lpespca2

POWER PURIFIER

Double Magnetic Conversion
Line-Interactive Power Conditioner

TECHNICAL SPECIFICATIONS

1.0 General

This specification describes the features, design, and benefits of the *Power Purifier*. All systems are designed to assure maximum reliability, serviceability and performance. The overall function of the *Power Purifier* is to receive raw, extremely polluted electrical power and purify it for use by sensitive electronic equipment. The *Power Purifier* is used where isolated, regulated, transient and noise free sinusoidal power is required.

2.0 Standards

Power Purifiers 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 Listed

3.0 Performance Specifications

3.1 Power Output - Single phase, continuous 100% duty rated KVA/KW capacity. Designed to supply power for linear or non-linear, high crest factor, resistive and reactive type loads.

3.2 Line Voltage Regulation - Output voltage automatically regulated to within ± 2% or better with input voltage fluctuations of +10% to -20% of nominal when system is loaded 100%. Exceeds Computer and Business Equipment Manufacturers Association (CBEMA) voltage regulation requirements. Utilizes Variable Range Regulation (VRR) to obtain improved line voltage regulation when operating under less than full load conditions.

3.2.1 At 75% load - output voltage automatically regulated to within ±3% with input voltage fluctuations of +10% to -35% 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% 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 (resistive) changes from 0% to 100% or 100% to 0%.

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

3.6 K Factor - 30, designed to operate with non-linear, non-sinusoidal, high crest factor 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 23dB at the input.

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 - Complies to UL 1449 rating 330 volts when subjected to a category B3 (6000 volt/3000 amp) combination waveform as established by ANSI / IEEE C62.41.

3.11 Common Mode Noise Attenuation - 140dB.

3.11.1 Inner winding capacitance -.001pf.

3.12 Transverse Mode Noise Attenuation - 120dB.
3.13 Ride Through Capability - With loss of input power for up to 16.6 milliseconds 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 one meter distance, the following noise levels are not exceeded:

3.15.1 Units 500VA through 2KVA - 52dB.
3.15.2 Units 2.5KVA through 8KVA - 54dB.
3.15.3 Units 10KVA and 25KVA - 56dB.

3.16 Efficiency - Approximately 92% at full load.
3.17 Operating Temperature - -20 degrees C to +40 degrees C.

4.0 Transformer Construction

4.1 Transformers are ferroresonant, dry type, convection cooled, 600 volt class.
4.2 All transformer windings are class N (200 degrees C) insulated copper.
4.3 A class N installation system is utilized throughout with operating temperatures not to exceed 115 degrees C over a 40 degree C ambient temperature.
4.4 Transformer primary is multi-input voltage configured. Input terminals are provided for source conductors and ground.

4.4.1 Nominal input voltage for units 500VA - 5KVA is 120/208/240/480 VAC, single phase, 60 Hertz.
4.4.2 Nominal input voltage for units 8KVA - 25KVA is 208/240/480VAC, single phase, 60 Hertz.
4.4.3 600VAC, single phase, 60 Hertz available upon request.
4.4.4 Single phase, 50 Hertz available upon request.

4.5 Transformer core manufactured utilizing M-6 grade, grain oriented, stress relieved transformer steel.
4.6 Transformer secondary is configured in a 240/120 split with 208 volt tap. Transformer secondary windings are electrically isolated from primary windings. Newly derived neutral conductor is effectively bonded to cabinet enclosure and output neutral terminal.
4.7 Output voltage for units 500VA to 25KVA is 120/208/240VAC, single phase, 60 Hertz.
4.8 Interface terminals are provided for output power hot, neutral and ground conductors.
4.9 All leads, wires and terminals are labeled to correspond with circuit wiring diagram.
4.10 Transformers are vacuum impregnated with epoxy resin.

5.0 Cabinet Construction

5.1 Cabinet for units 500VA - 3KVA are designed for panel or floor mounting.
5.2 NEMA 1, general purpose, indoor type enclosure.
5.2.1 NEMA type 2 indoor use, protected against falling non-corrosive liquids and dirt (option).
5.3 Cabinet for units 5KVA - 25KVA are designed for floor mounting.
5.4 NEMA type 2 indoor use, protected against falling non-corrosive liquids and dirt.
5.5 Cabinet manufactured from heavy gauge steel. Base sub-structure adequate for fork lifting.
5.6 Texture baked on paint finish with proper pre-treatment provided.