The special design of Perfect Harmony ensures elimination of discrete components like harmonic filter, power factor correction system & Sinewave filter used traditionally for the Variable Frequency Drives. The multi-cell topology design of the equipment ensures grid friendliness & high quality output waveform even at lower speed. Due to the special design of integrated converter transformer & multilevel output waveform, it eliminates the requirement of additional input / output filtering components. The integrated system also allows quick, easy and less expensive installation, thus providing flexibility.

The design of the dry integral transformer with phase-shifted secondaries provides 18-pulse or better input harmonic cancellation as well as the ability to arrest common mode voltage rise at motor terminals, thereby protecting motor insulation. The product is configured to use low voltage cells that are linked together to deliver medium voltage power of high quality towards the grid & motor side.

What sets us apart from others?

• Perfect Harmony allows operation of standard motors without filter, leading to higher efficiency and low torque ripple.

• Perfect Harmony has almost sinusoidal motor voltages and currents with minimal stress on the motor insulation. Hence there is no adverse effect on motor life.

• Where highest availability is required, Perfect Harmony offers the best solution with cell bypass and cell redundancy.

• High dynamic response: When permanent operation is near zero speed, there is no need of pulse encoder.

• Perfect Harmony does not need an output filter.

• The air-cooled drives have the most compact design with integrated transformer.

• Perfect Harmony uses IGBT which only requires very simple gate control circuits, inherently interrupting short circuits.

• The power cells of Perfect Harmony have a modular design, allowing quick replacement with a few easy steps.

• The Inbuilt Perfect Harmony transformer provides the following advantages:
  ü Limits common-mode voltage on the motor stator windings
  ü Complete protection to the motor in case of a ground fault in the converter or the motor cabling or insulation.
  ü Protects the power converter electronics from any voltage transients present in the incoming supply and prevents equipment failures, thus increasing availability and reliability.

• Perfect Harmony meets IEEE 519 regarding line harmonics, without requiring any input filtering, thus avoiding potential resonance issues and unexpected large switching transients associated with un-damped input LC filters.

• The front-end of Perfect Harmony diode eliminates the need for hard-switching semiconductors and complex control algorithms, while providing a near unity power factor across the operating speed/load range.
• The smaller voltage step in Perfect Harmony makes it ideal for retrofitting existing DOL motors because of the minimal stress in the motor insulation.
• True motor common-mode voltage cancellation.
• Effective protective barrier between the customer MV distribution system and the converter and the motor connected to it.
• Perfect Harmony Drives do not require thyristor crowbar circuit, since it has a simple transistor (IGBT) circuit. Surge protection is available as a standard option.
• Perfect Harmony output frequency can reach 330 Hz for standard applications and can go higher for specific applications.
• "Clean Power" Sinusoidal Converter with nearly Zero Harmonics.