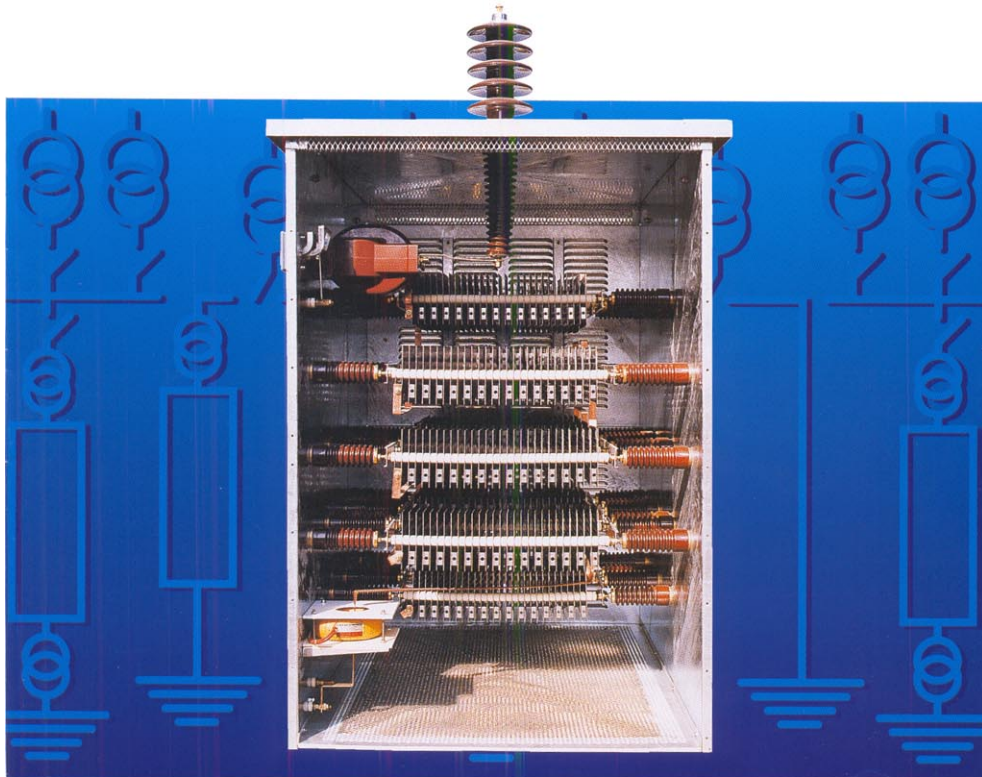


Power resistors

# NEUTRAL EARTHING RESISTOR



## SYSTEM EARTHING

The general purpose of earthing is to protect life and property in the event of 50/60 Hz faults (short circuit) and transient phenomena (lightning switching operations).

The question of how a system shall be earthed is governed by regulation.

The regulation that one point of every system shall be earthed is designed primarily to preserve the security of the system by ensuring that the potential on each conductor is restricted to such a value as is consistent with the level of insulation applied.

The choice of the earthing method is based on the following criteria :

- **Voltage level** : the insulation level of material must be in accordance with the induced voltage at the time of fault
- **Insulation co-ordination**
- **Limitation of fault current** : to reduce the electro-dynamics stresses on material, to limit the induced voltage on telecommunications lines and over voltage on LV components.

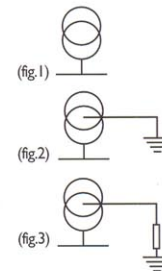
There are 3 methods of neutral earthing :

- Insulated neutral system (fig.1)
- Direct earthing or solidly earthed (fig.2)
- Impedance earthing (fig.3)

The purpose of this method is to limit the current for greater safety.

There are 3 type of impedance earthing :

- Earthing through reactance
- Earthing through ARC - Suppression coil
- Earthing through resistor.

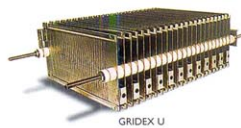
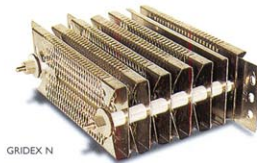


## EARTHING THROUGH RESISTOR

This is the most common, economical and sufficient solution. It is used when the neutral of the supply transformer is available and its own impedance is not enough to limit the fault current.

There are different resistance material used to build a Neutral Earthing Resistor :

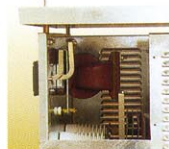
- cast iron resistance elements : fragile, no corrosion resistance
- liquid resistor : old technology, maintenance problems due to evaporation or freezing of electrolyse.
- Neutral Earthing Resistors made from stainless steel are the best technical and economical solution.



Founded in 1902, Métal Déployé S.A. has designed and developed several technologies based on expanded stainless steel metal grids to meet clients needs on neutral earthing resistors.

Métal Déployé neutral earthing resistors Gridex supplied all over the world are known for their solidity, reliability, performance and low maintenance requirement.

### Range



#### ◆ Electrical criteria :

- Rated fault current : from 5 to 5000 A
- Rated voltage : from 0.38 to 500 kV
- Rated time : from 1 sec to continuous time rating.

#### ◆ Mechanical criteria

- Direct connection or through top or side mounted bushing
- Protection degree of housing : from IP 00 to IP 54 (recommended IP23)
- Finishing : hot dip galvanised, painted or stainless steel housing.

#### ◆ Options

- current transformer HV or LV
- ON or OFF load disconnecting switches
- space heater
- elevating stands.



#### Special construction :

To meet the client requirements, we have designed and supplied disconnecting and change over switch cabinets comprising disconnectors and current transformers for direct earthing through the Neutral Earthing Resistor.

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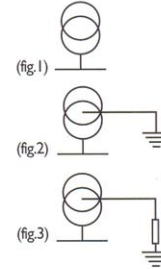
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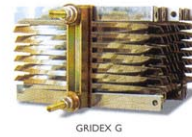
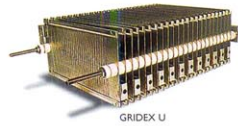
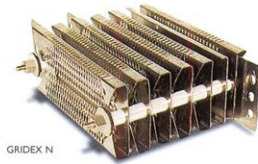


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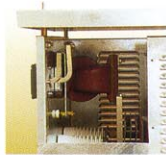
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### Range



Neutral Earthing Resistor with Current Transformer



Neutral Earthing Resistor with On Load Disconnecter 12 kV

#### ◆ Electrical criteria :

- Rated fault current : from 5 to 5000 A
- Rated voltage : from 0.38 to 500 kV
- Rated time : from 1 sec to continuous time rating.

#### ◆ Mechanical criteria

- Direct connection or through top or side mounted bushing
- Protection degree of housing : from IP 00 to IP 54 (recommended IP23)
- Finishing : hot dip galvanised, painted or stainless steel housing.

#### ◆ Options

- current transformer HV or LV
- ON or OFF load disconnecting switches
- space heater
- elevating stands.



Neutral Earthing Resistor 1000 A, 12kV

#### Special construction :

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