



TECHNICAL SPECIFICATION

10600/16000kVA, 34400-11000V, ONAN/ONAF TRANSFORMER, C/W AUTOMATIC ON LOAD TAPCHANGER

Customer: Empower Limited

WINDER ELECTRICAL
GRANGEFIELD HOUSE
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Specification		IEC 60076
Rated Output - ONAN		10600kVA
Rated Output - ONAF		16000kVA
HV Voltage (Off Load)		34400V
LV Voltage		11000V
HV Current – ONAN		177.9A
LV Current - ONAF		556.3A
HV Current – ONAN		268.5A
LV Current – ONAF		839.7A
Phases		3
Frequency		50Hz
Vector Group		YNd11
Insulation Levels	HV 36kV	70kV Power Frequency 170kV Lightning Impulse Voltage
	LV 12kV	28kV Power Frequency 75kV Lightning Impulse Voltage
Top Oil Temperature Rise		50°C
Winding Temperature Rise		55°C
Ambient Temperature		50°C
Approximate Losses – ONAN		8000W
		Cu – 73000W
Impedance – ONAN	10%	
Impedance ONAF		15.1%
Tapping Range		+10 to -10% in 16 steps of 1.25%
Type of transformer		Conservator type
Cooling		Oil (ONAF)
Quantity of liquid		9080 litres
Approx Dimensions		L5440mm x W4260mm x H4030mm
Approx Weight		25180kg

Figures quoted above are subject to IEC tolerance, ie, +/- 10%

Cores

The transformer cores are built from cold reduced grain orientated steel laminations with mitred joints, working at a flux density of 1.74T. The laminations are supplied with a phosphate coating to keep losses to a minimum. The core is supported with strong channel end frames, insulated from the core and protected with oil resisting varnish.

Windings

The windings are constructed from paper insulated copper. Cooling of the windings is achieved by the appropriate amount of ducts; ensuring local hot spots are avoided.

Tanks

The tanks are made from mild steel plate of sufficient thickness and stiffened to enable the complete transformer to be lifted or jacked safely, without distortion. Cooling radiators with isolation valves are fitted to the tank side.

On Load Tap Changer

The on load tapchanger will be supplied with 17 positions for linear regulation of the tapping windings.

The tapchanger would be an automatic, + 10% to – 10% in 1.25% steps. We have also included for a 100VA, 11000/110V VT to be mounted in the transformer tank and a tank mounted tapchanger, including a tank mounted automatic tapchanger/fan control panel

Fittings

The transformer will be supplied with a rating and tapping connection plate, earthing terminal, prismatic oil level gauge, lifting lugs, thermometer pocket, drain valve, jacking points, Buchholz relay, Qualitrol pressure relief device, winding temperature indicator and magnetic oil level gauge, all with contacts wired back to the auxiliary wiring terminal box and 3 x 1000mm diameter fans.

Terminations

HV - 3P, 3G, bottom entry cable box, complete with porcelain bushings, suitable for Raychem termination

HV neutral – 1P, 1G, bottom entry cable box, complete with porcelain bushings, suitable for Raychem termination

LV – 3P, 6G, bottom entry cable box, complete with porcelain bushings and suitable for air clearances

Testing

Routine tests will be carried out in line with IEC 60076-1. The rated withstand voltage levels will be in line IEC 60076 Part 3 section 5.3. Our offer does not include for any type testing.

Witness testing can be arranged to coincide with our works testing.

Paint Finish

Dark Admiralty Grey