

## Harmonic Filter Resistors

Up to 36 kV



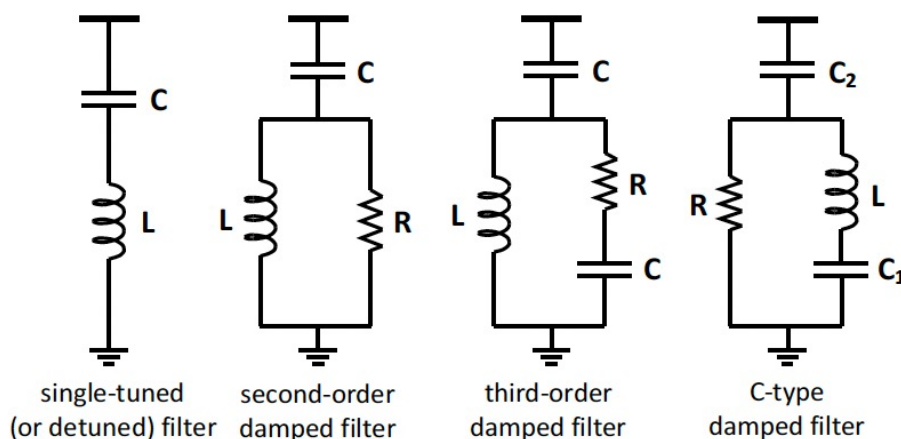
The widespread use of nonlinear loads such as power electronics based equipment and electric arc & ladle melt furnaces all around the world hinder the quality of electric power. One of the most important parameters for defining the power quality is harmonic distortion. The harmonic distortion in a network causes:

- Equipment heating
- Insulation failure due to overheating and higher voltage peaks than rated fundamental voltage (50Hz or 60Hz) sinusoidal signal
- Equipment malfunction (false zero cross detection on power electronic devices)
- Communication interference or noise
- Fuse and breaker mis-operation

Passive harmonic filters are the most commonly used devices for reducing the harmonic distortion in a network. These filters are built up from passive RLC components, i.e. resistors, inductors and capacitors. These resistors are used either to control the percentage of harmonics to be filtered and to dissipate the heat corresponding to those harmonic currents, or to lower the risk of amplification due to parallel resonance problems.

In some industrial applications such as arc furnaces and ladle melt furnaces, resistances are added to the harmonic filter topology in order to cope with a wide frequency band of harmonics and interharmonics, either to filter out unwanted harmonics or interharmonics in the optimum amount, or at least not to amplify them.

Harmonic filter resistors may be used in single-tuned, second order, C-type and high-pass harmonic filters, according to the type of load and purpose.



All Hilkar harmonic filter resistors are custom designed for different applications by considering the voltage, current, inductance, size, and loss characteristics that are required to provide the most efficient design at the most economical prices.

### Features

- Designed and tested to applicable IEC and IEEE standards
- Stainless steel resistor elements
- Excellent high voltage strength
- Low inductance resistor elements for easy tuning
- High thermal capacity
- Pulsed power compatibility for filter energization and transformer inrush scenarios
- Stainless steel, hot dip galvanized steel or aluminum enclosures on demand
- Corrosion and heat resistant electrostatic paint for indoor and outdoor applications
- Insulators with high creepage distance on demand for highly polluted areas and high altitudes
- Compact design, dimensions can be adjusted according to customer's specific needs
- Cooling fans on demand
- Aluminum, hot dip galvanized steel or concrete support stands are available
- Elevation stands are available
- High temperature paint on demand
- Bushing entry or cable entry
- Bolted resistor element connections instead of welded connections, on demand

### Technical Specification

- Voltage: Up to 36 kV
- Altitude: Up to 1000m\*
- Installation: Indoor / Outdoor
- Resistance Material: Stainless steel alloy
- Protection degree: IP 23 (outdoor), others on demand
- Temperature Range: -40°C to 55°C
- Cooling: Air Natural / Oil Natural / Air Forced
- Options: Taps with DIN or NEMA terminal configuration