

GP 16-11-01	Neutral Grounding Resistors	February 2002
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Neutral Grounding Resistors

GP 16-11-01

Scope

[I] This Global Practice (GP) covers neutral grounding resistors for low and high resistance grounded systems.

[I] An asterisk (*) indicates that a decision by Purchaser is required or that additional information is furnished by Purchaser.

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1. Required References

[I] This Section lists Practices and Standards that are generically referenced and assumed to be a part of this document. Unless otherwise specified herein, use the latest edition.

1.1. IEEE–Institute of Electrical and Electronics Engineers

IEEE 32	Standard Requirements, Terminology, and Test Procedure for Neutral Grounding Devices
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* [I] Unless otherwise specified, IEEE 32 shall be used.

2. Materials

* [R] Resistance elements for outdoor locations shall be stainless steel, Type 300 or Type 400 series.

3. Design

- 1) [R] Neutral grounding resistors shall be suitable for outdoor installation.
- 2) * [R] Resistors shall be capable of carrying maximum system ground fault current without exceeding their rated temperature rise for a period to be specified, but not less than 10 seconds. [The specified period will be 5 times the time of the slowest ground fault relay in response to 80 percent of resistor rated (initial) current, or 10 seconds, whichever is greater.] Unless otherwise specified, indoor neutral grounding resistors shall not exceed 500°C temperature rise and outdoor neutral grounding resistors shall not exceed 750°C temperature rise based on a 40°C ambient.
- 3) [S] Grounded enclosure is required for grounding resistors. (Designs requiring insulation of enclosure from ground are unacceptable.)
- 4) * [R] Enclosures for neutral resistors shall be appropriate for the specified environmental exposure. Openings in sides and top of enclosure shall not exceed 1½ in. or 40 mm across. When neutral resistors are mounted on top of the transformer, the enclosure should include the neutral bushing, and have a removable panel for inspection.
- 5) [M] A stainless steel nameplate, with the following minimum information, shall be attached to the resistor enclosure.
 - a) Resistor nominal value in ohms
 - b) Rated voltage
 - c) System voltage and frequency
 - d) Rated current
 - e) Time rating in seconds

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