



AMBIENT TEMPERATURE RANGE

Product Bulletin HV-10-PB008r2

Areva oil filled instrument transformers type OTCF, OSKF, OTEF and KOTEF normally are designed for operating safely over an ambient temperature range of -40°C to $+40^{\circ}\text{C}$.

However, Ritz will design its oil filled apparatus to operate in the most extreme ambient conditions based on either customer specification or delivery destination. For instance -60°C or $+50^{\circ}\text{C}$ can be achieved. Transformers destined to Canada are automatically designed for -50°C , units for Russia can be designed for operation at -60°C . It has to be considered, that extreme temperatures are average values over at least 24 hours. Some units like Current Transformers (CT's) can be derated in their parameters to operate beyond their temperature range.

All materials used in Areva oil-filled transformers type OTCF, OSKF, OTEF and KOTEF are compatible with both extreme hot and cold ambient temperatures. All sealing surfaces are accomplished by enchambered o-rings which provides the most secure sealing system for wide temperature swings. The o-ring material is similarly suitable for extreme low temperature applications.

The hermetic sealing system must be designed to effectively operate over the entire foreseeable ambient temperature range without creating an over pressure situation at the high end nor exposing the active part at the low temperature limit. For non-standard ambient temperature ranges, Ritz engineers ensure the diaphragm assembly is designed to hold the necessary volume of oil and space

AREVA T&D

Areva Waynesboro
One Ritz Avenue
Waynesboro, Ga. 30830
Tel.: (706) 554-8800
Fax: (706) 554-8808
usitrinfo@areva-td.com
itr-us.areva-td.com



for temperature compensation. Special oil-filling instructions may also be issued depending on the limits of the temperature range. Refer to product bulletin HV-10-PB001 for a discussion on the operation of the oil expansion chamber.

Areva oil-filled instrument transformers type OTCF, OSKF, OTEF and KOTEF have been installed successfully around the world under extreme cold conditions represented by Alaska, Manitoba Canada and Siberia Russia to extreme hot conditions as are found in Saudi Arabia and Thailand.

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