

# POWER PURIFIER

## Electrical Power Purification System

Double Magnetic Conversion  
Line-Interactive Power Conditioner

SERIES 800PI and SERIES 800P2

Constant Voltage  
Transformers For Line Voltage  
Regulation, Conditioning  
and Purification of  
Electrical Power For  
Commercial and Industrial  
Applications



**CONTROLLED POWER COMPANY**

*"World's recognized authority in power treatment"*

# POWER PROBLEMS?

## POWER PURIFIER Series 800P1 and Series 800P2



The Power Purifier is a double magnetic conversion, line-interactive, power conditioner. This state of the art technology provides assured reliability with tight regulation and true power conditioning properties. The Power Purifier is ideal in any electrical environment, especially in industrial factory automation applications whenever high-power equipment interferes with vulnerable electronic controls. The Power Purifier delivers isolated, regulated, transient and noise free sinewave power; securing operational reliability.

### Why Power Conditioning?

Industrial electrical environments are plagued with power disturbances due to the interaction of high-powered equipment. The interaction of motors, variable speed drives, solenoids, welders, and hand tools result in power disturbances. Over 2000 transients per hour and re-occurring voltage fluctuations are the resulting power anomalies caused by high-powered equipment. Calls for perpetual attention, adjustment, high maintenance, constant restarts and calibration, abnormal rejection rates, system upsets, nuisance alarms, erroneous data and premature failures are all incidences caused by power anomalies.

Profitability is achieved through successful automation; driven by consistency, accuracy, and repeatability. Overlooking any attribute diminishes the profitability of the operation. Automation becomes enhanced and improved through design, maintenance and proactive measures. One example is data signals. Data signals are protected and conditioned without a second thought, but many times the overall electrical environment is neglected or altogether ignored. Striving for consistency, accuracy, and repeatability requires maintaining a quality electrical environment and assures a profitable operation.



### Solution:

Through preventative action, specifically using the Power Purifier, all power disturbances including short-term power outages are eliminated. The double magnetic conversion, line-interactive technology provides three distinctive values: it guards and protects electronic controls from all power disturbances, increases the efficiency of the load, and prevents the reflection of load generated harmonics to the incoming power.

TECHNOLOGY	SOLUTION
<b>Power Purifier</b>	<b>99.95%</b>
Power Line Conditioner	90.00%
Shielded Transformer	88.00%
Voltage Regulation Only	19.00%
T.V.S.S.	26.00%

The Power Purifier is the solution to 99.95% of all power problems. The Power Purifier protects your sensitive electronic equipment from voltage spikes, oscillatory ring waves, noise, impulses, overvoltages, undervoltages, distorted sinewaves and even short duration power outages. In addition the Power Purifier protects your building's electrical system from the effects of damaging harmonic currents and also corrects for poor power factor conditions. In short, the triple value-add of the Power Purifier's double magnetic conversion, line-interactive design, enhances control equipment performance, extends equipment life and improves the buildings overall electrical system.



## Variable Range Regulation (VRR)

Variable Range Regulation, extends the usable input voltage window depending upon load. VRR provides regulated voltage under extreme brownout conditions or surges up to 200%. The output voltage remains tightly regulated under the following conditions.

LOAD	INPUT	OUTPUT REGULATION
25%	+10, -45%	+3%
50%	+10, -40%	+3%
75%	+10, -35%	+3%
100%	+10, -20%	+2%

## Unique "Ride-through" Capability

The Power Purifier generates its output voltage by a circuit operating as a powerful stored energy oscillator. Even with the loss of input voltage for one entire cycle the output retains its tight regulation. The Power Purifier offers battery back-up behavior without expensive batteries.

## Immunity to Distortion

With an input waveform distortion as high as 40%, the output of the Power Purifier delivers a transient free sinewave with no more than 5% harmonic distortion.

## Transverse Mode Noise Attenuation 120dB

## Common Mode Noise Attenuation 140dB

## Lightning and Surge Protection.

The Power Purifier's 3000:1 attenuation surpasses the stingiest lightning and surge protection criteria. Exceeds U/L 1449 Rating 330v, ANSI/IEEE C62.41-Cat B3.

## Short Circuit Proof

The Power Purifier will sustain operation under short circuit conditions without damage to the unit.

## Power Factor Correction

Corrects for load generated poor power factor. Input power factor remains within .95 with a load power factor of 0.6.

## K factor

K factor rating of 30. Handles high harmonic content loads without overheating.

## Harmonic Attenuation

The Power Purifier attenuates odd current harmonics typically generated by switch mode power supplies in the order of -23dB.

## CONTROLLED POWER EXCLUSIVE

### NEMA2

NEMA2 Cabinetry is specifically manufactured for harsh physical environments. Constructed for indoor use, protecting against falling non-corrosive liquids and dirt, this optional cabinet can be installed in virtually any location. NEMA2 cabinet construction is only available from Controlled Power Company.

### MAXIMUM SECURITY

"Maximum Security" 20 Year Warranty. Controlled Power Company stands behind the Power Purifier with an industry first 20 year warranty.

## Power Purifier

SAFETY	
Underwriters Laboratories U/L 1012-U/L 544-CUL	
PERFORMANCE SPECIFICATIONS	
Power Output	1 $\phi$ , 100% Duty kva/kw for non-linear loads
Line Voltage Regulation	$\pm$ 2% Vout for +10% to -20% Vin.
Immunity To Distortion	@ 40%THD Vin, 5% Max. THD Vout
Load Regulation	$\pm$ 2.5% for 0% to 100% load
Voltage Recovery	2 cycles to 95%, 3 cycles to 100%
K Factor	K-30 Rated
Power Factor Correction	Input of 0.95 typical
Harmonic Attenuation	-23db for load reflected harmonics
Galvanic Isolation	NEC 250-5d, .001pf
Surge Protection	U/L 1449 Rating 330v; ANSI/IEEE C62.41-Cat B3
CMN Attenuation	140db
TMN Attenuation	120db
Ride Through Capability	1 cycle
Reliability	200,000 hr. (MTBF)
Audible Noise	1 meter, A scale, 52db to 56db
Efficiency	$\approx$ 92%
Operating Temperature	-20°C to +40°C



# PRODUCTS & PHILOSOPHY

## Other Quality Products from Controlled Power Company

Controlled Power Company's general production philosophy is to manufacture as large a percentage of the product as possible. The reasoning behind this philosophy is to control the quality, cost and delivery of our products. As a result of this philosophy, we build most of our major components: Sheet metal fabrication, phosphating, and painting are done on site. All functions are performed internally including engineering fabrication, sub-assemblies, assembly, testing and quality control. Transformer design, manufacturing, vacuum impregnation and baking are done internally. Electronic layout, testing and quality control of all components are performed on site.

Our facility is fully integrated to take a product from marketing concept to engineering, prototype, production manufacturing, testing and quality control. This is a unique capability that allows us to offer the widest range of power treatment solutions in the industry. This is the reason we are the world's recognized authority in power treatment.

Controlled Power Company is a manufacturer of premium quality power treatment and conversion equipment with over 25 years of experience. The design, material, workmanship and ultimately the performance of the products reflect the inherent product quality. Controlled Power Company provides its customers with reliable, guaranteed solutions for electrical power problems.



**THE POWER COMMANDER**  
Electronic Line Voltage Regulators  
**Series 900A**  
Single Phase- 15 KVA to 150 KVA  
Three Phase- 15 KVA to 500 KVA



THE POWER PROCESSOR

**THE ULTRA-K TRANSFORMER**  
K-Rated Isolation Transformers  
**Series 600K**  
Single Phase- 5 KVA to 25 KVA  
Three Phase- 15 KVA to 500 KVA

**THE POWER PROCESSOR**  
Power Line Conditioners with Power Distribution  
**Series 700A**  
Single Phase- 5 KVA to 25 KVA  
Three Phase- 6 KVA to 500 KVA



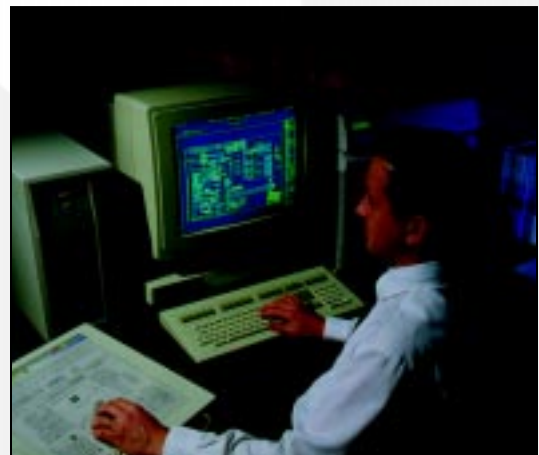
UNINTERRUPTIBLE POWER SYSTEMS

**THE POWER PURIFIER**  
Power Purification System  
**Series 800A, 800PI, and 800P2**  
250 VA to 25 KVA



THE ULTRA-K TRANSFORMER

**THE POWER DELEGATOR**  
Power Distribution Centers  
**Series 7000A**  
Three Phase- 10 KVA to 255 KVA  
Uninterruptible Power Systems  
**Series LTX, Series LT, Series MD, Series HV**  
Single Phase- 250 VA to 25 KVA  
Three Phase- 10 KVA to 150 KVA



## Power Purifier Engineering Information - Series 800PI (NEMA1 Enclosure)

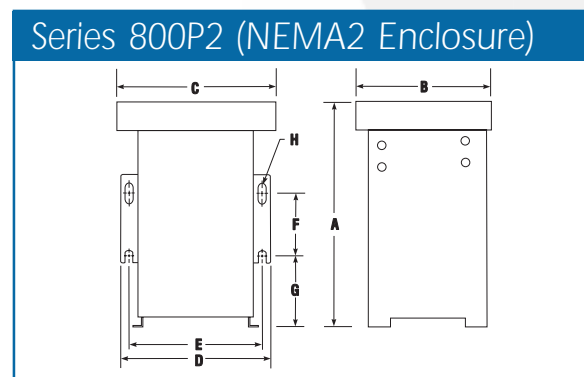
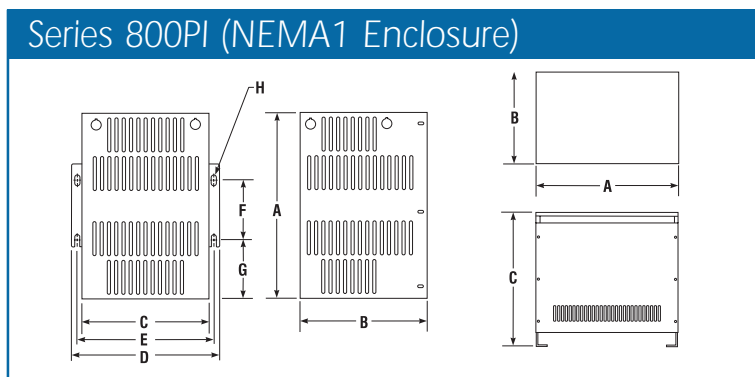
POWER RATING VA	*INPUT	**OUTPUT	WEIGHT POUNDS	DIMENSIONS								MODEL #
				A	B	C	D	E	F	G	H	
250	120/208/240/480	120	29	10.50	8	6.75	8.50	7.75	4.13	2.19	0.31	5DZAX-250-8PI
500	120/208/240/480	120/208/240	52	14.00	10	7.25	9.00	8.13	5.63	4.06	0.38	5DZZX-500-8PI
750	120/208/240/480	120/208/240	60	14.00	10	7.25	9.00	8.13	5.63	4.06	0.38	5DZZX-750-8PI
1000	120/208/240/480	120/208/240	82	14.00	10	7.25	9.00	8.13	5.63	4.06	0.38	5DZZX-1K-8PI
1500	120/208/240/480	120/208/240	106	16.50	14.75	10.50	13.00	11.75	5.00	5.19	0.44	5DZZX-1.5K-8PI
2000	120/208/240/480	120/208/240	125	16.50	14.75	10.50	13.00	11.75	5.00	5.19	0.44	5DZZX-2K-8PI
2500	120/208/240/480	120/208/240	142	16.50	14.75	10.50	13.00	11.75	5.00	5.19	0.44	5DZZX-2.5K-8PI
3000	120/208/240/480	120/208/240	157	16.50	14.75	10.50	13.00	11.75	5.00	5.19	0.44	5DZZX-3K-8PI
5000	120/208/240/480	120/208/240	407	23.00	20	28.50						5DZZX-5K-8PI
8000	208/240/480	120/208/240	465	23.00	20	28.50						5DMZX-8K-8PI
10,000	208/240/480	120/208/240	507	23.00	20	28.50						5DMZX-10K-8PI
15,000	208/240/480	120/208/240	830	35.00	25	39.50						5DMZX-15K-8PI
20,000	208/240/480	120/208/240	950	35.00	25	39.50						5DMZX-20K-8PI
25,000	208/240/480	120/208/240	1070	35.00	25	39.50						5DMZX-25K-8PI

\* 600 Vac Available (Input) \*\* 220 Vac Available (Output)

## Power Purifier Engineering Information - Series 800P2 (NEMA2 Enclosure)

POWER RATING VA	*INPUT	**OUTPUT	WEIGHT POUNDS	DIMENSIONS								MODEL #
				A	B	C	D	E	F	G	H	
250	120/208/240/480	120	29	13.00	8.875	8.20	8.50	7.75	4.13	3.20	0.31	5DZAX-250-8P2
500	120/208/240/480	120/208/240	52	17.50	11.75	8.80	9.00	8.13	5.63	5.19	0.38	5DZZX-500-8P2
750	120/208/240/480	120/208/240	60	17.50	11.75	8.80	9.00	8.13	5.63	5.19	0.38	5DZZX-750-8P2
1000	120/208/240/480	120/208/240	82	17.50	11.75	8.80	9.00	8.13	5.63	5.19	0.38	5DZZX-1K-8P2
1500	120/208/240/480	120/208/240	106	20.00	15.50	13.00	13.00	11.75	5.00	5.19	0.44	5DZZX-1.5K-8P2
2000	120/208/240/480	120/208/240	125	20.00	15.50	13.00	13.00	11.75	5.00	5.19	0.44	5DZZX-2K-8P2
2500	120/208/240/480	120/208/240	142	20.00	15.50	13.00	13.00	11.75	5.00	5.19	0.44	5DZZX-2.5K-8P2
3000	120/208/240/480	120/208/240	157	20.00	15.50	13.00	13.00	11.75	5.00	5.19	0.44	5DZZX-3K-8P2
5000	120/208/240/480	120/208/240	407	23.00	20	28.50						5DZZX-5K-8P2
8000	208/240/480	120/208/240	465	23.00	20	28.50						5DMZX-8K-8P2
10,000	208/240/480	120/208/240	507	23.00	20	28.50						5DMZX-10K-8P2
15,000	208/240/480	120/208/240	830	35.00	25	39.50						5DMZX-15K-8P2
20,000	208/240/480	120/208/240	950	35.00	25	39.50						5DMZX-20K-8P2
25,000	208/240/480	120/208/240	1070	35.00	25	39.50						5DMZX-25K-8P2

\* 600 Vac Available (Input) \*\* 220 Vac Available (Output)



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