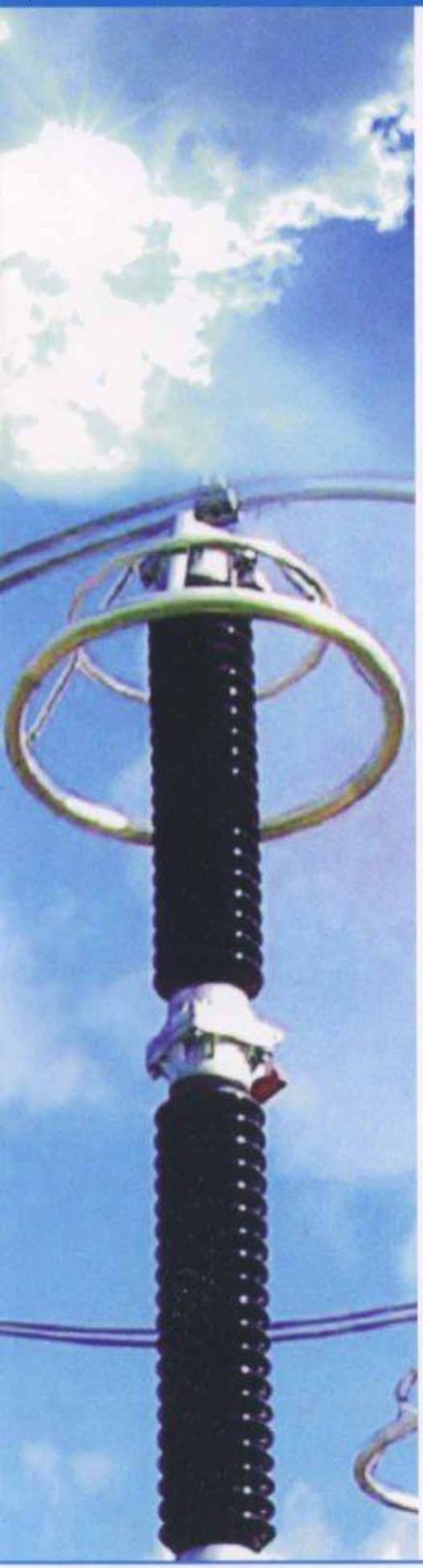

METAL OXIDE SURGE ARRESTER

Porcelain housed for outdoor application

Salient Features

- For protection of transformer & switchgear.
- Highly non-linear MOV.
- Explosion Proof - Pressure Relief Design.
- High energy handling capacity.
- Glazed brown Porcelain Housing.
- Corrosion proof Aluminum alloy metal flange.
- Suitable for Ambient -40°C to +55°C.

Performance Data

System Voltage (kV)	3 ~ 245kV
Rated Voltage (kV)	3 ~ 216kV
Nominal discharge current (kA)	5 ~ 20
High current capability (4/10us) kA	65 ~ 100
Energy Class :	D, 1, 2, 3 & 4
Energy absorption Capability kJ/kV	2 ~ 8
Short Circuit (Pressure relief) kA	40
Standard in accordance with	IEC-60099-4 IS-3070-Part in

In Collaboration With

国创电器
CCEC

Elektrolites™

Where Innovation is LIFE

Elektrolites®

Where Innovation is LIFE

INTRODUCTION

'Elektrolites' started in 1966 with trading in power station equipments. The company commenced production of 11 kV Isolator in 1982, and with the induction of technocrat Mr. Anil Saboo, expanded its product range upto 420 kV now. The Company diversified in 2008 into various electro-mechanical products of power sector upto 800 kV range. The manufacturing of surge arresters started in 2002 and established with large population of surge arresters performing satisfactorily . The company is ISO-9001-2008 certified from BSI.

INFRA STRUCTURE

The manufacture of lighting arresters involves sophisticated technology as well as environment. The company has now built a world class industrial complex at Bagru Industrial estate and the manufacture of LA is done under controlled atmospheric conditions. A modern HV lab incorporating 100kA impulse current generator, 300 kV P.D. free HV transformer has been established to carry out all type, acceptance and routine test as per IEC and IS-Standards.

SURGE PROTECTIVE DEVICE

Elektrolites manufactures effective surge protection device with the modern technology of highly non-linear Zinc Oxide Varistor blocks and thus diverts natural lightning surge and switching surge to earth and simultaneously clip off any follow on current. Our station class arresters are designed to provide maximum safety to personnel and sub-station equipment even at the enormous short circuit duty. Research and Development is an ongoing process at Elektrolites with the active collaboration of experts in the industry.

Station Type

In process testing

Distribution Type

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PRODUCT RANGE

DISTRIBUTION CLASS

Widely used for the protection of transformers in the distribution system

Voltage(kV)	0.5 to 36
Current(A)	1500~10,000
Line discharge class	D & 1

STATION CLASS

Mainly used for the protection of station transformer and switch gear.

Voltage(kV)	3 to 245
Current(A)	10,000-20,000
Line discharge class	2 ~ 4

CONSTRUCTION & OPERATING PRINCIPLE

Heart of the Surge Arrester is highly non-linear Metal Oxide (MOV) Blocks designed to withstand the electric surge duty as given in the table -1 and is housed in a non-porous electrical porcelain insulator along with proper anchoring parts and sealing system. For distribution type H.T. and ground terminals are taken out through metal caps, spun over the porcelain housing and in case of station type end casting made of corrosion resistant Al alloy is fitted with suitable pressure relief device.

When an electric surge due to natural lightning or switching action appears across the arrester, the MOV stack diverts the entire energy to earth by posing a very low resistance and instantaneously recovers to its original insulation strength getting ready for the next operation.

TECHNICAL PARTICULARS

Table - I

Model Reference		EMOD			EMOE			EMOG			EMOH					
Rated Voltage	kVrms	9	18	30	9	18	30	9	30	60	30	60	96	120	198	216
Nominal Discharge Current (NDC)	kA	5	5	5	10	10	10	10	10	10	10	10	10	10	10	10
Energy Discharge (at mcov 2 pulse)	kJ/kV	0.8	0.8	0.8	1	1	1	2	2	2	3	3	3	3	3	3
Max. Cont. Operating Volt(M.C.O.V.)	kVrms	7.2	15	25	7.2	15	25	7	25	51	25	51	81	102	168	175
Highest System Voltage (HSV)	kVrms	12	24	36	12	24	36	12	36	72	36	72	122	145	245	245
AC/1 Min. test level.	kVrms	28	50	70	28	50	70	28	70	140	70	140	230	275	460	460
Total creepage length	mm	300	600	900	300	600	900	300	900	1810	900	1810	3075	3625	6125	6125
Long duration Class		D	D	D	1	1	1	2	2	2	3	3	3	3	3	3
High Current withstand (4/10 micro*2)	kA	65	65	65	100	100	100	100	100	100	100	100	100	100	100	100
Low Current (2 millisec.*20 pulse)	Amps	150	150	150	250	250	250	400	400	400	500	500	500	500	500	500
Lightning Impulse Residual voltage at 2.5 kA	kVp	30.0	60.0	100.0	25	47	81	23	77	153	72	150	235	300	490	530
(8/20micro sec) at 5.0 kA	kVp	32.0	64.0	106.0	27.0	52.0	90.0	26	85	170	80	160	250	320	520	567
at 10.0 kA	kVp	36.0	72.0	120.0	30.0	60.0	95.0	28	90	180	85	170	272	340	550	600
at 20 kA	kVp	40.0	80.0	132.0	34.0	.68.0	105.0	30	100	200	90	190	307	380	610	668
Switching Impulse Residual voltage 125 A	kVp	NA	NA	NA	21.0	42.0	64.0	17	56	112	NA	NA	NA	NA	NA	NA
at 250 A	kVp	NA	NA	NA	NA	NA	NA	NA	NA	NA	51.0	102.0	160	192.0	325.0	360.0
at 500 A	kVp	NA	NA	NA	24.0	48.0	76.0	23	72	144	NA	NA	NA	NA	NA	NA
at 1000 kA	kVp	NA	NA	NA	NA	NA	NA	NA	NA	NA	55	110	168	220	350	380
Max.crest steep current impulse at NDC	kVp	36.0	72.0	120.0	34.0	70.0	118.0	32	118	200	116	190	298	372	600	654
Temp. Overvoltage..0.1 sec	kVrms	10.4	22.8	38.0	11.4	22.8	38.0	11.40	38	76	38	76	121	152	250	272
1 sec	kVrms	10.8	21.6	36.0	10.8	21.6	36.0	10.80	36	72	36	72	115	144	237	259
10 sec	kVrms	10.35	20.7	34.5	10.4	20.7	34.5	10.35	34.5	69	34.5	69	110	138	228	248
100 sec	kVrms	9.75	19.5	32.5	9.75	19.5	32.5	9.75	32.5	65	32.5	65	104	130	215	234
Pressure relief class	kA				40	40	40	40	40	40	40	40	40	40	40	40
Max. permissible leakage current	mA	0.3	0.3	0.3	0.4	0.4	0.4	0.40	0.40	0.40	0.50	0.50	0.50	0.50	0.50	0.50
Total Height 'H'	mm	325	520	462	325	520	462	270	462	960	680	970	1280	1530	2400	2670
Diameter of porcelain	mm	105	105	148	105	105	148	144	148	235	148	270	270	270	270	270
Mounting Pitch (pitch circle dia)	mm	40	40	40	184	184	40	184	184	184	224	224	224	224	224	224
Mounting Bolt		2nos * M10 Bolts			2/3nos * M12 Bolts			3nos * M12 Bolts			3nos * M16 Bolts					
Weight..... Net	Kg	2.3	3.8	9.8	2.6	6.5	11.4	7	11	45	15	60	90	100	162	185

Pressure relief capability (Short Circuit Test)

In the remote event of internal failure of an arrester, a pressure relief device operates due to high pressure inside and vents out the gases generated by power arc to the atmosphere thereby preventing the violent shattering of the housing.

'Elektrolites' arresters are designed in accordance with the requirements of IEC 60099-4 and IS-3070-Part III-1993 for the pressure relief capability.

Temporary Over Voltage (TOV)

'Elektrolites' arresters are designed for Temporary power frequency over voltage that exceed arrester rated voltage. Kindly refer table-1 for specific details

QUALITY CONTROL AND PERFORMANCE CHECK

'Elektrolites' is an ISO:9001-2008 certified company by BSI and are highly committed to the quality and performance of the product manufactured. The quality system Incorporates the following:

Inward inspection of all incoming materials are done as per relevant drawings, specifications before taking into stores.

In-process inspection and testing is conducted to assure the conformity with the standards and customer requirements.

Final testing on Routine basis is carried out as per standard requirements. Acceptance tests are carried out on random selected samples before delivery.

Packing and dispatch inspection is done to assure compliance of the arresters with regard to accessories like mounting clamp, hardware, surge counter, disconnector, grading ring and insulating base as per contract.

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ELEKTROLITES (POWER) PVT. LTD.
UNIT I : S-758 (A), Road No. 9F, VKI Area, JAIPUR - 302 013 India
Phone : + 91-141-2330576, 2331624 • Fax : + 91-141-2333572
E-mail : elektrolites@gmail.com • Webste : www.elektrolites.co.in
UNIT II : E-148 to 150, RIICO Ind. Area extn. Phase-II, BAGRU-303007 (Jaipur)