The 9900B UPS system uses the most advanced IGBT (CSTBT) modules within its fully digital, three-level converter and inverter. This unique combination means that the 9900B UPS offers superior reliability, performance, and is the most efficient true on-line double conversion UPS in the industry at all load levels.

EXCEPTIONAL EFFICIENCY
The NEW 9900B Series UPS will deliver as much as 97% system efficiency at unity power factor. This substantially reduces operating and cooling costs by several thousands of dollars annually when compared to its competitors. Efficiency ratings of 96.2% are possible with loads as low as 25%. The result: reduced cost of ownership and improved power usage effectiveness (PUE) compared to conventional UPS.

COMPACT LIGHTWEIGHT DESIGN AND FLEXIBILITY
The small footprint and lightweight design of the 9900B Series saves on precious floor space. This system not only saves on floor space, it offers the flexibility of adding or removing UPS modules with minimal cost. As a result, system options are enhanced.
The modular architecture and the most advanced fully digital three-level IGBT converter and inverter in the industry makes the 9900B UPS the best choice for your critical facility.

EXCEPTIONAL EFFICIENCY
The 9900B Series 750 kVA UPS, with a very flat efficiency curve, delivers efficiency ratings of 96.3% at 100% load, 96.5 at 50 – 75% loads, and 95.7% at 25% load. Even at 10%, load efficiency ratings of 93% are seen. This system efficiency substantially reduces operating and cooling costs by several thousands of dollars annually. The result: reduced cost of ownership and improved power usage effectiveness (PUE) compared to conventional UPS.

RELIABILITY AND ADAPTABILITY
No organization in the UPS industry offers the in-depth experience and unparalleled quality of Mitsubishi Electric. Mitsubishi manufactures most of the components that make up its UPS, rather than sourcing the components elsewhere and merely assembling the product. In that way, Mitsubishi has better control over the quality of the product, hence its reliability when installed at your site. In fact, Mitsubishi is one of the largest manufacturers of IGBTs in the world!

The 9900B UPS can be utilized in Single-module (SMS) or Multi-module (MMS) configurations. This allows for a modular system architecture, offering a highly reliable and flexible approach. If loads on an MMS decrease, a module or modules can be removed and used elsewhere in a single module application.

Likewise, an existing SMS can be paralleled for capacity or redundancy at a later date.

SCALABILITY
The small footprint and lightweight design of the 9900B Series takes up less room and saves on precious datacenter floor space. With a modular system architecture, this not only saves on floor space, it offers the extraordinary option of adding or removing modules with minimal cost.

OPEN ARCHITECTURE
The 9900B Series UPS provides for a variety of communication methods with features that make the product inherently easy to use and maintain.

SUPERIOR PERFORMANCE
Mitsubishi pioneered the use of the IGBT in the inverter and converter sections of the UPS. Many UPS systems on the market today have followed suit. It is not enough to merely provide IGBT technology. How the IGBT is controlled is the key.

Mitsubishi has incorporated its Digital Signal Processor and Direct Digital Control (DDC) to gain the full benefits of the most advanced generation IGBT that is utilized in the 9900B Series UPS. The combination means superior performance characteristics under all load conditions.

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**SERIES**

**9900B UPS**

At Mitsubishi Electric Power Products, Inc., we understand that in today’s high-speed, digital world, critical load downtime can cost your company millions of dollars. That is why we have developed the 9900B UPS – the most innovative and efficient true on-line, double conversion UPS.

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**RELIABILITY**

3-year warranty*

*3-year warranty standard. New low cost no worry 5-year warranty available. Please contact MEPP at 724-778-3134 for details.
**EFFICIENT**

up to 97% system efficiency

**STANDARD FEATURES**
- Fully Digital, 3 Level IGBT Converter and Inverter
- Double Conversion Topology
- Advanced Circuit Topology and Pulse Width Modulation (PWM)
- Parallel up to Eight (8) Modules
- Front Access UPS
- Small Footprint and Weight
- Top or Bottom Cable Entry
- UL 1778 Listed
- Load P.F. Leading and Lagging Display

**DC LINK VOLTAGE**
- 480 V

**AC INPUT**
- 480VAC 3P, 3W+G, 60 Hz
- +15%,-20% Voltage Range
- <3% THD @ 100% Load
- Power Factor: >0.99

**OPERATING ENVIRONMENT**
- Audible Noise: 73dB @ 1 Meter
- Temperature: 0–40°C
- Relative Humidity: 5–95% (Noncondensing)
- Altitude: 0–7,400 ft.

The 9900B Series 750 kVA UPS, with its very flat efficiency curve, provides efficiency ratings of 95.7% at load levels as low as 25%.

**TYPICAL TEST RESULTS**

<table>
<thead>
<tr>
<th>UPS Module Capacity (kVA)</th>
<th>AC to AC Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>300</td>
<td>96.9</td>
</tr>
<tr>
<td>500</td>
<td>97.0</td>
</tr>
<tr>
<td>750</td>
<td>96.8</td>
</tr>
</tbody>
</table>

**AC OUTPUT**
- 480 VAC 3P, 3W+G, 60 Hz
- Power Factor: 1.0
- Voltage Accuracy: ±1%
- Transient Recovery Time: 20 Milliseconds
- Step Load (100%): ±2%
- Voltage THD: 2% Maximum @ 100% Linear Load
- Overload: 125% for 10 Minutes, 150% for 1 Minute

**9900B ONE LINE DIAGRAM**

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*Mitsubishi Electric Carrier Stored Trench-Gate Bipolar Transistor (CSTBT) Module*

Mitsubishi Electric is the leading manufacturer of Insulated Gate Bipolar Transistors (IGBT).

Carrier Stored Trench-Gate Bipolar Transistors – CSTBT (A 5th Generation IGBT Device) are utilized in the 9900B Series UPS Systems. These advanced, high-performance transistors provide a variety of intelligent features:

- Large Power Capabilities
- High Speed Switching
- Low Control Power Consumption
- Low Switching Loss

IGBT has become the preferred power device for UPS systems, but it is how the IGBT power device is controlled that is key to achieving optimum UPS performance.
9900B MODULE FLEXIBILITY
The 9900B UPS, with its modular system architecture, can be utilized in Single-module (SMS) or Multi-module (MMS) configurations. If loads on an MMS decrease, a module or modules can be removed and used elsewhere in a single module application. Likewise, an existing SMS can be paralleled for capacity or redundancy at a later date.

MMS FEATURES INCLUDE:

- Up to 8 UPS Modules in Parallel
- Cross Current Sensorless Control
- System Operation and Monitoring from any UPS Module
- Adaptable for MMS or SMS Operation
- Customizable Input/Output Distribution
- System Load Bank Test Circuit (Optional)
- Parallel for Redundant or Capacity System Configuration

SYSTEM INPUTS

TYPICAL 2 X MMS CONFIGURATION

Note: Configurable up to 8 modules.
True, on-line, double conversion UPS systems have always been the preferred topology for mission critical applications because they offer lower risk of load loss. In the past, however, these systems offered lower efficiency when compared to off-line, delta conversion, economy mode and other standby type UPS systems. That was until now!

Mitsubishi's technology provides for a true on-line UPS system that offers high efficiencies no matter what the load. There is no longer a need to compromise system availability by using risky topologies to achieve high efficiency.

The Power of Green

The vision of Mitsubishi is to continuously produce value add products instilled with ingenuity and breakthrough technologies. This vision brings you the 9900B series, our most efficient, smallest footprint and lightweight UPS product series.
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## HIGH EFFICIENCY without compromise

**Mitsubishi Electric Power Products, Inc.**
**Uninterruptible Power Supplies (UPS) Division**
**547 Keystone Drive • Warrendale, PA 15086**
**Phone: 724-772-2555 • Fax: 724-778-3146**
**www.meppi.com**

The quality management system of Mitsubishi Electric Corporation Kobe Works has been approved to ISO9001:2000. The quality management system is applicable to design, development and manufacturing of the UPS.

The vision of Mitsubishi is to continuously produce value add products instilled with ingenuity and breakthrough technologies. This vision brings you the 9900B series, our most efficient, smallest footprint and lightweight UPS product series.

The Power of Green

Highly Efficient True On-line Double Conversion Topology

> Reduced UPS Module Operating Losses
> Reduced Cooling Equipment Needs

Compact Design Offering

> Small Footprint and Lightweight
> Excellent Transient and Load Demand Response

**INVERTER SECTION**
Full Digital Control and IGBT Topology:
> New 3-Level IGBT Bridge Design & PWM Control Method
> Instantaneous and Independent Phase Waveform Control
> High Speed Output Voltage Waveform Sampling
> Transformerless Design

**CONVERTER SECTION**
Full Digital Control and IGBT Topology:
> New 3-Level IGBT Bridge Design & PWM Control Method
> Active Front End: Low Harmonics - No Input Harmonic Filter Requirement
> Power Factor Controlled to Unity (0.99)

Exceptional Generator Compatibility

> Smaller Size Requirement
> No Leading Power Factor Problems
> No Resonance Problems

**9900B UPS SERIES**
**GREEN TECHNOLOGY**
**REDUCED COST OF OWNERSHIP**

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Mitsubishi Electric Power Products, Inc. Uninterruptible Power Supplies (UPS) Division
547 Keystone Drive • Warrendale, PA 15086
Phone: 724-772-2555 • Fax: 724-778-3146

[www.meppi.com](http://www.meppi.com)