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**transformer** brochure



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Amorphous Metal  
Distribution **Transformers**

# Amorphous Metal Distribution Transformers

- ▶ Reduce the No Load Losses by 65-75%
- ▶ Increase Life of Operation
- ▶ Lower Greenhouse Gas Emissions
- ▶ Exceed "Minimum Energy Performance Standards" (MEPS)
- ▶ Surpass "High Energy Performance Standards" (HEPS)
- ▶ Reduce Carbon Footprints
- ▶ Earn Carbon Credits

“ Known as Amorphous Metal Distribution Transformers or AMDTs, these transformers are a low loss, highly efficient, cost effective solution, contributing to a healthier world environment. ”

▶▶▶ Energise to begin saving...



## Applications:

- Pole-top transformer
- Pad-mounted kiosk transformer
- Ground-mounted / cable box transformer

Amorphous Metal Distribution Transformers or **AMDTs** are a low loss, highly efficient, cost effective solution contributing to a healthier world environment.

It is generally considered that transformers are responsible for approximately one third of network losses. Losses that cost the wider community in increased power generation, wasted power distribution, and higher green house gas emissions.

The distribution transformer supplies power to the network, consumer plant and equipment and must remain energised 24 hours per day, 365 days of the year. Whilst not consuming power, distribution transformers are responsible for certain inherent losses, particularly in the metal core.

Just as the transformer is the heart of the network, the metal core is the heart of the transformer and any reduction in the losses created as energy passes through the core will have significant economical and environmental benefits.

## The Amorphous Core

In AMDTs the core is manufactured from a Ferrous, Boron, and Silicon (Fe-B-Si) metal alloy. Rather than being a metal with a crystalline atomic structure, amorphous metal is not crystalline but in fact random in its arrangement of atoms. This is achieved by the rapid cooling of the molten metal alloy within a highly controlled manufacturing process. The transformer core manufactured from amorphous metal exhibits easier and more efficient magnetisation, lower magnetic losses, and faster flux reversal.

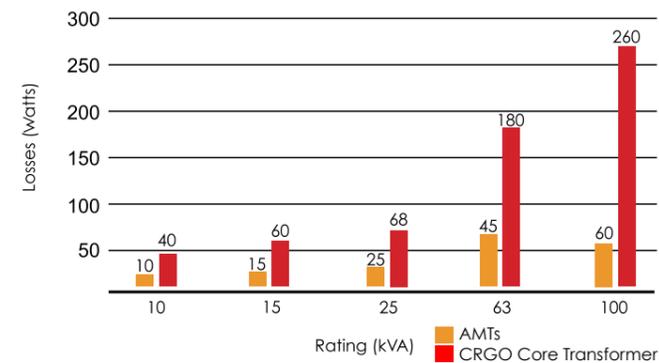
## No Load Losses

AMDT transformers are designed with No Load Losses (NLL's) 65% to 75% better than traditional counterparts. AMDTs also show vastly improved performance under harmonic load conditions, particularly when 5th and 7th harmonic conditions are applied.

## Sustainability & Environment

Real demonstrable savings in losses can assist in meeting sustainability & environmental targets; such as carbon reduction goals and efficiency targets.

## Amorphous Metal Core (Vs) CRGO Core



## Technical Specification

	Single Phase	Three Phase
<b>Ratings</b>	up to 167kVA	up to 1MVA
<b>Applicable Standards</b>	AS60076	
<b>Cooling</b>	ONAN	
<b>Insulating Fluid</b>	Mineral Oil to Specification or Vegetable Oil	
<b>Frequency</b>	50Hz	
<b>Primary Voltage</b>	Up to 33kV	
<b>Secondary Voltage</b>	250/500 V Other voltages on request	433 V Other voltages on request
<b>Core Construction</b>	Wound core/ Stacked core	
<b>Winding Material</b>	Copper/Aluminium (DPC or SE covered)	
<b>Off Load Tap Changer</b>	+7.5 / -5.0% steps of 2.5% (other tapplings on request)	
<b>Efficiency</b>	High Energy Performance Standards to AS2374.1.2	

## Total Ownership Cost

Whilst AMDTs may be marginally more expensive than silicon steel varieties, AMDTs are more cost effective in the long term and over the whole of life. Cost effective transformer calculations should consider capital cost, energy costs, No Load Losses (NLL's) and Load Losses (LL's) to calculate a Total Ownership Cost (TOC). Applying such variables to the TOC formula show AMDTs as being the transformer of economic and engineering choice.

## Fittings & Accessories

### Standard:

- ▶ Pole Mounting Brackets/ Base Channels\*
- ▶ Pressure Relief Device/ Self Venting Top Cover\*
- ▶ Lifting Lugs
- ▶ Earthing Terminal
- ▶ Name Plate
- ▶ Primary Bushings
- ▶ Secondary Bushings
- ▶ Draining Plug\*
- ▶ Filling Device\*
- ▶ Oil Level Indicator\*

\* Dependant on rating and size