



**TECHNICAL
SOLUTIONS**
LLC

Healthcare Power Protection Solution

Modular Online UPS + Voltage Regulator for Critical Medical Loads

A reliable integrated power solution designed to provide clean, stable, and continuous power for hospitals, clinics, imaging centers, laboratories, ICUs, and operating rooms. The system protects sensitive medical equipment from voltage instability and power outages while maintaining operational continuity.



Scalable Power Range

Configurable from 10 kVA to 650 kVA to match site requirements.



Custom Backup Time

Battery autonomy can be tailored from 10 minutes to 20 minutes to 1 hour.



Fast Deployment

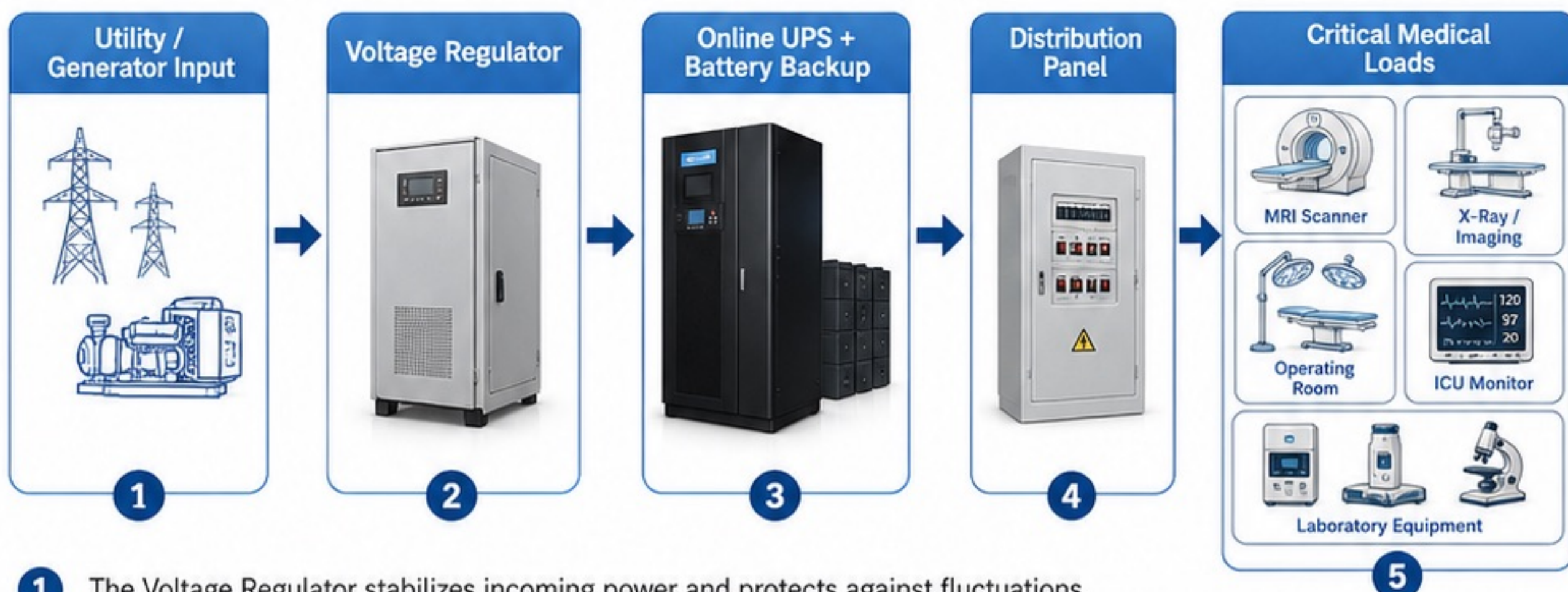
Flexible, adaptable design for easy integration into new or existing facilities.



Critical Care Reliability

Supports MRI, CT, X-Ray, operating rooms, ICU systems, laboratories, and other mission-critical healthcare loads.

How the Solution Works



- 1** The Voltage Regulator stabilizes incoming power and protects against fluctuations.
- 2** The Online UPS delivers conditioned power and instant battery backup during outages.
- 3** The Distribution Panel feeds only the critical healthcare loads for maximum protection.



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TECHNICAL SOLUTIONS LLC

Modular Online UPS

High-performance conditioned power and battery backup for critical medical loads

The modular online UPS delivers clean, stable, true online double-conversion power for hospitals, imaging rooms, laboratories, ICUs, and operating rooms. Its scalable architecture, smart battery management, and low distortion performance make it ideal for sensitive medical environments.



True Online Double Conversion

Continuous conditioned output with zero-transfer battery backup.



Modular Scalable Design

Expandable architecture with up to 10 modules for capacity growth and redundancy.



High Efficiency









Efficiency up to 96% with smart fan control and low operating cost.



Low Distortion Performance

Low input THDi <3% and low output THDv <1% linear / <3% non-linear.

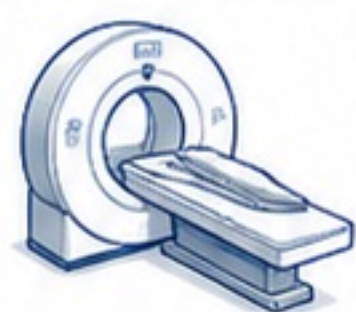
Key Features

-  IGBT Rectifier and Inverter
-  Output Power Factor 1.0
-  Selectable Input / Output Voltage and Frequency
-  Parallel / Redundant Operation
-  Smart Battery Management
-  Static and Maintenance Bypass
-  Touch Screen Graphical LCD
-  RS232, RS485, SNMP, Dry Contact, Generator Port
-  Cold Start and Deep Discharge Protection

Technical Snapshot

Power Range	30–300 kW modular frame
Input	220/380, 230/400, 240/415 VAC (3P+N)
Output	380 / 400 / 415 VAC (3P+N)
Frequency	50 / 60 Hz
Input Power Factor	>= 0.99
Overload	110% 1 h, 125% 10 min, 150% 1 min
Battery	12 Vdc, selectable 30–40 pcs
Noise	<= 55 dB
Protection Class	IP20

Ideal Healthcare Uses



MRI / CT Imaging



Operating Rooms



ICU Systems



Laboratories



Emergency Systems



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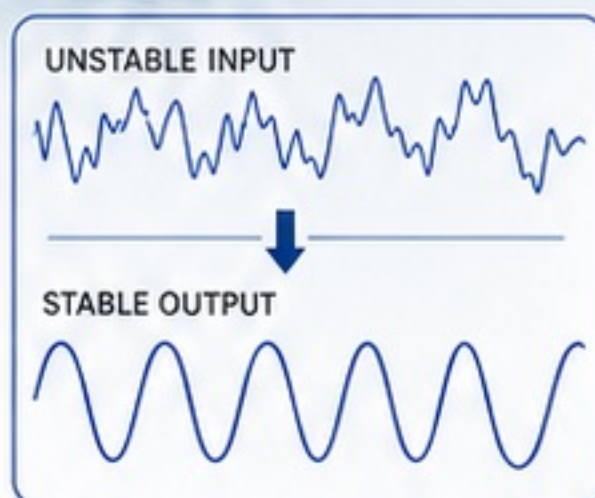
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Servo Voltage Regulator

Incoming voltage stabilization for sensitive medical equipment

The servo voltage regulator stabilizes fluctuating utility or generator input before power reaches the UPS and critical medical loads. It helps protect imaging systems, laboratory devices, operating rooms, and monitoring equipment from voltage variation and electrical stress.



Microprocessor Controlled

Fast, intelligent regulation with precise control logic.



High Efficiency 98%

Efficient operation with low ongoing losses.



Independent Phase Regulation

Three-phase models regulate each phase for better balance.



True RMS Measurement

Accurate voltage sensing for reliable stabilization.

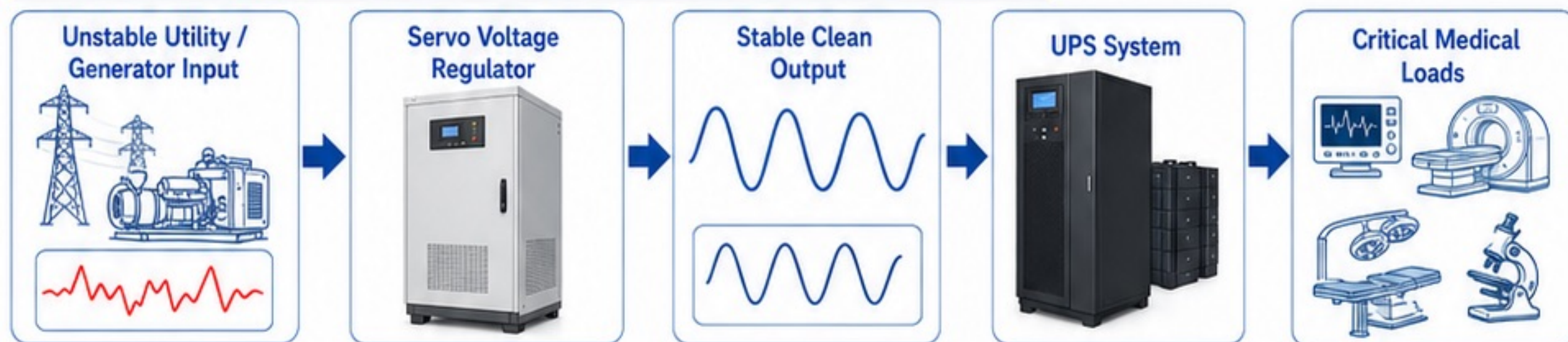
Key Benefits

- Wide Power Range**
- Fast Regulation Speed**
- High Accuracy ±1% selectable**
- Manual Bypass / Easy Service**
- Protection Against short circuit, overload, output high/low voltage, overtemperature, and motor fault**
- LCD Monitoring and Event / Alert Display**
- Optional Dry Contacts and LAN Monitoring**

Technical Snapshot

Single-Phase	1-50 kVA / 220 VAC RMS
Three-Phase	3-2500 kVA / 380 VAC RMS
Input Frequency	45-65 Hz
Voltage Tolerance	+/-1% selectable 1-5%
Efficiency	98%
Overload	10 ms at 200% load
Humidity	0-95% non-condensing
Noise	< 50 dB
Altitude	<= 2000 m
Protection Class	IP20

How Voltage Stabilization Protects Healthcare Loads



Stabilized voltage improves reliability, reduces stress on equipment, and supports uninterrupted medical operations.



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Integrated Healthcare Deployment

A complete power protection architecture for critical care environments.

Combining a voltage regulator, online UPS, battery backup, and selective distribution provides a dependable power pathway for mission-critical medical operations. The solution is adaptable, scalable, and suitable for both new facilities and retrofit projects.



Recommended Deployment Scenarios

Imaging Suites



Protection for MRI, CT, and X-Ray systems against outages and voltage instability.

Operating Rooms



Stable power for surgical systems, lighting, and mission-critical support equipment.

ICU and Critical Care



Continuous supply for monitors, life-support support systems, and clinical electronics.

Laboratories



Reliable operation for analyzers, refrigeration support, and precision instruments.

Typical Power Path



Why This Solution

- Improved patient safety
- Reduced downtime
- Stable voltage for sensitive electronics
- Backup power during outages
- Flexible expansion and configuration
- Fast deployment and easy integration

Technical Solutions LLC Services

- Site Assessment**
Review of facility needs and critical loads
- System Design**
Tailored sizing and architecture
- Installation & Commissioning**
Deployment and startup support
- Support & Maintenance**
Ongoing technical assistance

Protect your healthcare operations with a smarter, more resilient power infrastructure.