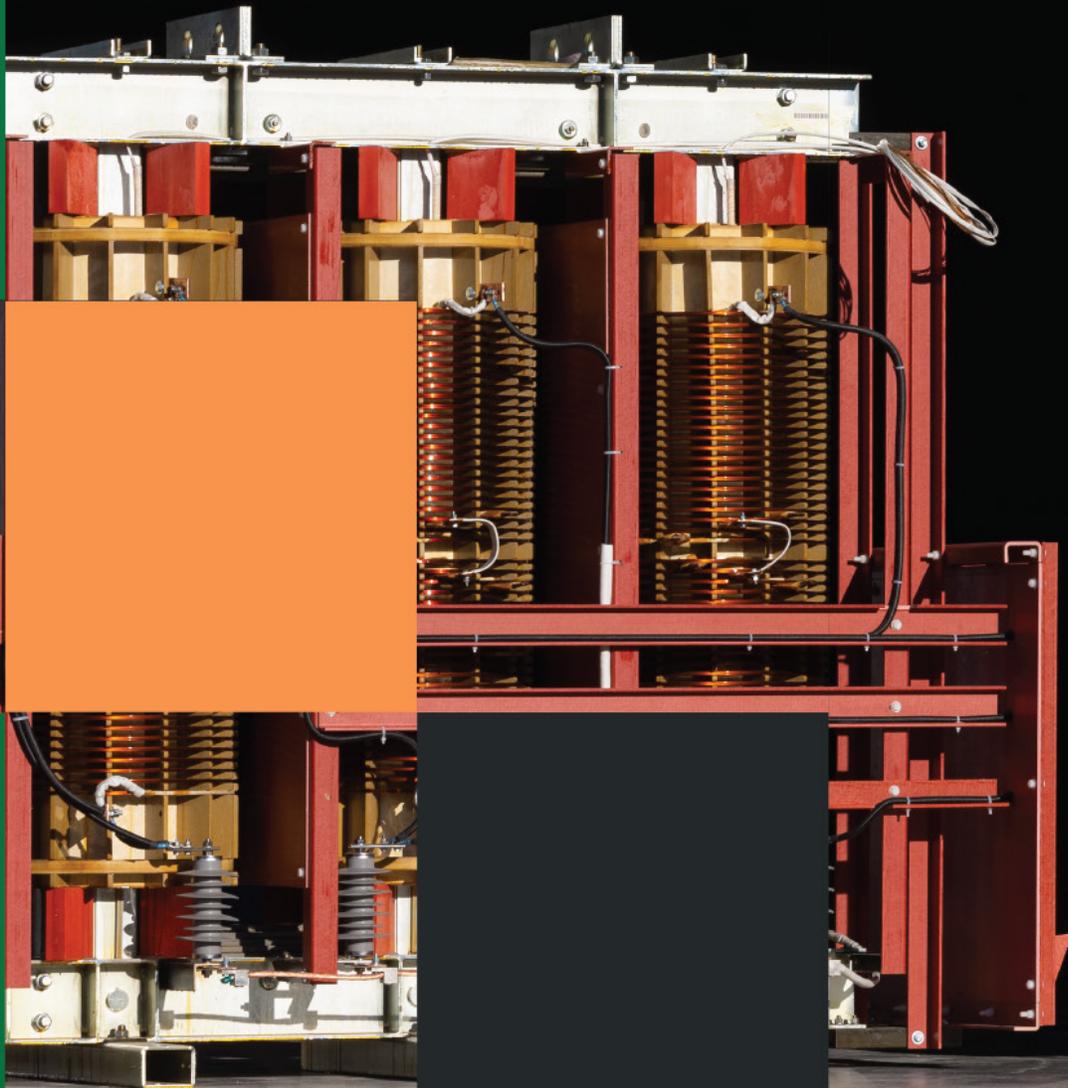




Robust electrical transformers built in North America

WR Transformers is a leading manufacturer of dry-type electrical transformers with over a decade of experience. Our high-quality North American-made transformers are used worldwide in the harshest environments.





When a major data center needs to run 24/7, it relies on us to bridge the gap between the grid and its servers.

When an off-grid mine needs to power its operations with mobile electrical transformers in Northern Canada, it relies on us to build a custom-made solution that will work in the harshest environment.

When a multi-billion dollar aluminum smelter needs to operate without interruption, it relies on our transformers to supply the planet with high-quality metal without downtime.

We are WR Transformers. We build high-end dry-type electrical transformers in North America for clients worldwide.

About Us



WR Transformers develops, designs and manufactures superior quality transformers at its plant in Granby, Quebec. Operating in a factory of over 50 000 square feet, we build large capacity units up to 20 MVA, voltages up to 49 kV, and insulation class up to 220kV BIL. With more than a decade of experience in the market, our team offers you excellent technical support and service that will meet your highest expectations.

Certified ISO 9001-2015, UL, CSA, CSAus and ULcan:

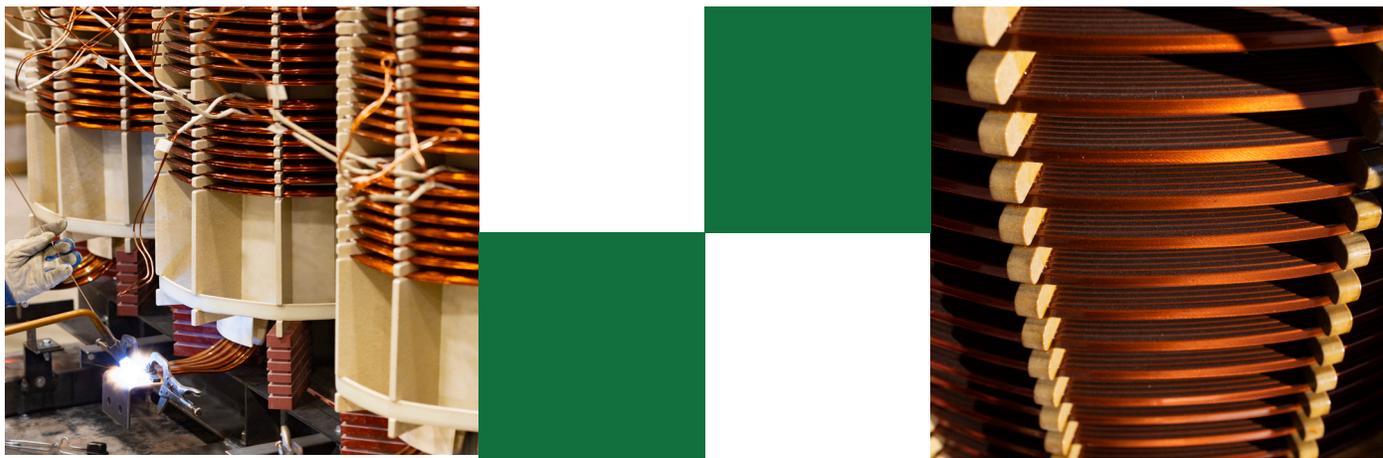
Our transformers have been put in place world wide and are used to support a wide range of industries from industrial to commercial, mining to data centers, pulp and paper to aluminum smelting, and micro-networks. Other essential domains in which these transformers are used include hospitals, factories, schools, pharmacies, grocery stores and many more requiring a secure and consistent energy source.

Furthermore, WR has been granted ISO/IEC 17025 certification for its testing laboratory, which is a symbol of quality regarding the capabilities, understanding, and dependability of the personnel and equipment utilized in the test facility. Every single transformer produced by WR is subjected to an intense testing procedure.



Windings

The copper or aluminum coils are vacuum-impregnated (VPI) with polyester resin, ensuring perfect impregnation of the windings and insulation. The VPI coils ensure reliability and longevity for operations in hostile environments. The plugs adjustments are easily accessible by bolt-on type and located at the front. The windings are made in layers or in discs depending on the voltage level and the insulation class (BIL). For some applications, the strap can be used for winding low voltage, which minimizes eddy current losses and provides higher short circuit resistance.



Our transformers are built with Class 220°C insulation class. They are UL listed products to assure a better lifetime.

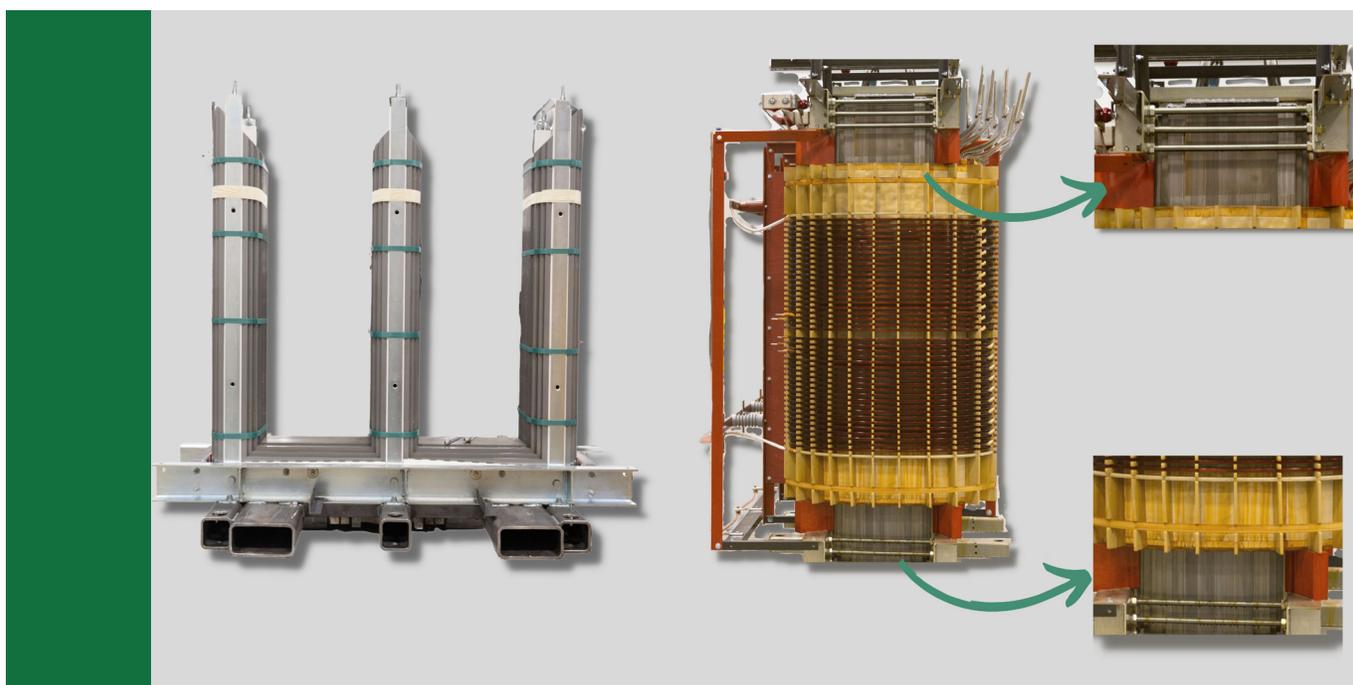
Temperature class for transformers

These are the maximum temperature rise of our transformers' windings. Data is based on an ambient temperature of 30°C, never over 40°C.

Temperature class, °C	Temperature of winding (average) measured by rise of resistance, °C	Winding hottest spot rise, °C
Class 105	55	65
Class 130	75	90
Class 150	90	110
Class 180	115	140
Class 200	130	160
Class 220	150	180

Core

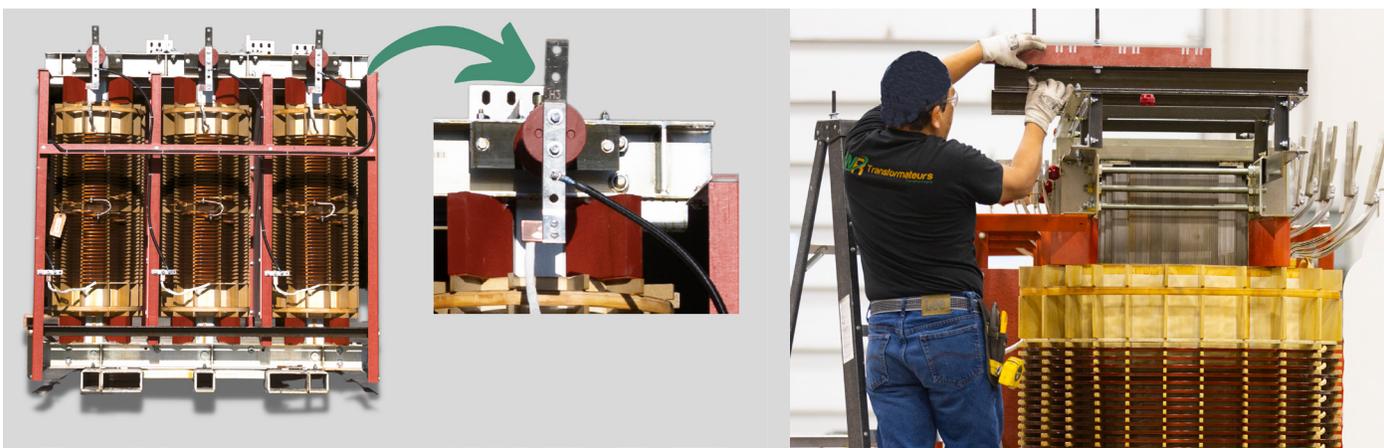
The cores are constructed of high-quality grain-oriented steel with high magnetic permeability. Magnetic steel is free of burrs and neatly stacked. The density of the magnetic flux is kept below the saturation point, which minimizes core losses and lowers the sound level. The core is electrically insulated except for one point, where a copper strip connects the core to the yoke. The steel cutting is done with high precision vacuum-impregnated applied on the core to protect as much as possible from corrosion. For larger capacity transformers and to avoid saturation, an air gap in the middle of the core is made using electrical insulation so that the air can circulate and cool it.



Core and Coil Assembly

The coils are compressed by high-density insulation blocks between the upper and lower frames, to provide the best ability to withstand short circuit forces. The transformers used in the mining sector will be mechanically reinforced to be handled by being oriented at 90°. The standard connection type is "stub up" having NEMA type holes with or without mechanical connectors. WR also offers the possibility of manufacturing and installing the busbars to coordinate with the low voltage (LV) and or high voltage (HV) switches. The same services are available for adding transition rooms, ATC Air Terminal Chamber.

As an option, the addition of flexible braids eliminates the transmission of vibrations from the transformer to the switching devices connected to the latter. They can be factory installed and ready to be connected on-site.



Enclosure

The mechanical housings used are either NEMA 1 or NEMA 3R type and can come with filters to protect transformers from dust, water, or snow. For greater strength and longevity, the enclosure can be manufactured with a range of thicknesses such as 11, 12, and 14 gauge. We also provide stainless steel enclosures for especially corrosive conditions, such as salt air. For mining operations, these transformers can be placed on a stable metal foundation, making them easier to move and reducing the amount of work needed when connecting them to the control panel. Furthermore, we also offer a case that has no ventilation, which can withstand the harshest of weather conditions.



Transition Chambers

To facilitate joining high voltage (HV) and low voltage (LV) cables, transition chambers can be incorporated to give way to the entry of cables from the top. Moreover, to make sure that the cables are securely and conveniently installed, cable supports can be added to the transition chambers.



Sound level

WR transformers are designed to reach CSA C9's sound level.

5kV @ 15kV (95kV BIL @ 150kV BIL)	kVA
60dB @ 62dB	300 @ 500
62dB @ 64dB	> 500 @ 750
64dB @ 66dB	> 750 @ 1000
65dB @ 67dB	> 1000 @ 15000

It is possible to have a reduced sound level of 3 dB to 5 dB below standard.

INSULATION CLASS (SHOCK HOLD) BIL

Tensions nominal kV	Standard kV (BIL)
5.0	30
8.7	45
15	60
18	95
25	125
35	150

Rectifier Dry-Type Transformer

Rectifier dry-type transformers are widely utilized in various industrial processes where there is a need for high currents, such as electrochemical processes for producing chlorine, copper, aluminum, and magnesium. Our engineering and production team can construct and evaluate transformers to any specification, including 6, 12, 24, and 36 pulse systems.

Connections on the secondary side can be customized according to the client's requirements, including delta, wye, and wye zigzag. All our rectifier transformers are manufactured and tested according to IEEE, ANSI, CSA, and UL Standards.



Routine factory tests

The tests are carried out in our factory by our specialized technical team. These tests are done per the following North American standards:

IEEE C57.12.91-2011: Test Code for Dry-Type Distribution and Power Transformer

CSA 22.2#47-13 Section 6: Air-cooled transformer

- Dielectric (Hipot & Induce)
- No load loss and excitation current test
- Polarity
- Ratio
- Resistance
- Load loss & impedance

Optional testing

- Heat run test
- BIL
- Partial discharge (Corona)
- Sound level



QUALITY INSURANCE





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