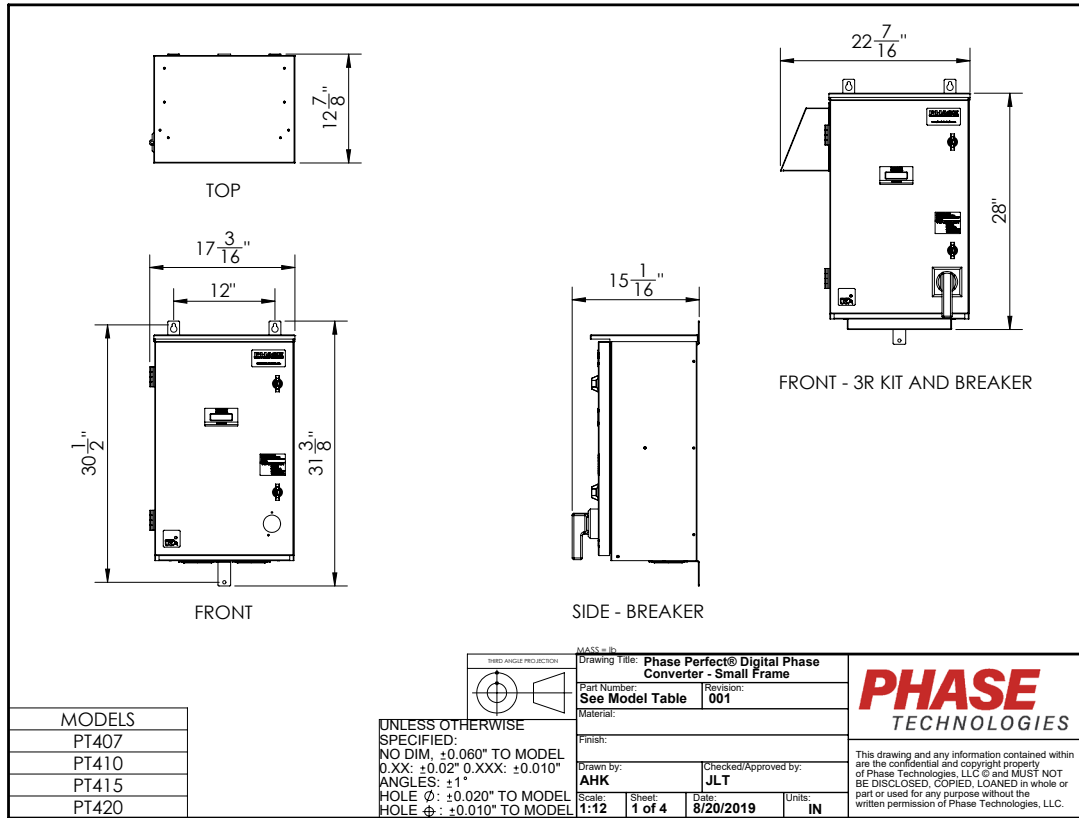
Enclosure	Small	Medium	Large
Models	PT407, PT410, PT415, PT420	PT007, PT010, PT020, PT430	PT030, PT040, PT050, PT060, PT075, PT440, PT450, PT460, PT475, PT4100
NEMA 1 (w x h x d)	17 x 32 x 15 (Inches)	24 x 37 x 17 (Inches)	25 x 45 x 19 (Inches)
NEMA 3R (w x h x d)	23 x 32 x 15 (Inches)	24 x 38 x 17 (Inches)	25 x 46 x 19 (Inches)
<i>NOTE: Dimensions are measured at maximum size and includes mounting hardware.</i>			
Weight	PT407-62lbs; PT410-64lbs; PT415-68lbs; PT420-74lbs	PT007-100lbs; PT010-102lbs; PT020-130lbs; PT430-139lbs	PT030-259lbs; PT040-259lbs; PT050-270lbs; PT060-285lbs; PT075-288lbs; PT440-282lb; PT450-282lbs; PT460-293lbs; PT475-299lbs; PT4100-320lbs

**Block Diagrams**

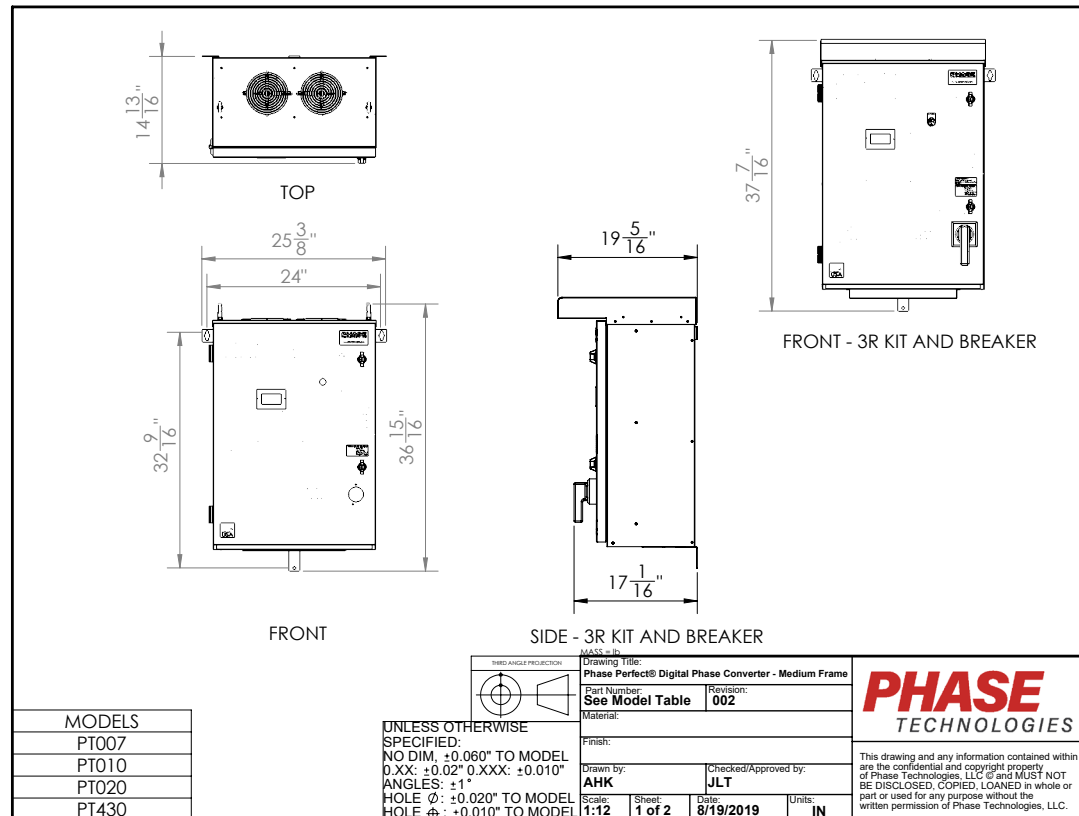




**Line Drawings**  
Small Frame



**Line Drawings**  
Medium Frame



**Line Drawings**  
Large Frame

