CONTROLLED POWER COMPANY

COMMERCIAL POWER PURIFIER (SERIES 800A)

GENERAL SPECIFICATIONS

1.0 General

This specification describes the features, design, and benefits of the Series 800A Power Purification System. All systems are designed to assure maximum reliability, flexibility, serviceability and performance. The overall function of the Series 800A is to receive raw, extremely polluted electrical power and purify it for use by sensitive electronic equipment. The Series 800A is used where isolated, regulated, transient and noise free sinusoidal power is required. The 800A is available with output power distribution receptacle wired flexible cables and/or flush mounted receptacles.

2.0 Standards

Systems are designed and manufactured in accordance with the following:

- Institute of Electrical and Electronic Engineers (IEEE C62.41-1991)
- National Fire Protection Association (NFPA) 70, National Electric Code (NEC)
- Underwriters Laboratories (UL, C-UL 1012)
- Federal Information Processing Standards Publication 94 (FIBS Pub 94)

3.0 Performance Specifications

3.1 Power Output - Single phase, continuous duty rated capacity.

3.2 Line Voltage Regulation - Output voltage automatically regulated to within ± 3% with input voltage fluctuations of +10% to -20% of nominal under typical load conditions. Meets Computer and Business Equipment Manufacturers Association (CBEMA) voltage regulation requirements. Utilizes Variable Range Regulation (VRR) to obtain improved line voltage regulation when operating under low load conditions.

3.2.1 At 75% load - output voltage automatically regulated to within ± 3% or better with input voltage fluctuations of +10% to -25% of nominal.

3.2.2 At 50% load - output voltage automatically regulated to within ± 3% with input voltage fluctuations of +10% to -40% of nominal.

3.2.3 At 25% load - output voltage automatically regulated to within ± 3% or better with input voltage fluctuations of +10% to -45% of nominal.

3.3 Immunity to Distortion - With input voltage distortion of up to 40%, output voltage sine wave contains a maximum harmonic content of 5%.

3.4 Load Regulation - Output voltage automatically regulated to within ± 2.5% when load changes from 0% to 100% or 100% to 0%.

3.5 Voltage Recovery - Output voltage returns to 95% of nominal level within two AC cycles and to 100% within three cycles when the output is taken from no load to full load or vice-versa. Recovery from partial load changes are corrected on a shorter period of time.

3.6 K Factor - 30, designed to operate with non-linear, non-sinusoidal, high crest factor switch mode power supply type loads without overheating.

3.7 Power Factor Correction - Input power factor within 0.95 approaching unity with load power factor as poor as 0.6.

3.8 Harmonic Attenuation - Attenuates load generated odd current harmonics in the order of 23 dB.

3.9 Isolation - Primary electrically isolated from secondary. Meets isolation criteria as defined by National Electric Code article 250-5d.

3.10 Lighting and Surge Protection - Attenuates voltage spikes 3000 to 1. Exceeds U/L 1449 rating 330 volts, ANSI / IEEE C62.41 - Category B3.

3.11 Common Mode Noise Attenuation - 140dB.

3.12 Transverse Mode Noise Attenuation - 120dB.

3.13 Ride Through Capability - With loss of input power for up to 1 cycle, the output sine wave remains at usable AC voltage levels.

3.14 Reliability - 200,000 hours (MTBF)

3.15 Audible Noise - At full load, when measured at three foot distance, the following noise levels are not exceeded:

3.15.1 Units 500VA through 2.1KVA - 45dB

3.15.2 Units 2.5KVA through 7.5KVA - 50dB

3.25.3 Units 10KVA and 15KVA - 60dB

3.16 Efficiency - Approximately 92% at full load.

3.17 Operating Temperature - -20° C to +40° C.

4.0 Major System Components

4.1 Main Input Circuit

4.1.1 Units 500VA through 3.5KVA are rated for a nominal input voltage of 120 VAC, single phase, 60 hertz and include a pre-installed input plug with 8 foot input line cord.

4.1.2 Units 3.5KVA through 15KVA are rated for nominal input voltage levels of 208 or 240, single phase, 60 hertz. Input terminals for hard wiring of source conductors and ground are provided.

4.1.3 All units are provided with a pre-installed, molded case, thermal magnetic input circuit breaker.

4.2 Transformer

4.2.1 Transformers are ferroresonant, dry type, fan air cooled, 600 volt class.

4.2.2 All transformer windings are class H (220 degrees C) insulated copper.

4.2.3 A class H installation system is utilized throughout with operating temperatures not to exceed 150 degrees C over a 40 degree C ambient temperature.

4.2.4 Transformer core manufactured utilizing M-6 grade, grain oriented, stress relieved transformer steel.

4.2.5 Transformer secondary windings are electrically isolated from primary windings. Newly derived neutral conductor is effectively bonded to cabinet enclosure, ground terminal strip and output neutral terminal strip.

4.2.6 All leads, wires and terminals are labeled to correspond with circuit wiring diagram.

4.2.7 Transformers are vacuum impregnated with an epoxy resin.

4.2.8 Leakage current to ground on units 500VA through 3.5KVA measured at < 20 microamps, which is well below UL60601-1 maximum leakage current to ground requirements.

4.3 Power Distribution (Units 5KVA through 15KVA)

4.3.1 Optional output power distribution receptacle wired flexible cables and/or flush mounted receptacles allow quick and easy power interface to the load. Simple patch panels allow maximum flexibility and reduce installation time.

4.3.2 Optional receptacle wired flexible cables are provided with pre-installed molded case thermal magnetic circuit breaker and customer specified receptacle type. Cables are provided at customer specified length.

4.3.3 Flush mounted output receptacle circuits are provided with pre-installed molded case thermal magnetic circuit breaker and customer specified receptacle type.

4.3.4 Terminals are provided for hard wiring of output conductors, neutral conductor and ground.

4.4 Power Distribution (Units 500VA through 3.5KVA)

4.4.1 Units 500VA through 3.5KVA are provided with four (4) NEMA 5-20R receptacles. All output receptacles are protected with appropriately rated circuit breaker or fuse.

4.5 Cabinet Construction

4.5.1 Cabinet is attractive, functional, general purpose, NEMA type 1 indoor enclosure.

4.5.2 Cabinet manufactured from 16 gauge steel.

4.5.3 Cabinet for units 500VA – 850VA are provided with rubber feet to prevent scratching of finished surfaces. Dimensions: 8.5"W x 12.75"D x 9.5"H.

4.5.4 Cabinet for units 1KVA - 3.5KVA are provided with swiveling lockable wheels to facilitate movement. Dimensions: 8.5"W x 12.75"D x 17.5"H.

4.5.5 Cabinet for units 5KVA - 15KVA are provided with swiveling lockable wheels to facilitate movement. Dimensions: 15"W x 23.75"D x 22.5"H.

4.5.6 Texture baked on paint finish with proper pre-treatment provided.