



**Specification for Surge Arresters**  
SWITCHGEAR ENGINEERING DIVISION

Annexure-A for  
PI No.

PAGE 1 OF 4

**TECHNICAL SPECIFICATION FOR ZINC OXIDE TYPE SURGE ARRESTOR (Polymeric Insulation)**

Single Pole, Indoor, non linear (gap-less design) Zinc Oxide type surge arrestor suitable for 3 Phase, 50Hz solidly earthed neutral system conforming to technical requirements detailed in table-1 below.

**A. APPLICATION :**For protection of motors & transformers against switching surges generated by vacuum circuit breakers.

Complete technical particulars of the offered surge arrestor to be furnished by the supplier as per the enclosed technical particulars format ANNEXURE-I.

*Offers without duly filled Annexure are liable to get rejected technically without any further communication in this regard.*

**TABLE-1**

S/no.	Technical Parameters	Item-1	Item-2	Vendor Confirmation	Remarks
1	System Voltage	12 kV	15 kV		
2	Power frequency withstand voltage (1 min. RMS)	28 kV rms	28 kV rms		
3	MCOV	9kV	12kV		
4	Peak withstand voltage	70 kVp	70 kVp		
5	Nominal Discharge current	10 kA	10 kA		
6	Energy dissipation class	IEC-60099-4	IEC-60099-4		
7	Dimensional requirement	As per Fig.-1	As per Fig.-1		
8	Applicable Standard	IEC-60099-4	IEC-60099-4		
9	Color Code (Stickers/Painted)	White	White		
10	Mounting	For mounting inside H.T. switchgear cubicles			
11	Insulation	<b>Polymeric Type</b>			

Other than above parameters, offered surge arrestor shall strictly comply to all the requirements mentioned in IEC-60099-4, Also colour code band of specified colour shall be provided by the vendor on each Surge Arrestor.

**B. DOCUMENTS TO BE FURNISHED BY SUPPLIER AT THE TIME OF OFFER :**

- Guaranteed technical particular details as per ANNEXURE-I for all the 3 items separately
- Dimensional general arrangement drawing.
- Technical leaflets.
- Vendor shall submit two set of type test reports against each project, with the order acceptance, for approval/review by customer during approval. In case any discrepancy or inadequacy is found by customer, the same shall be resolved by supplier with customer with no binding on BHEL and without any price implication

REV.		PRINTS TO :-		Compliance Of Vendor (Authorised Signatures)		
ALTD.		SCR- PROD	1	BHEL	ISSUED	DATE
		SCR- MM	1			
APPD.		SWE-CONT	1			
		SCR- PLG	1			
		SCR- QC	1			

**COPYRIGHT AND CONFIDENTIAL**

The information on this document is the property of Bharat Heavy Electricals Limited  
It must not be used directly or indirectly in any way detrimental to interest of Co.



**C. DOCUMENTS TO BE FURNISHED BY SUPPLIER AT THE TIME OF SUPPLY :**

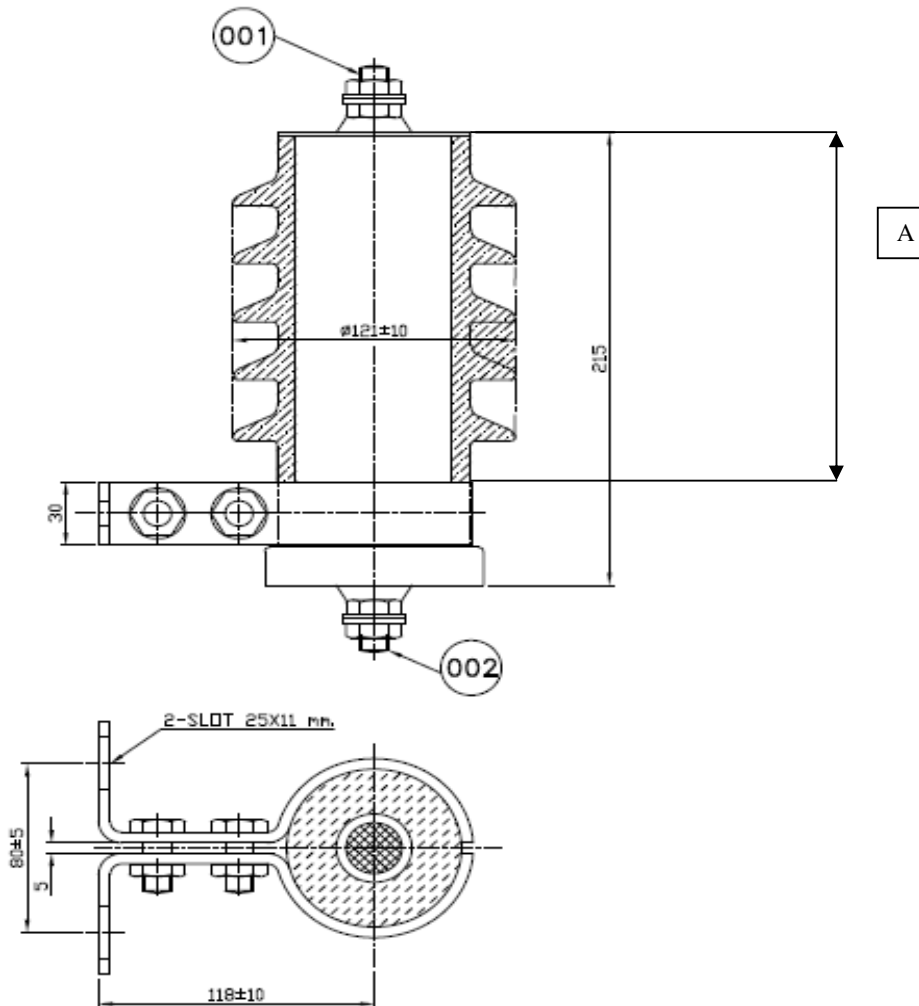
1. 3 copies of routine test certificates.

**D. PERFORMANCE GUARANTEE :** Surge arrestors shall perform satisfactorily for a minimum period of 24 months after receipt at BHEL Bhopal order or 18 months from date of commissioning, whichever is earlier.

**E. ACCEPTANCE CRITERIA :**

1. Dimensions as per approved drawing.
2. Technical parameters as per approved GTP.
3. Visual checks for defect free surface.

**D. Dimensional Requirement :** As per figure-1 below, all the dimensions are in mm.



Legends : 001 is Line Terminal

002 is Earth Terminal

A = 130mm (minimum) with minimum Creepage distance 220mm

**Fig.-1**

**COPYRIGHT AND CONFIDENTIAL**

The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to interest of Co.

ANNEXURE-IZINC-OXIDE TYPE SURGE ARRESTORSGUARANTED TECHNICAL PARTICULARS FOR SURGE ARRESTOR

- 1) Type :
- 2) Model No. :
- 3) Rating :
- 4) Maximum continuous operating voltage :
- 5) Nominal Discharge Current :
- 6) a. Discharge capability repetitive :  
b. Long duration current impulse :
- 7) a. Maximum resistive component  
Continuous current at COV :  
b. Maximum capacitive component  
of continuous current :
- 8) a. Reference current :  
b. Reference voltage range :
- 9) Maximum Residual voltage  
(8/20 Micro sec.) at current impulse  
5 KA :  
10KA :  
20KA :
- 10) Maximum switching impulse residual  
Voltage at  
1000 Amps crest :  
500 Amps crest :
- 11) Maximum steep current impulse  
residual voltage at  
10KA crest :  
1KA crest :
- 12) High current impulse  
4/10 micro sec. wave :
- 13) Temporary over voltage withstand  
Capacity for  
0.1 sec. :  
1.0 sec. :  
10.0 sec. :  
100.0 sec. :
- 14) Insulation withstand  
a. Lighting Impulse (dry) :  
b. Power Frequency rms (wet) :

**COPYRIGHT AND CONFIDENTIAL**

The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to interest of Co.



15) Maximum radio interference voltage :

16) Suitability for motor protection  
From switching surges generate  
by vacuum interrupter :

17) Suitability for Solidly Earthed System :

**COPYRIGHT AND CONFIDENTIAL**

The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to interest of Co.