

# Ground Fault Neutraliser

- A significant technological advancement in electricity distribution.
- Improves reliability and quality of power supply.
- Allows early detection of reduced insulation levels, reduces electrical equipment damage and improves public safety.
- An innovative, cost-effective solution which will set new benchmarks for electricity delivery throughout Australasia.
- Has produced excellent results on Orion's electricity distribution network.



# Ground Fault Neutraliser

Orion New Zealand Limited, the electricity lines company servicing Christchurch and central Canterbury, has successfully installed advanced new equipment from Sweden that improves network reliability and quality of power delivery.



Called a Ground Fault Neutraliser, the technology reduces the amount of electrical arcing at the point a fault occurs on the network. This reduces the level of threat to human life and risk of fire. It also allows electricity network operators to maintain power supply to homes and businesses, while field staff are dispatched to fix the fault.

Transient or momentary faults can be neutralised as well, eliminating most cases of flickering lights and short term interruptions to power supply.

Ground Fault Neutraliser technology has produced excellent results in Europe in applications such as a 110 kV supply to the German State Railway, regional networks with a mix of overhead power lines and underground cables, and networks within large industrial plants such as steel mills. Orion's use at a substation near Darfield is the first commercial application in Australasia, possibly the Southern Hemisphere.

## Technical information

The Ground Fault Neutraliser employs resonant earthing with an additional 'residual current compensation feature' which involves injecting current into an arc suppression coil at 180° out of phase with the residual fault current.

This process eliminates cable arcing faults which are common with older existing arc suppression coil systems. Earth faults do not need to be disconnected in order to reduce damage to the faulty cable.

Overhead line insulation is typically compromised by events such as trees contacting a conductor, the conductor becoming detached from its insulator or the insulator itself breaking down – however the Ground Fault Neutraliser can detect even quite subtle problems like these before they develop into major faults.

This ability to monitor asset condition extends to detecting 'high impedance' faults of up to 20,000 ohms. The technology can also separately adjust each phase voltage to ground.

## Sales distribution agency

Swedish Neutral AB has granted Orion the distribution rights for sales of its Ground Fault Neutraliser in New Zealand and Australia.

### For more information contact:

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