

TECHNICAL SPECIFICATION ELECTRICAL

Transformers

1.2 SPECIFIC TECHNICAL REQUIREMENTS FOR TRANSFORMER

1500 KVA TRANSFORMER (Bidirectional)			
1	Rated Power (kVA)	1500kVA	
2	Number required	4 (Four) Minimum	
3	Installation outdoor	Out door	
4	Number of windings	3 (Three) numbers	
5	Number of Phases	3 Phase	
6	Frequency	50 Hz	
7	Cooling medium	Insulating oil	
8	Type of cooling	ONAN	
9	Rated voltage		
	a) HV	33000V	
	b) LV	Shall be suitable for the Rated Inverter output	
10	Vector group	As per system requirement	
11	percentage impedance at 75 °C	As per system requirement with 6.25% (Min)	
12	Neutral Earthing	As per system requirement	
13	Type of insulation and insulation details for winding	HV	LV
	a) Type of insulation	Uniform	Uniform
	b) One minute power frequency withstand voltage (kV rms)	70	3
	c) Rated lightning Impulse withstand voltage (kVp)	170	--
14	TEMPERATUE RISE		
	a)Reference ambient	40 °C	
	b)Oil by thermometer	50 °C	
	c)Winding by resistance method	55 °C	
15	Over Load Capacity	As per IS:6600	
16	Noise level at Rated voltage & Frequency	As per NEMA, Publ. TR-1	
17	TAP CHANGING GEAR		

	a)Type of tap Changer :	Off-circuit Tap-Changer	
	b)Tappings on windings:	HV	
	c)Total tapping range:	$\pm 5\%$	
	d) Steps	5 equal steps of 2.50% each	
18	Neutral Current Transformer	As per system requirement	
19	Bushings:	HV	LV
	a) Rated Voltage, kV	36	1.1
	b) Impulse withstand test voltage kV(peak)	170	--
	c) One minute power frequency test voltage kV (rms)	70	3
	d) Minimum Creepage distance(mm)	900	25 mm/kV
20	Terminal connections		
	a) HV terminals	Cable box and disconnecting chambers suitable for HV side shall be provided. Terminal connection shall be done through suitable size of cables.	
	b) LV terminals	Cable box and disconnecting chambers suitable for LV side shall be provided. Terminal connection shall be done through suitable size of cables.	
21	Noise level at rated voltage and frequency	As per NEMA, Publ. TR-1	
22	Ability to withstand short circuit & duration of short circuit	According to IS 2026	
23	Overloads	According to IS:6600	

250 KVA, 33/0.433 KV AUXILIARY TRANSFORMER

Sl. No.	Technical Particulars		
1	Rated Power	250kVA	
2	Type	Outdoor/Step-down	
3	Number required	1 (One)	
4	No. of Phases	Three	
5	System frequency	50 Hz	
6	Cooling medium	Insulating oil	
7	Rated Voltage		
	a) HV Voltage	33kV	
	b) LV Voltage	0.433kV	
8	a) HV Winding	Delta	
	b) LV Winding	Star	
	c) Neutral	LV neutral Effectively earthed	
9	Vector Group	Dyn11	
10	Type of cooling	ONAN	
11	Impedance Voltage at normal tap at 75°C	4.00%	
12	Tap changing gear		
a)	Type	Off circuit	
b)	Tapping range as % of off load Rated KVA	-5% to +5% in steps of 2.5%	
13	Type of insulation and insulation details for winding	HV	LV
	a) Type of insulation	Uniform	Uniform
	b) One minute power frequency withstand voltage (kV rms)	70	3
	c) Rated lightning Impulse withstand voltage (kVp)	170	--
14	The maximum permissible temperature rise over maximum ambient temperature of 40°C		
a)	Winding (measured by resistance method)	55°C	
b)	Top Oil Measured by thermometer	50°C	
15	Terminal connections		
	a) HV terminals	Cable box and disconnecting chambers suitable for HV side shall be provided. Terminal connection shall be done through suitable size of cables.	
	b) LV terminals	Cable box and disconnecting chambers suitable for LV side shall be provided. Terminal connection	

		shall be done through suitable size of cables.	
16	Bushings:	HV(33kV)	LV
	a) Rated Voltage, kV	36	1.1
	b) Impulse withstand test voltage kV(peak)	170	--
	c) One minute power frequency test voltage kV (rms)	70	3
	d) Minimum Creepage distance (mm)	900	25 mm/kV
	e) Mounting	Tank Transformer body /	Tank Transformer body /
17	Ability to withstand short circuit & duration of short circuit	According to IS 2026	
18	Overloads	According to IS:6600	

Note: HT and LT Cable sizes shall be selected considering the power loss, current carrying capacity, voltage drop, maximum short circuit duty and period of short circuit current to meet the anticipated current.