

## POWER RESISTORS

- Neutral Grounding Resistors
- Generator Neutral Grounding & Leads Cubicles
- Inverter Braking Resistors
- Motor Starting & Control Resistors
- Cubicle Heaters
- Harmonic Filter Resistors
- Current Limiting Resistors
- RC Filters

## REACTORS

- Current Limiting Reactors
- Neutral Grounding Reactors
- Shunt Reactors
- Harmonic Filtering Reactors
- Motor Starting Reactors
- Electric Arc Furnace Reactors
- Smoothing Reactors
- Line and Load Reactors
- Test Laboratory Reactors

## TESTING SYSTEMS

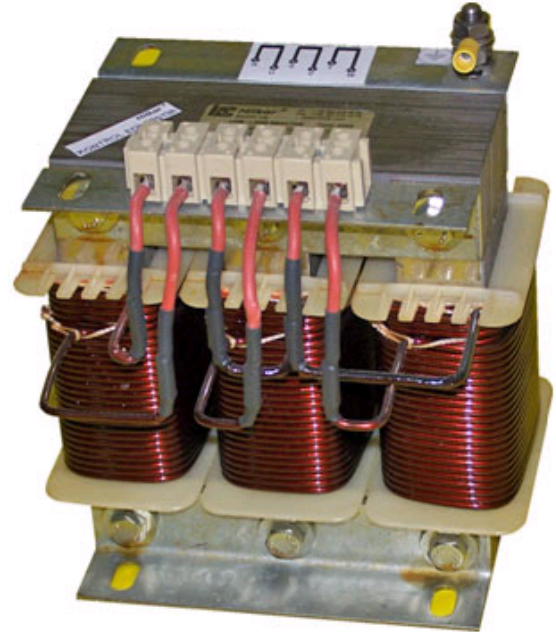
- Turn-key Short Circuit Laboratories
- High Current Injection Test Sets
- R - L - C Load Banks

## MOTOR STARTING REACTORS

Motor starting reactors are used for starting large 3 phase motors while limiting inrush currents. Large motors generally use 6 times more current than their nominal current. Normally, they are started with 70 % of voltage and the rest of the voltage, that is normally about 30 %, is dropped across the motor starting reactor. After 15 - 20 seconds, the reactor is switched off with contactors in the system.

### ADVANTAGES

- Perfect mechanical strength to withstand high short-circuit forces.
- Limited temperature rise enables longer lifetime.
- Special surface protection against UV and pollution class IV areas.
- Maintenance-free design



### STANDARD

EN 60289 or depending on customer requirements.

### FEATURES

- Air core and iron core
- Dry type
- Side by side, delta or vertical arrangement depending on space availability for air core reactors
- Outdoor and indoor
- Enclosures are available on demand
- Elevated support stands are available
- Aluminum or copper winding
- RAL 7032 or other colors
- - 40 °C / + 55 °C ambient temperature range
- F class (155 °C) or customer specific design
- Taps are available
- Fiberglass spacers are used in order to provide ease of cooling
- AN (air-natural) cooling method



### INSULATION

- F class (155 °C) film insulation or epoxy resin reinforced fiberglass.
- Epoxy based paint & insulating varnish.

### INSTALLATION

The height and the diameter of the reactor can be adjusted to customer specific needs in order to

meet unusual space requirements

Complete installation guidelines are provided with the reactors in order to meet required magnetic clearances on close metallic structures. Each reactor is supplied with an INSTALLATION GUIDELINES that specifies minimum magnetic clearances for the reactor.



#### SUPPORT STANDS

Aluminum, hot dip galvanized steel or concrete support stands are designed for specific applications.

#### TESTS

All the routine tests are performed in accordance with EN 60289 or other standards depending on customer request. Type test reports are available on request. All the test reports are submitted to customer.

Basic testing program includes some or all of the following tests:

- Routine Tests (Inductance, Resistance, One Minute AC Insulation Voltage Withstand Test and Impulse Voltage Withstand Test)
- Short Circuit Withstand Test
- Temperature Rise Test
- Sound Level Test
- Seismic Test

#### QUALITY ASSURANCE

Hilkar maintains a complete quality assurance program including ISO 9001 and other major industry standards in it's manufacturing plant.

#### TECHNICAL SUPPORT

Hilkar provides complete technical assistance to contractors and end customers for applications, design, calculations and field installation. All Hilkar reactors are custom designed for different applications by considering the voltage, current, inductance, size, loss characteristics that are required to provide the most efficient design at the most economical prices.

