

Power Solutions

# Ensuring Seamless Growth



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Isolation Transformers

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## ISOLATION TRANSFORMERS

Isolation Transformer provides complete electronics & electromagnetic shielding. The presence of spikes and transient or noise in the supply line leads to the erratic behavior. The electrostatic and electromagnetic shielding provided by Isolation Transformer eliminates line disturbance and prevents faulty and erratic operation of critical and sensitive instruments & equipments.

## ELECTRICAL NOISES ARE GENERATED DUE TO

- Switching of electrical utilities like Capacitors, MCCBs, ACBs, etc.
- The inductive loads like Motors, Elevators, Compressors, Overhead Cranes and Presses.
- Switching equipments like Inverters, UPSs, SMPS, etc. generate electrical noises due to switching of Thyristors, Relays, Transistors, etc.
- Welding systems pollute earthing systems, adds notches and high frequency noises in the wave form.
- Lightning, precipitation of static charges and electrical discharges in the atmosphere are the natural cause of generation of various electrical noises.

# Isolation Transformers

## EFFECTS

- Electrical noises are observed to occur over a wide band of frequency ranging from 1 KHz to 100 MHz and above. Magnitude is observed to be as high as 4000 to 6000 Volts in 3 phase supply system.
- The high frequency noise can interface with digital electronic equipments causing untraceable data errors, change of programme, loss of memory, erratic behavior, etc.
- The high voltage spikes can cause the failure of Thyristors or Transistor, Micro Processors and other sensitive devices.
- The radiated noise can interface in operation of remote control equipment like Cranes, Digital Controls or Telecom Equipments.

Isolation Transformer isolates primary and secondary, or separates neutral-to-ground bond on the secondary side. It can be used to create separately derived source to combat current loops.

The Ultra Isolation Transformers are available in different levels of noise attenuation capabilities, the most commonly used are 100 & 120 dB. The coupling capacitance between primary and secondary is direct 1:1 relationship with dB levels.

## APPLICATIONS & USES

- Machine tools/CNC equipments & Industrial Automation applications
- Broadcast communications & Telecommunication equipment
- General laboratory equipment
- Refineries & their distribution outlets
- Hospitals, Diagnostic labs & Imaging equipments
- Building/Shopping mall automation
- Data centers/Call centers
- Process industries & Chemical plants
- UPS bypass & Power distribution



## SPECIAL FEATURES

- Complete electrostatic shielding
- Isolates sensitive & critical equipments from noise power lines
- Filters power line noise, spikes & transients
- Minimizing common mode noise by 85 dB

## TECHNOLOGY

Isolation Transformer is constructed with a primary and secondary winding closely wrapped about the same ferrous core. A single faraday shield is used between the primary and secondary winding to divert noise, which would normally be electrically coupled between the primary and secondary winding to ground.

## TECHNICAL SPECIFICATIONS

| Item                    | Isolation Transformer   |
|-------------------------|---|
| Capacity                | 1 KVA to 50 KVA (Single Phase),<br>1 KVA to 500 KVA (Three Phase) |
| Cooling                 | Air Cooled  |
| Connection              | Delta/Star for 3 Phase Supply                                     |
| Regulation              | 2-4 % for 100 % changes in current unity P.F.                     |
| Di-Electric Strength    | 2500 V for 60 seconds   |
| Ratio                   | 1:1 and 2:1   |
| Insulation Resistance   | Better than 500 Mega Ohms   |
| Common Mode Attenuation | 20 dB/40 dB   |
| Coupling Capacitance    | 1 Micro farads  |
| Leakage Current         | < 5 mAmps   |
| Ambient                 | 0-45° C   |

\*In the interest of continuous product improvement, all specifications are subject to change without notice.

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