

Online UPS

Falcon 5000

Isolation Transformer UPS

30 KVA - 800 KVA

Three Phase Input / Three Phase Output



Reliability & Performance By Design

The Falcon 5000 (Uninterruptible Power Supply) has been developed by a World Class R&D team, with over three decades of power electronics experience for the harsh power and site conditions prevalent in India and other developing countries. The Falcon 5000 shares the characteristics of the Falcon birds which is a rugged and an incredible flying machine and one of the fastest creatures on the planet with the ability to move and change direction very quickly. Similarly, the Falcon UPS is an incredible power protection system designed and manufactured in India to global IEC standards.



Features



RELIABILITY

Thermal design and component selection for longer life when operating at higher ambient temperatures and in harsh power and site conditions.

Advanced technology of CAN bus and 32 bit micro processor.



USER FRIENDLINESS

Intuitive HMI and Wide range of connectivity options.



SCALABILITY

Upto 8 units in parallel for Capacity or Redundancy.



ROBUSTNESS

Designed to continue functioning without going to battery even when there are severe disturbances in input mains.

Designed to operate at 40°C continuously



FLEXIBILITY

Can handle loads of many kinds including steps loads, 100% Non-linear loads and loads with leading and lagging power factor.

4 quadrant rectifier to handle regenerative loads.



SERVICEABILITY

Easy access to critical components allowing low MTTR (Mean Time To Repair) and modular construction for low spare part count.



GREEN TECHNOLOGY

Input PF > 0.99
HDI < 5%
Intelligent Eco Mode operation for 99% efficiency



SAVING

Advanced battery management for longer battery life.

Input IGBT Rectifier means no need to oversize DG set and can operate without air-conditioning.

High Reliability

Falcon 5000 provides a higher level reliability

Thanks to the modular constructions, Shorter mean time to repair with side out modules for easy serviceability. High Level of internal redundancy providing N+1 Redundant Fans and Failure of modules leads only to reduce capacity.

Advanced thermal protection of IGBT using on chip built-in temperature sensor.

Pulse by pulse current limit and Desaturation protection IGBT from short circuits is implemented.

Internal protection for capacitors against Overload and Failure to prevent it from bursting.

The Falcon UPS family is designed for harsh conditions which prevail in India, Like high ambient temperature, very high humidity, wide input voltage fluctuations, and operation on DG Sets during power cuts which are not seen in many parts of the world. The Falcon UPS is designed for continuous operation at 40°C ambient temperature with special attention to details in component selection and design to improve reliability and life under demanding conditions.

Green Input Performances

Falcon 5000 is designed with active front end IGBT rectifier.

High input power factor ($PF > 0.99$) and Low current harmonic distortions ($THDi < 5\%$) irrespective of the power factor or harmonics generated by the load.

This low THDi and high PF in the input of UPS ensures the UPS will not create unwanted problems due to harmonics created by older generation UPS. Also ensures that DG sets, power cables and switch gear rating need not be over-sized and thereby saving considerably on infrastructure costs. This feature also helps avoid any penalty charged by Utility companies for low power factor or high harmonics input.

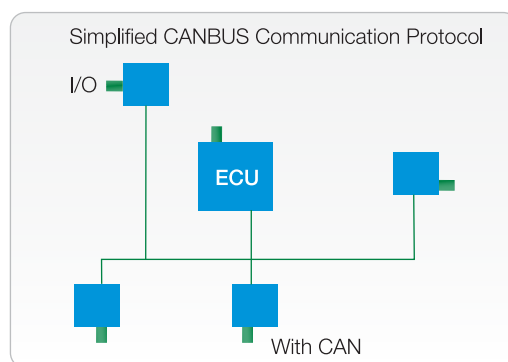
Advanced Battery Characteristic

Advanced battery management techniques to improve battery life.

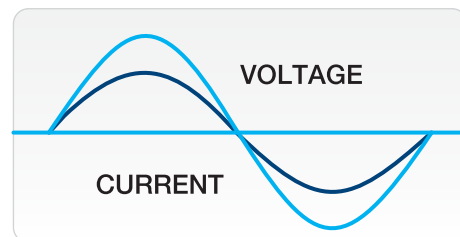
- Auto Float Boost Charger Topology for VRLA (SMF).
- Three stage charging which also auto equalizes charging at pre-determined intervals to improve battery life.
- Temperature Compensated battery Charging. (Optional)



Complexity of control wiring within the UPS has been simplified using CANBUS communication protocol for higher reliability and trouble-free operations.



Input Phase sequence correction provided as standard to avoid UPS transferring to Battery mode in case of Phase sequence change at input. UPS will continue to work on mains mode without discharging battery resulting in optimised usage of battery.



- Adjustable algorithm for test of battery based on Capacity of battery, connected load etc.
- Configurable DoD (Depth of Discharge).
- Compatible with Lithium Ion Battery.

Service ability & user Friendliness by Design

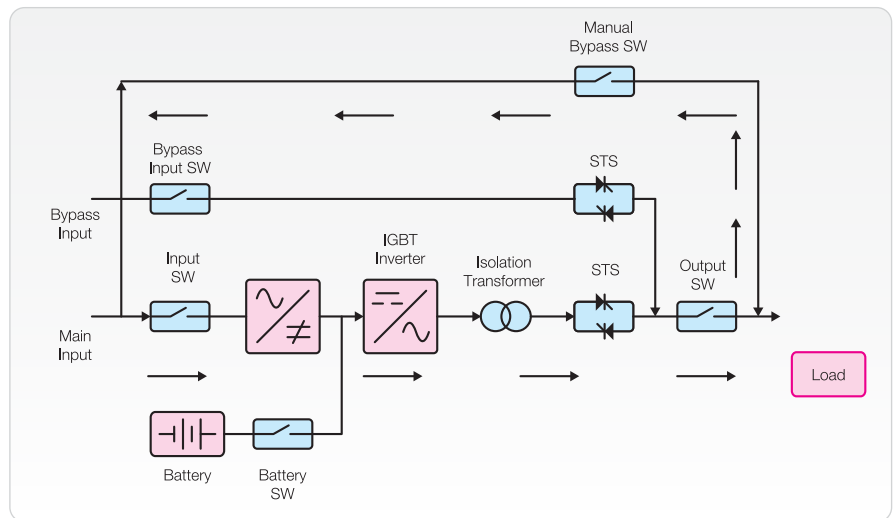
Reduced MTTR

The Falcon UPS is designed with a focus on serviceability to reduce the Mean Time To Repair (MTTR) in the unlikely event of a failure and all modules are on pullout trays which can slide out for quick diagnostics and replacement. The Falcon UPS also comes with built-in SD card and RAM where all events, alarms and error logs are stored for analysis remote or on site.



Intelligent Testing of UPS System

Falcon 5000 has a special function of performing a full load on itself and can also perform battery discharge test without any additional load banks. This allows the UPS to be tested at different load levels and can be easily performed by a qualified technician at site.



Total Cost of Ownership

Optimized cost of ownership with Falcon 5000

Falcon 5000 can be operated upto 40°C (Ambient Temperature) without precision air conditioning as required by most UPS. This helps large saving for the customer in capex and opex costs associated with cooling required for the UPS. The UPS batteries must be kept in a separate room for safety and temperature must be maintained below 27°C to maximize the life of the batteries.

Long life power Electronic grade capacitors are being used in the UPS which doesn't warrant for the replacement of capacitors during its lifetime.

Falcon 5000 is specially designed with four quadrant IGBT rectifier designed to handle regenerative loads and feeds back the regenerative power to the mains providing considerable energy savings.

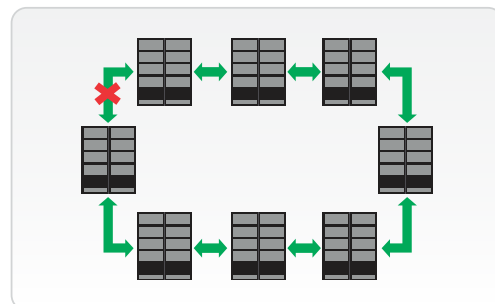
Intelligent Eco Mode

Energy Efficient System

Falcon 5000 has a intelligent high efficiency Eco Mode operations which can be enabled for energy savings (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. Otherwise the UPS transfers back to double conversion mode in less than 2ms whereby the reliability of power is ensured to the critical load.

Flexibility & Scalability

Falcon UPS can be configured with upto 8 units in parallel for both capacity and redundancy. Falcon UPS uses space vector pulse width modulations (SPPWM) to ensure uniform sharing of load even with dynamic load changes. The Parallel Redundant System (PRS) architecture does not have any single common point of failure, making it the most reliable UPS & true redundant UPS configuration for critical applications. Falcon UPS can also be configured to support Tier-1 to Tier-4 data centre designs.



User Friendliness

Falcon 5000 has HMI & Communication options



The Human Machine Interface (HMI) is intuitive and user friendly with a LCD screen and LED mimcs.



A TFT touch screen is also available as an optional interface.

True RMS readings of more than 25 parameters of the UPS is available.



The Falcon UPS also provides a wide range of connectivity options including Serial-RS232; Rs485, Modbus RTU, SNMP - (10/100Mbps auto-select) - (optional), Datacard with 3G/4G for remote monitoring (optional) and Profibus (optional). Also there are six programmable potential free alarm contacts.

Standards & Certifications

Standard	
Safety	IEC 62040-1
Testing and Performance	IEC 62040-3
EMC/EMI	IEC 62040-2 Category C3
IP Protection Class	IEC 60529
Noise Level	ISO 3746
Quality Standards	ISO 9001 : 2008
Environment Management System	ISO 14001 : 2004
OHSAS	OHSAS 18001 : 2007



Technical Specification

Falcon 5000

UPS 30 KVA - 80 KVA

Three Phase Input / Three Phase Output

General				
Rating in KVA	30	40	60	80
Input				
Normal Voltage	415 V AC 3 ph + N ($\pm 15\%$)			
Nominal Frequency	50 Hz (46 to 54 Hz)			
Power Factor	≥ 0.99			
THDi (@ Vthd <1%)	<5%			
Topology	32 bit DSP controlled			
Output				
Power in KW	24	32	54	72
Power Factor	0.6 to Unity within KVA and KW rating			
Voltage	400 v / 415 V AC ($\pm 1\%$) 3Ph (380 V Optional)			
Frequency	50 Hz / 60 Hz (± 0.1 Hz)			
Transient Response	$\pm 5\%$, recovery within one cycle to 98%			
Waveform	Sinusoidal			
Total Harmonic Distortion	<2% for Linear Load, <5% for Non-Linear Load (ref IEEE 62040-3)			
Overload Capacity	110% for 60min, 125% for 10min, 150% for 60sec			
Efficiency	Upto 99% @ Energy saving mode.			
Bypass				
Voltage & Frequency	415 V AC, +/- 10%, 50 Hz (+2.5Hz) settable			
Transfer Time	Synchronous mode: No break Asynchronous mode < 10 ms			
Manual Bypass	Provided			
Environment				
Operating Temperature	0 to 40°C			
Storage Temperature	0 to 70°C			
Relative Humidity	upto to 95% RH (Non-condensing)			
Maximum Operating Altitude	1000 m (without de-rating)			
Acoustic Noise @ 1m (Ref. ISO 3746)	≤ 65 dBA			
Enclosure Protection Grade	IP 20			
Ventilation	Forced air cooling			
Cable Entry	Bottom			
Dimensions				
Width (mm)	500	600	600	800
Depth (mm)	800	800	800	
Height (mm)	1085	1750	1750	
Weight (mm)	270	350	700	750
Cabinet Finish	Texture Finish			
Communication				
Interface & Protocol	Ethernet RJ45			
Available Options	SNMP, MODBUS			

*This Information contained in this publication is subject to change without prior notice.

Ref. Standards IEC 62040-1, IEC 62040-2, IEC 62040-3

Falcon 5000

UPS 100KVA - 600 KVA

Three Phase Input / Three Phase Output

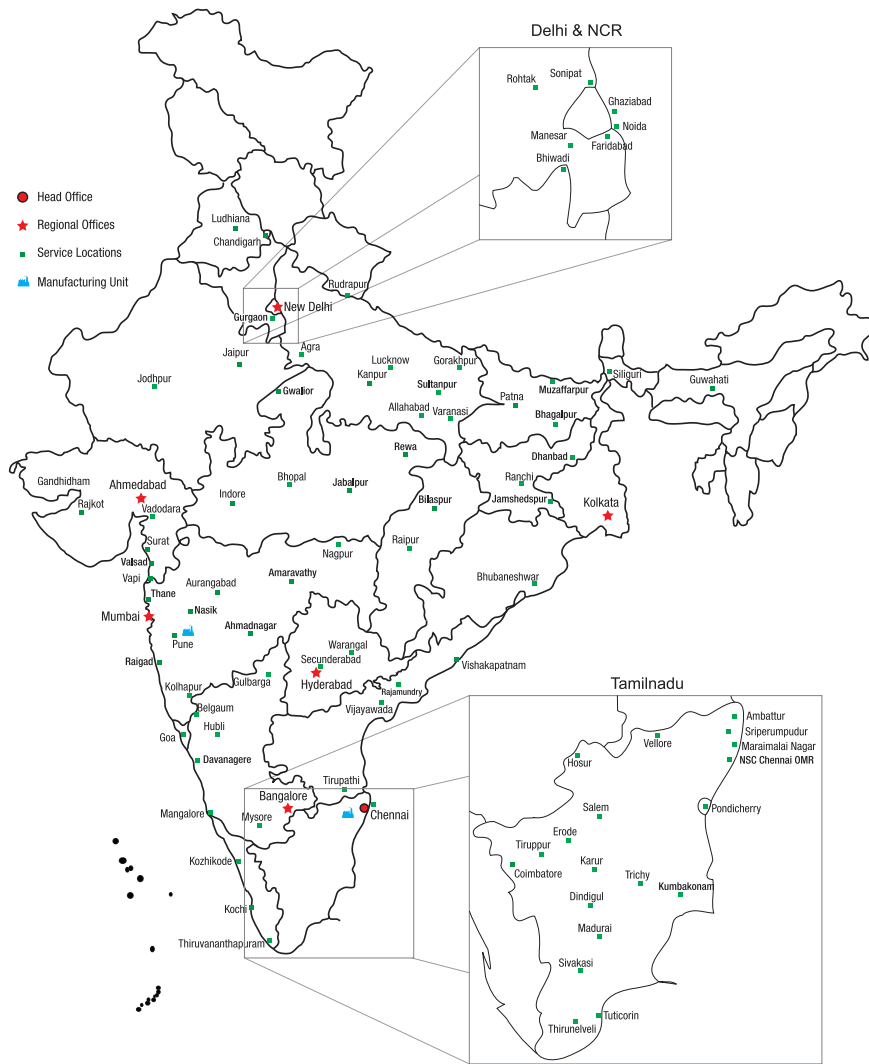
General									
Rating in KVA	100	120	160	200	250	300	400	500	600
Input									
Normal Voltage	415 V AC 3 ph + N (±15%)								
Nominal Frequency	50 Hz (46 to 54 Hz)								
Power Factor	≥ 0.99								
THDi (@ Vthd <1%)	<5%								
Topology	32 bit DSP controlled								
Output									
Power in KW	90	108	144	180	225	270	360	450	540
Power Factor	0.6 to Unity within KVA and KW rating								
Voltage	400 v / 415 V AC (±1%) 3Ph (380 V Optional)								
Frequency	50 Hz / 60 Hz (± 0.1 Hz)								
Transient Response	± 5%, recovery within one cycle to 98%								
Waveform	Sinusoidal								
Total Harmonic Distortion	<2% for Linear Load								
	<5% for Non-Linear Load (ref IEEE 62040-3)								
Overload Capacity	110% for 60min, 125% for 10min, 150% for 60sec								
Efficiency	Upto 99% @ Energy saving mode.								
Bypass									
Voltage & Frequency	415 V AC + 15%, 50 Hz (+ 2.5 Hz) settable								
Transfer Time	Synchronous mode: No break,								
	Asynchronous mode < 10 ms								
Manual Bypass	Provided								
Environment									
Operating Temperature	0 to 40°C								
Storage Temperature	0 to 70°C								
Relative Humidity	upto 95% RH (Non-condensing)								
Maximum Operating Altitude	1000 m (without de-rating)								
Acoustic Noise @ 1m (Ref. ISO 3746)	≤ 68 dBA			≤ 70 dBA			≤ 72 dBA		
Enclosure Protection Grade	IP 20								
Ventilation	Forced air cooling								
Cable Entry	Bottom								
Dimensions									
Width (mm)	840		1390		1650		2100		2490
Depth (mm)	900		900		900		900		1000
Height (mm)	1750		1750		1750		1750		1950
Weight (mm)	850	850	1200	1400	1500	1500	1800	2200	2500
Cabinet Finish	Texture Finish								
Communication									
Interface & Protocol	Ethernet RJ45								
Available Options	SNMP, MODBUS								

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* 0.9 PF Available on request

Ref. Standards IEC 62040-1, IEC 62040-2, IEC 62040-3

Pan India Sales & Service Network



Product Offerings

- Online UPS (1-800 KVA)
- Servo Controlled Voltage Stabilizer (Oil Cooled / Air Cooled)
- Active Harmonic Filter
- Static Transfer Switch
- Isolation Transformer
- Solar Inverter
- Emergency Lift Operating System
- Offline UPS

Service Offerings

- Comprehensive Annual Maintenance Contracts (CAMC)
- Annual Maintenance Contracts (Labour - AMC)
- AMC for Third Party UPS, Stabilizers, Inverters and other Power Products
- Battery Replacement Services
- Power Audits
- Stabilizer Retrofits
- Rental UPS and Stabilizers
- Stabilizer Oil Replacement
- Remote Monitoring

Service Support



Real time E-service report through mobile app



Service request through mobile app



350 company trained service engineers



80+ service locations



Parts warehouse in 24 Locations



Call center with 4 language support



Any time service request

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