

Sr. No.	Description	30
1	Make	CGPISL, INDIA
2	Type	Station Class, Gapless
3	Model	ZLA-4E
4	Standard	IEC 60099-4 (2014)
5	No. of units per arrester	Single Unit
6	Class	Station SH / Class 4
7	Nominal System Voltage	33
8	Ratings(rms)	30
9	Highest System Voltage	36
10	Max. Continuous Operating Voltage(MCOV)	25
11	Nominal Discharge current(8x20)	20
12	Maximum residual voltage(8x20)	
	5 kA	68
	10 kA	75
	20 kA	83
	40 kA	90
13	Switching current Impulse residual Voltage	
	2000 A	65
	500 A	60
14	High current Impulse withstand :kAp	100
15	Steep Front Current Impulse Max. Residual Voltage	95
16	Lightning Impulse residual Voltage (kVp) (8*20 usec)	
	5 kA	68
	10 kA	75
	20 kA	83
17	Long duration Discharge Class	Station SH / Class 4
18	Energy discharge Capability (KJ/KV) of rated voltage	Min. 10KJ/kV
19	Pressure Relief Class :	Class A
20	Max. Radio Interference Voltage at COV(MV) :	Less than 2500 μ V
21	Reference Voltage at AMB, TEMP :	> 120
22	Reference Current at AMB, TEMP :	7
23	Resistive/Capacitive Components of Continuous :	0.5 /2.0
24	Power Freq. O/v Capability (kVrms) for	

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)

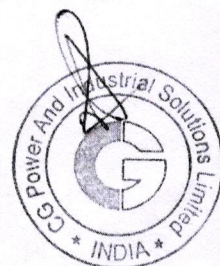
Bihar State Power Transmission Company Limited

Vidvat Bhawan, Patna-800021

31.07.23

ADOPTION

For M.T. 25 FEBRUARY 2023



68

0.1 Sec	37
1 Sec	36
10 Sec	34
100 Sec	33
25 Capability of withstand over voltage immediately	25
26 Arrester Housing Insulation withstand values	170
Lightning Impulse	NA
Switching Impulse	70
Power Freq. Dry/Wet	900
27 Creepage Distance (mm)	150
28 Cantilever Strength in kG	Yes
29 Voltage/Time Curve	Tender purpose drawing attached
30 Other dimensional details	70 ± 2
31 Diameter of Zinc Oxide blocks(in mm)	20 ± 2
32 Height of discs (in mm)	10 kJ/kV
33 Energy dissipation capability of the disc in Assembled	Yes , at the event of order
34 Calculation showing KJ/per KV rating of the ZnO	As per GA drawing
35 Details of thermal circuit employed for dissipation of heat	Yes attached
36 Copy of latest type test Report furnished or not	Tender purpose drawing attached
37 Height of complete unit from base to line side(mm)	NA
38 In case ring type blocks are used indicate dimension of O.D & I.D	

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhan Bhawan, Patna-800002

Sk
31-07-23

Ab



ADOPTION

For M/T 25 APR/BSPTCL/ 2023
SK

65

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CG Power & Industrial Solutions Limited
ZINC OXIDE SURGE ARRESTER

Model No. : ZLA-4E
HSV : 36
N.D.C (kAp) : 20
Year of Mfg : 2023
Designation : SH
Qrs (C) : 2.4C
Sr.No. : *****
Rated Voltage (kVrms) : 30
MCOV (kVrms) : 25
Pr. Rel. Current (kArms) : 40
Appr. Wt. (kg) : 30
Rated Freq. (Hz) : 50

105

ARRESTER NAME PLATE

ADOPTION

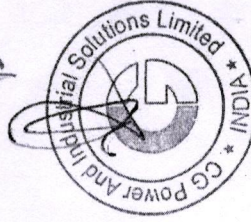
For NIT 25 APR/BSPTCU 2023

APPROVED

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Electrical-Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidwat Bhawan, Patna-800021

SK
31.07.23



OWNER : BIHAR STATE POWER TRANSMISSION COMPANY LTD.

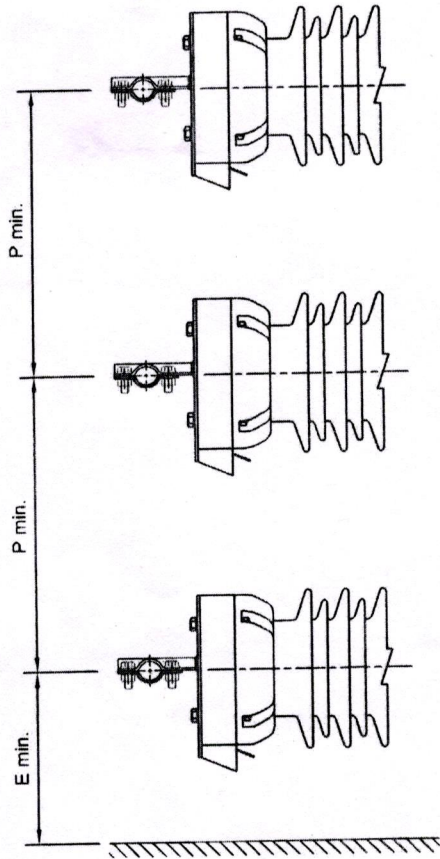
CUSTOMER : SHYAMA POWER INDIA LIMITED

PROJECT : CONSTRUCTION OF (2X160MVA+3X50MVA) 220/132/33kV GSS, TAJPUR (DIST.-SAMASTIPUR) & THAKURGANJ (DIST.-KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV DIC TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADIH ON TURNKEY BASIS

NOA NO. : 01/TRANS/MISC/P-1/1012022 LTD. DT 03-03-2023

THIRD ANGLE PROJECTION			TITLE	
SCALE	NIS	INITIALS	NAME	
ALL DIMS IN mm	DRN	NNJ	ARRESTER NAME PLATE FOR 30kV, CL-4, SH TYPE SA	
DIMENSIONS OTHERWISE SPECIFIED	CHD	PSB	CG Power and Industrial Solutions Limited	
GEN. TO.	APPD	NJ	LIGHTNING ARRESTER DIVISION, AMBAC, NAGP	
±6%			DRG NO : G-033 / 30 / ZN0878	
NO	REVISION	DATE	COL W.O. : ZN0878	
3		22.05.2023	REV 0	
2			SH-1 OF 1	

IF IN DOUBT, ASK



APPROVED

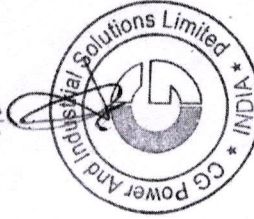
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidvat Bhawan, Patna-800021

E min. - MINIMUM RECOMMENDED CLEARANCES BETWEEN CENTRE OF ARRESTER AND EARTHED OBJECT.
E min. - MINIMUM RECOMMENDED CLEARANCE BETWEEN TWO ADJACENT PHASE OF ARRESTER.

TABLE

SR.NO.	LA RATED VOLTAGE (KV)	E min. (mm)	P min. (mm)
1.	30	500	700



All information contained in this document is confidential & should not be used without prior consent of CG Power and Industrial Solutions Limited

OWNER	BIHAR STATE POWER TRANSMISSION COMPANY LTD.		
CUSTOMER	SHYAMA POWER INDIA LIMITED		
PROJECT	CONSTRUCTION OF (2X160MVA+3X500MVA) 220/132/33KV GSS, TAJPUR (DIST.-SAMASTIPUR) & THAKURGANGU (DIST.-KISHANGANJ) WITH SAS ON TURKEY BASIS ALONG WITH CONSTRUCTION OF 220KV DIC TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADH ON TURKEY BASIS		
NOA NO.	01/TRANS/MISCP/11/01/2022 LTD. DT. 03-03-2023		
3	SCALE: NTS	THIRD ANGLE PROJECTION	TITLE: MIN. RECOMMENDED CLEARANCES
2	ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED	INITIALS	NAME
	GEN. TOL. ±0%	DRN	NNJ
		CHD	PSB
		APPD	NJ
NO.	REVISION	DATE	DATE: 22.05.2023
4			
5			
6			

ADOPTION

For NIT 25 - PROSPTCU 2023

4

CG Power and Industrial Solutions Limited	
LIGHTNING ARRESTER DIVISION, AMBAC NAGY	
DRG NO. : G - 007 / ZN0878	REV 0
COL W.O. : ZN0878	SHEET 1

1

	C
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A-3 297 - 420 : DIVISION - LIGHTNING ARRESTER

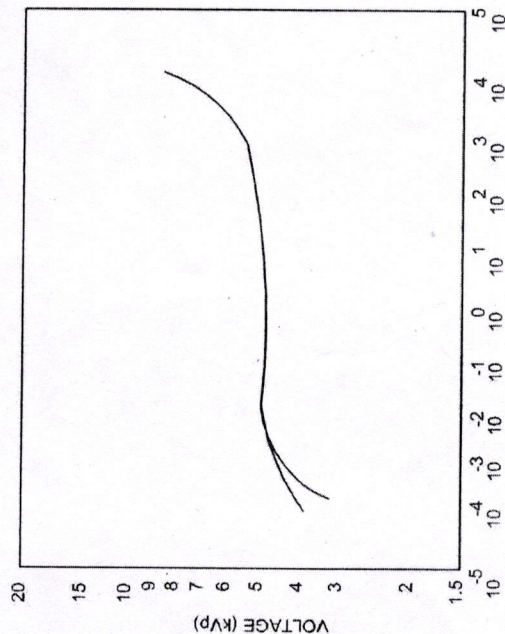
IF IN DOUBT, ASK

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POWER FREQUENCY VOLTAGE Vs CURRENT CHARACTERISTICS

ADDITION

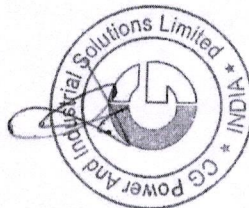
For Ref 25 - 25/05/2023



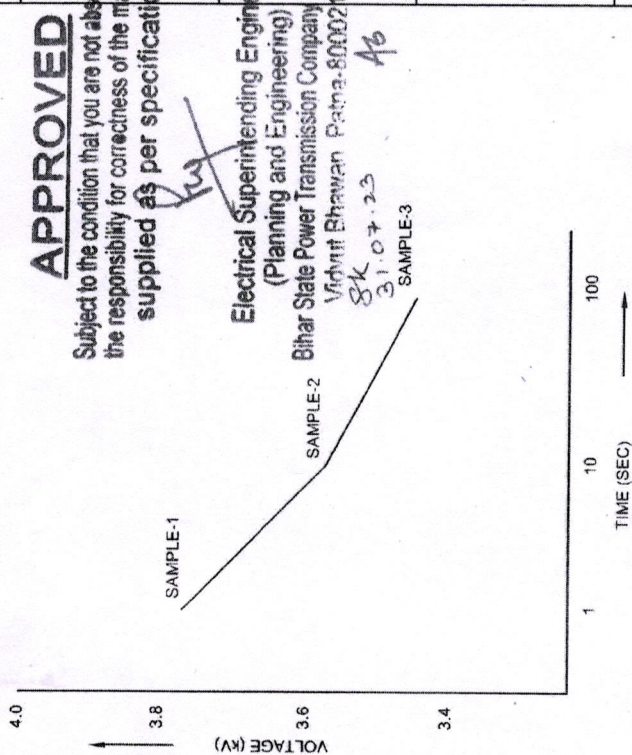
CURRENT (A)

NOTE :

1. Ur = 3kV
2. Uc = 2.8kV
3. NDC = 10kAp
4. FOLLOWING GRAPH REPRESENTS ONLY FOR SINGLE ZnO BLOCK FOR OFFERED RATING.



POWER FREQUENCY VOLTAGE Vs TIME CHARACTERISTICS



APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhan Bhawan Patna-800026

8K 07.23
31.07.23
SAMPLE-3
AB

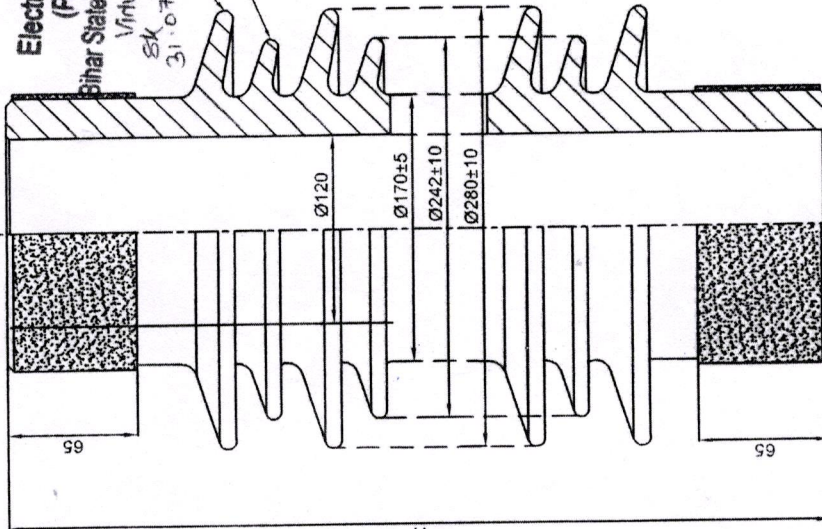
OWNER	BIHAR STATE POWER TRANSMISSION COMPANY LTD.				
CUSTOMER	SHYAMA POWER INDIA LIMITED				
PROJECT	CONSTRUCTION OF (2X150MVA+3X50MVA), 220/132/33KV GSS, TAJPUR (DIST -SAWASTIPUR) & THAKURGANI (DIST -KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV DC TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADIH ON TURNKEY BASIS				
NOA NO.	01/TRANSMISC/P-1/10/2022 LTD. DT 03-03-2023				
THIRD ANGLE PROJECTION					
SCALE: NTS	INITIALS NAME				
ALL DIMN. IN mm UNLESS OTHERWISE SPECIFIED	DRN NNJ				
GEN. TOL. ±5%	C-D PSB				
DATE	APPD NJ				
NO	REVISION	DATE	DATE	DATE	DATE
3					
2					
1					
CG Power and Industrial Solutions Limited				LIGHTNING ARRESTER DIV./SON, AMBAC NASK	
DRG NO. : G-057 / 30/120/216ZN0878				REV 0	
COL W.O. : ZN0878				S-1 OF 1	

APPROVED

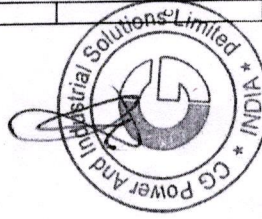
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vikram Bhawan, Patna-800021
8K.07.23
31.07.23

BIG SHED (B) 46
SMALL SHED (S)



RATED VOLTAGE (KV)	HEIGHT (H) mm	TOTAL CREEPAGE (mm)
30KV	500	900



BIHAR STATE POWER TRANSMISSION COMPANY LTD.

SHYAMA POWER INDIA LIMITED

CONSTRUCTION OF (2X180MVA+3X500MVA) 220/132/33KV GSS, TAJPUR (DIST.-SAMASTIPUR) & THAKURGANJ (DIST.-KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV D/C TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADIH ON TURNKEY BASIS

01/TRANSMISC/P-1/10/2022 LTD. DT.03-03-2023

TITLE

PORCELAIN INSULATOR FOR 30KV, CL-4, SH TYPE SA

CG Power and Industrial Solutions Limited
LIGHTNING ARRESTER DIVISION, AIRBAG, N.S.

DRG NO : G-008 / 30 / ZN0878

REV 0

NOTE:

1. ELECTRICAL TEST AS PER IS : 5621
2. SHED PROFILE IEC : 815
3. PORCELAIN COLOUR : GLAZE-BROWN

ADOPTION

For M/T 25 /PR/BSPTCL/ 2023

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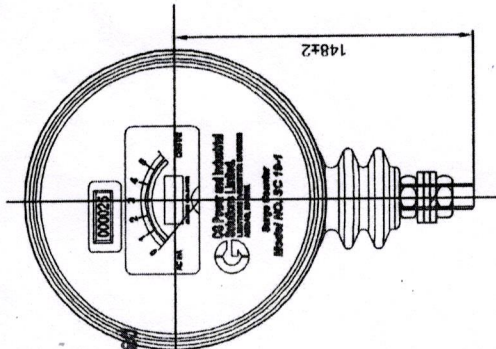
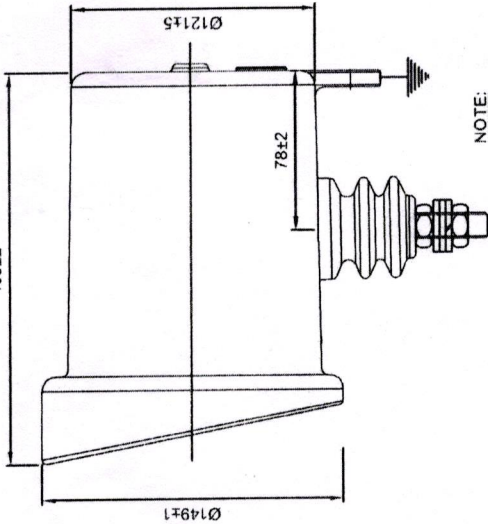
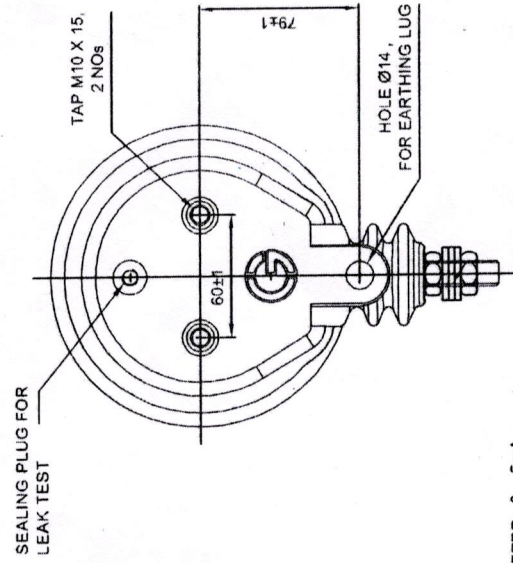
APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
1/4th Mile, Patna-800021

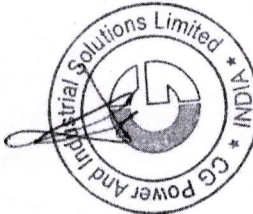
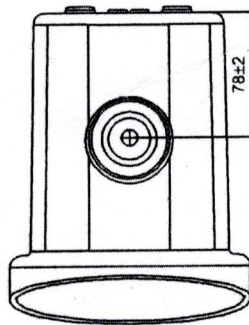
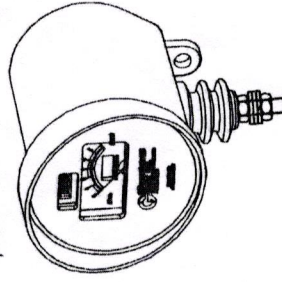
SK 2-23
3107-23

IF IN DOUBT, ASK

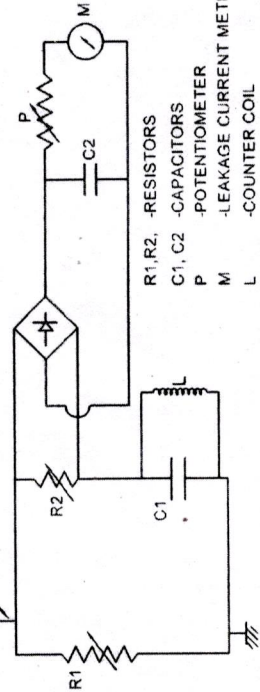


NOTE:

1. RANGE OF METER : 0 - 5mA.
* 0 - 3mA GREEN ZONE &
* 3 - 5mA RED ZONE.
2. HOUSING :
* MATERIAL : AL. ALLOY.
* PROTECTION : IP 67.
3. WEIGHT OF S.C. : 3±1kg APPROX.
4. MODEL NO. : SC 19-1
5. ELECTROMECHANICAL TYPE.
6. GASKET : BUTYL RUBBER
7. SURGE COUNTER SHOULD BE INSTALLED MINIMUM 1.5 METER FROM GROUND LEVEL.



FROM ARRESTER BOTTOM:



SCHEMATIC DIAGRAM

OWNER : BIHAR STATE POWER TRANSMISSION COMPANY LTD.

CUSTOMER : SHYAMA POWER INDIA LIMITED

PROJECT : CONSTRUCTION OF (2X160MVA+3X500MVA) 220/132/33KV GSS, TAJPUR (DIST.-SAMASTIPUR) & THAKURGANJ (DIST.-KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV D/C TRANSMISSION LINE FROM PGCIBANKA TO BGCL GORADIH ON TURNKEY BASIS

NO. NO. : 01/TRANSMIS/CP-11/01/2022 LTD. DT 03-03-2023

TITLE :

GENERAL ARRANGEMENT
DRAWING AND SCHEMATIC
DIAGRAM OF SURGE COUNTER

**CG Power and Industrial
Solutions Limited**
LIGHTNING ARRESTER DIVISION, AIRBAG, NAGP

DRG NO. : G - 064 / 30/120/216/ZN0878
REV : 0

CGL W.O. : ZN0878

DATE : 22.05.2023

REVISION

NO.

4

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8

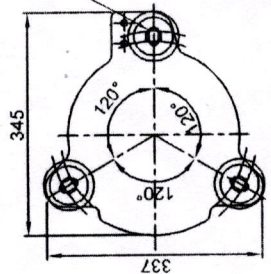
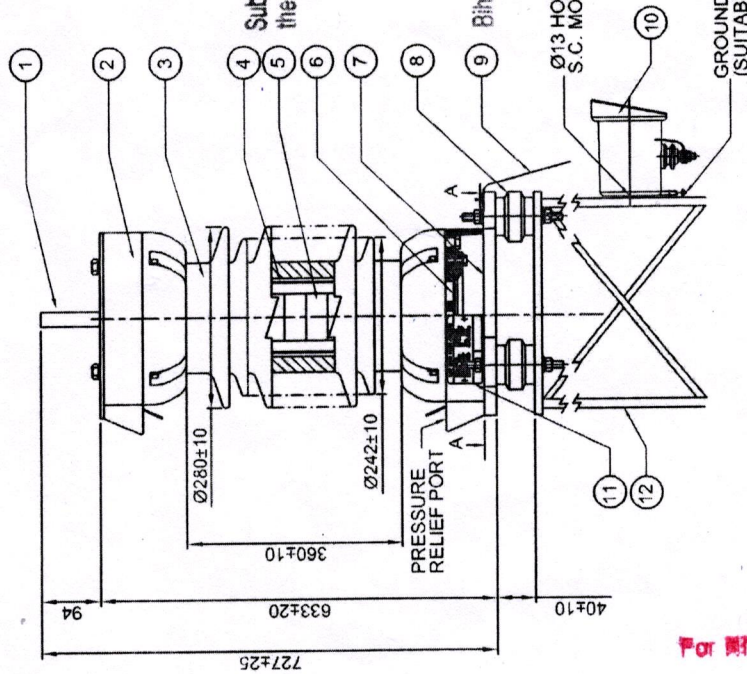
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ADOPTION

For M12 25 IPR/BSPTCU 2023

LA BASE MOUNTING DETAIL VIEW AA

APPROVED

Subject to the condition that you are not allowed to use the responsibility for correctness of the material supplied as per specification

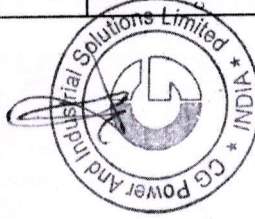
Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhan Bhawan, Patna-800021

Ø13 HOLE, 2 NOS. FOR S.C. MOUNTING, AT DIST. 190 mm

GROUND CONNECTION
(SUITABLE FOR M12 LUG)

BILL OF MATERIAL

ITEM NO.	ITEM	MATERIAL
1	LINE TERMINAL (STUD TYPE)	MS H.D.G.
2	FLANGE	AL ALLOY
3	INSULATOR	PORCELAIN (BROWN)
4	FRP TUBE	FIBER REINFORCED PLASTIC
5	ZnO ELEMENT	ZnO & ADDITIVES
	PRESSURE RELIEF PLATE	Cu CLAD PAPER PHENOLIC
	BASE PLATE	MS H.D.G.
	BASE INSULATOR	POLYCRETE / POXY
	CONNECTING LINK (L-1.5 M)	25 SQ. mm Cu STANDARD PVC INSULATED CABLE
10	SURGE COUNTER	ALUMINIUM
11	ARRESTER NAME PLATE	ALUMINIUM
	CUSTOMER SUPPORT STRUCTURE	NOT IN CGPISL SCOPE



NOTE:

1. RATED VOLTAGE : 30kV
2. CREEPAGE (min) : 900mm
3. WEIGHT (Approx) : 30±10%kg

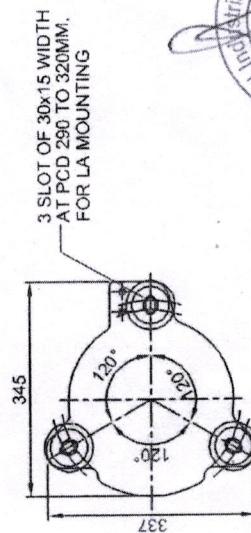
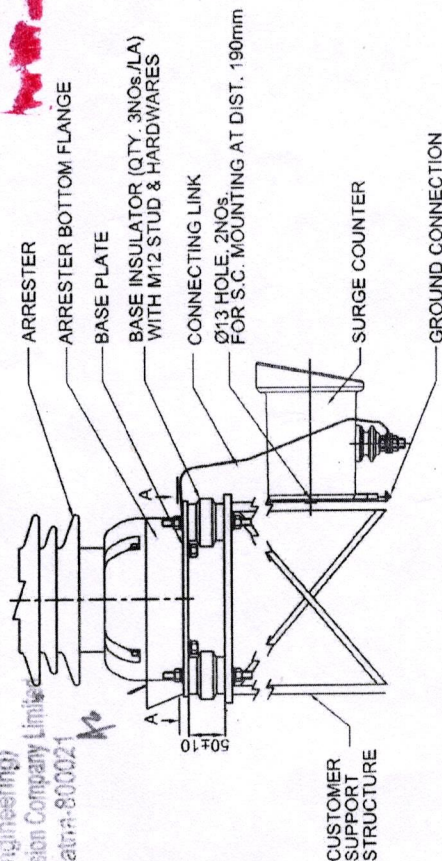
OWNER	BIHAR STATE POWER TRANSMISSION COMPANY LTD.	
CUSTOMER	SHYAMA POWER INDIA LIMITED	
PROJECT	CONSTRUCTION OF (2X160MVA+3X50MVA) 220/132/33KV GSS, TAJPUR (DIST.-SAMASTIPUR) & THAKURGANG (DIST.-KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV D/C TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADIH ON TURNKEY BASIS	
NOA NO.	01/TRANS/MISC/P-11/01/2022 LTD. DT. 03-03-2023	
3	THIRD ANGLE PROJECTION	
2	SCALE: NTS	
1	ALL DIM. IN mm UNLESS OTHERWISE SPECIFIED	
NO	REVISION	DATE
1	1	22.05.2023
TITLE: GENERAL ARRANGEMENT FOR 30KV CL-4 SH TYPE SURGE ARRESTER		
CG Power and Industrial Solutions Limited		
LIGHTNING ARRESTER DIVISION, AIRBAG NASY		
REV	DRG NO.	42345
0	CGL WO.	ZN0878
S-1 OF 1		

Subject to the condition that you are not released of the responsibility for the fitness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidya Vihar, Patna-800021

Sk
31.07.23

IF IN DOUBT



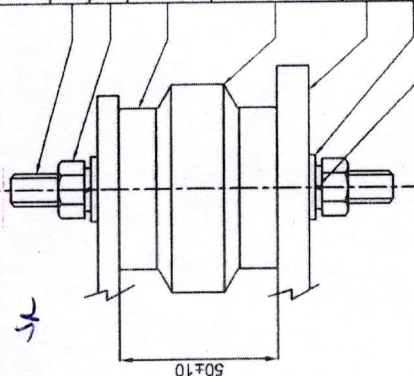
LA BASE MOUNTING DETAIL VIEW AA

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43 297 - 420 - DIVISION - LIGHTNING ARRESTER

ADOPTION

25-2023



DETAIL "X"

OWNER		BIHAR STATE POWER TRANSMISSION COMPANY LTD.	
CUSTOMER		SHYAMA POWER INDIA LIMITED	
PROJECT	CONSTRUCTION OF (2X150MVA+3X50MVA), 220/132/33KV GSS, TAJPUR (DIST-SAMASTIPUR) & THAKURGANJ (DIST -KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV D/C TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADIGH ON TURNKEY BASIS .		
NOM NO	01/TRANSMISCIP-1/10/12022 LTD. DT 03-03-2023		
3	THIRD ANGLE SURVEY		TITLE : INSULATING BASE ASSY. AND SURGE CURRENT MOUNTING DETAILS FOR 216KV, CL-4,SH TYPE SA
2	SCALE: N/S	INITIALS	NAME
1	ALL DIMN IN MM UNLESS OTHERWISE SPECIFIED.	DSN	NNJ
	GEN TOL. ±6%	APPD	PSB
DATE	DATE:		22.05.2023
SIGNATURE	SGL W/O :		ZNOR28
REV	DRG NO :		G-075 / 301/2021/16ZNU0878
0	SGL D/E :		0

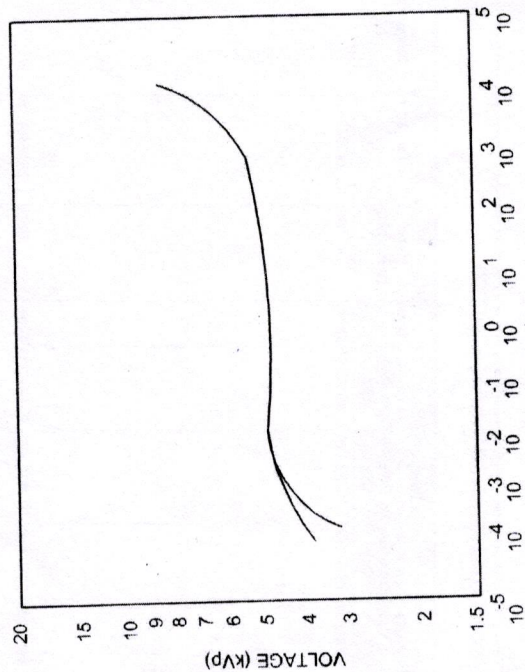
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IF IN DOUBT, ASK

POWER FREQUENCY VOLTAGE VS CURRENT CHARACTERISTICS

ADOPTION

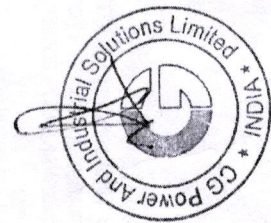
FOR INT 25 IPRISPTCL 2023



CURRENT (A)

NOTE :

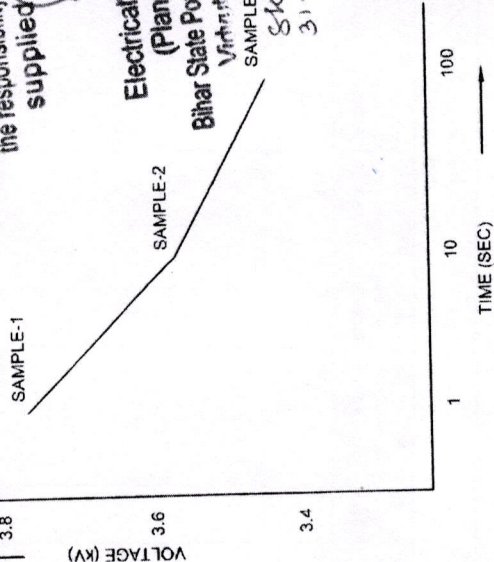
1. $U_r = 3kV$
2. $U_c = 2.8kV$
3. $NDC = 10kA$
4. FOLLOWING GRAPH REPRESENTS ONLY FOR SINGLE ZnO BLOCK FOR OFFERED RATING.



POWER FREQUENCY VOLTAGE VS TIME CHARACTERISTICS

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification



Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vijay Pratap Singh, Patna-800021

SK 31.07.23
SAMPLE-3

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OWNER	BIHAR STATE POWER TRANSMISSION COMPANY LTD.	
CUSTOMER	SHYAMA POWER INDIA LIMITED	
PROJECT	CONSTRUCTION OF (2X160MVA+3X50MVA), 220/132/33KV GSS, TAJPUR (DIST. SAMASTIPUR) & THAKURGANGA (DIST. KISHANGANJ) WITH SAS ON TURNKEY BASIS ALONG WITH CONSTRUCTION OF 220KV DIC TRANSMISSION LINE FROM PGCILBANKA TO BGCL GORADIH ON TURNKEY BASIS	
NDA NO.	01/TRANS/MISC/P-1/101/2022 LTD. DT 03-03-2023	
TITLE :		
THIRD ANGLE PROJECTION		
SCALE: NTS	INITIALS	NAME
ALL DIM. IN UNLESS OTHERWISE SPECIFIED.	DRN	NNJ
GEN. TOL. ±8%	C-H	PSB
DATE	DATE	DATE
NO.	REVISION	DATE
3		
2		
1		
CG Power and Industrial Solutions Limited		DRG NO. : G-057 / 30/120/216/ZN0878
LIGHTNING ARRESTER DIVISION, AIRBAG, NAGPUR		REV. 0
CGL WO. : ZN0878		SHEET OF