

CLARIANT[®] FRAKO

In collaboration with Frako-Germany
Trusted Name in Power Quality Management Since 1998

It's all about saving your money!



More Power by
Saving Energy



Clariant Corporate Office

About us

Clariant Power System Ltd is one of the leading manufacturers of Reactive Power Management and Power Quality Improvement systems in India for last eighteen years in business association with FRAKO Kondensatoren-und Anlagenbau, Germany. FRAKO incorporated in 1928 is pioneer and a top rated European company in the field.

Clariant provides Design, Engineering, Assembly, Testing, Commissioning and after sales support for:

- All types of Capacitor panels (Low Voltage and High Voltage)
- Specially Designed Tapped Tuned Filter Panels
- Thyristor Switched Automatic Harmonic Filter Panels
- Contactor Switched Automatic Harmonic Filter Panels
- HT Fixed Harmonic Filter Capacitor Banks (Indoor and Outdoor)

Highlights

- First Indian company having RTPFC panels type tested at CPRI Bangalore.
- Executed 33KV/11KV Reactive Power schemes for various state Electricity / Utility Companies.
- Successfully installed Hybrid Broadband Passive Filters at Carraro India, Volkswagen India and many more.
- Executed projects for Steel Authority of India, Ultratech Cements, Serum institute, Honeywell Automation, Century Enka, Godrej, TATA-BSS and many more.
- Received UL approval for Active Harmonic Filter.
- Introduced new products in Clariant family
 1. Hybrid Broadband Series Passive Filter (for VFD's),
 2. Phase to Phase Reactive Power Compensation (for unbalanced load)
 3. Hybrid Energy Storage System (HESS), Microgrids, Super Capacitors.

Certifications & Approvals

CLARIANT ISO 9001 -2008 By QEC	CLARIANT ISO-14001-2004 By Geotek Global Cert. Pvt. Ltd.	FRAKO ISO 9001-2000 ISO 14001-2004 BY DQS GmbH
NSIC - Crisil	CE Certification by QS Zurich Certification Pvt. Ltd.	ERDA / CPRI Certification

- HT Automatic Harmonic Power Factor Correction Panels
- Active Harmonic Filters
- Step less Reactive Power Compensation System STATCOM
- Hybrid Harmonic Filters

Our systems have been working satisfactorily and maintaining Power Quality parameters being increasingly and strictly enforced and monitored by way of incentives and penalties by various state electricity boards. They are guaranteed for maintaining agreed PF values, harmonic levels and generating excellent savings and ROI in a very short span of time.

Payback periods range from few months to few years. Savings are produced as a result of effective harmonic mitigation, power factor improvement and KVA demand reduction. Our systems generate active power savings between 2 to 4%. Our systems ensure minimum self consumption, generate excellent energy savings and provide long trouble free life to electrical equipment due to reduced harmonic levels.

We provide services for Power Quality Studies, Harmonic Analysis, Thermography Studies and Energy Audits. These studies are followed by offers for providing Power Quality solutions, which are designed and manufactured by us.

Environmental protection is also of primary concern to us. This is reflected in our products, the way we deal with our clients and conduct our CSR activities.

We believe, "Business is Relationship and we strive for management of Relationship." We look forward to opportunities for long term fruitful associations.

4. Dynamic/Passive voltage and reactive power support systems for grid connected solar plants.
5. Shunt Reactor for Medium and High Voltage grids.



Executed prestigious project for World bank sponsored Haryana State Electricity Board - 36MVAR, 11KV Automatic Reactive Power system.

Awards & Achievements



Our Products



Contactor Switched Automatic Harmonic Filter Panel (AHPFC)

- System Voltage: 400.....1000V
- Design voltage : 525.....1750V
- Rated KVAR: 50.....6000KVAR
- Type: Automatic
- Applicable standards: IEC 61921 for capacitor bank
IEC 61439 for switchgear assembly
- With Tuned/Detuned/Tapped Tuned Harmonic Filter Reactors
- Tuned to 3rd, 5th, 7th, 11th or 13th order harmonics
- Switching device: FRAKO Capacitor Duty Contactor
- To limit inrush current < 70 times rated current
- Harmonic mitigation as per IEEE 519, 2014/CEA, other utilities norms



Thyristor Switched Automatic Harmonic Filter Panel (RTPFC)

- CPRI certified
- System Voltage: 400.....1000V
- Design voltage : 525.....1750V
- Rated KVAR: 50.....6000KVAR
- Type: Automatic
- Applicable standards: IEC 61921 for capacitor bank
IEC 61439 for switchgear assembly
- With Tuned/Detuned/Tapped Tuned Harmonic Filter Reactors
- Tuned to 3rd, 5th, 7th, 11th or 13th order harmonics
- Switching device: Thyristor
- Response time: 20 mili seconds
- Zero crossover switching technology with intelligent electronic control
- Smooth, surgeless, transient free switching of capacitor
- Harmonic mitigation as per IEEE 519, 2014/CEA, other utilities norms



HT Automatic Harmonic Power Factor Correction Panel (Indoor)

- System Voltage : 3.3KV, 6.6KV..... 11KV
- Rated KVAR : 450KVAR..... 20MVAR
- Switching device : Vaccum Contactor / Capacitor Switch
- With Tuned/Detuned/Tapped Tuned Harmonic Filter Reactors
- Tuned to 3rd, 5th, 7th, 11th or 13th order harmonics
- Installation : Indoor / Outdoor



HT Fixed Harmonic Filter Capacitor Bank & Associated Equipments (Outdoor)

- System Voltage : 3.3KV, 6.6KV..... 66KV
- Rated KVAR : 50KVAR..... 20MVAR
- With Tuned/Detuned/Tapped Tuned Harmonic Filter Reactors
- Tuned to 3rd, 5th, 7th, 11th or 13th order harmonics
- Type : Fixed/Auto
- Installation : Indoor / Outdoor



Active Harmonic Filter

- Free standing/wall mounted
- UL approved
- System Voltage : 400.....690V
- 3 phase 3 wire/3 phase 4 wire
- Rating : 30Amp to 600Amp
- Filtration from 2nd to 50th order harmonics
- Can be interfaced with Ethernet/web server
- 32 bit DSP technology
- Touch screen display with multiple monitoring options.
- Less than 3% losses.



STATCOM

- It combines all the features of Reactive Power Compensation, Harmonic Filtration and Power Quality Improvement.
- Step less compensation capable of injecting capacitive or inductive power on real time basis
- Voltage and Reactive Power control for stable power system operation
- Dynamic response to system fluctuations
- Flicker control
 - Reduced voltage fluctuations
- Harmonic Mitigation
 - Unbalance control



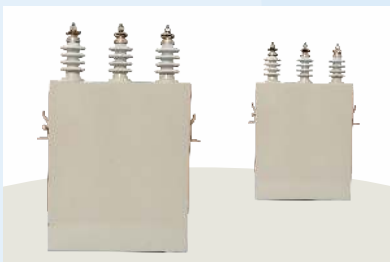
Hybrid Broadband Series Passive Filter

- Specially designed for Variable Frequency Drive (VFD)
- Filter can be installed in series between the power source line and input of nonlinear load
- System Voltage: 400.....660V
- Available in Standard Basic model and Advanced Model
- Harmonic mitigation as per IEEE 519 standards and Power Factor improvement above 0.99 lag
- 3-5% active power (KWh) savings



FRAKO make Low Voltage Capacitor

- Ratings - 1 to 40KVAR Heavy Duty Capacitor
- Voltage - 230V to 800V AC (Other voltage ratings on request)
- Frequency - 50/60Hz
- Power loss - <0.2 watt/kvar
- Inrush Current - 450 times of rated current
- Over Current Capacity - 2.7 times of rated current
- Patented terminals offer fast, anti-vibration and maintenance free wiring
- Dry type, environmental friendly
- Self healing, segmented metallization, over pressure disconnecter
- Patented Contact rings for solder less end connections
- UL/CSA certified



Medium and High Voltage Capacitor

- Ratings - 50 to 1000KVAR per capacitor casing
- Voltage - 3KV to 22KV AC (Other voltage on request)
- Frequency - 50/60Hz
- Power loss - <0.2 watt/kvar
- Type - Indoor/Outdoor
- Discharge to less than 75V in < 10 min
- UL/CSA certified
- The Capacitor comply with the requirements of IEC 60871-1



Low Voltage Series Reactor for Harmonic Filtration (CPSL make)

- Available in single tap/ multi tap configuration
- Rating : 6.25KVAR to 400KVAR
- Voltage : 230V to 1000V AC, 50Hz/60Hz
- Detuning Factor : 0.2% to 14%
- Low loss design with linearity more than 200%
- Dry type, Copper or Aluminium wound
- Applicable standards: As per IS 5553 and IEC 60076-6
- ERDA Certified



Medium and High Voltage Series Reactor for Harmonic Filtration (CPSL make)

- Available in single tap/ multi tap configuration
- Rating : 50KVAR to 10MVAR
- Voltage : 3.3KV to 33KV AC, 50Hz/60Hz (Other voltage ratings on request)
- Detuning Factor : 0.2% to 14%
- Low loss design with linearity more than 200%
- Dry type, Copper or Aluminium wound
- Applicable standards: As per IS 5553 and IEC 60076-6
- ERDA Certified
- Application: Line end/Neutral end of capacitors. For harmonic suppression and inrush current limiting.
- Medium and High voltage Shunt Reactor for Reactive compensation on request.



Power Factor Control Relays (FRAKO Germany)

Type: EMR1100S / RM9606 / RM2106 / RM 2112 / PQC

- For Contactor / Thyristor switching
- Fully Automatic Microprocessor based and simple commissioning
- Patented control characteristics – No overcompensation during low load
- Measurement & monitoring of Harmonics
- Manual/Automatic operation with ability to switch individual capacitor steps.



LT Capacitor Duty Contactor (FRAKO Germany)

- System Voltage: 400.....690V
- Rated KVAR: 10.....200KVAR
- Safe switching of capacitor stages with or without reactors
- Bounce free switching contacts
- Wear free contact material
- Long service life and a high number of switching operations
- Long life contactors tested by FRAKO for 1,00,000 switching operations
- During the switching of power capacitor, peak inrush current of 200 times of rated current can occur. In order to limit the inrush current and to protect switching devices and capacitors, capacitor switching contactors type K3...K with leading transition contacts are used
- Patented design with significant damping on inrush current.



Water Cooled and Surge Capacitors (CPSL make)

- Water Cooled capacitors for Induction heating and melting applications for indoor use.
- Medium frequency water cooled capacitors from 1KV to 5KV, upto 7000KVAR and frequency upto 50KHz
- Surge Capacitors for suppression of voltage surges and switching transients for indoor or outdoor use.
- Single phase capacitor units from 1.1KV upto maximum 40KV, 50/60Hz.

Service Activities : CLARIANT is offering a comprehensive package quality solution for



Power Quality Audit



Harmonic Study



Thermography



Annual Maintenance Contract

Reference List of Customers

Steel & Metal, Ferro Alloys



Rolling / Structural / Wire Rod Mill



Automobile



Tyre



Power



Textile / Synthetic Yarn



Cement / Paper / Telecom



Infrastructure & Pharmaceuticals / Banks



OEM



Oil, Petroleum Refineries & Petrochemical



Foundries



IT / Automation / Commercial



Overseas Clients



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