

3 Phase On-Line UPS 6-200 KVA



Vigour Series



Sterling in collaboration with Alpha and other various organizations to provide world class products to their customers. Vigour represents high energy / high capacity products which is suitable for various applications.

Highlights Of Vigour UPS :

Flexibility:

1. Inbuilt Isolation transformer
2. Compatible for medical imaging equipment requiring low mains resistance
3. Compatible with all types of loads including regenerative active loads, lifts, escalators and lighting loads
4. 1+1 parallel redundant configuration with common battery bank
5. Rectifier current limit setting for optimised upstream infrastructure
6. Parallel up to 6 units for capacity or redundancy

Reliability:

1. Operating temperature of 0-40°C with special attention in component selection and design to improve reliability
2. Advance battery management technique to improve battery life with three stage charging and with auto equalizing charge at predefined intervals
3. Advanced thermal protection of IGBT using on chip built-in temperature sensor.

APPLICATIONS:

Infrastructure

Commercial Offices
And Malls

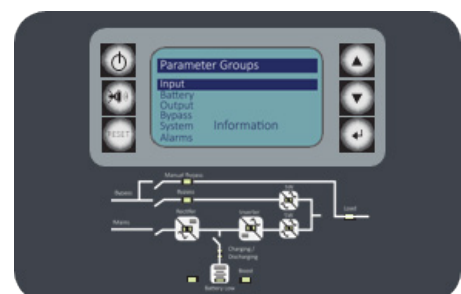
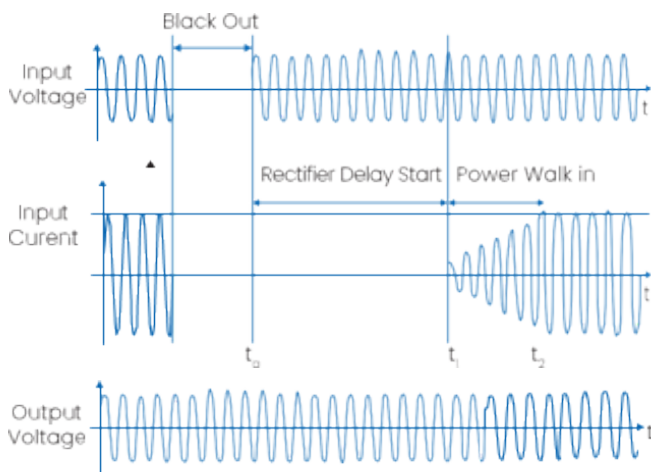
Lifts and Escalators

Medical Imaging
Equipment

Engineering Industry

Process Industry

Rectifier Delay Start



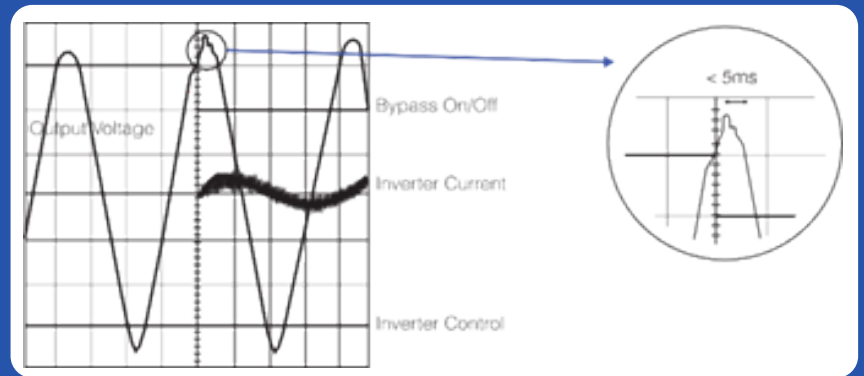
Easy Installation:

Vigour has a compact footprint and requires a very small for installation
The Human machine Interface(HMI) is intuitive and user friendly with a LCD screen and LED mimics.

Intelligent High Efficiency (Vigour-i)

Eco mode operations which can be enabled for energy savings (up to 99% efficiency). The firmware, tested to Indian power conditions monitors the quality of the input power, and enables the eco mode operations on bypass only when input power conditions are stable. Other wise the UPS transfers back to double conversion mode in less than 5ms whereby the reliability of power is ensured is ensured to the critical load.

Eco Mode Of Operation:



Scalable Solution:

- Redundant parallel architecture(RPS) provides reliability, redundancy and scalability
- Parallel up to 6 UPS modules
- Long history of experience with redundant parallel architecture(RPS) which increases system reliability by eliminating single point of failures.

Digital Signal Processor (DSP)

DSP(Digital Signal Processor) performance enables z the high sampling rates required to achieve the appropriate bandwidth for the current and voltage controls for an efficient double-conversion UPS.

- High speed sampling rate for precise RPA control
- Faster transient response time
- Redundant high speed communication
- All digital controls for increased reliability and stability
- All system control parameters are adjustable from the front panel.

Redundant Parallel Architecture(RPA) System Configuration:

Sterling provides RPA, a unique technology that can parallel UPS modules with true redundancy by eliminating any single point of failure. RPA provides a scalable paralleling technique that reduces operating footprint and increases system reliability by eliminating the need for external paralleling equipment and cabinets (centralized bypass and master control).

One of the UPS modules in the system intelligently takes the leadership role, while the other UPS modules have access to all control parameters. If one UPS fails to operate, the load is automatically redistributed among the others. If the lead UPS fails to operate, then another UPS automatically takes on the leadership role. Sterling's RPA technology is implemented by distributing the control electronics within each UPS module in the system.

RPA SYSTEM ADVANTAGES:

1. No Single Points Of Failure

The RPA system provides complete redundancy of all critical components, allows paralleling of up to 6 units for increased load capacity or redundancy.

2. Scalable and Modular:

the system can be easily expanded for higher capacity and redundancy without any interruption to the critical load or transfer to bypass. Redundant communication. Redundant high speed bus and control electronics provide higher system reliability.

3. Distributed Control Logic:

Each module in an RPA system has its own operational controller. Each one continuously communicates with all others in order to manage the entire system like a team.

4. Online Management:

N+1 configurations allow maintenance on any single module in the system while other modules provide online protection with battery backup.

5. Sequential Soft Start:

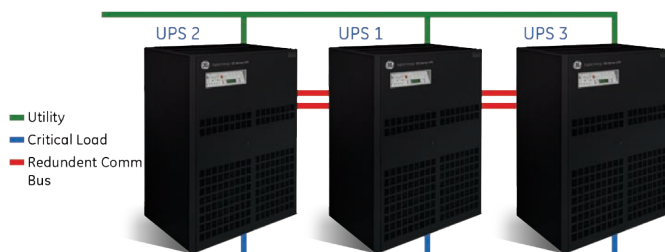
Provides sequential soft start of each module to reduce instantaneous load on input feeders during mans recovery. This helps avoid over-rating of generator and overheating of cables and fuses.

6. Smaller footprint:

RPA eliminates centralized control and external static bypass cabinet.

Sterling's RPA

Standard RPA Configuration:
True Redundancy with Distributed Control & Bypass



Inside Each UPS Module is:

- RPA control/ Communications
- 100% RATED Static Switch

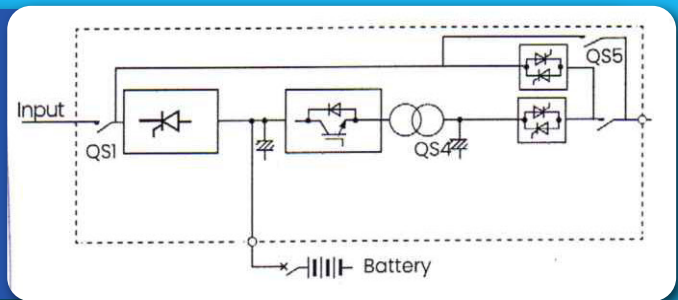
Vigour / Vigour-i Series

SPECIFICATIONS												
Capacity (KVA)	10	15	20	25	30	40	60	80	100	120	160	200
Active Power (KW)	8	12	16	20	24	32	48	64	80	96	128	160
Active Power factor	'0.8 standard , 0.9 / Unity (Optional)											
INPUT												
Phase	3 Phase + Neutral + Ground											
Voltage	415 AC <u>±</u> 15%											
Frequency	50 Hz <u>±</u> 6%											
OUTPUT												
Voltage	400 / 415 VAC (380 VAC Optional) L-L											
Frequency range	50 / 60 Hz <u>±</u> 0.5%											
Frequency Stability on Battery	<u>±</u> 0.05% Hz											
Type of Output Power	3 Phase + Neutral + Ground											
Voltage regulation	<u>±</u> 0.5%											
Harmonic Distortion	≤ 2.5% on linear load, ≤ 8% on Non-linear load											
Overload Capacity	Up to 110% for 60 mins.; Up to 125% for 10 mins. ; Up to 150% for 1 min. *											
Crest Factor	3 : 1											
Efficiency	Online mode : up to 92% , ECO mode : up to 99% *											
Isolation Transformer	Inbuilt @ inverter											
Bypass												
Type of Bypass	Static Bypass											
Rated Voltage	380 / 400 / 415V (L-L)											
Voltage range	<u>±</u> 20% (Settable)*											
Type of Input Power	3 Phase + Neutral + Ground											
Frequency range	50 / 60 Hz <u>±</u> 10% (Settable)*											
Transfer Time	0 ms with sync.											
DC Bus (Battery)												
Nominal DC Voltage	384 VDC standard. (360 VDC optional only on Vigour Series)											
Battery type	SMF VRLA / Tubular / GEL											
Recharging Time	8-12 Hours											
Other												
Parallel	up to 6 units, redundant (Optional)*											
Display	LCD + LED / Touch Screen (Optional)*											
Communication (Optional)	RS232 / RS 485* / SNMP / Dry contact Signals											
Cold Start	Standard											
Protection	input under / over voltage, over temp., over current, over load, short circuit, DC bus over voltage											
Temperature	0 - 40°C											
Noise	≤ 65 dB											
Altitude	0-2000 m											
IP rating	IP20 / IP21											
Standards	(Safety : IEC60950-1, IEC62040-1-1, UL1778, EMC : IEC62040-2 Class C2, EN50091-2 CLASS A)*											
Humidity	(Safety : IEC60950-1, IEC62040-1-1, UL1778, EMC : IEC62040-2 Class C2, EN50091-2 CLASS A)*											

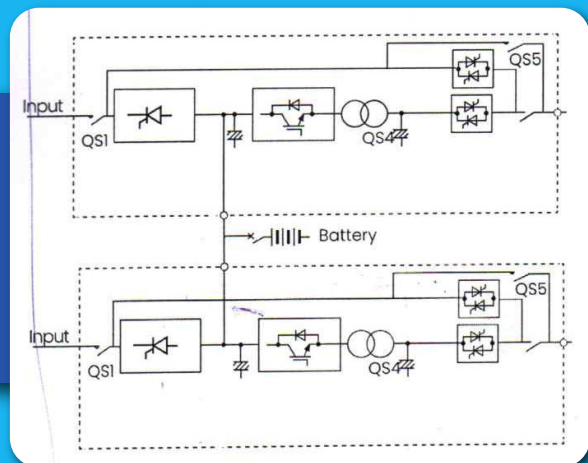
- *On Vigour-i series
- All Specifications are subject to change without prior notice
- Custom made specifications are acceptable.

Vigour UPS Configuration Examples:

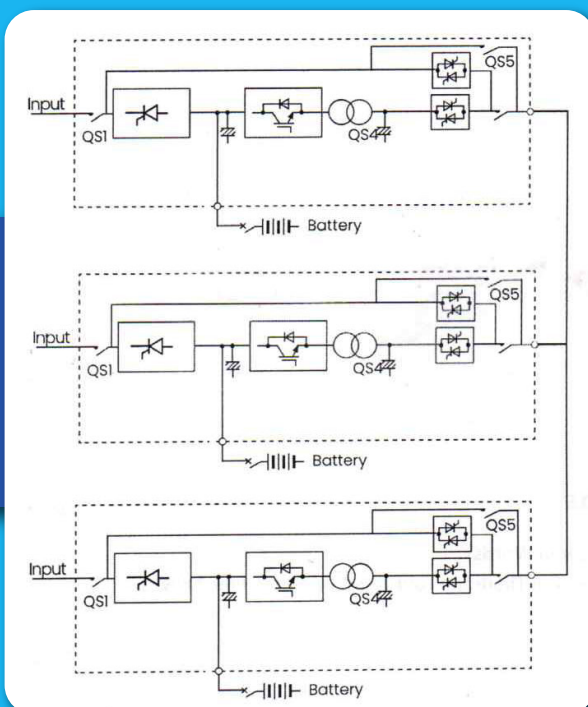
Standalone UPS Configuration



1+1 Parallel with Common Battery Bank



Parallel UPS for Capacity or redundancy



SERVICES:

Today a business is in always ON mode with zero-tolerance for downtime. Sterling offers a wide range of products that promise seamless quality power solutions for all kinds of consumers-industrial, commercial and residential. The range of power solutions covers 3P, 2P and LI across power needs.

SUPPORT:

Site Inspection, Installation Supervision:
Sterling UPS safe and fault-free operations start at the time of installation. A team of technical experts from Sterling visit the UPS site to perform a comprehensive check of the environment. The site engineer or electrical contractor is informed of their recommendations. The installation is supervised by the Sterling technical team.

Site Test, Commissioning:

After the installations, the UPS is subject to rigorous site tests. The UPS is configured according to users requirements and completely set-up before going live. After successful testing, the UPS is handed over with the installation report.

TRAINING:

On site training is made available to ensure the safe and efficient operations of the equipment. Hands-on training for the clients engineers and technical team can be arranged at Sterling's plant.

MAINTENANCE:

Preventive Maintenance: Optimal performance of the UPS require regular preventive maintenance operations, with parts replaced when needed. Sterling offers Service Contracts with Preventive Maintenance that include cleaning, UPS measurements, functional tests, technical reports(optional), battery health check up and software upgrades.

Corrective Maintenance, Emergency Call:

Engineers and spare parts stocks have been strategically located to handle emergencies. A powerful diagnostic software helps engineers identify the fault quickly and ensure short MTTR (Mean Time To Repair). The diagnosis further helps corrective actions such as part replacement, adjustments to be performed and return the UPS system back to normal.



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