

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

Annexure-A

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

	b. LV Winding	<b>1.26</b>	
15	Clearances : mm		
	a. Core and LV	<b>3.0</b>	
	b. LV&HV	<b>10.5</b>	
	c. HV Phase to Phase	<b>10.0</b>	
	d. End insulation clearance to earth	<b>22</b>	
	e. Any point of winding to tank	<b>25</b>	
16	Efficiency at 75°C		
	a. Unity P.F. and		
	b. 0.8 P.F.		
	1. 125% load	<b>a. 97.30</b>	<b>b. 96.65</b>
	2. 100% load	<b>a. 97.71</b>	<b>b. 97.16</b>
	3. 75% load	<b>a. 98.08</b>	<b>b. 97.62</b>
	4. 50% load	<b>a. 98.35</b>	<b>b. 97.94</b>
	5. 25% load	<b>a. 98.17</b>	<b>b. 97.73</b>
17	Regulation at:		
	a. Unity P.F. and	<b>2.08</b>	
	b. 0.8 P.F. at 75°C	<b>4.04</b>	
18	% Impedance at 75°C	<b>4.5</b>	
19	Flash Test:		
	(i) HV 28kV/50HZ for 1 minute	<b>Yes</b>	
	(ii) LV 3kV/50Hz for 1 minute	<b>Yes</b>	
20	Over potential test (Double voltage and Double frequency for 1 minute)	<b>0.866/22kV</b>	
21	Impulse test in peak kVA.	<b>95 kV (Peak)</b>	
22	Mass of : (kg)		
	a. Core lamination (minimum)	<b>78.0</b>	
	b. Windings (minimum)	<b>38.0</b>	
	c. Tank and fittings	<b>97</b>	
	d. Oil	<b>74</b>	
	e. Oil quantity (minimum) (litre)	<b>90</b>	
	f. Total weight	<b>305</b>	
23	Oil Data:		
	1. Qunatity for first filling (minimum) (litre)	<b>90</b>	
	2. Grade of oil used	<b>As per IS 335/1993</b>	
	3. Maker's name	<b>Savita Petro Chem,Apar etc</b>	
	4. BDV at the time of filling (kV)	<b>70kV in 2.5mm gap</b>	
24	Transformer:		

	1. Overall length x breadth x height (mm x mm x mm)	<b>860 x 700 x 920</b>
	2. Tank length x breadth x height	<b>690 x 280 x 700</b>
	3. Thickness of plates for	
	a. Side plate (min)	<b>3.15 With IS Tolerance</b>
	b. Top and bottom plate (min)	<b>5.0 With IS Tolerance</b>
	4. Conservator dimensions	<b>Not Required</b>
25	Radiation:	
	1. Heat dissipation by tank walls excluding top and bottom	<b>594 Watts</b>
	2. Heat dissipation by cooling tube	<b>203 Watts</b>
	3. Diameter and thickness of cooling tube	<b>1.15/1.2mm</b>
	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	<b>Will be furnished in the event of placement of order</b>
26	Inter layer insulation provided in design for:	
	1. top and bottom layer	<b>3 mills Epoxy Dotted Paper</b>
	2. In between all layer	<b>3 mills Epoxy Dotted Paper</b>
	3. Details of end insulation	<b>3 mills Epoxy Dotted Paper</b>
	4. Whether wedges are provided at 50% turns of the HV coil	<b>Not Required</b>
27	Insulation materials provided	
	a. For conductors	
	1. HV	<b>Super Enamel</b>
	2. LV	<b>Paper Covered</b>
	b. For core	<b>Carlite</b>
28	Material and size of the wire used	
	1. HV Dia (mm) SWG	<b>Aluminium 1.05</b>
	2. LV a) Strip size	<b>Aluminium 8.3 x 3.25</b>
	b) No. of conductors in parallel	<b>1W X 1D</b>
	c) Total area of cross section (sq.mm)	<b>26.43</b>
29	Whether the name plate gives all particulars as required in tender	<b>Yes</b>
30	Particulars of bushings HV/LV	
	1. Maker's name	
	2. Type IS:	<b>3347 Part-III &amp; IS3347 Part-I</b>
	3. Rating as per IS	<b>12 kV Class 1.1 kV Class</b>

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

44	Date of commencement of production of distribution transformer at the factory of the supplier	
----	---	--

<b>Name of the firm:</b>	
--------------------------	--

SI No	Particulars	Number / Value
		25KVA
1	<b>TANK</b>	
	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	<b>CORE (Magnetic Circuit)</b>	
	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 $\varnothing$ mm	12mm Dia
j) Tie rod insulation mm paper	3 mills Craft Paper	
3	<b>WINDING (Electrical Circuit)</b>	
	a) Conductor Material	Aluminium
	b) Conductor Insulation	
	i) HV Winding	Super Enamel
	ii) LV Winding	Paper Covered
	c) Conductor Size	
i) HV Winding	1.05	
ii) LV Winding	8.3 x 3.25	
4	<b>PHASE BARRIER BOARD (Press Board)</b>	
	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
b) Tapping lead		NA
c) Neutral current		As per Specification
d) Breather (Silica Gel)		Yes