

Medium & High Voltage Power Capacitors



Advantages

- World Class Raw Materials
- Mfgd in State of art infrastructure
- Low Loss
- Highly Reliable
- Long Life Performance
- Environmental Friendly

For Power Factor improvement & Harmonic Filter Capacitors



An ISO 9001 : 2008 Certified Company

Magnewin
Enhancing Power

Medium & High Voltage Power Capacitors

General Information

Magnewin make capacitors are manufactured to comply IEC 60871 and BIS 13925 standards using latest technology, materials and state of art plant and machinery.

Experienced and skilled workmanship enable's to manufacture highly reliable and long life performance capacitors in line with International standards.

Applications

- Automatic Power Factor Correction (PFC).
- Fixed Power Factor Corrections. (Individual)
- Group fixed Power factor correction (several equipment connected in a group)
- Capacitor banks of tuned and detuned.
- Harmonic Filter applications (e.g. UPS, VFD, Furnaces and converters, etc)

Features

- Latest technology
- Non-PCB
- Maintenance - free
- Easy disposal
- Internal / External fuse & Internal discharge Resistor.
- Long useful life
- Environmentally friendly.

| | | | |
|-------------------------------|---|---------|----------------------------|
| Rated Voltage Capacitor | 1000 volts up to 20,000 volts . | | |
| Rated kVAR | Up to 800 Kvar. | | |
| System Voltage | For the power system voltage 145KV application | | |
| Frequency | 50 / 60 Hz | | |
| Standards | IEC 60871 & BIS 13925 | | |
| Max. Over Voltage (V) | 1.1UN (12 hours), 1.15UN (30 mins), 1.2UN (5 mins), 1.3UN (1 min) | | |
| Over Current (A) | 1, 3 * IN | | |
| Capacitance tolerance (uF) | -5 / +10% | | |
| Test Voltage | 4, 3 * UN DC, 10 s | | |
| AC Test Voltage | According to relevant IEC standard for 10 s terminals / case: only for 2 bushing type | | |
| Insulation Levels (KV) BIL | 10/40 kV, 20/60 kV, 28/75 kV, 38/95 kV, 50/125 kV | | |
| Dielectric & Capacitor Losses | 0.05 W / kvar & 0.15 W / kvar max (with discharge resistors & Internal Element Fuse) | | |
| Life expectancy | 20 years min. | | |
| Installation | Indoor and outdoor | | |
| | -40 / D | | |
| Ambient temperature category | Symbol | Maximum | Highest over any period of |
| | | | 24 ahours |
| | D | 50°C | 1 Year |
| | | | D |
| | | | 30°C |
| Cooling | Oil Natural. | | |
| Humidity | 95 % max. | | |
| Max. attitude | 1000 mtrs above sea level | | |
| Mounting Position | Any position | | |
| Mounting | Side brackets | | |
| Safety features | Internal Element fuse for each element. | | |
| Case | Mild Steel / SS409L / or SS304 grade | | |
| Dielectric | Double hazy Polypropylene ?Im (All ?Im) | | |
| Impregnation | Environmentally friendly, non-toxic (non-PCB).. Jarylec C-101 D | | |
| Terminals | Wet Process Porcelain bushings, welded | | |
| Discharge Resistors | Internally ?tted. - 75 V, 5 min or 50V, 5min | | |

Manufacturing and Quality Control Imported bi-axially oriented double hazy Polypropylene film and 99.9% pure aluminum foil are used as dielectric and electrode. Wrinkle free winding is carried in a Class 100 environment on a Semi-Automatic winding machine with edge and end folding of the aluminum foil. This is to eliminate over voltage stress at the edges of the buried area of the foil.

Each wound element is tested for DC Over voltage with stand for pin holes and adequacy of margins between Al foils.

Numbers of elements are interconnected in series – parallel to achieve the desired capacitance and voltage rating of the Capacitor. Electrical connections & discharge resistors fitment are carried out. The dry pack is wrapped with several layers of high quality insulating paper before inserting it into a pretreated / sheet metal container and the embossed top lid is welded by semi-automatic Pulsed TIG welding machine.

Porcelain bushings of desired BIL are leak proof fitted by TIG welding on the lid as required.

The capacitors are then processed in a PLC controlled autoclave for drying and under heat @ 85°C and vacuum of 0.001 torr for a given period.

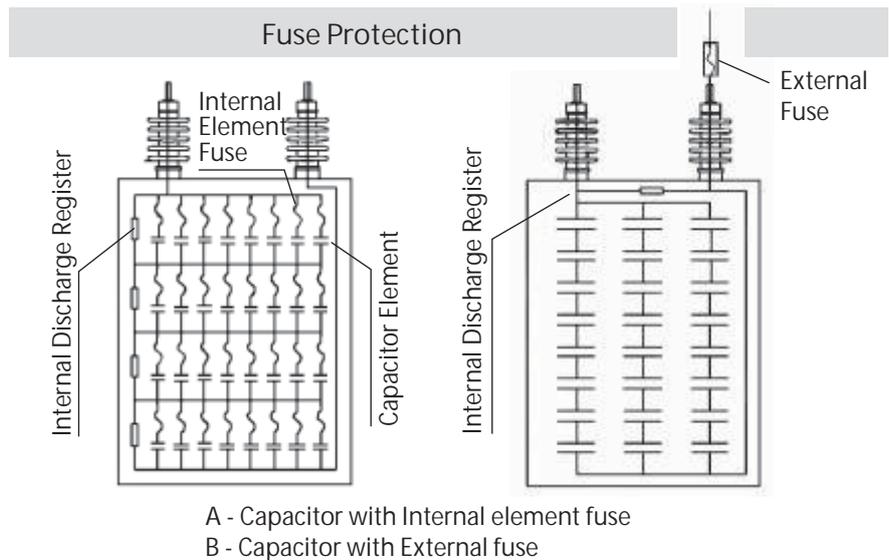
After confirming the quality of drying by precision online monitoring instruments, the capacitors are then impregnated under vacuum with highly purified and degassed Jarylec C-101.

Then the capacitors are subjected to all electrical tests.

Electrical Tests

MV & HV Capacitors are tested at regular intervals for Routine, Type Test as per IEC 60871 standards at CPRI Bangalore. These Capacitors have also been tested at CPRI Bangalore for Endurance test as per IEC 60871-2 and have successfully passed.

Note : Product improvement is a continuous process. For the latest information and special applications, please contact us..



- Capacitors are protected by -
- Internal element fuse comply with IEC 60871-4. Each element is protected with an individual fuse placed in between elements. The sizing of fuse is done using specially developed software. Internal fuses are designed and placed to isolate only the faulty elements without affecting the adjacent healthy element fuse in order to allow further operation of the capacitor unit and the bank in which the capacitor is connected. (Refer drg...A)
 - External fuse is provided to individual capacitor, which isolates the capacitor in the event of an internal fault, thereby protecting other healthy capacitors in the bank. (Refer drg...B)

Painting

After completion of electrical tests, the capacitors are then loaded on a overhead conveyerised painting system. The capacitors are first subjected to sand blasting which ensure removal of welding burrs, minor scratches etc. making the surface perfect compatible for painting. Thermal spray is also done against specific orders.

The capacitors are then painted in a painting booth with semi-automatic painting gun with two coats of epoxy

primer followed by two coats of epoxy air drying paint.

The paint layers are tested at random for adhesion to the surface of the capacitor.

Life Expectancy

Based on the state of art plant & machinery, quality of raw materials used, manufacturing under strict quality control and process using precision on line instruments, and elevated over voltage test results under extreme temperatures, capacitors are assured of minimum 20 years life.

Capacitor Banks/ MV APFC Panels Indoor Sheet metal cubicles up to 33KV for switched capacitors / Harmonic filters / Automatic P F Control Panels and structural open type substation banks up to 145 KV network can be fabricated and assembled in house.

Magnewin has in house fabrication shop fully equipped with Hydraulic presses, shearing machines, Power Presses, MIG / MAG, & TIG Welding machines, punches, dies and tools which enable us to fabricate both in sheet metal enclosures and structural types for Indoor and outdoor installations.



Product Range

- Low Voltage Shunt capacitors
- Medium Voltage Shunt capacitors in Internal / External fuse
- Medium & High Voltage Surge Capacitors
- Medium / High Frequency Water Cooled Capacitors
- Energy storage Capacitors
- Pulse Discharge capacitors
- Low Inductance Capacitors
- Voltage Dividers up to 1200 KV.
- Any Special capacitor in accordance to client specs

Engineering Services

- Harmonics Measurement, Analysis and mitigation & Power Quality
- Turnkey projects / consultancy in Reactive Power Compensation engineering



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