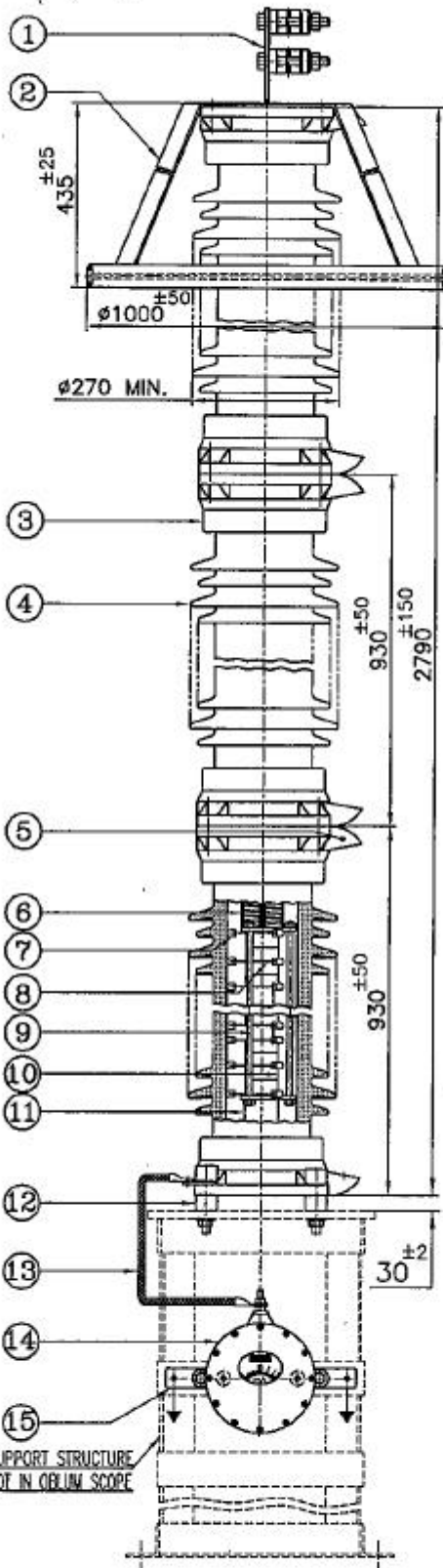
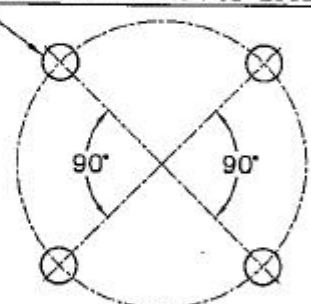


MINIMUM CLEARANCE FROM EARTHED OBJECTS AND BETWEEN PHASES

4-INSULATORS ON PCD 296±6



ARRESTER BASE MOUNTING DETAILS

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION - I
A. TRANSCO, DYUTH SOUDHA/HYD

CHECKED

ADN-1/DN
ADN-2/DN
ADN

ARRESTER MODEL	ARRESTER RATING KV	DISCHARGE CURRENT kA
ZAQ	216	10

15. EARTH & 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. ARRESTER HOUSING
3. END CASTING
2. GRADING RING
1. TERMINAL CLAMP

TITLE: 216kV-10kA METAL OXIDE SURGE ARRESTER
MATL: ALL M.S. PARTS ARE HOT DIP GALVANISED
REV. No.: 01
DATE: 21/10/2011

DRG. No.: ZAQ-216135-SM DRN. BY: DVHumar OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED



Standardised Drawing for 216 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,)..
STD/GTP-DWG/Approval No. 210-2-sheet 1 Revision No. 0
Prepared & Approved during October - 2011
Customer ref : APTRANSCO
Title: 216 KV - 10KA Metal Oxide Surge Arrestor

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



Standardised Drawing for 216 KV Lightning Arrestor (Oblum Electrical Industries Pvt.Ltd.,).

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

Prepared & Approved during October - 2011

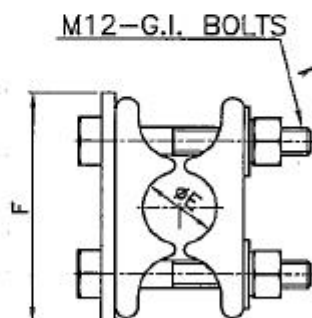
Customer ref : APTRANSCO

Title: Terminal Clamps (Bolted Type)



SELECTION GUIDE

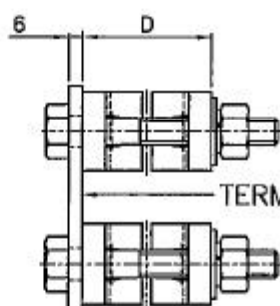
NAME	CLAMP DETAILS					
	A	B	C	D	ØE	F
WOLF	58	96	35	45	18.13	100
LYNX	58	96	35	45	19.53	100
SPIDER	58	96	35	45	20.00	100
PANTHER	58	96	35	45	21.00	100
HAWK	58	96	35	45	21.80	100
KUNDAH	58	96	35	53	26.88	100
DRAKE	58	96	35	53	28.60	100
ZEBRA	58	96	35	53	28.62	100
MOOSE	58	96	35	56	31.77	100



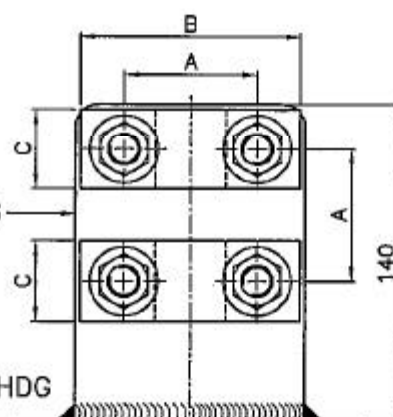
PLAN

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



ELEVATION



SIDE VIEW

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

(Signatures)
DESIGNER: *(Signature)*
CHECKER: *(Signature)*
APPROVER: *(Signature)*

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

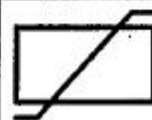
DRN. BY: *(Signature)*

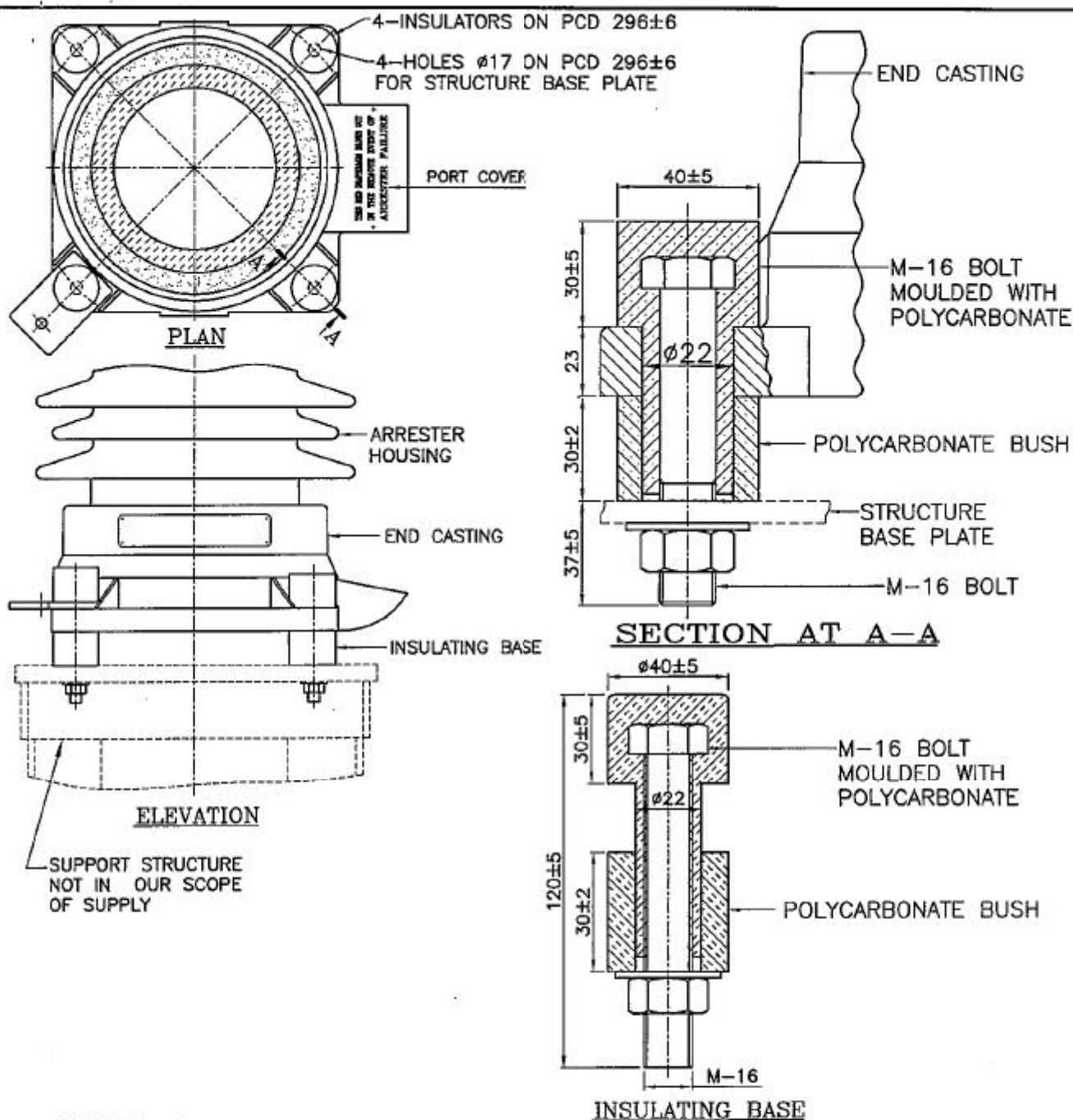
SCALE: N.T.S

APPRD. BY: *(Signature)*

ALL DIMENSIONS ARE IN mm. WITH A TOLERANCE OF ±5%

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





APPROVED FOR TURNKEY PROJECTS

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

CHECKED

ADN

ADN

ADN

TITLE:
INSULATING BASE FIXING DETAILS

MATL: POLYCARBONATE

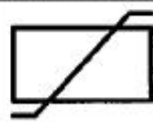
REV. No.: 01

DATE: 21/10/2011

DRG. NO.: ZAQ-IB-60135

DRN. BY: *Dr. Kumar*

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED,
140 & 47, LOCATED PRIVATE INDUSTRIAL ESTATE,
GAR
7. A.P. (INDIA)

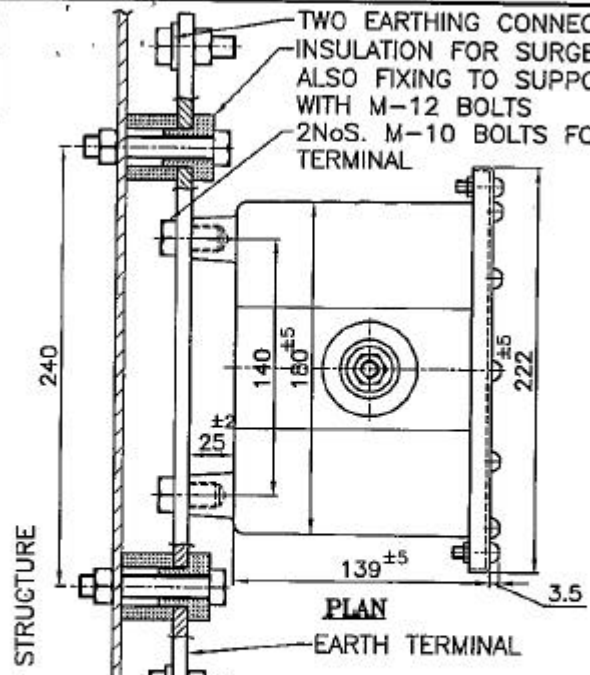


Standardised Drawing for 216 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,).

STD/GTP-DWG/Approval No. 210-2-sheet 3 Revision No. 0

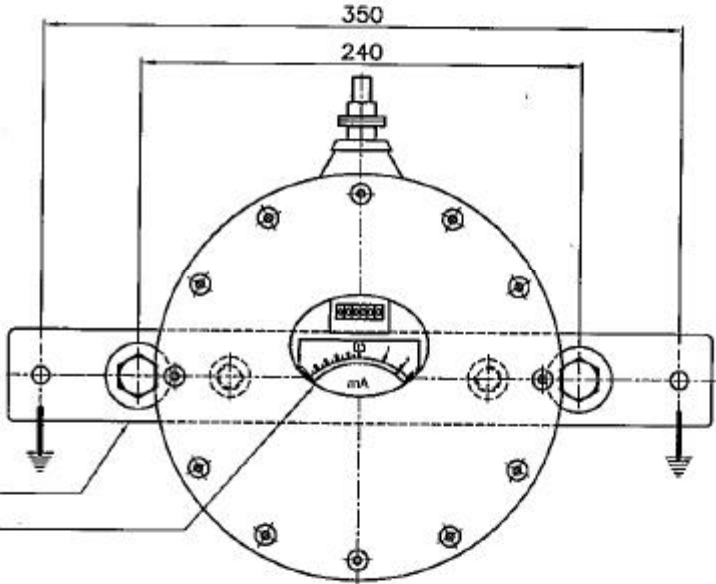
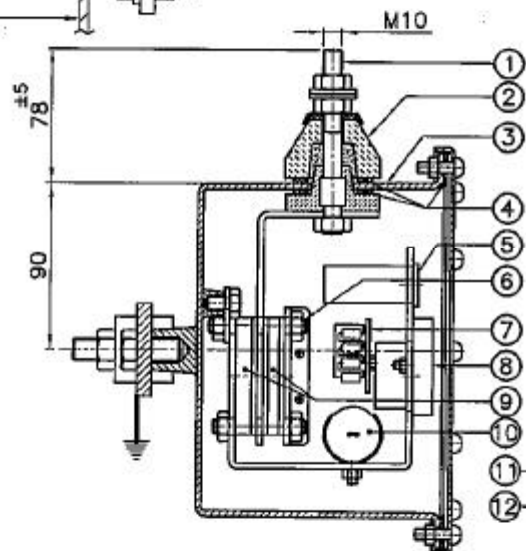
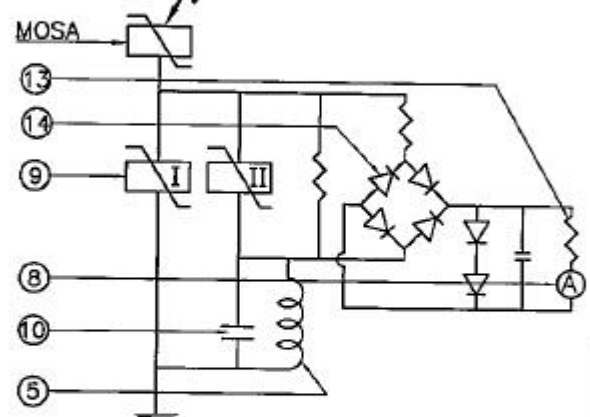
Prepared & Approved during October - 2011

Customer ref : APTRANSCO



NOTE :-

1. DO NOT OPEN THE SEALED UNIT
2. GREEN BAND : 0 TO 2mA - RED BAND : 2 TO 5mA
3. DEGREE OF PROTECTION : IP 67



APPROVED FOR TURNKEY PROJECTS

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

CHECKED

[Signatures]
AEE-1/DN, AEE-2/DN, DE/DN

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

TITLE: **SURGE MONITOR** MATL: _____

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

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

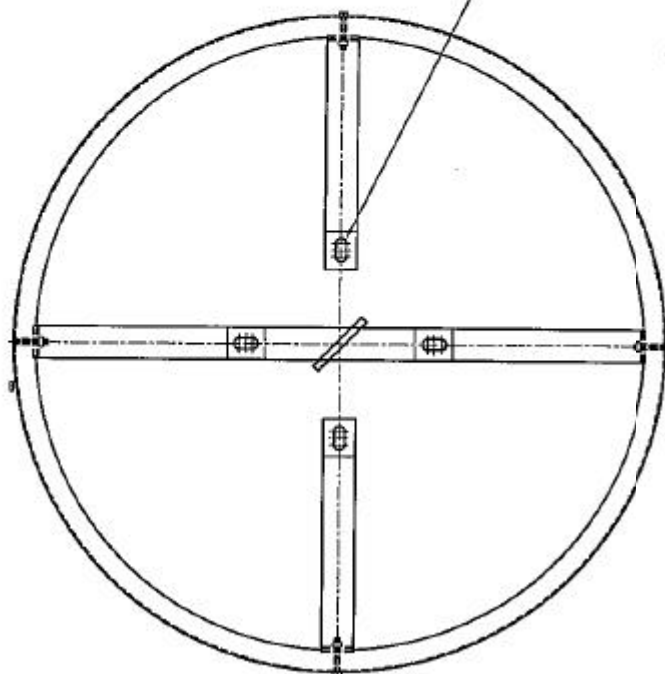
Standardised Drawing for 216 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,).. INDUSTRIAL ESTATE AR A.P. (INDIA)

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

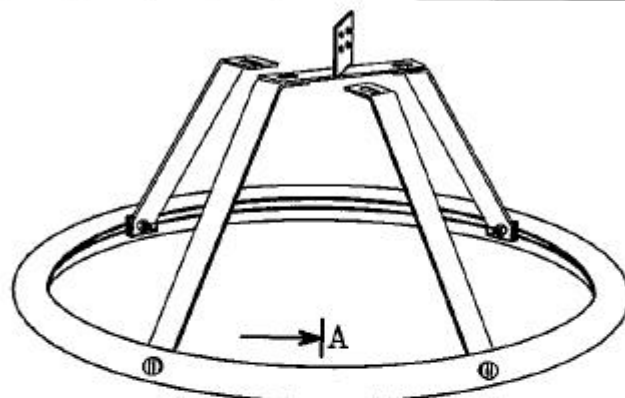
Prepared & Approved during **October - 2011**

Customer ref : **APTRANSCO**

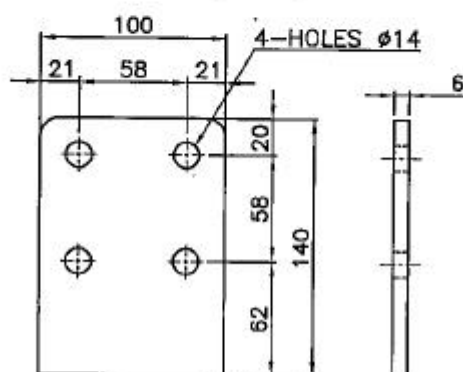
4 SLOTS 30x17 ON PCD 296 ± 6 AT 90°



PLAN



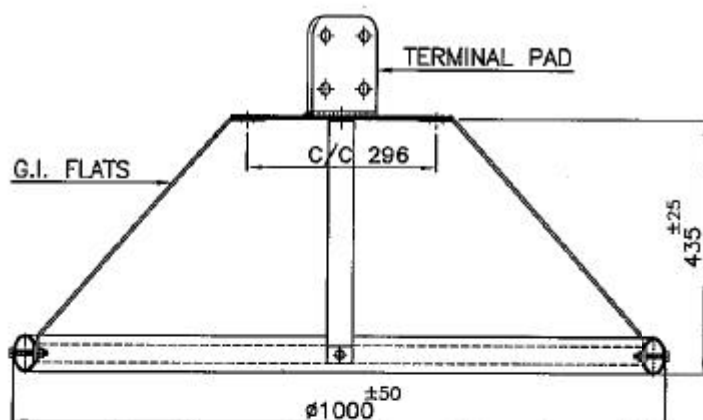
ISOMETRIC VIEW



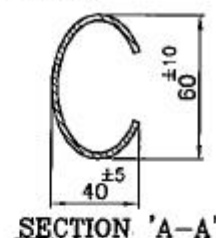
ELEVATION

SIDE VIEW

TERMINAL PAD



SECTIONAL ELEVATION



SECTION 'A-A'

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

ADG 1/DN ADG 2/DN DE/DN

TITLE:

GRADING RING

MATL.: M.S. HDG

REV. No.: 0

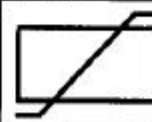
DATE: 21/10/2011

DRG. No.: ZAQ-GR-216

DRN. BY: K. R. Santhosh

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED,

INDUSTRIAL ESTATE,
R
A.P. (INDIA)



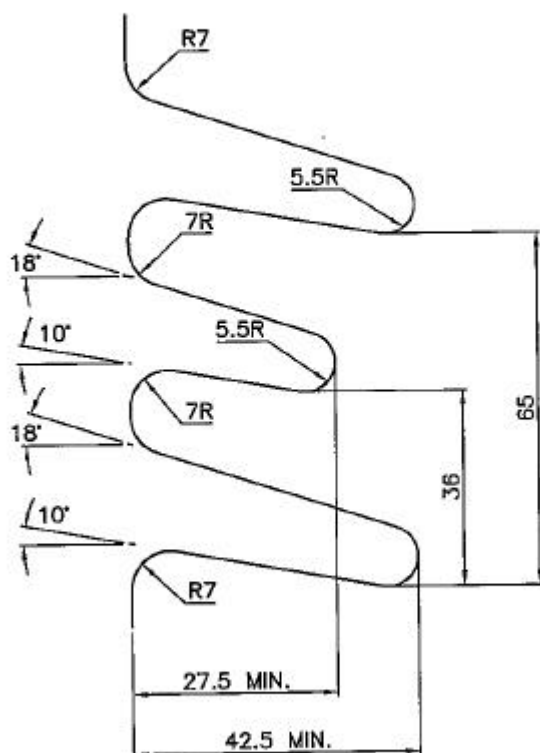
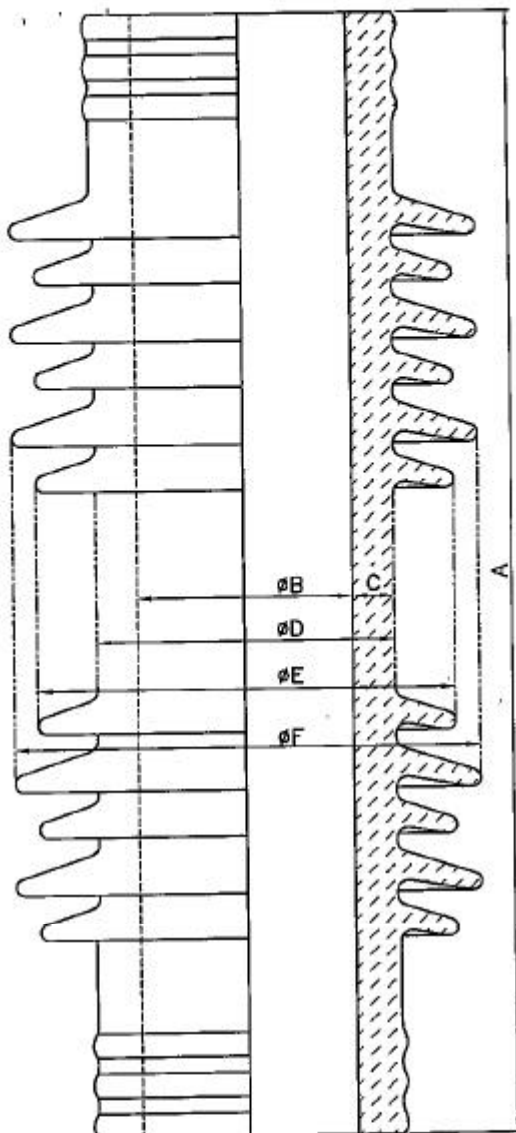
Standardised Drawing for 216 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,).

STD/GTP-DWG/Approval No. 210-2-sheet 5 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

Title: Grading Ring



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 { $\pm(0.04xd+1.5) \leq 300m.m.$
WHERE 'd' IS DIMENSION { $\pm(0.025xd+6) \geq 300m.m$

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

[Signatures]
APTRANSCO

TO SUIT ARRESTER RATINGS	A	B	C	D	E	F	TOTAL CREEPAGE DISTANCE
72kV	840 ^{±50}	135 ^{±6}	26 ^{±2}	187 ^{±8}	240 MIN.	270 MIN.	2050 MIN.

TITLE:	MATL: PORCELAIN
PORCELAIN BUSHING	REV. No.: 0 DATE: 21/10/2011

DRG. NO.: ZA-Q-PB-72135	DRN. BY: DVkumar	OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED	INDUSTRIAL ESTATE AR A.P. (INDIA)
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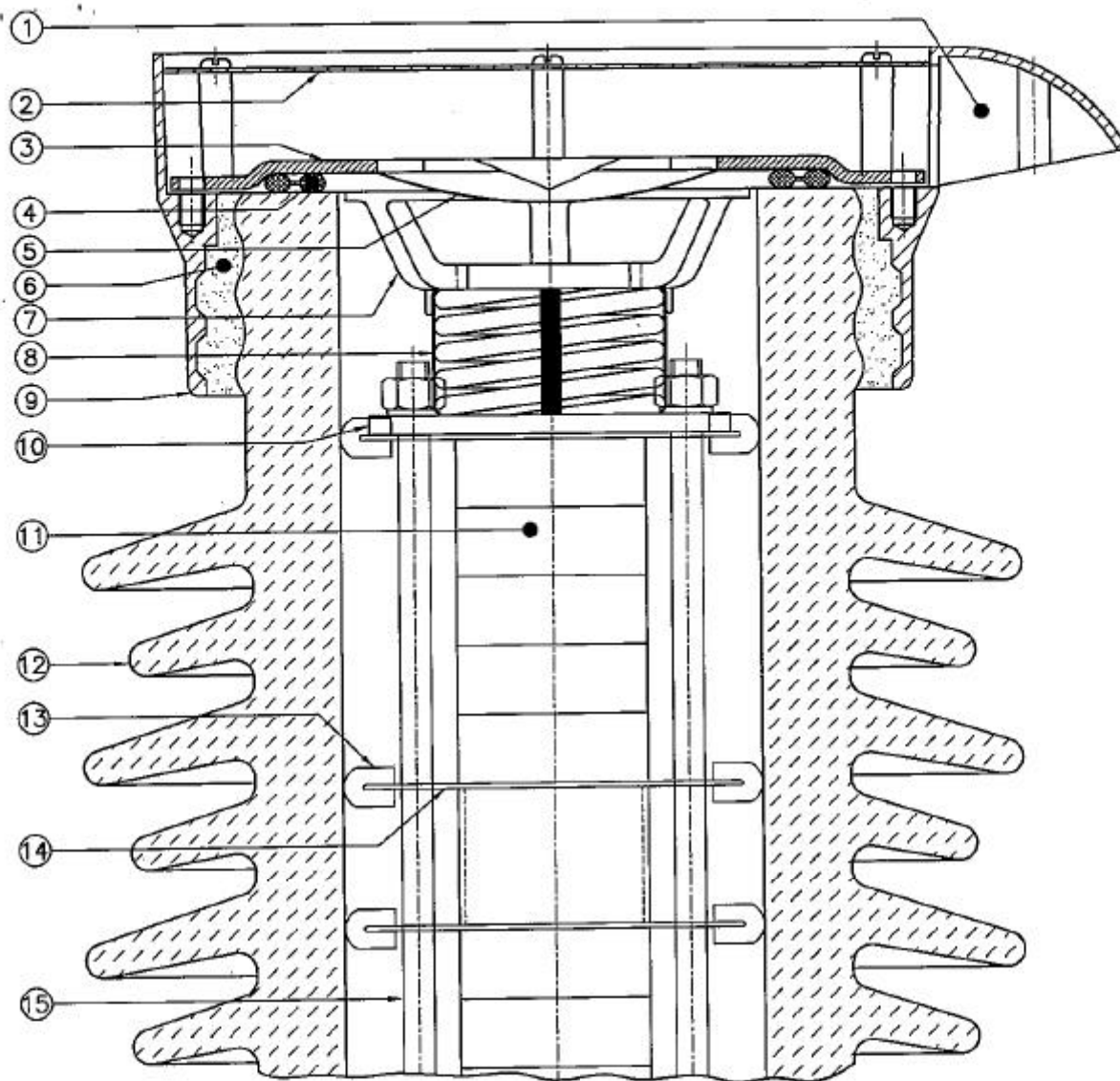


Standardised Drawing for 216 KV Lightning Arrestor(Oblum
Electrical Industries Pvt.Ltd.,).

STD/GTP-DWG/Approval No. 210-2-sheet 6 Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO



APPROVED FOR TURNKEY PROJECTS

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

CHECKED

APTRANSCO

APTRANSCO

APTRANSCO

- 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:

PRESSURE RELEASE ARRANGEMENT

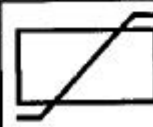
MATL: ---

REV. No.: 01

DATE: 21/10/2011

DRG. No.: **ZAQ-PRA-6672** DRN. BY: *D. V. Kumar*

OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED
PRIVATE INDUSTRIAL ESTATE
ANAGAR
- 37 A.P. (INDIA)



Standardised Drawing for 216 KV Lightning Arrestor(Oblum
Electrical Industries Pvt.Ltd.,)..

STD/GTP-DWG/Approval No. **210-2-sheet 6** Revision No. 0

Prepared & Approved during October - 2011

Customer ref : APTRANSCO

UNIT NAME PLATES

133 125		35	
METOVAR METAL OXIDE SURGE ARRESTER – UNIT NAME PLATE			
RATED VOLTAGE	72	kV L.D. DISCHARGE CLASS	3
DISCHARGE CURRENT	10	KA MCOV	57.3
MODEL	ZAQ-216-SM	SI. No.:	YEAR OF MFG.
		POSITION	
OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED HYDERABAD, ANDHRA PRADESH, INDIA.			

	Standardised Drawing for 216 KV Lightning Arrestor(Oblum Electrical Industries Pvt.Ltd.,)
	STD/GTP-DWG/Approval No. 2T0-2-sheet.7 Revision No. 0
	Prepared & Approved during October – 2011
	Customer ref : APTRANSCO
Title: 216 KV Name Plate	

MASTER NAME PLATE

133 125		35	
METOVAR METAL OXIDE SURGE ARRESTER – MASTER NAME PLATE			
RATED VOLTAGE	216	kV MCOV	172
DISCHARGE CURRENT	10	KA MODEL	ZAQ-216-SM
RATED FREQUENCY	48 TO 62	Hz. SI.No.	
L.D. DISCHARGE CLASS	3		
PRESSURE RELIEF CLASS	40	KA(RMS)	
		UNIT RATING	UNIT POSITION
		72	TOP
		72	MIDDLE
		72	BOTTOM
OBLUM ELECTRICAL INDUSTRIES PRIVATE LIMITED HYDERABAD, ANDHRA PRADESH, INDIA.			

APPROVED FOR TURNKEY PROJECTS

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

CHECKED

TITLE: **216kV NAME PLATE**

MATL: 0.5mm ALUMINIUM SHEET

REV. No.: 0

DATE: 21/10/2011

DRG. No.: ZAQ-NP-216

DRN. BY: *Dr. Kumar*

SCALE: N.T.S

APPRD. BY: *asr*

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 $\pm 2\%$





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) 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 :

GAURANTEED TECHNICAL PARTICULARS FOR 216 KV 10 KA -CLASS-III METAL OXIDE GAPLESS SURGE ARRESTER

Sl.no	Description	216 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)	216 kV
5.	Maximum Continuous Operating Voltage (MCOV)(kV)	172 kV rms
6.	Nominal Discharge Current (kA) with 8/20 μ sec wave	10 kA
7.	Long Duration Discharge	Class-III
8.	Energy Discharge Capability (kJ/kV)	8 kJ/kV (OD TEST)
9.	Maximum switching current impulse residual voltage at i) 1000 Amps. ii) 250 Amps	496 kV _{Peak} 468 kV _{Peak}
10.	Maximum residual voltage with 1 μ second current wave at 10kA(kV _{Peak})	660 kV _{Peak}
11.	Maximum residual voltage with 8/20 (kV _{Peak}) μ sec wave i) 5kA ii) 10kA iii) 20kA	567 kV _{Peak} 600 kV _{Peak} 660 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})	1050 kV _{Peak}
14.	One minute power frequency withstand voltage of housing (dry/wet)-kv(rms)	460 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	351 kV _{Peak} 366 kV _{Peak} 382 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	3-Units of 72kV each
20.	Minimum Creepage distance mm(min)	6125mm.(minimum)
21.	Leakage Current (mA)	I _r =Less than 500 μ Amps I _c =About 1500 μ Amps
22.	Total weight of Arrester (kGS)	220 $\pm$ 10% kGS
23.	Maximum Cantilever strength of Surge Arrester (including wind load)	1000 kGM.
24.	Overall height of Surge Arresters(mm)	2790 $\pm$ 150 mm
25.	Maximum distance recommended from equipment to be protected by Surge Arrester(mm)	3 to 4 mtrs
26.	Minimum distance between grounded object (mm)	3000 mm
27.	Minimum distance between Arrester phase legs (mm)	3600 mm
28.	Any other particulars	Yes, GTP of Surge Monitor.



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) 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 (8/20μsec wave)
5	Nominal Discharge Current	10kA.
6	Max. Current to be withstood by the Surge Monitor	100kA.
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
APTRANSCO/VIDYUTH SOUDHA/HYD

(O.BALAGANGADHAR)
MANAGING DIRECTOR

CHECKED

	Standardised Guaranteed Technical Particulars for 216 KV Lightning Arrester (-Oblum Electrical Industries Pvt Ltd make)
	STD/GTP-DWG/Approval No. 210-1 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.