Filter Resistors

FR Series
FRF | FRC | FRL | FRH
Aktif manufactures Resistors for Special applications. These resistors consist of Harmonic Filter Resistors, RC Snubber Filters, Current Limiting Resistors and Discharge Resistors.

**Harmonic Filter Resistors**

Harmonic harmonic filtration is the most efficient and cost-effective method to eliminate harmonics. The harmonic filter systems can in principle only consist of capacitor and reactor (LC). However, in this case, a change in the value of the capacitor or reactor due to manufacturing defect, aging or temperature can affect the filtering very seriously and may even cause the parallel resonance to increase even more harmonics. This sensitivity can be controlled by adding resistance to the filter circuit and the harmonic filter system can continue to work with the same efficiency for a long time. For low-voltage systems, harmonic filtering with a capacitor and a reactor is a more optimal solution due to low risk. However, considering the risk of changing the capacitance of the capacitor and the damages that may occur due to this, in medium voltage and high voltage systems, using harmonic filter resistance is a more optimum solution.

**Standards**
- IEC 60071
- IEC 60060-1
- IEC 60273
- EN 60137
- IEC 60529
- EN ISO 1461

**Application Areas**
- Oil and Steel Industry
- Arc Furnaces
- Mining Industry

**Technical Specifications**
- Suitable up to 36 kV rated voltage
- Stainless steel resistance material
- Special mechanical and electrical design to withstand high temperature and inrush current
- Design and tests in accordance with IEC 60071-1 and CIGRÉ WG 14.30 Section 17 Resistors and other special specifications
- IP23 Protection Level

**Advantages**
- Easy access and maintenance to the resistor blocks on site thanks to blocks independently mounted to the frame
- Fully-modular, rigid, strong enclosure design with resistor blocks mounted to the frame for safety lifting from the upper or lower side
- Frame suitable for side by side (horizontal) or stacked (vertical) installation
- High internal insulation and high mechanical resistance against to shocks and sagging thanks to the use of large surface satiated bushings and M16 shear connectors

**Options**
- Requested inductance limits
- Stainless steel, aluminum enclosure
- Painting enclosure in desired color code
- Side or top entry or exit with bushings
- Modular elevation legs suitable for extreme environmental conditions
- Special design for high altitude
RC Snubber Filter

In order to attenuate the transient voltage that occur during the commissioning loads of inductive character, the snubber capacitor which do not allow sudden changes in the voltage and the series-dependent damping resistance are used. RC snubber filters are connected parallel to the network as close as possible to the load causing transient voltage. During the transient voltages occurring at high frequencies, the RC filters’ impedance decreases to low value, prevent over-voltage of the mains voltage and damp the oscillation very soon.

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Current Limiting Resistors

Current limiting resistors are used to reduce the transient current and to adjust the test current to the desired value at power laboratories and some special applications. Current limiting resistors are especially designed and manufactured according to their intended purpose.

Discharge Resistors

Discharge resistors are used to discharge the capacitors and batteries. Discharging the capacitors and batteries may be compulsory for maintenance. Discharging may be for safety reasons or in order to do load testing at power laboratories and some special applications. Discharge resistors are especially designed and manufactured according to their intended purpose.
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