



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG12505 Rev 02

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Specification for MV CONNEX Surge Arrester (10KA) for 36 kV

Application

A) GENERAL

The separable Surge Arrester is installed on the switchgears to prevent the intake of unduly high overvoltage surges.

B) APPLICATION

Connex Surge Arresters are used for the protection of metal-enclosed switchgears equipped with plug-in type bushings. The surge arrester limits particularly those over voltages that are produced by the reflection of traveling waves. When using these surge arresters for switchgears connected to the transmission line via a cable route, it is necessary to protect the transition between the cable and the transmission line with suitable arresters. The capacity of protection is specially coordinated with the switchgear's resistance to surge voltages, considering at the same time the space arrangement and the level of electrical protection.

C) COMPLIANCE WITH NATIONAL/INTERNATIONAL STANDARDS

The Standards for surge arresters (DIN VDE 0675, Part 4/05.94 and IEC 60099-4) are applicable to these devices. The dimensions of the plug-in termination system comply with EN50180/EN 50181.

D) TECHNICAL SPECIFICATIONS :

The live part shall consist of metal oxide resistors without spark gap. The resistors shall possess high thermal stability. The live parts shall be enclosed by a silicone rubber jacket that provides insulation against the metal housing.

The metal housing provides a hermetic sealing of the live parts against environmental influences, such as moisture or pollution. The plug-in connector is designed to fit the inside cone plug-in termination system acc. EN 50180/EN 50181.

It shall be available in Size-2.

The arrester shall be equipped with a corrosion-resistant fracture membrane that opens the arrester in case of an internal fault and allows a defined axial pressure relief on the bottom of the arrester without damaging the plug-in system.

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REV.

02

PRINTS TO:-

APPROVED –

ALTD.

JAG

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APPD.

SKP

PREPARED

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DATE.

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VKD

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Technical parameters:-

| Sl. No. | Parameters | ITEM-01 | ITEM-02 |
|---------|---|--------------------------|---------|
| 1) | Highest permitted rated voltage of the equipment, U_m (kV) | 24 kV | 36 kV |
| 2) | Rated voltage, insulated or compensated U_r (kV) | 24 kV | 36 kV |
| 3) | Max. continuous rating | 19 kV | 29 kV |
| 4) | Max. residual voltage U_{res} at 5 kA 8/20 μs | 64 kV | 96 kV |
| 5) | Max. residual voltage U_{res} at 10 kA 8/20 μs | 70 kV | 105 kV |
| 6) | Max. residual voltage U_{res} at steep impulse 1/20 μs | 75 kV | 112 kV |
| 7) | Max. Length (L) Approx. | 350 mm | 350 mm |
| 8) | Line discharge class, for SA 10 kA | 1 | |
| 9) | Rated discharge surge current, for SA 10 kA | 10 kA, 8/20 μs | |
| 10) | Long-wave peak current, for SA 10 kA | 250 A, 2 ms | |
| 11) | Energy absorption capacity, for SA 10 kA | 2 kJ/kV _{Rated} | |
| 12) | High peak current, for SA | 65 kA, 4/10 μs | |
| 13) | Short-circuit withstand current, for SA 10 kA (rms value in kA) | 16 kA, 0.2 s | |

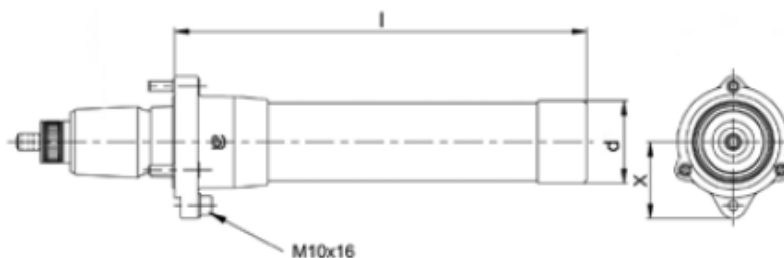


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E) ROUTINE TESTS

Routine tests as per IEC 60099-4.

F) QA Plan

QA Plan shall be submitted along with offer & got approved. This shall include tests & measurements on raw material, semi-finished / finished products.

G) TEST CERTIFICATE

Unless otherwise stated, three copies of certificates for parameters specified in Clause E shall be supplied along with each consignment.

H) GUARANTEE CERTIFICATE

The surge arrester shall meet the requirement of BHEL product standard SG12505 and guaranteed against all manufacturing defects for 12 months from date of supply. Guarantee certificate shall be furnished along with the supply. If any deviation is observed, manufacturer will replace the material free of cost.

I) PACKING AND MARKING

Surge Arrester shall be suitably packed in separate boxes or assembled as one unit in one box. Each component shall be first wrapped in plastic and then packed in cardboard to avoid contamination and damage during transit. The lot should be supplied in shock proof, unbreakable containers/boxes. Necessary arrangement shall be made to avoid ingress of water into the container/box. Gross weight of container should be less than 50 kg Each package shall be legibly and indelibly marked with the following:

BHEL Purchase Order No.

Batch/Lot No.

Manufacturer's /Suppliers Name and grade

Drawing No. & Item No. if any

Quantity supplied

Net & Gross Weight.

J) ACCEPTANCE CRITERIA:

- Routine Test certificate as per clause E.
- Guarantee certificate as per clause H.
- QA as per Clause F.
- Packing and marking as per clause I.