



# Neutral Earthing Resistors

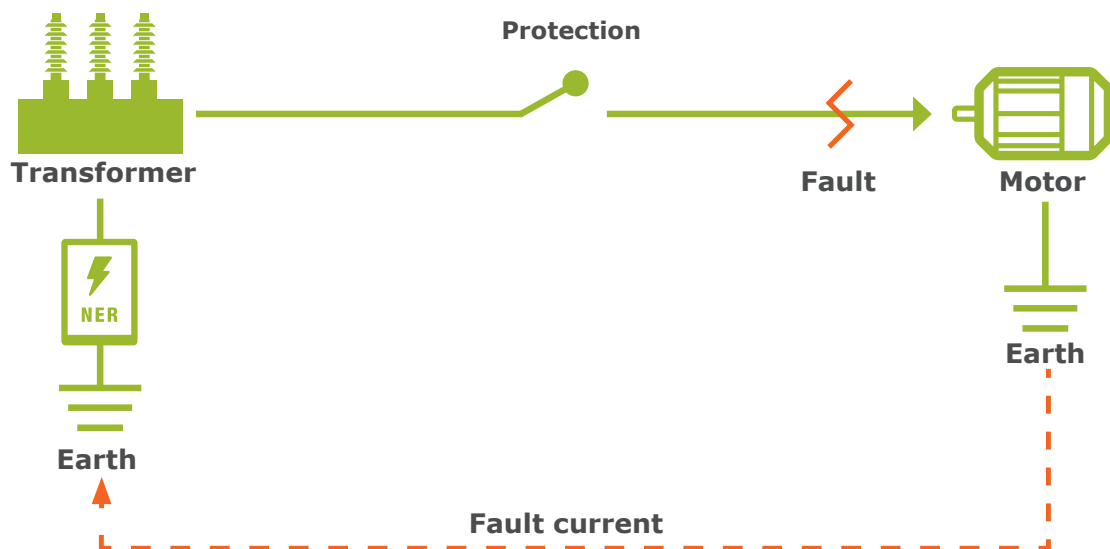
# Neutral Earthing Re

Neutral Earthing Resistors (NER) is one of the most widely used approaches to protect equipment from damage in the event of earth faults. They do this by limiting the earth fault currents to a maximum pre-determined value that avoids a network shutdown and damage to equipment, yet allows sufficient flow of fault current to activate protection devices to locate and clear the fault.

## How does an NER work?

Connected between ground and neutral of a transformer or generator, NERs reduce the fault current to a pre-determined maximum level such that damage to equipment or network shutdown is avoided while allowing a sufficient amount of fault current to activate protection devices. A fast response time allows protection relays and current transformers to operate and quickly identify, isolate and clear the fault. Subsequent faults are also avoided. Damage to equipment is therefore minimised and the risk of hazardous arc flash is reduced or eliminated.

Given that an NER must absorb and dissipate a huge amount of energy during a fault without exceeding temperature limitations, the design and selection of an NER is critical to ensure equipment and personnel safety as well as continuity of supply.



## When is earth fault limiting right for you?

- Improvements in safety for personnel through reduced electrical shock and arc flash hazards
- Elimination of burning and melting effects in electrical equipment, such as transformers, generators, switchgear, cables and machines
- Minimisation of mechanical stresses in circuits and equipment carrying fault currents
- Limitation of the momentary line voltage dip and transient over-voltages
- Simplification and fast isolation and clearing of the earth fault
- Reduction of operation and maintenance expenses
- Reduction in unscheduled shutdowns due to electrical faults and equipment damage.

## What we offer

### Captech offer a range of high performance NER solutions.

- For utilities, industrial and mining applications
- Compliant with IEEE-32 or AS/NZS 2081:2011 standards
- LV and MV systems
- High and low resistance grounded systems
- Shot and continuous time rated
- As a loose part or a complete solution
- Indoor or outdoor installations
- Standard or custom-built enclosure.



## We utilise

High quality wire-wound, edge-wound or plate-wound resistive elements made of alloy steel;

- with tolerance  $\pm 5\%$
- with positive temperature coefficient.



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