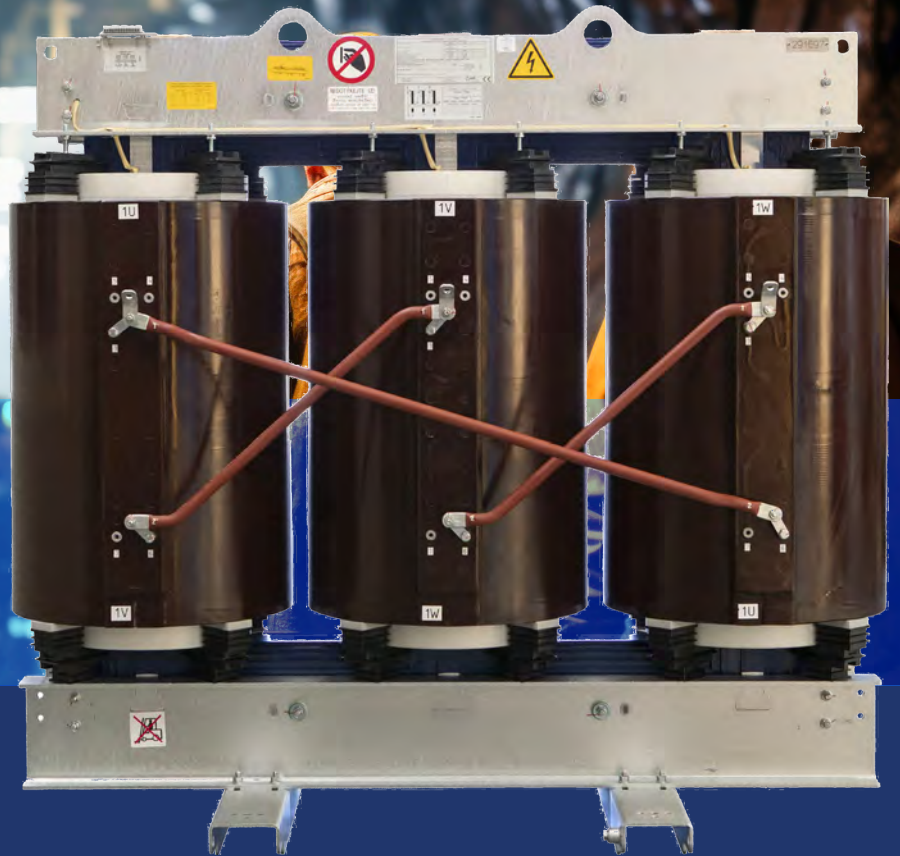


# Vantran

TRANSFORMERS



## MV CAST RESIN TRANSFORMERS

# RUGGED CAST RESIN

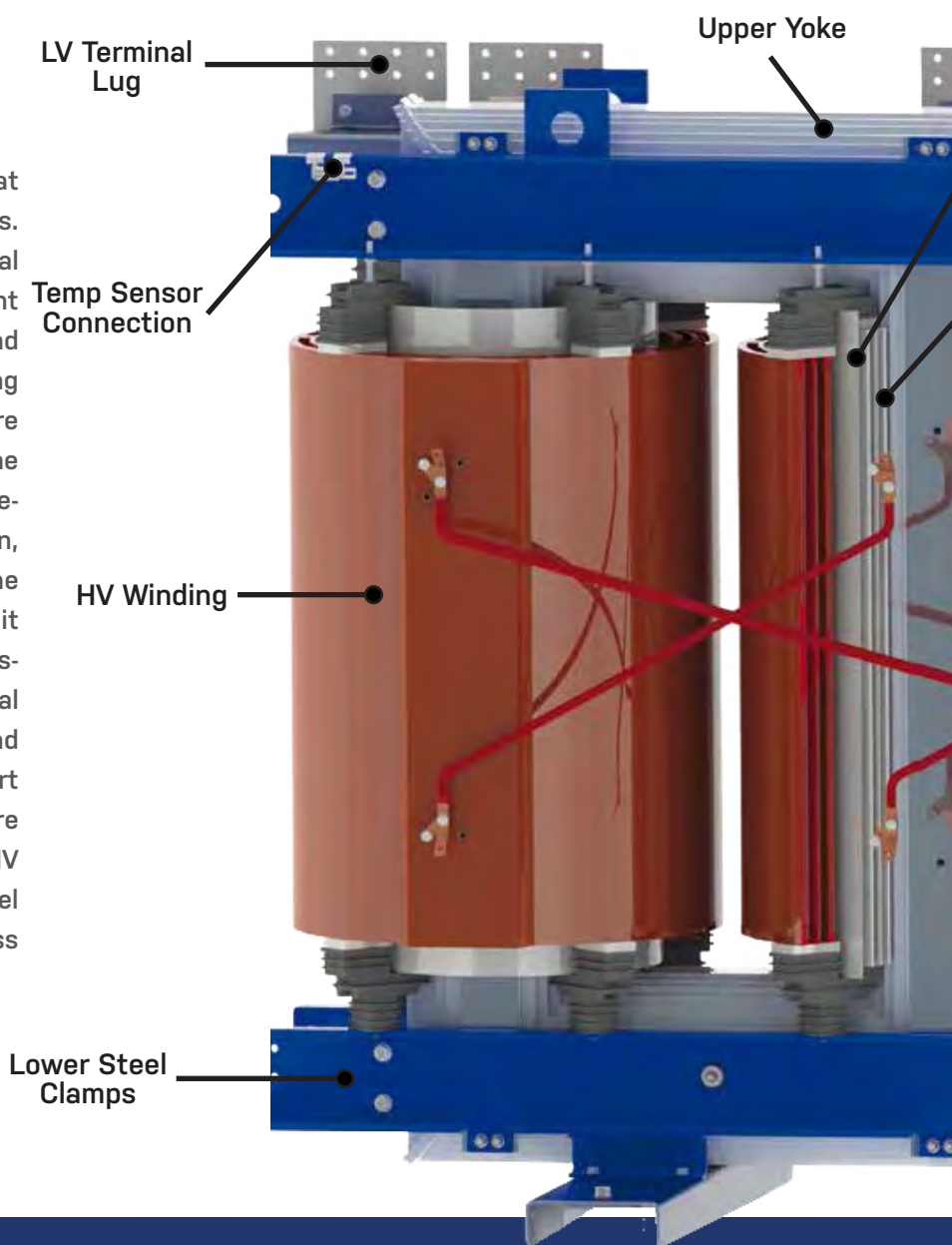
VanTran's Medium Voltage (MV) Cast Resin Transformers are built to deliver reliability and performance in the most demanding environments. Whether it's grids exposed to harmonic distortion, switching surges, extreme climates, or high-altitude installations, these transformers are engineered to withstand it all.

With ratings from 75KVA to 7,500KVA, our Cast Resin Transformers are designed to ensure continuous operation, even in harsh conditions such as desert heat, high humidity, salt exposure, and temperatures as low as -50°C. Capable of handling short-term overloads up to 450% and long-term loads up to 140% when equipped with fans, they are the perfect choice for power systems that require high availability.

In addition to their robust performance, these transformers are built for mechanical stability in challenging settings such as seismic zones, overhead cranes, ships, and other unstable installations.

## HV WINDING

Feature advanced high voltage windings that incorporate multiple innovative technologies. The double-layer winding design utilizes special primary insulation with highly heat-resistant materials, providing thermal reserves for overload capability and enhanced endurance. Cooling ducts integrated within the coil structure ensure efficient heat dissipation and long service life. The vacuum-encapsulated construction with double-layer winding offers superior surge protection, distributing voltage stress evenly and reducing the risk of short-circuits from lightning strikes or circuit breaker operations. Additionally, the use of glass-fibre reinforced plastics in the composite material significantly improves mechanical strength and thermal shock resistance, allowing safe transport and operation even under extreme temperature conditions. This comprehensive approach to HV winding design results in transformers that excel in reliability, performance, and durability across various demanding applications.





## **TESTING**

Each transformer receives the following standard production tests in accordance with IEEE C57.12.91. Test results, when requested, are available by transformer serial number. In addition, the following special tests can be performed on each transformer in accordance with applicable standards at an additional cost.

### **Standard:**

- Winding resistance
- Polarity & phase relation
- No-load loss & exciting current
- Short-circuit impedance & losses
- Applied voltage
- Induced voltage
- Partial discharge

### **Special:**

- Temperature Rise
- Impulse
- Audible Sound

## **AVAILABLE OPTIONS**

- Chassis w/ castors
- Locking device
- Transformer bearing
- Spherical-head bearing
- Earthing switch/kit
- Fan (output increase up to 40%)
- Temperature measurement
- Deadening of vibrations (mat/absorber)
- Vibration-proof design
- Seismic design
- Shielding winding
- HV Switch
- PTC/PT100 Thermo sensor
- Dial thermometer
- Premagnetizing unit
- HV & LV Current Transformer

## **TEMPERATURE MONITORING (OPTIONAL)**

Temperature monitoring is implemented using PTC sensors, which rapidly change resistance when the operating temperature is reached, ensuring reliable protection for each cast resin transformer. With thermistors strategically placed on the LV winding for insulation purposes, they safeguard the vacuum-encapsulated HV windings from dangerous overheating due to overload, insufficient cooling, or high ambient temperatures. Depending on customer needs, PT100 sensors or non-contact temperature monitoring options can be incorporated.

## **OVERLOAD CAPACITY**

Our transformers, utilizing glass-fiber reinforced windings and cooling ducts, are designed to handle high short-time overloads, crucial for applications with significant load fluctuations such as drives, wind, or solar systems. Insulation class F transformers must endure temperatures up to 180°C in short bursts without immediate damage. The nominal operating temperature is carefully determined based on the heating of the LV winding, with limits ranging from 120°C to 150°C, depending on coolant temperature and load conditions.

The system allows for overloads up to 130% of the rated power for approximately 40 minutes, provided the load is within permissible parameters. This flexibility makes our transformers ideal for operations where load demands vary significantly. Overload capacity is calculated individually based on design-specific parameters, ensuring long-term reliability and performance.



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