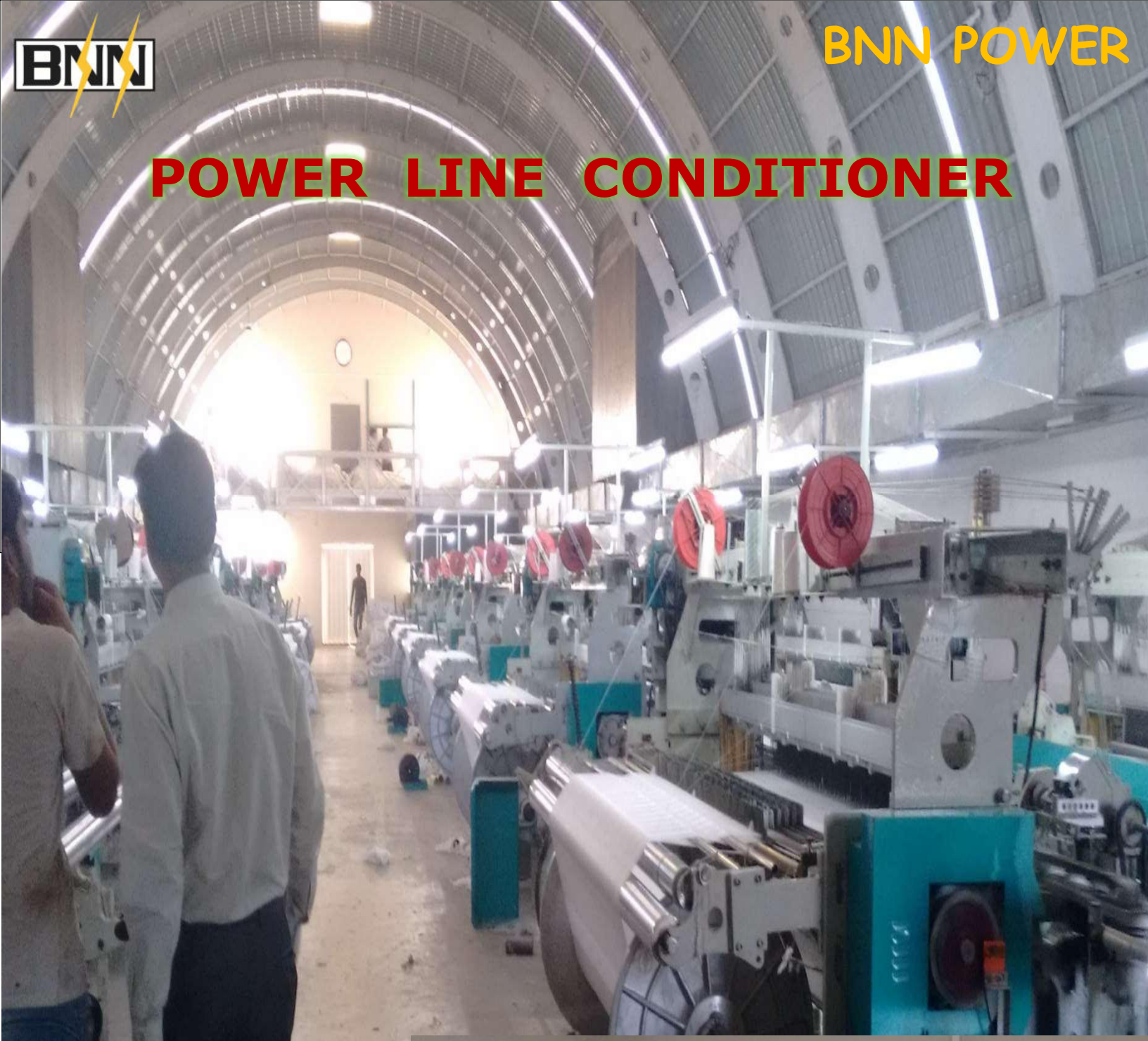
BNN POWER

POWER LINE CONDITIONER



Power Quality,Fire & Safety

for Machine's Survival & To Increase Machine's Productivity

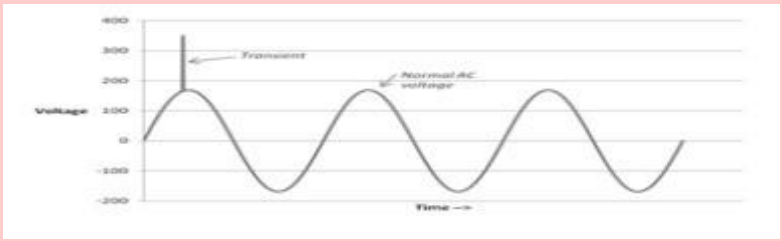
PQC - For next Generation Power Quality

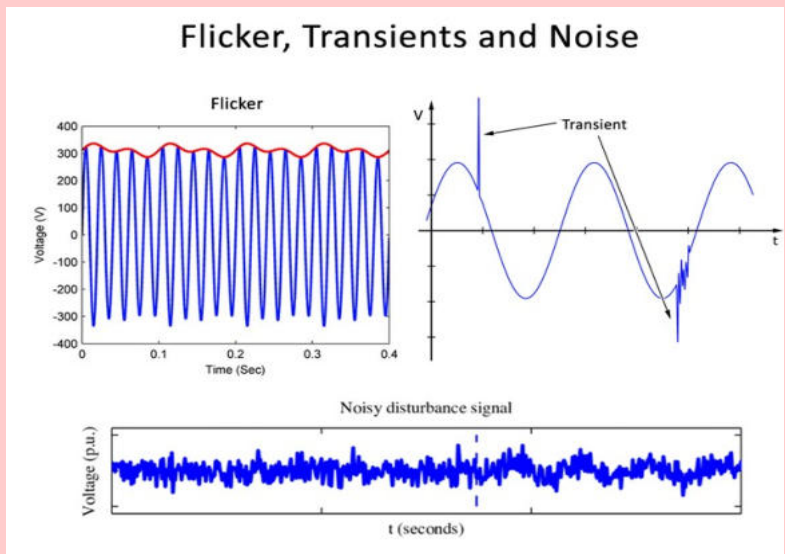
Several phenomena's are adopted to avoid Power Quality disturbances

(Design , Simulation, Implementation Can only improve Power Quality)

Non-linear loads are commonly present in industrial facilities, service facilities, office buildings, in the form of various VFD's, CNC Machines, Computers, UPS, LED Lamps Etc. They are the source of several Power Quality problems.

Therefore, it can be observed an increasing deterioration of the electrical power grid voltage and current waveforms, mainly due to impurity/ pollution/distortion of the system currents by harmonics of various orders, including inter-harmonics. Harmonic currents circulating through the line impedance also produces distortion in the system voltages.





We BNN POWER Survey, Analyze the site with value engineering & design Expertise to furnish Tailor made

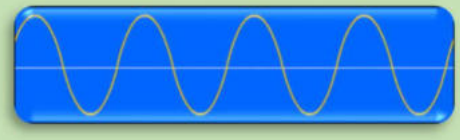
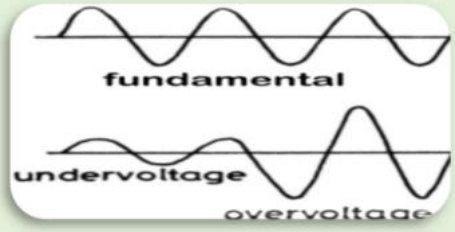
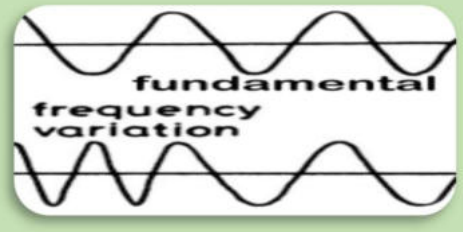
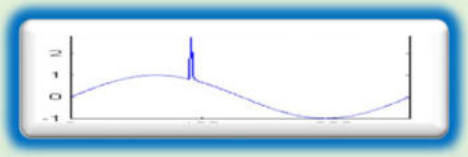
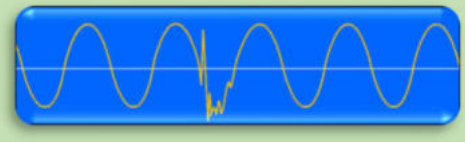
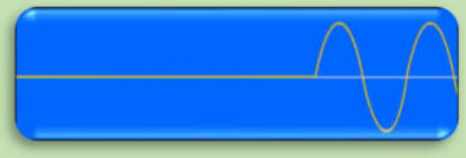
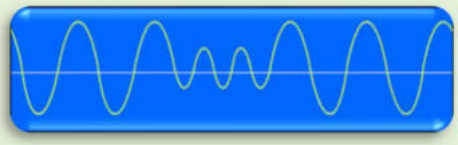
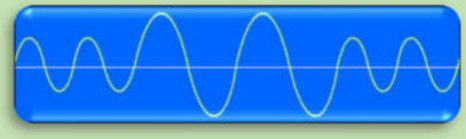
Because power matters for Industries & Commercial sectors Power Line Conditioner with other aspects implementation must go hand in hand considering various factors will dominate the power quality.

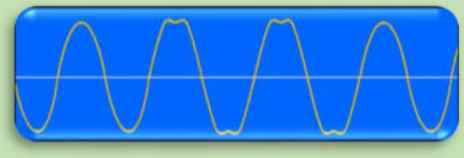
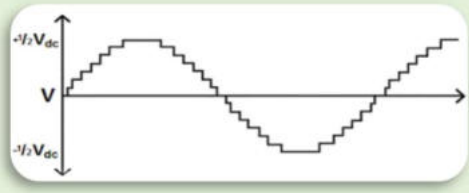
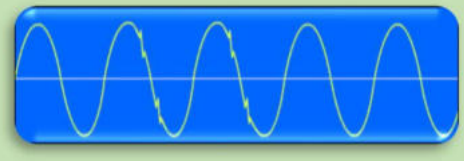
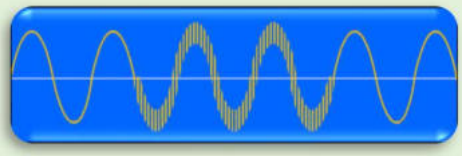
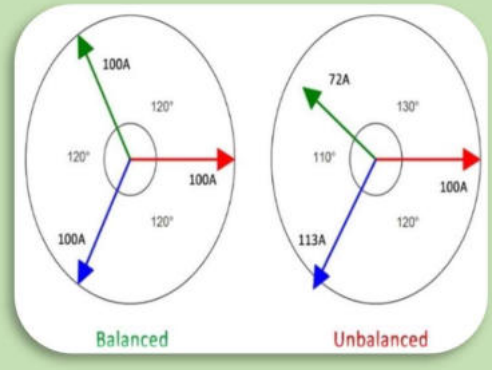
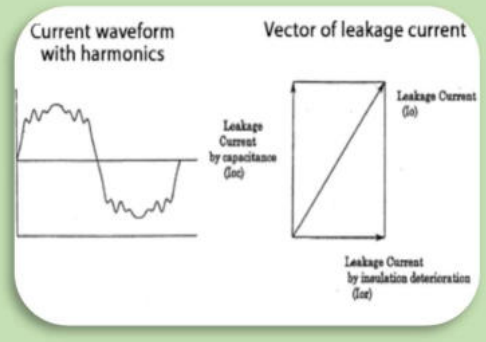
Ratings : 100KVA to 2000 KVA

Features –

Experienced Team of experts
In-dept site survey & analysis
High immunity to distortion
Maintain Current Balancing
Maintain zero neutral current
Steady Output Voltage +/-1%
Built in surge protection as per standard (IEEE STD-1100)
Suppression of voltage surge & current transient
Assured Harmonics & Inter-harmonics reduction
Enable GPRS smart Remote Monitoring
Enable GPRS smart max. demand alerts
Enable various trends & report for all electrical parameters
Password protected user friendly dashboard
Enabled remote load ON-OFF (optional)
Earth leakage current auto trip (optional)
Bypass switch with manual changeover
Avoid leakage reactance
Avoid Resonance condition
Avoid Harmonics amplification through capacitors
Support to maintain phase angle, thus avoid voltage & current unbalancing at Load side
Support to maintain Fire & Safety standards

Like other advanced technologies Power Line Conditioning tends to talk it's own language. Just feel it by implementation

Disturbance category	Waveform	Effects	Causes	Solution
No Disturbance		Original	Linear Load	No action required
Voltage Fluctuation		Motor life reduced, components failure, No impact on LED Lamps	Supply voltage Variations, Faulty equipment's, Ineffective Grounding,	Power Line Conditioner/ UPS/ Stabilizer
Power Frequency Variation		Motor life reduced, components failure, PF changes	Supply voltage Variations, Faulty equipment's, Ineffective Grounding,	Power Line Conditioner/ UPS
Impulsive Transient /spike		Loss of Data, Components Damage, System Halt	Utility Fault, Lightning, switching Impulses,	TVSS
Oscillatory Transient		Loss of Data, Components Damage	Switching of Inductive / Capacitive Load	TVSS/UPS/ Reactors/ Chokes
Interruption Short Term		Loss of Data, Components Damage	Switching, Utility Faults, Circuit Breaker Tripping, Component failure	UPS
Interruption Long Term		Loss of Data, Components Damage	Switching, Utility Faults, Circuit Breaker Tripping, Component failure	UPS
Sag /Dip		Loss of Data, Nuisance Trip, System Halt	Utility Faults / Start up Loads	Power Line Conditioner/ UPS
Swell		Loss of Data, Nuisance Trip, System Halt	Utility Faults / Start up Loads	Power Line Conditioner/ UPS

Disturbance category	Waveform	Effects	Causes	Solution
Harmonics		Transformer / Cable Heating, Resonance	More Non Linear Load, LED Light , VFD, UPS etc.	Harmonics Active/Passive Filter
Inter-Harmonics		Light Flicker, Heating, Resonance, Telecom Interference,	Random changes in current and phase angle/ Non synchronized switching	Harmonics Passive Filter
Notch		Loss of Data, System Halt	VFD's, Arc welding, Machine's, LED Light Dimmers	Install Passive Harmonics Filters, Re locate sensitive Load
Noise		Loss of Data, System Halt	Faulty equipment's, Ineffective Grounding,	Reconfigure grounding, Passive Filters / Isolation Transformer
Voltage Unbalance		Above 3% Unbalance will drop motor efficiency / More Current unbalancing	Grid side unbalanced Voltage, Load Unbalance, Faulty APFC	Power Line Conditioner/ UPS/Passive/ Stabilizer BNN®
Current Unbalance		Changes Load Impedance / current Shifting to Neutral	Increased Harmonics / Heating of Motor & distribution cable	Power Line Conditioner/ Filter
Insulation Leakage		May leak to ground or to another phase, Energy waste/ may lead to fire	Degradation over the time due to heating, moisture, chemicals	Alert for leakage by Monitoring/ Replace conductors Insulators

BNN POWER is a global leader in solutions that ensure the efficient and reliable operation of power electronic systems by shaping electrical power.

SELECTING POWER CONDITIONERS

Selecting power conditioners is painful & demanding. It requires a sound appreciation from Energy Services consultant with proper Power Quality Audit considering site conditions.

By this review we BNN POWER pointed facts of this selection process:

- Incoming Ground Leakage Voltage & Current.
- Neutral Leakage Voltage & Current.
- Frequency Variation & Response
- Source Impedance & Load impedance
- Incoming Supply Variation
- V & I Unbalance during Low & Full Load
- % THD V & I Harmonics during Low & Full Load
- Individual Harmonics during Low & Full Load
- Sources of Harmonics?
- Max. Demand in KVA with Justification.
- Reactive power compensation with Justification.
- Transformer Load Losses.
- Transformer temperature during Min.& Max. Load
- Anti-resonance compensation with Justification
- Phase shifting in the supply voltage
- Thermography health check for equipment's, switchgear etc.

If you could comply above points with protection, Trip-SMS-Email Alert, Online Report facility, Monitoring you can safeguard your plant from fire & safety. Moreover being Energy Efficient plant you are a part of Green Energy Concept with achievement of carbon credit by reduced carbon emission.

BNNJ®

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