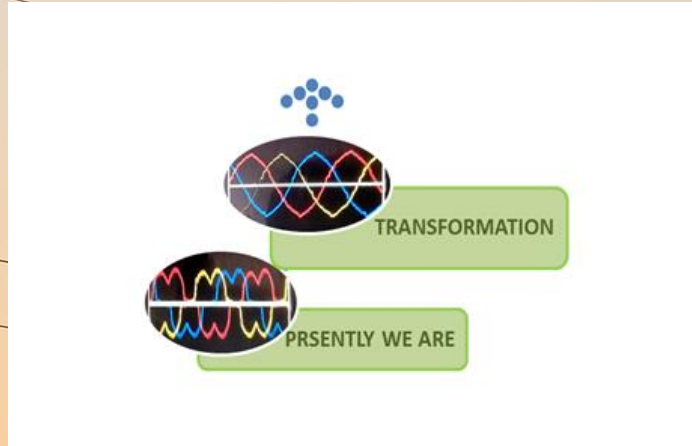


**A DREAM JOURNEY TOWARDS HARMONICS FREE NATION
TRULY IEEE 519-2014 COMPLIANT PRODUCT FOR NET ZERO EMISSION
Mfd. by - BEE (Bureau of Energy Efficiency) empanelled ESCO (Energy Service
Company)**



HYBRID HARMONICS FILTER

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Today's global trends are utilization of Energy efficient devices producing harmful waveform distortion called Harmonics produced by Nonlinear Loads. The increased use of nonlinear electronic equipment has become a concern in most utility power systems. Nonlinear loads draw a current but unable to measure by normal Electrical Instruments. Harmonics being Hidden parameter producing heat and rising Temperature sometimes catch fire.

Harmonics increases line current and can limit the available capacity of branch circuits. Moreover, harmonic currents can cause heating in utility and facility transformers. Modern computers, Chargers and other information technology based equipment convert utility ac power to regulated dc power e.g. Rectifiers, IGBT, MOSFET etc. SMPS and LED Lamps are typically single-phase nonlinear devices that generate high 3rd. harmonic current.



Our Hybrid Harmonic Filters (HHF) are ideal for all this type of commercial and Industrial single-phase applications. HHF Filter acts as a very high impedance at 150Hz, thus offering a significant reduction in the 3rd. harmonic current. HHF Filters can also be applied at the facility electrical system level. Such applications may enhance the reduction of harmonics and result in an enhanced performance of the electric system. However, before some facility filters can be applied specific variables associated with the facility's electrical system must be taken into account to determine the expected harmonics

Neutral-to-ground voltage is caused by high harmonic currents flowing in the neutral wire, and is highest at outlets furthest away from the transformer. This voltage is suspected when data errors occur between computers that are networked. Data measured at this site clearly show that by applying HHF significantly reduces neutral-to- ground voltage.



HYBRID HARMONICS FILTER

Applications –

- 1) Hospitals
- 2) Commercial Buildings IT sector Buildings
- 3) School & college buildings
- 4) Housing apartments
- 5) Hotel Industry
- 6) Industrial single-phase Loads
- 7) Computer Load
- 8) Single phase UPS Load
- 9) Govt. & Semi govt. buildings
- 10) Malls & shops
- 11) Amusement parks
- 12) Club House Buildings
- 13) Airports buildings
- 14) Railway buildings & stations
- 15) Street Light Loads
- 16) Golf course/ race course buildings
- 17) Stadiums
- 18) Metro Railway buildings & stations

SPECIFICATIONS

Ratings

- * 20 - 1000 Amps
- * K Factor Rating: K20
- * 50°C Temperature Rise
- * Class 'H' Insulation
- * Input: 3-phase, 4 wire plus ground
- * Applied Voltage: 415 V, 50 Hz

Features

- * Copper Wound Construction
- * Natural Convection Cooling
- * Operating Efficiency: 98% typical
- * Common Mode Noise Protection
- * Transverse Mode Noise Protection

Enclosure

- * IP-42 or IP-65
- * Removable Front and Rear Panels

Operating Conditions

- * 50 Hz Operating Range: 47-53Hz
- * Operating Temperature: ambient 0°C to 50°C
- * Relative Operating Humidity: 90%

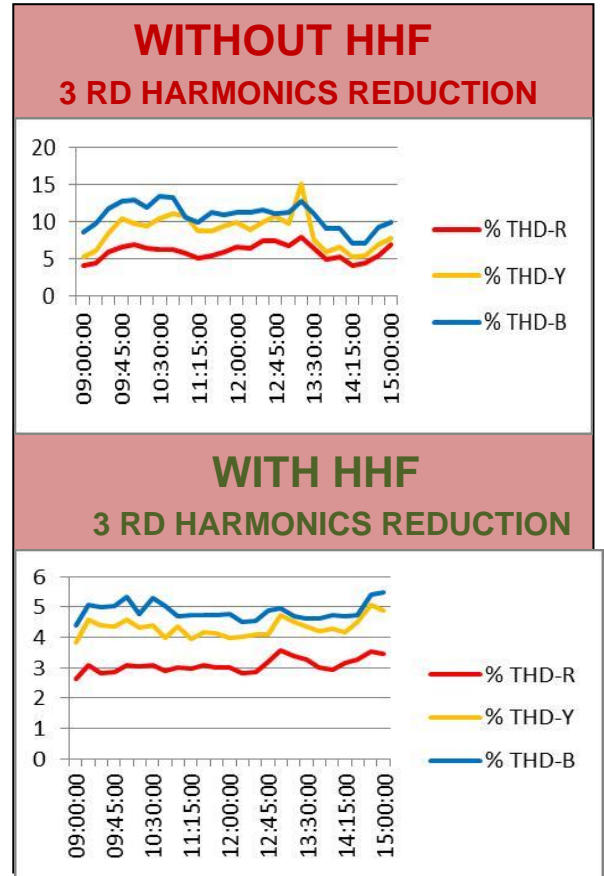
We have geared up with the problems faced by the commercial and Industrial entities and in finding solutions to upgrade so as to Improve Energy efficiency and to reduce net Zero Emission. At certain locations we found that, even if Passive & Active Harmonics Filters are in circuit load side issue persist. In order to overcome this issue, we have come up with this HHF with more features. Some of the State Electricity Board have started penalizing the Industries, whose Current Harmonics levels are more than 5% TDD as per the IEEE 519-2014 standards. Hence, our products are invariably equipped with the required technology to tackle these issues. It's not only Energy Efficiency improvement but also Clean Energy, protection by spikes/Surge, avoid voltage & current unbalance & reduced Harmonics are the additional benefits added to cope up Harmonics and Neutral to ground related issues.



HYBRID HARMONICS FILTER

Advantages and Benefits HYBRID HARMONICS FILTER (HHF)

- 1) Reduction in Electricity Bill by virtue of circulating current reduction.
- 2) Safeguards sensitive devices from spikes and transients
- 3) Avoid Voltage & Current unbalance
- 4) Prevents premature failure of switchgears
- 5) Reduces heating of Transformers / switchgears / cables etc.
- 6) Reduction in transformer burden and reactive / active power losses
- 7) Reduction in Earthing related issues
- 8) Reduction in Neutral related issues
- 9) Maintain IEEE standard for Harmonics free environment
- 10) Maintain Voltage and current individual and Total Harmonics distortion.
- 11) Avoid nuisance tripping of MCB/MCCB/Fuses etc.
- 12) Reduces load side Triple Harmonics & % THD
- 13) Support in PF improvement near unity
- 14) Support in Demand KVA reduction
- 15) Support for preventive maintenance
- 16) Reduction in Electrical breakdown and maintenance
- 17) Support for High efficiency equipment / lamps life long
- 18) Ready for upcoming Harmonics standards by Electricity board
- 19) Self-life more than 15 years
- 20) No AMC required
- 21) Efficiency more than 99 % ensures energy efficient.



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