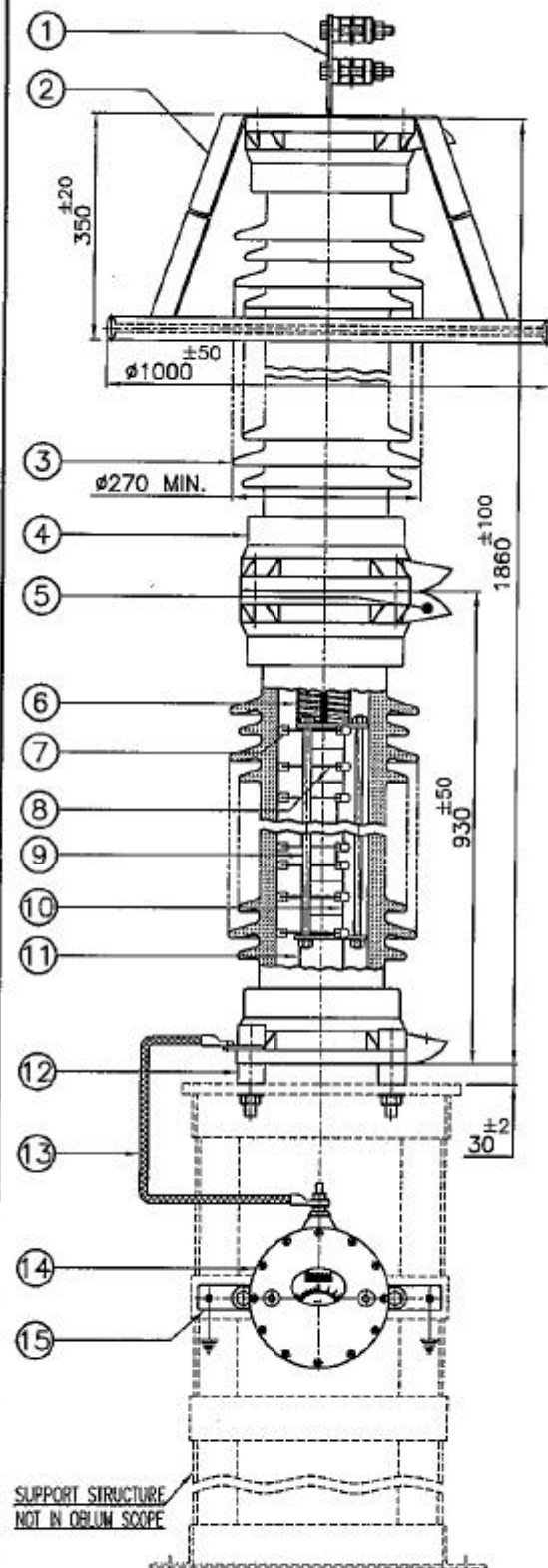
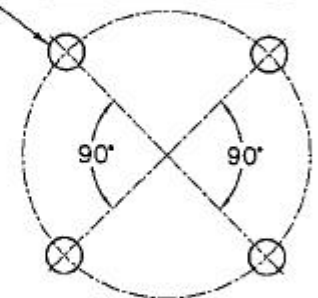


MINIMUM CLEARANCE FROM EARTHED
OBJECTS AND BETWEEN PHASES

4-INSULATORS ON PCD 296±6



ARRESTER BASE MOUNTING DETAILS

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

AGE-1/DN

AGE-2/DN

DE/DN

ARRESTER MODEL	ARRESTER RATING kV	DISCHARGE CURRENT kA
ZAQ	120	10

15. EARTHING & FIXING TERMINAL
14. SURGE MONITOR
13. CONNECTING LEAD
(35 Sq mm INSULATED
AL CABLE 1.5M LENGTH)
12. INSULATING BASE
11. SPACER
10. ZnO. ELEMENT
9. INSULATING TIE ROD
8. CONTACT ELECTRODE
7. BUMPER
6. COMPRESSION SPRING
5. PRESSURE RELEASE PORT
4. END CASTING
3. ARRESTER HOUSING
2. GRADING RING
1. TERMINAL CLAMP

TITLE:

120kV-10kA METAL OXIDE SURGE ARRESTER

MATL: ALL M.S. PARTS ARE HOT DIP GALVANISED

REV. No.: 01

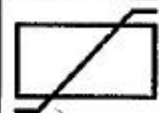
DATE: 21/10/2011

DRG. No.: ZAQ-120135-SM

DRN. BY: DVkumar

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED

ATE INDUSTRIAL ESTATE
AGAR
37 A.P. (INDIA)



Standardised Drawing for 120 KV Lightning Arrestor(Oblum
Electrical Industries Pvt.Ltd.,).

STD/GTP-DWG/Approval No. 210-4-sheet 1 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO



Standardised Drawing for 120 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,).

STD/GTP-DWG/Approval No. 210-4-sheet 2 Revision No. 0

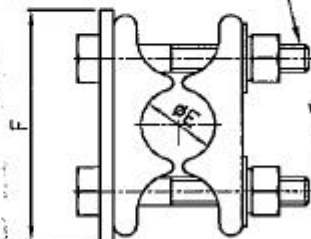
Prepared & Approved during October - 2011

Customer ref : APTRANSCO

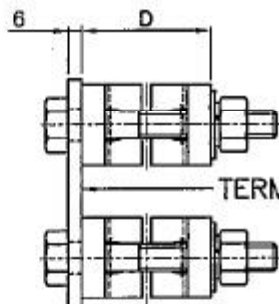
Title: Terminal clamps (Bolted Type)



M12-G.I. BOLTS



PLAN



ELEVATION

TERMINAL PAD MS HDG

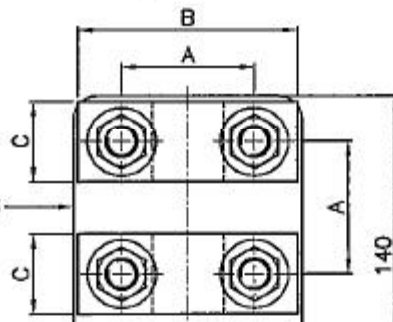
GRADING RING BRACKET MS HDG

SELECTION GUIDE

NAME	CLAMP DETAILS					
	A	B	C	D	ØE	F
WOLF	58	96	35	45	18.13	100
LYNX	58	96	35	45	19.53	100
SPIDER	58	96	35	45	20.00	100
PANTHER	58	96	35	45	21.00	100
HAWK	58	96	35	45	21.80	100
KUNDAH	58	96	35	53	26.88	100
DRAKE	58	96	35	53	28.60	100
ZEBRA	58	96	35	53	28.62	100
MOOSE	58	96	35	56	31.77	100

NOTE:

1. SELECT THE CONDUCTOR FOR THE TERMINAL CLAMP REQUIRED. : BY ARROW MARK (→) AND APPROVE THE DWG.
2. APPLICABLE STANDARD IS 5561 AS TERMINAL CLAMP BUT NOT AS POWER CONNECTOR. (RATED CURRENT AND RATED SHORT TIME CURRENT ARE NOT APPLICABLE FOR ARRESTERS)
3. TERMINAL CLAMP GROOVE IS TO SUIT HORIZONTAL OR VERTICAL TAKEOFF OF A.C.S.R. CONDUCTORS



SIDE VIEW

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

APTRANSCO

APTRANSCO

APTRANSCO

TITLE:

TERMINAL CLAMPS
(BOLTED TYPE)

MATL.:ALUMINIUM ALLOY GRADE 63400 OF IS:733-1983

REV. No.: 0

DATE: 21/10/2011

DRG. No.:TC-1832GR

DRN. BY: DV Kumar

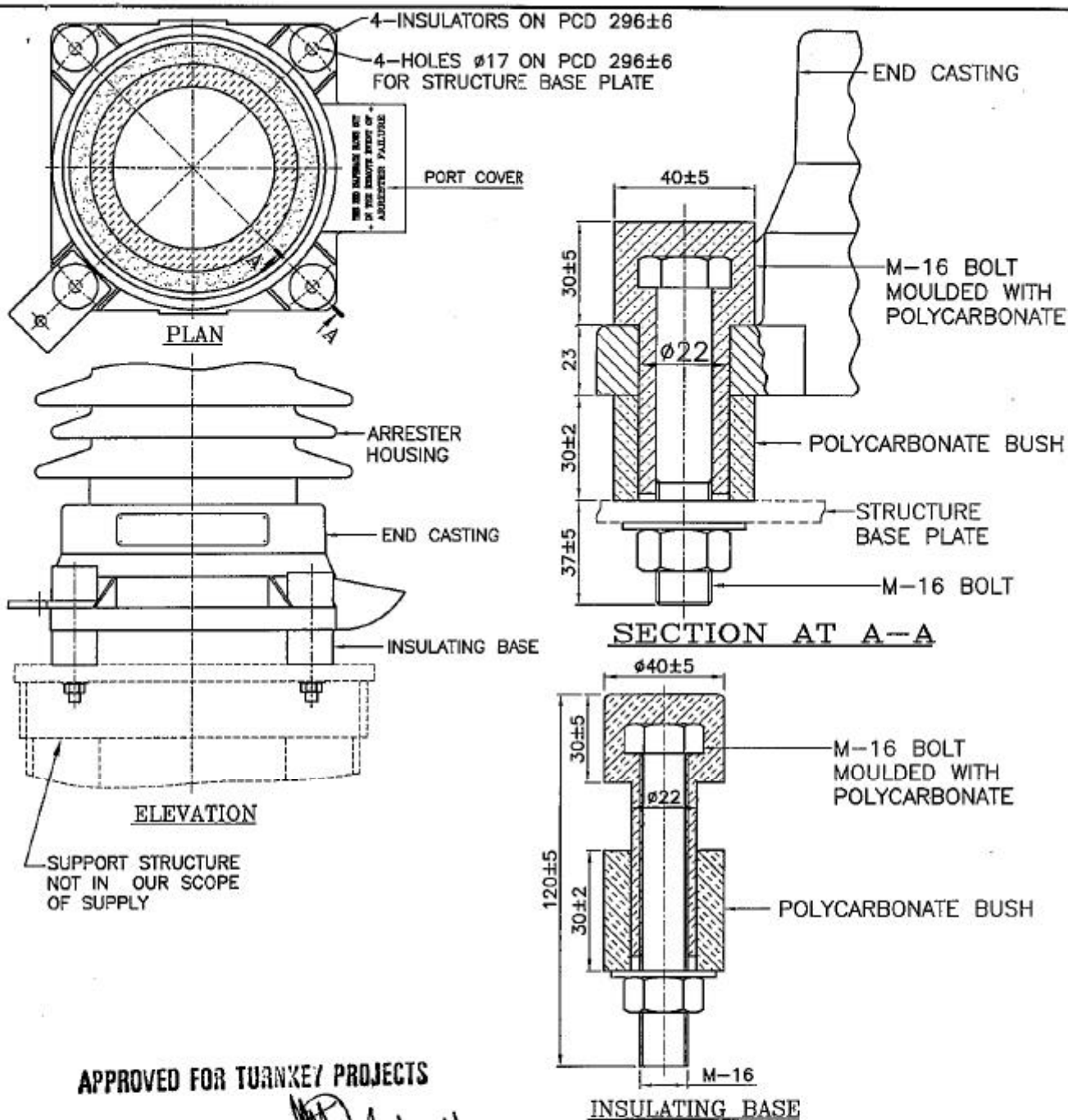
SCALE: N.T.S

APPRD. BY: [Signature]

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED
A-16&17 ASSISTED PRIVATE INDUSTRIAL ESTATE
BALANAGAR
HYDERABAD - 37 A.P. (INDIA)



ALL DIMENSIONS ARE IN m.m. WITH A TOLERANCE OF $\pm 5\%$



APPROVED FOR TURNKEY PROJECTS

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

CHECKED

AGE-1/DN

AGE-2/DN

DE/DN

TITLE:

INSULATING BASE FIXING DETAILS

MATL.: POLYCARBONATE

REV. No.: 01

DATE: 21/10/2011

DRG. NO.: ZAQ-IB-60135

DRN. BY: *DV Kumar*

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED,

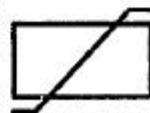


Standardised Drawing for 120 KV Lightning Arrester(Oblum Electrical Industries Pvt.Ltd.,).

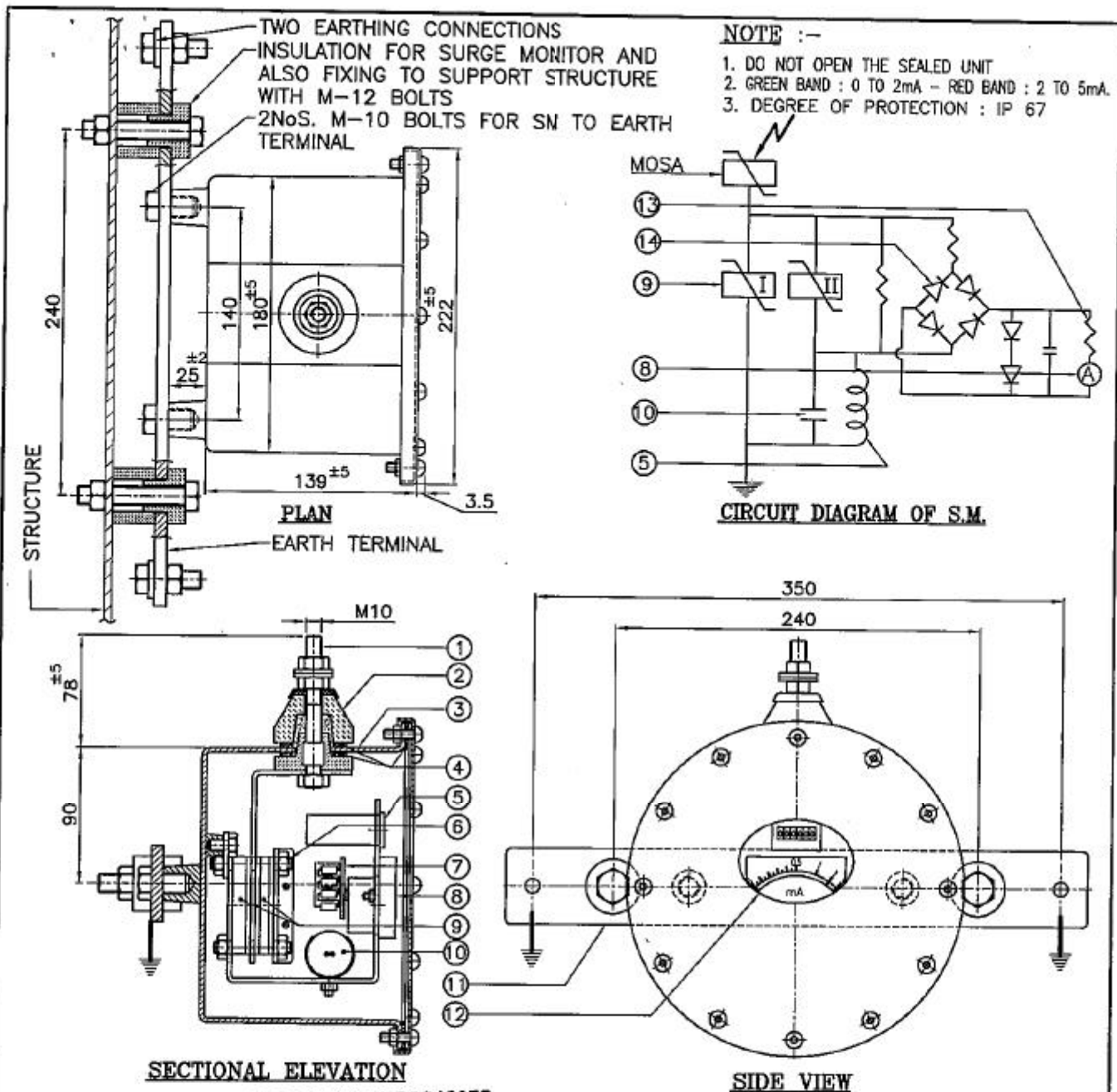
STD/GTP-DWG/Approval No. 210-4-sheet3 Revision No. 0

Prepared & Approved during October - 2011

VATE INDUSTRIAL ESTATE,
AGAR
57. A.P. (INDIA)



Customer ref : APTRANSCO



APPROVED FOR TURNKEY PROJECTS

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

CHECKED

DESIGNER
DESIGNER
DESIGNER

- | | | |
|----------------------------|--------------------------|--------------------------------|
| 5. ELECTROMAGNETIC COUNTER | 10. CAPACITOR | |
| 4. SEALING GASKET | 9. ZnO. ELEMENT | 14. BRIDGE RECTIFIER |
| 3. AL. SHELL | 8. MILLI AMMETER 0 - 5mA | 13. RESISTOR |
| 2. PORCELAIN INSULATOR | 7. P.C.B. | 12. VIEWING WINDOW |
| 1. TERMINAL | 6. TIE ROD | 11. EARTHING & FIXING TERMINAL |

TITLE: **SURGE MONITOR** MATL: -----

REV. No.: 01 DATE: 21/10/2011

DRG. No.: **SM-TZB-3R** DRN. BY: *Dr. Kumar* OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED

Standardised Drawing for 120 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,).

PRIVATE INDUSTRIAL ESTATE ANAGAR - 37 A.P. (INDIA)

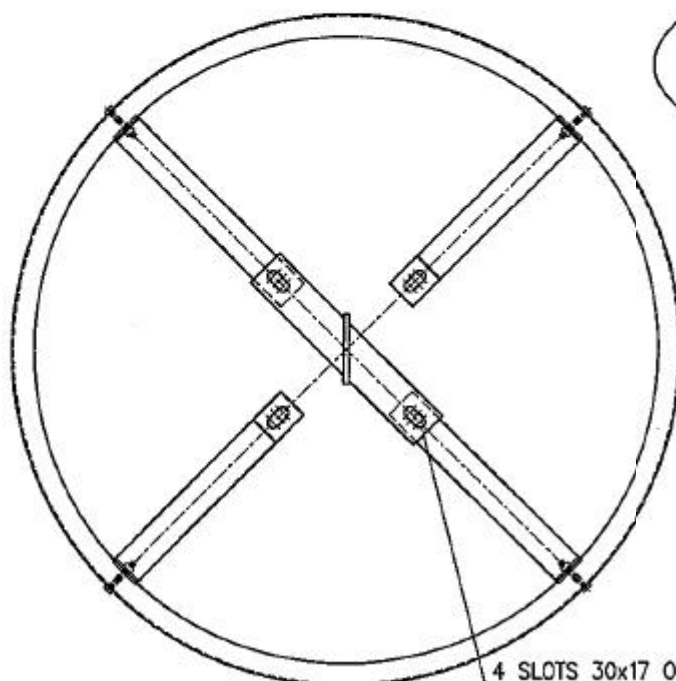


STD/GTP-DWG/Approval No. 210-4-sheet 4 Revision No. 0

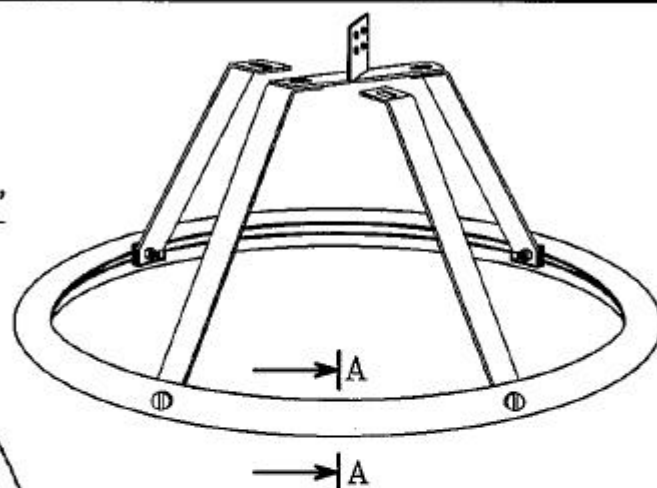
Prepared & Approved during October - 2011

Customer ref : APTRANSCO

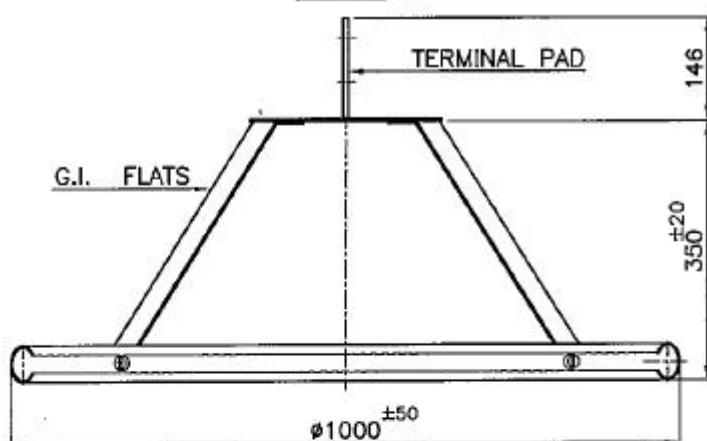
C
SECTION 'A-A'



PLAN



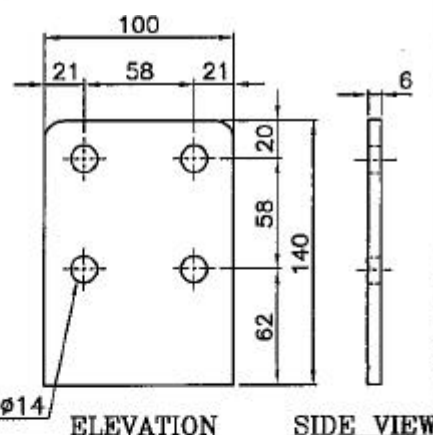
ISOMETRIC VIEW



SECTIONAL ELEVATION

APPROVED FOR TURNKEY PROJECTS

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



4-HOLES Ø14

ELEVATION

SIDE VIEW

TERMINAL PAD

CHECKED

ADE-1/DN ADE-2/DN DE/DN

TITLE:

GRADING RING

MATL: M.S. HDG

REV. No.:0

Dt.: 21/10/2011

DRG. No.: ZAQ-GR-120

DRN. BY: *Dr. Kumar*

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED,

PRIVATE INDUSTRIAL ESTATE,
JAGAR
37. A.P. (INDIA)

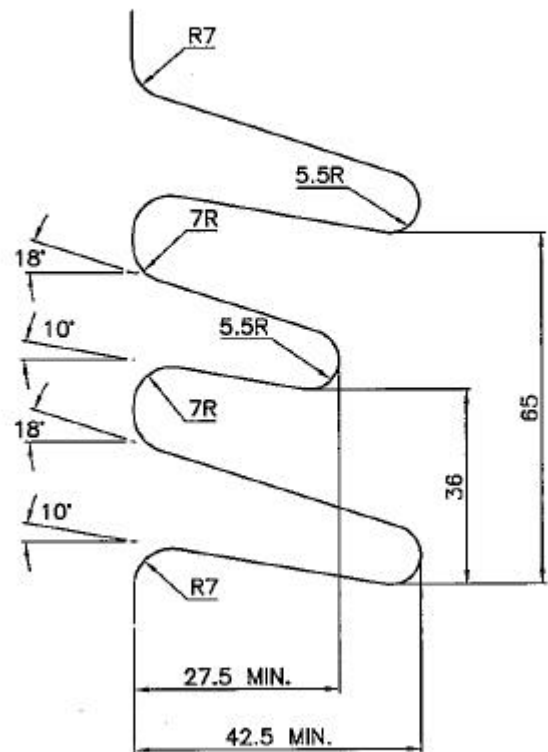
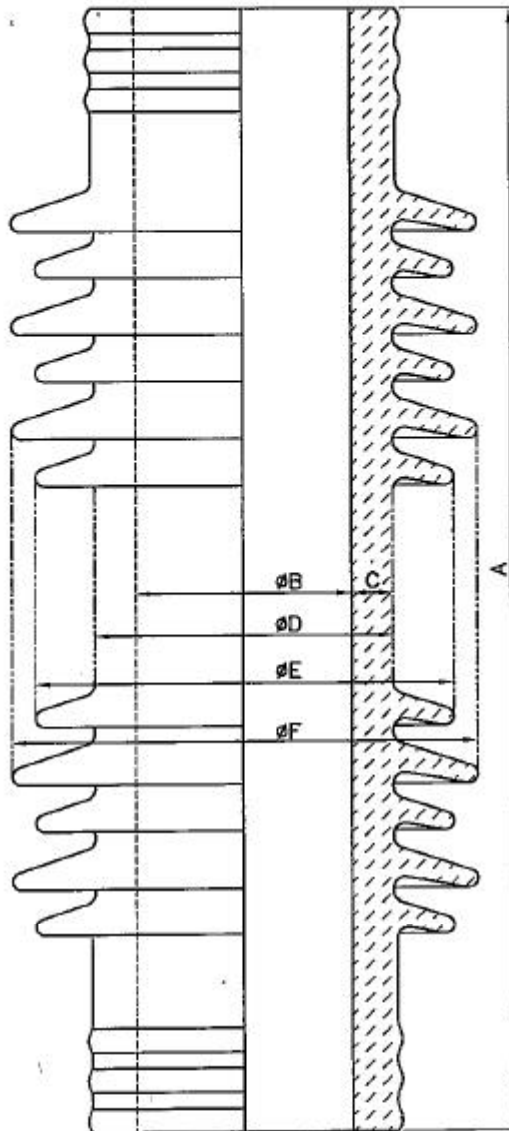


Standardised Drawing for 120 KV Lightning Arrestor(
Oblum Electrical Industries Pvt.Ltd.,)..

STD/GTP-DWG/Approval No. 210-4-sheet 5 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

**SHED PROFILE****NOTES :-**

1. MANUFACTURER : OBLUM INSULATORS
2. SPECIFICATIONS : IS-5621-1980, IEC-815 OF 1986
3. GLAZE : BROWN
4. TOLERANCES AS PER IEC-815 $\pm(0.04xd+1.5) \leq 300\text{m.m.}$
WHERE 'd' IS DIMENSION $\pm(0.025xd+6) \leq 300\text{m.m.}$

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

TO SUIT ARRESTER RATINGS	A	B	C	D	E	F	TOTAL CREEPAGE DISTANCE
60KV	840 ^{±50}	135 ^{±6}	26 ^{±2}	187 ^{±8}	240 MIN.	270 MIN.	2050 MIN.

TITLE:

PORCELAIN BUSHING

MATL: PORCELAIN

REV. No.: 0

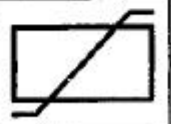
DATE: 21/10/2011

DRG. NO.: ZAQ-PB-60132

DRN. BY: D. Kumar

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED

INDIAN PRIVATE INDUSTRIAL ESTATE
ALANAGAR
- 37 A.P. (INDIA)



Standardised Drawing for 120 KV Lightning Arrestor(Oblum
Electrical Industries Pvt.Ltd.,)..

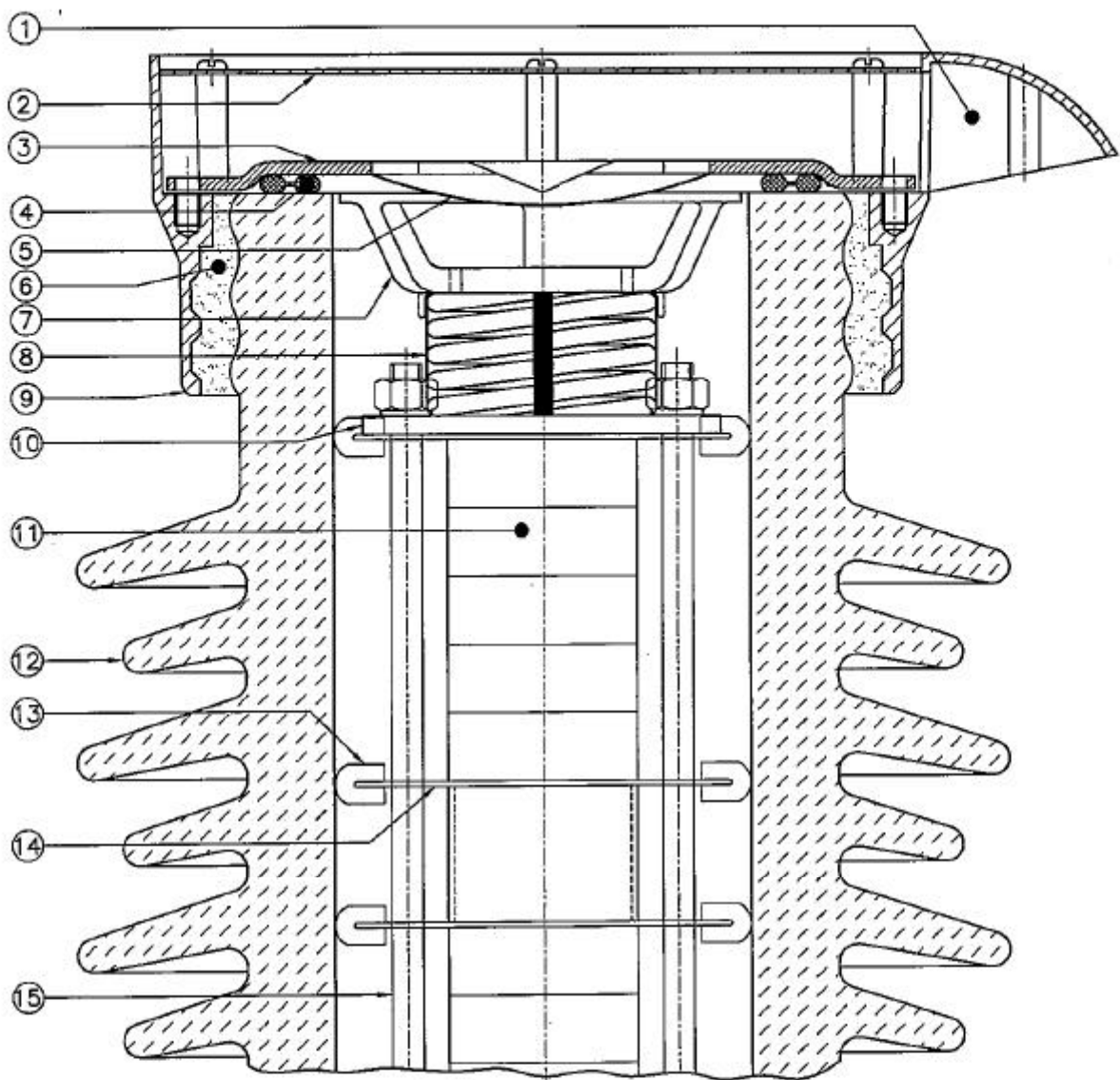
STD/GTP-DWG/Approval No. 210-4-sheet 6 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

Title: Porcelain Bushing





APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYO

CHECKED

ADG-DON
ADG-DON
ADG-DON

- 8. COMPRESSION SPRING
- 7. SPRING LOCATOR
- 6. SEALING COMPOUND
- 5. PRESSURE RELEASE RUPTURE DIAPHRAGM
- 4. DUMBLE SEALING GASKET
- 3. PRESSURE RELEASE PLATE
- 2. COVER PLATE
- 1. PRESSURE RELEASE PORT

- 15. INSULATING TIE ROD
- 14. CONTACT ELECTRODE
- 13. BUMPER
- 12. PORCELAIN HOUSING
- 11. ZnO. ELEMENT
- 10. SUPPORT PLATE
- 9. END CASTING

TITLE:	MATL: ---	DATE: 21/10/2011
PRESSURE RELEASE ARRANGEMENT	REV. No.: 01	

DRG. No.: ZAQ-PRA-60	DRN. BY: <i>DV Kumar</i>	OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED
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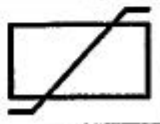
Standardised Drawing for 120 KV Lightning Arrester(Oblum Electrical Industries Pvt.Ltd.,).

STD/GTP-DWG/Approval No. 210-4-sheet 7 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

PRIVATE INDUSTRIAL ESTATE
ANAGAR
- 37 A.P. (INDIA)



UNIT NAME PLATES

133		125	
METOVAR METAL OXIDE SURGE ARRESTER - UNIT NAME PLATE			
RATED VOLTAGE	60	kV L.D. DISCHARGE CLASS	3
DISCHARGE CURRENT	10	ka MCOV	53
MODEL	ZAQ-120-SM	Si. No.:	YEAR OF MFG.:
		POSITION:	
OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED HYDERABAD, ANDHRA PRADESH, INDIA.			

MASTER NAME PLATE

133		125	
METOVAR METAL OXIDE SURGE ARRESTER - MASTER NAME PLATE			
RATED VOLTAGE	120	kV MCOV	106
DISCHARGE CURRENT	10	ka MODEL	ZAQ-120-SM
RATED FREQUENCY	48 TO 62	Hz. Si. No.	
L.D. DISCHARGE CLASS	3		
PRESSURE RELIEF CLASS	40	ka(RMS)	
OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED HYDERABAD, ANDHRA PRADESH, INDIA.			

APPROVED FOR TURNKEY PROJECTS

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

CHECKED





TITLE: NAME PLATES		MATL: 0.5mm ALUMINIUM SHEET	
REV. No.: 0		DATE: 21/10/2011	
DRG. No.: ZAQ-NP-120		DRN. BY: <i>Dr. Kumar</i>	
OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED		PRIVATE INDUSTRIAL ESTATE	
ANAGAR		37 A.P. (INDIA)	
			
Standardised Drawing for 120 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,).. STD/GTP-DWG/Approval No. 210-4-sheet 8 Revision No. 0 Prepared & Approved during October - 2011 Customer ref : APTRANSCO			



OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED

A-16 & 17, Assisted Private Industrial Estate, Balanagar, Hyderabad - 500 037, A.P. (INDIA)
 Grams : OBLUM, Phone : 23771880, 23774184, 23772708, Fax : 0091 (040) 23771108
 E-MAIL : oblumelectricals@gmail.com, oblumelectricals@yahoo.co.in, oblumexports@gmail.com
 oblumelectricals@hotmail.com Website : www.oblum.com



Surge Arresters

Ref. No.

Date :

GUARANTEED TECHNICAL PARTICULARS FOR 120 KV 10 KA -CLASS-III METAL OXIDE GAPLESS SURGE ARRESTER

Sl.no	Description	120 KV 10 KA -CLASS-III
1.	Name of Manufacturer	M/s. OBLUM electrical industries private Limited
2.	Arrester Class and Type	Station Class & Gapless Type ✓
3.	Applicable Standard	IEC 60099-4 & IS-3070 (PART-III) ✓
4.	Rated Arrester Voltage (kV)	120 kV ✓
5.	Maximum Continuous Operating Voltage (MCOV)(kV)	106 kV rms ✓
6.	Nominal Discharge Current (kA) with 8/20 μ sec wave	10 kA ✓
7.	Long Duration Discharge	Class-III ✓
8.	Minimum Energy Discharge Capability (kJ/kV)	8 kJ/kV (OD TEST)
9.	Maximum switching current impulse residual voltage at i) 1000 Amps. ii) 250 Amps	272 kV _{Peak} ✓ 240 kV _{Peak} ✓
10.	Maximum residual voltage with 1 μ second current wave at 10kA(kV _{Peak})	380 kV _{Peak} ✓
11.	Maximum residual voltage with 8/20 (kV _{Peak}) μ sec wave i) 5kA ii) 10kA iii) 20kA	320 kV _{Peak} ✓ 340 kV _{Peak} ✓ 380 kV _{Peak} ✓
12.	Safe Fault Current (kA)	40 kA ✓
13.	Lightning Impulse withstand voltage of Arrester housing with 1.2/50 μ second wave (kV _{Peak})	650 kV _{Peak}
14.	One minute power frequency withstand voltage of housing (dry/wet)-kv(rms)	275 kVrms
15.	High Current short duration impulse withstand level with 4/10 μ second wave (kA _{Peak})	100 kA _{Peak}
16.	Pressure Relief Class	CLASS 'A' /40kA
17.	Over-voltage withstand Capability (kV _{Peak}) a) 10 seconds b) 1 seconds c) 0.1 seconds	195 kV _{Peak} 204 kV _{Peak} 212 kV _{Peak}
18.	a) Reference Voltage(kV) b) Reference current	Greater than the rated voltage of arrester 3 mA ✓
19.	Number of Units per phase & rating of each unit	2-Units of 60kV each
20.	Minimum Creepage distance mm(min)	3625mm.(minimum)
21.	Leakage Current (mA)	I _r =Less than 500- μ Amps I _c =About 1500 μ Amps
22.	Total weight of Arrester (kGS)	150 $\pm$ 10% kGS.
23.	Maximum Cantilever strength of Surge Arrester (including wind load)	1000 kGM.
24.	Overall height of Surge Arresters(mm)	1860 $\pm$ 100 mm
25.	Maximum distance recommended from equipment to be protected by Surge Arrester(mm)	2 to 4 mtrs ✓
26.	Minimum distance between grounded object (mm)	2000 mm
27.	Minimum distance between Arrester phase legs (mm)	3000 mm
28.	Any other particulars	Yes, GTP of Surge Monitor.



OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED

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 Grams : OBLUM, Phone : 23771880, 23774184, 23772708, Fax : 0091 (040) 23771106
 E-MAIL : oblumelectricals@gmail.com, oblumelectricals@yahoo.co.in, oblumexports@gmail.com
 oblumelectricals@hotmail.com Website : www.oblum.com



Surge Arresters

Ref. No.

Date :

SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS FOR SURGE MONITOR

Sl. No.	Description	Technical Particulars
Counter Operation:		
1	Make	Oblum Electrical Industries Private Limited.
2	Model	SM-TZB-3R. /
3	Type	Non-Reset, cyclometric counter
4	Sensitivity of Surge Counter (min. current at which the Counter operates)	100A (8/20 μ sec wave)
5	Nominal Discharge Current	10kA _r
6	Max. Current to be withstood by the Surge Monitor	100kA _r
7	Counter operation	One count per Surge.
Operation of Current Meter:		
8	Safe Leakage Current Indication	0 to 2 mA (Green Band).
9	Indication of deterioration of Surge Arrester	2 to 5 mA (Red Band).
10	Net. Weight	2.5 kGS. (approx.).

For OBLUM ELECTRICAL INDUSTRIES PVT.LTD.

APPROVED FOR TURNKEY PROJECTS

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

(O.BALAGANGADHAR)
 MANAGING DIRECTOR

CHECKED

APPROVED

APPROVED

APPROVED

	Standardised Guaranteed Technical Particulars for 120 KV Lightning Arrester (Oblum Electrical Industries Pvt Ltd make)
	STD/GTP-DWG/Approval No. 210-3 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.