

NEUTRAL GROUNDING RESISTORS

Neutral Earthing/Grounding Resistors (NERs/NGRs) are used in AC distribution networks to limit the current that can flow through the neutral/star point of a transformer or generator in the event of an earth fault. The rating of the NER/NGR is chosen so that the fault current is limited to that necessary to operate the protection relays within the required time.

Elements

TPR's range of elements includes plate grids of 0.5mm, 1mm, 2mm and 4mm thickness and (for higher resistances) wire wound coils. These allow us to manufacture cost effective designs for all currents from a few Amps to KA and for time ratings from a few milliseconds to continuous.

Enclosures

We have standard earthed frame enclosures with voltage ratings to IEC/IEEE from 3.6kV to 36kV with fully rated insulation from element to housing and from 52kV to 132kV with graded insulation.

IP Ratings

The enclosure type is often determined by the duty but TPR can produce NERs/NGRs with a protection rating from IP00 for indoor applications to breathable IP55 for outdoor applications.

Resistance Stability

Resistance values are set during manufacturing and are then constant throughout the working life of the NER. Different types of stainless steels can be used for element material according to the level of cold to hot variation needed by the client.

Resistance Change

The resistance of grid type NERs/NGRs increases in operation. This means the fault current is always reducing, unlike a liquid NER where the change is negative and the fault current is always increasing.

Reliability

NERs/NGRs are a fault protection device and may only be called upon to operate a few times in their service life. The elements used are all proven within all industrial environments and can confidently be called upon 24 hours a day, 7 days a week.

Cooling

The use of grid elements increases the cooling rate when compared to a liquid resistor, so the time period between faults can be decreased. For this reason a grid type resistor rated for 10 seconds has a better performance than a liquid resistor with a 60 second rating.

Installation

TPR resistors are compact and do not require on site calibration.

