

Testing of oil quality, On-load tap-changers

Product information



Taking oil samples from tap-changers is a recommended practice to understand the condition of the unit and it is recommended that this is performed according to the IEC 60422 standard.

Dielectric breakdown voltage and moisture content are key indicators of the quality of the tap-changer oil. The following recommended limits below apply for different products. The content is not valid for tap-changers using other insulating fluids than mineral oil.

For information regarding DGA in tap-changer oil, please refer to 1ZSC000498-AAA.

In case of any questions, the following information is then useful for providing proper support:

- OLTC type designation and serial number (from the rating plate on the motor drive mechanism)
- No. of operations since last oil treatment.
- Rated load and average load since last oil treatment
- Type of breather for the conservator
- Daily oil temperature and load variations
- Faults, if any, that has occurred since last oil treatment

Oil testing limits

Type	Application	Dielectric strength acc. to. IEC 60156	Moisture content (at 20 °C) *
(V)UC	Star point application and $U_m \leq 72,5$ kV	Min 30 kV in service Min 40 kV after maintenance	≤ 10 ppm when filling Max 35 ppm in service
	Delta or line end application $U_m > 72,5$ kV	Min 30 kV in service Min 40 kV after maintenance	≤ 10 ppm when filling Max 35 ppm in service
UZ	Star point application and $U_m \leq 72,5$ kV	Min 30 kV in service Min 40 kV after maintenance	≤ 10 ppm when filling Max 30 ppm in service (1)
	Delta or line end application $U_m > 72,5$ kV	Min 30 kV in service Min 40 kV after maintenance	≤ 10 ppm when filling Max 20 ppm in service
(V)UBB	Star point application and $U_m \leq 72,5$ kV	Min 30 kV in service Min 40 kV after maintenance	≤ 10 ppm when filling Max 30 ppm in service

* For units where service at oil temperatures -20°C is expected, the moisture content shall be kept considerably lower.

¹⁾ Max 20 ppm in service if the operating voltage of any of the regulating windings (tapping winding and OLTC contacts) exceeds 15 kV.

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