Earthing Transformers

A return path for earth current is needed to protect a system against earth fault currents. Earthing transformers, sometimes also called neutral couplers or grounding transformers, are used to create an artificial neutral point in a three phase system, which provides possibility for neutral earthing.

The primary terminals (1U-1V-1W) of the earthing transformer are connected to the three-phase electrical network and the earthing connection is for instance made from neutral terminal (1N) through an arc-suppression coil. The neutral point (N) of the earthing transformer is energized with phase voltage in case of earth fault in the electrical network.

The rated current and the fault time duration are key design parameters for the earthing transformer when used together with an arc-suppression coil.
General Standard Design

Our earthing transformers are naturally cooled and of hermetically sealed design with corrugated tank. The insulating liquid is inhibited mineral oil. Standard surface treatment according to C3 (ISO 12944).

The transformers can be installed both in- and outdoors and they are designed to operate in an environment with ambient temperature between -40°C and +40°C.

The transformers are easy to install thanks to plug-in bushings and auxiliary wiring box for connection of signal cables. For personal safety are the low voltage bushings of auxiliary winding additionally equipped with protective covers.

The transformers are equipped with a top oil thermometer including alarm and trip contacts. For additional safety is the tank equipped with a pressure relief device.

Internal Electrical Design

Our earthing transformers are commonly made with one winding being inter-star connected or also known as Zig-Zag connection (ZN). The zero sequence impedance of such a winding is normally quite low, but can be increased if the purpose is to limit the earth fault current flowing through the transformer.

Our design is flexible and we are able to design according to specific requirements on for instance zero sequence impedance or short circuit impedance if required.

Alternatively can we make the earthing transformers as two winding design with star/delta-connection.

Optional Features

- Secondary winding for continuous auxiliary power supply (e.g. ZNyn11)
- Multi-functional device for monitoring of gas, temperature and oil level
- Off-circuit tap changer for voltage regulation on primary side
- Improved surface treatment for environment with very high corrosivity (environmental class C5-I in accordance with standard ISO 12944)
- Fixed Petersen Coil with or without tappings

Our Benefits

- Flexible and custom made design to meet specific customer requirements
- Compact design and minimum need for maintenance
- User friendly - Easy installation