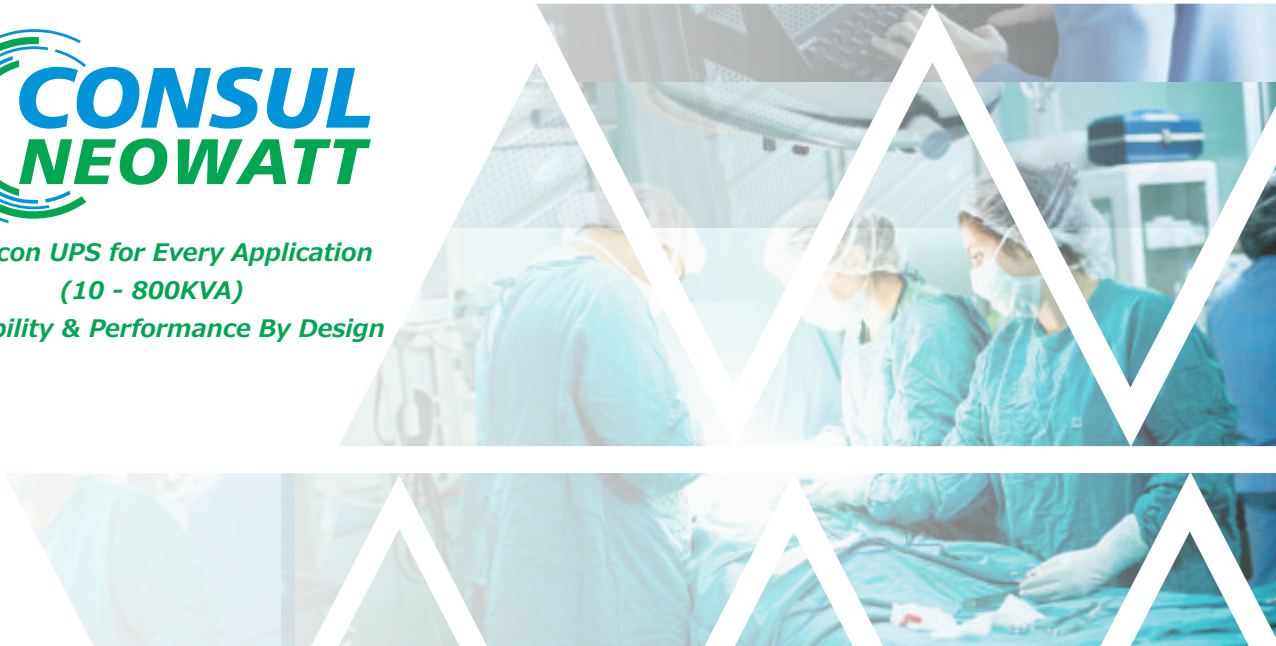




*A Falcon UPS for Every Application
(10 - 800KVA)
Reliability & Performance By Design*



Falcon UPS Family

The Falcon UPS (Uninterruptible Power Supply) family 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 UPS shares the characteristics of the Falcon birds which is a rugged and an incredible flying machine and one of the fastest creature 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. The Falcon UPS is equipped with the state of the art 32-bit Floating-Point DSP controller which can handle any load variations or input power quality issues at supersonic speeds in an efficient manner to provide clean, reliable and uninterrupted power to all critical applications even in harsh conditions

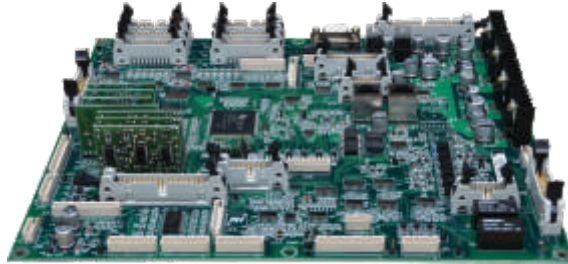


A Falcon UPS (Uninterruptible Power Supply) for Every Application

Falcon Models	AC Input	AC Output	Single Module Rating	Horizontal Scalability (Max)	Galvanic Isolation	Rectifier	Inverter
Falcon 3000	3 Phase	1 Phase	10 to 60 KVA	480 KVA	Built-in	IGBT	IGBT
Falcon 5000	3 Phase	3 Phase	10 to 800 KVA	6400 KVA	Built-in	IGBT	IGBT
Falcon 7000	3 Phase	3 Phase	60 to 500 KVA	4000 KVA	Optional & External	IGBT	IGBT
Falcon 8000	3 Phase	3 Phase	30 to 300 KVA	2400 KVA	Built-in	SCR	IGBT

Reliability And Performance : By Design

The Use of latest generation 32-bit floating - point DSP controller using space vector modulation technique makes the falcon UPS a state of the art, highly reliable, flexible and efficient UPS.



Flexibility

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



User Friendliness

- Intuitive HMI with touch screen display (Optional)
- Wide range of connectivity options



Saving

- Advanced battery management for longer battery life
- Input IGBT Rectifier means no need to oversize DG set
- Can operate without air-conditioning



Green Technology

- Input PF>0.99 and THDi <3%*
- Intelligent Eco Mode operation for 99% efficiency*



Robustness

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



Reliability

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



Scalability

Up to 8 units in parallel for Capacity or Redundancy



Serviceability

- Only Front access required with easy access to critical components allowing low MTTR
- Modular construction for low spare part count

Reliability & Long Life By Design

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.

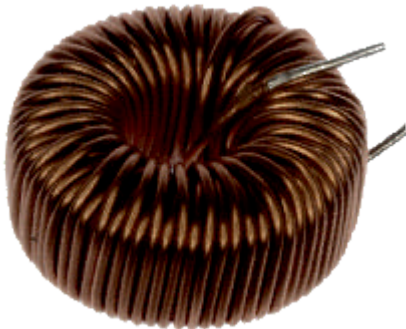
Professional grade DC capacitors to handle ripple currents with little degradation.



Power electronic grade AC capacitors for long life



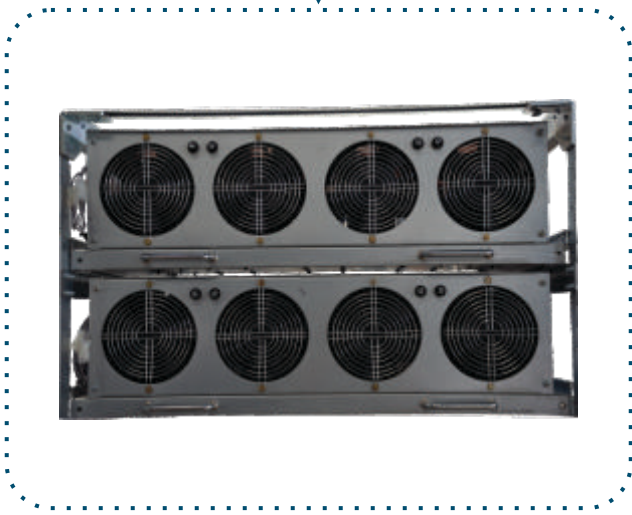
Special Magnetic powder cores used for inductors which provide stable performance over wide temperature range.



Special Heat Sinks with large surface area for effective heat dissipation in small volume.



Redundant Fans which provides unmatched reliability and lower noise compares to traditional blowers used in high power three phase UPS systems.

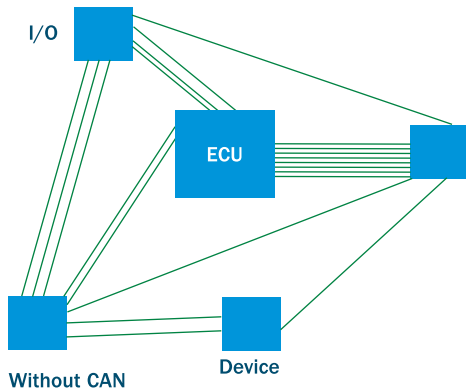


Advanced thermal protection of IGBT using on chip built-in temperature sensor. Pulse by pulse current limit and Desaturation protection IGBT from short circuits is implemented. Press fit low inductance drivers are used with latest generation IGBT ensuring highest reliability

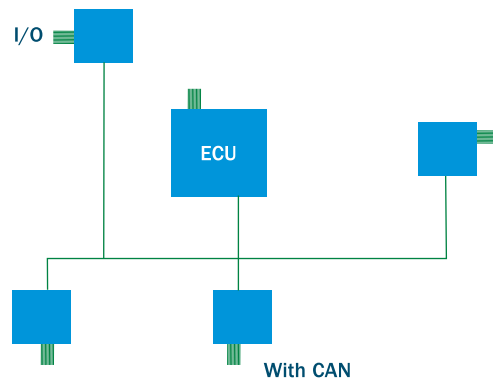


Complexity of control wiring within the UPS has been simplified using CANBUS communication protocol for higher reliability and trouble-free operations.

Complex communication protocol in conventional UPS



Simplified CANBUS communication protocol in Falcon UPS

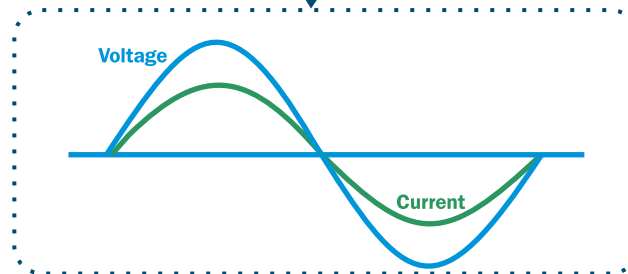


Energy Efficiency & Saving By Design

The Falcon UPS family is designed to provide green, energy efficient and clean uninterrupted power protection to all critical applications. The components used in Falcon UPS are designed for high efficiency to give the optimal energy efficient performance under different line and load conditions.

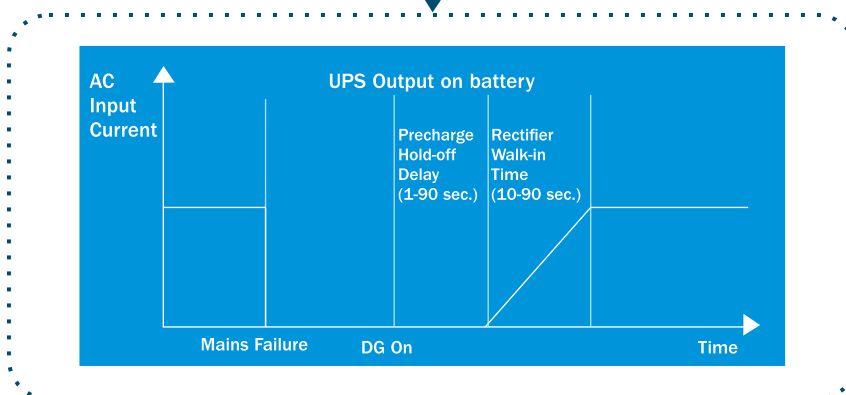


Current drawn by IGBT Rectifier with low harmonics & high PF*



Falcon Family UPS comes standard with front end IGBT rectifier which helps achieve high input power factor ($PF > 0.99$) and low current harmonic distortions ($THDi < 3\%$) 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.

Scheduled ramp-up & Power Walk-in



In a site with multiple UPS, to avoid sudden load on DG Set in the event of a power outage, the UPS rectifiers can be programmed to start gradually with a ramp-up delay of 1-90 seconds. This ensures there is no need to oversize DG to handle UPS loads.

Battery Management Techniques for Extended Life

Falcon UPS also uses an advanced battery management system with three stage charging which also does an auto equalize charging at pre-determined intervals to improve battery life.

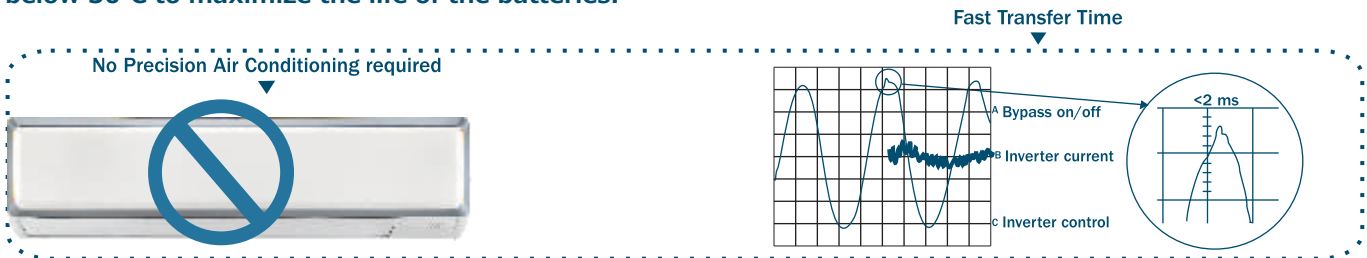
Advanced software algorithms allows for perfect phase-lock of inverter output to bypass source even if source has a lot of distortions like when operating on the DG Set. This allows UPS to provide clean power without going to battery when UPS is operating on DG Set.



Falcon also comes built-in with a unique technology to handle Input Phase sequence reversal issues. The Falcon UPS will keep charging the batteries and work on mains Power even in the event of Phase sequence reversal unlike conventional UPS which will drain the battery and then shut down. Falcon UPS has excellent dynamic response and can support sudden load changes without going to battery unlike conventional UPS based on proprietary control used in the IGBT Rectifier. The above features help increase battery life due to reduction in both the number of discharges and depth of discharges of batteries when used with the Falcon UPS results in minimal reduction in backup time due to battery aging and during operation.

Energy Savings

Falcon UPS can be operated 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. While air-conditioning is not required, the air must be dust free and there must be sufficient air flow circulation to ensurerequired number of air changes per hour in UPS room and ambient temperature must be below 40°C. The UPS batteries must be kept in a separate room for safety and temperature must be maintained below 30°C to maximize the life of the batteries.

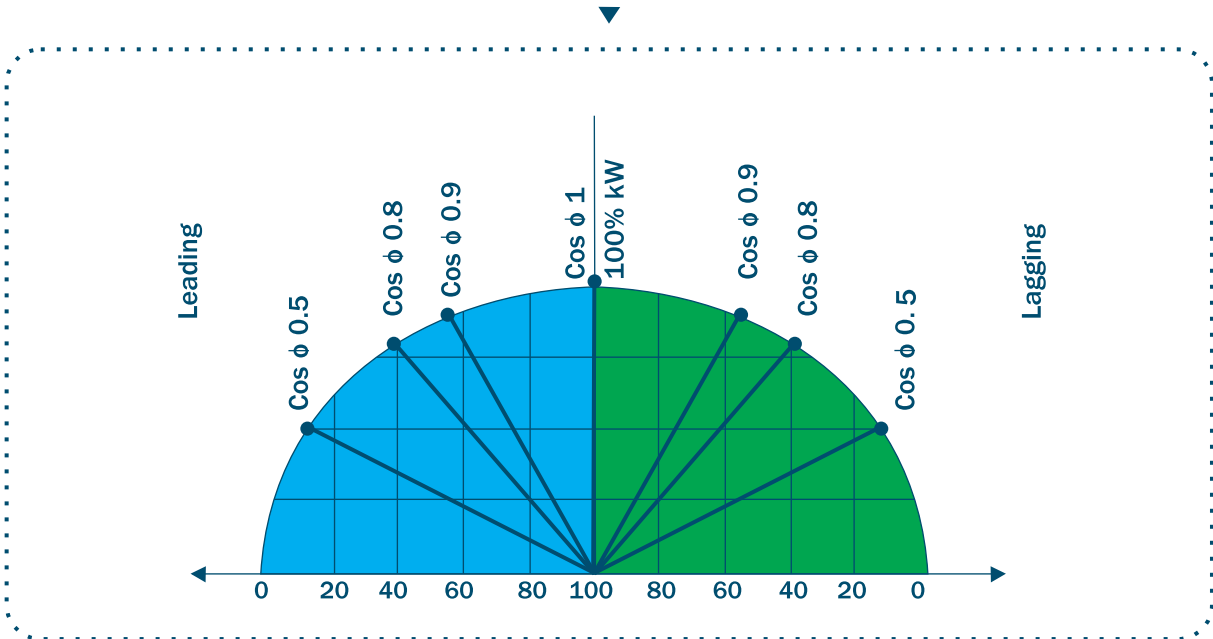


Falcon UPS has an intelligent high efficiency Eco Mode operations which can be enabled for energy savings (99% Efficiency). Here the firmware, tested to Indian power conditions monitors the quality of the input power, and enables the Eco Mode operations on bypass only when input power conditions are stable. otherwise theUPS transfers back to double conversion mode in less than 2ms whereby the reliability of power is ensured to the critical load.

Application Flexibility By Design

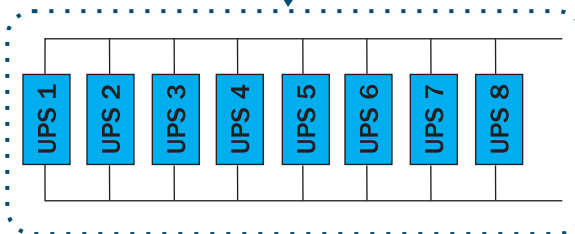
The Falcon UPS family is designed to be adaptable and flexible to provide the optimal power backup solution for critical applications in Datacenters, manufacturing, process industries, Healthcare and for Infrastructure projects. The falcon UPS is Compatible to support a wide range of loads like 100% non-linear loads, dynamic step loads, loadswith leading and lagging power factor and regenerative loads.

Compatibility with loads from PF 0.7 lead to 0.9 lag without de-rating



Datacenters

Parallel Redundant System Architecture



Falcon UPS can be configured with upto 8 units in parallel for both capacity and redundancy. Falcon UPS uses space vector pulse width modulation (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 Data center applications. Falcon UPS can be configured bto support Tier-1 to Tier-4 data centers designs. falcon UPS is available with both in-built transformer and transformerless options. Falcon UPS can handle loads with both leading and lagging power factor loads including leading power factor seen when supporting Blade servers

Healthcare

Falcon UPS is designed to meet the highest quality and reliability standards required in Hospitals. The Falcon UPS offers low line resistance and has excellent transient response to handle the step load power required during scanning by Diagnostic imaging equipment like MRI, PET, CT, Cath labs and X-rays. The Falcon UPS can also be configured to support these diagnostic imaging equipment with the available input power supply without need for upgrading the mains. The UPS can be configured to limit the power drawn from mains and support the scan. This allows substantial saving on the Capex and Opex for the Diagnostics Center.

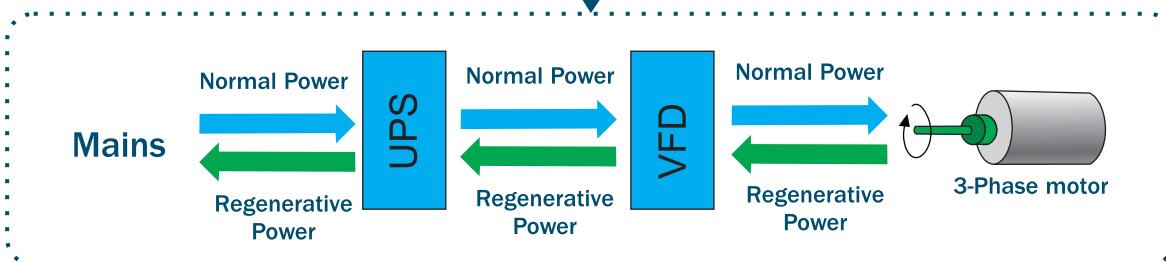
Designed for Diagnostic Imaging Applications



Engineering & Manufacturing

Falcon UPS family is designed to provide a rugged and robust uninterruptible power supply for the highly nonlinear and cyclic load conditions seen in manufacturing industries. Today many of the Variable frequency drives (VFD) used in industries allow for regenerated power flow when there is a Braking mechanism which slows or stops the motor. This regenerated power flows into the UPS and in a conventional UPS will result in the tripping of the UPS. The Falcon UPS is specially designed with four quadrant IGBT rectifier design to handle this regeneration and feeds back the regenerative power to the mains causing interruption to the critical load as well as providing considerable energy savings by returning the power to the mains during regeneration transients.

Designed for handling Regenerative Loads*



Process & Infrastructure

Falcon UPS is designed for reliability and high energy efficiency which is very critical for process applications like plastics, pharmaceuticals, textiles, plastic extruders, food processing, bottling, injection molding and also infrastructure projects like Airports, Tunnels, Railways and Metros. Falcon UPS will enable the Process Industry to achieve their uninterrupted production and the required quality standards without eating into the power bills by using the Intelligent Eco mode operation which can reduce power bills while still ensuring reliable uninterrupted power supply.



Designed for Energy Efficiency

Serviceability & User Friendliness By Design

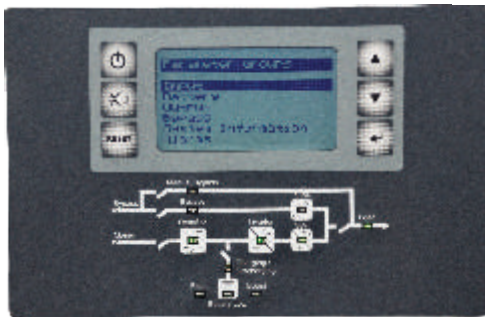
The Falcon UPS is Designed with a focus on serviceability to reduce the mean time to repair (MTTR) in the unlikely event of a failure. The construction of the UPS is modular in nature with shared spare parts being used across the family and within a UPS. The UPS requires only front access for service and all modules are on pull-out 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 remotely or on site.



Front Only Access Design with slide out Modules for easy serviceability

The Human Machine Interface (HMI) is intuitive and user friendly with a LCD screen and LED mimcs. A tough TFT touch screen is also available as an optional interface. True RMS readings of more than 25 parameters of the UPS is available

LCD/LED HMI



TFT Touch Screen HMI



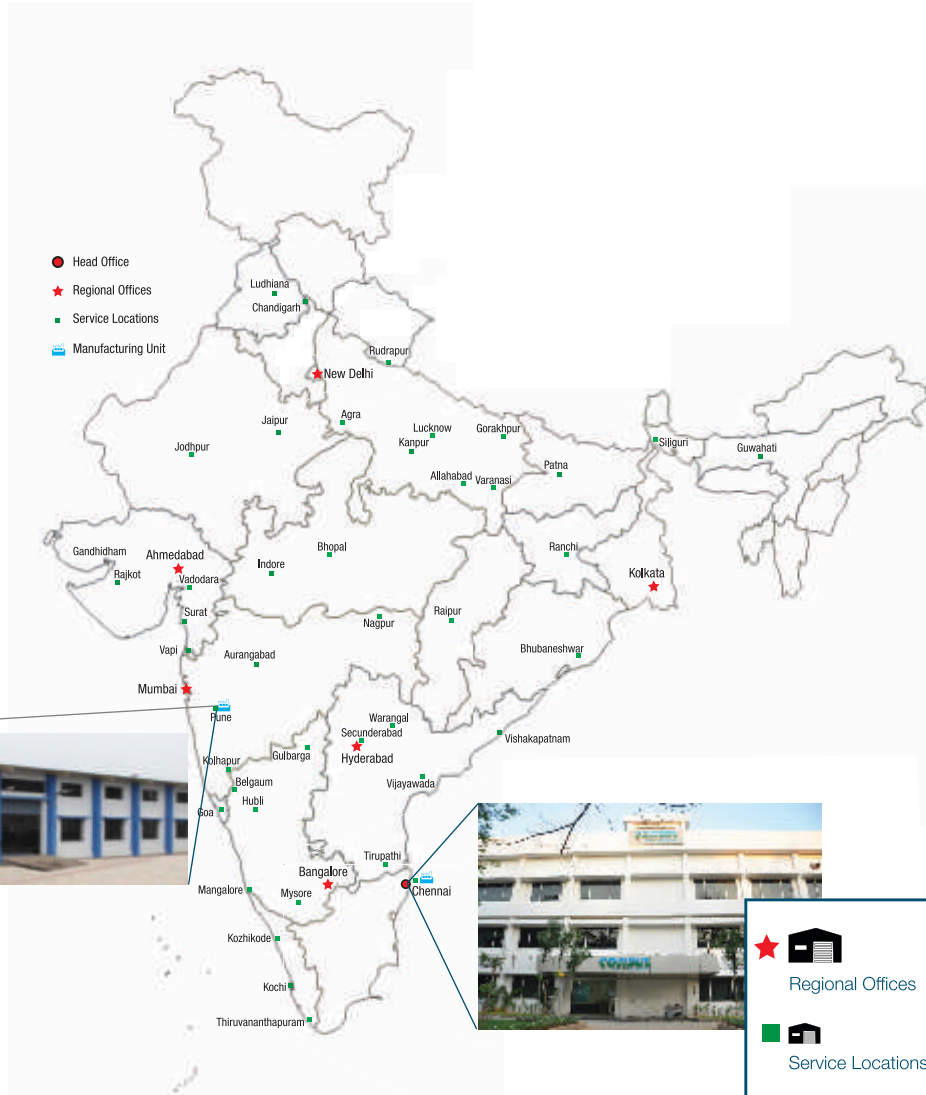
Multiple Connectivity Options








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

* This feature not applicable to falcon 8000

Pan India Sales & Service Network



		7
Regional Offices		
		75
Service Locations		
	Factory-trained Service Engineers	250
Customer Support - 7x365 IVR Call Center		078 1000 9955

► Service outside India delivered by our partners

Our Other Products

Servo Stabilizer / Online UPS / Inverter / Harmonic Filter / Solar Inverter / Isolation Transformer / Custom Solutions / Static Transfer Switch

Consul Neowatt Power Solutions Pvt Ltd (CNPS)

CNPS is the only Indian company to manufacture and supply a full range of power electronics products, Services and solutions- UPS, Inverter, Active Harmonic Filter, Solar PCU and Inverters, Servo Stabilizers, Isolation Transformer and Static transfer Switches.

CNPS solutions and products are backed with more than three decades of field experience in developing customized power products that meet the exacting standards of clients in supporting critical and sensitive equipment in various industrial and commercial applications. CNPS also assists customers optimize their power protection & energy consumption through tailor made products and solutions.

CNPS ISO 9001 and 14001 state of the Art Manufacturing facilities are located in Chennai and Pune, India. CNPS products are backed by a nation-wide service network of over 250 company employed, factory trained service engineers based out of 75 locations to provide quick, reliable & local service. Services outside India are provided by our partners.

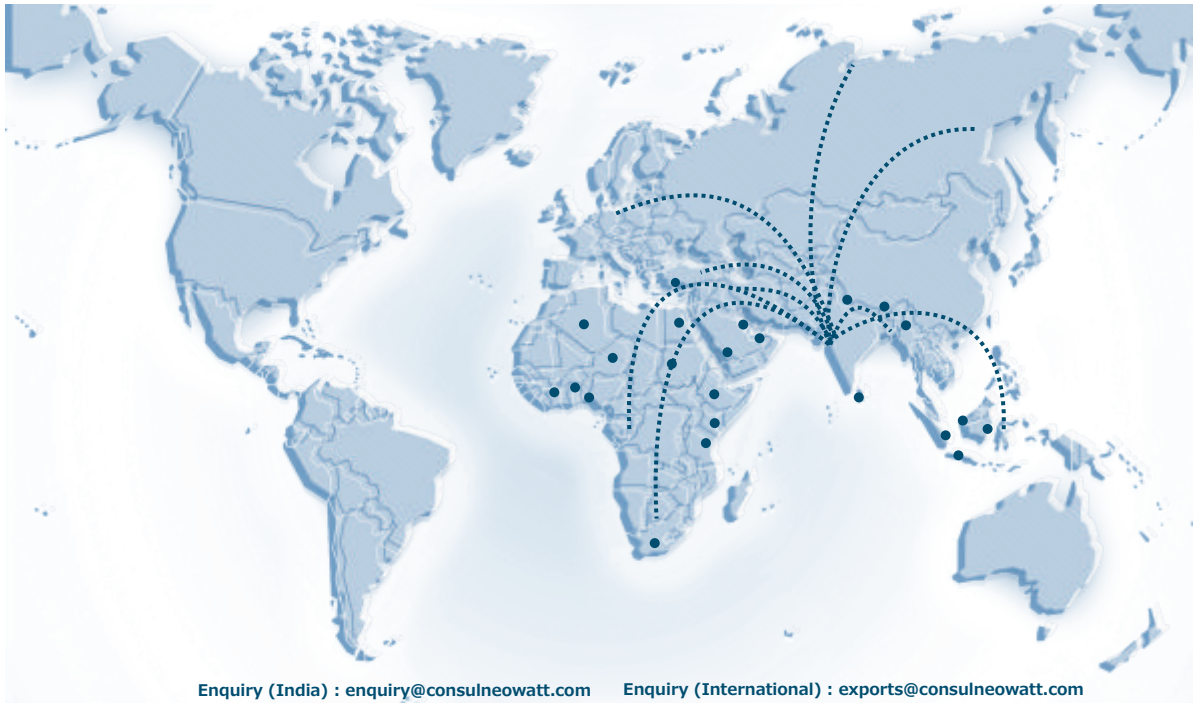
Till date CNPS has completed over 250,000 installations across India, Africa and Middle East Delivering over 1000 Megawatt of power conditioning and power back up products and solutions.

Awards & Recognition

Forbes India : Consul was identified in 2013 as one of the 14 Hidden Gems by Forbes India.

ET Now : Consul was featured in Leaders of Tomorrow 2012 series on ET Now.

SD Awards 2014 : No 2 Power Electronics Company and No. 2 Online UPS Manufacturer in India with A++ Customer satisfaction rating.



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