MITSUBISHI ELECTRIC
UNINTERRUPTIBLE POWER SUPPLIES

>9700UPS

UNINTERRUPTIBLE POWER SUPPLIES

9700

Superior Performance, Reliability and Safety Come from Experience. Our Uninterruptible Power Supply Systems Ensure All Three.

Mitsubishi Electric has been developing and manufacturing Uninterruptible Power Supply (UPS) components and systems for more than three decades. That experience, and the continuous application of new power-device technologies to further improve products in the industry clearly explain why Mitsubishi Electric has dominated a large portion of the world UPS market for years.

When purchasing a UPS system, the key word is “dependability.” And there’s one company that many rely on. Uninterruptible Power Supply systems by Mitsubishi Electric.

Ig BT - Transistors with Excellent Performance Characteristics

Mitsubishi Electric is the leading manufacturer of Insulated Gate Bipolar Transistors (IGBTs), and now utilizes IGBTs in the converters and inverters of its 9700 Series UPS systems. These advanced, high-performance transistors provide a variety of intelligent features.

- High Ampacity Transistors (600A)
- High Speed Switching
- Low Control Power

Low Input Current Harmonics (THD)

- 3% maximum (100% load)
- 4% maximum (75% load)
- 5% maximum (50% load)

(No additional filtering required)

Input Power Factor

- 0.99 typical (0~100%)
- 1:1 Ratio (No oversizing of generator)

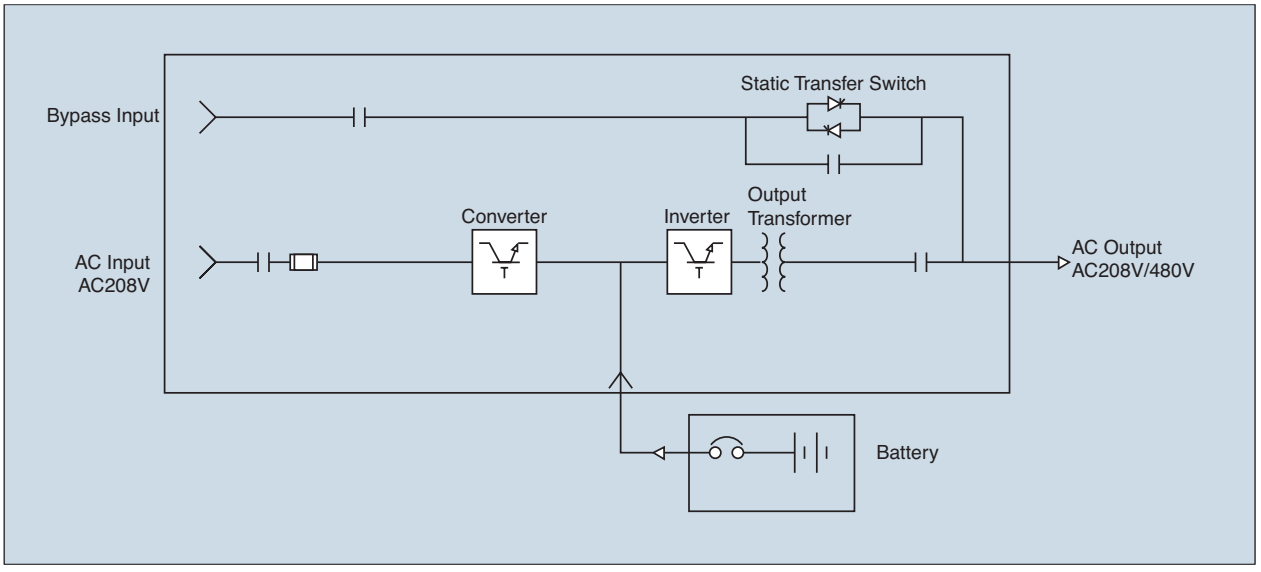
Benefit of Lower Input Current

- Smaller upstream components (Transformers, Circuit Breakers and cable sizing)

Low Heat Loss / High Efficiency

Use of IGBTs transistor enables efficient high-speed switching (6kHz), thus reducing heat dissipation in the UPS. (Higher efficiency means lower cost per kilowatt and lower cost of ownership.)

ONE-LINE DIAg RAM



UPS MONITORINg EQUIPMENT & SOFTWARE

The Netcom2 works with all major NMS systems on Ethernet –
Netcom2 works with the most widely used Network Management Systems:
HP OpenView,
Novell ManageWise,
Sun NetManager,
IBM NetView, and many more.

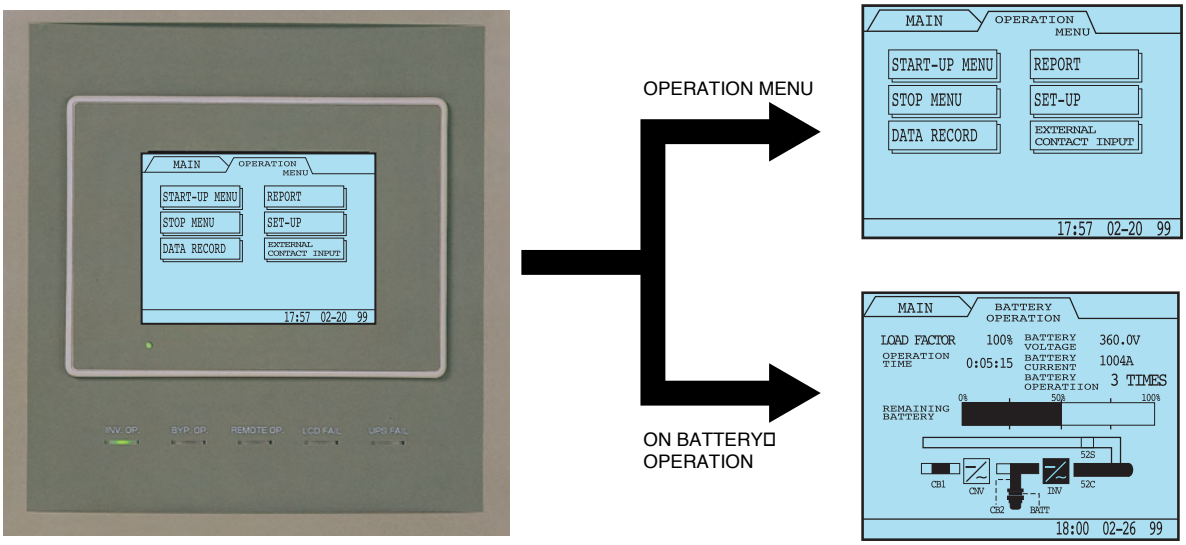
The **Netcom2** hardware SNMP/Web adapter runs an embedded Simple Network Management Protocol (SNMP) software agent. This powerful and intelligent unit is designed for the rigorous task of managing the UPS systems that protect equipment and the critical data residing throughout the network.

Netcom2 Features:

Remote UPS status monitoring – Monitor a remote UPS system using an RS-232 Cable to the Netcom2 for one UPS system to a remote workstation (NMS) through an Ethernet connection
Web Card – Assign an IP address to your UPS system to monitor the UPS system from anywhere around the world
SNMP Adapter – Turn the UPS system's protocol into an SNMP software agent and enable SNMP traps
SNMP Viewer – Unique Mitsubishi design that color coordinates SNMP messages that inform the NMS about all current UPS alarms
Send Shutdown Signal to Networked Servers – Send a shutdown signal to servers connected via the Ethernet network
Battery and Service Monitoring – Monitor the battery life and servicing details of the UPS
E-mail – Send the Administrator an e-mail when an event occurs

ModBus Communications for Building Management Systems
The MUCM card allows the customer to integrate Mitsubishi Electric UPS systems into their current Building Management Solution. The MUCM is a user-programmable protocol converter, or data concentrator, that is DIN-rail mountable, with 2 serial ports: One RS-232, one RS-485, and over 2,048 internal mailbox registers. Through the ModBus protocol converter, the UPS system's variables can be monitored through various Building Management System vendors' software.

bility



Extended Battery Life (0-100% Load Step)

- Supplemental current from the batteries is no longer required with the installation of IGBTs transistor in both the converter and inverter. Other UPS systems require assistance from the battery during step load conditions. The additional battery cycling results in decreased battery life.

Isolated Redundant System Capability

- The 9700 Series is designed for isolated redundant applications.
- Lower cost to consumer, small footprint, less components.
- Different kVA sizes and different series can be used for greater flexibility of the overall system.

Operator-Friendly Control Panel

Features:

- Mimic bus diagram
- Operator's control station
- Touch panel input

LCD monitor displays:

- System metering
- Menu-driven start-up procedures
- Menu-driven operation procedures
- History of events
- Trend graph

Additional features:

- Password locked for start / stop operation
- Sealed EPO button

Realtime Battery Monitoring

- Remaining time in battery charge displayed for operator
- Software algorithms continuously calculate and update actual remaining time in battery charge.

Superior Functions

- Automatic restart
- Automatic retransfer
- Converter walk-in function
- Battery monitoring
- Ripple-free DC output (rectifier)
- 1-set "Form A" dry contacts of selectable items
- Large overload / overcurrent capacity
- Battery temperature compensation
- Adjustable DC cut-off

Quiet Operation

- 100kVA → 63dB (A scale, 1m)
- 150 - 225kVA → 65dB (A scale, 1m)

Software

- Netcom2 SNMP
- 95% of all operating systems are compatible with Netcom2
- RS-232C parallel interface
- Multiple server shutdown software (V. 1.50)
- Paging, E-mail capability during power events
- Ethernet LAN connection interface (optional)
- SNMP Interface

Standard warranty is two years, including parts and labor.

(NOTE: All information subject to change without prior notice.)

SPECIFICATIONS

UPS Cabinets

kVA/KW	208 V/208 V Dimensions (W x D x H) (inch)	Weight (lbs)
100/80	35.4 x 29.9 x 79.7	1,900
150/120	47.2 x 29.9 x 79.7	2,350
225/180	55.1 x 29.9 x 79.7	3,300

Note: Batteries not included.

Specifications: 9700 Series 100kVA – 225kVA

Rated Output kVA	100	150	225
Rated Output kW	80	120	180
AC INPUT CHARACTERISTICS			
Configuration	3 phase, 3 wire		
Voltage	208V +10% ~ -15%		
Input Power Factor	0.98 Typical		
Frequency	60 Hz ±5%		
Reflected Current THD	3% max. at 100% load; 5% max. at 50% load		
STATIC BYPASS INPUT			
Configuration	3 phase, 3 or 4 wire		
Voltage	120/208V ±10%		
Frequency	60 Hz (±3% Tracking window)		
BATTERY			
Type	VRLA, Flooded Lead Acid, Nickel Cadmium		
Ride Through	Application specific		
Nominal Voltage	360 VDC		
Minimum Voltage	290 VDC		
Number of Cells	176 ~ 185		
AC OUTPUT			
Configuration	3 phase, 3 or 4 wire		
Voltage	120/208V		
Voltage Stability	±1%		
Frequency	60 Hz		
Frequency Stability	±0.01% in free running mode		
Power Factor	0.8 nominal		
Power Factor Range	0.8 ~ 1.0 lagging (within output kW rating)		
Voltage THD	2% maximum THD at 100% Linear Load; 5% maximum THD at 100% non-linear load		
Transient Response	±2% maximum at 100% load step; ±1% maximum at loss or return of AC power ±5% maximum at load transfer to/from static bypass		
Transient Recovery	Less than 1 line cycle		
Voltage Unbalance	1% maximum at 100% unbalanced load		
Phase Displacement	1% maximum at 100% unbalanced load		
Inverter Overload	125% for 10 minutes; 150% for 1 sec		
System Overload	500% for 2 cycle (with bypass available)		
Bypass Overload	125% for 10 minutes		
Withstand Rating	65kA; with optional fuses		
ENVIRONMENTAL			
Cooling	Forced air		
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C). Recommended 68°F ~ 86°F (20°C ~ 30°C)		
Relative Humidity	5% ~ 95% non-condensing		
Altitude	3300 feet (1000 meters); 5000 feet at 0.99 derating		

Consult Mitsubishi for Battery Cabinet Configurations.

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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