



The controlled power to serve your future...



**ISOLATION
TRANSFORMERS**

**Indian Transformers & Electricals
Gurgaon**

Need to Have Isolation Transformers

The Electrical Noises are generated due to:

- Switching of electrical utilities like Capacitors, MCCB's, ACB's... etc. Larger the inductance of the system and larger the current change during switching result into larger the magnitude of electrical noise.
- The inductive loads like big Motors, Compressors, Overhead Cranes, Elevators, Presses etc. also generates substantial switching noise.
- Switching equipments like Inverters, Converters, SMPS etc., generate electrical noise due to switching of Thyristors, Transistors, Relays etc.
- Welding systems pollutes earthing systems & add notches in the wave form, generating harmonics.
- Lightening, precipitation of the static charges and electrical discharges in the atmosphere.

Effects of Noises & Spikes

- The high frequency noise can interfere with digital electronic equipments causing untraceable data entry, 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 interfere in operation of remote control equipment like Cranes, Digital controls or Telecommunication Equipment

Capacity

- Isolation Transformers are available from upto 2500KVA, both Single/Three Phase Air cooled dry type / Oil Cooled oil immersed type. For three phase input, these can be connected in both Star / Delta Configuration as per Customer's requirement.

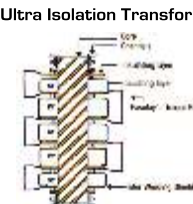
Construction & Materials

- Isolation Transformers are designed with split winding construction and bifilar Connections to reduce over all Capacitance of the winding.
- Shielded Isolation Transformers are designed with Layer winding. The use of high insulating materials and special shielding techniques result in minimising noises.
- The core and its magnetic properties are properly selected to exhibit sufficient leakage inductance to provide greatest possible attenuation of normal mode power line noise, consistent with the Transfer of Fundamental power frequency. But all higher frequencies are blocked.
- The use of Faraday's Unique Box shielding and special shielding techniques totally block the transfer of electric noise.
- Due to better regulation, it does not generate common mode impedance coupling effect.

Technical Specifications

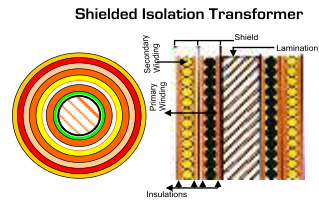
Phases	Single / Three
Voltage Ratio	Step-Up / Step-Down / 1:1
Voltage Regulation	2-4% for 100% change in current at unity P.F.
Connections	Delta/ Star for 3 phase
Operating Power Factor	0.75 lagging to 0.75 leading
Dielectric strength	2500V for 60 secs.
Insulation Resistance	Greater than 100 Mega Ohms
Coupling capacitance	0.1 pf for 100dB / 0.006 for 120db
Leakage current	less than 20 micro Amps.
Noise Attenuating	Upto 100 / 120dB.

Comparison




Ultra Isolation Transformer

Consumes Extra quantity of better quality of copper, lamination etc. (50 - 70%) with high content of special grade insulating materials



Shielded Isolation Transformer

Normal content of Copper lamination & insulating materials etc.



Applications

- To Protect the Computers, CNC Machines and Telecommunication equipment from damage due to electrical noises and spikes etc.
- If ground earth potential of system units are different from each other and are exposed to the effects of instability at high frequencies.
- If ground of the equipment cannot be earthed.
- When no current leakage is permitted in the equipments especially for computers and CNC controls where less than 100 micro Amps is only permitted.
- To shield electronic equipments producing different types of electrical noises at a common busbar like CNC machines, Drives, Hardening equipment etc. The use of Isolation Transformers, being bidirectional, prevents damage due to circulating noise interference within them.
- To protect against strong lightening, impulse noise, bus short-circuit, accidental discharge of capacitors etc.
- Scientific Instruments, Analytical Testing, Life Saving/Supporting Medical Equipments, Digital Communication Equipments, PLC / CNC based Machines, industrial lightings, R & D departments and various critical electrical/electronic gadgets/equipments etc.

PRODUCTS

G Vacuum Circuit Breakers G Servo Voltage Controllers / Stabilizers G Unitised / Compact Substations
 G Transformers { o Power o Distribution o Furnace Duty o Converter Duty o Isolation / Shielded o Scott o Buck & Boost

APPROVALS & REGISTRATIONS

G E-in-C (Defence) G MAP G Railways G BSNL G MTNL G DGS & D



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