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 either 50 or 60Hz input.

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 99% 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	97.8%
Short Circuit Rating	10kA
Noise	73 dBA
Start Delay On Power Up	2 sec
Enclosure Rating	NEMA 1 or NEMA 3R

Input Power Terminals

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

Specifications *(Continued)*

Output Power Terminals

	Wire Size	Torque
PT007, PT010, PT020, PT030, PT040, PT407, PT410, PT415, PT420, PT430, PT440, PT450, PT460, PT475, PT4100	2/0 – 6 AWG	120 in-lb
	8 AWG	40 in-lb
	10 - 14 AWG	35 in-lb

	Wire Size	Torque
PT050, PT060, PT075	350 kcmil - 6 AWG	275 in-lb

Ground Wire Sizes

	Wire Size
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

240V Models	Horsepower	Recommended Breaker Size
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

480V Models	Horsepower	Recommended Breaker Size
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

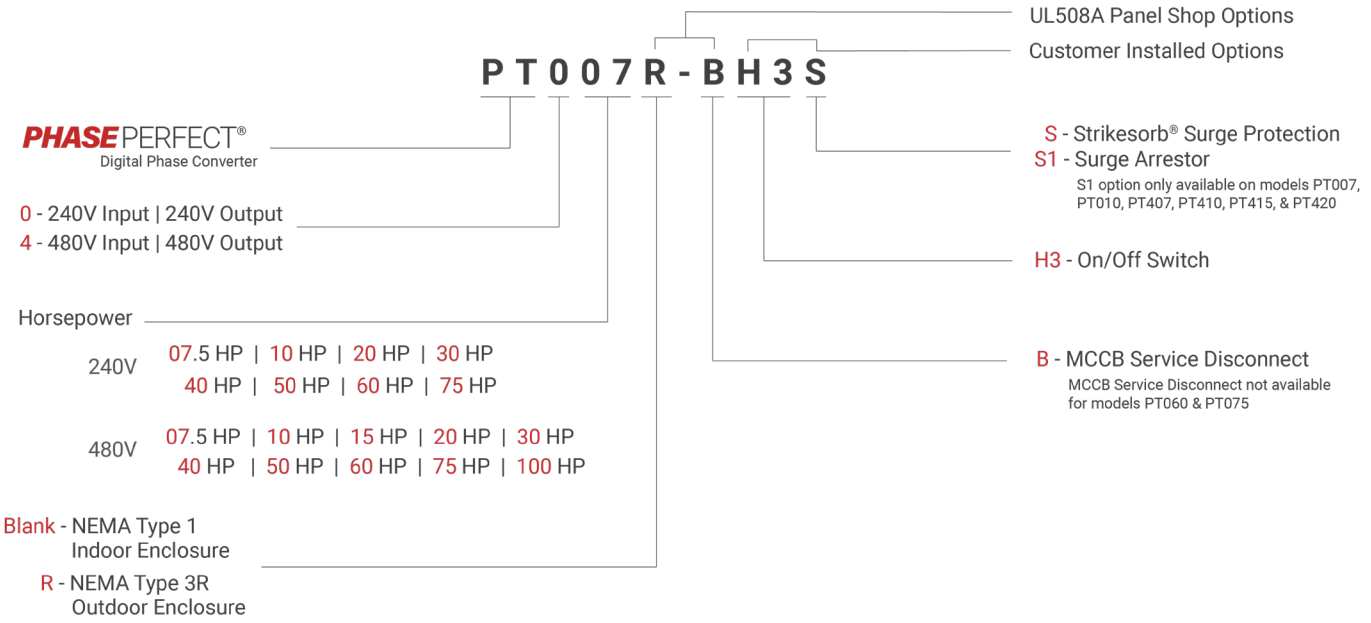
ETL listed to the following:

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

Intertek

Nomenclature



V1.3_07182019

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

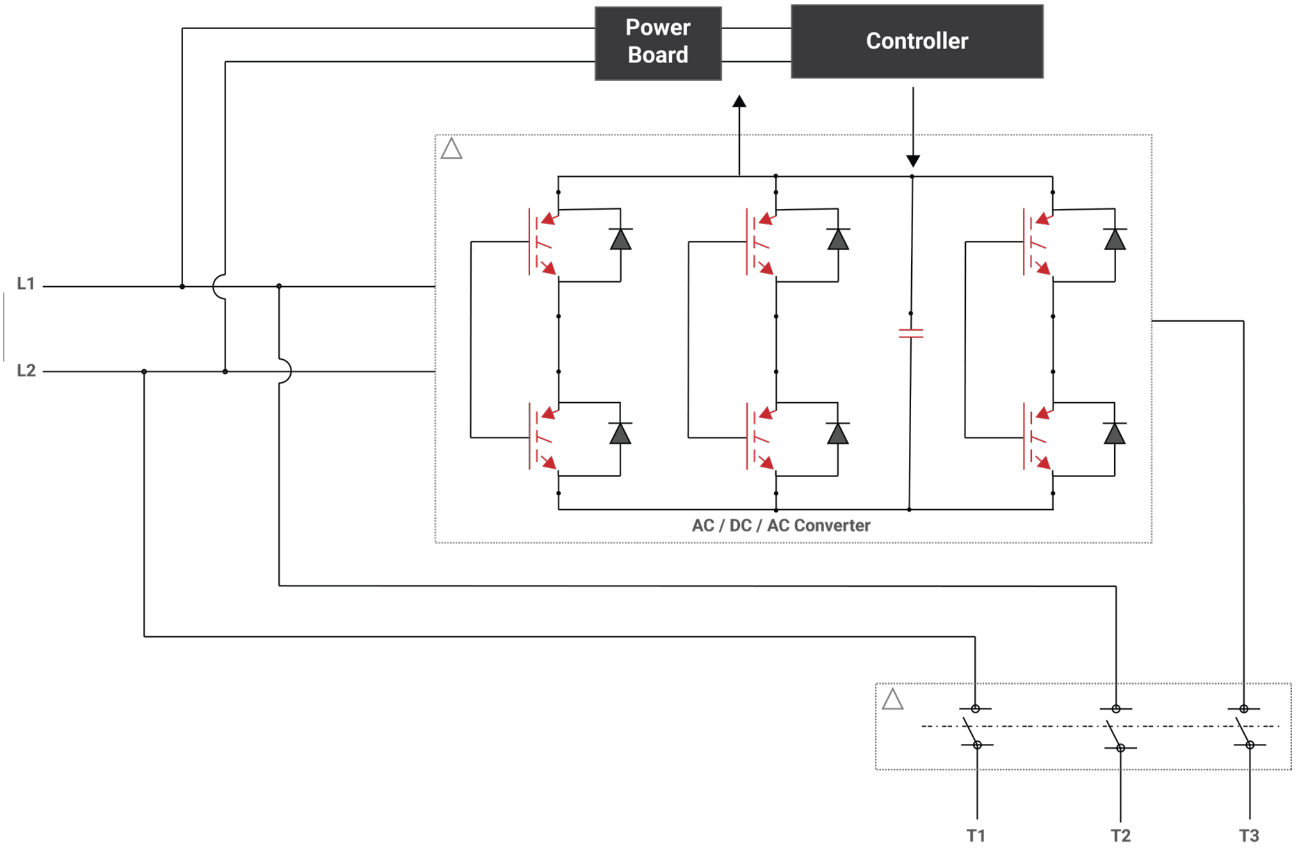
480V Models

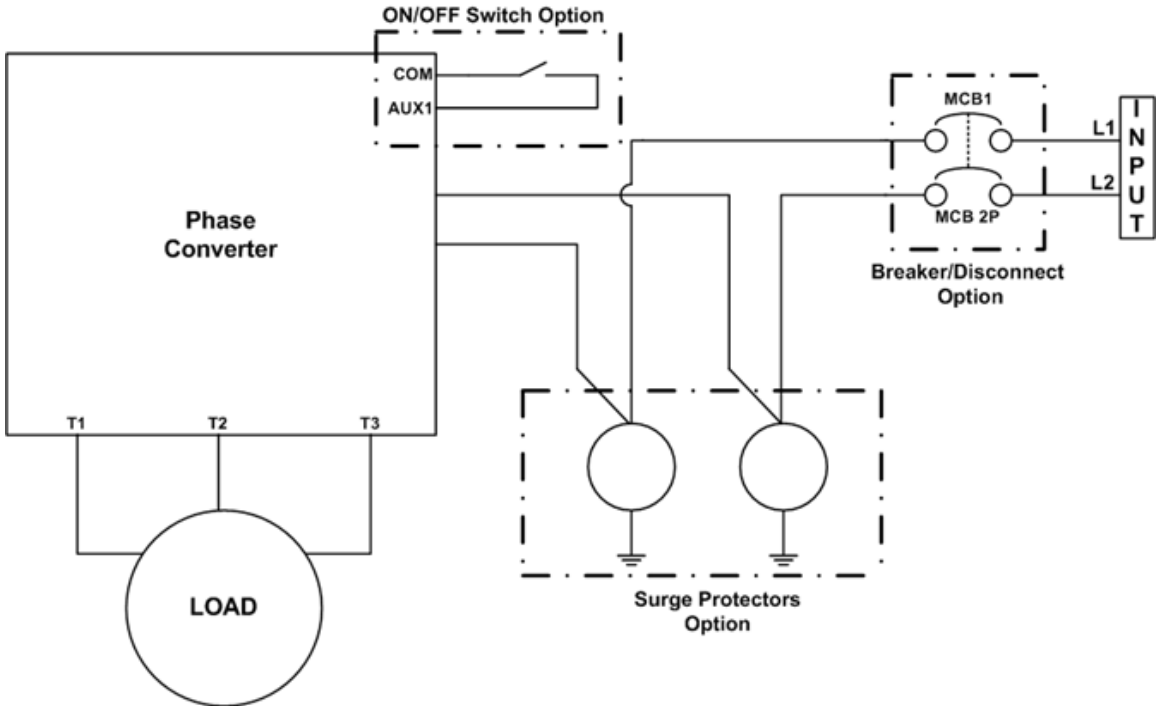
Model / Part Number	PT407	PT410	PT415	PT420	PT430	PT440	PT450	PT460	PT475	PT4100
Rated Horsepower	7.5 HP	10 HP	15 HP	20 HP	30 HP	40 HP	50 HP	60 HP	75 HP	100 HP
Output kVA	10.8 kVA	14.9 kVA	22.4 kVA	26.6 kVA	38.2 kVA	50.7 kVA	64.0 kVA	75.6 kVA	88.9 kVA	118.0 kVA
Input Voltage	440 - 520 V	440 - 520 V	440 - 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

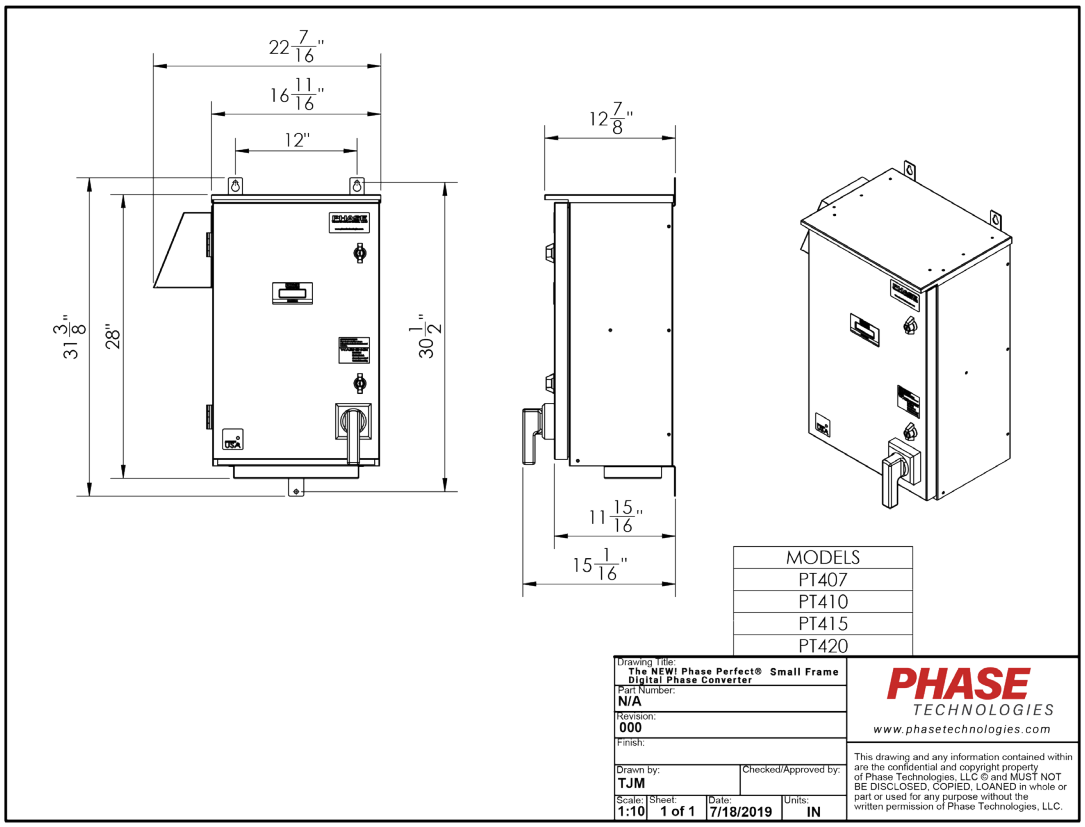
Enclosure	Small	Medium	Large
Models	PT407, PT410, PT415, PT420	PT007, PT010, PT020, PT430	PT030, PT040, PT050, PT060, PT075, PT440, PT450, PT460, PT475, PT4100
NEMA 1 (w x h x d)	17 x 32 x 15 (Inches)	24 x 37 x 17 (Inches)	25 x 45 x 19 (Inches)
NEMA 3R (w x h x d)	23 x 32 x 15 (Inches)	24 x 38 x 17 (Inches)	25 x 46 x 19 (Inches)
NOTE: Dimensions are measured at maximum size and includes mounting hardware.			
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



MODELS
PT407
PT410
PT415
PT420

Drawing Title: The NEW! Phase Perfect® Small Frame Digital Phase Converter			
Part Number: N/A			
Revision: 000			
Finish:			
Drawn by: TJM		Checked/Approved by:	
Scale: 1:10	Sheet: 1 of 1	Date: 7/18/2019	Units: IN

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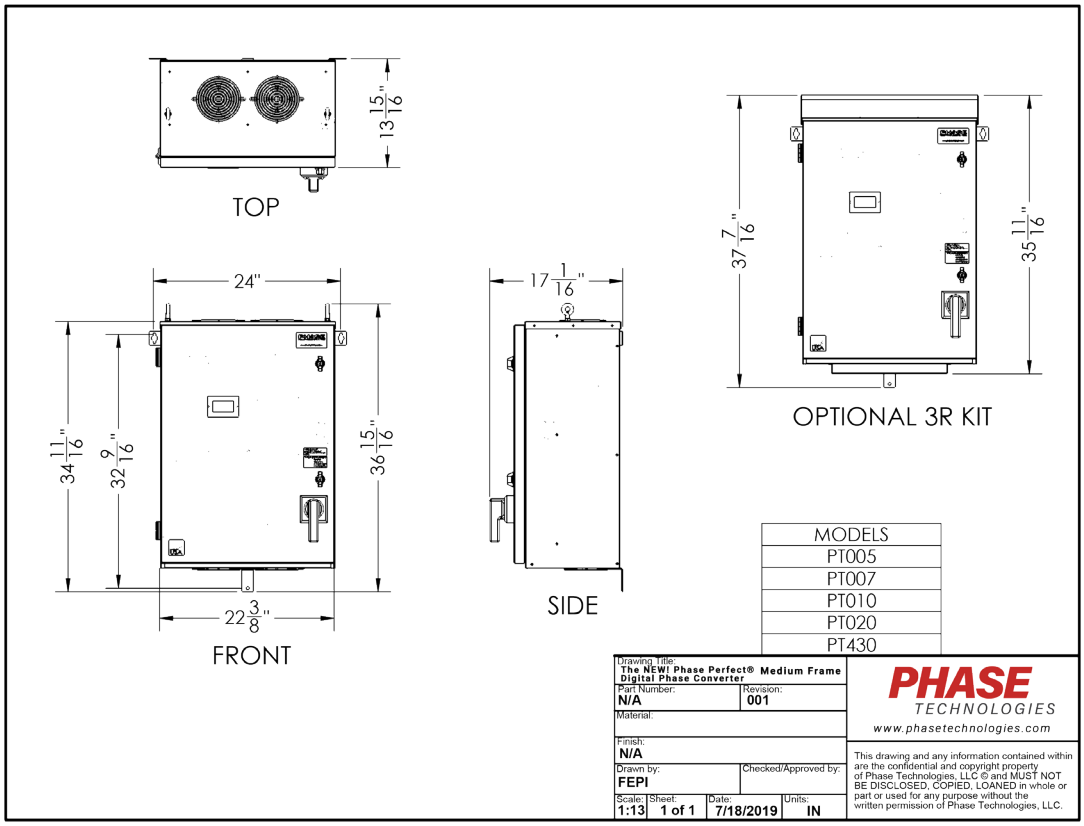
Line Drawings
Medium Frame



MODELS
PT005
PT007
PT010
PT020
PT430

Drawing Title: The NEW! Phase Perfect® Medium Frame Digital Phase Converter			
Part Number: N/A	Revision: 001		
Material:			
Finish: N/A			
Drawn by: FEPI		Checked/Approved by:	
Scale: 1:13	Sheet: 1 of 1	Date: 7/18/2019	Units: IN

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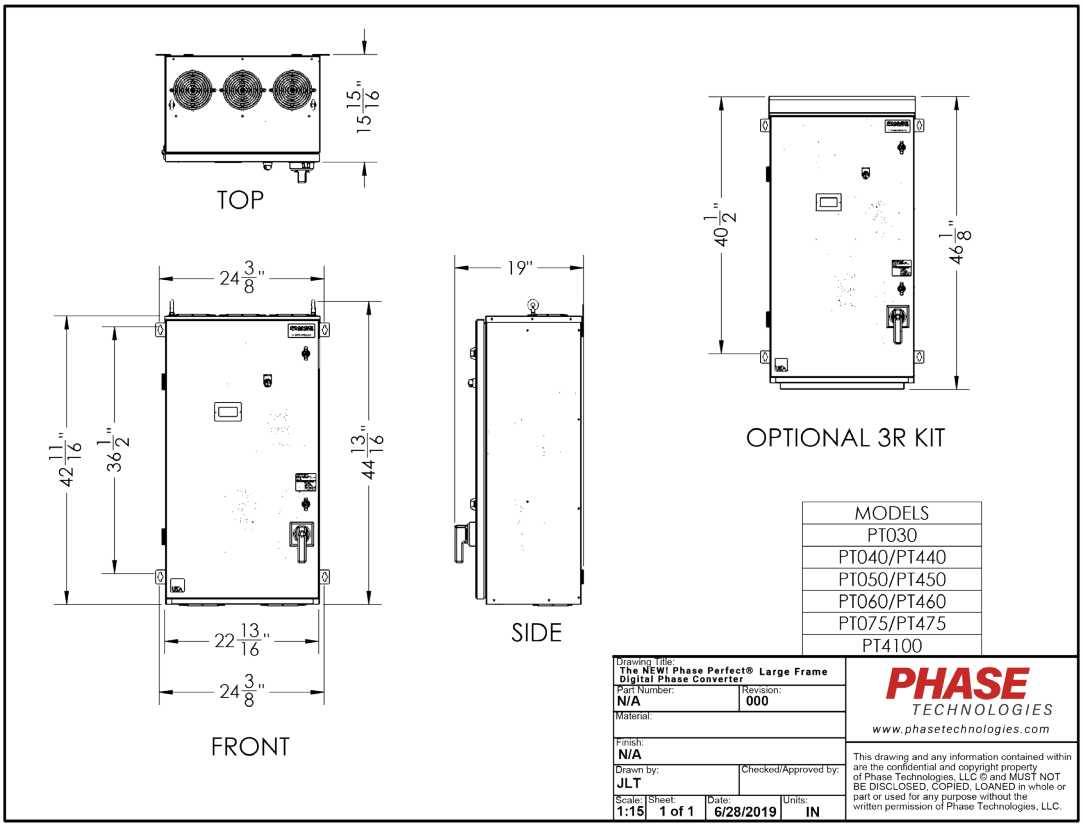
Line Drawings

Large Frame



MODELS
PT030
PT040/PT440
PT050/PT450
PT060/PT460
PT075/PT475
PT4100

Drawing Title: The NEW! Phase Perfect® Large Frame Digital Phase Converter		PHASE TECHNOLOGIES www.phasetechnologies.com
Part Number: N/A	Revision: 000	
Material:		
Finish: N/A		
Drawn by: JLT	Checked/Approved by:	
Scale: 1:15 / Sheet: 1 of 1 / Date: 6/28/2019 / Units: IN		