

NEUTRAL EARTHING RESISTOR DATA SHEET

Neutral Earthing Resistors (NERs) - sometimes called Neutral Grounding Resistors - are employed in AC distribution networks to limit the current that would flow through the neutral point of a transformer or generator in the event of an earth fault. NERs limit fault currents to a value that does not cause any further damage to switchgear, generators or transformers beyond what has already been caused by the fault itself, and in some cases limit touch and step potentials to safer values than a solidly grounded systems. In addition, consideration is given to operation of protection relays within the required time.

DESIGN CONSIDERATIONS

Fortress NER Features

- Full compliance with ANSI-IEEE 32, Terminology and Test Procedure for neutral grounding devices
- Stainless steel resistors as standard
- Enclosures ratings from IP00 to IP55
- Type-tested standard designs (certificates available)

OPTIONS

- Supply of resistor banks only for incorporation into customers own enclosures
- Cyclone Wind Loading rated enclosures
- Seismic rated enclosures
- Provision of CTs, heaters, special cabling, and other accessories.
- Interlocked off-load by-pass isolators
- Single or multiple vacuum contactors or circuit breakers

ENCLOSURE MATERIALS AND DESIGN

The standard enclosure material is mill galvanised steel with an epoxy powder coat finish. Alternative materials include both GR304 & GR316 stainless steel.

As standard we offer IP23 enclosures. They keep out birds and vermin and are suitable for outdoor use whilst also allowing good ventilation. We also supply IP33, IP54, and IP55 enclosures. When side mounted cable termination chambers are specified they are IP54 or IP55 as standard.



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We routinely supply cyclone wind load rated enclosures to customers in harsh coastal environments and seismic rated enclosures for earthquake prone areas.

Whilst our standard range of enclosures are suitable for most applications we are also happy to provide custom designed equipment if your application requires it.

ADDITIONAL SWITCHGEAR.

NERs can be fitted with one or more manual off-load isolators. These can be interlocked if required and can be supplied mounted in the same enclosure as the resistor, a separate compartment, or in a side mounted cable termination chamber.

For medium-voltage power generating schemes which have multiple generating sets, it is often necessary to ensure that only one of the neutrals of the running generating sets is earthed at any time. This can be achieved by fitting the NER with an appropriately rated vacuum contactor controlled from the generating set panel. Fortress can supply contactors rated from 3kV to 24kV fitted in a separate compartment to the resistor.

Fortress has standard designs for the incorporation of circuit breakers with NERs.

TRANSFORMER/RESISTOR COMBINATION

Fortress can also supply transformer / resistor combinations such as zig zag earthing transformers and single phase earthing transformers as required.

