TRYSTAR

SERIES 700A POWER PROCESSOR

OWNERS MANUAL

5KVA - 25KVA
120V, 208V, 220V, 230V, 240V, 277V, 347V, 480V OR 600V INPUT

120V, 208V, 220V, 230V 240V, 277V, 347V, 480V OR 600V OUTPUT

SINGLE PHASE, 50HZ OR 60HZ

IMPORTANT - SAVE THESE INSTRUCTIONS - PLEASE READ THIS MANUAL BEFORE USING EQUIPMENT

ABOUT THIS MANUAL

When viewing electronically, click on the subject to jump to that page. Clicking the header on the front page will launch the Controlled Power web site. Clicking any where else on the front page will also jump to the Table of Contents. Clicking any blue text will take you to that section of our website.

⚠ CAUTION

The following symbol indicates that caution should be taken when performing the process required in this manual. Damage to the unit or personal harm could happen if proper precautions are not taken.

⚠ SHOCK HAZARD

The following symbol indicates that there is a risk of electrical shock if proper precautions are not followed. Only qualified personnel should perform the actions required in this manual.

TABLE OF CONTENTS

FEATURES AND SPECIFICATIONS

Trystar engineers and manufactures the industry's highest quality power processors and voltage regulators, capitalizing on 40 years of expertise. We have an enviable reputation for quality, which is reflected in the design, workmanship, and performance of our products.

Subjecting commercial and industrial electrical systems to a harsh, "polluted" electrical environment increases downtime, maintenance costs, and lost productivity. Maintaining steady, spike-free voltage and keeping ground noise away from the controls, increases the reliability of electronic equipment, contributes to the overall integrity of data, and enhances workflow and productivity.

Trystar's Series 700A Power Processor is a solid-state, automatic voltage regulator which guards against both high and low voltage conditions. The Series 700A easily corrects wide input voltage deviations to well within the safe operating limits for information technology equipment as recommended by CBEMA and ITIC. The power protection that the Series 700A delivers, meets the IEEE and ANSI standards that define power anomalies, occurrences, and their impact on operations.

Features & Benefits

- 7-tap, microprocessor-controlled for tight voltage regulation, accuracy, and stability.
- Precisely maintains correct voltage to ± 3% within one cycle, and maintains regulation during extended brownouts.
- Low output impedance transformer minimizes voltage distortion and sags commonly associated with high surge currents.
- Triple-shielded isolation transformer provides a noisefree ground, attenuates voltage spikes and transients, and re-establishes the N-G bond.
- Internal manual bypass option maintains system isolation, voltage transformation, and power conditioning.
- Superior compatibility with dynamic loads.
- Increased surge capability, without the need for automatic bypassing, provides full-time power conditioning.
- High-efficiency design results in lower operating cost.

Product Specifications

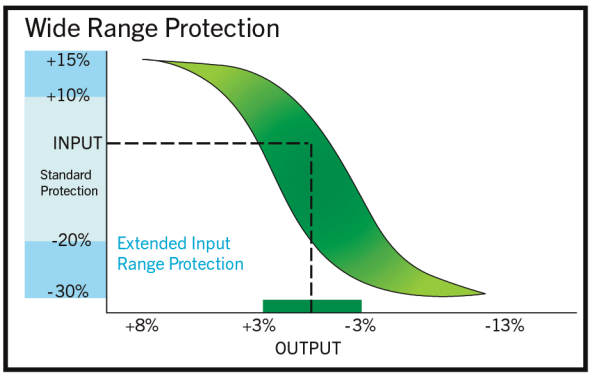
- Input Operating Voltage Range: +10%, - 20% from nominal (Extended regulation range options available.)
- Input Frequency: 60 Hz, ± 3 Hz
- Input Power Factor: > .99 PF with resistive load
- Output Line Voltage Regulation: ± 3% from nominal
- Response Time: < 1/2 cycle

- Correction Time: 1 cycle
- Load Regulation: 2.5% typical, no load to full load
- Overload Rating: 200% for 10 seconds; 1000% for 1 cycle
- Noise Attenuation: Common Mode: 146 dB Transverse Mode: 3 dB down at 1 kHz; 40 dB down per decade to below 50 dB with a resistive load
- Transient Voltage Suppression: Meets ANSI C62.41 Category B-3
- Efficiency: 96% - 97% typical, model and load dependant

Line Voltage Regulation

Input Line Voltage: +10%, - 20%

Output Line Voltage: ± 3% typical

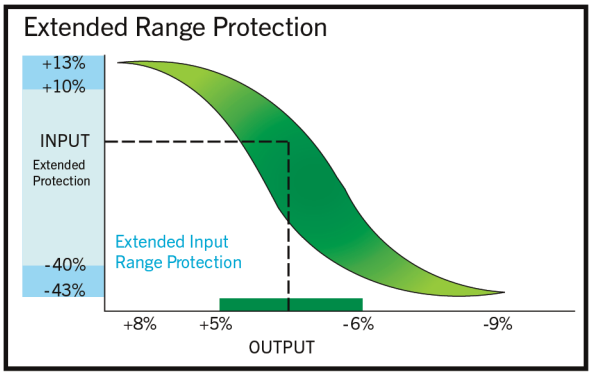


Extended Line Voltage Regulation

Optional Extended Range for Intermittent Duty only:

Input Line Voltage: +10%, - 40%

Output Line Voltage: + 5%, - 6% typical



RECEIVING, INSPECTING AND STORING THE UNIT

Note: Be sure to remove the front, back or side panels as required, and inspect the inside of the unit for shipping damage.

INSPECTING THE POWER PROCESSOR

Upon receipt of the unit, visually inspect for shipping damage. If any damage is found, the Purchaser must contact the Carrier immediately and file a shipping damage claim.

NOTE: Be sure to remove the front, back or side panels as required, and inspect the inside of the unit for shipping damage.

If any internal damage has occurred or any external damage that could affect the operation of the unit, please contact Trystar.

FOR ASSISTANCE CALL 1-800-521-4792 X222 or 1-248-528-3700 X 222

IMPORTANT NOTICE

This shipment has been carefully inspected, checked and properly packaged at our facility.

When it was delivered to the carrier it was in good condition and technically it became your property at that time. Thus, any damage, whether obvious or hidden, must be reported to the transportation company within FIVE days of receipt of the shipment at your premises to avoid forfeiting claims for damages.

FOR ALL SHIPMENTS DAMAGED IN TRANSIT

Leave the items, packing material and carton “AS IS”. Notify your carrier’s local office and ask for immediate inspection of the carton and contents.

After inspection has been made by the carrier, and you have received acknowledgment in writing as to the damage, notify our Customer Service Department to make any required repair arrangements.

It is your responsibility to follow the above instructions or the carrier will not honor any claims for damage. Also, if there are any shortages or questions regarding this shipment, please notify us within FIVE days.

Please note that we cannot be responsible for any service work or back-charges unless authorized by us in writing, before the work is performed.

STORING

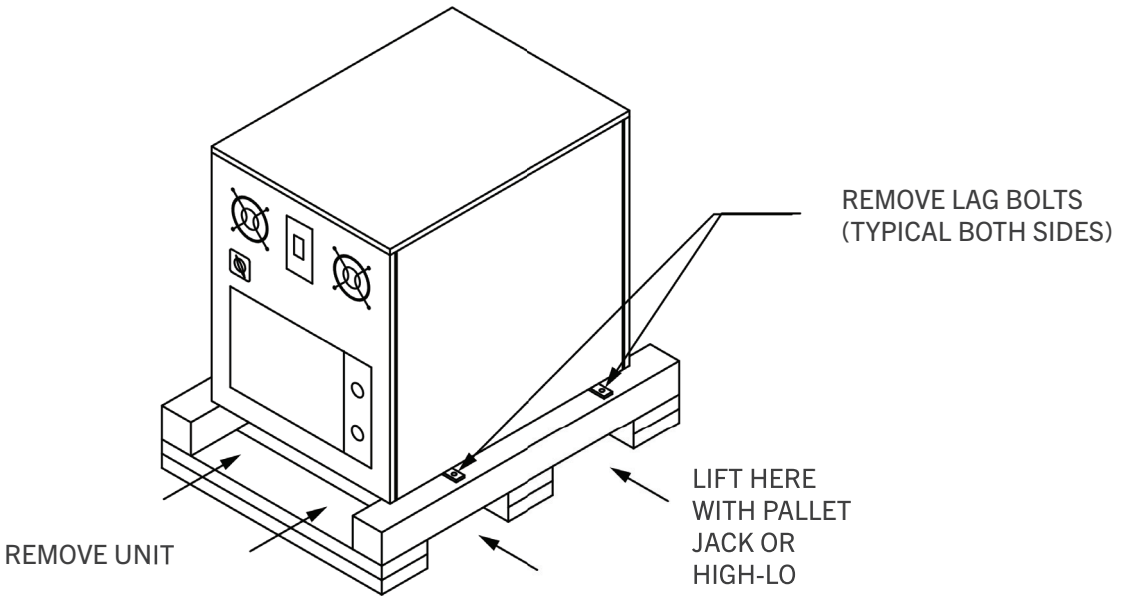
If it is necessary to store the unit for a period of time before it is installed, be sure to place the unit in a clean, dry area. To prevent excessive dust from accumulating on the unit, it is advisable to protect it by replacing it in the original container (if possible). If the original container is not available it is recommended that all openings that lead internally into the unit are covered so that dust, water or any other substance cannot come in contact with the internal components of the system. The unit must be

handled at all times with the same care you would give to any piece of precision industrial equipment.

REMOVING THE UNIT FROM THE PALLET

REMOVING THE POWER PROCESSOR FROM PALLET

Please take special care when removing the unit from the pallet. Proper equipment must be used for lifting and moving, and all safety precautions should be taken. Each unit is bolted to a wooden pallet. In order to properly remove the cabinet from the pallet, all bolts connecting the unit to the pallet must be removed completely. The unit can then be lifted off the skid using a pallet jack or fork lift. When lifting the unit off of the pallet, be sure to take proper safety precautions. Serious injury and/or unit damage can result otherwise.



SAFETY PRECAUTIONS

WARNING

There are dangerously high voltages present within the Enclosure of the power supply system. Caution must be taken when working with the system. It is recommended that all work be performed by qualified Electrical personnel only.

CAUTION

Risk of electrical shock and high short circuit current. The following precautions should be observed When working on the unit:

1. Remove watches, rings, or other metal objects.
2. Use tools with insulated handles.
3. Wear rubber gloves and boots.

CAUTION

- Follow all standard and local electrical codes.
- Do not allow water or foreign objects to get inside the unit.
- Do not place objects or liquids on top of the unit.
- Do not locate the unit near running water.

PRELIMINARY INSTALLATION

INSTALLATION CONSIDERATIONS

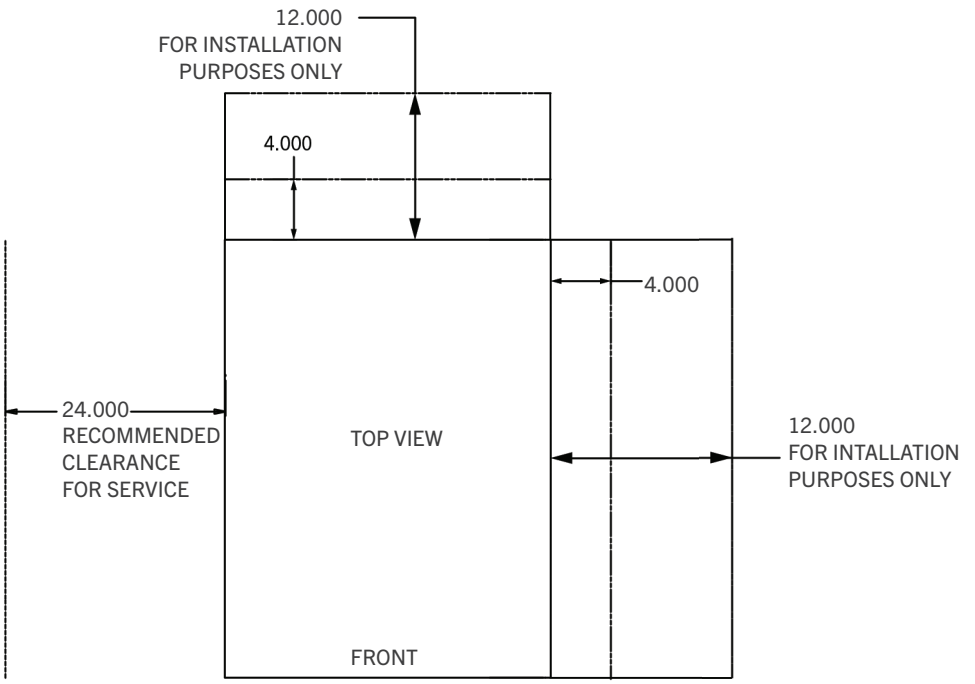
Prior to installing the Series 700A, be sure to take into consideration the installation site you have selected. Power Processors produce heat and therefore require ventilation as well as accessibility. Consider these factors:

- Ventilation
- Input Source Voltage
- Size of the Power Processor
- Receiving Facilities
- Weight Load
- Distribution of Power
- Audible Noise Requirements
- Room Temperature
- Remote Emergency Power Off (Repo)
- Clearances
- Monitors
- Accessibility
- Options
- Excessively Long Power Runs
- Clean Environment
- Proper Ground Techniques

CHOICE OF LOCATION

The unit has been completely inspected and extensively tested under various load conditions prior to shipment. Care to install it at a proper location will assure long trouble-free operation.

The unit is air cooled with the air intake at the bottom and exhausts at the rear of the unit. Therefore, it should be installed in a clean, dry place with enough clearance to allow a free flow of air. Allow at least 24 inches of space between the left side of the unit and the wall or other equipment. Allow at least 4 inches of space for maintenance on the right side and rear of the unit. (See “Appendix A - *Cabinet Outline”*)



TO REMOVE TOP: REMOVE RETAINING SCREW IN REAR OF TOP, LIFT REAR, & SLIDE FORWARD.

TO REMOVE SIDE: REMOVE RETAINING SCREW IN TOP OF PANEL,

& BOTTOM SIDE. LIFT PANEL OFF.

	NOMINAL INPUT CURRENTS AND INPUT BREAKER AT VARIOUS INPUT VOLTAGES								
KVA	**120V**	**208V**	**220V**	**230V**	**240V**	**277V**	**347V**	**480V**	**600V**
5KVA Input	43.75A	25.24A	23.86A	22.83A	21.88A	18.95A	15.13A	10.94A	8.75A
Breaker	60A	35A	30A	30A	30A	25A	20A	15A	15A
8KVA Input	70.00A	40.38A	38.18A	36.52A	35.00A	30.32A	24.21A	17.50A	14.00A
Breaker	90A	50A	50A	50A	45A	40A	30A	25A	20A
10KVA Input	87.50A	50.48A	47.73A	45.65A	43.75A	37.91A	30.26A	21.88A	17.50A
Breaker	125A	70A	60A	60A	60A	50A	40A	30A	25A
15KVA Input	131.25A	75.72A	71.59A	68.48A	65.63A	56.86A	45.39A	32.81A	26.25A
Breaker	175A	100A	90A	90A	90A	70A	60A	40A	35A
20KVA Input	175.00A	100.96A	95.45A	91.30A	87.50A	75.81A	60.52A	43.75A	35.00A
Breaker	225A	125A	125A	125A	110A	100A	75A	60A	45A
25KVA Input	218.75A	126.20A	119.32A	114.13A	109.38A	94.77A	75.65A	54.69A	43.75A
Breaker	300A	175A	150A	150A	150A	125A	100A	70A	60A
If unit is provide with no input circuit breaker option, input over-current protection and a disconnect device (circuit breaker) shall be provided by others.									
NOTE: 120V, 277V, 347V, 480V and 600V inputs are not ETL listed.									

	NOMINAL OUTPUT CURRENT AT VARIOUS OUTPUT VOLTAGES								
KVA	**120V ***	**208V**	**220V**	**230V**	**240V ***	**277V**	**347V**	**480V**	**600V**
5KVA	41.67A	24.04A	22.73A	21.74A	20.83A	18.05A	14.41A	10.42A	8.33A
8KVA	66.67A	38.46A	36.36A	34.78A	33.33A	28.88A	23.05A	16.67A	13.33A
10KVA	83.33A	48.08A	45.45A	43.48A	41.67A	36.10A	28.82A	20.83A	16.67A
15KVA	125.00A	72.12A	68.18A	65.22A	62.50A	54.15A	43.23A	31.25A	25.00A
20KVA	166.67A	96.15A	90.91A	86.96A	83.33A	72.20A	57.64A	41.67A	33.33A
25KVA	208.33A	120.19A	113.64A	108.70A	104.17A	90.25A	72.05A	52.08A	41.67A
If unit is provide with no output circuit breaker option, output over-current protection and a disconnect device (circuit breaker) shall be provided by others.									
NOTE: 120V, 208V, 277V, 347V, 480V and 600V outputs are not ETL listed.									
*** NOTE: ON UNITS WITH 120/240V OUTPUTS THE 120V LOADS MUST BE SPLIT EVENLY BETWEEN L1 - N AND L2 - N.**									

	WEIGHT, DIMENSIONS AND BTU's			
MODEL	**CONTINUOUS KVA**	**FULL LOAD BTU's / HR**	**DIMENSIONS**	**WEIGHT (LBS.)**
5KVA	**5**	**853**	**21.5"W X 29"D X 30"H**	**344**
8KVA	8	1,364	21.5"W X 29"D X 30"H	364
10KVA	10	1,705	21.5"W X 29"D X 30"H	438
15KVA	15	2,558	21.5"W X 29"D X 30"H *	501
20KVA	20	3,410	21.5"W X 29"D X 30"H *	554
25KVA	25	4,263	21.5"W X 29"D X 30"H *	634
Stated BTU's / Hr. is at 100% rated load, 100% duty cycle.				
*** Consult factory for 120V input cabinet sizes.**				

INSTALLATION

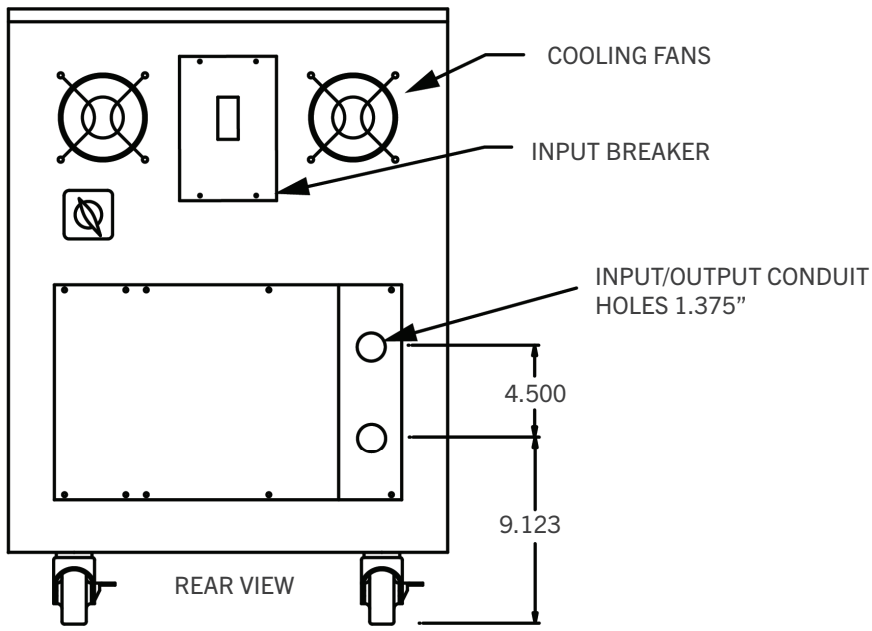
CONDUIT ENTRY LOCATIONS

WARNING

Before installing the Power Processor make sure that the input voltage and the output voltages match the unit's specification plate.

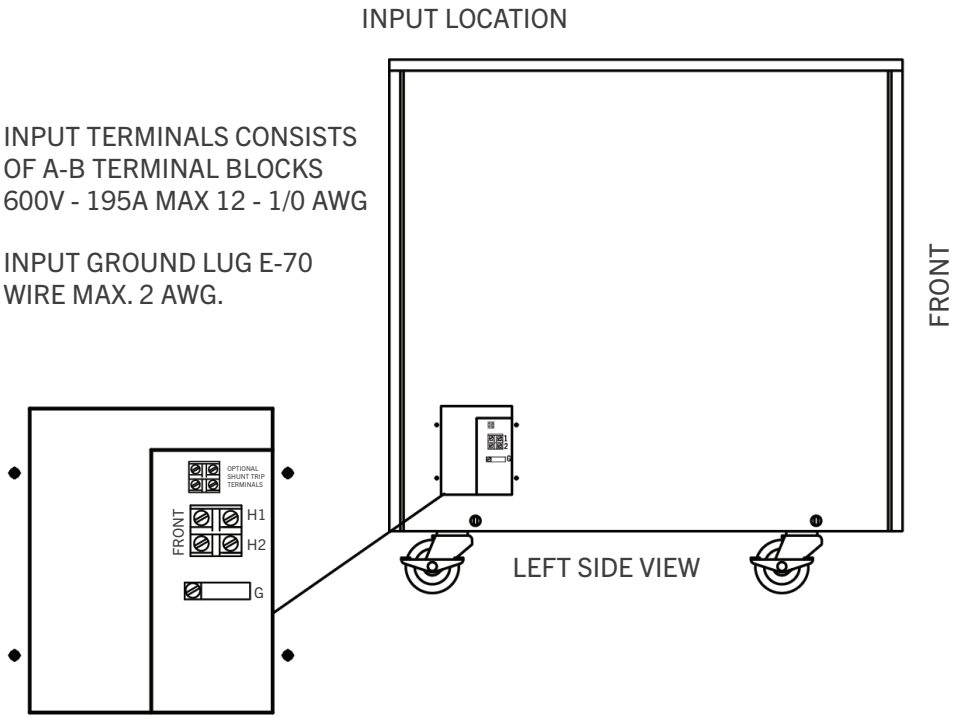
The unit is air cooled with the air intake at the bottom and exhausts at the rear of the unit. Therefore, it should be installed in a clean, dry place with enough clearance to allow a free flow of air. Allow at least 24 inches of space between the left side of the unit and the wall or other equipment. Allow at least 4 inches of space for maintenance on the right side and rear of the unit. *(See "Appendix A - Cabinet Outline").*

1. Recomended conduit entry locations are located on the rear of the unit. See illustrtation below.
2. Input terminals are located on the left side of the unit near the back (looking at the front). Output terminals are located on the right side of the unit near the rear (looking at the front).
3. To access terminal blocks, remove conduit panels and any other panels necessary on the sides of the unit.
4. Wire accordingly. The terminals will be clearly marked. If there are any discrepancies refer to the schematic which accompanies the unit.



INPUT WIRE SIZE AND GROUNDING

1. Conduit should be used for both input and output wiring.
2. Input wire ampacity is specified in NEC table 310.15(B)(16). Specifying not more than 3 connections in a raceway based on an ambient of 30°C and wire rated for 90°C (Note: amperages will need to be adjusted for 40° C ambient applications). Ground wire sizing is specified in NEC table 250.122.
3. Input conductors are terminated directly to the input terminal blocks. Input terminals consist of Allen Bradley terminal blocks 600V - 195A max. Wire range: 12awg - 1/0.
4. Input Ground - An E-70 terminal allows maximum wire size of 2awg.



The unit is constructed using an isolation transformer and is considered to be a “separately derived system” It should be grounded in accordance with the NFPA 70 article 250.20 “Alternating-Current Circuits and Systems to Be Grounded”, article 250.20(D) “Separately Derived Systems” and article 250.30 “Grounding Separately Derived Alternating-Current Systems”

Refer to the latest edition of the national electric code Requirements for over-current protection and wire sizing.

CAUTION

To reduce the risk of fire, use only on circuits provided with ampere branch circuit protection, in accordance with the National Electric Code, ANSI/NFPA 70.

OUTPUT WIRE SIZE AND GROUNDING

1. Output is a 3 wire (4 including ground). If four (3) current carrying conductors are used in a raceway the neutral is assumed to be current carrying and the wire must be de-rated as indicated in the 2011 NEC table 310.15(B)(16).

Example:
1. Assume #10 wire max current = 25 Amps.
2. Multiply 25 x .8 = 20
3. 20 Amps is max current for #10 wire in a raceway with 4 conductors.

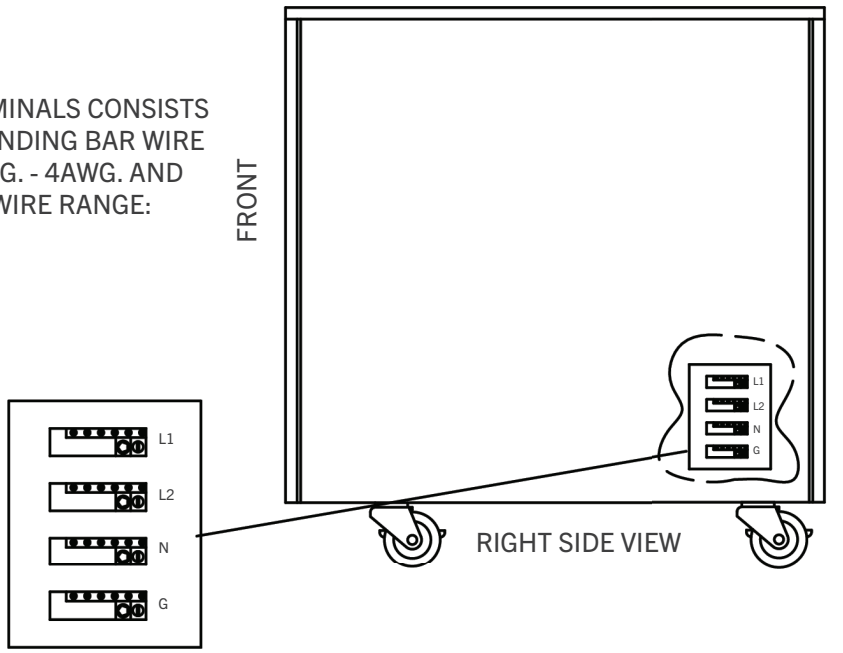
Note: Installation is subject to local codes - verify with a local electrical inspector.

NOTE: Installation is subject to local codes - verify with a local electrical inspector.

2. All output terminals, including ground and neutral terminals are Square D model PK9 terminals, with a TA-2/0 lug attached. PK9 Wire range: 14awg - 4awg, TA-2/0 Wire range: 14awg - 2/0.
3. Output connections are made directly to the output terminal(s) and/or to the load side (bottom) of the optional output circuit breakers provided (optional output breakers are wired at the factory). Output neutral and ground lugs are also provided. The load current is not to exceed 80% of the output breaker(s) rating, and not to exceed the rated total current. **NOTE: ON UNITS WITH 120/240V OUTPUTS THE 120V LOADS MUST BE SPLIT EVENLY BETWEEN L1 - N AND L2 - N.**
4. Output neutral to ground bonded during manufacturing of the Power Processor. Output neutral is already grounded by the factory.
5. Installation is subject to local codes. Verify with a local electrical inspector.

OUTPUT LOCATION

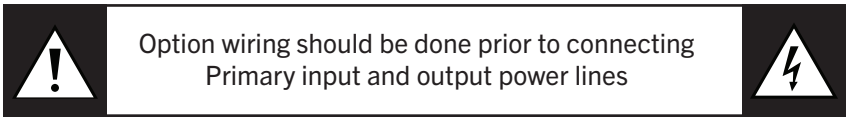
OUTPUT TERMINALS CONSISTS OF PK9 GROUNDING BAR WIRE RANGE: 14AWG. - 4AWG. AND A TA 2/0 LUG WIRE RANGE: 14AWG - 2/0



G

OPTION INSTALLATION

OPTION DESCRIPTION AND INSTALLATION



RBS2020 REGULATOR BYPASS SWITCH

The Power Processor has a main isolation transformer and regulator. This option bypasses the regulator portion of the Power Processor. Price: See Bypass The bypassing is done by manually setting the switch when the power is **OFF**. Factory installed, there is no external wiring or set up required for this option. See “Bypass Operation” for proper use.

ERR1040 EXTENDED REGULATION RANGE 1040

Provides +10% -40% voltage regulation range for intermittent duty only. Output Regulation +5%, -6%. Note: Extended operation at voltages below -20% may cause the main input circuit breaker to trip on the thermal overload. Factory installed, there is no external wiring or set up required for this option.

ERR2020 EXTENDED REGULATION RANGE 2020

Provides +20% -20% voltage regulation range for intermittent duty only. Output Regulation +/- 5%. Note: Extended operation at voltages below -20% may cause the main input circuit breaker to trip on the thermal overload. Factory installed, there is no external wiring or set up required for this option.

ERR2030 EXTENDED REGULATION RANGE 2030

Provides +20% -30% voltage regulation range for intermittent duty only. Output Regulation +5, -6%. Note: Extended operation main input circuit at voltages below -20% may cause the breaker to trip on the thermal overload. Factory installed, there is no external wiring or set up required for this option.

ERR1525 EXTENDED REGULATION RANGE 1525

Provides +15% -25% voltage regulation range for intermittent duty only. Output Regulation +5%, -6%. Note: Extended operation at voltages below -20% may cause the main input circuit breaker to trip on the thermal overload. Factory installed, there is no external wiring or set up required for this option.

UOV2020 UNDER/OVER VOLTAGE SHUTOFF

When the output voltage goes above or below the preset value, the unit electronically shuts off. The system is reset by cycling the input breaker. The preset voltages can be set from 75% of nominal up to 115% of nominal. It does not trip the main breaker; however, the system is reset by cycling the input breaker. The under/over ranges can be adjusted as required. Factory installed and set, there is no external wiring or set up required for this option.

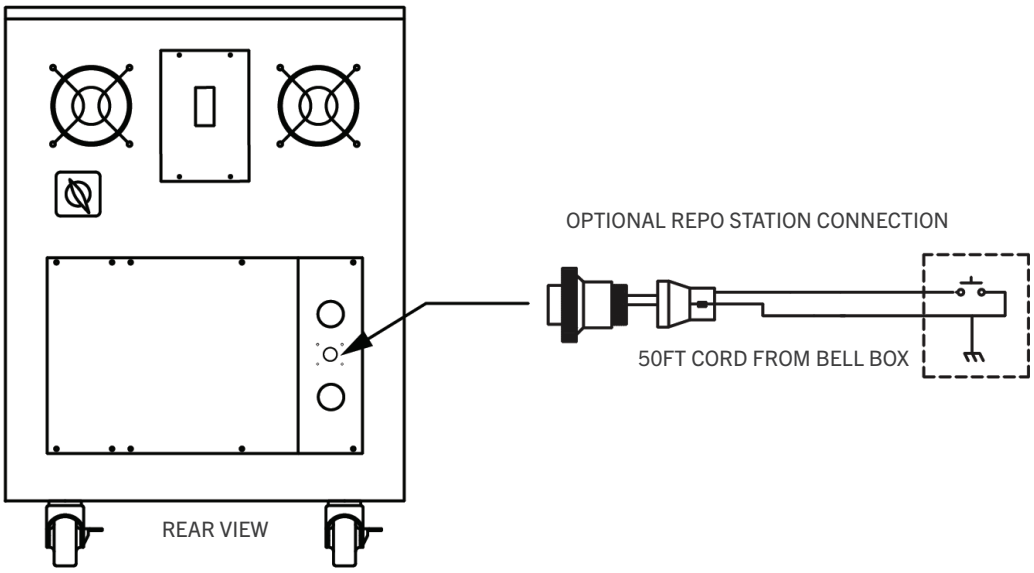
PSO2020 UNDER/OVER VOLTAGE AND LOSS OF POWER TRIP

When the output voltage goes above or below the preset value or detects a loss of power, the shunt trip coil is energized, which in turn shuts off the main breaker. The preset voltages can be set from 75% of nominal up to 115% of nominal. The circuit breaker must be reset manually. Includes the Shunt Trip Breaker. The under/over ranges can be adjusted as required. Factory installed and set, there is no external wiring or set up required for this option.

Option wiring should be done prior to connecting Primary input and output power lines

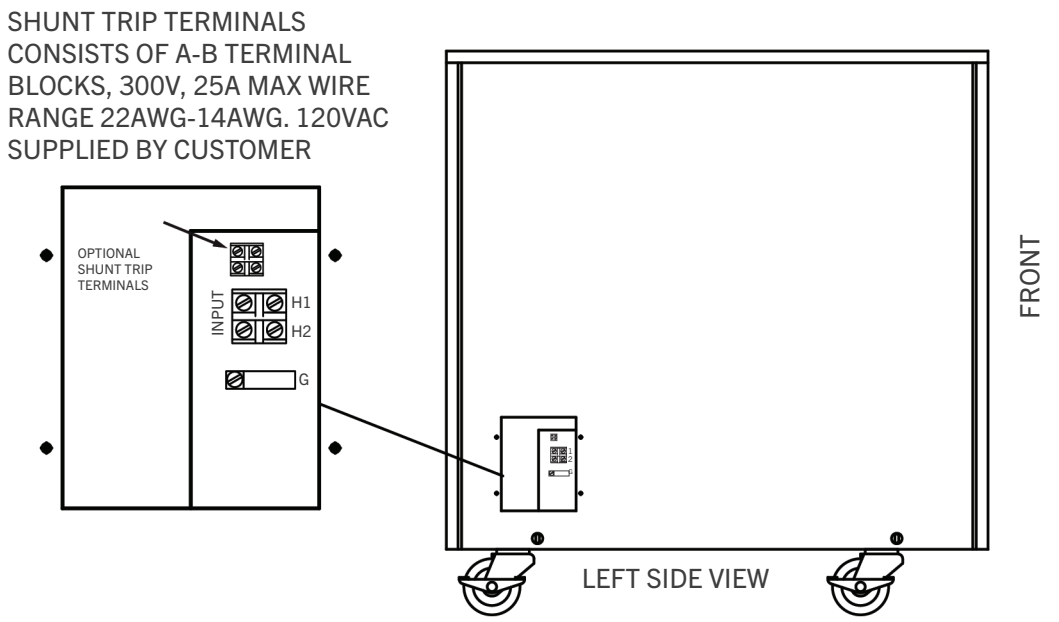
REP2020 REMOTE EMERGENCY POWER OFF (REPO)

Consists of a guarded “Emergency OFF” button which when depressed, will disconnect the input circuit breaker of the Power Processor. The REPO station can be remotely located. Supplied with 50ft cable. The main circuit breaker must be manually reset to re-energize the system. Includes compatible Shunt Trip on input circuit breaker. Connect the REPO assembly to the provided connector at the rear of the unit as shown below.



STC2020 SHUNT TRIP

Adds to the main input circuit breaker; consisting of 120vac shunt trip coil solenoid. When the shunt trip coil is energized, the main input circuit breaker is de-energized. A manual reset is required. 120vac supplied by customer. Refer to the drawing below and the circuit diagram supplied with the unit for wiring instructions.



BYPASS OPERATION

CAUTION

Prior to switching from one position to another - Turn off the ac input breaker. Failure to do so will Result in serious damage to the power processor.

BYPASS SWITCH

The manual by-pass switch is a break before make switch located on the rear of the Model 700A. The manual bypass switch is used to bypass all power electronics in case of failure. Prior to switching from one position to another - turn off the AC input breaker. Failure to do so will result in serious damage to the power processor.

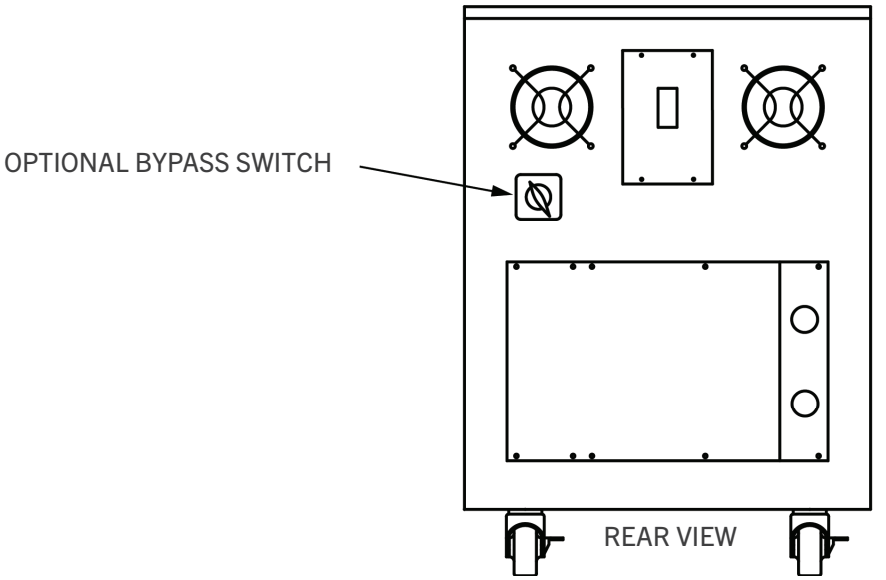
NORMAL MODE

With the switch in the normal position, the Model 700A will provide clean and regulated power to the critical loads. The Model 700A should have the switch in the normal position unless a failure has occurred.

BYPASS MODE

A manually operated rotary bypass switch bypasses the regulator portion of the system. The transformer and suppression circuitry remains in the circuit when in the bypass mode. When the switch is in the bypass position, the Model 700A will provide clean power to the critical loads. In the bypass position, the unit will not regulate the incoming voltage. The Model 700A should be placed in the bypass position if a failure of the system

has occurred. This provides the loads with some protection until a service technician arrives.



START UP

WARNING

There are dangerously high voltages present within the enclosure of the power Supply system. Caution must be taken when working with the enclosure. It is Recommended that all work be performed by qualified electrical personnel only.

NOTE: INITIAL START-UP SHOULD BE PERFORMED WITH NO LOAD ON SYSTEM.

1. Re-install all panels that may have been removed during installation.
2. Make sure the input circuit breaker is in the **off** position.
3. Energize the primary building power.
4. Turn on the main AC input breaker.
5. Verify that the output voltage is within the specified range.
6. Turn the system off.
7. Connect the loads one at a time and repeat Step 4.

PREVENTIVE MAINTENANCE

⚠ WARNING ⚠

Danger of electrical shock, turn off all power supplying this equipment Prior to maintenance.

⚠ WARNING ⚠

There are dangerously high voltages present within the enclosure of the power Supply system. Caution must be taken when working with he enclosure. It is Recommended that all work be performed by qualified electrical personnel only.

PREVENTIVE MAINTENANCE

To ensure longer component life and trouble-free operation, minor preventive maintenance procedures should be performed at regular intervals, for example once every year. More frequent inspection intervals would be needed for more severe operating conditions and larger number of hours of continuous operation.

At each service inspection, any accumulated dust, dirt or foreign particles should be carefully removed. Special care should be exercised in cleaning the SCR's (Power Mods), heatsinks and the control assembly.

CORRECTIVE MAINTENANCE AND TROUBLESHOOTING

Corrective maintenance might have to be performed on any of the three main component types in the Series 700A Power Processor:

Transformer

The transformer is designed with a considerable safety margin. Normally the only malfunction that can take place is a short either to the core or to the shield. It can be checked easily with an ohmmeter.

Electronic Control Board

The electronic control board has a large number of components on it. The failure of any of these components can cause a malfunction of the whole system. It is recommended that if the control board is suspected of malfunctioning, the board should be returned to the factory for repair or be replaced with a new or spare board.

Inverse Parallel Silicon Rectifiers (SCR's or Power Mods)

The silicon controlled rectifiers (SCR's) usually fail in the shorted mode. When this happens, normally the fuselink will be blown open to clear the short and prevent damage to the transformers. The individual SCR can be checked with an ohmmeter.

A simple performance checklist has been developed for use in maintenance.

Note: Preventive Maintenance Plans are available. Please contact the Customer Support Group for information.

See *"Performance Checklist".*

NOTE: Preventive Maintenance Plans are available. Please contact the Customer Support Group for information.

Call 1-800-521-4792.

PERFORMANCE CHECKLIST

Company_____

Model #_____Serial #_____

1. Customer Comments or Problems_____
2. Power Processor Environment Clean and Dust Free Yes_____ No_____
3. Electrically wired properly ie...Conductor Sizing, Breakers, Grounding
4. Verify Input Voltage (See specification tag)
5. Check Tightness of Electrical Connections:

   _____Input Connections_____Output Connections_____Heatsink Connections (SCR's)

   _____Circuit Board Connections_____By-Pass Switch_____Fuse Connections

   _____Fan Connections_____Transformer Connections
6. Exercise all circuit breakers-

   _____Input Breaker_____Output Breakers
7. Input/Output Voltage Checks (Adjust as Needed).

   No Load Input

   H1-H2_____VAC

   No Load Output

   L1-N_____VAC

   L2-N_____VAC

   L1-L2_____VAC
8. **Available Load Input**

   H1-H2_____VAC

   L2-N_____VAC

   Available Load Output

   L1-N_____VAC

   L1-L2_____VAC
9. Input/Output Current Checks (Balance as Needed).

   Input

   H1_____Amps

   H2_____Amps

   Output

   L1_____Amps

   L2_____Amps

   N_____Amps

   G_____Amps
10. Fans Operational_____

⚠ WARNING ⚠

There are dangerously high voltages present within the enclosure of the power Supply system. Caution must be taken when working with the enclosure. It is Recommended that all work be performed by qualified electrical personnel only.

SYMPTOM	PROBABLE CAUSES
1. No Output on One or More Phases.	A. No Input or AC input breaker is turned off.
	B. Blown Fuse.
	C. Defective SCR or Power Mod.
	D. Defective Control Card.
	E. Defective Sense Card.
	F. Defective Over/Under Output Detection (Optional)
2. Output is too High or too Low.	A. Input Out of Range.
	B. Control Card Adjustment.
	C. Defective Control Card.
	D. Defective Sense Card.
	E. Defective SCR or Power Mod.
3. Input Breaker Tripping Off.	A. System Overloaded.
	B. Defective Breaker.
	C. Shorted Taps.
	D. Defective Over/Under Output Detection (Optional).
	E. E. Over/Under Voltage Detection (Optional) is shutting down the system.
	F. REPO Circuit (Optional) has been engaged or is defective.
	G. Shunt trip circuit (Optional) has been engaged or is defective.
4. Blowing Semi-Conductor Fuses	A. Shorted SCR's or Power Modules.
	B. Output Loads Shorted.

WARRANTY

This Warranty applies only to the original purchaser who must properly register the product within thirty (30) days of receipt.

https://controlledpwr.com/customer-support/warranty-registration/

Trystar warrants that our products and their components will remain free from defects in material and workmanship for the duration of the respective warranty period* from the date of shipment and agrees to replace, F.O.B. its factory, any parts which fault through defect in material or workmanship during such period. Non payment for the product to either the reseller, rep, distributor or the factory direct will result in revocation of warranty, technical support and service contracts. **Warranty begins from date of shipment unless a factory Start-Up Plus is purchased, then the warranty begins from date of Start Up or 90 days from ship date; whichever comes first.**

If a Start-Up Plus is purchased with the unit(s) or within 30 days from original ship date, the 1st year warranty is upgraded to include onsite labor and expenses during normal business hours (Monday - Friday, 8AM - 4PM). Start-Up Plus includes all travel and living expenses. Start-Up Plus description: Testing all emergency circuitry - Calibration - Inspection - Exercising all circuit breakers - Cooling fan check - Input and output parameter check - Air intake / exhaust check - Complete battery inspection and testing (where applicable) - Re-torque all high current terminals - Battery certification report (where applicable) - Input/Output verification - Written report. User training to be done at time of start up (no return visits). Product installation is required to be complete before start up can be scheduled.

This Warranty applies only to the original purchaser who must properly register the product within thirty (30) days of receipt. Please complete the form on the back and Fax Toll Free to : 1-800-642-9625 or register online at http://www.controlledpwr.com/csupport-warranty.php

Products:

- Power Processor (700A, 700D, 700F) / 1 Year parts only.*

* From original shipment date / Excludes on site labor and expenses unless otherwise noted.

1. This Warranty shall be effective only if and so long as the system is installed and operated in the manner specified in the manual which accompanied the product, and is operated within the ratings on the nameplate of the system.
2. This Warranty shall be effective provided the purchaser pays the cost of transporting the faulty component(s) to and from Trystar's factory at the purchaser's own expense, unless the item covered under service contract with Trystar. There is no cost for installation of the replacement component(s) when done at the factory. Otherwise installation of the replacement component(s) are the responsibility of the purchaser, unless the item is covered under service contract with Trystar. If after inspection the faulty component has been caused by misuse or abnormal conditions in the judgment of Trystar, the purchaser will be charged for repairs based on parts and labor required. This Warranty does not cover fuses, light bulbs, and other normally expendable items. Trystar service personnel are not included in this warranty unless covered by a Trystar service contract.
3. This Warranty shall be void if any alteration is made to the system, or any of its components are altered by anyone other than an authorized Trystar service person, without the written permission of Trystar.
4. This Warranty is in lieu of all other warranties, expressed or implied. Trystar neither assumes, nor authorizes any person to assume for it, any liability other than that specifically set forth in this Warranty. Except for its obligations, Trystar assumes no liability or responsibility for personal injury, loss of life, consequential or other damages resulting from defects in, or failure of, the system or any of its components.

https://controlledpwr.com/customer-support/warranty-registration/.

CUSTOMER SUPPORT

SERIES 700A POWER PROCESSOR PRODUCT SUPPORT SERVICES

Contact Trystar.

CONTROLLED POWER NATIONWIDE CUSTOMER SUPPORT

Controlled Power offers total customer support that assures your critical equipment is maintained properly for trouble-free operation.

WHAT A CUSTOMER SUPPORT PLAN OFFERS

HOT LINE: Call 24 Hours 1-800- 521-4792 or 1-248-528-3700

RESPONSE TIME: Immediate 24 hour phone support. If problem is not solved, we will make every effort to have your system running within 48 hours.

START-UP*: On site start-up assures equipment is installed and operating properly. *Start up may be substituted for preventive maintenance on new units.

FIELD REPAIRS: Customer Support Plans cover parts, labor, travel, living and freight expenses.

PREVENTIVE MAINTENANCE: Optional scheduled preventive maintenance includes the following:

- Inspection
- Exercising all circuit breakers.
- Re-torquing all high current terminals and connectors.
- Testing all emergency circuitry.
- Calibration
- Clean internal and external
- Verify Cooling System
- Written Report

PLAN	ON SITE COVERAGE	PARTS COVERED	FIELD REPAIR LABOR COVERED	FACTORY REPAIR LABOR COVERED	FREIGHT COVERED	TRAVEL EXPENSES COVERED
SILVER	NONE	YES	NO	YES	NO	NO
GOLD	M-F 8AM-4PM	YES	YES	YES	YES	YES
PLATINUM	24-7	YES	YES	YES	YES	YES

TRAINING AND PARTS

For customers who maintain their own equipment, Controlled Power offers hands on training at our facility and part kits. For more information, contact Controlled Power Customer Support Department at

1-800-521-4792 or 1-248-528-3700.

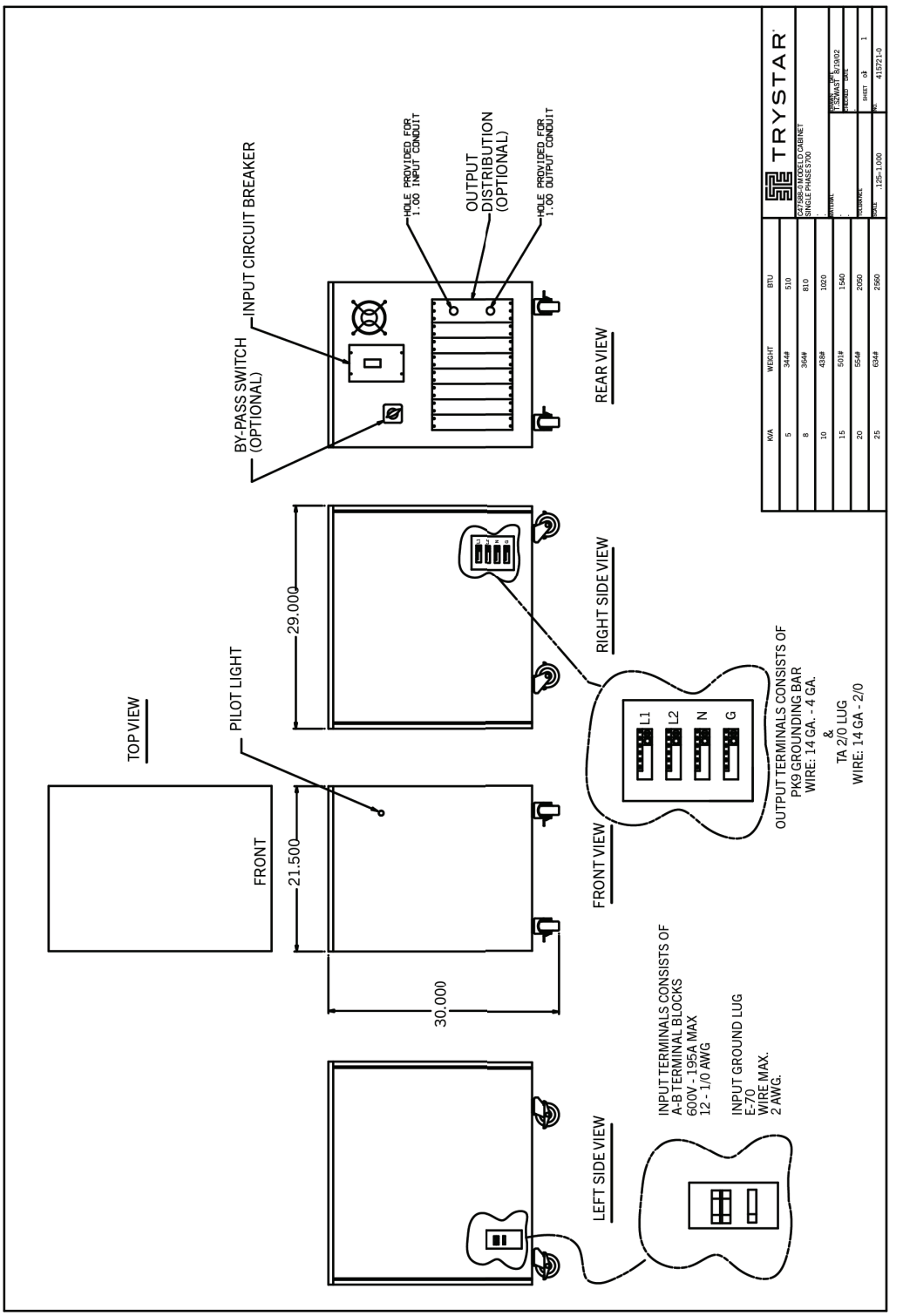
Individual components are available upon request, please contact the factory for specific part numbers and prices. When contacting the Parts Department, please have the unit's full model number and serial or system number.

Call 1-800-521-4792 or 1-248-528-3700.

APPENDIX A

RELATIVE DRAWINGS

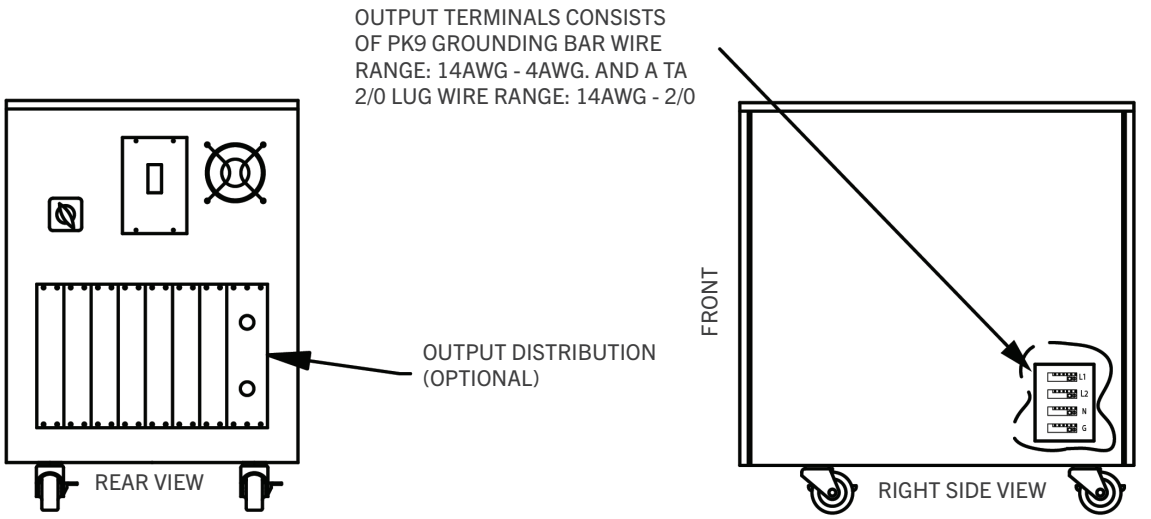
CABINET OUTLINE



ADDING OUTPUT RECEPTACLES

WARNING

There are dangerously high voltages present within the enclosure of the power Supply system. Caution must be taken when working with the enclosure. It is Recommended that all work be performed by qualified electrical personnel only.



INSTALLATION:

1. Refer to the figures above.
2. Turn **off** and disconnect all loads connected to the Power Processor.
3. Turn **off** the main power supplying the Power Processor.
4. Turn **off** the main input breaker on the Power Processor.
5. Remove the four screws that hold the output panel in place.
6. The output patch assembly will come with color coded and numbered wiring. Wire the new panel into output terminals, following the color code.
7. Be sure to tighten the terminals properly.
8. Be sure to wire in the ground terminal.
9. Mount new output panel to unit, with four screws. Close out any spaces left open on the distribution panel.
10. Turn on the main power supplying the Power Processor.
11. Turn on the main input breaker on the Power Processor and verify the output panel has proper voltage before plugging in your equipment.

NOTES

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