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For EPC Contracts Only

DRAWING COVER SHEET WITH REVISION STATUS		REVISION DETAILS	
Sr. No.	DRAWING NUMBER	DESCRIPTION	REV. NO.
1	001 / 30 / 21547	LIST OF DRAWING	0
2	002 / 21547	GENERAL ARRANGEMENT	0
3	003 / 30 / 21547	ARRESTER NAME PLATE	0
4	006 / 30 / 21547	CROSS SECTIONAL VIEW AND PRESSURE RELIEF ARRANGEMENT	0
5	007 / 30 / 21547	PORCELAIN INSULATOR	0
6	008/ 30 / 21547	TOP TERMINAL PLATE	0
7	009 / 30 / 21547	MIN. RECOMMENDED CLEARANCES	0
8	010 / 30 / 21547	V - 1 & V-T CHARACTERISTICS	0
9	011 / 30 / 21547	ZNO ELEMENT	0
10	015 / 30 / 21547	S4/GTP/A/PTRANSCO/30KV-SL/31/POR/001	0

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.
TO BE CHECKED DURING ACCEPTANCE TESTS.

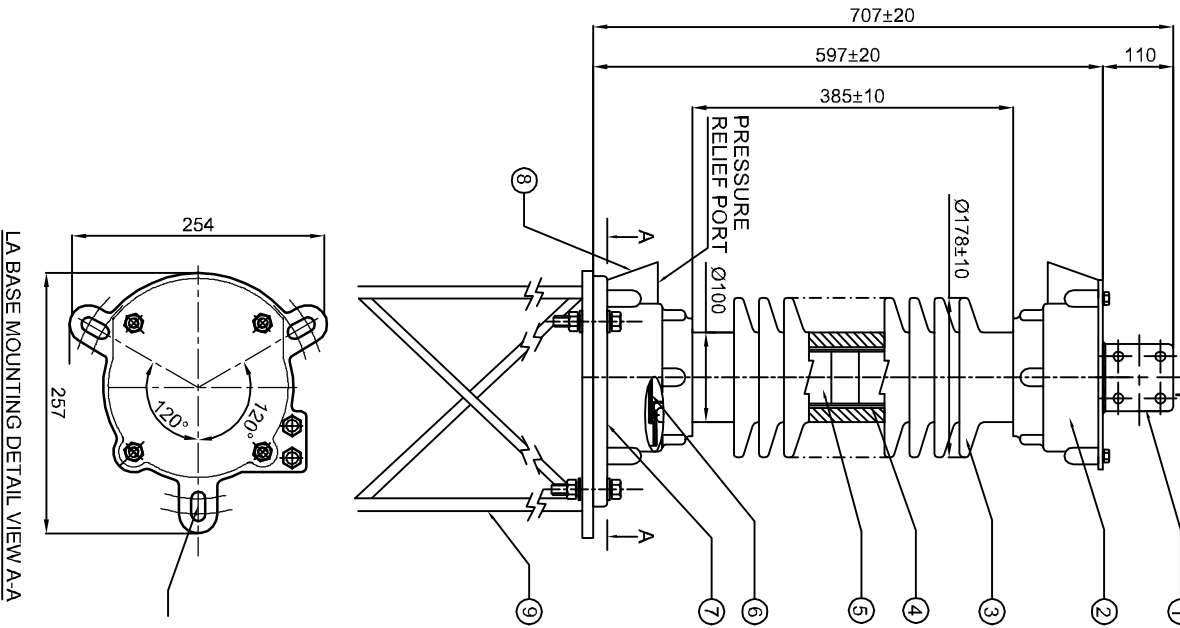
Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/IVT/CVT requirement and compatibility.

CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH			
3		THIRD ANGLE PROJECTION		INITIALS	NAME
2		SCALE: NTS	DRN	NNJ	
1		ALL DIMN. IN PERS. OTHERWISE SPECIFIED.	CHD	PSB	
		GEN. TOL. ±6%	APPD	NJ	
NO.	REVISION	DATE	DATE	DATE	DATE
			07.02.2024		
TITLE :		DRAWING COVER SHEET WITH REVISION STATUS			
CG Power and Industrial Solutions Limited		LIGHTNING ARRESTER DIVISION, AMBAD NASIK			
DRG NO. : 001 / 30 / 21547		REV 0			
CG. W.O. : APTRANSCO_STD_30KV		SH 1 OF 1			

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Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/IVT/CVT requirement and compatibility.

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3 SLOT OF 14 WIDTH,
AT PCD 220 TO 250
(FOR LA MOUNTING)

BILL OF MATERIAL

ITEM NO.	ITEM	MATERIAL
1	LINE TERMINAL (PAD)	MS H.D.G.
2	FLANGE	AL. ALLOY
3	INSULATOR	PORCELAIN (BROWN)
4	FRP TUBE	FIBER REINFORCED PLASTIC
5	ZNO ELEMENT	ZNO & ADDITIVES
6	PRESSURE RELIEF PLATE	Cu CLAD PAPER PHENOLIC
7	BASE PLATE	MS H.D.G.
8	ARRESTER NAME PLATE	ALUMINIUM
9	CUSTOMER SUPPORT STRUCTURE	NOT IN CGPISL SCOPE

TECHNICAL DETAILS

RATED VOLTAGE (Ur)	30kVrms
MCOV (Uc)	25.5kVrms
CREEPAGE (DISTANCE)	1116mm
WEIGHT	25±10%kg
NOMINAL DISCHARGE CURRENT	10kAp
DESIGNATION	SL
TYPE :- STATION CLASS / CLASS-2	
ENERGY HANDLING CAPABILITY :-	4kJ / kV
PRESSURE RELIEF CLASS :-	CLASS A (40kAp)
CANTILEVER STRENGTH :-	150kg
ALL UNITS ARE HERMATICALLY SEALED.	
ALL METAL PARTS ARE H.D.G.	

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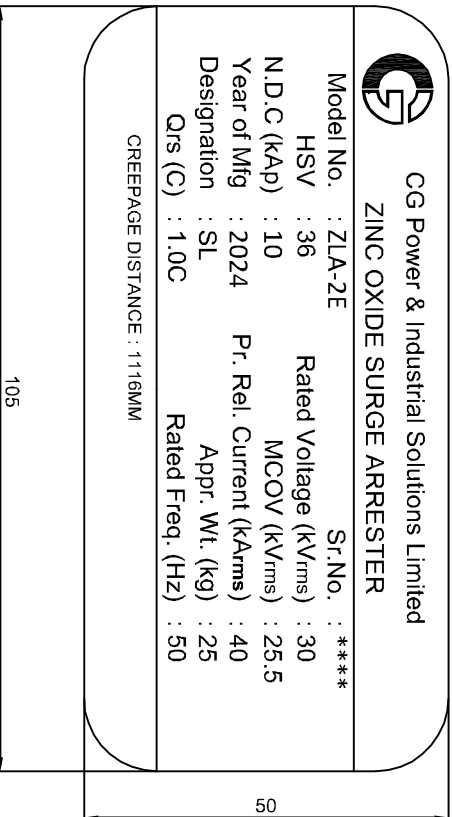
CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH	
NO.	REVISION	DATE	DATE
1			07.02.2024

THIRD ANGLE PROJECTION		TITLE :- GENERAL ARRANGEMENT FOR 30kV, CL-2, SL TYPE HC SURGE ARRESTER	
SCALE: NTS	INITIALS	NAME	REV
ALL DIMN. UNITS UNLESS OTHERWISE SPECIFIED.	DRN	NNJ	
GEN. TOL. ±6%	CHD	PSB	
	APPD	NJ	

CG Power and Industrial Solutions Limited	CGI W.O. : APTRANSCO STD_30kV/ SH 1 OF 1
Lightning Arrester Division AMBAD NASIK	
DRG NO. : 002 / 21547	
REV 0	

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ARRESTER NAME PLATE

Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/VT/CVT requirement and compatibility.

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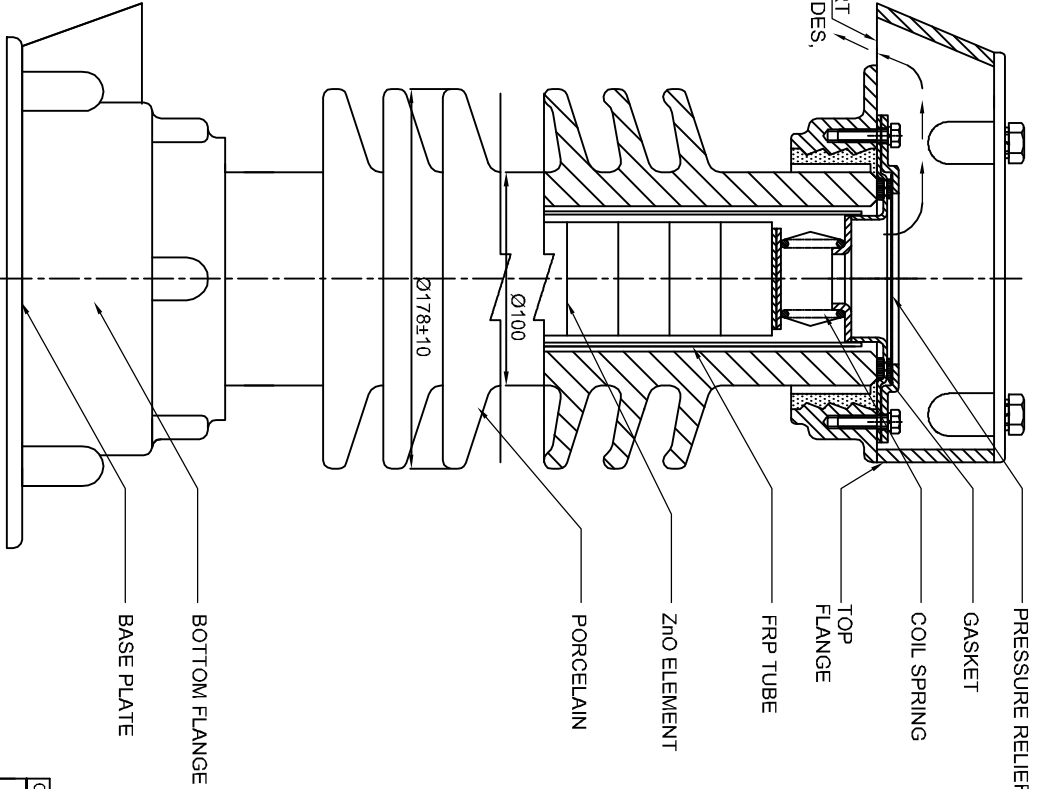
CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH			
THIRD ANGLE PROJECTION		TITLE : ARRESTER NAME PLATE FOR 30KV, CL-2,SL TYPE SA			
SCALE: NTS	INITIALS	NAME	CG Power and Industrial Solutions Limited LIGHTNING ARRESTER DIVISION, AMBAD NASIK		
ALL DIMN. UNITS OTHERWISE SPECIFIED.	DRN	NNJ	DRG NO. : G-033 / 30 / 21547		
GEN. TOL. ±0.5%	APPD	NJ	DATE: 07.02.2024	CG. W.O.: APTRANSCO STD_30KV	SH 1 OF 1
NO.	REVISION	DATE	REV		
1			0		

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1. BURSTING PRESSURE OF ARRESTER : 3kg/cm^2 (Max.)



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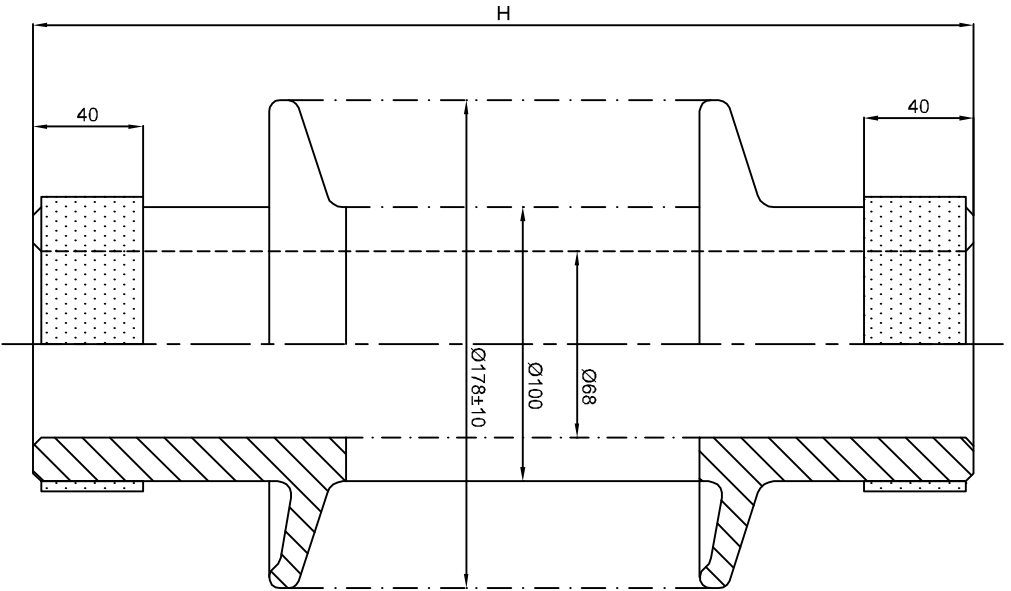
NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.
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Chief Engineer
Projects

CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH			
THIRD ANGLE PROJECTION		SCALE: NTS	INITIALS	NAME	
1	REVISION	DATE	DATE	DATE	DATE
2					
3					
TITLE : CROSS SECTIONAL VIEW AND PRESSURE RELIEF ARRANGEMENT FOR 30KV, CL-2,SL TYPE SA		CG Power and Industrial Solutions Limited LIGHTNING ARRESTER DIVISION, AMBAD NASIK			
DRG NO. : 006 / 30 / 21547		CG, W.O.: APTRANSOCO STD_30KV/ SH 1 OF 1			
REV		0			

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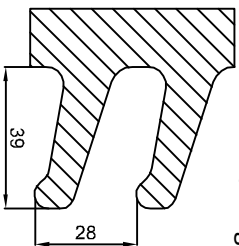


- NOTE:**
1. PORCELAIN COLOUR : GLAZE - BROWN
 2. BENDING STRENGTH : 325kg M
 3. ELECTRICAL TEST AS PER IS : 5621
 4. SHED PROFILE AS PER IEC : 815

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SHED FORM



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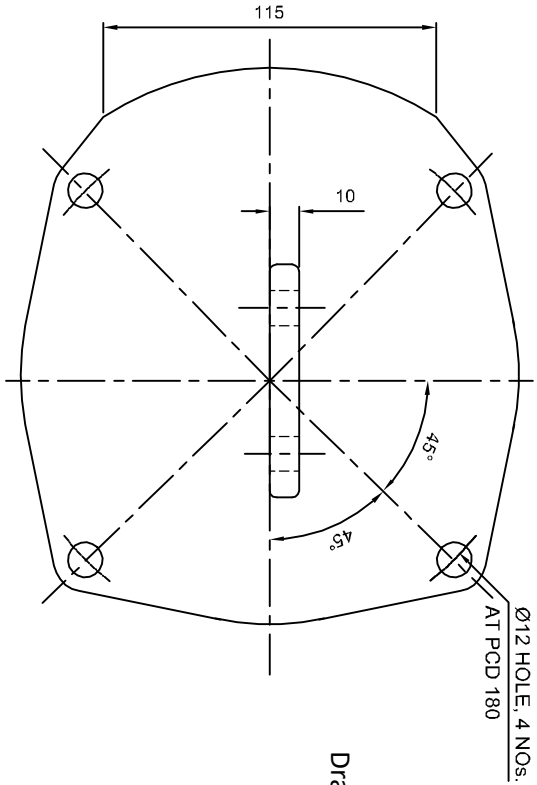
RATED VOLTAGE (kV)	HEIGHT (H) mm	TOTAL CREEPAGE (mm)
30kV	465	1116

**Chief Engineer
Projects**

CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH	
THIRD ANGLE PROJECTION		SCALE: NTS	INITIALS NAME
1	2	ALL DIMN. UNITS OTHERWISE SPECIFIED.	DRN NNU CHD PSB
NO.	REVISION	DATE	DATE
1		07.02.2024	
TITLE :		PORCELAIN INSULATOR FOR 30KV, CL-2, SL TYPE SA	
DRG NO. : 007 / 30 / 21547		CG Power and Industrial Solutions Limited LIGHTNING ARRESTER DIVISION, AMBAD NASIK	
CG, W.O. : APTRANSOCO STD_30KV	SH 1 OF 1	REV	0

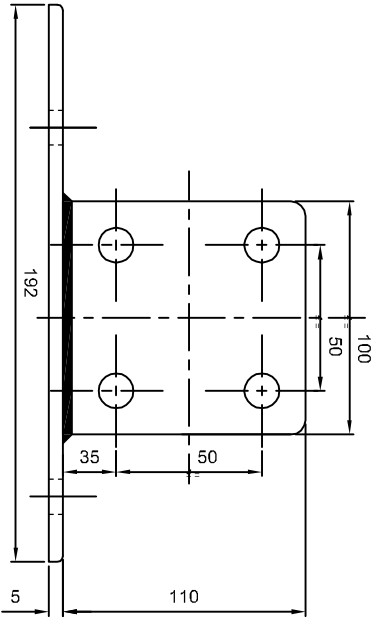
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TO BE CHECKED DURING ACCEPTANCE TESTS.

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NOTE:-
1. MATERIAL : MS HDG.

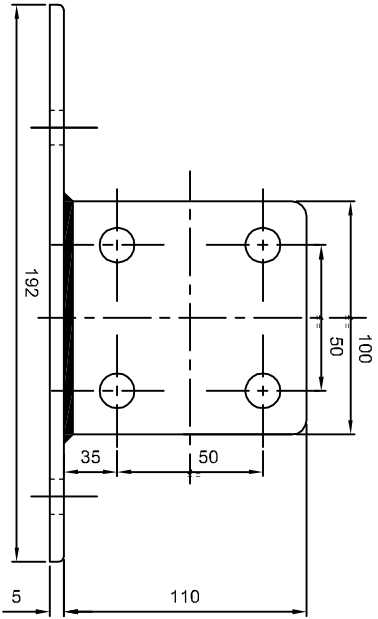
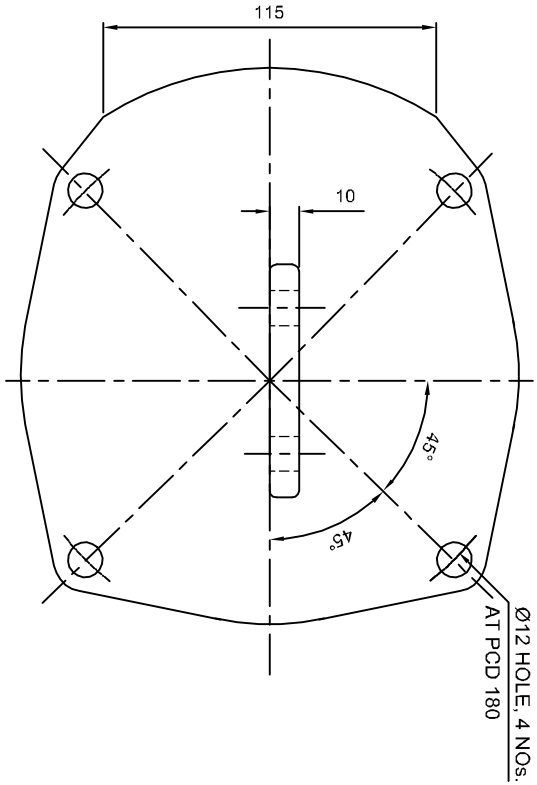
CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH				
THIRD ANGLE PROJECTION		TITLE : TERMINAL PAD FOR CL-2-SL TYPE, SA				
3	SCALE: NTS	ALL DIMN. UNITS OTHERWISE SPECIFIED.	DRN	NNJ	INITIALS	NAME
2	GEN. TOL. ±6%	APPD	CHD	PSB		
1	DATE: 07.02.2024	DATE:	APPD	NJ		
NO.	REVISION	DATE	DATE	CG. W.O. : APTRANSOCO_STD_30kV/SH 1 OF 1	DRG NO. : 008 / 30 / 21547	REV
						0



CG Power and Industrial Solutions Limited
LIGHTNING ARRESTER DIVISION, AMBAAD NASIK

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NOTE:-
1. MATERIAL : MS HDG.

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TO BE CHECKED DURING ACCEPTANCE TESTS.

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CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH			
THIRD ANGLE PROJECTION		SCALE: NTS	INITIALS	NAME	TITLE:
		ALL DIMN. IN PERS. OTHERWISE SPECIFIED.	DRN	NNJ	TERMINAL PAD FOR CL-2,SL TYPE, SA
		GEN. TOL. ±6%	CHD	PSB	CG Power and Industrial Solutions Limited
		APPD	NJ		LIGHTNING ARRESTER DIVISION, AMBAD NASIK
		DATE: 07.02.2024			DRG NO. : 008 / 30 / 21547
					CG. W.O.: APTRANSOCO_STD_30kV/ SH 1 OF 1
NO.	REVISION	DATE			REV
1					0

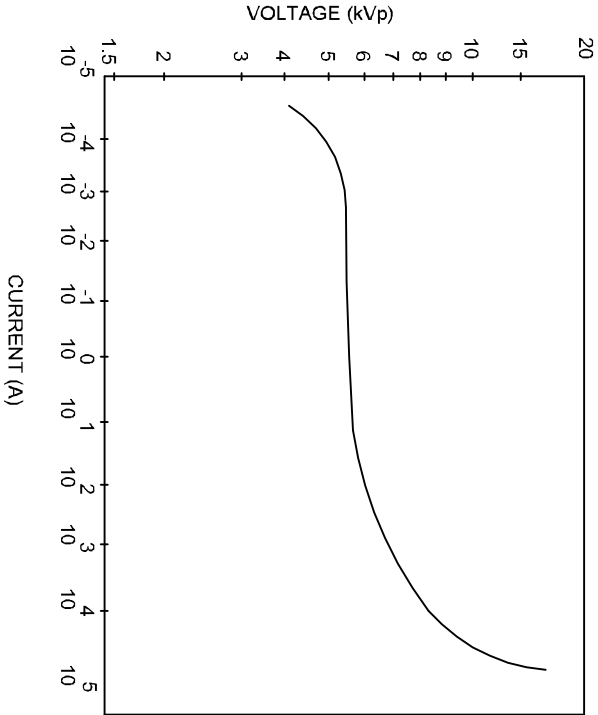
A3 297 / 420 : DIVISION - LIGHTNING ARRESTER

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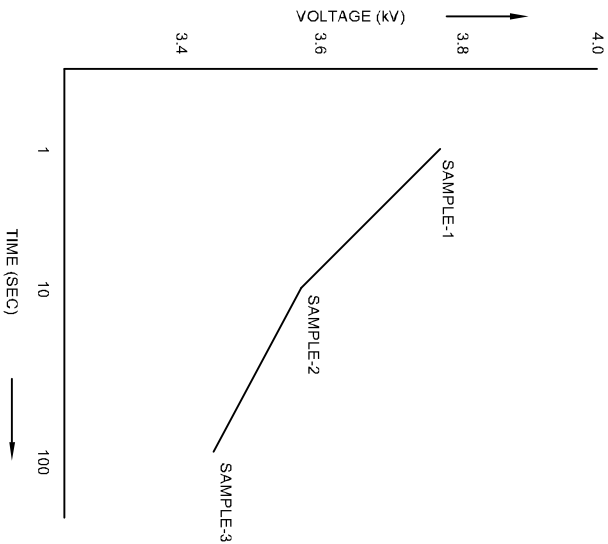
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POWER FREQUENCY VOLTAGE Vs CURRENT CHARACTERISTICS



- NOTE :
1. Ur = 3.4kV
 2. Uc = 2.8kV
 3. NDC = 10kAp
 4. FOLLOWING GRAPH REPRESENTS CHARACTERISTICS ONLY FOR SINGLE ZNO BLOCK FOR OFFERED RATING.

POWER FREQUENCY VOLTAGE Vs TIME CHARACTERISTICS



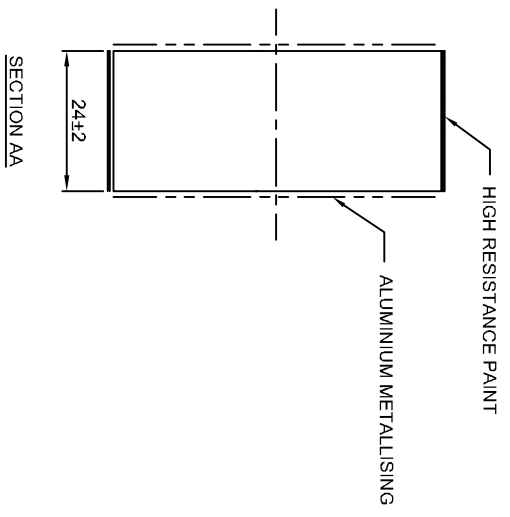
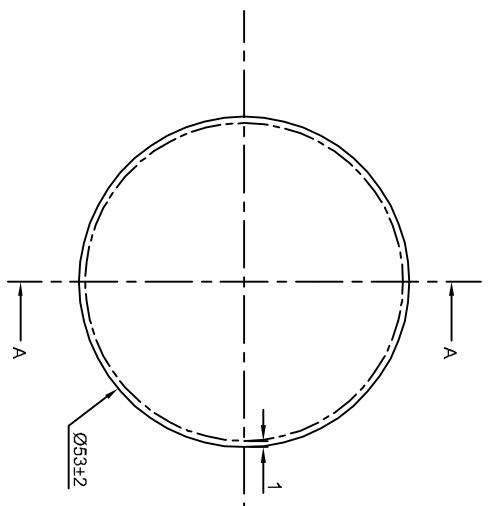
CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH			
3		THIRD ANGLE PROJECTION		SCALE: NTS	
2		ALL DIMN. UNITS OTHERWISE SPECIFIED.		DRN NNU	
1		GEN. TOL. ±6%		CHD PSB	
NO.	REVISION	DATE	DATE	DATE	DATE
			07.02.2024		
TITLE:		V - I & V-T CHARACTERISTICS			
CG Power and Industrial Solutions Limited		LIGHTNING ARRESTER DIVISION, AMBAID NASIK			
DRG NO. : 010 / 30 / 21547		REV 0			
CG. W.O. : APTRANSCO STD_30kV		SH 1 OF 1			

A3297 - 420 : DIVISION - LIGHTNING ARRESTER

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ZNO ELEMENT TYPE D5



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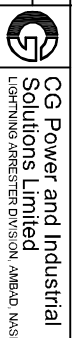
NOTE : DRAWING APPROVED TO BE CHECKED DURING APPROVAL

- NOTE :
1. Ur = 3.4kV
 2. Uc = 2.8kV
 3. NDC = 10kAP
 4. Station SL Type
 5. Line Discharge Class = Class 2 (As per IEC 60099-4 (2009))
 6. Qr(C) ≥ 1.0C

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CUSTOMER		TRANSMISSION CORPORATION OF ANDHRA PRADESH			
THIRD ANGLE PROJECTION		SCALE: NTS	INITIALS	NAME	TITLE :
ALL DIMN. UNITS OTHERWISE SPECIFIED.		DRN	NNJ		ZNO ELEMENT FOR CLASS-2, LA
GEN. TOL. ±6%		CHD	PSB		
DATE: 07.02.2024		APPD	NJ		
NO.	REVISION	DATE	DATE	CG. W.O. : APTRANSCO_STD_30kV	SH 1 OF 1
1				DRG NO. : 011 / 30 / 21547	REV 0



CG Power and Industrial Solutions Limited
LIGHTNING ARRESTER DIVISION, AMBAD NASKIK

A3297 / 420 / DIVISION - LIGHTNING ARRESTER

Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/IVT/CVT requirement and compatibility.

CG Power and Industrial Solutions Limited

Switchgear Division: Power Systems

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S4/GTP/APTRANSCO/30kV-SL/31/POR/001

ANNEXURE II (PORCELAIN SURGE ARRESTERS) GUARANTEED TECHNICAL PARTICULARS		
Sr.No	Description	33kV
1	Name of Manufacturer	CG Power and Industrial Solutions Limited
2	Arrester Class & Type	Station Class, Gapless type , SL Type
3	Applicable Standard	IEC 60099-4 (2014)
4	Rated Arrester Voltage (kV)	30
5	Maximum continuous operating Voltage (kV)	25.5
6	Nominal Discharge current (kA) with 8/20 micro-sec wave	10
7	Designation of Arrester Long Duration discharge class	Station Class, SL(Station Low duty) / Line Discharge Class - Class 2 (As per IEC 60099-4 (2009)
8	Long Duration Discharge Class (IEC:60099-4 Ed. 2.2, 2009)	Class 2
9	a. Thermal Energy Rating W _{th} in kJ/kV of U _r b. Repetitive charge transfer rating (Q _{rs}) in coulomb	W _{th} - 4 kJ/kV _{Ur} Q _{rs} - ≥1.0 C
10	Maximum Switching current impulse residual voltage at	
	I) 1000Amps	71
	ii) 500Amps	66
	ii) 250Amps	60
11	Maximum steep impulse residual voltage (1 / 20 micro second) current wave at 10kA (kVp)	101
12	Maximum residual voltage with 8/20 micro-sec wave (kVp)	
	I) 5 kA	85
	ii) 10kA	90
	III) 20kA	100
13	Safe Fault current (kA _{rms})	40kArms at 0. 2sec
14	Lightning Impulse withstand voltage of Arrester Housing with 1.2/50 micro-second wave (kVp)	170

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

Registered Office:

CG House, 6th Floor, Dr Annie Besant Road, Worli, Mumbai 400 030, India

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Corporate Identity Number: L99999MH1937PLC002641

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CG Power and Industrial Solutions Limited

Switchgear Division: Power Systems

A-3 MIDC, Ambad, Nashik 422 010, Maharashtra, India
T: +91 253 238 2271-75 F: +91 253 238 1247



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S4/GTP/APTRANSCO/30kV-SL/31/POR/001

15	One minute power frequency withstand voltage of housing (Dry/Wet) - kVrms	70
16	High current short duration impulse withstand level with 4/10 micro-sec wave (kA) Peak	100
17	Pressure Relief Class	Class A _ with pressure relief device
18	Over-voltage withstand Capability kVp	
	a) 10seconds	44
	b) 1 second	46
	c) 0.1 second	48
19	a) Reference Voltage (kV)	>= 30kV
	b) Reference current (mA)	3 mAp
20	Number of units per phase and rating of each unit.	Single
21	Minimum total creepage distance (mm)	1116
22	Leakage current (mA)	<= 3 mAp
23	Total weight of Arrester (kg)	25 kgs (approx)
24	Maximum cantilever strength of Surge Arrester (Including wind load) with maximum deflection	150kg (deflection less than 20mm)
25	Overall Height of Surge Arresters (mm)	Ref GA Drg.
26	Maximum distance recommended from equipment to be protected by Surge Arrester (mm)	As per IE rules
27	Minimum distance between grounded object	As per IE rules
28	Minimum distance between arrester phase legs	As per IE rules
29	Any other particulars	No
30	Partial Discharge level a 1.05COV to mention	Less than 10pC
31	Seismic Acceleration	0.3 g (Horizontal + Vertical)

Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/IVT/CVT requirement and compatibility.

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