

ANNEXURE - II
GUARANTEED TECHNICAL PARTICULARS



Sr.No	Description	220kV
1	Name of Manufacturer	Crompton Greaves Ltd
2	Arrester Class & Type	Station Class, Gapless type
3	Applicable Standard	IEC 99-4
4	Rated Arrester Voltage (kV)	216
5	Maximum continuous operating Voltage (kV)	175
6	Nominal Discharge current (kA) with 8/20 micro-sec wave	10
7	Long Duration discharge class	3
8	Minimum Energy discharge Capability (kJ/kV)	6.0
9	Maximum Switching current impulse residual voltage at	
	i) 1000Amps	496
	ii) 250Amps	468
10	Maximum residual voltage with 1 micro second current wave at 10kA (kVp)	660
11	Maximum residual voltage with 8/20 micro-sec wave (kVp)	
	i) 5 kA	567
	ii) 10kA	600
	III) 20kA	668
12	Safe Fault current (kA)	40
13	Lightning Impulse withstand voltage of Arrester Housing with 1.2/50 micro-second wave (kVp)	1050
14	One minute power frequency withstand voltage of housing (Dry/Wet) - kVrms	460
15	High current short duration impulse withstand level with 4/10 micro-sec wave (kA) Peak	100
16	pressure Relief Class	A
17	Over-voltage withstand Capability kVp	
	a) 10seconds	351
	b) 1 second	366
	c) 0.1 second	382
18	a) Reference Voltage (kV)	≥ 216 kV
	b) Reference current (mA)	5 mA
19	Number of units per phase and rating of each unit.	3(Each of 72kV)
20	Minimum total creepage distance (mm)	6125
21	Leakage current (mA)	≤ 3 mA
22	Total weight of Arrester (kg)	150 kgs (approx)
23	Maximum cantilever strength of Surge Arrester (Including wind load)	725 kg-m
24	Overall Height of Surge Arresters (mm)	Ref GA Drg.
25	Maximum distance recommended from equipment to be protected by Surge Arrester (mm)	2.5 m
26	Minimum distance between grounded object	As per IE rules
27	Minimum distance between arrester phase legs	As per IE rules
28	Any other particulars	No

Standardised Guaranteed Technical Particulars for 216 KV
Lightning Arrester (Crompton Greaves Ltd make)
STD/GTP-DWG/Approval No. 209-1 Revision No. 0
Prepared & Approved during October - 2011

29. The type tests should have been conducted not earlier than 5 years in the standard third party laboratory. The manufacturer shall produce the type test reports at the time of acceptance tests.
30. Quality of material & applicable standard - BIS. The manufacturer shall produce the valid BIS certification at the time of acceptance tests.

APPROVED FOR TURNKEY PROJECTS

APTRANSCO-216-120-30kv-STANDERED-D6.xls

1 *

29/10/2011
CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

IF IN DOUBT, ASK

STD. LIST OF DRAWING FOR 216KV LIGHTNING ARRESTER

DRAWING NAME	DRAWING NO.
GENERAL ARRENGEMNT	31402
RECOMMANDED MIN.CLERENCES	G-007/216
C/S VIEW & PR RELIEF ARRANGEMENT	G-006/216
PORCELAIN INSULATOR	G-008/216
TOP TERMINAL PLATE AND TERMINAL CONNECTOR	G-041C/216
NAME PLATE	G-033/216
INSULATING BASE ASSY & SC MTG	G-075/216
SURGE COUNTER DRAWING	G-083
GRADING RING	G-022/216
V-T CHARECTERISTICS	G-057A
V-I CHARECTERISTICS	G-057
STD. GTP	STD.GTP/216

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[Signature]
CHIEF ENGINEER / CONSTRUCTION-1
A. TRANSCO/VIDYUTHA SOJJA/RYD.

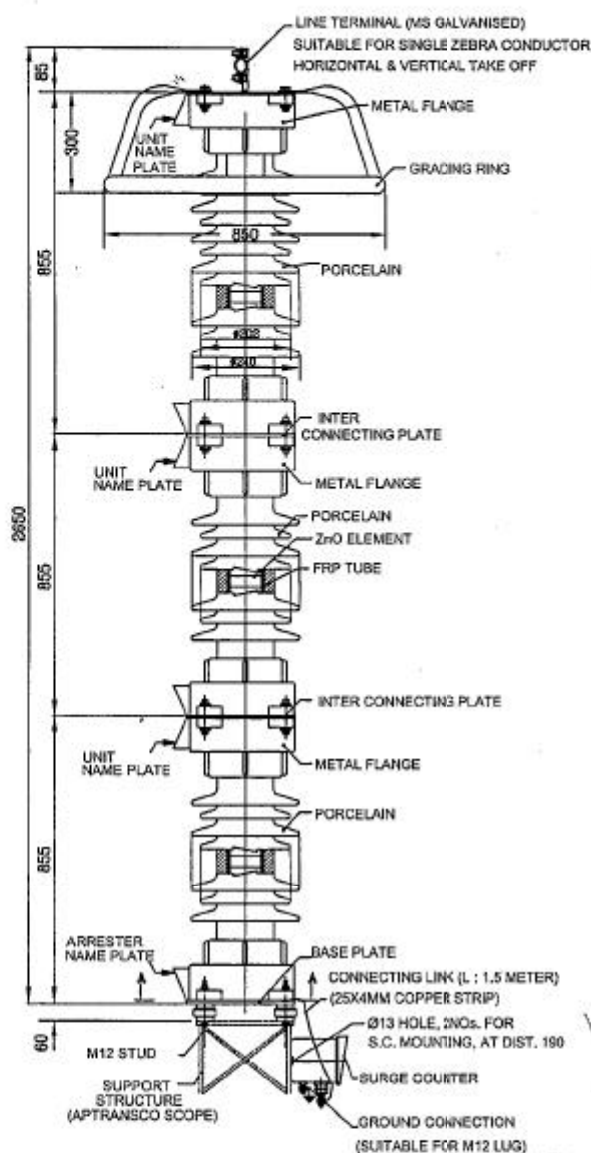
STANDARD DRAWING

	Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make).
	STD/GTP-DWG/Approval No. 209-2-sheet 1 Revision No. 0
	Prepared & Approved during October-2011
	Customer ref : APTRANSCO Title:List of Drg for 216KV Lightning Arrestor

CUSTOMER : TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

3				THIRD ANGLE PROJECTION			TITLE : STD. LIST OF DRG FOR 216KV LIGHTNING ARRESTER		
				SCALE: NTS		INITIALS	NAME		
2				ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ			Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASIK.
					CHD	MDD			
1				GEN. TOL. ±5%	APPD	MSZ		DRG.NO: G-00L/30	
NO		REVISION		SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —	
								SH 1 OF 1	

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NOTE:

1. RATED VOLTAGE : 216kV
2. CREEPAGE (min) : 6125mm
3. WEIGHT (Approx) : 150kg

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CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.



Standardised Drawing for 216 KV Lightning Arrester (Crompton Greaves Ltd make).

STD/GTP-DWG/Approval No. 209-2-sheet 2 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

Title: General arrangement for 216KV Lightning Arrester Class-3

SA BASE MOUNTING DETAIL VIEW AA

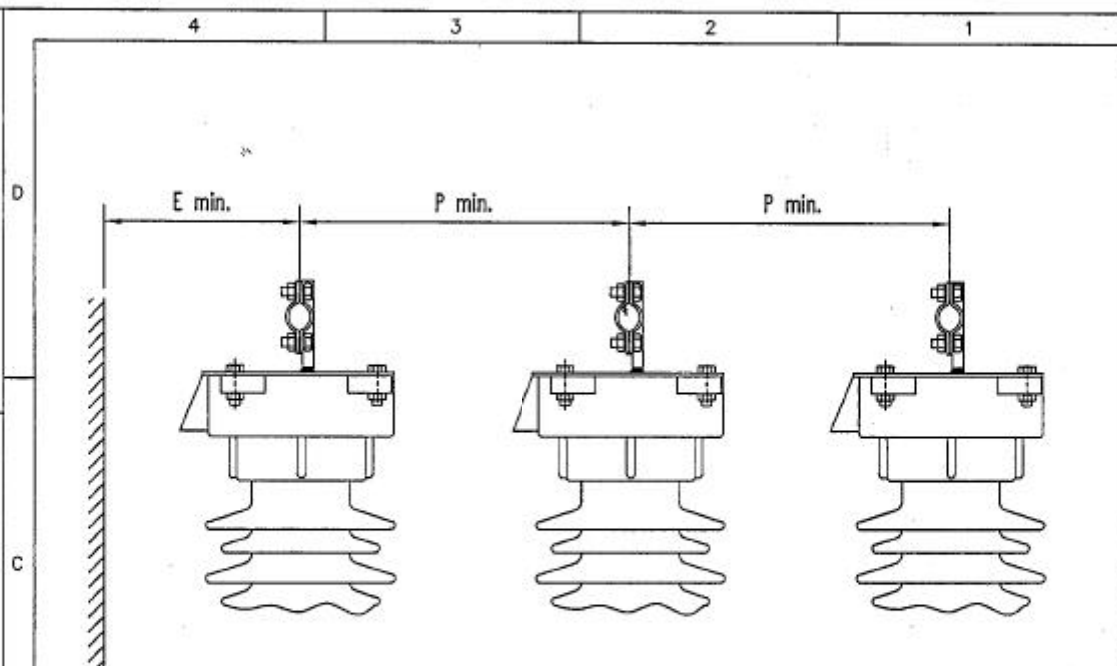
STANDARD DRAWING

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CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.						
3			THIRD ANGLE PROJECTION			TITLE : GENERAL ARRANGEMENT FOR 216kV, CLASS-3 LIGHTNING ARRESTER			
			SCALE: NTS		INITIALS				NAME
2			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ			Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASIK.	
				CHD	MDD				
1			GEN. TOL. ±5%	APPD	MSZ		DRG.NO: 31402		REV 0
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —			SH 1 OF 1

A4 210 * 297 : DIVISION - LIGHTNING ARRESTER

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

TABLE 1

SR.NO.	LA RATED VOLTAGE (kV)	E min. (mm)	P min. (mm)
1.	216	2850	3000

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CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

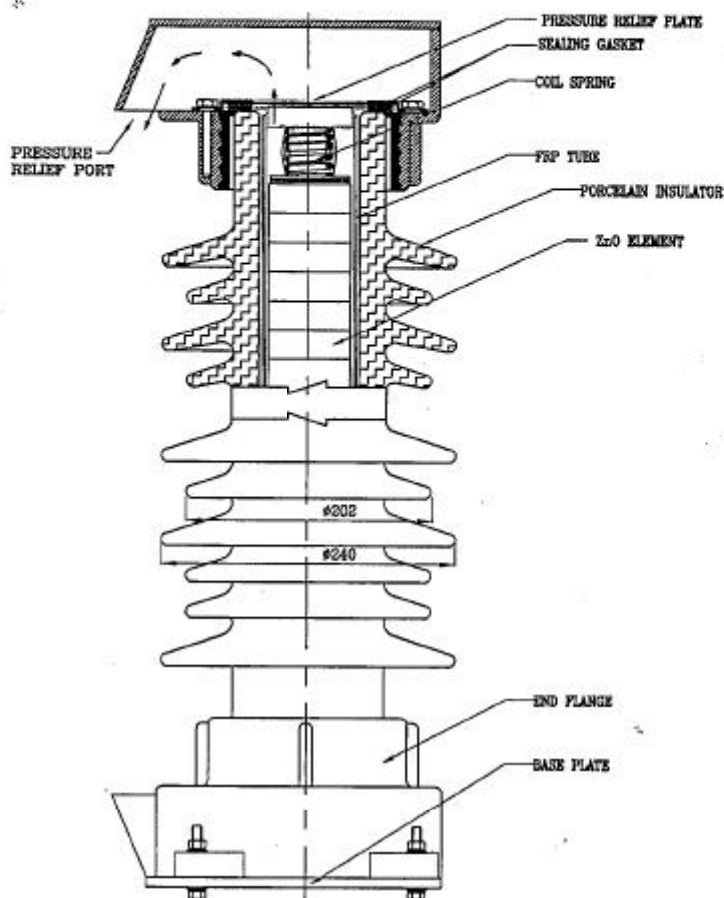
	Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-2-sheet3 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
	Title:Min. recommended clearance for 216KV LA Class-3

STANDARD DRAWING

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CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.		
3			THIRD ANGLE PROJECTION		
2			SCALE: NTS	INITIALS	NAME
1			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN VSJ	
			GEN. TOL. $\pm 5\%$	APPD MSZ	
NO			REVISION	SIGN	DATE
					DATE: 02/07/2011
			TITLE : MIN. RECOMMENDED CLEARANCES FOR 216KV LA CLASS-3		
			Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGAL.		
			DRG.NO: G-007/216		
			REV 0		
			CGL W.O.: —		
			SH 1 OF 1		

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NOTE:

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

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[Signature]
 CHIEF ENGINEER / CONSTRUCTION-1
 APTRANSCO/VIJAYITH SOJJA/HYD.

	Standardised Drawing for 216 KV Lightning Arrester (Crompton Greaves Ltd make).
	STD/GTP-DWG/Approval No. 209-2-sheet 4 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Cross Sectional view & Pressure relief arrangement for 216KVA	

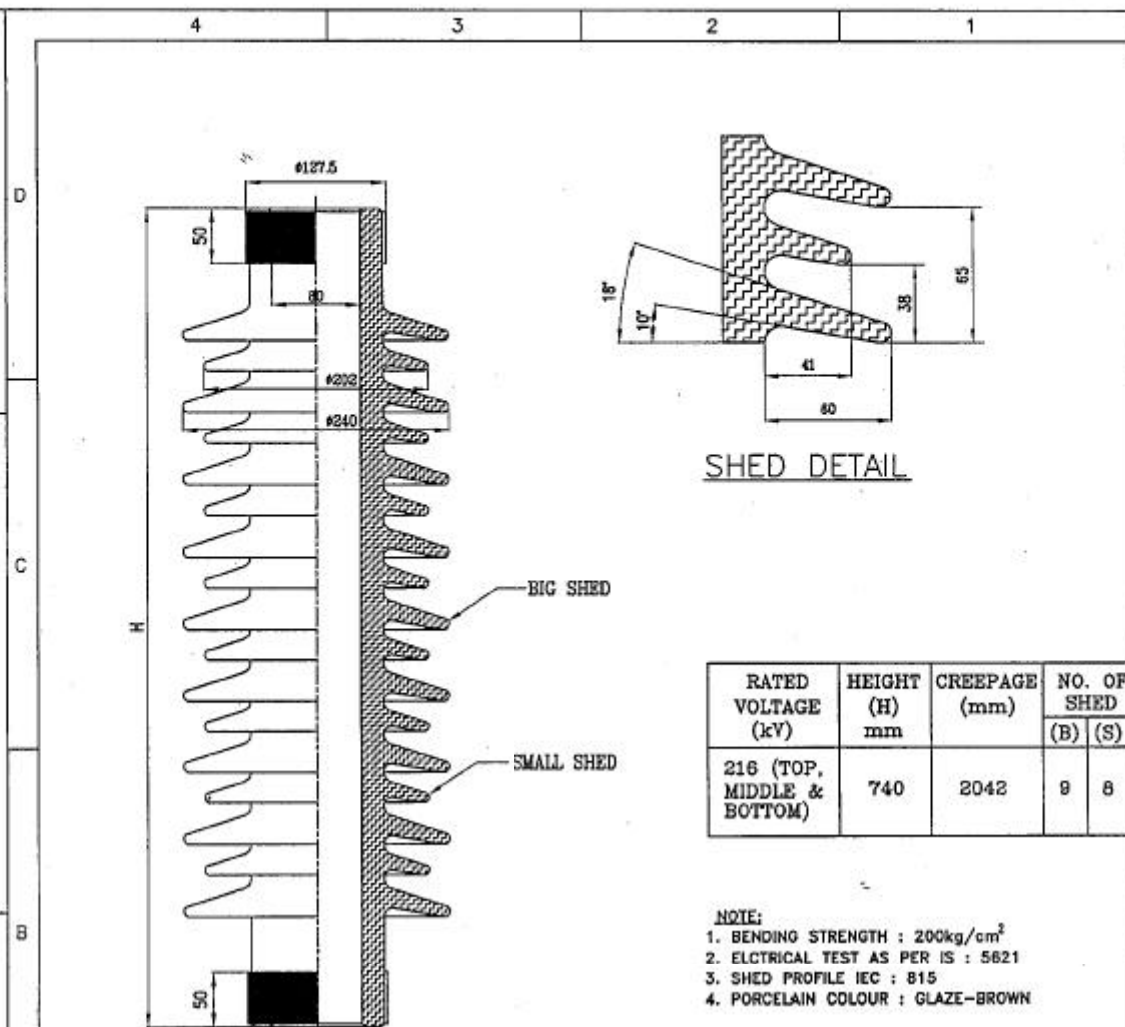
STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				TITLE :		CROSS SECTIONAL VIEW & PRESSURE RELIEF ARRANGEMENT FOR 216KV	
3		THIRD ANGLE PROJECTION							
		SCALE: NTS		INITIALS	NAME				
2		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ					
			CHD	MDD					
1		GEN. TOL. $\pm 5\%$	APPD	MSZ					
NO		REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —		SH 1 OF 1	REV 0

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- NOTE:**
- BENDING STRENGTH : 200kg/cm²
 - ELECTRICAL TEST AS PER IS : 5821
 - SHED PROFILE IEC : 815
 - PORCELAIN COLOUR : GLAZE-BROWN

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CHIEF ENGINEER CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

NOTE:
ROUTINE & ACCEPTANCE TEST AS PER IS 3070 P-III, IS 15086 P-I, IEC-99-4.

	Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-2-sheet 5 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Porcelain Insulator for 216 Class -3 LA	

STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				TITLE : PORCELAIN INSULATOR FOR 216KV CLASS-3 LA			
3		THIRD ANGLE PROJECTION			Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGIK.				
2		SCALE: NTS	DRN	VSJ				INITIALS	NAME
1		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	CHD	MDD					
		GEN. TOL. ±5%	APPD	MSZ		DRG.NO: G-008/216	REV 0		
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —	SH 1 OF 1		

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4	3	2	1
D			
C			
B			
A			

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[Signature]
 CHIEF ENGINEER / CONSTRUCTION-1
 APTRANSCO/VIDYUTH SOUDHA/HYD.

STANDARD DRAWING

		Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make).. STD/GTP-DWG/Approval No. 209-2-sheet 6 Revision No. 0 Prepared & Approved during October - 2011 Customer ref : APTRANSCO Title: Top terminal plate terminal connector for 216KV, CL-3
CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.
3		THIRD ANGLE PROJECTION SCALE: NTS INITIALS NAME
2		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED. DRN VSJ CHD MDD
1		GEN. TOL. ±5% APFD MSZ
NO	REVISION	SIGN DATE
		DATE: 02/07/2011
		DRG.NO: G-041C/216
		REV 0
		CGL W.O.: —
		SH 1 OF 1

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DRG.NO:

ZINC OXIDE SURGE ARRESTER

MODEL NO. ZLASE SR. NO.
 RATED VOLTAGE OF UNIT kV 72
 POSITION OF UNIT T10P MOV kV 5.6
 YEAR OF MFG. 2011 LD CLASS 3

105

TOP UNIT

ZINC OXIDE SURGE ARRESTER

MODEL NO. ZLASE SR. NO.
 RATED VOLTAGE OF UNIT kV 72
 POSITION OF UNIT T10P MOV kV 5.6
 YEAR OF MFG. 2011 LD CLASS 3

105

ZINC OXIDE SURGE ARRESTER

MODEL NO. ZLASE SR. NO.
 RATED VOLTAGE OF UNIT kV 72
 POSITION OF UNIT T10P MOV kV 5.6
 YEAR OF MFG. 2011 LD CLASS 3

105

MID UNIT

ZINC OXIDE SURGE ARRESTER

MODEL NO. ZLASE SR. NO.
 RATED VOLTAGE OF UNIT kV 72
 POSITION OF UNIT T10P MOV kV 5.6
 YEAR OF MFG. 2011 LD CLASS 3

105

ARRESTER NAME PLATE

BOTTOM UNIT

Standardised Drawing for 216 KV Lightning Arrester Crompton Greaves Ltd make).

STD/GTP-DWG/A Approval No. 209-2-sheet 7 Revision No. 0
 Prepared & Approved during October - 2011

Customer ref : APTRANSCO
 Title:Arrester & Unit Name plate for 216KV, Class-3

- NOTE:**
1. MATERIAL : ALUMINUM, 0.5mm THICKNESS
 2. ALL DIMENSION IN mm
 3. WHITE ENGRAVED LETTERS ON BLACK BACKGROUND

STANDARD DRAWING

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION
 APTRANSCO/WIDYUTH SOUJHA/MD.

THIRD ANGLE PROJECTION

NAME PLATE FOR 216KV, CLASS-3

Crompton Greaves Ltd.
 Lightning Arrester Division
 ZENES, INDIA.

DRG.NO: G-039/216

COL. W.O.:

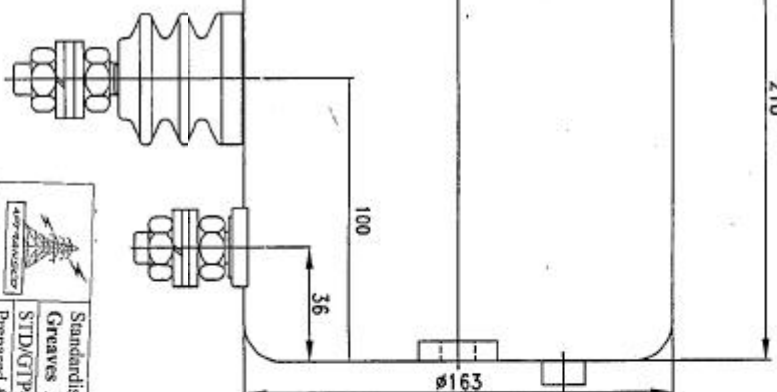
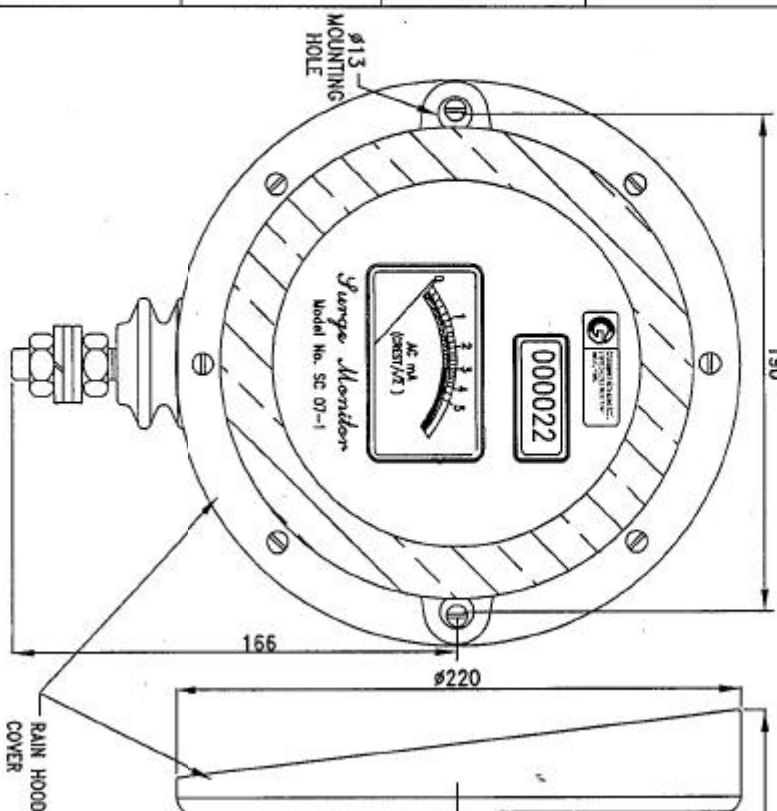
REV 0

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.	
NO	REVISION	DATE	DATE : 02/07/2011
1			
2			
3			
THIRD ANGLE PROJECTION		INITIALS	NAME
SCALE: HTS	ALL DIMS. IN MM.	DRN	VSJ
	UNLESS OTHERWISE SPECIFIED.	CHKD	MD
	APPD	MSZ	
	DATE : 02/07/2011		
	COL. W.O.:		
	SH 1 OF 1		

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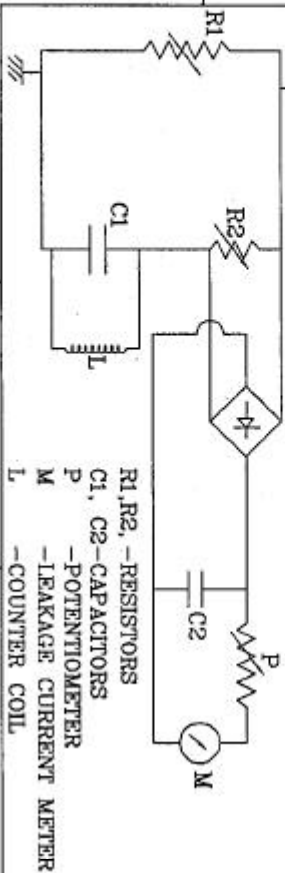
DRG.NO:



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. : 4kg APPROX.
4. MODEL NO. : SC 07-1

SCHEMATIC DAIGRAM



R1, R2 - RESISTORS
C1, C2 - CAPACITORS
P - POTENTIAL DIVIDER
M - LEAKAGE CURRENT METER
L - COUNTER COIL

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUT, SOUTH INDIA.

STANDARD DRAWING

Standardised Drawing for 216 KV Lightning Arrester (Crompton Greaves Ltd make).
STD/GTP-DWG/Approval No. 209-2-sheet 8 Revision No. 0
Customer ref : APTRANSCO
Title: General arrangement and Schematic diagram for surge arrester
Prepared & Approved during October - 2011

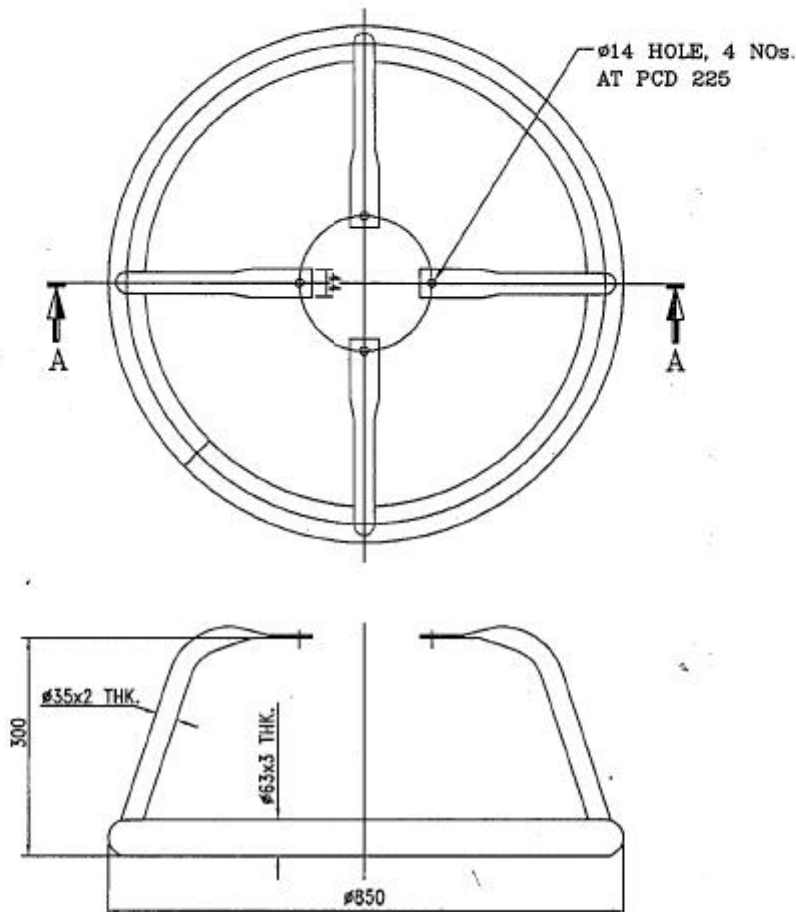
CUSTOMER : TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

NO	REVISION	DATE	THIRD ANGLE PROJECTION	SCALE	INITIALS	NAME	TITLE	DRG. NO.	REV
1			ALL DIMS. IN MM. DIMENSIONS SPECIFIED ON TOL. ±0.5	DNM	VSJ	NAME	GENERAL ARRANGEMENT DRAWING & SCHEMATIC DIAGRAM OF SURGE COUNTER	G-083	0
2				CHD	MDD				
3									



Crompton Greaves Ltd.
INDIAN ELECTRIC CORP.
DELHI, INDIA.

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APPROVED FOR TURNKEY PROJECTS

VIEW AA

CHIEF ENGINEER / CONSTRUCTION-1
A. TRANSCO/VIDYUTH SOUDHA/HYD.

NOTE:

1. FINISHING SMOOTH FREE FROM CAVITIES & PIN HOLES.
2. MATERIAL : ALUMINIUM



Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make)..

STD/GTP-DWG/Approval No. 209-2-sheet 9 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

Title: Grading ring for 216KV, CL-3

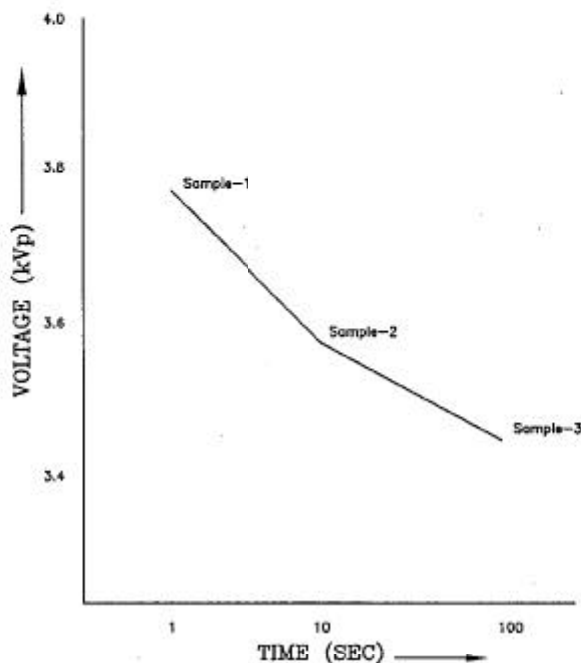
STANDARD DRAWING

CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				TITLE :	
3			THIRD ANGLE PROJECTION				GRADING RING FOR 216kV, cl-3	
			SCALE: NTS	DRN	VSJ	NAME	 Crompton Greaves Ltd. LIGHTNING ARRESTOR DIVISION AMBAH, MASIK.	
2			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	CHD	MDD			
1			GEN. TOL. ±5%	APFD	MSZ		DRG.NO: G-022/216	REV 0
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —		SH 1 OF 1

A4 210 * 297 : DIVISION - LIGHTNING ARRESTER

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POWER FREQUENCY VOLTAGE VS TIME CHARACTERISTICS

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION
A. TRANSCO, VIDYUTH SOUDHA/HYD.

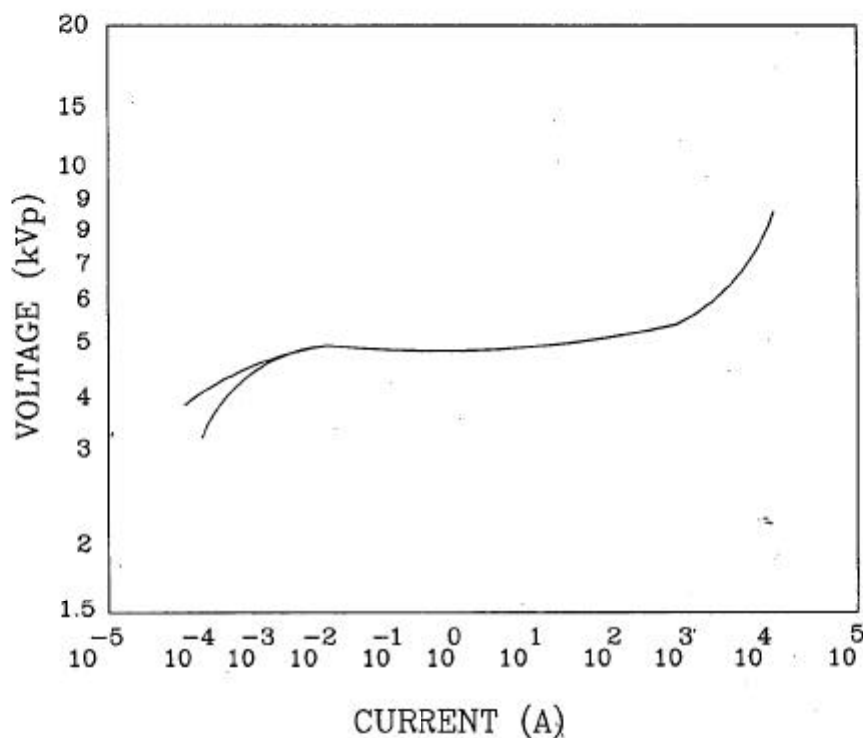
	Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-2-sheet 10 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO Title: Voltage - Time Characteristics

STANDARD DRAWING

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CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				
3		THIRD ANGLE PROJECTION			TITLE :	
		SCALE: NTS	INITIALS	NAME	VOLTAGE-TIME CHARACTERISTICS	
		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ		
CHD	MDD	Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGIE.				
1			GEN. TOL. ±5%	APPD	MSZ	DRG.NO: G-057A
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —	SH 1 OF 1

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Signature

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	Standardised Drawing for 216 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-2-sheet 11 Revision No. 0..
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Voltage - Current Characteristics	

STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				TITLE :		V-I CHARACTERISTICS		
3			THIRD ANGLE PROJECTION				Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION ANGRA, NAGAR.	DRG.NO: G-057	REV 0	
			SCALE: NTS		INITIALS					NAME
			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ					
2				CHD	MDD					
1			GEN. TOL. ±5%	APPD	MSZ					
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —		SH 1 OF 1		

ANNEXURE - II
GUARANTEED TECHNICAL PARTICULARS



Sr.No	Description	132kV
1	Name of Manufacturer	Crompton Greaves Ltd
2	Arrester Class & Type	Station Class, Gapless type
3	Applicable Standard	IEC 99-4
4	Rated Arrester Voltage (kV)	120
5	Maximum continuous operating Voltage (kV)	106
6	Nominal Discharge current (kA, with 8/20 micro-sec wave)	10
7	Long Duration discharge class	3
8	Minimum Energy discharge Capability (kJ/kV)	6.0
9	Maximum Switching current impulse residual voltage at	
	i) 1000Amps	285
	ii) 250Amps	280
10	Maximum residual voltage with 1 micro second current wave at 10kA (kVp)	385
11	Maximum residual voltage with 8/20 micro-sec wave (kVp)	
	i) 5 kA	325
	ii) 10kA	340
	iii) 20kA	385
12	Safe Fault current (kA)	40
13	Lightning Impulse withstand voltage of Arrester Housing with 1.2/50 micro-second wave (kVp)	650
14	One minute power frequency withstand voltage of housing (Dry/Wet) - kVrms	275
15	High current short duration impulse withstand level with 4/10 micro-sec wave (kA) Peak	100
16	pressure Relief Class	A
17	Over-voltage withstand Capability kVp	
	a) 10seconds	156
	b) 1 second	163
	c) 0.1 second	170
18	a) Reference Voltage (kV)	≥ 120 kV
	b) Reference current (mA)	5 mA
19	Number of units per phase and rating of each unit.	2(each of 60kv)
20	Minimum total creepage distance (mm)	3625
21	Leakage current (mA)	≤ 3 mA
22	Total weight of Arrester (kg)	100kg approx
23	Maximum cantilever strength of Surge Arrester (Including wind load)	725 kg-m
24	Overall Height of Surge Arresters (mm)	Ref GA Drg.
25	Maximum distance recommended from equipment to be protected by Surge Arrester (mn)	2.5 m
26	Minimum distance between grounded object	As per IE rules
27	Minimum distance between arrester phase legs	As per IE rules
28	Any other particulars	No

Standardised Guaranteed Technical Particulars 120 KV Lightning Arrester (Crompton Greaves Ltd make) STD/GTP-DWG/Approval No. 209-3 Revision No. 0 Prepared & Approved during October - 2011	

29. The type tests should have been conducted not earlier than 5 years in the standard third party laboratory. The manufacturer shall produce the type test reports at the time of acceptance tests.

30. Quality of material & applicable standard - BIS. The manufacturer shall produce the valid BIS certification at the time of acceptance tests.

APTRANSCO-216-120-30kv-STANDERED-D6.xls

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CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

IF IN DOUBT, ASK

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STD. LIST OF DRAWING FOR 120KV LIGHTNING ARRESTER

DRAWING NAME	DRAWING NO.
GENERAL ARRENGEMNT	31403
RECOMMANDED MIN.CLERENCES	G-007/120
C/S VIEW & PR RELIEF ARRANGEMENT	G-008/120
PORCELAIN INSULATOR	G-008/120
TOP TERMINAL PLATE AND TERMINAL CONNECTOR	G-041C/120
NAME PLATE	G-033/120
INSULATING BASE ASSY & SC MTG	G-075/120
SURGE COUNTER DRAWING	G-083
V-T CHARECTERISTICS	G-057A
V-I CHARECTERISTICS	G-057
STD. GTP	STD.GTP/120



Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make)..

STD/GTP-DWG/Approval No. 209-4-sheet 1 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

Title:List of Drg for 120KV Lightning Arestor

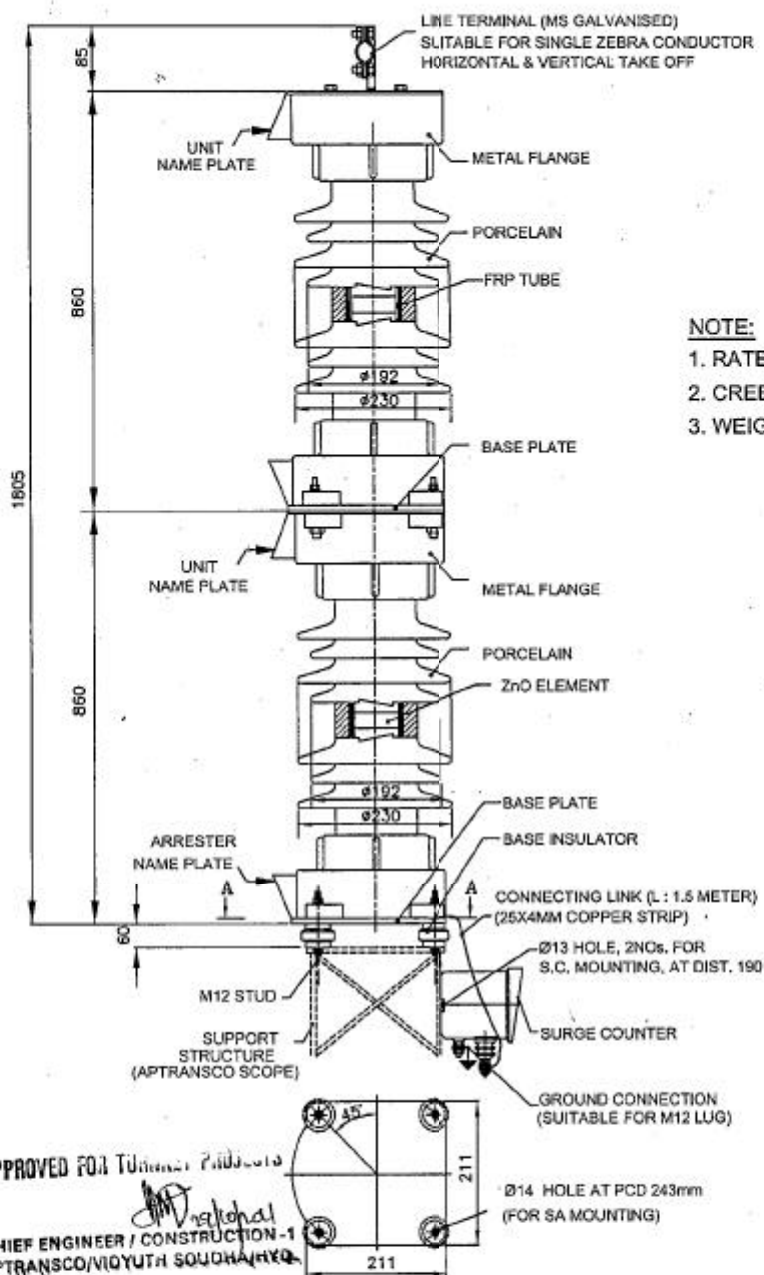
APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION
APTRANSCO/VIDYUTH SOUGHV U

STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3		THIRD ANGLE PROJECTION			TITLE :
2		SCALE: NTS	DRN	VSJ	STD. LIST OF DRG FOR 120KV LIGHTNING ARRESTER
1		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	CHD	MDD	 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASEK.
		GEN. TOL ±5%	APPJ	MSZ	
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	DRG.NO: G-00L/120
				CGL W.O.: —	REV 0
				SH 1 OF 1	

IF IN DOUBT, ASK



- NOTE:**
1. RATED VOLTAGE : 120kV
 2. CREEPAGE (min) : 3625mm
 3. WEIGHT (Approx) : 100kg

APPROVED FOR TUNING PRODUCT
CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIOYUTH SODHANIK

SA BASE MOUNTING DETAIL VIEW AA

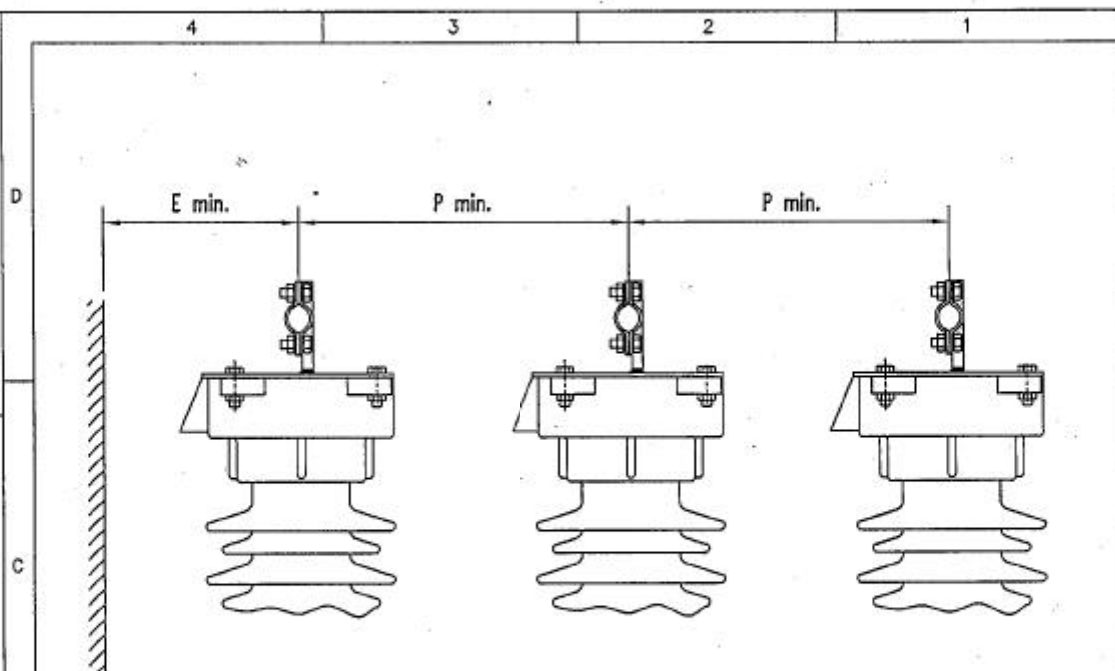
Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make).
STD/GTP-DW/G/Approval No. 209-4-sheet 2, Revision No. 0
Prepared & Approved during October - 2011
Customer ref : APTRANSCO
Title: General arrangement for 120 KV Lightning Arrestor Class-3

STANDARD DRAWING

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CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			TITLE :	
3			THIRD ANGLE PROJECTION			GENERAL ARRANGEMENT FOR 120KV, CLASS-3 LIGHTNING ARRESTER	
			SCALE: NTS	DRN	VSJ		
2			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	CHD	MDD		
1			GEN. TOL. ±5%	APPD	MSZ	DRG.NO: 31403	
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —	SH 1 OF 1

IF IN DOUBT, ASK



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

TABLE 1

SR.NO.	LA RATED VOLTAGE (kV)	E min. (mm)	P min. (mm)
1.	120	1500	1700

	Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-4-sheet 3 Revision No: 0-
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Min. recommended clearance for 120 KV LA Class-3	

APPROVED FOR TRANSCO PROJECTS

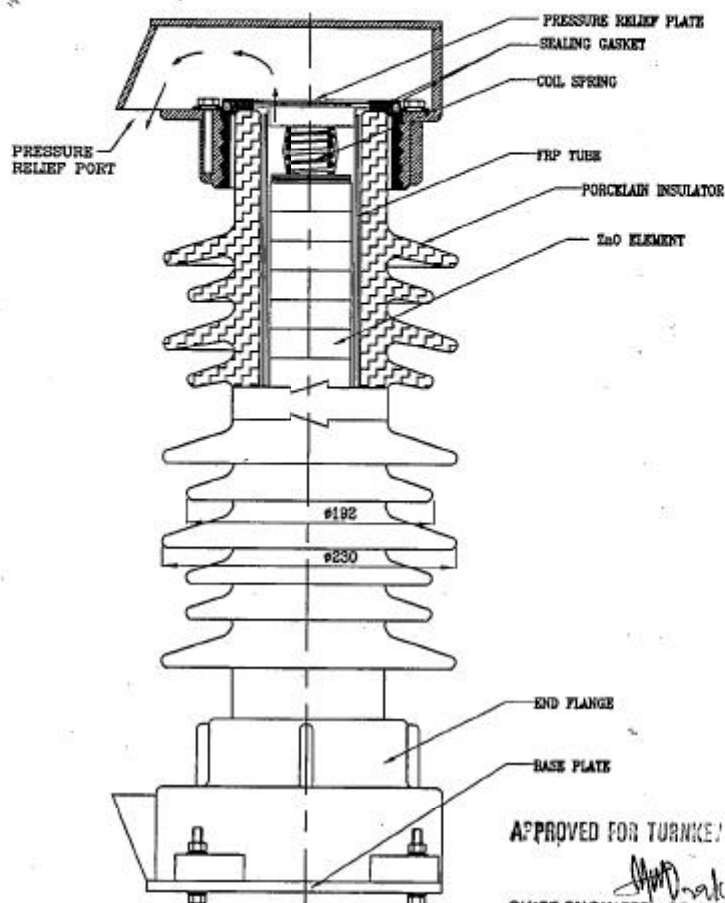
 CHIEF ENGINEER / CONSTRUCTION-1
 A TRANSCO/VIDYUTH SODHA/HYD.

STANDARD DRAWING

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CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3			THIRD ANGLE PROJECTION			TITLE :
			SCALE: NTS	INITIALS	NAME	MIN. RECOMMENDED CLEARANCES FOR 120KV LA CLASS-3
2			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ	
				CHD	MOD	
1			GEN. TOL. $\pm 5\%$	APPD	MSZ	DRG.NO: G-007/120
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —	SH 1 OF 1

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APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

NOTE:

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

	Standardised Drawing for 120 KV Lightning Arrester(Crompton Greaves Ltd make).
	STD/GTP-DWG/Approval No. 209-4-sheet 4 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
	Title: Cross Sectional view & Pressure relief arrangement for 120 KVA

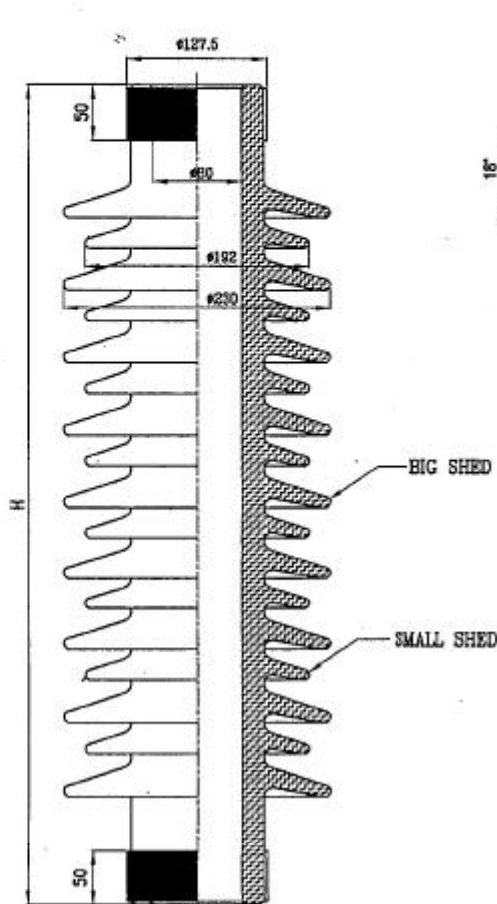
STANDARD DRAWING

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CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.					
3			THIRD ANGLE PROJECTION			TITLE : CROSS SECTIONAL VIEW & PRESSURE RELIEF ARRANGEMENT FOR 120kV		
			SCALE: NTS		INITIALS			NAME
2			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ		Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMRAB, NASIK.	
				CHD	MDD			
1			GEN. TOL. ±5%	APPD	MSZ	DRG.NO: G-006/120		
NO		REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —	REV 0
							SH 1 OF 1	

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SHED DETAIL

RATED VOLTAGE (kV)	HEIGHT (H) mm	CREEPAGE (mm)	NO. OF SHED	
			(B)	(S)
120 (TOP, & BOTTOM)	740	1815	9	8

NOTE:

1. BENDING STRENGTH : 200kg/cm²
2. ELECTRICAL TEST AS PER IS : 5621
3. SHED PROFILE IEC : 815
4. PORCELAIN COLOUR : GLAZE-BROWN

	Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make)..	
	STD/GTP-DWG/Approval No. 209-4-sheet 5 Revision No. 0	
	Prepared & Approved during October - 2011	
	Customer ref : APTRANSCO	
Title: Porcelain Insulator for 120 KV Class -3 LA		

NOTE:

ROUTINE & ACCEPTANCE TEST AS PER IS 3070 P-III, IS 15086 P-I, IEC-99-4.

APPROVED FOR TRANSMISSION

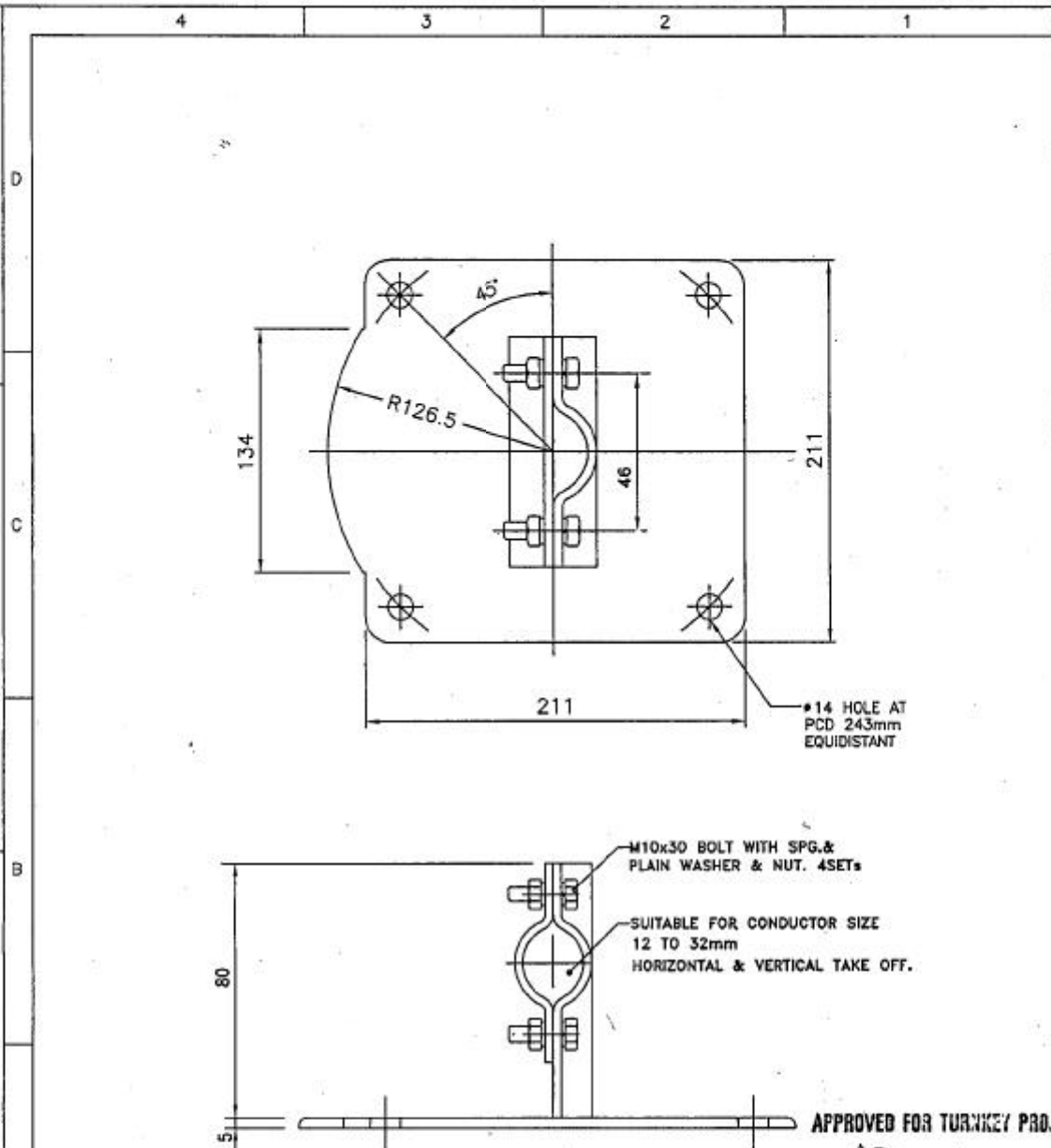
CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/MDYUTH SQUAD/HYD.

STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3		THIRD ANGLE PROJECTION			TITLE : PORCELAIN INSULATOR FOR 120KV CLASS-3 LA
		SCALE: NTS	INITIALS	NAME	Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGIK.
		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ	
2			CHD	MDD	
1		GEN. TOL. ±5%	APFD	MSZ	
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: — SH 1 OF 1

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	Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-4-sheet 6 Revision No. 0
	Prepared & Approved during October -2011
	Customer ref : APTRANSCO
	Title: Top terminal plate terminal connector for 120 KV, CL-3

APPROVED FOR TURNKEY PROJECTS

Dr. J. K. Reddy
CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUT SAJJA/HYD.

STANDARD DRAWING

CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.					
3			THIRD ANGLE PROJECTION			TITLE : TOP TERMINAL PLATE TERMINAL CONNECTOR FOR 120Kv, CL-3		
			SCALE: NTS		INITIALS		NAME	
2			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ		Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBA, NAGIK.	
				CHD	MDD			
1			GEN. TOL. ±5%	APPD	MSZ	DRG.NO: G-041C/120		REV 0
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —		SH 1 OF 1

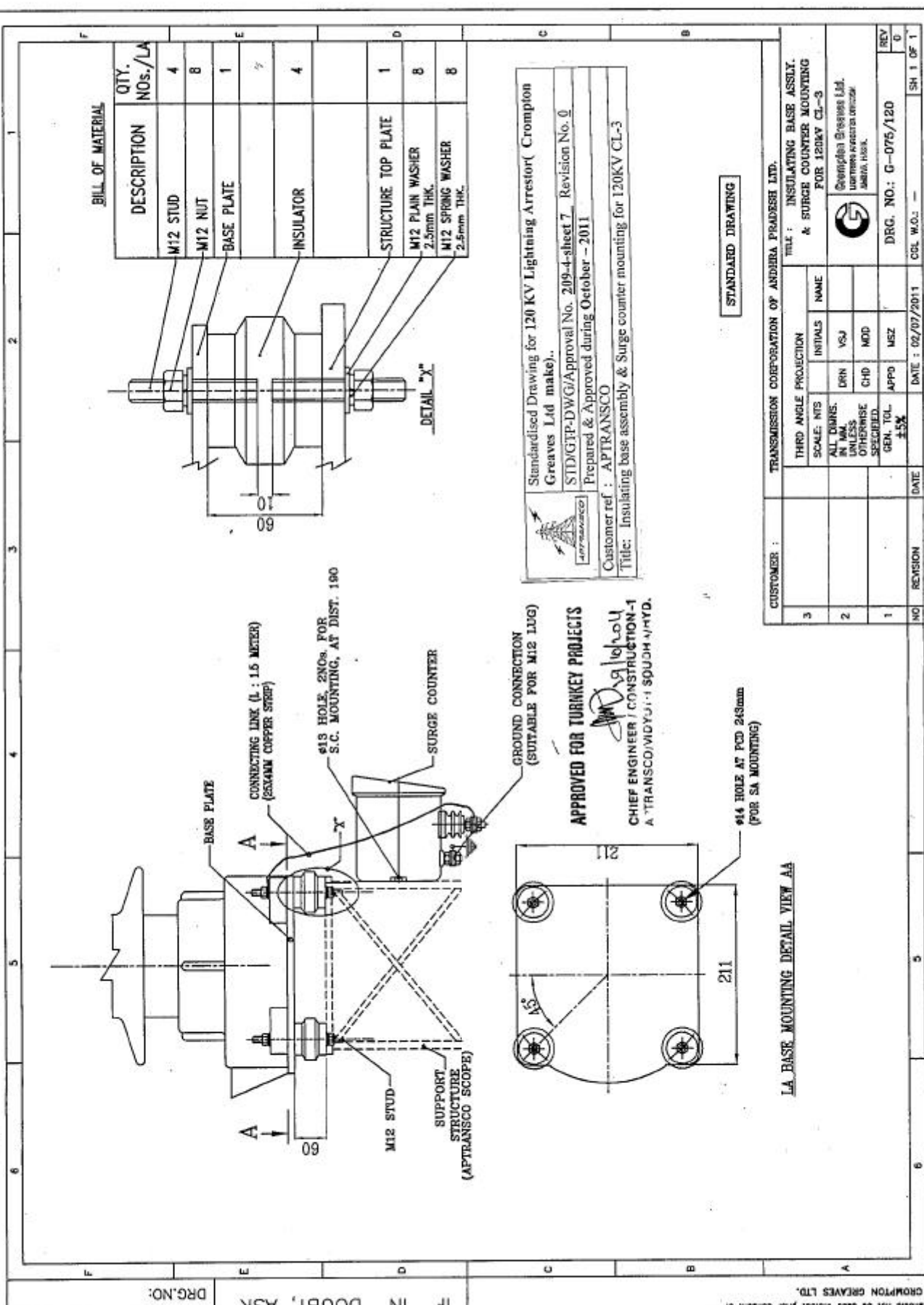
A4 210 * 297 : DIVISION - LIGHTNING ARRESTER

6	5	4	3	2	1																								
ZINC OXIDE SURGE ARRESTER MODEL NO. ZLA -3E SR. NO. RATED VOLTAGE OF UNIT kv 160 POSITION OF UNIT T0P MCOV kv 53 YEAR OF MFG. 2011 LD CLASS 3 105 TOP UNIT ZINC OXIDE SURGE ARRESTER MODEL NO. ZLA -3E SR. NO. RATED VOLTAGE OF UNIT kv 160 POSITION OF UNIT B0T MCOV kv 53 YEAR OF MFG. 2011 LD CLASS 3 105 BOTTOM UNIT																													
ARRESTER NAME PLATE ZINC OXIDE SURGE ARRESTER Model No. : ZLA -3E System Voltage 132 kV Rated Voltage 120 kV Non-Disch. Current 10 kA MCOV 160 kV LD CLASS 3 Year of Manufacture : 2011 Appr. Weight 100 kg ZINC OXIDE SURGE ARRESTER Sr. No. Rated Voltage 120 kV MCOV 160 kV LD CLASS 3 Appr. Weight 100 kg																													
NOTE: 1. MATERIAL : ALUMINUM, 0.5mm THICKNESS 2. ALL DIMENSION IN mm 3. WHITE ENGRAVED LETTERS ON BLACK BACKGROUND																													
ARRESTER NAME PLATE Standardised Drawing for 120 KV Lightning Arrester(Crompton Greaves Ltd make) STD/GTP-DWG/Approval No. 209-4-sheet 11 Revision No. 0 Prepared & Approved during October - 2011 Customer ref : APTRANSOCO Title: Arrester & unit Name Plate for 120KV, CL-3 APPROVED FOR TURKEY PROJECTS CHIEF ENGINEER / CONSTRUCTION-1 APTRANSOCO/MDYOUTH SOUDHA/HVD																													
STANDARD DRAWING																													
TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">THIRD ANGLE PROJECTION</th> <th colspan="2">TITLE</th> </tr> <tr> <th>SCALE</th> <th>NTS</th> <th>INITIALS</th> <th>NAME</th> </tr> <tr> <td>ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED.</td> <td>DRN</td> <td>VSJ</td> <td></td> </tr> <tr> <td>GEN. TOL. ±0.5%</td> <td>CHD</td> <td>MOD</td> <td></td> </tr> <tr> <td></td> <td>APPD</td> <td>NSZ</td> <td></td> </tr> <tr> <td>NO</td> <td>REVISION</td> <td>DATE : 02/07/2011</td> <td>CSL W.O. : --</td> </tr> </table>						THIRD ANGLE PROJECTION		TITLE		SCALE	NTS	INITIALS	NAME	ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ		GEN. TOL. ±0.5%	CHD	MOD			APPD	NSZ		NO	REVISION	DATE : 02/07/2011	CSL W.O. : --
THIRD ANGLE PROJECTION		TITLE																											
SCALE	NTS	INITIALS	NAME																										
ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ																											
GEN. TOL. ±0.5%	CHD	MOD																											
	APPD	NSZ																											
NO	REVISION	DATE : 02/07/2011	CSL W.O. : --																										

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IF IN DOUBT, ASK

DRG. NO.:



BILL OF MATERIAL	
DESCRIPTION	QTY. NOS./LA
M12 STUD	4
M12 NUT	8
BASE PLATE	1
INSULATOR	4
STRUCTURE TOP PLATE	1
M12 PLAIN WASHER 2.5mm THK.	8
M12 SPRING WASHER 2.5mm THK.	8

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.	
NO	REVISION	DATE	DATE : 02/07/2011
3			
2			
1			

TITLE :		INSULATING BASE ASSLY. & SURGE COUNTER MOUNTING FOR 120KV CL-3	
SCALE :	NTS	INITIALS	NAME
ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED	DRN	VSJ	
GEN. TOL. $\pm 5\%$	CHD	MOD	
APPD	MSZ		

DRG. NO. : G-075/120		REV	
CCL W.O. : -		SH 1 OF 1	
CROMPTON GREAVES LTD.		CROMPTON GREAVES LTD.	

Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make).

STD/GTP-DWG/Approval No. 209-4-sheet 7. Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

Title: Insulating base assembly & Surge counter mounting for 120KV CL-3

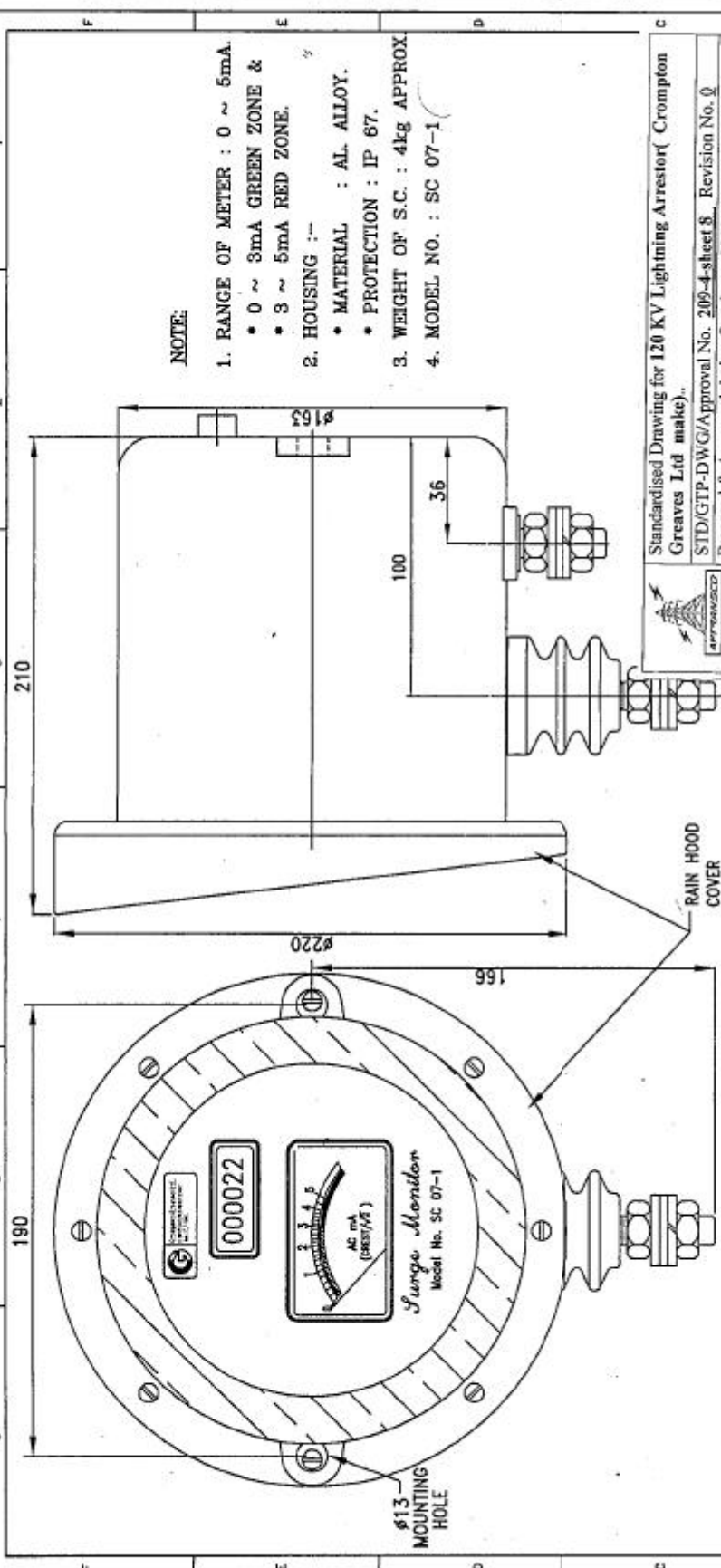
APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1

A TRANSCO/VIDYUT SPOUDH VYD.

LA BASE MOUNTING DETAIL VIEW AA

IF IN DOUBT, ASK
DRG. NO.:



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. : 4kg APPROX.
4. MODEL NO. : SC 07-1

Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make).
STD/GTP-DWG/Approval No. 209-4-sheet 8, Revision No. 0
Prepared & Approved during October - 2011
Customer ref : APTRANSCO
Title: General arrangement and Schematic diagram for surge counter

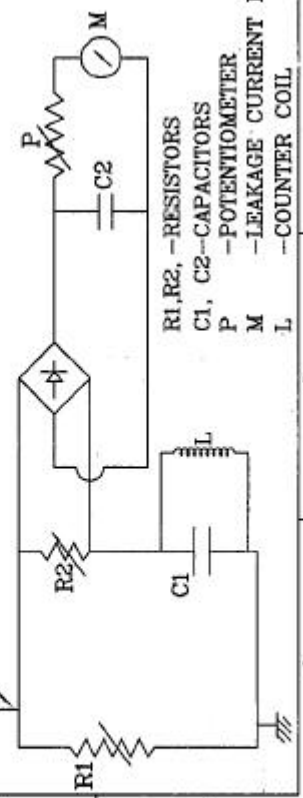
APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION - I
A TRANSCO/MDYU/TH SOUJHA/HYD.

STANDARD DRAWING

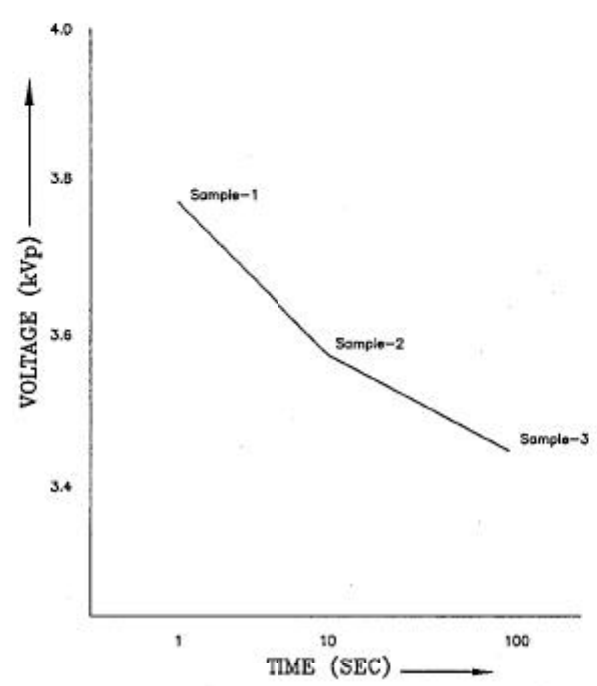
SCHEMATIC DAIGRAM

FROM ARRESTER BOTTOM.



THIRD ANGLE PROJECTION			TITLE :	
SCALE: NTS	INITIALS	NAME	GENERAL ARRANGEMENT DRAWING & SCHEMATIC DIAGRAM OF SURGE COUNTER	
ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSAJ	Crompton Greaves Ltd. LIGHTNING ARRESTOR DIVISION MUMBAI, INDIA.	
GEN. TOL. ±5%	APPD	NSZ		
NO	REVISION	DATE	DATE : 02/07/2011	COL W.O. : —
1			DRG. NO. 6-083	REV 0
2				SH 1 OF 1
3				

IF IN DOUBT, ASK



POWER FREQUENCY VOLTAGE VS TIME CHARACTERISTICS

	Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWC/Approval No. 209-4-sheet 9 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Voltage - Time Characteristics	

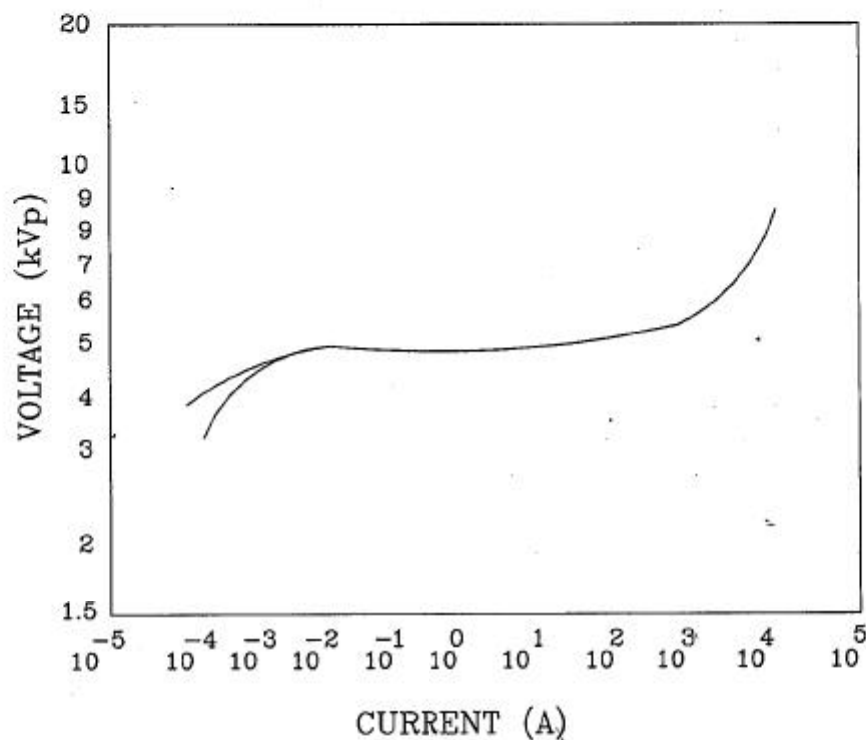
APPROVED FOR TURNKEY PROJECTS
[Signature]
CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

STANDARD DRAWING

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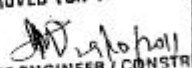
CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3		THIRD ANGLE PROJECTION			TITLE :
		SCALE: NTS	INITIALS	NAME	VOLTAGE-TIME CHARACTERISTICS
		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ	
2		CHD	MDD	Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGIK.	
1		GEN. TOL. ±5%	APPD	MSZ	DRG.NO: G-057A
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —
					SH 1 OF 1

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A		Standardised Drawing for 120 KV Lightning Arrestor(Crompton Greaves Ltd make).
		STD/GTP-DWG/Approval No. 209-4-sheet 10 Revision No. 0
		Prepared & Approved during October - 2011
		Customer ref : APTRANSCO
Title: Voltage - Current Characteristics		

APPROVED FOR TURNKEY PROJECTS

 CHIEF ENGINEER / CONSTRUCTION-1
 APTRANSCO/WIDYUTH SOUDHA/HYD.

STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				TITLE : V-I CHARACTERISTICS			
3		THIRD ANGLE PROJECTION			 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGIK.				
2		SCALE: NTS	DRN	VSJ				INITIALS	NAME
1		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	CHD	MDD					
		GEN. TOL. ±5%	APPD	MSZ	DRG.NO: G-057			REV 0	
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —		SH 1 OF 1	

A4 210 * 297 : DIVISION - LIGHTNING ARRESTER

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STD. LIST OF DRAWING FOR 30KV LIGHTNING ARRESTER

DRAWING NAME	DRAWING NO.
GENERAL ARRENGEMNT	21240
RECOMMANDED MIN.CLERENCES	G-007/30
C/S VIEW & PR RELIEF ARRANGEMENT	G-018/30
PORCELAIN INSULATOR	G-011/30
TOP TERMINAL PLATE AND TERMINAL CONNECTOR	G-041C/30
NAME PLATE	G-031/30
V-T CHARECTERISTICS	G-057A
V-I CHARECTERISTICS	G-057
STD. GTP	STD.GTP/30

	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-6-sheet 1 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title List of Drg for 30KV Lightning Arrestor	

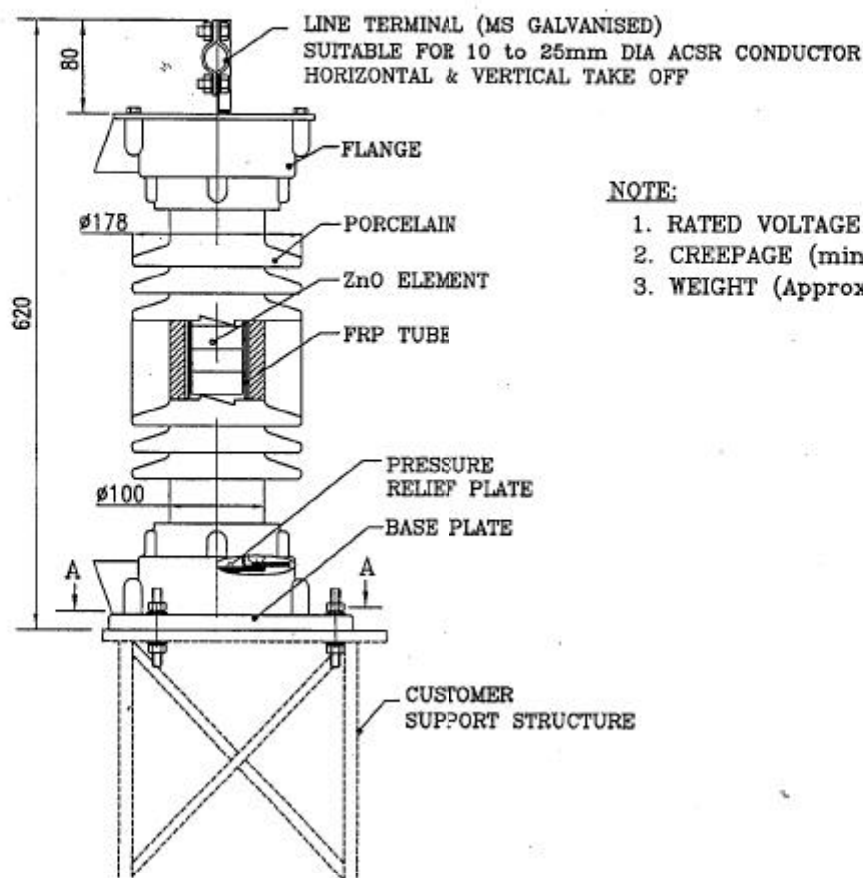
APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH Soudha/HYD.

STANDARD DRAWING

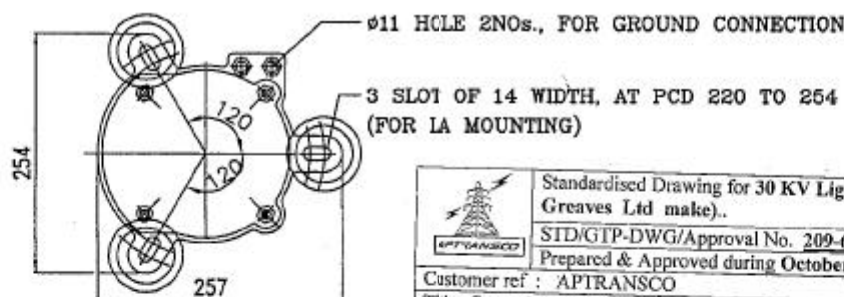
CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				
3			THIRD ANGLE PROJECTION		TITLE : STD. LIST OF DRG FOR 30KV LIGHTNING ARRESTER	
			SCALE: NTS	INITIALS		NAME
			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN		VSJ
2			CHD	MDD	 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASHIK.	
1			GEN. TOL. $\pm 5\%$	APPD		MSZ
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	DRG.NO: G-00L/30 CGL W.O.: — SH 1 OF 1	

IF IN DOUBT, ASK



NOTE:

1. RATED VOLTAGE : 30kV
2. CREEPAGE (min) : 900mm
3. WEIGHT (Approx) : 20kg



	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..	
	SID/GTP-DWG/Approval No. 209-6-sheet 2 Revision No. 0	
	Prepared & Approved during October - 2011	
	Customer ref : APTRANSCO	
Title: General arrangement for 30 KV Lighting Arrestor Class-3		

LA BASE MOUNTING DETAIL VIEW AA

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIOYUTH SOUJHA/HYQ

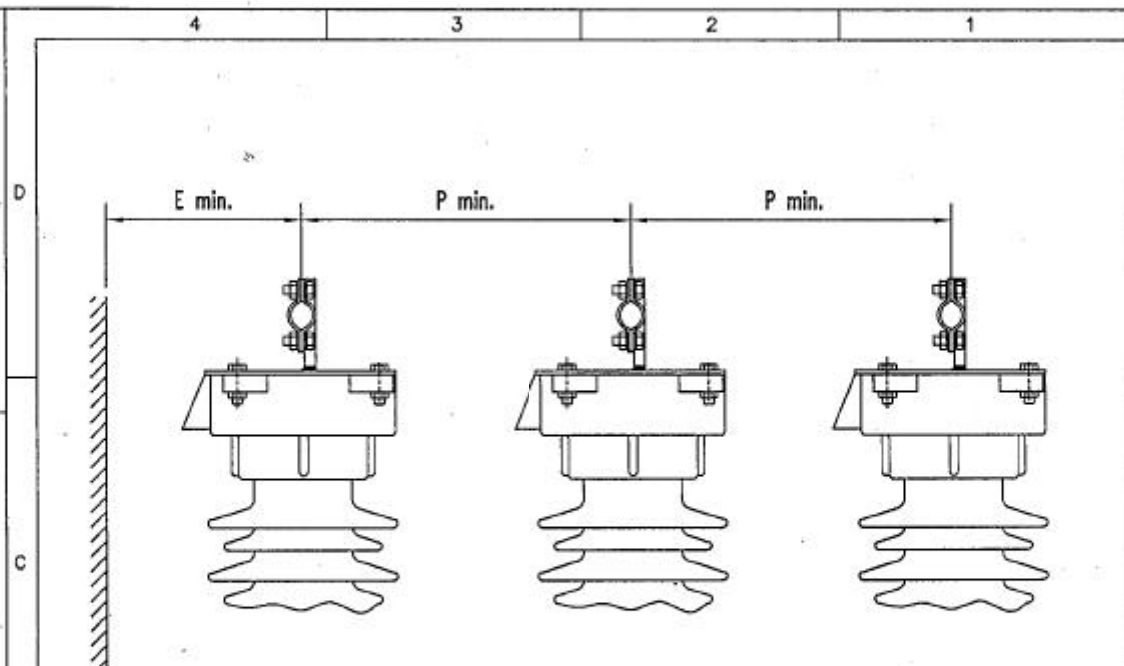
STANDARD DRAWING

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CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3		THIRD ANGLE PROJECTION			TITLE : GENERAL ARRANGEMENT FOR 30KV, CLASS-2 LIGHTNING ARRESTER
		SCALE: NTS	INITIALS	NAME	
2		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ	Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGK.
			CHD	MDD	
1		GEN. TOL. ±5%	APPD	MSZ	DRG.NO: 21240
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —
					SH 1 OF 1

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

TABLE 1

SR.NO.	LA RATED VOLTAGE (kV)	E min. (mm)	P min. (mm)
1.	30	550	700

	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-6-sheet 3 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Min. recommended clearance for 30 KV LA Class-3	

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER CONSTRUCTION
APTRANSCO/VIJAYTH SOJITHA HYD.

STANDARD DRAWING

CUSTOMER :			TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3			THIRD ANGLE PROJECTION			TITLE : MIN. RECOMMENDED CLEARANCES FOR 30KV LA CLASS-2
			SCALE: NTS	INITIALS	NAME	
			ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN VSJ		
2				CHC MDD		 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASIK.
1			GEN. TOL. $\pm 5\%$	APPD MSZ		
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —	SH 1 OF 1

ANNEXURE - II
GUARANTEED TECHNICAL PARTICULARS



Sr.No	Description	33kV
1	Name of Manufacturer	Crompton Greaves Ltd
2	Arrester Class & Type	Station Class, Gapless type
3	Applicable Standard	IEC 99-4
4	Rated Arrester Voltage (kV)	30
5	Maximum continuous operating Voltage (kV)	25
6	Nominal Discharge current (kA) with 8/20 micro-sec wave	10
7	Long Duration discharge class	2
8	Minimum Energy discharge Capability (kJ/kV)	4.0
9	Maximum Switching current impulse residual voltage at	
	i) 1000Amps	75
	ii) 250Amps	72
10	Maximum residual voltage with 1 micro second current wave at 10kA (kVp)	110
11	Maximum residual voltage with 8/20 micro-sec wave (kVp)	
	i) 5 kA	85
	ii) 10kA	90
	iii) 20kA	100
12	Safe Fault current (kA)	40
13	Lightning Impulse withstand voltage of Arrester Housing with 1.2/50 micro-second wave (kVp)	170
14	One minute power frequency withstand voltage of housing (Dry/Wet) - kVrms	70
15	High current short duration impulse withstand level with 4/10 micro-sec wave (kA) Peak	100
16	pressure Relief Class	A
17	Over-voltage withstand Capability kVp	
	a) 10seconds	49
	b) 1 second	51
	c) 0.1 second	53
18	a) Reference Voltage (kV)	>= 30kV
	b) Reference current (mA)	3 mAp
19	Number of units per phase and rating of each unit.	Single
20	Minimum total creepage distance (mm)	900
21	Leakage current (mA)	<= 3 mAp
22	Total weight of Arrester (kg)	20 kgs (approx)
23	Maximum cantilever strength of Surge Arrester (Including wind load)	325 kg-m
24	Overall Height of Surge Arresters (mm)	Ref GA Drg.
25	Maximum distance recommended from equipment to be protected by Surge Arrester (mm)	2.5 m
26	Minimum distance between grounded object	As per IE rules
27	Minimum distance between arrester phase legs	As per IE rules
28	Any other particulars	No

**Standardised Guaranteed Technical Particulars for 30 KV
Lightning Arrester (Crompton Greaves Ltd make)**
STD/GTP-DWG/Approval No. 209-5 Revision No. 0
Prepared & Approved during October - 2011

APTRANSCO

29. The type tests should have been conducted not earlier than 5 years in the standard third party laboratory. The manufacturer shall produce the type tests reports at the time of acceptance tests.

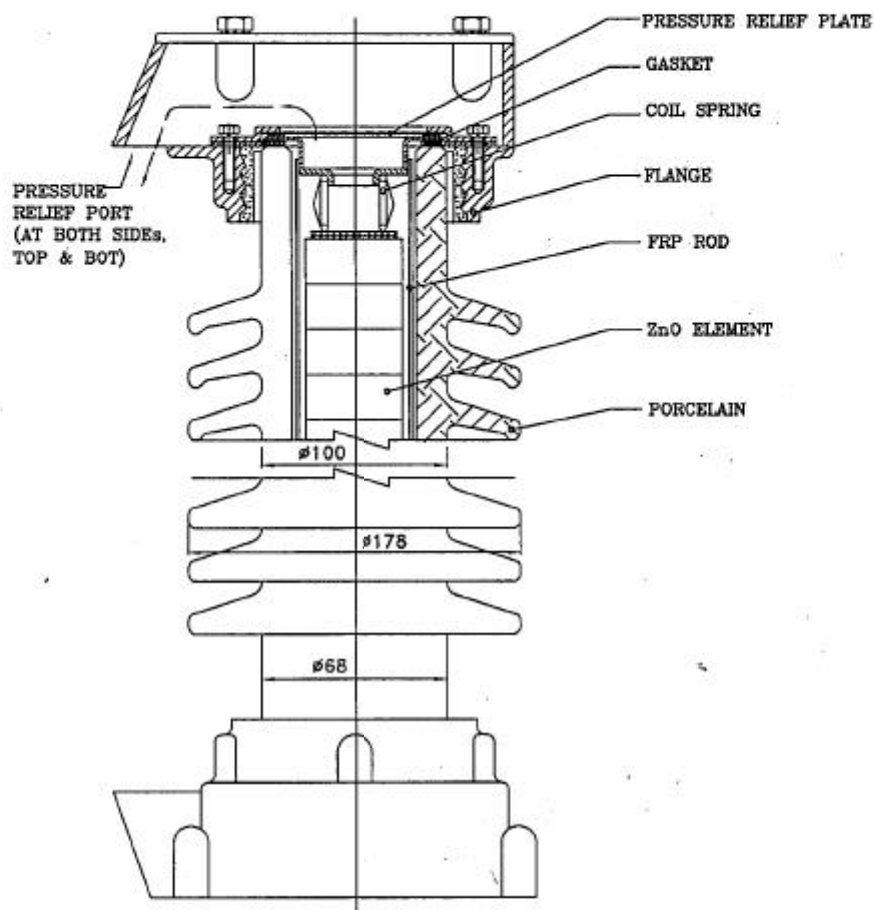
30. Quality of material & applicable standard - BIS. The manufacturer shall produce the valid BIS certification at the time of acceptance tests.

APTRANSCO-216-120-30kv-STANDERED-D6.xls

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	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-6-sheet 4 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
	Title: Cross Sectional view & Pressure relief arrangement for 30 KV.LA-2

A. PROVIDED FOR TOLERANCE PROJECTS

CHIEF ENGINEER / CONSTRUCTION
APTRANSCO/VIDYUTH SOUDHA/HYD.

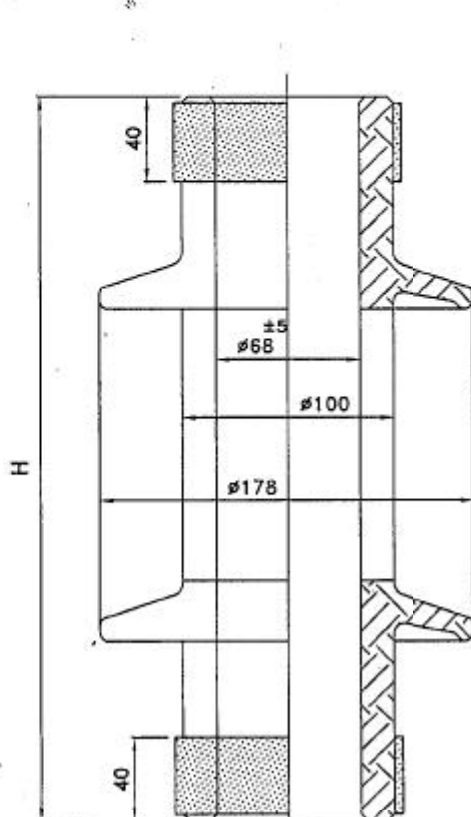
STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3	THIRD ANGLE PROJECTION	SCALE: NTS	INITIALS	NAME	TITLE : CROSS SECTIONAL VIEW & PRESSURE RELIEF ARRANGEMENT FOR 30KV, CL-2
2	ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ		 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NAGIN.
		CHD	MDD		
1	GEN. TOL. ±5%	APPD	MSZ		DRG.NO: G-018/30
NO	REVISION	SIGN	DATE	DATE 02/07/2011	CGL W.O.: — SH 1 OF 1

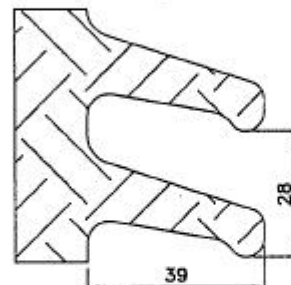
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SHED FORM



RATED VOLTAGE (kV)	HEIGHT (H) mm	CREEPAGE (mm)	NO. OF SHED
30KV	410	900	9

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

	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..
	STD/GTP-DWG/Approval No. 209-6-sheet 5 Revision No. 0
	Prepared & Approved during October - 2011
	Customer ref : APTRANSCO
Title: Porcelain Insulator for 30 KV Class -2 LA	

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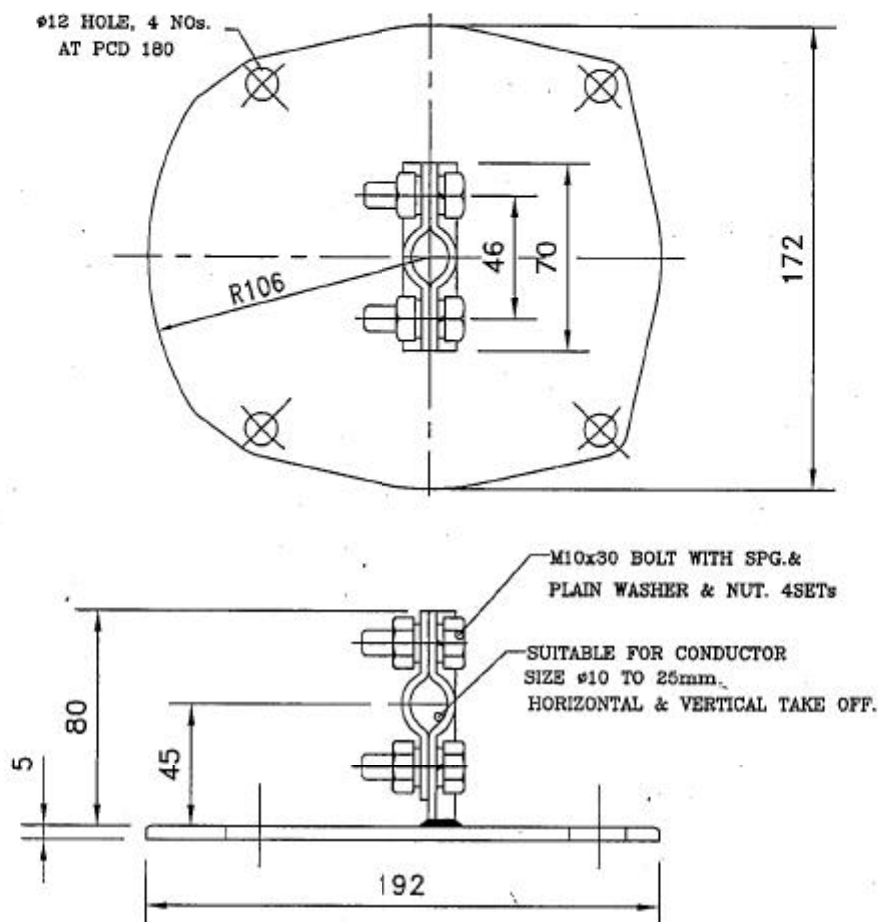
CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/ADYUTH SONDHA/HYD.

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.				TITLE :		PORCELAIN INSULATOR FOR 30KV CLASS-2 LA	
3		THIRD ANGLE PROJECTION							
		SCALE: NTS		INITIALS	NAME				
2		ALL DIMS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ					
			CHD	MDD					
1		GEN. TOL. $\pm 5\%$	APPD	MSZ		DRG.NO: G-011/30			
NO	REVISION	SIGN	DATE	DATE: 02/07/2011		CGL W.O.: —		SH 1 OF 1	



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LIGHTNING ARRESTER DIVISION
AMBAJ, NAGIK.

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	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)...	
	STD/GTP-DWG/Approval No. 209-6-sheet 6 Revision No. 0	
	Prepared & Approved during October - 2011	
	Customer ref : APTRANSCO	
Title: Top terminal plate terminal connector for 30KV, CL-2		

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STANDARD DRAWING

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APTRANSCO/MYTH SODHA/HYD.

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CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.					
3		THIRD ANGLE PROJECTION			TITLE : TOP TERMINAL PLATE & TERMINAL CONNECTOR FOR 30KV, CL-2		
		SCALE: NTS	INITIALS	NAME			
		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ			
2			CHD	MDD	 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASIK.		
1		GEN. TOL. ±5%	APPD	MSZ			
NO		REVISION	SIGN	DATE	DATE: 02/07/2011	DRG.NO: G-041C/30	REV 0
					CGL W.O.: —	SH 1 OF 1	

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 ZINC OXIDE SURGE ARRESTER	
Model No. : <u>ZLA-2E</u> System Voltage <u>33</u> kV Nom. Disch. Current <u>10</u> kA Pr. Relief Current <u>40</u> kA Year of Manufacture : 2011	Sr. NO. <u> </u> Rated Voltage <u>30</u> kV MCOV <u>25</u> kV LD Class <u>2</u> Appr. Weight <u>20</u> kg
105 55	

NOTE:

1. MATERIAL : ALUMINIUM, 0.5 THICKNESS
2. ALL DIMENSION IN mm
3. WHITE ENGRAVED LETTERS ON BLACK BACKGROUND

	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..	
	STD/GTP-DWG/Approval No. 209-6-sheet 7 Revision No. 0	
	Prepared & Approved during October - 2011	
	Customer ref : APTRANSCO	
Title: Arrestor name plate for 30KV, CL-2 Lightning Arrestor		

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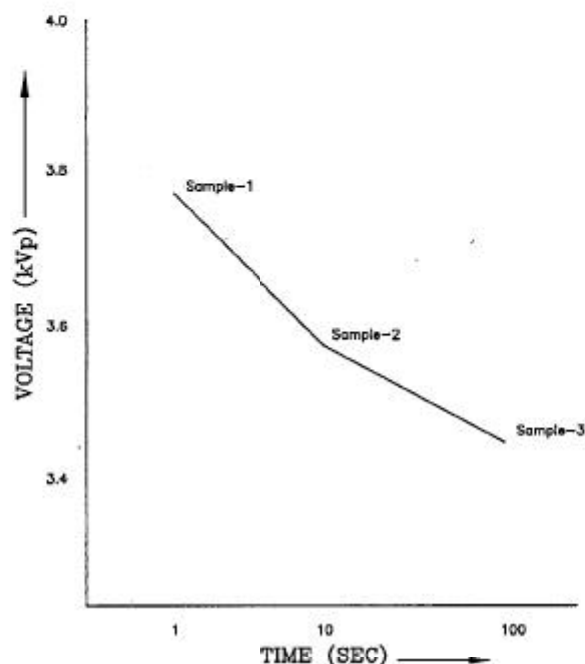
CHIEF ENGINEER / CONSTRUCTION-1
 APTRANSCO/VQYUTH 9QMOHA/HYD.

STANDARD DRAWING

CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3	THIRD ANGLE PROJECTION		TITLE : ARRESTER NAME PLATE FOR 30KV, CL-2 LIGHTNING ARRESTER		
	SCALE: NTS	INITIALS	NAME	 Crompton Greaves Ltd. LIGHTNING ARRESTER DIVISION AMBAD, NASIK.	
	ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ		
2		CHD	MDD		
1		GEN. TOL. $\pm 5\%$	APPD	MSZ	DRG.NO: G-031/30
NO	REVISION	SIGN	DATE	DATE: 02/07/2011	CGL W.O.: —
					SH 1 OF 1

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POWER FREQUENCY VOLTAGE VS TIME CHARACTERISTICS

	Standardised Drawing for 30 KV Lightning Arrester(Crompton Greaves Ltd make)..	
	STD/GTP-DWG/Approval No. 209-6-sheet 8	Revision No. 0
	Prepared & Approved during October - 2011	
	Customer ref : APTRANSCO	
Title: Voltage - Time Characteristics		

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CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3		THIRD ANGLE PROJECTION			TITLE :
		SCALE: NTS	INITIALS	NAME	VOLTAGE-TIME CHARACTERISTICS
		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRW	VSJ	
2			CHD	MDD	
1		GEN. TOL. $\pm 5\%$	APPD	MSZ	
NO		REVISION	SIGN	DATE	DATE: 02/07/2011
					CGL W.O.: —
					SH 1 OF 1

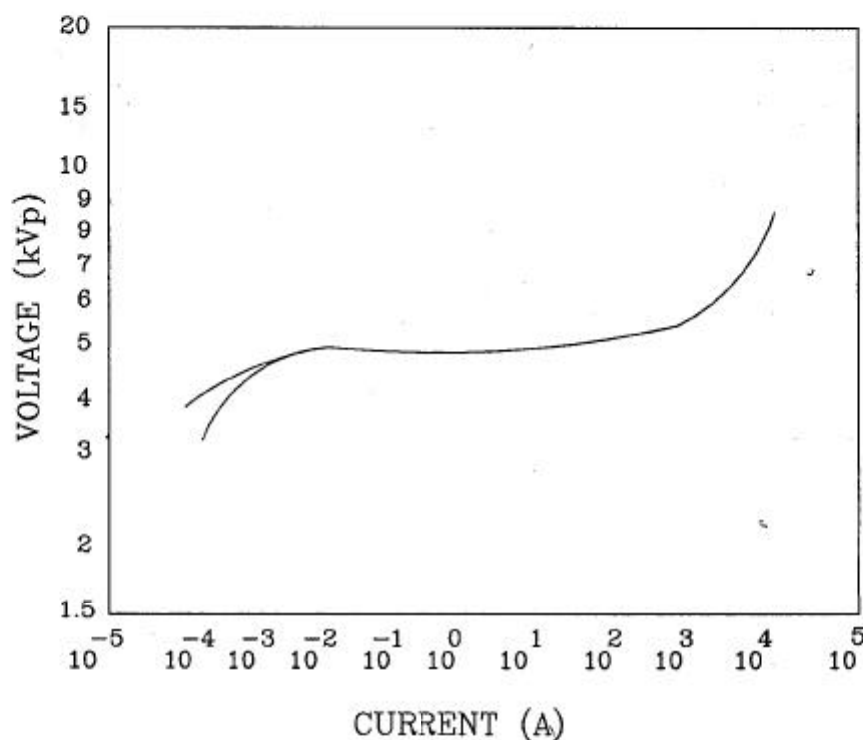


Crompton Greaves Ltd.
LIGHTNING ARRESTER DIVISION
AMBAD, NAGAR.

DRG.NO: G-057A

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	Standardised Drawing for 30 KV Lightning Arrestor(Crompton Greaves Ltd make)..	
	STD/GTP-DWG/Approval No. 209-6-sheet 9 Revision No. 0	
	Prepared & Approved during October - 2011	
	Customer ref : APTRANSCO	
Title: V - I Characteristics		

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CUSTOMER :		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.			
3		THIRD ANGLE PROJECTION			TITLE : V-I CHARACTERISTICS
		SCALE: NTS	INITIALS	NAME	
		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	VSJ	
2			CHD	MDD	
1		GEN. TOL. $\pm 5\%$	APPD	MSZ	
NO		REVISION	SIGN	DATE	DATE: 02/07/2011
					CGL W.O.: —
					SH 1 OF 1

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