

25 - 1500 KW Hot Swappable Modular UPS

# ***Falcon 7000M***



Falcon 7000M is a truly modular and hot swappable system designed and developed with the most advanced technology to provide the lowest total cost of ownership while providing high flexibility and reliability.

Falcon 7000M is designed with hot swappable power modules, system level static bypass module and with inbuilt manual bypass switch with special attention to avoid single point of failures in the system. Each module has its own controller which eliminates the need for common controller.

## **Highlights of Falcon 7000M UPS at a Glance**

### **Total Cost of Ownership**

- Smart Sleep mode for energy saving and to prolong the life time of the system
- Green and energy saving:
  - AC/AC efficiency upto 96%,
  - Input power factor >0.99
  - Input THDi is <3%

### **Flexibility**

- Modular design with N+X redundancy, online hot-swappable
- Full load test on site with less than 10% of the total power capacity
- Battery cold start feature allows UPS to be powered on from the battery without utility
- Automatic recording of the relevant data during faults makes it easy for trouble shooting
- Independent LCD display on each power module
- User Programmable dry contacts
- Friendly human machine interface 10.4" touch screen display
- Wide Communication Options

### **Reliability**

- Full DSP control for high stability, reliability and safety
- Integrated IGBT module with improved performance and reduced size
- Monitoring runtime of critical components, such as battery, fans and capacitors
- Optimized battery management, intelligent charging and discharging to effectively improve the life of the battery



### **Applications**

- Data Centre
- Commercial Offices
- Infrastructure
- IT/ITES
- BFSI
- Healthcare

**Scalability**

Falcon 7000M is available in two flexible configurations of 25 & 50KW modules for vertical and horizontal scalability. Highly expandable design allows to parallel up to 30 modules to reach an ultimate capacity of 1.5MW.

**Comprehensive Monitoring Management**

Independent LCD display for each power module with self-starting function provides the full overview of operation conditions and status of each module. A 10.4" LCD display is also available to provide the global status of the full system.

**Intelligent testing of UPS System**

Falcon 7000M has a special feature for performing a full load test on itself without any additional load banks. The benefit of this function is that the UPS can be tested at different load levels and can easily be performed by a qualified technician at site.

**Optimised & Flexible Battery Configuration**

Battery configuration is flexible with selectable number of batteries for optimised battery selection. Battery configuration can be optimised with independent battery bank for each UPS frame in parallel or shared battery bank for multiple UPS in parallel.

**Flexible Operating Mode**

Falcon 7000M can be switched directly on battery without mains power providing the flexibility to run the UPS to support the testing of critical loads during installation without utility power.

Falcon 7000M is equipped with a hot swappable and full rated centralised static switch.

**Advanced 3 Level Topology**

Falcon 7000M series incorporates advanced 3 level technology. Fuji Electric's 3 level topology is more advantageous than conventional 3 level topology as the losses can be reduced.

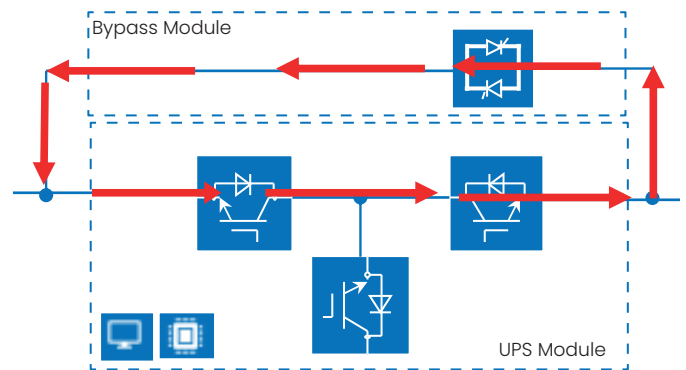
■ **Frame Capacity**

Frame Capacity in KW	150	200	300	500
Power Module Capacity in KW	25	50	50	50
Max Number of Power Modules	6	4	6	10
Max Numbers of frames in Parallel	3	3	3	3
<b>Total Maximum Capacity in KW</b>	<b>450</b>	<b>600</b>	<b>900</b>	<b>1500</b>

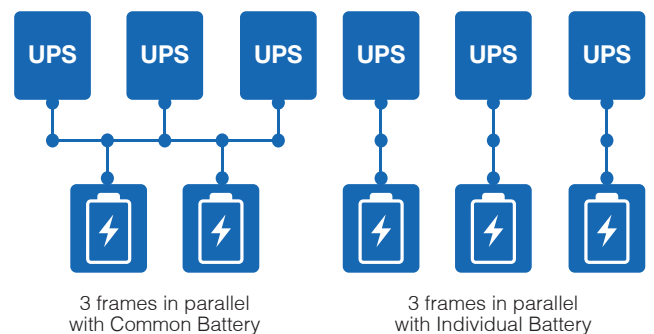
■ **Module Level Display**



■ **Smart Intelligent Testing**



■ **Battery Configuration**



### Higher Availability

Falcon 7000M is designed with hot swappable power modules, system level static bypass module and with inbuilt manual bypass switch with special attention to avoid single point of failures in the system. Each module has its own controller which eliminates the need for a common controller.

Can handle loads with unity power factor apart from lagging and leading power factor without de-rating. Falcon 7000M can deliver 12.5% of more real power when compared with the conventional system.

### Advanced Parallel Configuration

Falcon 7000M uses advanced Fuji Electric's "individual-independent" parallel redundant architecture using looped communication method. This system has no single point of failure and each unit monitors all the other units with loop communication lines to ensure high reliability in parallel UPS systems.

### Intuitive and User Friendly Display

Falcon 7000M has been designed with special software programming which allows the system to record and store the output waveforms in the event of failure. This allows for easy troubleshooting of the causes of the failures and to avoid similar faults in the future.

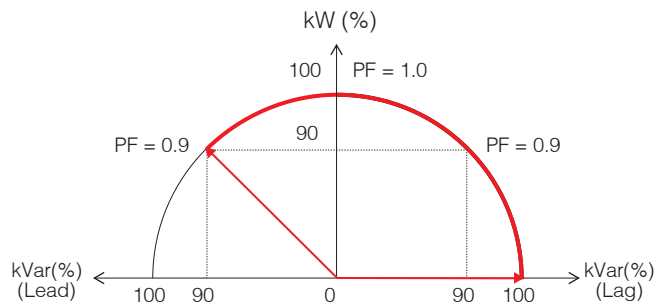
Life cycle monitoring of critical components like fan, capacitors, battery helps the UPS to predict the life of these components.

### Easy to Install

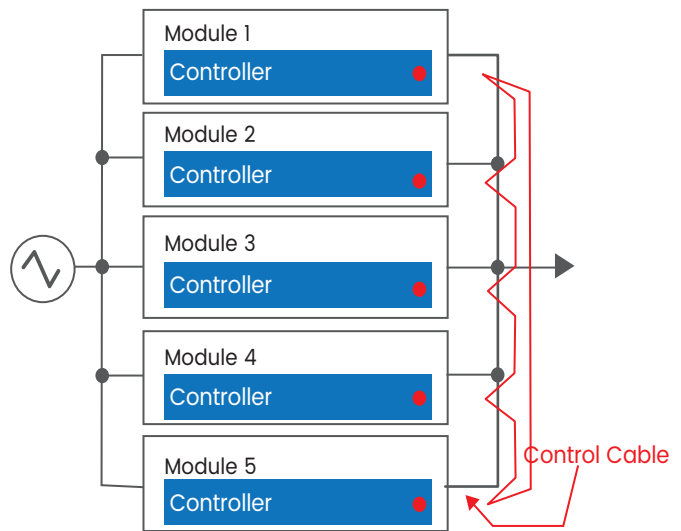
The power modules of Falcon 7000M are designed with auto configuration function. Once the module is inserted into the slot, the module switches on automatically without any manual intervention.

Falcon 7000M is suitable for both top and bottom cable entry without the need for additional cable entry cabinet.

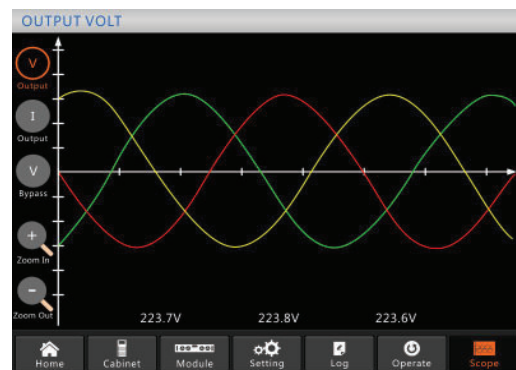
### Power Availability Curve



### Parallel Control Logic



### Waveform Recording



### 25KW/50KW Power Module



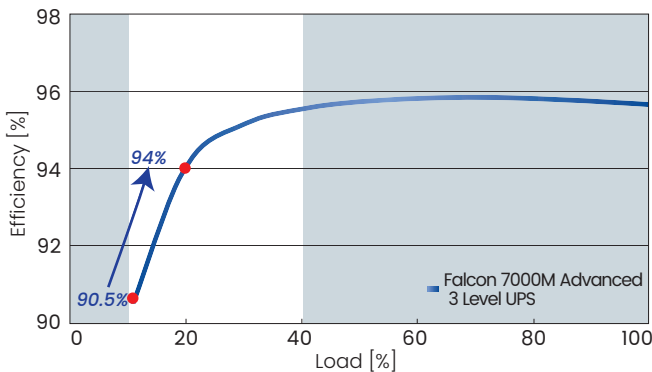
**Energy Efficient UPS System**

Falcon 7000M is an online double conversion UPS fully meeting the requirements of IEC62040-3.

The Eco mode operation of Falcon 7000M guarantees an overall AC-AC efficiency of 99%. The online double conversion mode of operation has an overall efficiency of upto 96%, offering one of the highest efficiency for Modular UPS systems.

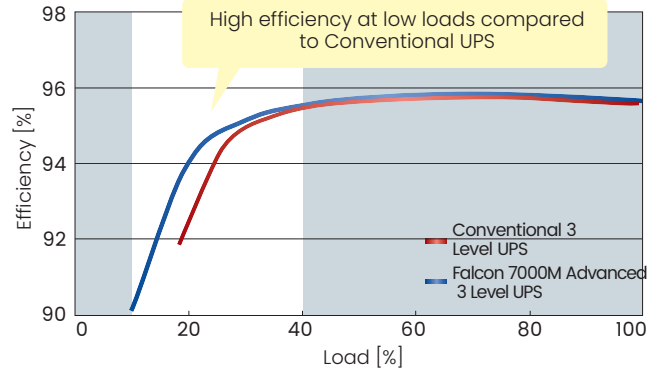
**Energy Saver Mode**

Falcon 7000M also has an advanced energy saver mode of active hibernation which allows the unused UPS modules to go into sleep mode to improve the efficiency of the UPS at light load conditions.

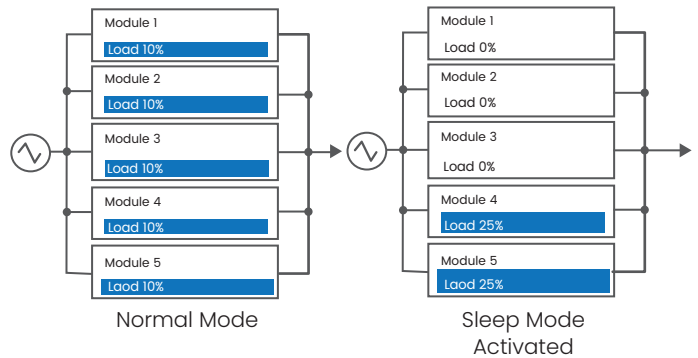


Efficiency Improvement with sleep mode Activated

■ **Efficiency**



■ **Efficiency Improvement with Energy Saver Mode**



**Technical Specification**
**Falcon 7000M**

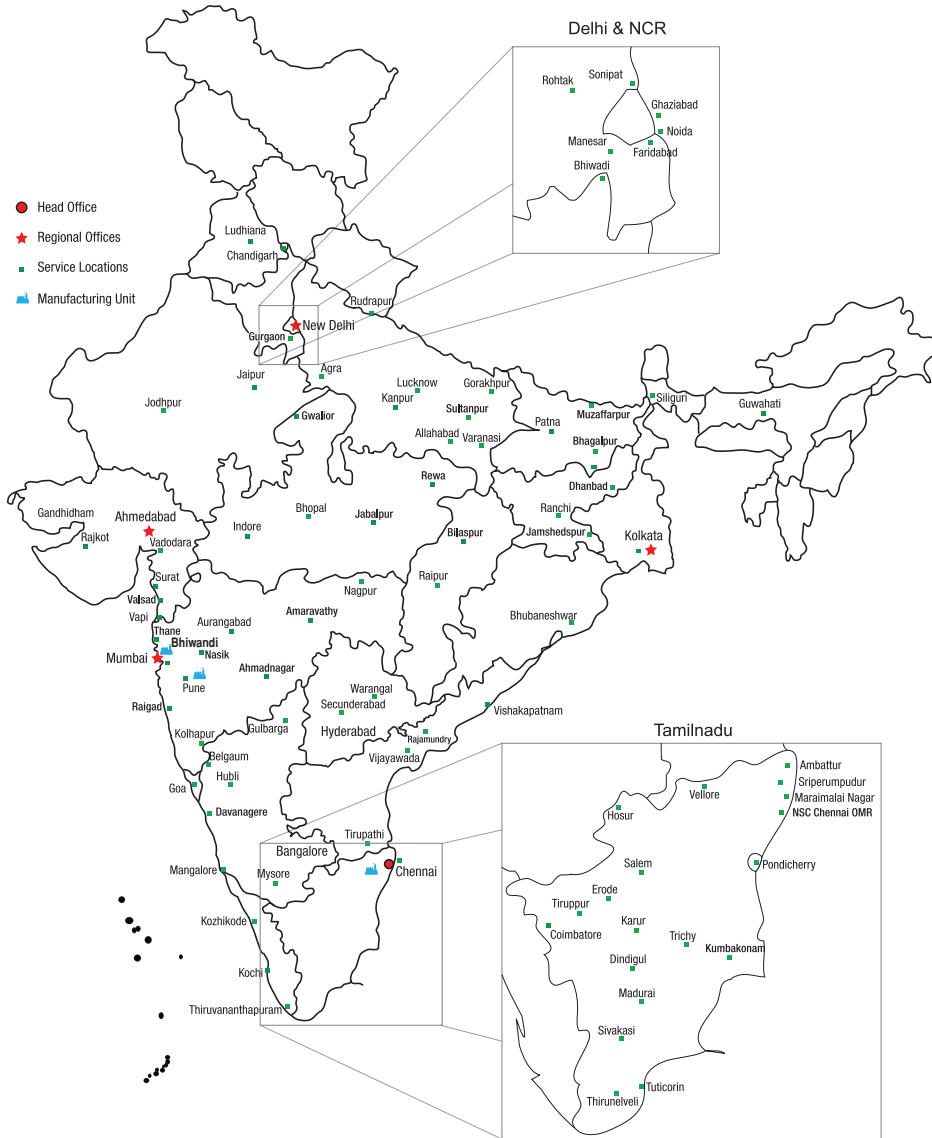
25 KW + 1500 KW Hot Swappable Modular UPS

<b>General</b>				
Frame Capacity	150 KW	200 KW	300 KW	500 KW
Capacity	25 - 150 KW	50 - 200 KW	50 - 300 KW	50 - 500 KW
Power Module Type	25 KW	50 KW	50 KW	50 KW
No of Frames in Parallel	3	3	3	3
Maximum Capacity	450 KW	600 KW	900 KW	1500 KW
<b>Input</b>				
Phase	3 Phases+Neutral+Ground			
Voltage	400/415V			
Frequency	50/60Hz			
Power Factor	>0.99			
THDi	THDi<3%			
Voltage Range	-25% to + 15% @ 100% Load -45% to + 15% @ 40% Load			
<b>Output</b>				
Voltage	400/415V			
Voltage Regulation	+/- 1%			
THDu	THD<1% (Linear load), THD<6% (Non linear load)			
Power Factor	Unity Power Factor			
Crest Factor	3:1			
Overload Capability	110% for 1 hour; 125% for 10 minutes; 150% for 1 minute; >150% for 200ms			
<b>Battery</b>				
Voltage	40 Battery System			
Change Power	20% of System Power			
<b>System</b>				
System Efficiency	Online Mode: upto 96%; ECO Mode: upto 99%			
Display - System Level	10.4" LCD + LED, Colour Touch Screen + Keyboard			
Display - Module Level	LCD + LED + Keyboard			
Interface	Standard: Rs232, RS485, Dry contacts, USB Optional: SNMP, Expansion dry contact card			
Operation Temperature	0-40° C			
Storage Temperature	-40-70° C			
Relative Humidity	0-95%(Non-Condensing)			
Noise	72dB @ 100% load, 68dB @ 45% load (1 Meter away)			
Altitude of Operation	≤1000, load deration for higher altitude			
<b>Physical</b>				
Cabinet Dimension (W*D*H)(mm)	600 x 1100 x 1600	690 x 970 x 1600	690 x 970 x 2000	1300 x 1100 x 2000
Weight in kgs - Cabinet Without Power Modules	180 Kgs	170 Kgs	220 Kgs	450 Kgs
Module Dimension (W*D*H)(mm)	460 x 790 x 134	510 x 700 x 198		
Weight in Kgs - Power Modules	33 Kgs	45 Kgs		
Protection Class	IP20			
Colour	Black			
<b>Applicable Standards</b>				
Safety	IEC 62040 -1			
EMC	IEC 62040 -2			
Performance	IEC 62040 -3			

\* Specifications subject to change



## 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
- Medium Voltage / Low Voltage VFD
- Instrumentation
- Factory Automation
- Process Automation (PLC/HMI/SCADA)

### Service Offerings

- Comprehensive Annual Maintenance Contracts (CAMC)
- Annual Maintenance Contracts (Labour - AMC)
- AMC for Third Party 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	400 company trained service engineers	80+ service locations	Spare Parts warehouse in 24 Locations	Call center with multi language support	Any time service request

## Fuji Electric India Pvt. Ltd.

(CIN:U31900TN1985PTCO11866)

119, 120, 120A, Electrical and Electronics Industrial Estate,  
Perungudi, Chennai - 600 096, Tamil Nadu, India

☎ +91 78100 09955

✉ enquiry.fei@fujielectric.com

🌐 www.india.fujielectric.com



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