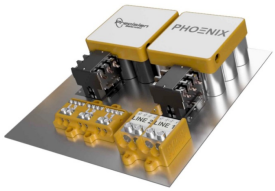


Precision GP100PL Phoenix Phase Converters User Manual

Contents

Precision GP100PL Phoenix Phase Converters

Product Information

Specifications

- Model: GP100PL
- Power Requirements: 230 Volts – 300 AMP SERVICE
- Idler Motor: 2/0 AWG COPPER
- Breaker/Fuse: 150 MIN / 400 MAX

GENERAL SPECIFICATIONS	
HP 5	100
KW	75
KVA	87.21
HZ	50/60
ENCL	TEFC/NEMA 4
FRAME	405T
IDLER WEIGHT	1120
PANEL WEIGHT	89

SINGLE PHASE ELECTRICAL SPECS	
VOLTAGE INPUT	208-250V
MOTOR LOAD BREAKER Minimum Size	150
MOTOR LOAD BREAKER Maximum Size	400
SERVICE KVA Minimum Size	167
SERVICE AMPS Minimum Size	695
COPPER WIRE Minimum Size	300mcm

CONSTRUCTION, DIMENSIONS, WEIGHT	
ELECTRICAL PANEL	
ENCLOSURE TYPE	NEMA 4
ENCLOSURE CERTIFICATIONS	UL 508A (CSA C22.2 No. 14-13.), TUV, CE.
COLOR	Light Gray
HEIGHT	26
WIDTH	26
DEPT	10
MOUNTING	WALL MOUNT

THREE PHASE ELECTRICAL SPECS	
VOLTAGE OUTPUT	208-230 Volts Delta
MAX OUTPUT INDUCTIVE LOAD AMPS	227
MAX OUTPUT RESISTIVE LOAD AMPS	135
VOLTAGE BALANCING	+/- 2%
WIRE SIZE MIN Idler/Generator	2/0
LARGEST SPINDLE MOTOR START	50
LARGEST COMPRESSOR LOAD START	40
TOTAL COMBINED HORSEPOWER RUN	100

Product Usage Instructions

Power Requirements

Before installation, call your electric company to verify the KVA size of the transformer. The KVA number should be larger than the HP of the idler motor.

Checking Connections

Check all connections to ensure they are secure, including factory connections to the power block. It is recommended to recheck connections after a few weeks of using the converter.

Speed Control

If you experience any issues with the speed of the phase converter, shut it down immediately. If you don’t understand how to troubleshoot the issue, contact us or a qualified electrician. Failure to turn off the unit may result in damage to the idler motor, which will not be covered under warranty.

Breaker and Fuse Sizes

For motors, double the amps size of the machine. For example, if the equipment pulls 20 amps, use a 40 amp breaker. When multiple machines will run at the same time, calculate the total amps by adding the amps of the largest machine and the other machines. Use the next standard size breaker for this total amperage.

Wire and Breaker Sizes

For single-phase wiring, use 300 MCM Copper for distances under 50 feet. The idler motor requires 2/0 AWG

COPPER wiring. The breaker/fuse should be a minimum of 150 amps and a maximum of 400 amps.

Wiring Diagram

Refer to the wiring diagram located inside the connection cover or on the nameplate of the idler/generator motor. Follow the specific instructions for connecting the wires based on the motor's lead numbers and the L1, L2, and L3 terminals.

Load Center and Breaker Panel

If using a load center or a 3-phase breaker panel, make sure to size the motor load breaker twice the full load amps of your equipment.

Enclosure Dimensions

The Nema 4 enclosure dimensions for GP50, GP60, GP75, and GP100 models are as follows:

- A: Dimension
- B: Dimension
- C: Dimension
- D: Dimension
- E: Dimension
- F: Dimension

READ FIRST – BEFORE INSTALLATION

A most important step to know.

- NEVER Start the phase converter with a load, this includes transformers.
- Make sure you have the incoming service to start the phase converter, call your electric company to verify the KVA size of the transformer, the KVA number should be larger than the HP of the idler motor.
- DO NOT use WIRE NUTS for any connection, use the bolt-down lugs. Check to make sure all connections even factory connections to the power block are secure, also recheck connections after a few weeks of using the converter.
- When powering up the unit, if the idler does NOT come up to FULL SPEED, then shut the phase converter down right away. If you don't understand then call us or a qualified electrician. if you do not turn the unit off you have a chance
  to damage the idler motor that will not be covered under warranty.
- Must be installed by a licensed industrial electrician, our guidelines are not to supersede local and state laws.

Power requirements

- You will need to use a motor load-type breaker. NOT a quick blow or trip breaker.
- Sizing a breaker for a single machine with an inductive load (motors) doubles the amps size of the machine. For example, if the equipment pulls 20 amps use a 40 amp breaker.
- Sizing the equipment for multiple machines double the amp of the largest machine and add the the other

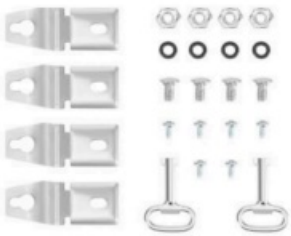
machine that will run at the same time. Example; 20 AMP Lathe. 9 amp saw, 6 amp milling machine. 20 X 2 = 40 +9 + 6 = 45 amps, use the next standard size breaker which would be 50 Amps two pole breaker.

- Use the chart to make sure you don't go over or under the Minimum and maximum size allowed. For rural areas increase the minimum size breaker by 20% Click on the next picture to see this chart.

WIRE AND BREAKER SIZES	
SINGLE PHASE	300 MCM Copper under 50 feet
IDLER MOTOR	2/0 AWG COPPER
BREAKER/FUSE	150 MIN / 400 MAX

Mounting the Phase Converter Panel

Mount the enclosure first, to a non-vibrating surface, there are two options provided for mounting, next install the back plate with the four nuts provided. Mounting the phase converter panel near the breaker panel is recommended the larger wire is your single phase line, so that is best to keep as short as possible.

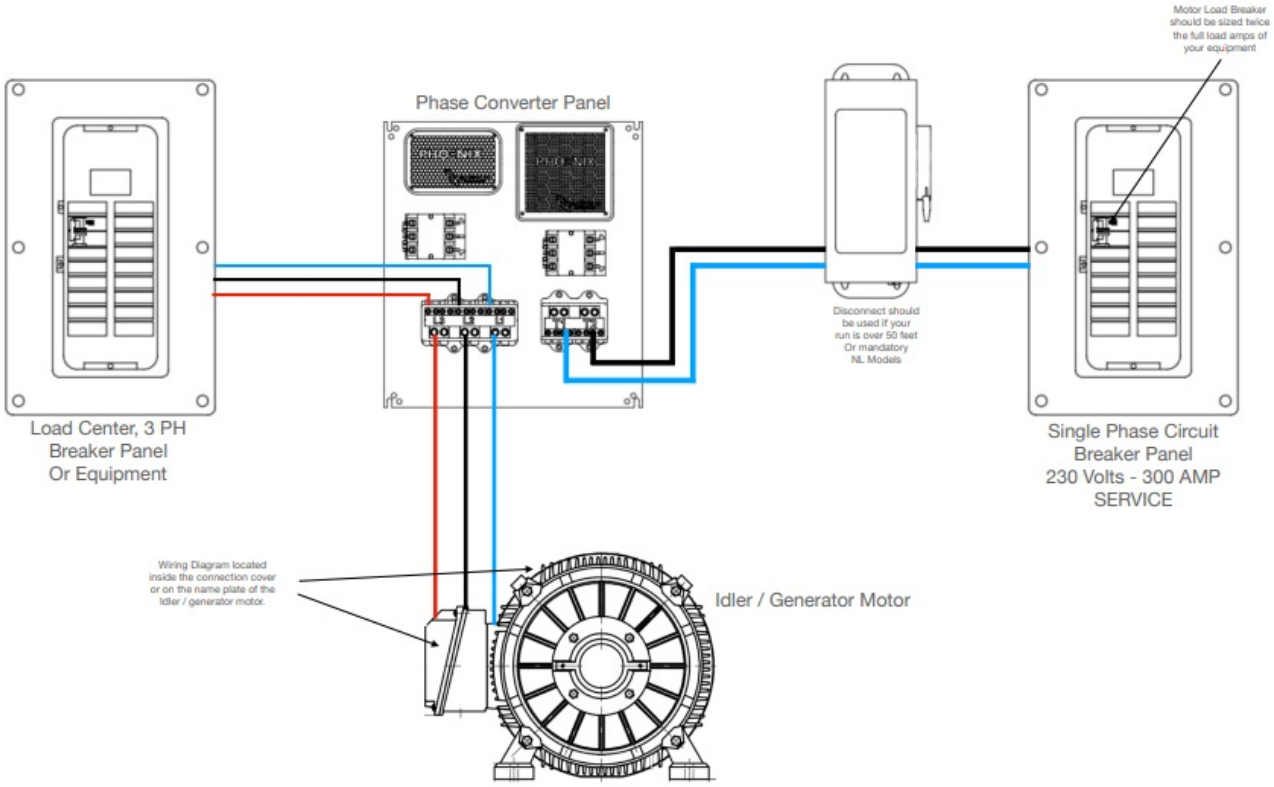


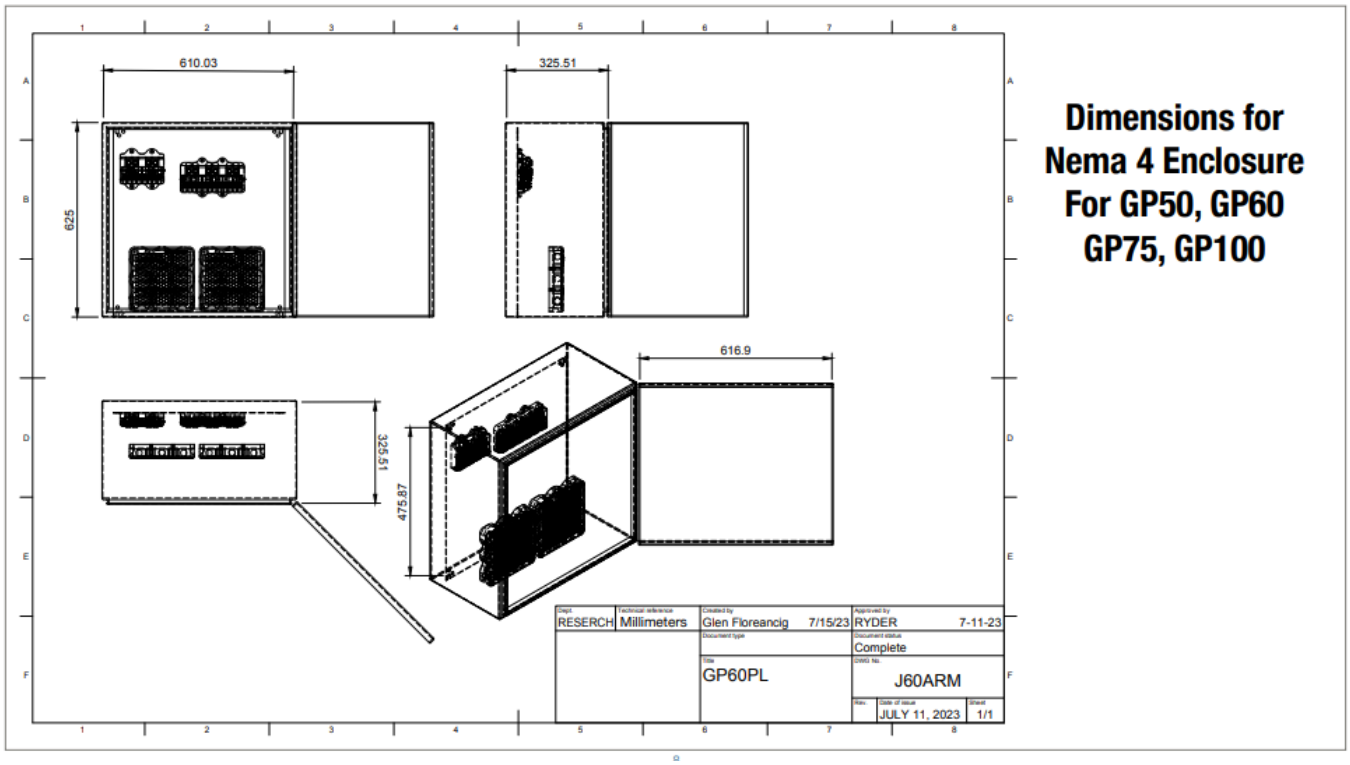
Additional mounting brackets and hardware are inside the enclosure.

Indoor or outdoor enclosure

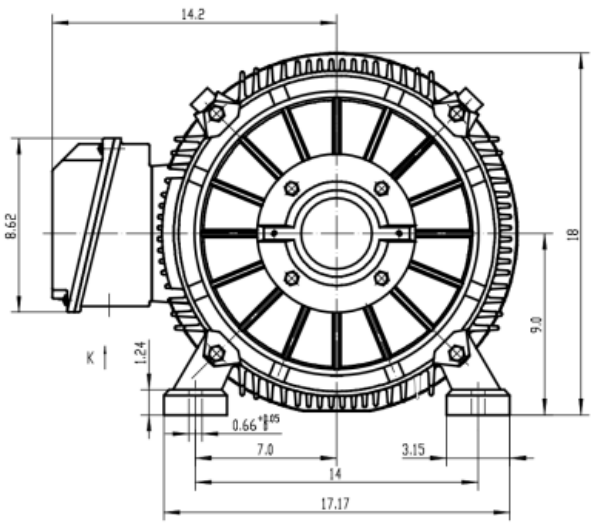
Every 50 feet you will need to increase the size of the single-phase wire.

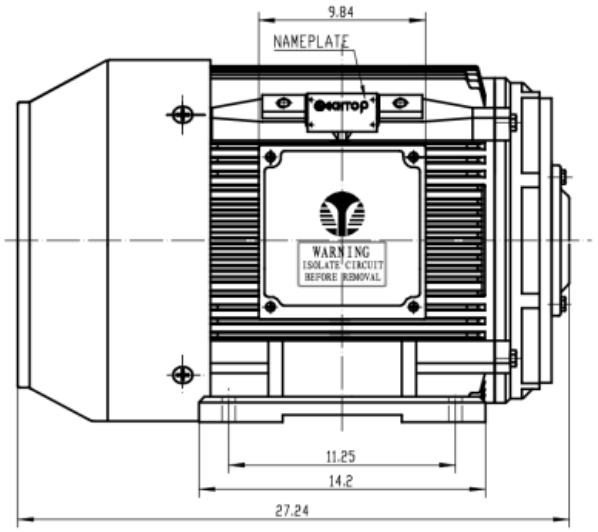
3d Animation of 12 Wire Idler Motor, Lead 1,7,6,12 to L1. Lead 2,4,10,12 to L2. Lead 3,5,9,11 to L3.

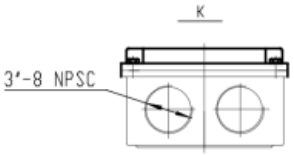




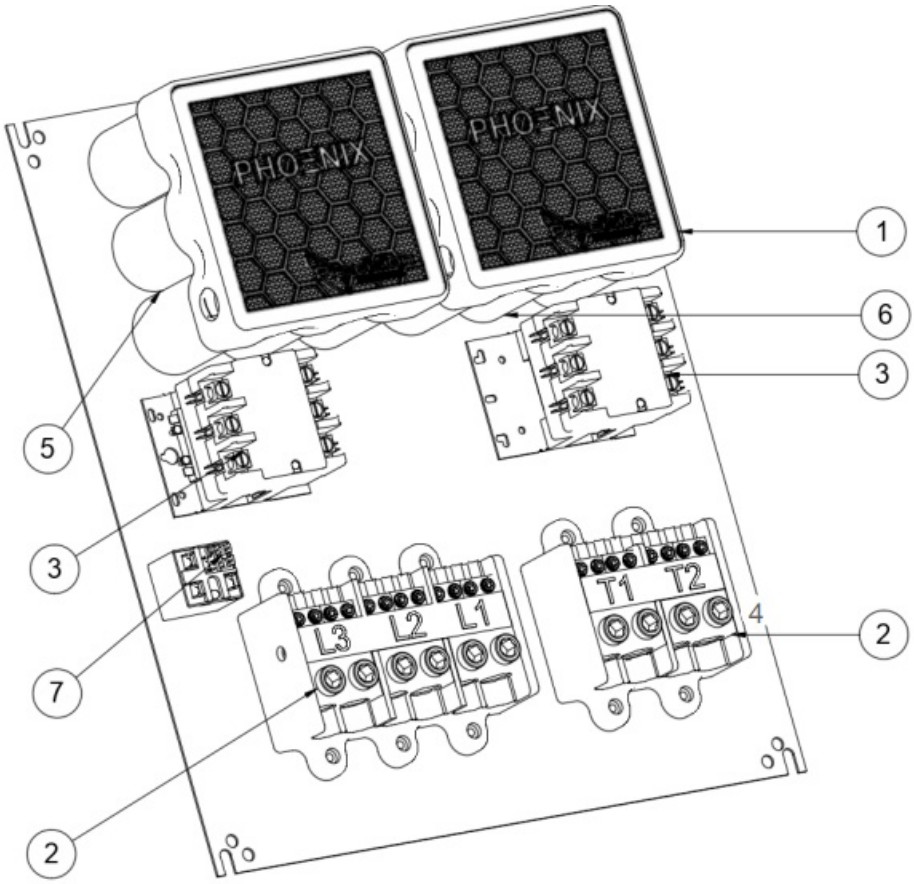
Dimensions for Nema 4 Enclosure For GP50, GP60 GP75, GP100







Weight 75 HP = 873.18 lbs


PHOENIX
PHOENIX
1
6
3
5
3
7
2
L3
L2
L1
T1
T2
4
2

100 HP Rotary Phase Converter Components				
Item Number	Description (Click on the description to visit the link to that item)	Quantity in Model	Price	SKU# (Click on 3D viewing)
7	Relay	1	47.00	GP90-66
4	Complete Run Bank Assembly - Prewired	1	490.00	*
3	3 Pole Contactor 75 amp - 230V	1	182.90	C375C
1	9 Bank Start and Run Capacitor Holder Only with Base	1	239.00	CB409HO
2	3 Phase Power Block	1	535.00	GPB1003
5	630 MFD 220V Start Capacitor	3	24.14	PTMJ630
6	100 MFD 370V Run Capacitor	1	26.00	TRC100
*	Complete Capacitor Start Bank Assembly - Prewired	1	490.00	CB30230
*	Complete Back Plate Assembly - Prewird PL Model. (with Start and Stop Button)	1	4421.00	CBA75PL
*	Complete Panel with NEMA 4 Enclosure - Prewird PL Model (with Start and Stop Button)	1	4743.00	GP75PLPO
*	Idler Motor	1	4332.00	*
*	Complete Unit Phase Converter Panel (PL Model) and Idler/ Generator Motor	1	9486.00	GP75PL

FAQ

Q: What is the power requirement for this phase converter?

A: The power requirement for this phase converter is 230 Volts – 300 AMP SERVICE.

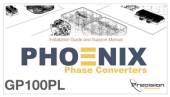
Q: What wire and breaker sizes should I use?

A: For single-phase wiring, use 300 MCM Copper for distances under 50 feet. The idler motor requires 2/0 AWG COPPER wiring. The breaker/fuse should be a minimum of 150 amps and a maximum of 400 amps.

Q: How should I connect the wires to the motor?

A: Refer to the wiring diagram located inside the connection cover or on the nameplate of the idler/generator motor. Follow the specific instructions for connecting the wires based on the motor's lead numbers and the L1, L2, and L3 terminals.

Documents / Resources

	Precision GP100PL Phoenix Phase Converters [pdf] User Manual GP100PL Phoenix Phase Converters, GP100PL, Phoenix Phase Converters, Phase Converters, Converters

References

- 100 MFD Round Motor Run Capacitor (370V) – Phoenix Phase Converters
- 2 Pole 100 HP Power Distribution Block | Phoenix Phase Converters
- Replacement 100 HP Run Capacitor Bank | Phoenix Phase Converters
- 630-750 MFD - 250V Start Capacitor – Phoenix Phase Converters
- CONTACTOR 3 POLE 75 AMPS 208/240 COIL VOLTAGE – Phoenix Phase Converters
- Potential Relay 90-66 | Phoenix Phase Converters
- 75 HP Rotary Phase Converter - GP75PL | Phoenix Phase Converters
- User Manual