Neutral Grounding Solutions
GR Series

Neutral Grounding Resistor

The purpose of the Neutral Grounding Resistor is limiting the earth fault current to prevent any damage to generator and ensure operation continuity and safety of personal and equipment in electrical systems. To ensure this safety, neutral points of power transformers and generators are grounded through Neutral Grounding Resistor, at LV & HV power distribution.

The fault currents which may occur high current values to damage the generator, motor, cable or other critical equipment will be prevented, with this application.

Application Areas
• Thermal, Nuclear, Gas Power Generation
• Hydroelectric, Wind and Solar Power Generation

Standards
• IEEE-C57.32
• IEC 60529

Technical Characteristics
• Nominal voltage up to 110/√3 kV
• Fault current up to 5000 A
• Fault duration for 5 s, 10 s, continuous or other customer requirements
• Stainless steel resistor elements
• Spring-wound, edge-wound, grid type resistor elements
• Special design for ATEX explosive environments
• Custom made lifting eyes to ensure safe lifting

Advantages
• Easy access and maintenance
• High insulation and mechanical resistance against shocks

Options
• Standard IP23 protection degree of enclosure, available from IP00 to IP55.
• Standard Hot dip galvanized enclosure, Optional stainless steel, aluminium and painting
• Entry from bottom is standard, top and side with bushings are options
• Accessories; Current & Voltage Transformers, Disconnector Switch, Surge Arrester, Relays, Anti-Condensation Heater, etc.
• Modular design for extreme conditions

High Resistance Neutral Grounding Systems

High Resistance Neutral Grounding Systems (HRG) are used to limit short-circuit fault current and locate fault where energy continuity is important. HRG system automatically reduces the fault current to 5 A and then start triggering the fault current of the network between 5 / 10 A continuously to allow the detection of fault by the operator.

Application Areas
• Any area where energy continuity is priority like
  • Electrical network
  • Hospitals
  • Data centers
  • Textile factories, Cement factories, ...

Standards
• IEEE-C57.32
• IEC 60529
• IEC 60071

Technical Characteristics
• Nominal voltage up to 7.2 kV
• Suitable for continuous current up to 10 A and impulse current up to 20 A
• Adjustable fault current, impulse time
• Smart fault detection system
• Smart auto control system to check system operation
• Stainless steel resistance material
Options
- Hot dip galvanized, stainless steel or aluminium enclosure
- Entry from top or bottom with bushings
- Special design for high altitude

Advantages
- Limiting the short circuit failure current
- Detecting the location of the fault
- Monitoring the system operation
- Visual and audio failure notification
- Stable fault and pulse current with 3% resistance variation against temperature rise
- Modular and rigid enclosure design with resistor blocks mounted to the frame for safety lifting

Generator Neutral & Leads Cubicle
3 phases from the LV and HV generator are combined inside the Generator Neutral Cubicles to provide a neutral point. This neutral point is connected to the ground through a resistor.

Generator Neutral & Leads Cubicle provides the sensing of fault current with the relays and current transformer mounted inside the Neutral Grounding Resistor, and limiting the fault duration.

Application Areas
- Thermal, Nuclear, Gas Turbine Power Generations
- Renewable power plants like Hydroelectric, Wind and Solar

Standards
- IEC 62271-200
- IEEE-C57.32
- IEC 60529
- IEC 60071

Technical Characteristics
- Suitable up to 17.5 kV gensets
- Applicable up to 5000 A
- Stainless steel resistor elements
- Special mechanical and electrical design to withstand high temperature and extreme current values
- Internal current transformer detecting failure current

Advantages
- High personal and equipment safety by using fully type tested SME enclosure as per IEC 62271-200
- Easy access and maintenance
- High insulation and mechanical resistance against shocks

Options
- Entry from top or bottom with bushings
- Additional equipment including voltage transformer, surge arrester, panel heater, analog display etc
- Special design for high altitude
Owing to periodical improvements of our products the supplied products may differ in some details from the data stated in the prospectus material.

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