KEHUA TECH

UPS TEKNIK
SÄKER STRÖMFÖRSÖRJNING

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 compatiable with the lithium-ion battery.

MR33200-300

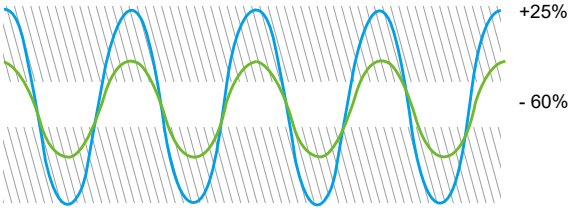
MR33400-500

Typical Applications:

Telecom | Edge Application | Finance | Servers | Local Area Network | Security | Medical Equipment

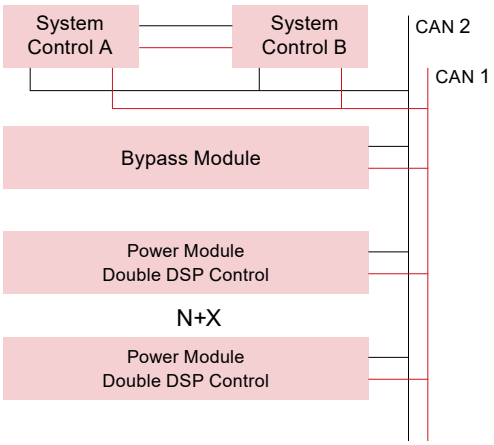
High Reliability

- **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 effection 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

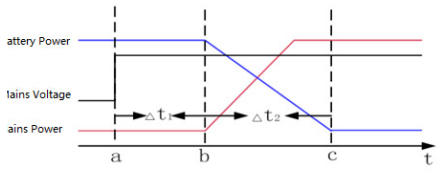


Wide input voltage range

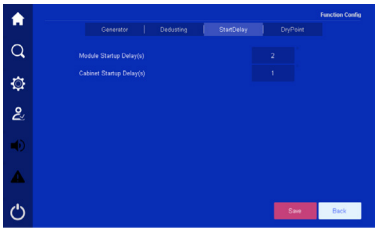
Automatic fans control



System redundancy

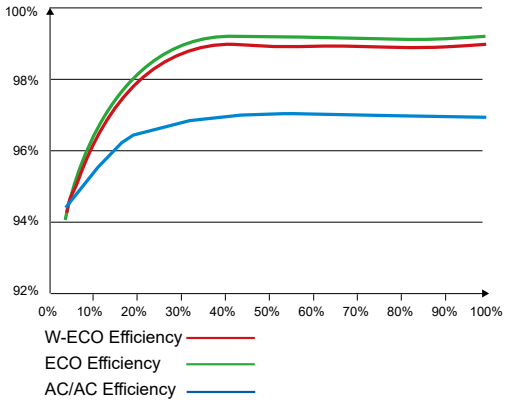


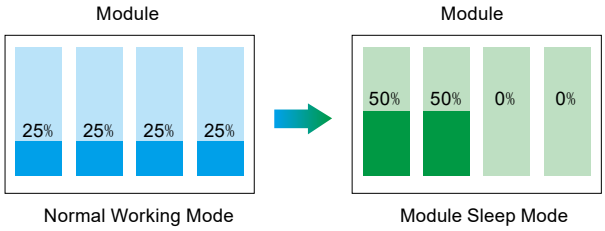
Power walk in

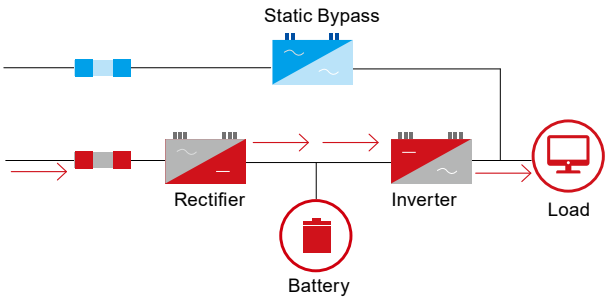

Startup delay

Green Power

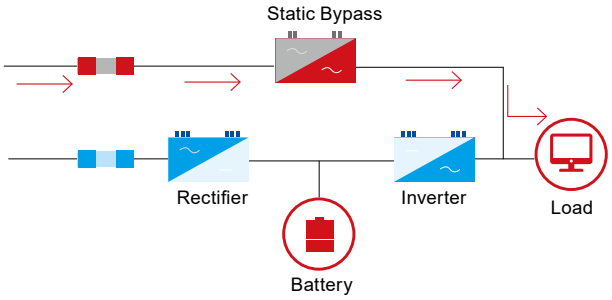
- **High efficiency in online mode up to 97%** reduces heat dissipation and limits power consumption costs
- W-ECO mode efficiency could reach 99% , THDi below 5% and transfer time below 0ms to reduce TCO.
- ECO mode efficiency up to 99.2% lead to significant cost reduction
- Low **THDi≤1.5%** and input 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 maxinum efficiency and energy saving.
- 8 units of intelligent paralleling helps to achieve maximum capacity up to 4MW.



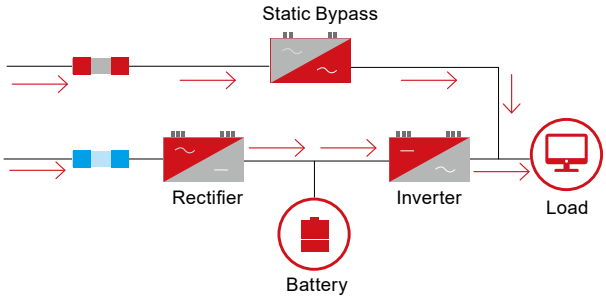




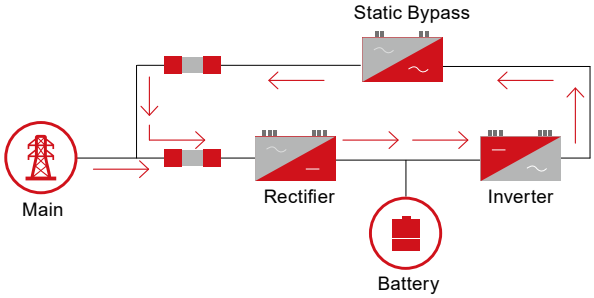
Double Conversion Mode



ECO Mode



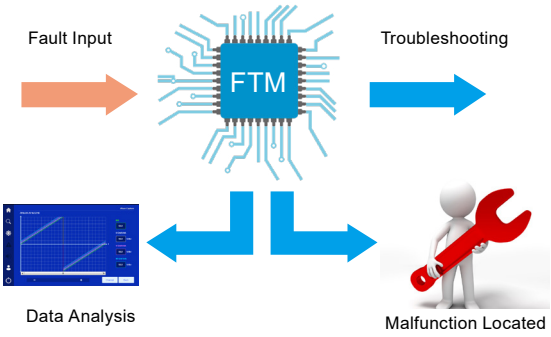
W-ECO Mode



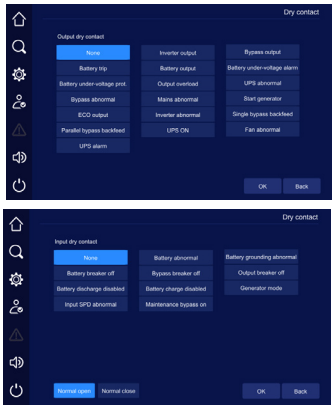
Self-load Test Mode

Intelligent Management

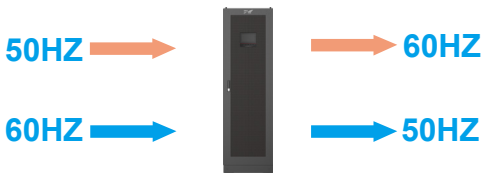
- **Fault Trace Management (FTM)** for convenient failure analysis (waveform record before & after of the fault point for 200ms) which easily figure out faulty point.
- Intelligent battery management and mutiple setting, 28-46pcs* batteries per string allow customers to get the faulty battery out instead 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



Fault tracing management


Programmable Dry Contact

Maintenance Assistant



Frequency Converter Mode

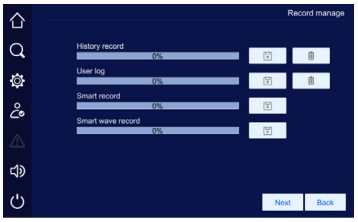
User-friendly Interface

- 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,10000pcs 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

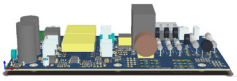
- Network Management: SNMP card
- Li battery communication: BMS expansion card
- Backup: VRLA or Lithium battery
- SPD: Class-C
- Battery temperature compensation kit
- Battery trip control kit KM-BTC
- Dry contact expansion card
- Parallel kit

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
INPUT					
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			
BYPASS					
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			
OUTPUT					
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			
BATTERY					
Battery Type		Lead-acid/S³ 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)			
GENERAL					
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.

UPS TEKNIK
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Reliable • Flexible • Responsible

UPS-teknik i Väst AB
Rattgatan 25, 44240 Kungälv

www.ups-teknik.se | info@ups-teknik.se | 0303 - 152 20

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