

# MR33 Series Modular UPS

High efficiency 200-500kVA/50kW module



# MR33 Series Modular UPS



- » All Module Hot-swappable Design
- » High Efficiency up to 97%
- » Build in Back feed protection
- » Flexible operation and maintenance
- » Intelligent functional experience

***High density, High efficiency, hot-swappable and redundant design UPS offer high availability and high performance.***

The MR series is a high density design modular UPS with the high efficiency up to 97%. The hot-swappable module design, allow the fast plug and play maintenance. At the same time, MR series also compatible with the lithium-ion battery.



**MR33200-300**



**MR33400-500**

## Typical Applications:



Telecom



Edge  
Application



Finance



Servers



Local Area  
Network



Security

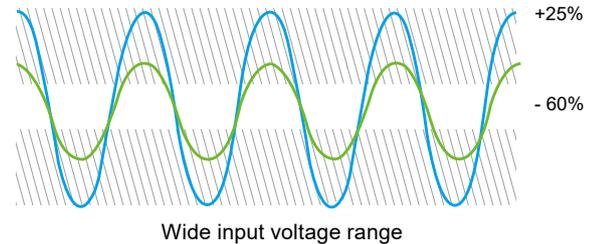


Medical  
Equipment

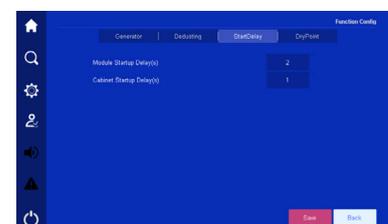
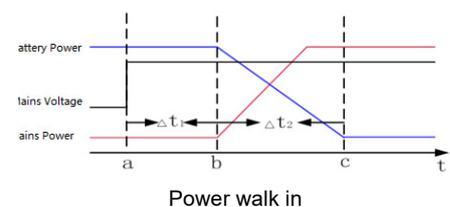
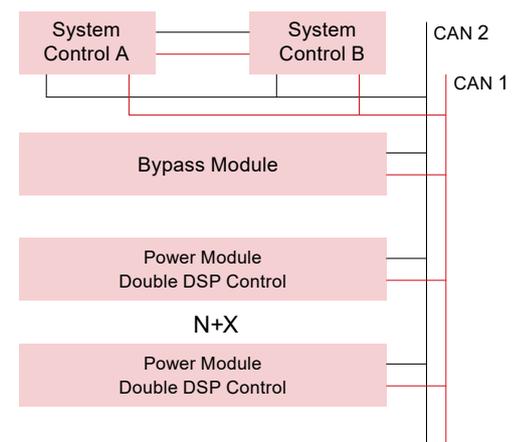


## High Reliability

- **Wide input voltage range** -60%~25% and **wide input frequency range** 40-70Hz with high grid adaptability and prolong battery life.
- **All module hot-swappable** design ensures uninterrupted operations during maintenance and easy for module replacement.
- **High overload capacity** on inverter for 105%: long term; 110%: 60min; 125%: 10min; 150%: 1min.
- **Build in Back feed protection** which prevents any potential risk from electric shock on the UPS bypass input AC terminals, in the event of a failure of the bypass static switch SCR.
- The most advanced and dual DSP control prevents single failure point and increase performance.
- Intelligent fan control and redundant design: 15% load can be driven when 2 fans fail and 40% load when 1 fan fails
- **Integrated with 4 breakers**, input, output, bypass breaker and manual bypass breaker for better protection of system.
- **All-round conformal coating** to all PCB boards, protect electronics from environmental effect and corrosion.
- **Multilevel electrical isolation design**, frame and modules equip with fuse, which isolate the abnormal condition and make sure safety.
- High short circuit capacity with time duration settable from **20~200ms** which provide high protection for system.
- **Standard dust filter** protect UPS placed in dusty environment.
- Cold start function which allow UPS start on battery when grid isn't available.
- Bus synchronization control function provides reliable high power for dual bus application
- **Power walk in function** decrease the inrush to mains or generator.
- Start up delay function to sequentially restart the rectifiers once the mains power supply is restored if there are several UPS within the overall system



Automatic fans control

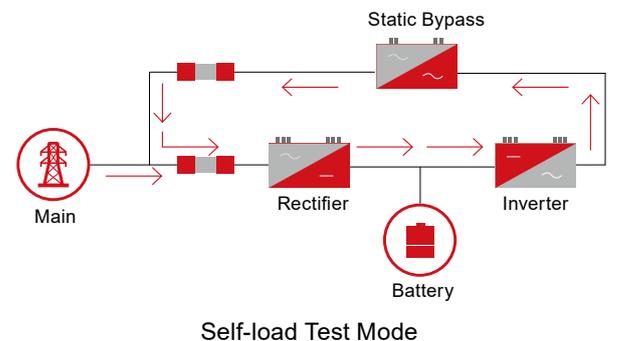
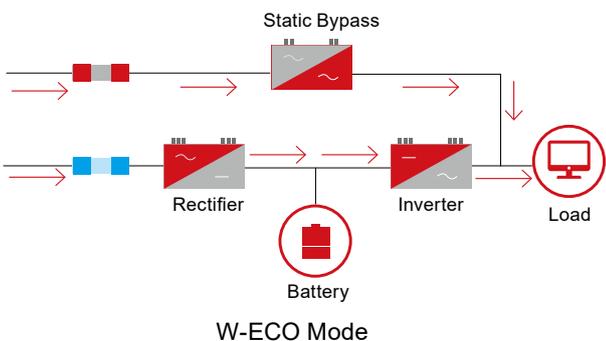
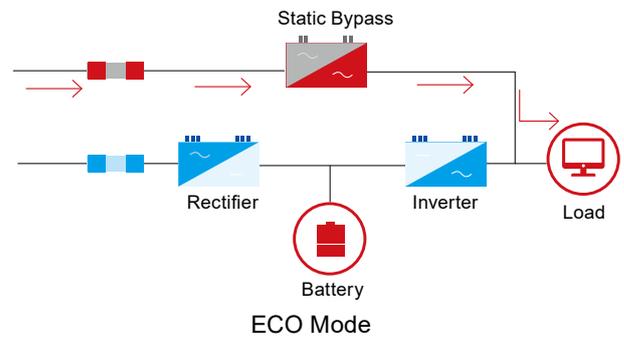
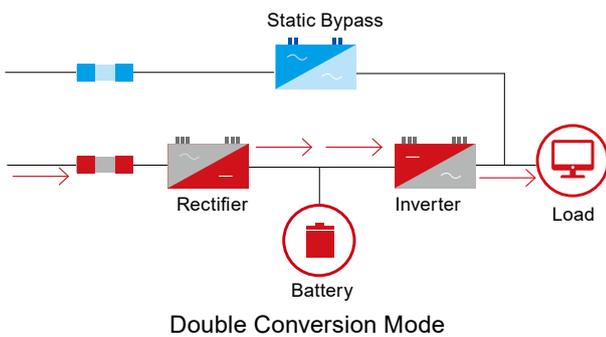
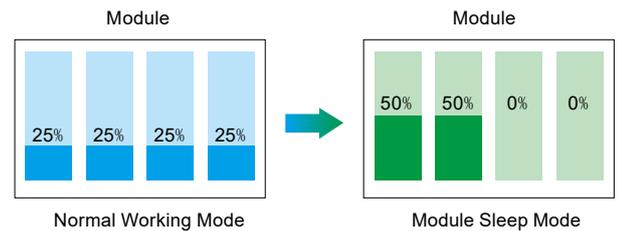
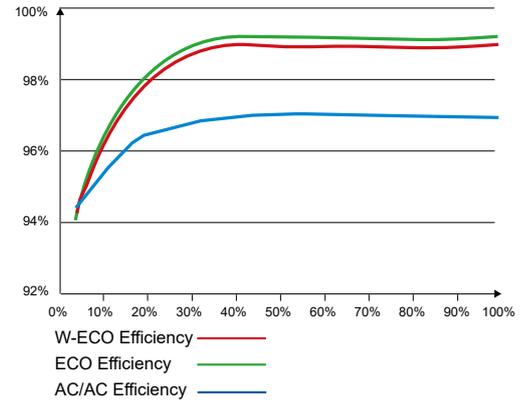


Startup delay



## Green Power

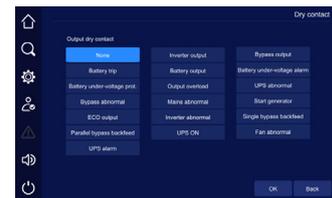
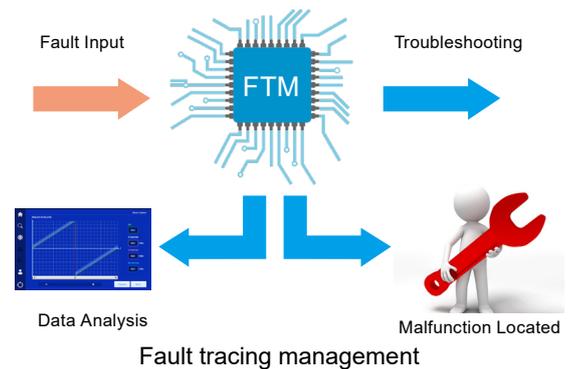
- **High efficiency in online mode up to 97%** reduces heat dissipation and limits power consumption costs
- W-ECO mode efficiency could reach 99% , THDi below 5% and transfer time below 0ms to reduce TCO.
- ECO mode efficiency up to 99.2% lead to significant cost reduction
- Low **THDi** ≤ 1.5% and input power factor 0.99 reduce the pollution to grid and reduce upstream investment costs
- **Self-load test function**, easy debugging and easy onsite test during commissioning without using costly temporary loads, cabling and breakers for energy saving.
- **Intelligent sleep mode** which UPS module sleep in random keep maximum efficiency and energy saving.
- 8 units of intelligent paralleling helps to achieve maximum capacity up to 4MW.



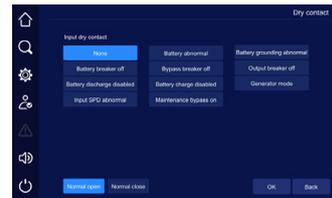


# Intelligent Management

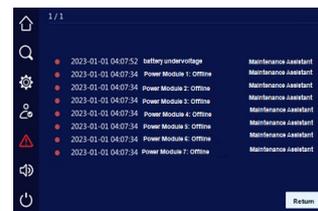
- **Fault Trace Management (FTM)** for convenient failure analysis ( waveform record before & after of the fault point for 200ms) which easily figure out faulty point.
- Intelligent battery management and mutiple setting, 28-46pcs\* batteries per string allow customers to get the faulty battery out instead of replacing it
- **Key components pre-alarm** function which precaution the system fault and remind service for key components, like capacitor, fan.
- Full asset management record the spare parts replacement, timeline and service people.
- Cabinet temperature detect and pre-notification which prevent over temperature.
- **Smart programmable dry contact** which have 2 input dry contact and 4 output dry contact, which input dry contact have more than 3 functions and output dry contact have 6 functions allows to settable at site.
- Smart generator mode which allow UPS sent signal to turn on and off generator, also taking part power from battery to compensation generator capacity.
- **Self-dedusting function** which save the preventive service time.
- Common battery bank on parallel mode.
- Frequency converter function(60Hz to 50Hz or 50Hz to 60Hz)
- VRLA and Lithium-ion battery compatible design



Programmable Dry Contact



Maintenance Assistant



Frequency Converter Mode

## User-friendly Interface

- Double physical ON/OFF button design to avoid false operation.
- User-friendly graphical interface with Single-line mimic diagram showing system status.
- Colorful **7 inch touch screen** with LED Indicators, ensure comprehensive and visualized information display.
- **Multicolor LED bar** allowing quick and easy detection of the system status and simplified troubleshooting.
- **Multi-language** build-in display with Chinese, English, French, Russian, German.
- High security access with separate password levels for users, technician and service engineers
- Large data storage capacity, 10000 pcs events logs.
- Support firmware online update, one time update for touch screen, power unit, bypass unit and extended card.
- Smart integrated display allow to check the information of each UPS status during parallel mode.



7 inch Touch Screen



Normal Mode

Bypass Mode

Warning Mode



U disk Upgrade



Smart Record

## More Options

- Network Management: SNMP card
- Li battery communication: BMS expansion card
- Backup: VRLA or Lithium battery
- SPD: Class-C
- Battery temperature compensation kit
- Battery trip control kit KM-BTC
- Dry contact expansion card
- Parallel kit



BMS Kit



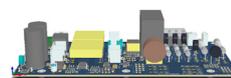
Expanded Dry Contact Kit



SPD: Class-C



SNMP kit



Battery tripping kit

## Technical Specifications

MODEL	MR33200	MR33300	MR33400	MR33500	
Power Module (kVA)	50				
Capacity (kVA)	200	300	400	500	
<b>INPUT</b>					
Voltage (Vac)	L-L: 138-485 (324-485 at full load)				
Frequency (Hz)	40-70				
Power Factor	≥0.99				
THDi	≤1.5% (resistive full load) ≤5% (non-linear full load)				
Phase	3W+N+PE				
<b>BYPASS</b>					
Voltage (Vac)	-30% /-20%/-15%/-10% (default -20%) ~ +10%/+15%/+20%/+25% (default +15%)				
Frequency (Hz)	±8%/±10%/±20% (default ±10%)				
Overload	130%: long term; 150%: 5min; 200%: 1s; 300%: 100ms				
<b>OUTPUT</b>					
Voltage (Vac)	L-L: 380/400/415±1%				
Frequency (Hz)	50/60±0.1 (battery mode)				
Power Factor	1.0				
THDv	≤1% (resistive full load), ≤4% (non-linear full load)				
AC/AC Efficiency (Max.)	97%				
Overload Capacity	105%: long term; 110%: 60min; 125%: 10min; 150%: 1min; above 150% 200ms				
Transfer Time (ms)	0 (Mains mode-Battery mode), 1 (Inverter mode-Bypass mode)				
Crest Factor	3:1				
<b>BATTERY</b>					
Battery Type	Lead-acid/S <sup>3</sup> lithium-ion batteries				
Voltage (Vdc)	±240 (±180~±300 settable, ±240~±300 at full load)				
Charging Current (A)	N×30 Maximum (N: the number of power modules)				
<b>GENERAL</b>					
Communication	RS485, Modbus+RS232, EPO, Dry contact Optional: SNMP card, Dry contact expansion card, BMS expansion card				
Display	7" touch screen+LED display				
Noise (dB)	< 70				
Working Temperature (°C)	0~40				
Altitude (m)	2000				
Relative Humidity	0%~95%, no condensation				
Protection Grade	IP20				
Agency/Certification/Conformance	EN IEC 62040-1, EN IEC 62040-2, EN IEC 62040-3				
Dimension (W×D×H)(mm)	600×860×2000		1200×860×2000		
Weight (kg)	Cabinet	224	236	459	506
	Bypass Module	23	32	32	50
	Power Module	39			

● Specification is subject to change without prior notice.

**Reliable • Flexible • Responsible**

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