**Neutral Grounding Resistor (Low Resistance)**

1. **SCOPE**

This specification covers the minimum requirements for the design, materials, manufacturing, inspection and testing of low resistance neutral grounding resistors.

1. **CONFORMANCE TO NATIONAL STANDARDS**

The neutral grounding resistors shall be designed and factory tested to IEEE Standard 32­1972. The neutral grounding resistors shall be designed to meet all applicable specifications of ANSI, NEC, NFPA, NEMA, and OSHA. The neutral grounding resistors shall be designed to conform to Seismic Zone 2 requirements of the Uniform Building Code unless otherwise specified.

1. **SERVICE CONDITIONS**

Neutral grounding resistors shall perform satisfactorily when operated in a 120°F maximum ambient temperature, 0°F minimum ambient temperature and an altitude of 6000 feet (1829 m), or lower.

1. **RATINGS**

The neutral grounding resistors shall be Advanced Power Technologies, LLC.

Neutral Grounding Resistor Assembly, rated for 4160/12470/13800 System Volts, 2400/7200/8000 Volts L­N, 100/200/XXX Amps, 10 seconds, 760 C Rise, Outdoor (NEMA/3R/IP23), bottom entry and exit.

Measures approximately 38 inches wide by 38 inches deep by 30 inches high and weighing 240 lbs.

1. **DESIGN DETAILS**

The unit shall be enclosed in outdoor type safety enclosure and shall be fully assembled. Neutral current transformer shall be installed in the resistor enclosure with secondary leads wired to the terminal blocks for field interconnection to the generator ground fault relay.

Each resistor shall be completely factory assembled, suitable for mounting on a level pad or atop the transformer. Enclosures shall be safety enclosures, they shall be properly insulated from the resistor element and frame sub­assembly and grounded, they shall be provided with openings for entry and exit conduits so that there are no exposed live parts outside of the enclosure. Enclosures shall utilize corrosion resistant hardware throughout.

1. **MATERIALS**

Each resistor unit shall be stainless steel edge­wound type with welded stainless steel jumpers between unit resistors. The edge­wound helix strap shall be wound around a one piece refractory core reinforced by a longitudinal steel through rod. Each resistor unit shall be designed to permit thermal expansion.

1. **NAMEPLATES**

The nameplates shall be produced from clear textured polycarbonate, laminated on high performance pressure sensitive adhesive. The printing shall be done on the interior surface of the laminate to avoid scratching or other deterioration of text. The lettering shall be white on black background.

1. **DRAWINGS**

The supplier shall submit approval drawings within 5­10 working days after notification of contract award. Drawings shall show assembly overall weight, exterior dimensions, mounting bolt dimensions, and terminal locations. Drawings shall show an elementary wiring schematic.

1. **TESTS**

Manufacturer shall perform all standard tests prescribed by NEMA, ANSI, and IEEE Standard 32­1972 and shall be responsible for testing circuits to insure proper function performance and operable condition.

1. **MANUALS**

Supplier shall submit complete Instruction and Maintenance manuals at the time of shipment. The manuals shall give complete and detailed instructions for unpacking, installation, inspection, connection, and maintenance.