

HTT, Postfach 1347, 34346 Hann. Münden

Operating Conditions
Information for handling

Hann. Münden, Apr-19

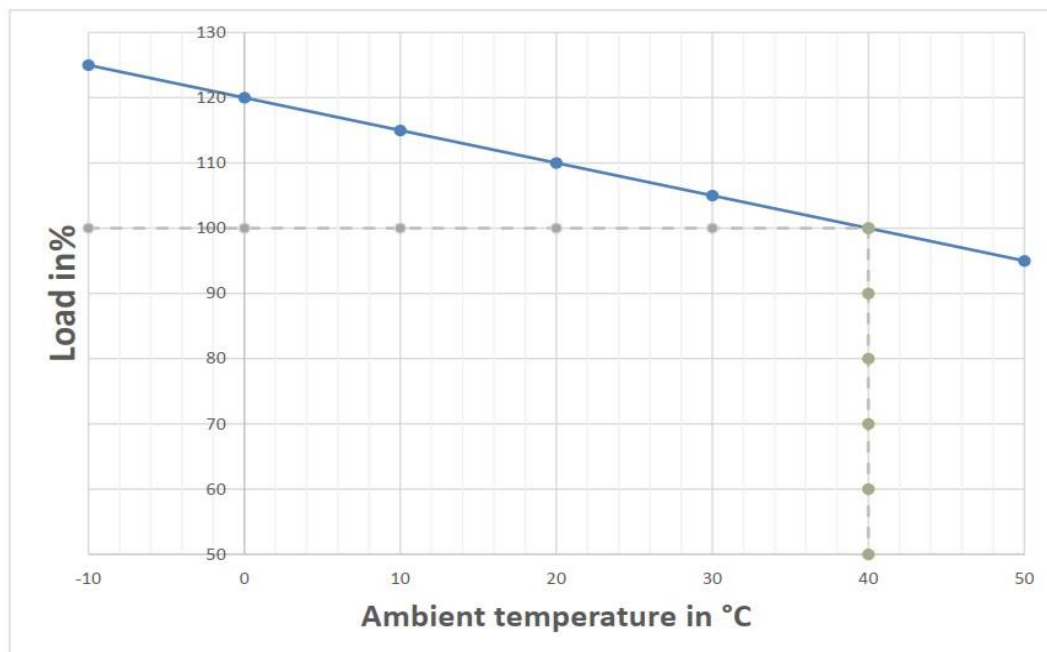
Operating Conditions

Standard Operation

The following conditions apply in accordance with DIN/VDE 0532:

- The transformer installation altitude must not be greater than 1000 m (3300 feet) above sea level.
- Maximum allowable ambient temperature is 40°C.
- Average day temperature must not exceed 30°C.
- Average annual temperature must not exceed 20°C.
- Ambient temperature must never be below -25°C.
- No condensation may occur in case of internal installation.

Transformers for the operation in greater altitudes or at higher or lower ambient temperature are available on request. The following Graph 1 shows the necessary reduction in output.



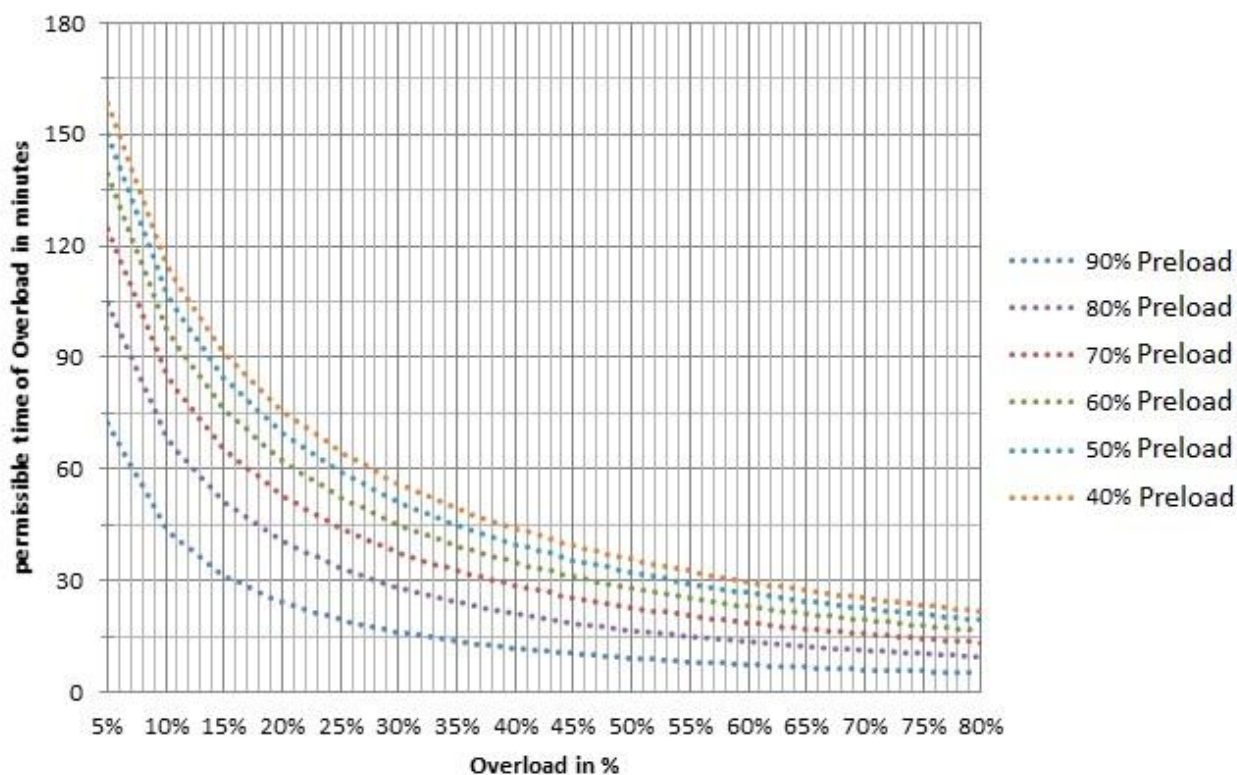
Graph 1: Power supply depending on the ambient temperature

Overload Operation

Under certain preconditions, the HTT resin-encapsulated transformers can be overloaded for a short time without its further operation or service-life being reduced by this.

The overload is limited by the excess temperature of the windings. The maximum excess temperature of 100 K for Insulation Class F is reached in operation only if ambient temperature is 40°C and the transformer is operated for a prolonged time at nominal load. If ambient temperature is below 40°C and/or the previous load is less than 100% of nominal load, winding temperature will also be below 100 K. This temperature difference can be exploited for short time overloading of the transformer.

The duration of possible overloading in relation to the previous load and the magnitude of the overload is shown in the following Graph 2. The graphs apply to HTT Transformers with an output range from 100 to 3150 kVA at an ambient temperature of 20°C and a thermal utilization according to the insulation class F. If the transformer is overloaded for longer than permissible, excess temperature rises above 100 K and the temperature monitoring system causes tripping of the transformer.



Graph 2: Overload Operation for copper windings with a current density of 2 A/mm²