

Electrical Design Circle II  
UPP, Shakti Bhawan Lko.

**DRAWING APPROVED**

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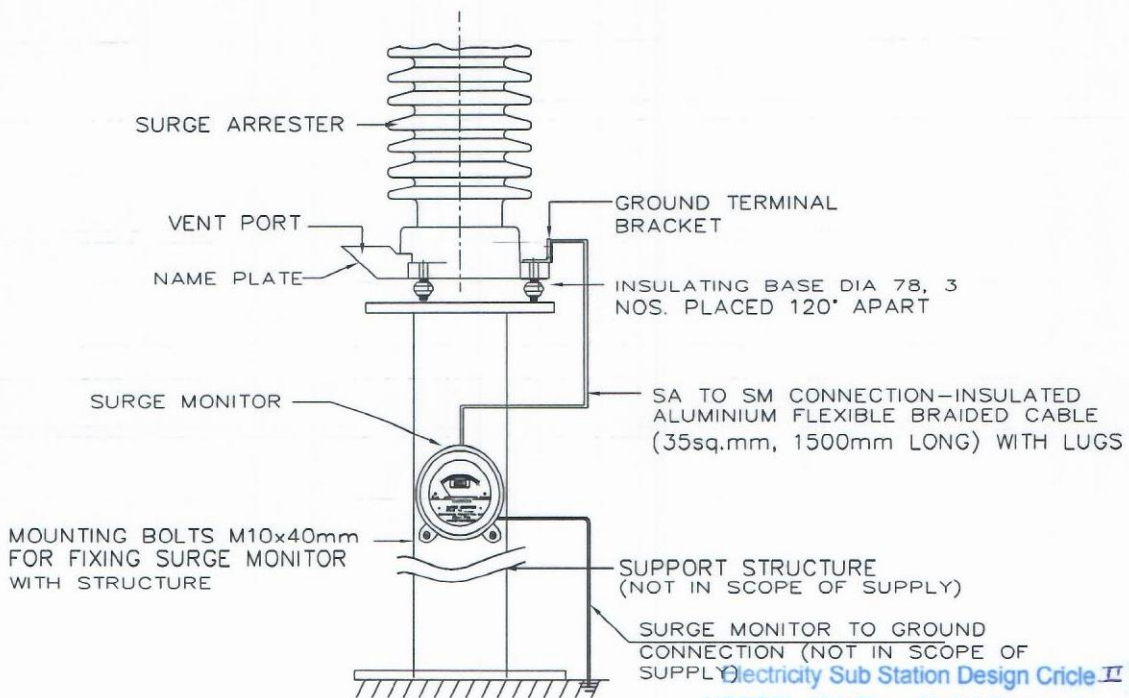
**NOTE:**

1. TOTAL CREEPAGE DISTANCE : 3625mm (minimum)
2. ARRESTER VENT PORTS TO BE DIRECTED TOWARDS SAFE DIRECTION
3. WEIGHT OF THE ARRESTER : 105±10% Kgs.
4. RATED VOLTAGE : 120kV
5. NOMINAL DISCHARGE CURRENT : 10kA
6. LONG DURATION DISCHARGE CLASS : CLASS 3
7. PRESSURE RELIEF CLASS : CLASS A
8. PRESSURE RELIEF CURRENT : 40kA
9. LA SUITABLE FOR HOT LINE WASHING
10. MINIMUM ENERGY HANDLING CAPACITY : 8kJ/kV
11. MAXIMUM PARTIAL DISCHARGE WHEN ENERGISED AT 1.05 TIMES OF MCOV : NOT TO EXCEED 10pC
12. MOUNTING TYPE : PEDESTAL MOUNTING
13. APPLICABLE STANDARD - IS:3070 (Part III) & IEC:60099-4:2004
14. INSULATOR MAKE - JAIPUR CLASS/RAVKIRAN/C.JI/ABI/IEC/MAHALAXMI
15. FOR SURGE MONITOR REFER DRG. NO. : EL-LA-12010105
16. FOR METHOD OF CONNECTING SURGE MONITOR TO LA. REFER DRG. NO. : EL-LA-12010105
17. GRADING RING DIA. INCLUDED IN 3 PHASE INSTALLATION CLEARANCES

ALL DIMENSIONS ARE IN mm  
GENERAL TOLERANCE ±5%  
CLIENT : U.P. POWER TRANSMISSION CORPORATION LIMITED, LUCKNOW  
TENDER SPECIFICATION No.: ESD - 481

**120KV, 10kA METAL OXIDE GAPLESS LIGHTNING ARRESTER**  
( STATION CLASS -3, TYPE : EMOH )

PROJECT NO. : EL-TN-18-00054	DRAWN BY:- ADITYA	CHKD. BY:-	APPD. BY:-
	SCALE:- N. T. S.	DRG. NO:- EL-LA-12010101	DATE:- 22-02-2018

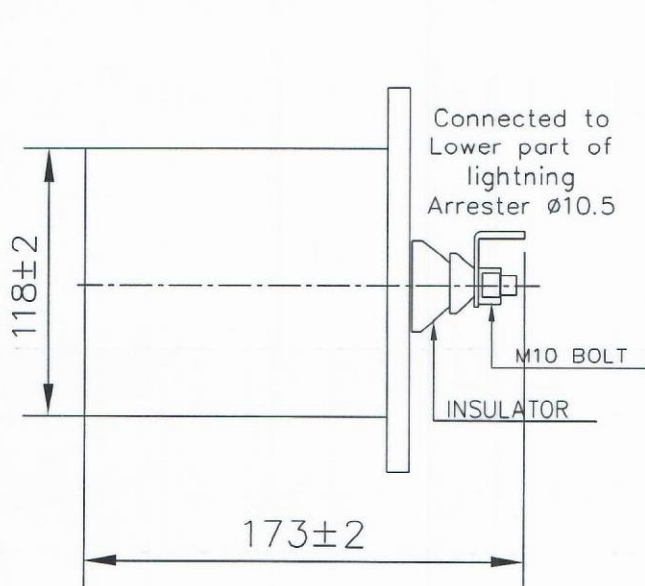


Electricity Sub Station Design Circle II  
 UPPTCL, 13th Floor, Shakti Bhawan Lko.

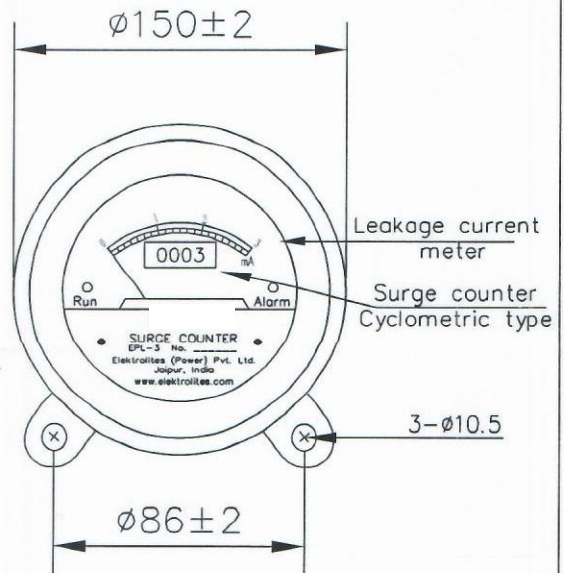
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ALL DIMENSIONS ARE IN mm GENERAL TOLERANCE $\pm 5\%$	METHOD OF CONNECTING SURGE MONITOR WITH SURGE ARRESTER		
CLIENT : U.P. POWER TRANSMISSION CORPORATION LIMITED, LUCKNOW TENDER SPECIFICATION No.: ESD - 481			
PROJECT NO. : EL-TN-18-00054	DRAWN BY:- ADITYA	CHKD. BY:-	APPD. BY:-
	SCALE:- N. T. S.	DRG. NO.:- EL-LA-12010104	DATE:- 22-02-2018



SIDE VIEW

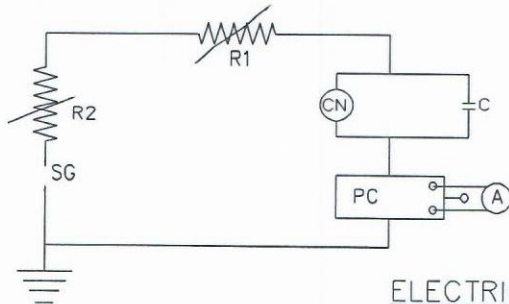


FRONT VIEW

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UPPTCL, 13th Floor, Shakti Bhawan Lko.

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ELECTRICAL CIRCUIT

SG - SPARK GAP  
R1, R2 - NON LINEAR RESISTANCE BLOCK  
C - CAPACITOR  
CN - COUNTER  
PC - PROTECTION IN CIRCUIT  
A - AMMETER 0-25 mA

- \* ALL DIMENSIONS ARE IN mm
- \* TOLERANCE ON DIMENSIONS  $\pm 5\%$

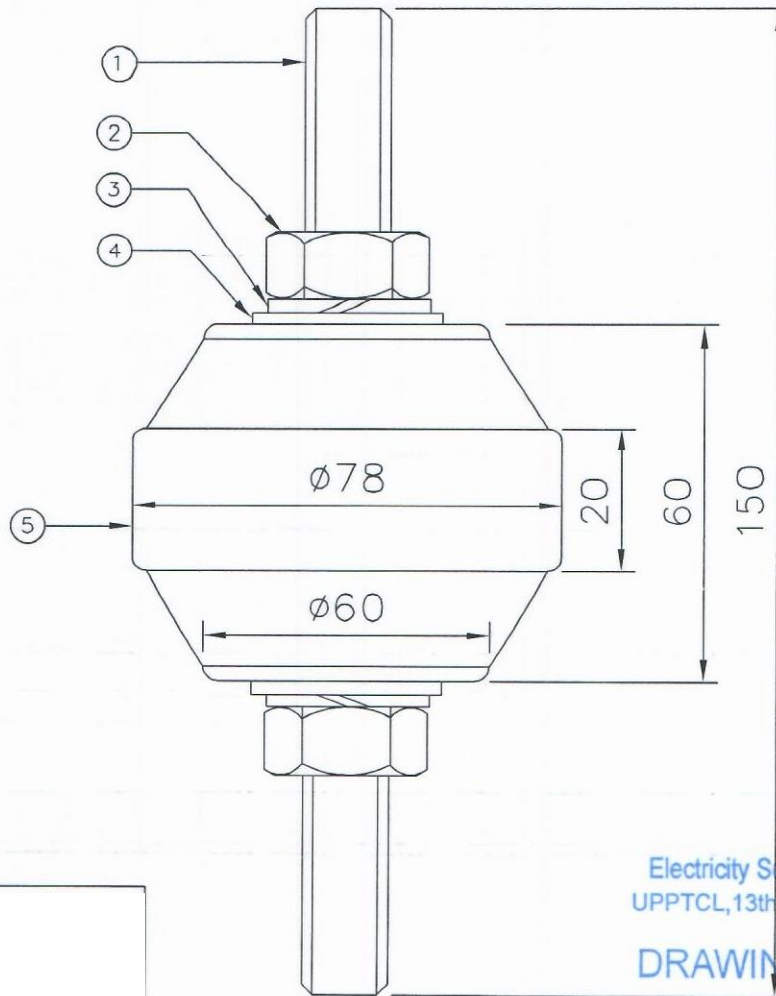
**SURGE COUNTER (G.A.)**

CLIENT : U.P. POWER TRANSMISSION CORPORATION LIMITED, LUCKNOW  
TENDER SPECIFICATION No.: ESD - 481

PROJECT NO. : EL-TN-18-00054

DRAWN BY: - ADITYA	CHKD. BY: -	APPD. BY: -
SCALE: - N. T. S.	DRG. NO.: - EL-LA-12010105	DATE: - 22-02-2018





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NOTE :

1. WEIGHT - 418 ± 10 gms.

ITEM NO.	DESCRIPTION	QTY.	MATERIAL
1.	M12 BOLT	2	S.S.
2	M12 NUT	2	S.S.
3	M12 SPRING WASHER	2	S.S.
4	M12 PLAIN WASHER	2	S.S.
5	INSULATOR	1	POLYCRETE

ALL DIMENSIONS ARE IN mm  
 GENERAL TOLERANCE ±5%

INSULATING BASE

CLIENT : U.P. POWER TRANSMISSION CORPORATION LIMITED, LUCKNOW  
 TENDER SPECIFICATION No.: ESD - 481  
 LOI NO. 99/ESDC-II/A/T/ESD-481/LOI/ELEKTROLITES DT. 21.02.2018

DRAWN BY: -  
 ADITYA

CHKD. BY: -

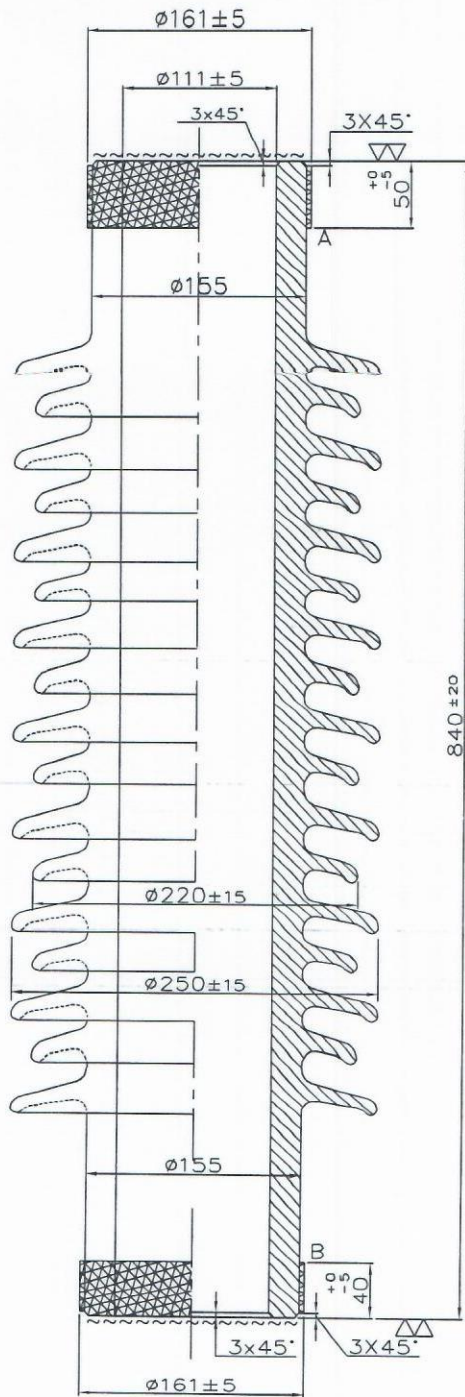
APPD. BY: -

SCALE: -  
 N. T. S.

DRG. NO.: -  
 EL-LA-12010106

DATE: -  
 25-02-2018

PROJECT NO. : EL-TN-18-00054



Electricity Sub Station Design Circle II  
UPPTCL, 13th Floor, Shakti Bhawan Lko.

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NOTE :

1. SURFACE UNGLAZED SHOWN THUS ~~~~~
2. SURFACE MARKED  $\nabla$  TO BE GROUND SMOOTH
3. CREEPAGE DISTANCE :- 25mm/kV (1813 mm Min.) **1850 mm (Nominal)**
4. COLOUR OF GLAZE - DARK BROWN
5. UNSPECIFIED TOLERANCE AS PER IEC233-1974
6. ROUTINE AND ACCEPTANCE TEST AS PER IEC233-1974 & IS : 5621-1980
7. BORE SHOULD HAVE STRAIGHT & UNIFORM DIAMETER
8. RATED VOLTAGE - 60kV
9. BENDING STRENGTH - 200 Kg/cm<sup>2</sup>

ALL DIMENSIONS ARE IN mm  
GENERAL TOLERANCE  $\pm 5\%$

PORCELAIN INSULATOR

CLIENT : U.P. POWER TRANSMISSION CORPORATION LIMITED, LUCKNOW  
TENDER SPECIFICATION No.: ESD - 481

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ADITYA

CHKD. BY:-

APPD. BY:-

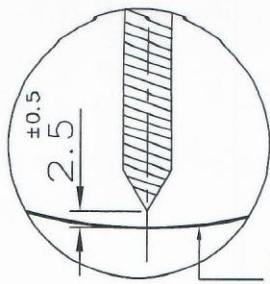
SCALE:-  
N. T. S.

DRG. NO.:-  
EL-12010108

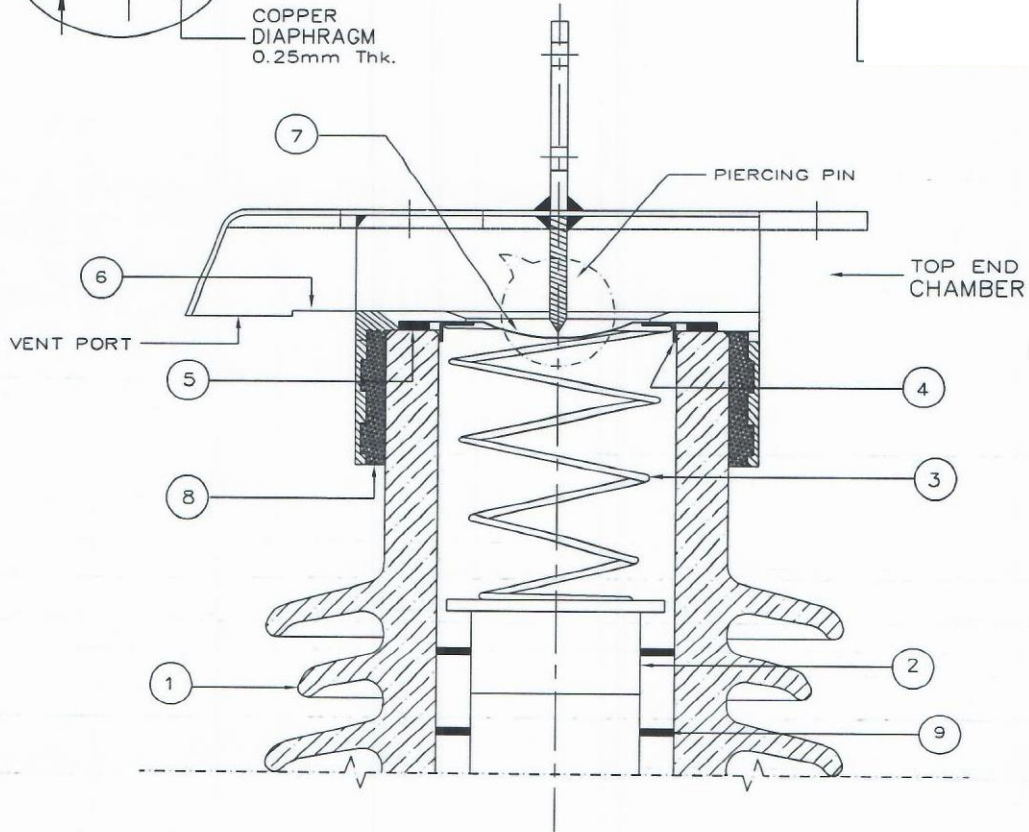
DATE:-  
22-02-2018

PROJECT NO. : EL-TN-18-00054





ENLARGED VIEW OF PIERCING PIN AND DIAPHRAGM ARRANGEMENT



S.No.	DESCRIPTION	MATERIAL
1	INSULATOR	PORCELAIN
2	MOV BLOCK	ZnO
3	CONICAL COMPRESSION SPRING	SPRING STEEL
4	SPRING SUPPORT	ALUMINIUM
5	RUBBER GASKET	NEOPRENE <i>5 mm thick</i>
6	COVER PLATE WITH PIERCING PIN	ALUMINIUM DIE CASTED / M.S
7	PRESSURE RELIEF DIAPHRAGM	TIN COATED COPPER
8	CEMENT	SULPHUR
9	RUBBER STACK SUPPORT	NEOPRENE

ALL DIMENSIONS ARE IN mm  
GENERAL TOLERANCE  $\pm 5\%$

CLIENT : U.P. POWER TRANSMISSION CORPORATION LIMITED, LUCKNOW  
TENDER SPECIFICATION No.: ESD - 481

PRESSURE RELIEF AND SEALING  
ARRANGEMENT OF ARRESTER

DRAWN BY:- ADITYA	CHKD. BY:-	APPD. BY:-
SCALE:- N. T. S.	DRG. NO.:- EL-LA-12010109	DATE:- 22-02-2018

PROJECT NO. : EL-TN-18-00054

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**SCHEDULE-R**  
**THE TECHNICAL PARTICULARS OF THE OFFERED 120 KV 10 KA RATING**  
**METAL OXIDE (GAPLESS) LIGHTNING ARRESTERS**

Sr. No.	Particulars	Offered
1	Name of Manufacturer	
2	Type of Model	EMOH
3	Standard	As per IS:3070/IEC-99-4
4	Number of unit in one Complete arrester	02 Nos,
5	Ratings a)Voltage b)Frequency c)Nominal discharge current	a)120 KV (rms) b) 50 Hz c) 10 KA
6	Maximum continuous operation voltage (MCOV) not less than	102 KV (rms)
7	Power frequency reference voltage	Not less than MCOV
8	Power frequency reference current	1 to 5 mA
9	Continuous current drawn by the arrester at MCOV and ambient temperature a) Resistive Component b) Capacitive Component	a) 500 Micro Amps Crest b)1500 Micro Amps Crest
10	Long duration current discharge class as per IEC	Class-3 as per IEC
11	Pressure relief class as per IEC	Class -A for 40 KA (rms)
12	Residual voltage for discharge current of 10 KA and 8/20 micro second	350 KV (peak)
13	One micro second discharge voltage at 10 KA (steep Impulse)	400 KV(peak) to 460 KV (peak)
14	Maximum Switching surge protection level at 1000 Amps (With current wave having virtual front time over 30 microsecond)	342 KV (Peak)
15	Peak value of high current impulse of 4/10 micro second	100 Kv (peak)
16	<b>G.T.P. OF PORCELAIN HOUSING TO BE USED IN THE OFFERED L.A. UNITS</b>	
i).	Overall height of porcelain	840+/-20 mm.
ii).	Internal diameter	Ø 111 +/- 5mm.
iii).	Outer diameter	Ø 155 mm.
iv).	Wall thickness	25 mm.
v).	Number of sheds	As per standard.
vi).	Diameter of sheds	Ø 250 +/- 15 & Ø 220+/- 15 mm.
vii).	Colour of glaze	Dark Brown
viii).	Total Creepage distance	1813 mm. <i>1850mm (Nominal)</i>
ix).	Total protected Creepage distances	906.5 mm. <i>1025mm</i>

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x).	Power frequency withstand voltage (dry/Wet)	350 KV.

17.	<b>GTP OF METAL OXIDE DISCS TO BOUSED IN THE OFFERED L.A. UNITS</b>	
i)	Manufacturer	GECE
ii)	Manufacturer's catalogue reference	Enclosed
iii)	Number of discs per L. A. Unit	20 Nos. (per unit)
iv)	Nominal Rating	3 KV
a)	Rated Voltage Ur	3 KV
b)	M.C.O.V. Ur	2.55 KV
c)	Nominal Discharge Current	10 KA
d)	Discharge Class	Class -3
v)	Dimension of Disc	-
a)	Diameter	62+/-2 mm.
b)	Thickness	22+/-2mm.
vi)	Maximum Watt Loss	-
vii)	Residual voltage at 10 KA discharge Current	As per IEC
viii)	Rating after accelerating ageing test	
a)	Rated Voltage Ur	3 KV
b)	M.C.O.V. Uc	2.55 KV
18	Details of metal grading rings if provided	N.A.
19	Weight of complete arrester unit	105+/-10%Kg.
20	Height of complete arrester unit from base to top	1860+/-50 mm
21	Mounting base flange dimension details of the arrester unit (Should match with purchaser's Drg. No. W-07447)	
a)	PCD	As per Drg.
b)	Number of hole	
c)	Dia of Holes	
d)	Spacing of Holes	

  
Signature of tenderer

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**SCHEDULE – R (B)**  
**GUARANTEED TECHNICAL PARTICULARS OF INSULATION BASE SURGE**  
**COUNTER AND TECHNICAL COUNTER**

**A. Insulating base**

1. Height of insulation base =  $150 \pm 5 \%$
2. Weight of insulation base =  $418 \pm 10$  gms
3. Dimensional and other mounting details = 3 No. Placed  $120^\circ$  Apart

**B. Surge counter with L.A. current meter**

1. Type of surge counter = Analogue
2. Surge counter's measuring details = mA

**C. Terminal connector**

1. Material of the terminal connector = Aluminum Alloy and suitable for ACSR panther conductors for vertical as well as horizontal entry of the conductors
2. Type of bolts and nuts, the material and size = 4 Nos of 12 mm dia stainless steel bolts and nuts

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**DRAWING APPROVED**

  
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(SIGNATURE OF TENDERER)  
SEAL