شركة المحولات
STC
السعودية المحدودة

THE SAUDI TRANSFORMERS CO. LTD.

Oil Filled
Distribution Transformers
50 kVA-5000 kVA

Manufacturer of Oil Filled Transformers to suit your specific requirement.

THE SAUDI TRANSFORMERS CO. LTD. *can custom design and manufacture Oil-Filled Transformers to suit your specific application.*

Overloading capabilities

Due to variation in ambient temperature and daily cyclic burdens, the transformers may be loaded above stated conditions in compliance with **IEC 60354.**

Bushings

Several types can be provided depending on the requirement and applications. Porcelain bushings are used on the HV side as a norm while on the LV side porcelain or polyamide bushings are provided. Other types are available on request.

Standard accessories

THE STANDARD ACCESSORIES INCLUDE:

> Thermometer (with 2 contacts as option)
> Over-pressure vent
> Thermometer pocket
> Oil level gauge (with 2 contacts as option)
> Lifting lugs
> Drain and sampling valve
> Rating plate
> Earthing terminals
> Terminal box (on request)
> Over-pressure relay (on request)
> DGPT-2 relay (on request)

ADDITIONALLY, THE FOLLOWING ACCESSORIES ARE PROVIDED FOR TRANSFORMERS WITH RADIATORS:

> Buchholz relay
> Dehydrating breather
> Conservator

Tests

All the manufactured units undergo the following tests in the factory as described in IEC-60076 before they are released for dispatch.

① Transformation ratio and connection
② Measurement of winding resistance.
③ Measurement of load losses and short circuit impedence
④ Measurement of no-load losses.
⑤ Induced over-voltage test.
⑥ Separate source withstand voltage test.

THE FOLLOWING TYPE/SPECIAL TESTS ARE SUBJECT TO SEPARATE AGREEMENT:

⑦ Temperature rise test.
⑧ Noise level test.
⑨ Impulse test.
⑩ Short circuit withstand test.

TABLE - I

STANDARD RATINGS

Standard power (kVA) ratings offered are: 50, 100, 150, 200, 250, 300, 400, 500, 630, 750, 1000, 1250, 1500, 1600, 2000, 2500, 3000,3500, 4000, 4500 & 5000. Other ratings are available on request. The following table shows the standard voltages.

Standard No.	High Voltage	Low Voltage Range	Vector Group	Frequency[4]
1	3.3 kV	0-1000 Volts[2]	Dyn11[3]	60 Hz.
2	4.16 kV[5]			60 Hz.
3	6.6 kV			60 Hz.
4	11 kV			60 Hz.
5	13.8 kV			60 Hz.
6	33 kV			60 Hz.
7	34.5 kV			60 Hz.

1. Other colours are available on request. **2.** Standard LV voltages are110V, 220V, 231V & 400V. **3.** Other connections are available on request.
4. 50 Hz and dual frequency of 50/60 Hz are also available on request. **5.** Available up to 1000kVA

Oil Filled Distribution Transformers

Introduction

STC offers three phase, oil immersed, naturally cooled (ONAN) distribution transformers. STC manufactures these transformers under a licensing agreement with Pauwels International Belgium, one of the world's leading manufacturers of transformers. The transformers are manufactured in compliance with IEC 60076 and SASO standards. All technical tolerances are also in accordance with IEC 60076. The standard manufacturing range is from 50 kVA to 5000 kVA with a maximum voltage of 36 kV. The standard kVA ratings are shown in Table I.

Construction

Core

The core is manufactured from cold-rolled grain oriented, (CRGO) silicon steel. The silicon steel is either conventional or laser treated and the choice depends on the desired loss level. The steel sheets are cut into required dimensions on automated machines thereby ensuring reduced air gap, low exciting current and low noise. Each lamination is insulated from each other to ensure a long trouble-free lifetime of the core. Suitably designed core clamping system ensures vibration free operation.

Windings

The windings are made of high-grade electrolytic copper and are concentrically positioned. Usually copper foil is used for the low voltage windings.

Round shaped, enamel insulated wire is used for the high voltage windings. It is exclusively of layered construction and is wound directly onto the low voltage winding, giving a maximum mechanical strength, rigidity and compactness.

Off Load Tap Changer

The off-load tap changer is fixed on the high voltage winding for voltage regulation. It is basically a 5, 7, or 10 position switch, which helps to adjust the voltage at a desired level. The tap changer handle is either on the top cover or sidewall and acts directly on the switching mechanism. As the name indicates, the tap changer must only be operated when the transformer is de-energised.

Voltage Selector Switch

The voltage selector switch is incorporated in transformers with dual high voltages. This switch is used to choose the required voltage level at the transformer terminals (as per user requirement).

Tank

The tank is of hermetically sealed design and is made from corrugated steel sheets. This type of construction allows a degree of flexibility that is needed to accomodate the expansion and contraction of oil due to varying service conditions. The tank cover is bolted to the body of the tank.

The surface is shot blasted first to eliminate all signs of rust, welding spatters, greese, oil and mill scale to achieve a good abrasive surface for the paint to hold for a long period of time. The two coats of a primer paint are applied followed by one coat of standard "Cement Gray" color (RAL 7033)[1]. The minimum thickness of the paint exceeds 100 microns.

Other designs with radiators, conventional conservators fitted with breather are also available on request.

Insulating Oil

The insulating oil generally complies with IEC 60296 Class 1. Both inhibited and uninhibited types can be offered if requested. Transformers with silicon fluid are also available.

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