



**PurityElec**  
Pure Energy, Smart Savings!

**PurityElec Pvt. Ltd.**

## **Harmonics Impacts**

**Harmonics can be as harmful to electrical systems as CO<sub>2</sub> is to living beings.**

According to **IEEE-519 norms**, **Total Harmonic Distortion in Current (iTHD%)** should not exceed **8%** in electrical networks. In fact, some states like **South India and Maharashtra** impose **penalties** if harmonic levels exceed these limits.

### **! Key Impacts of Harmonics:**

- 🔥 **Overheating** of transformers, induction motors, and neutral conductors
- 🚫 **Malfunction** of electronic and microprocessor-based equipment
- ⚡ **Failure** of power factor correction capacitors
- 🚫 **Breakers** failing to operate correctly
- ⚡ **Fuses and relays** tripping unnecessarily
- 🧲 Increased **magnetic fields** around transformers and switchgear

### **📈 Consequences:**

- Harmonic currents increase **RMS current** in the system
- They **degrade voltage quality**
- Cause **network stress** and **equipment damage**
- Lead to **higher operating costs** and **downtime**

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**PCB Failures due to high harmonics**



**Burning of Fuse/MCCB/Cables due to harmonics (high heating)**



**Higher losses due to heat means higher electricity costs.**



**Electronics Cards Failures Higher iTHD means**

Thanks.

Regards

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