

# 9900B UPS

## UNINTERRUPTIBLE POWER SUPPLIES

300 kVA / 300KW  
500 kVA / 500KW  
750 kVA / 750KW

## The POWER of Green

### EXCEPTIONAL EFFICIENCY

The NEW 9900B Series UPS will deliver as much as 96.5% 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 95.7% 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 9900B UPS system uses the most advanced IGBT (CSTBT) modules within its **patented**, 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.***



750 kVA

# B O O B 9 9 9

*The modular architecture and the most advanced patented fully digital three-level IGBT converter and inverter in the industry makes the 9900B UPS the best choice for your critical facility.*



## 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.

### 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 an 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.

kVA / KW	INPUT/ OUTPUT VAC	UNIT CONFIGURATIONS	OUTPUT PF	DIMENSIONS† (WXDXH)	LBS	PARALLEL CAPABILITIES	DC
300/300	480/480	Standard unit-(2 Pieces)*	1.0	55.1" X 32.7" X 80.7"	2360	UP TO 8 MODULES	480 VDC
300/300	480/480	Unit with 16.3" MP	1.0	71.4" X 32.7" X 80.7"	2610	NOT APPLICABLE	480 VDC
500/500	480/480	Standard unit (3 Pieces)**	1.0	88.3" X 32.7" X 80.7"	3625	UP TO 8 MODULES	480 VDC
500/500	480/480	Unit with 36" MP	1.0	108.0" X 32.7" X 80.7"	3875	NOT APPLICABLE	480 VDC
750/750	480/480	Standard unit (3 Pieces)**	1.0	106.9" X 32.7" X 80.7"	4525	UP TO 8 MODULES	480 VDC
750/750	480/480	Unit with 36" MP	1.0	126.6" X 32.7" X 80.7"	4775	NOT APPLICABLE	480 VDC

\* 300 kVA standard unit does not require a 16.3" cable entry cabinet. The 16.3" Maintenance Panel (MP) can be purchased as an option.

\*\* 500 & 750 kVA standard unit requires a 16.3" cable entry cabinet. The 36" MP can be purchased as a substitution for the 16.3" cable entry cabinet. Contact MEPEPI for other maintenance panel and cable entry cabinet options.

† Dimensions and weights are estimated.

# RELIABILITY

## 3-year warranty\*

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

# EFFICIENT

## up to 96.5% system efficiency



### 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.

#### 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

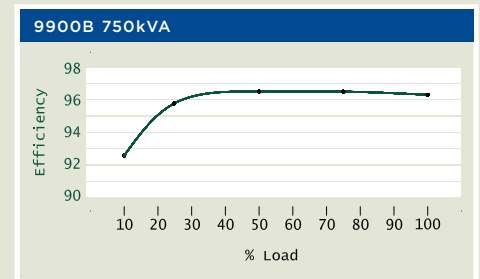
#### AC INPUT

- > 480VAC 3P, 3W+G, 60 Hz
- > +15%, -20% Voltage Range
- > <3% THD @ 100% Load
- > Power Factor: >0.99
- > Surge Withstand: Meets IEEE587, ANSI C62.41-1991

#### 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

#### Efficiency Rating %

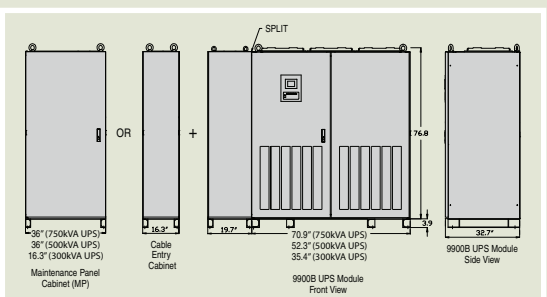
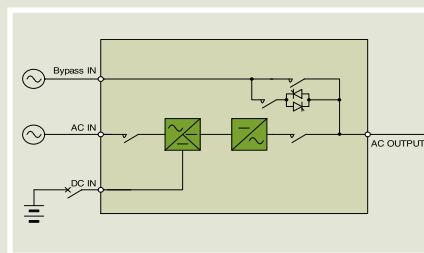
UPS Module Capacity (kVA)	AC to AC Load			
	100%	75%	50%	25%
300	96.0	96.2	96.2	95.4
500	96.1	96.3	96.3	95.5
750	96.3	96.5	96.5	95.7

Efficiency Rating %

#### 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



The 300 kVA standard unit does not require a 16.3" cable entry cabinet. The 16.3" MP can be purchased as an option for the 300 kVA UPS module. The 500 & 750 kVA standard unit requires a 16.3" cable entry cabinet. The 36" MP can be purchased as substitution for the 16.3" cable entry cabinet. Contact MEPLI for other maintenance panel and cable entry cabinet options. Dimensions and weights are estimated.

# FLEXIBLE

## system flexibility

### 9900B MODULE FLEXIBILITY

The 9900B UPS, with its modular system architecture, can be utilized in Single-module (SMS) or an 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.

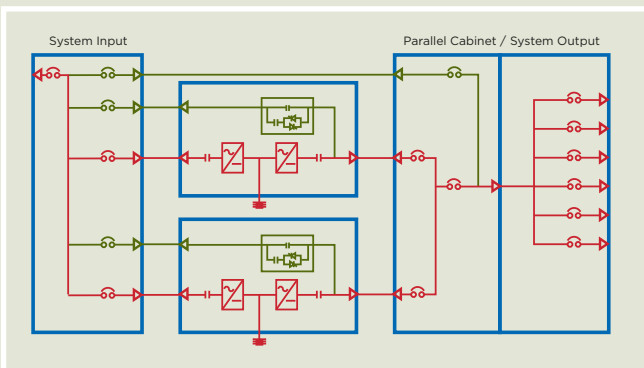
### MMS FEATURES INCLUDE:

- > 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.

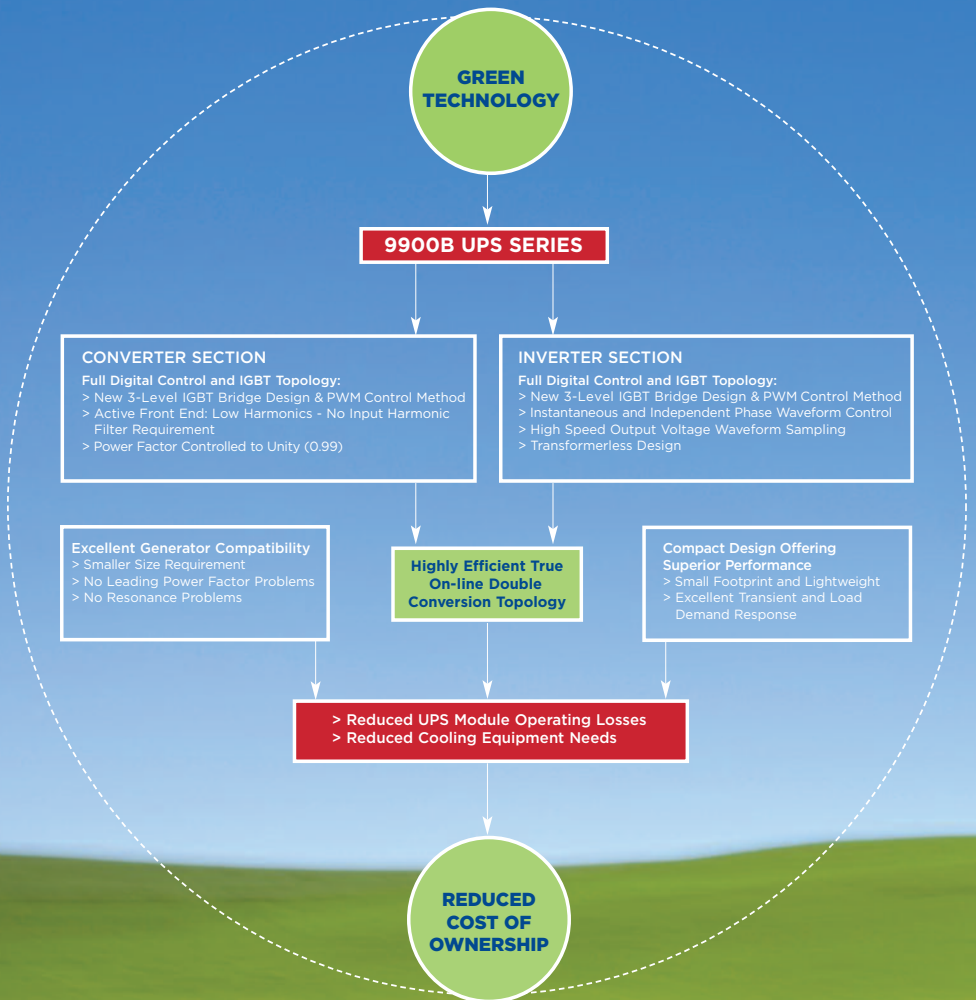
# > HIGH EFFICIENCY without compromise

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 patented 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.





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.

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MK00012R-Rev#3 • July 2010



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