

Shreem



Lightning Arrester

Metal Oxide Distribution Class
Metal Oxide Station Class

Shreem

Shreem Electric Ltd.

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Metal Oxide Distribution Class Lightning Arrester

Applications

- Protection against over voltage caused by Lightning/switching surges
- Utilized in distribution network
- Range: 3 KV – 36 KV

Advantages

- Negligible wattage dissipation under normal operating condition
- Proper end sealing to prevent failure due to moisture
- Compact size , minimum assembly components and minimum weight ensures ease in transportation and installation
- Maximum reliability and durability due to gapless design
- Excellent surge protection characteristics and temporary over voltage capability.

Technical Specification

Parameter	Unit	Rating 9 KV	Rating 15 KV	Rating 30 KV
System Voltage	kVrms	11	22	33
Max. continuous operating voltage	kVrms	7.65	15.3	24
Max. Lightning Impulse (8/20 µsec) Residual Voltage at NDC	KVP	28.5	57	95
Temporary Power frequency over voltage capability for -				
0.1 secs	kVrms	10.8	21.6	36
1.0 secs	kVrms	10.3	20.6	34.5
10.0 secs	kVrms	9.9	19.8	33
Insulation withstand of Arrester housing -				
- Lightning impulse withstand (Dry)	KVP	75	125	179
- Power frequency (Wet)	kVrms	28	50	70
Minimum reference Voltage	kVrms	9	18	30
Creepage Distance	mm	300	600	900
Nominal Height	mm	275	435	550
Weight	kgs	2	3.8	5.5

Note : Other ratings are available on request.



Metal Oxide Station Class Lightning Arrester

Applications

- Protection of equipment for substation against over voltage caused by Lightning/switching surges
- Range: 3 KV – 198 KV
- Line Discharge Class – I , II and III

Advantages

- Absorbs switching surges caused either due to load rejection, system faults and faults clearing or Line energisation / de-energisation.
- Excellent protection characteristic against temporary over voltage arising from either Earth faults , Load rejection or Resonance and Ferro-resonance
- Better thermal stability and efficient dissipation of energy due to eccentric assembly of MOV blocks individually supported by silicon rubber support and strip.
- Simple rugged construction prevents internal arrester damage during shipping and installation
- Ensures longer life due to hermetic sealing of the arrester
- Pressure relief system prevents explosive failure of the arrester housing in the event of prolonged passage of fault current or internal flash over of the arrester
- No maintenance except cleaning of the arrester housing
Design type testing of Lightning Arrester is in accordance with International standard IEC 60099-4 and IS 3070 - Part 3.

Ambient Temperature

Ambient temperature is an important consideration in the application of surge arresters.

The reference standard indicates the standard service ambient temperature not exceeding 40 degree Celsius. Our arresters are designed to operate at a weighted average of 45 degree celsius with excursions to 60 degree celsius.

Altitude

Shreem arresters are designed for altitudes not exceeding 1000 m above sea level. For higher altitude applications extra clearances arcing distance is required.

Mounting Considerations

Shreem Distribution Class Arresters are for pole mounting in vertical position and Station class arresters are self supporting for vertical mounting.

To avoid unwanted flashovers and electrical overstress to internal arrester elements,

recommended clearances between lightning arrester and any adjacent equipment must be observed. Higher the clearance the equipment would be subjected to higher over voltage and lesser the clearance the voltage distribution of the arrester would be disturbed.

General

The objective of arrester application is to select the lowest rating surge arrester that will have a satisfactory service life on the power system while providing adequate protection of equipment insulation. An arrester of the minimum practical rating is generally preferred because it provides the highest margin of protection for the insulation.

The use of higher rating increases the capability of the arrester to survive on the power system but reduces the margin of protection it provides for a specific insulation level. Thus arrester selection must strike a balance between arrester survival and equipment protection.

Stresses to which the arrester will be exposed:

- Continuous system voltage
- Temporary over voltages
- Lightning surges

Continuous system voltage is the recommended limit to the magnitude of the permissible r.m.s. power frequency voltage, which may be continuously applied between the arrester terminals.

Temporary over voltages can be caused by a number of system events such as line-to-ground faults, circuit back feeding, load rejection and ferro resonance. Arrester Temporary over voltage (TOV) capability must meet or exceed expected TOV stresses.

Arrester selected must have sufficient capability to meet the anticipated service requirements in all categories.

