

**GUARANTEED TECHNICAL PARTICULARS FOR 25 KVA 11 KV CLASS
DISTRIBUTION TRANSFORMERS**

Annexure-A

Name of the bidder		
S1 No.	Description	Firm's offer
1	Make	YULE
2	Name of Manufacture	ANDREW YULE & CO. LTD
3	Place of Manufacture	KOLKATA
4	Voltage Ratio.	11000 : 433
5	Rating in kVA.	25
6	Core Material used and Grade.	CRGO, M4
	a). Flux density.	1.5Tesla
	b). Over fluxing without saturation (Curve to be furnished by the manufacture in support of his claim).	1.80Tesla
7	Maximum temperature rise of:	
	a. windings by resistance method	40
	b. Oil by thermometer	35
8	Magnetising (no-load) current at:	
	a. 90%	2.5% of rated full load Current
	b. 100%	3% of rated full load Current
	c. 110%	6% of rated full load Current
9	Core loss in watts	
	a. Normal voltage	85
	b. Maximum voltage.	128
10	Resistance of windings at 20°C (with 5% tolerance)	
	a. HV Windings (ohms).	118.1
	b. LV Windings (ohms).	0.058
11	Full load losses (watt) at 75°C	500
12	Total Losses at 100% load at 75°C	695
13	Total Losses at 50% load at 75°C	210
14	Current density used for : (Amper/sqmm)	
	a. HV Winding	0.875

	b. LV Winding	1.26	
15	Clearances : mm		
	a. Core and LV	3.0	
	b. LV&HV	10.5	
	c. HV Phase to Phase	10.0	
	d. End insulation clearance to earth	22	
	e. Any point of winding to tank	25	
16	Efficiency at 75°C		
	a. Unity P.F. and		
	b. 0.8 P.F.		
	1.125% load	a. 97.30	b. 96.65
	2.100% load	a. 97.71	b. 97.16
	3. 75% load	a. 98.08	b. 97.62
	4. 50% load	a. 98.35	b. 97.94
	5. 25% load	a. 98.17	b. 97.73
17	Regulation at:		
	a. Unity P.F. and	2.08	
	b. 0.8 P.F. at 75°C	4.04	
18	% Impedance at 75°C	4.5	
19	Flash Test:		
	(i) HV 28kV/50HZ for 1 minute	Yes	
	(ii) LV 3kV/50Hz for 1 minute	Yes	
20	Over potential test (Double voltage and Double frequency for 1 minute)	0.866/22kV	
21	Impulse test in peak kVA.	95 kV (Peak)	
22	Mass of : (kg)		
	a. Core lamination (minimum)	78.0	
	b. Windings (minimum)	38.0	
	c. Tank and fittings	97	
	d. Oil	74	
	e. Oil quantity (minimum) (litre)	90	
	f. Total weight	305	
23	Oil Data:		
	1. Qunatity for first filling (minimum) (litre)	90	
	2. Grade of oil used	As per IS 335/1993	
	3. Maker's name	Savita Petro Chem,Apar etc	
	4. BDV at the time of filling (kV)	70kV in 2.5mm gap	
24	Transformer:		

	1. Overall length x breadth x height (mm x mm x mm)	860 x 700 x 920
	2. Tank length x breadth x height	690 x 280 x 700
	3. Thickness of plates for	
	a. Side plate (min)	3.15 With IS Tolerance
	b. Top and bottom plate (min)	5.0 With IS Tolerance
	4. Conservator dimensions	Not Required
25	Radiation:	
	1. Heat dissipation by tank walls excluding top and bottom	594 Watts
	2. Heat dissipation by cooling tube	203 Watts
	3. Diameter and thickness of cooling tube	1.15/1.2mm
	4. whether calculation sheet for selecting cooling area to ensure that the transformer is capable of giving continuous rated output without exceeding temperature rise is enclosed	Will be furnished in the event of placement of order
26	Inter layer insulation provided in design for:	
	1. top and bottom layer	3 mills Epoxy Dotted Paper
	2. In between all layer	3 mills Epoxy Dotted Paper
	3. Details of end insulation	3 mills Epoxy Dotted Paper
	4. Whether wedges are provided at 50% turns of the HV coil	Not Required
27	Insulation materials provided	
	a. For conductors	
	1. HV	Super Enamel
	2. LV	Paper Covered
	b. For core	Carlite
28	Material and size of the wire used	
	1. HV Dia (mm) SWG	Aluminium 1.05
	2. LV a) Strip size	Aluminium 8.3 x 3.25
	b) No. of conductors in parallel	1W X 1D
	c) Total area of cross section (sq.mm)	26.43
29	Whether the name plate gives all particulars as required in tender	Yes
30	Particulars of bushings HV/LV	
	1. Maker's name	
	2. Type IS:	3347 Part-III & IS3347 Part-I
	3. Rating as per IS	12 kV Class 1.1 kV Class

	4. Dry power frequency voltage withstand test	AS per IS 3347
	5. Wet power frequency voltage withstand test	and also conforming to IS 2099
31	Type of insulation used in	SEM
	a. HV windings	DPC
	b. LV windings	
32	Type of insulation used on	
	a. Core bolts	Not Required
	b. core bolt washers	Not Required
	c. Core laminations	Carlite
33	whether conservator is provided	NO
34	whether breather is provided	YES
35	Approximate overall dimensions	
	a. height	920
	b. Breadth	700
	c. Length	860
36	Weight of insulated conductor	
	a. HV	26
	b. LV	11
37	a. Weight of core	78
	b. Tolerance	±5%
38	a. weight of complete Transformer for transport	305
39	Period for which this design of transformer has been in commercial use	5 Year
40	Reactance of windings at 75 ° C/ph a.HV b. LV	4.03%
41	Resistance of rated current and frequency a. HV b.LV	2.00%
42	Bushing characteristics Normal power frequency with voltage stand voltage (kV) Dry(kV) Wet (kV) 11kV 28 28 0.433kV 3 3	As per referred IS
43	Material of bushing rod and nuts	Brass

44	Date of commencement of production of distribution transformer at the factory of the supplier	
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Name of the firm:	
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SI No	Particulars	Number / Value
		25KVA
1	TANK	
	a) Wall Thickness	3.15mm
	b) Top bottom plate thickness	5.0mm
	c) Welding of plates	By Arc Welding
	d) Side wall joints	Process
	e) General	
	i) Reinforcement for walls	As per GA drawing enclosed
	ii) Limits for permanent deflection	As per specification
	iii) Channel (bore) mm	As per IS
2	CORE (Magnetic Circuit)	
	a) Top yoke (Single sheet) Thickness	0.27/0.23 mm
	b) Channel liner	Press Board
	c) Core wrapper	Cotton Tape & Press Board
	d) Core clamping	By MS channel
	e) Core Dimensions:	
	i) Height (window)	375mm
	ii) Core Diameter	83mm
	iii) Limb centre	212.5mm
	f) No load current (% of FL current)	3.00%
	g) No Load loss in watts	85
	h) Core material	CRGO, M\$ or Better
	i) Core fixing bolt Ø mm	12mm Dia
	j) Tie rod insulation mm paper	3 mills Craft Paper
3	WINDING (Electrical Circuit)	
	a) Conductor Material	Aluminium
	b) Conductor Insulation	
	i) HV Winding	Super Enamel
	ii) LV Winding	Paper Covered
	c) Conductor Size	
4	PHASE BARRIER BOARD (Press Board)	
	a) Spacer between HV & LV Coils	Press board duct & Cylinder
	b) Coil end insulation	3 mills Epoxy Dotted Paper
	c) Coil packing screw	NA
	d) HV jumper & delta formation	By 1.5mm Copper Wire
	e) LV Jumper	Not Required
	f) HV termination (Bushing)	Bare on out door bushing
	g) LV termination (Bushing)	Bare on out door bushing
	h) Spacers	
	i) Load loss at at 50% and 100% load in Watts	125W, 500W
	j) Percentage impedance at 75 deg C	4.50%
	k) Neutral current at Full Load in %	2%
5	a) Coil Packing	NA
	b) Tapping lead	NA
	c) Neutral current	As per Specification
	d) Breather (Silica Gel)	Yes