8.34 GUARANTEED TECHNICAL PARTICULARS FOR 8CX2.5 SQ. MM LV CONTROL CABLE (ISOLATOR MOTORIZED)

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, **otherwise the bid shall be rejected.)**

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
1.	Manufacturer's Name and country	-	To be mentioned	
2.	Cable Size	sq. mm.	8C×2.5	
3.	Type of Cable	-	YRGY(FR)/YFGY(FR)	
4.	Rated Voltage	V	1000	
5	Standard Referred	-	IEC-60502-1 or equivalent international standard as applicable	
6	**Conductor**	-	-	
	i) Material	-	Stranded Electrolyte annealed bare Copper Confirming to Class-1 or 2 of IEC 60228 or equivalent international standard as applicable	
	ii) Nominal Area of Cross- section of each conductor	sq.mm	2.5	
	iii) Total no. of wire/Conductor	Nos	7	
	iv) Diameter of each wire	mm	0.675	
	v) Shape of conductor	-	Solid & Round	
7	**Insulation**	-	-	
	i) Material	-	FR PVC Type E as per IEC 60227 -1 Standard Ins 90 °C.	
	ii) Nom. Thickness	mm	0.8 (As per IEC 60502-1 or equivalent international standard as applicable)	
	iii) Suitable by with regard to temperature, moisture, acid, oil and alkaline surrounding	-	Yes	
8	**Inner sheath**	-	-	
	i) Material	-	FR PVC Category C-1 PVC Type ST-2, as per IEC 60502-1 or equivalent international standard as applicable	
	ii) Minimum thickness of sheath	mm	1.0	
9	**Armoring**	-	-	
	i) Material & Type	-	Flat Galvanized Steel/Round Galvanized Steel Wire (As per IEC60502-1)	

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
	ii) Nominal Thickness	-	Minimum 0.8mm for Flat Galvanized Steel. or Mention Diameter & Number of Wire for Round Galvanized Steel Wire.	
10	Outer sheath	-	-	
	i) Material	-	FRLS Black Type ST-2	
	ii) Nominal thickness of sheath	mm	To be Mentioned (As per OD according to calculation with formula IEC 60502-1)	
11	Approximate overall dia of cable	mm	To be mentioned	
12	Method of core identification	-	8C – All grey with Sequential Numbering both in numeric & Word form in every 50 mm interval.	
13	**Electrical Properties**	-	-	
	i) Maximum D.C. resistance of conductor at 20^0 C (Ohm/Km)	-	To be mentioned (As per IEC-60228 or equivalent international standard as applicable)	
	ii) Maximum permissible conductor temperature(°C) under full load	°C	85	
	iii) Rated voltage (KV)	KV	1.1	
	iv) Maximum operating voltage	-	10% Higher than the Rated Voltage	
	v) Permissible voltage variation	%	±10%	
	vi) Rated frequency	Hz	50	
	vii) Permitted frequency variation	%	±5%	
	viii) Minimum volume resistivity at 27°C/ 85°C (Ohm/Cm)	ohm.cm	$1 \times 10^{13}/1 \times 10^{10}$	

Seal & Signature of the Manufacturer

Seal & Signature of the Bidder

8.35 GUARANTEED TECHNICAL PARTICULARS FOR 24CX2.5 SQ. MM CABLE (VCB CONTROL)

LV CONTROL

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, **otherwise the bid shall be rejected.)**

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
1.	Manufacturer's Name and country	-	To be mentioned	
2.	Cable Size	sq. mm.	24C×2.5	
3.	Type of Cable	-	YRGY(FR)/YFGY(FR)	
4.	Rated Voltage	V	1000	
5	Standard Referred	-	IEC-60502-1 or equivalent international standard as applicable	
6	**Conductor**	-	-	
	i) Material	-	Stranded Electrolyte annealed bare Copper Confirming to Class-1 or 2 of IEC 60228 or equivalent international standard as applicable	
	ii) Nominal Area of Cross- section of each conductor	sq.mm	2.5	
	iii) Total no. of wire/Conductor	Nos	7	
	iv) Diameter of each wire	mm	0.675	
	v) Shape of conductor	-	Solid & Round	
7	**Insulation**	-	-	
	i) Material	-	FR PVC Type E as per IEC 60227 -1 Standard Ins 90 °C.	
	ii) Nom. Thickness	mm	0.8 (As per IEC 60502-1 or equivalent international standard as applicable)	
	iii) Suitable by with regard to temperature, moisture, acid, oil and alkaline surrounding	-	Yes	
8	**Inner sheath**	-	-	
	i) Material	-	FR PVC Category C-1 PVC Type ST-2, as per IEC 60502-1 or equivalent international standard as applicable	
	ii) Minimum thickness of sheath	mm	1.0	
9	**Armoring**	-	-	
	i) Material & Type	-	Flat Galvanized Steel/Round Galvanized Steel Wire (As per	

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
			IEC60502-1)	
	ii) Nominal Thickness	-	Minimum 0.8mm for Flat Galvanized Steel. or Mention Diameter & Number of Wire for Round Galvanized Steel Wire.	
10	**Outer sheath**	-	-	
	i) Material	-	FRLS Black Type ST-2	
	ii) Nominal thickness of sheath	mm	To be Mentioned (As per OD according to calculation with formula IEC 60502-1)	
11	Approximate overall dia of cable	mm	To be mentioned	
12	Method of core identification	-	24C – All grey with Sequential Numbering both in numeric & Word form in every 50 mm interval.	
13	**Electrical Properties**	-	-	
	i) Maximum D.C. resistance of conductor at 20^0 C (Ohm/Km)	-	To be mentioned (As per IEC-60228 or equivalent international standard as applicable)	
	ii) Maximum permissible conductor temperature(°C) under full load	°C	85	
	iii) Rated voltage (KV)	KV	1.1	
	iv) Maximum operating voltage	-	10% Higher than the Rated Voltage	
	v) Permissible voltage variation	%	±10%	
	vi) Rated frequency	Hz	50	
	vii) Permitted frequency variation	%	±5%	
	viii) Minimum volume resistivity at 27°C/ 85°C (Ohm/Cm)	ohm.cm	$1 \times 10^{13}/1 \times 10^{10}$	

Seal & Signature of the Manufacturer

Seal & Signature of the Bidder

8.36 GUARANTEED TECHNICAL PARTICULARS FOR 4CX4 SQ. MM LV CONTROL CABLE (CT FOR SHORT DISTANCE AND MOTORIZED ISOLATOR POWER SUPPLY)

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, otherwise the bid shall be rejected.)

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
1.	Manufacturer's Name and country	-	To be mentioned	
2.	Cable Size	sq. mm.	4C×4	
3.	Type of Cable	-	YRGY(FR)	
4.	Rated Voltage	V	1000	
5	Standard Referred	-	IEC-60502-1 or equivalent international standard as applicable	
6	**Conductor**	-	-	
	i) Material	-	Stranded Electrolyte annealed bare Copper Confirming to Class- 1or 2 of IEC 60228 or equivalent international standard as applicable	
	ii) Nominal Area of Cross- section of each conductor	sq.mm	4.0	
	iii) Total no. of wire/Conductor	Nos	1	
	iv) Diameter of each wire	mm	2.26	
	v) Shape of conductor	-	Solid & Round	
7	**Insulation**	-	-	
	i) Material	-	FR PVC Type E as per IEC 60227 -1 Standard Ins 90 °C.	
	ii) Nom. Thickness	mm	1.0 (As per IEC 60502-1 or equivalent international standard as applicable)	
	iii) Suitable by with regard to temperature, moisture, acid, oil and alkaline surrounding	-	Yes	
8	**Inner sheath**	-	-	
	i) Material	-	FR PVC Category C-1 PVC Type ST-2, as per IEC 60502-1 or equivalent international standard as applicable	
	ii) Minimum thickness of sheath	mm	1.0	
9	**Armoring**	-	-	
	i) Material & Type	-	Flat Galvanized Steel/Round Galvanized Steel Wire (As per IEC60502-1)	

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
	ii) Nominal Thickness	-	Minimum 0.8 mm for Flat Galvanized Steel. or Mention Diameter & Number of Wire for Round Galvanized Steel Wire.	
10	**Outer sheath**	-	-	
	i) Material	-	FRLS Black Type ST-2	
	ii) Nominal thickness of sheath	mm	To be Mentioned (As per OD according to calculation with formula IEC 60502-1)	
11	Approximate overall dia of cable	mm	To be mentioned	
12	Method of core identification	-	4C - Red, Yellow, Blue, Black	
13	**Electrical Properties**	-	-	
	i) Maximum D.C. resistance of conductor at 20^0 C (Ohm/Km)	-	To be mentioned (As per IEC-60228 or equivalent international standard as applicable)	
	ii) Maximum permissible conductor temperature(°C) under full load	°C	85	
	iii) Rated voltage (KV)	KV	1.1	
	iv) Maximum operating voltage	-	10% Higher than the Rated Voltage	
	v) Permissible voltage variation	%	±10%	
	vi) Rated frequency	Hz	50	
	vii) Permitted frequency variation	%	±5%	
	viii) Minimum volume resistivity at 27°C/ 85°C (Ohm/Cm)	ohm.cm	$1 \times 10^{13}/1 \times 10^{10}$	

Seal & Signature of the Manufacturer

Seal & Signature of the Bidder

8.37 GUARANTEED TECHNICAL PARTICULARS FOR 4CX6 SQ. MM CABLE (LONG DISTANCE CT)

LV CONTROL

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, **otherwise the bid shall be rejected.)**

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
1.	Manufacturer's Name and country	-	To be mentioned	
2.	Cable Size	sq. mm.	4C×6	
3.	Type of Cable	-	YRGY(FR)/YFGY(FR)	
4.	Rated Voltage	V	1000	
5	Standard Referred	-	IEC-60502-1 or equivalent international standard as applicable	
6	**Conductor**	-	-	
	i) Material	-	Stranded Electrolyte annealed bare Copper Confirming to Class-1 or 2 of IEC 60228 or equivalent international standard as applicable	
	ii) Nominal Area of Cross- section of each conductor	sq.mm	6.0	
	iii) Total no. of wire/Conductor	Nos	7	
	iv) Diameter of each wire	mm	1.05	
	v) Shape of conductor	-	Solid & Round	
7	**Insulation**	-	-	
	i) Material	-	FR PVC Type E as per IEC 60227 -1 Standard Ins 90 °C.	
	ii) Nom. Thickness	mm	1.0 (As per IEC 60502-1 or equivalent international standard as applicable)	
	iii) Suitable by with regard to temperature, moisture, acid, oil and alkaline surrounding	-	Yes	
8	**Inner sheath**	-	-	
	i) Material	-	FR PVC Category C-1 PVC Type ST-2, as per IEC 60502-1 or equivalent international standard as applicable	
	ii) Minimum thickness of sheath	mm	1.0	
9	**Armoring**	-	-	
	i) Material & Type	-	Flat Galvanized Steel/Round Galvanized Steel Wire (As per IEC60502-1)	

Sl. No.	Description	Unit	WZPDCL's Requirement	Manufacturer's guaranteed Particulars
	ii) Nominal Thickness	-	Minimum 0.8mm for Flat Galvanized Steel. or Mention Diameter & Number of Wire for Round Galvanized Steel Wire.	
10	**Outer sheath**	-	-	
	i) Material	-	FRLS Black Type ST-2	
	ii) Nominal thickness of sheath	mm	To be Mentioned (As per OD according to calculation with formula IEC 60502-1)	
11	Approximate overall dia of cable	mm	To be mentioned	
12	Method of core identification	-	4C - Red, Yellow, Blue, Black	
13	**Electrical Properties**	-	-	
	i) Maximum D.C. resistance of conductor at 20^0 C (Ohm/Km)	-	To be mentioned (As per IEC-60228 or equivalent international standard as applicable)	
	ii) Maximum permissible conductor temperature(°C) under full load	°C	85	
	iii) Rated voltage (KV)	KV	1.1	
	iv) Maximum operating voltage	-	10% Higher than the Rated Voltage	
	v) Permissible voltage variation	%	±10%	
	vi) Rated frequency	Hz	50	
	vii) Permitted frequency variation	%	±5%	
	viii) Minimum volume resistivity at 27°C/ 85°C (Ohm/Cm)	ohm.cm	$1 \times 10^{13}/1 \times 10^{10}$	

Seal & Signature of the Manufacturer

Seal & Signature of the Bidder

8.38 GUARANTEED TECHNICAL PARTICULARS OF TWIN TACSR (2X800/55 MM2) CONDUCTOR

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, otherwise the bid shall be rejected.)

Sl. No.	Description	Unit	Requirement	BIDDER'S GUARANTEED VALUES
1.	Name of the Manufacturer		Shall be mentioned	
2.	Address of the Manufacturer		Shall be mentioned	
3.	Standard		Performance Design and Testing shall be in accordance to the BS, IEC, ASTM, BDS or equivalent International standards.	
4.	Installation		Overhead	
5.	Type		Stranded	
6.	Bundle Configuration		Twin (2 sub-conductors per phase)	
7.	Material		Hard drawn Aluminium steel reinforced	
8.	Approximate Overall diameter	mm	38	
9.	Nominal cross sectional area of conductor	mm2	861	
10.	Number/diameter of Aluminium Strand	No./mm	45/4.77	
11.	Nominal Aluminium cross sectional area	mm2	800	
12.	Number/diameter of Steel Strand	No./mm	7/3.18	
13.	Nominal Steel cross sectional area	mm2	55	
14.	Weight of conductor	Kg/KM	2667	
15.	Drum wound length	M	500	
16.	Drum Net weight	Kg	Shall be mentioned	
17.	Drum Gross weight	Kg	Shall be mentioned	
18.	Maximum DC Resistance of Conductor at 20 °C	Ω/KM	0.0359	
19.	Minimum breaking Load of Conductor	Kgf	18702	
20.	Maximum working tension of conductor	KN	Shall be mentioned	
21.	Current rating at 75ºC ambient temperature	Amps.	3000 (min)	
22.	Practical (final) modulus of elasticity	hbar	Shall be mentioned	
23.	Co-efficient of linear expansion	1/ºC	shall be mentioned	
24.	Aluminum to Steel Ratio		Shall be mentioned	

25.	Lay length for Outermost Layer of Aluminium	mm	Shall be mentioned	
26.	Lay direction for Outermost Layer of Aluminium		Right hand	
27.	Lay ratio for Outermost Layer of Aluminium		10 to 14	
28.	Spacer Type		Damped Spacer (Vibration Control Type)	
29.	Spacer Interval		To be Mentioned	
30.	Bundle Orientation		Horizontal	
31.	Corona Ring Requirement		Yes	
32.	Treated Wooden Drum Standard		AWPA C1 – 82, C2 –83, C16 –82, P5 –83.	

Seal & Signature of the Manufacturer

Seal & Signature of the Bidder

8.39 GUARANTEED TECHNICAL PARTICULARS CONNECTOR TWIN TACSR (2X800/55 MM2) CONDUCTOR

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, otherwise the bid shall be rejected.)

Sl. No.	Description	Unit	WZPDCL'S Requirement	BIDDER'S GUARANTEED VALUES
1.	Name & Address of the Manufacturer	-	Shall be mentioned	
2.	Manufacturer's Code No.	-	Shall be mentioned	
3.	Applicable Standard	-	Design, Testing & Performance shall be in accordance to BS, IEC, BDS, ANSI, ASTM or equivalent international standards.	
4.	Installation	-	Outdoor and shall be installed for the above-mentioned conductor.	
5.	Type	-	To be mentioned	
6.	Material	-	Aluminium	
7.	Minimum Continuous Current rating at 75ºC ambient temperature	amp	As per conductor current rating	
8.	Dimension	mm	To be mentioned with calculation	
9.	Weight of 100 nos. in Kg	kg	Shall be mentioned	

Seal & Signature of the Manufacturer

Seal & Signature of the Bidder

8.40 GUARANTEED TECHNICAL PARTICULARS FOR 33KV POST INSULATOR

(To be filled up by the Manufacturer in Manufacturer Letterhead Pad, otherwise the bid shall be rejected.)

Sl. No	Description	Requirements of WZPDCL	Manufacturers Particulars
1.	Name Of the Manufacture & Address	to Be mentioned	
2.	Applicable Standard	ANSI C29.1 & C29.8 OR other Equivalent Internationally Acceptable Standard	
3.	Manufacture's Code No	To Be mentioned	
4.	Type	cap and pin, S units	
5.	System Voltage	33KV	
6.	Installation	Outdoor Line support	
7.	Material of Insulator	Porcelain	
8.	Leakage Distance	736 mm	
9.	Dry arching distance flash over voltage	311 mm	
10.	a) Power Frequency, Dry	125 KV	
	b) Power Frequency, Wet	100 KV	
11.	Withstand Voltage(minimum)		
12.	a) Power Frequency, Dry	95 KV	
13.	b) Power Frequency, Wet	80 KV	
14.	Impulse withstand Voltage 1.2/50 Micro-sec wave	200 KV	
15.	Power Frequency Puncture Voltage	195 KV	
16.	Cantilever strength(upright)	910 Kg	
17.	Construction of Cap	Cap at both end of Insulator and connector mounted on top to accommodate CU Flat bar	
18.	Construction of Pin	Length 100mm (Min) & Dia 22mm Full thread complete with Nut, Lock Nut & Thick washer/ Spring Washer for use in steel cross arm	
19.	Galvanization	As per BS EN ISO 1461:2009 or BS-729 or ASTM A-153; 610 gm/sq.m	
20.	Weight of Insulator	to be mentioned	

Seal and Signature of the manufacturer:

Seal and Signature of the Tenderer: