

TMC

TRANSFORMERS

ESTABLISHED 1936

Transformer Specialists

Why Purchase a Cast Resin Transformer
Cast Resin Transformers - Advantages over VPI and Oil
Why Purchase From TMC
TMC Experience



WHY PURCHASE A **CAST RESIN** TRANSFORMER

| FEATURES | BENEFITS |
|--|---|
| Partial discharge free | Extends the life of the transformer reducing overall project costs. |
| Fire and flame resistant (and self-extinguishing in the event of a fire) | Increases safety of people and reduces the risk to property. Lack of toxic smoke emissions in case of fire. |
| No requirements for specific fire protection structures or protocols | Reduces installation costs. |
| Can be placed closer to the load | Reduces civil engineering costs. |
| Fully encapsulated medium voltage windings cast under high vacuum | Highly resistant to mechanical shock and stress. Ideal for transport and operation in extreme weather conditions with temperatures down to -40°C. No risk of pollution due to liquid spillage - safer for the environment. Extends the life of the transformer. Suited to sensitive conditions such as nuclear plants / seismic areas / high vibration. |
| High thermal capacity | The transformer is mechanically resistant and thermally tolerant to short term overloads - particularly suitable to industrial processing plants. |
| Inherently superior dynamic strength | Increased ability to withstand short circuits. |
| High reliability and low maintenance | Minimizes operating costs and downtime interruptions. |
| Outstanding resistance to moisture and atmospheric contaminants | Able to withstand dusty, humid, saline and tropical environments. Suitable for conditions with dampness or atmospheric contaminants. |
| Optional fan cooling during heavy loading | Potential to increase capacity up to 50%. |
| Copper or aluminium windings | Provides flexibility with sizing and pricing. |
| High electrical insulation level | Enhanced BIL over conventional VPI dry type transformers |
| High efficiency options | Reduction in no load and load losses, thereby saving energy. |
| Compliance | Cast resin transformers are subject to strict international design and manufacturing standards with enhanced safety and performance requirements. |
| Ease of Repair / Retrofit | Coils can be changed over relatively easily, minimizing downtime |

CAST RESIN TRANSFORMERS – ADVANTAGES OVER VPI AND OIL

| | | CAST RESIN | VPI | OIL |
|-----------------------------|--|------------|-----|-----|
| SAFETY | Self-extinguishing in case of fire | ✓ | | |
| | In the event of fire, smoke is non-toxic | ✓ | | |
| PERFORMANCE | High reliability | ✓ | | ✓ |
| | Reliability with only negligible maintenance | ✓ | | |
| | Higher voltages / Higher BIL | ✓ | | ✓ |
| | Superior resistance to short circuit currents | ✓ | | |
| | Capacity to support high, immediate and short overloads | ✓ | | ✓ |
| | Enhanced capacity with addition of fans | ✓ | ✓ | |
| | Longer thermal time constant | ✓ | | |
| ENVIRONMENTALLY RESPONSIBLE | No pollution / risk of liquid spillage / emission of toxic fumes | ✓ | ✓ | |
| | Ease of disposal at end of life | ✓ | ✓ | |
| INSTALLATION ENVIRONMENT | Able to withstand damp, humid, saline and tropical environments | ✓ | | ✓ |
| | Suitable for conditions with atmospheric contaminants e.g. chemicals, metallic dust | ✓ | | ✓ |
| | Suitable for sensitive conditions (nuclear plants / seismic areas / high vibrations) | ✓ | | |
| | Ability to operate in harsh, dusty and dirty conditions | ✓ | | ✓ |
| | Ease of Installation | ✓ | ✓ | |
| | Ability to retro-fit into installations | ✓ | | |
| REDUCED COSTS | Can place close to load center (reducing civil engineering costs) | ✓ | | |
| | Absence of specific anti-fire protection or protocols reduces installation costs | ✓ | ✓ | |
| | Lower ongoing costs due to reduced maintenance | ✓ | | |
| | Longer life of the transformer due to low partial discharge | ✓ | | ✓ |
| | Longer life of the transformer due to superior insulating materials | ✓ | | |

WHY PURCHASE FROM TMC

TRANSFORMER SPECIALISTS

TMC has been manufacturing transformers for more than 80 years and cast resin transformers for more than 30 years. Since the mid-1980s, 90% of TMC's output has been in cast resin transformers. TMC plants in Australia and Spain have manufactured more than fifteen thousand cast resin transformers which have been installed all over the globe.

By focusing solely on transformers, TMC has developed specialist expertise in transformer design and manufacture. Besides standard distribution transformers, TMC has earned a reputation for expertise in more complex units, often installed in locations where safety and reliability are absolutely critical such. These include public transport infrastructure, hospitals, underground mines, marine and seismic environments.

TMC supplies a large band of loyal customers, many of whom have been purchasing for decades. Other customers include installers and the world's largest multinational engineering firms - ABB, Siemens, WEG, Schneider, General Electric and Alstom, all of who purchase specialised products from TMC.

BREADTH AND DEPTH OF EXPERIENCE

TMC manufactures a range of products with rated power up to 30MVA and up to 72kV class. It has extensive experience across a broad range of applications and enjoys a reputation for reliability and quality of supply as evidenced by customer names who appear regularly on TMC reference lists.

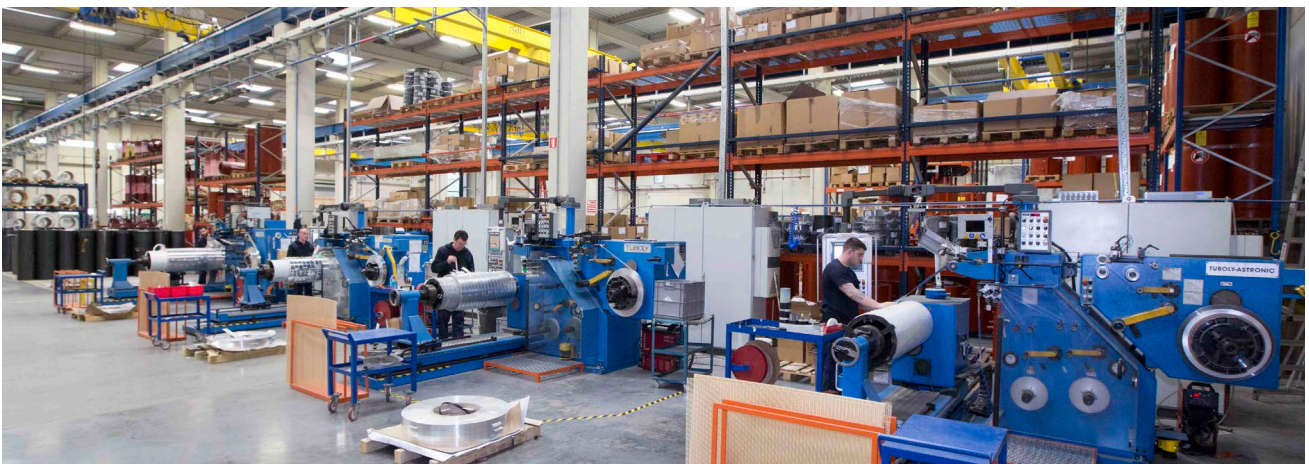
TMC has thousands of designs in its data banks as well as a team of experienced in-house engineers who tailor solutions to customer specific needs. Engineers work with TMC customized transformer design software to ensure the best solutions - both technically and commercially. A large portfolio of external Type Test and Special Test Certificates from internationally accredited laboratories confirms the validity of these solutions.

TMC has developed a range of low loss, high efficiency transformers enabling customers to reduce their energy costs and can manufacture in aluminium or copper to Class F or Class H, 50Hz or 60Hz.

It has extensive experience in designing and manufacturing enclosures – to IEC, Canadian and NEMA standards and has engineered unique, effective approaches to environmental control within these housings.

Certifications and accreditations include ISO9001, ISO14001, ISO45001, and CSA Compliance.

TMC has also developed a steady stream of business in the repair and upgrade of other manufacturers' transformers.



MANUFACTURING FINESSE

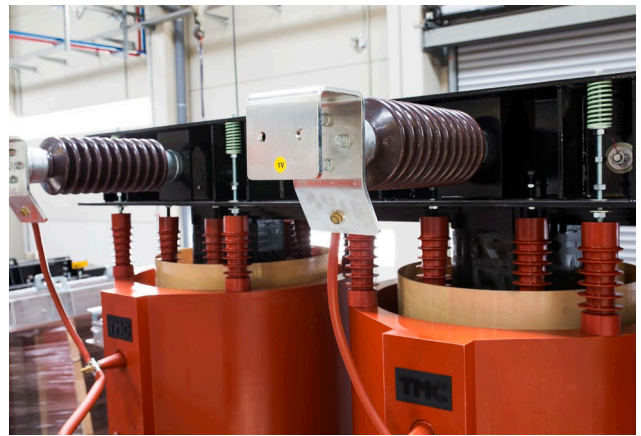
TMC has earned a reputation for excellence, based on exacting manufacturing practices and standards that have been honed over 80 years of experience.

TMC uses the most advanced production technologies, facilitated by superior plant and winding equipment used to produce Medium Voltage and Low Voltage coils using aluminium or copper foil. This results in a higher quality and more reliable product than that of competitors who use less sophisticated wire winding technologies.

TMC manufactures only in Australia or Spain, unlike many competitors who manufacture in Asia or second world countries. TMC staff are long term employees, highly skilled with decades of experience.

TMC manufactures in compliance with strict international design standards which are in place to enhance transformer safety and performance.

TMC has extensive in-house, independently certified, testing laboratories as well as accomplished test engineers in both Australia and Spain, in addition to an extensive library of special tests by independent, accredited laboratories.



QUALITY MATERIALS

TMC's superior quality is supported by materials from predominantly European based suppliers, many of whom have decades of experience producing world's best quality.

INTERNATIONAL SUPPORT NETWORK

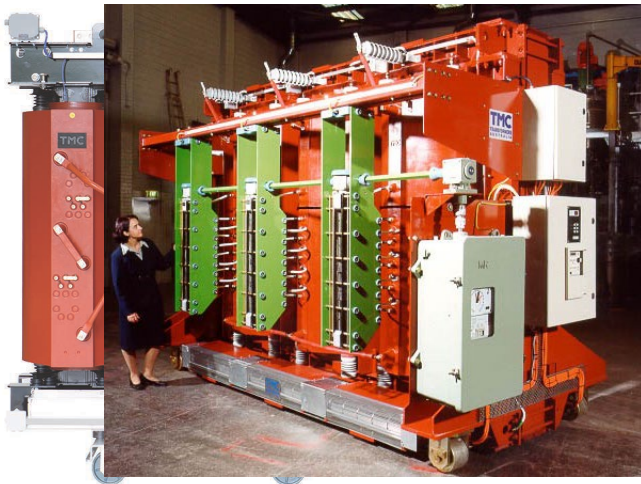
In export sales TMC is represented by a valued network of international distributors who offer customers support and service across North America, South America, Asia and the Middle East.

TMC EXPERIENCE

TMC PRODUCTS

TMC manufactures transformers and reactors for a range of applications rated to 30MVA 72kV including:

- ❖ Distribution
- ❖ Power
- ❖ On Load Tapchanger
- ❖ Traction
- ❖ Rectifier
- ❖ Earthing
- ❖ Renewable Energy
- ❖ Mine Duty
- ❖ Marine and Offshore
- ❖ Autotransformers
- ❖ EV Fast Charging
- ❖ Welding
- ❖ Submersible
- ❖ Seismic Rated
- ❖ Motor Starting
- ❖ Induction Oven
- ❖ Water Cooled
- ❖ Silicone Free
- ❖ Oil Coiled
- ❖ Vacuum Pressure Impregnated
- ❖ Air Cored Reactors
- ❖ Iron Cored Reactors
- ❖ Shunt Reactors
- ❖ Voltage Stabilizers



IP33 to IP54 / NEMA3R



IP21 to IP IP55 to IP66 / NEMA3 or NEMA4

TMC TRANSFORMER INSTALLATIONS

TMC manufactures transformers well suited for harsh loads, extreme rugged environments and wherever safety is paramount.

These can be found all over the globe across a range of installations including:

CIVIL INFRASTRUCTURE

- Hospitals
- Education
- Shopping Centres
- Stadiums
- Public Buildings
- Hotels
- High Rise Buildings

TRANSPORT

- Metropolitan Trams & Trains
- Intercity Trains
- Marine Substations with OLTCs
- Railway Substations
- Airports
- Roads and Tunnels
- EV Fast Charging Stations

RENEWABLE ENERGY

- Solar farms
- Wind farms
- Hydroelectric
- Wave

INDUSTRIAL

- Data Centres
- Petrochemical Plants
- Heavy Manufacturing & Processing
- Pulp and Paper Plants
- Cement Factories

MINING

- Underground
- Aboveground
- Infrastructure
- Oil and Gas

MARINE

- Water Treatment
- Reservoirs
- Desalination Plants
- Sewerage Treatment Plants
- Ports
- Shipping
- Offshore Platforms
- Offshore Wind Farms

UTILITIES

- Generation
- Transmission

SENSITIVE ENVIRONMENTS

- Nuclear Plants
- Seismic Conditions
- Heavy Vibrations

MILITARY STRUCTURES

- Naval dockyards
- Aerospace installations

References are available on request.

INTERNATIONAL QUALITY CERTIFICATION INTERNATIONAL ACCREDITATION

TMC has accreditation to ISO 9001, ISO 14001 and OHSAS 45001

TMC has CSA certification up to 5MVA and 35kV Class
in NEMA/CSA enclosures up to Type 3R.





Transformers Manufacturing Company España S.A.U.
Poligono Bidosola, Parcela B1
48142 Artea (Bizkaia) España
Tel +34 94 631 22 80
Email: ventas@tmc.com.au

Transformers Manufacturing Company Pty Ltd
19 Ewing Street
Brunswick Victoria 3056 Australia
Tel +61 3 9356 8700
Email: sales@tmc.com.au

www.tmc.com.au