

## MTR-RM Modular Online UPS

10~90kVA (380V/400V/415)

10~90kVA (220V/230V/240V)



The rack modular, scalable, hot-swappable, online double conversion UPS ranging from 10 to 90kVA, with its flexible configuration of 3/3, 3/1 and 1/1, compact structure, is the ideal choice for small and medium data center.

### Features

- **Rack design**  
Modular design, compatible with 19" standard rack cabinet, convenient to integrated with servers
- **Flexible configuration**  
The system can be configured to 1/1 and 3/1 without de-rating or hardware changing
- **High power density**  
10/15KVA power module in 2U height Saving great amount of space, easy for capacity expansion
- **Friendly interface**  
7" touch color LCD with graphic display, more information displayed for customer easier for customer to operate



- **Integrated solution for data center**  
UPS can integrate with battery cabinet and PDU, offering excellent choice for data center
- **Smart sleep function**  
System can intelligently shut down some power modules to increase total load rate, achieving higher efficiency
- **Intelligent charging management**  
The system intelligently control the whole process of the charging and discharging, effectively improve shelf life time of the battery
- **Self-aging mode**  
Energy internal circle technology, system can run with full load, assuming less than 10% energy

Module Model	RM060/10X	RM040/10X	RM030/10X	RM020/10X	RM090/15X	RM045/15X	RM030/15X	
Capacity	60kVA/60kW	40kVA/40kW	30kVA/30kW	20kVA/20kW	90kVA/90kW	45kVA/45kW	30kVA/30kW	
Power module	PM10X (10kVA/10kW)				PM15X (15kVA/15kW)			
<b>Input</b>								
Phase	3P+ N + G (380/400/415V)							
Voltage range	304-478Vac (line-line),100% load; 228-304Vac, load de-rated linearly							
Frequency range	40Hz-70Hz							
Power factor	>0.99							
THDi	THDi<4% @ 100% linear load							
<b>Output</b>								
Voltage	3 phase: 380/400/415V 1 phase: 220/230/240V							
Voltage regulation	1.5%							
Power Factor	1							
THDu	THD<1% (linear load ),THD<5.5% (non-linear load)							
Crest factor	3:1							
Overload capability	110% for 1 hour; 125% for 10 min ;150% for 1 min ; >150% for 200 ms							
<b>Battery</b>								
Voltage	±240VDC							
Charge Power	20% * System Power							
Charge voltage precision	±1%							
<b>System</b>								
System efficiency	Normal mode: 95% ; ECO mode: 98% ; Battery mode: 94.5%							
Display	7.0" Color touch screen LCD + LED + Keyboard							
IP Class	IP20							
Interface	Standard :RS232,RS485,Dry contacts; Optional: SNMP							
Operation / Storage temperature	0-40°C / -25-70°C							
Relative humidity	0-95% (non-condensing)							
Noise	56dB @ 50% load (1 meter away)							
<b>Physical</b>								
Weight	Cabinet	85kg	51kg	55kg	42kg	85kg	55kg	42kg
	Power Module	15.3kg				15.5kg		
Dimension (W*D*H) (mm)	Cabinet	485*751*1033 (21U)	485*697*575 (11U)	485*751*575 (11U)	485*697*398 (7U)	485*751*1033 (21U)	485*751*575 (11U)	485*697*398 (7U)
	Power Module	436*590*85 (2U)						

# MTR-RB

## Modular Online UPS

In-built Hot Swappable Battery  
20-60kVa (380V/400V/415V)

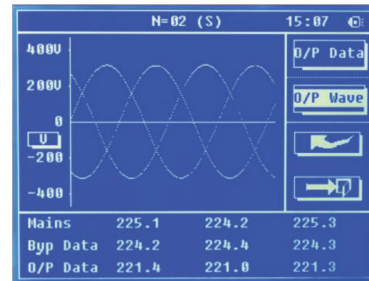


MTR-RM series is modular online UPS for sensitive equipments. The single cabinet power rating covers from 10KVA to 200KVA which delivers the best of combination of reliability, hot-swappable and flexibility. With the latest IGBT three-level technology and DSP control, MTR-RM achieves a high input power factor, low THD and high system efficiency, which make it a great choice for data centers, computer systems and critical equipments.

RM 060/20B series is modular online UPS with hot-swappable battery. The single cabinet power rating covers from 20kva to 60kva which delivers the best of combination of reliability, hot-swappable and flexibility. With intelligent battery protection and management technology, RM060/20B realized a compact total power solution which is easy for installation and maintenance

### Features

- Modular design with swappable battery package
- Monitor system for battery
- Integrated IGBT module with improved performance and reduced size
- Easy for installation and maintenance
- Easy for power expansion and backup time expansion.
- Intelligent protection technology for safe and reliable hot swappable battery package of the system
- Smart charging management system, Intelligently control the whole process of the charging and discharging
- Effectively improve the life time of the battery
- Battery cold start, UPS can be powered on from the battery without utility.
- Friendly human machine interface with touch screen



Module Model		RM060/20B
Capacity	60kVA / 54kW	
Power module type	PM20 (20kVA / 18kW)	
<b>Input</b>		
Phase	3 Ph + Neutral + Ground, 380V/ 400V / 415V (line to line)	
Voltage range	+20% - 25%	
Frequency range	40Hz - 70Hz	
Power factor	>0.99	
THDi	THDi<3% @100% linear load	
<b>Output</b>		
Voltage regulation	±1% (Balance load); ±1.5% (Unbalance load)	
THDu	THD<1.5% (linear load ),THD<5% (None linear load)	
Power Factor	0.9	
Crest ratio	3:1	
Overload capacity	110% for 1 hour; 125% for 10 minutes ;150% for 1 minute; >150% for 200ms	
<b>Battery</b>		
Voltage	±240VDC	
Charge power	20% * System Power	
Charge power precision	±1%	
<b>System</b>		
System efficiency	Normal mode: 95%; ECO mode: 98%; Battery mode:95%	
Display	LCD+LED, Touch Screen + Keyboard	
IP class	IP20	
Interface(Communication port)	Standard: RS232, RS485, Dry contacts; Optional: SNMP	
Installation/Connection	Top or bottom cable connection	
Operation/Storage temperature	0 - 40°C / -40 - 70°C	
Relative humidity	0 - 95% (non-condensing)	
Noise	55dB (1 meter away)	
<b>System</b>		
Weight	Cabinet	205Kg;
	Power module	PM20 : 22Kg
	Battery package	10kg (without battery)
Dimension (W*D*H) (mm)	Cabinet	600*1020*2000
	Power module	PM20: 440*590*134
	Battery package	120*824*177

# MTR-RM

## Modular Online UPS

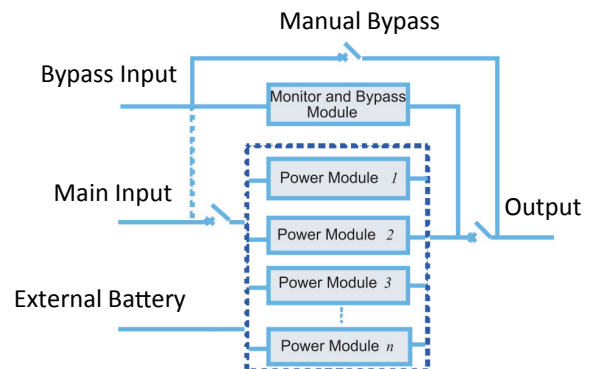
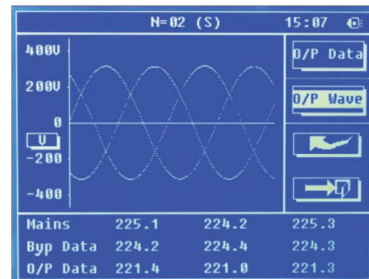
20-200kVa  
(380V/400V/415V)



MTR-RM series is modular online UPS for sensitive equipments. The single cabinet power rating covers from 20KVA to 200KVA which delivers the best of combination of reliability, hot-swappable and flexibility. With the latest IGBT three-level technology and DSP control, MTR-RM achieves a high input power factor, low THD and high system efficiency, which make it a great choice for data centers, computer systems and critical equipments.

### Features

- Modular design**  
 Up to 20 power module in parallel Online hot-swappable N+X redundancy
- High power density**  
 200kVA with footprints of about 0.5m<sup>2</sup> saving valuable data center space
- Independent charger**  
 Independent charger for each module intelligently control the whole charging process with prolong the life time of the battery
- Integrated IGBT design in one module, less failure points with higher performance and reliability
- Battery cold start**  
 UPS can be powered on from the battery without utility
- Friendly interface**  
 Touch LCD display with abundant information
- Totally front access**  
 Top and bottom cable entry connection are supported, more convenient for site installation
- Maintenance reminder**  
 System can record the running time for critical components and set reminding time for replacement
- Modular design with transformer**  
 Modular UPS up to 60kVA with built-in isolation transformer, meeting different requirement for customers





Module Model	RM200/20	RM120/20	RM060/20	RM060/20-TX (In-built transformer)	
Power module type	PM 20(20kVA)				
<b>Input</b>					
Phase	3 Phase+ Neutral + Ground,380V/400V/415V (line to line)				
Voltage range	304-478Vac (Line-Line),full load; 228V-304Vac (Line-Line), load decrease linearly according to the min phase voltage				
Frequency range	40Hz-70Hz				
Power factor	>0.99				
THDi	THDi<3% @ 100% linear load				
<b>Output</b>					
Voltage	380V/400V/415V				
Voltage regulation	1.50%				
Power Factor	0.9		0.8		
THDu	THD<1.5% (linear load ), THD<5% (None linear load)				
Crest ratio	3:1				
Overload capability	110% for 1 hour; 125% for 10 minutes ;150% for1 minute; >150% for 200ms				
<b>Battery</b>					
Voltage	±240VDC				
Charge power	20%*System Power				
Charge voltage precision	±1%				
<b>System</b>					
System efficiency	Normal mode: 95% ; ECO mode: 99% ; attery mode: 95%				
Display	LCD+LED, Touch Screen +Keyboard				
IP Class	IP20				
Interface	Standard: RS232, RS485, Dry contacts; Optional: SNMP0				
Operation/Storage temperature	0 - 40°C / -40 - 70°C				
Relative humidity	0 - 95% (non-condensing)				
Noise	55dB @ (1 meter away)				
<b>Physical</b>					
Weight	Cabinet	179kg	145kg	105kg	400kg
	Power module	22kg			
Dimension (WxDxH)	Cabinet	600*900*2000(mm)	600*900*1600(mm)	600*900*1100(mm)	600*900*1600(mm)
	Power module	440*590*134			

## MTR-RM Modular Online UPS 40-500kVa (380V/400V/415V)



The RM series modular, online UPS ranging from 40kVA to 500kVA is designed to protect any critical load for medium and large data center achieving maximum availability. The RM series feature the latest technology of 3-level technology and PFC input control, which guarantees high efficiency of 96% and ultra-reliability. Its compact design ensures power density of 500kVA in one cabinet, 3 units can be paralleled for capacity or redundancy up to 1500kVA, making it an excellent choice for medium and large facilities.

### Features

- **Compact design**  
500kVA in one cabinet, footprint less than 1.45m<sup>2</sup> saving valuable room space
- **High power density**  
50kVA power module in 4U height, easy for capacity expansion
- **High efficiency**  
Advanced 3-level technology guarantees high efficiency operating in double conversion mode up to 96%
- **Intelligent charging management**  
The system intelligently control the whole process of the charging and discharging, effectively improve the life time of the battery



- **High scalability**  
The system can be configured from 40kVA to 500kVA in one single cabinet, 3 units in parallel for a capacity up to 1500kVA
- **Friendly HMI**  
10.4" touch color LCD with graphic display, independent LCD for each power module
- **Smart sleep function**  
System can intelligently shut down some power modules to increase total load rate, achieving higher efficiency
- **Multi communication interface**  
Provide RS232, RS485, USB, SNMP, AS400 and programmable dry contacts



Module Model	RM100/50X	RM200/50X	RM300/50X	RM500/50X	RM80/40X	RM1600/40X	RM240/40X	RM400/40X	
Capacity	100kVA/90kW	200kVA/180kW	300kVA/270kW	500kVA/450kW	80kVA/80kW	160kVA/160kW	240kVA/240kW	400kVA/400kW	
Power Module	PM50X (50kVA/45kW)				PM40X (40kVA/40kW)				
<b>Input</b>									
Grid System	3 Phases + Neutral + Ground (frame)								
Rated Input Voltage	380/400/415VAC (Line-Line)								
Rated Frequency	50/60Hz								
Input Voltage Range	304~478Vac (Line-Line),full load 228V~304Vac (Line-Line),load decrease linearly according to the min phase voltage								
Input Frequency Range	40Hz ~ 70Hz								
Input Power Factor	>0.99								
Input Current THDi	<3% (full Linear Load)								
<b>Bypass Input</b>									
Rated Bypass Voltage	380/400/415VAC (Line-Line)								
Rated Frequency	50/60Hz								
Bypass Voltage Range	Selectable, default -20% ~ +15% Up limited: +10%, +15%, +20%, +25% Down limited: -10%, -15%, -20%, -30%, -40%								
Bypass Frequency Range	Selectable, ±1Hz, ±3Hz, ±5Hz								
<b>Output</b>									
Rated Inverter Voltage	380/400/415VAC (Line-Line)								
Rated Frequency	50/60Hz								
Output Power Factor	0.9				1				
Voltage precision	±2%								
Transient Response	<5% for step load (20% - 80% -20%)								
Transient recovery	<30ms for step load (0% - 100% -0%)								
Output Voltage THDu	<1.5% from 0% to 100% linear load <5.5% full non-linear load according to IEC/EN62040-3								
Inverter Overload	<110%, 60min; 110%~125%,10min; 125%~150%,1min; >150%, 200ms								
Frequency Regulation	50 / 60Hz ±0.1%								
Synchronized Range	Settable, ±0.5Hz ~ ±5Hz, default ±3Hz								
Synchronized Slew Rate	Settable, 0.5Hz/S ~ 3Hz/S, default 0.5Hz/S								
<b>Battery And Charger</b>									
Battery Rate Voltage	±240VDC								
Charger Voltage precision	1%								
Charger Power	max=20%								
<b>Efficiency</b>									
Normal Operation	>96%								
Battery Operation	>96%								
<b>System</b>									
Display	LCD + LED + Touch screen								
<b>Environmental</b>									
Operation Temperature	0°C ~ 40°C								
Storage Temperature	-40°C ~ 70°C								
Relative Humidity	0 ~ 95% Non condensing								
Noise (1 meter)	65dB @ 100% load, 62dB @ 45% load								
Altitude	<1000m, Load derated 1% per 100m From 1000 ~ 2000m								
<b>Physical</b>									
Dimension (WxDxH) cm	Cabinet	60*98*115	65*96*160	65*96*200	130*110*200	60*98*115	65*96*160	65*96*200	130*110*200
	Power module	51*70*17.8							
Weight	Cabinet	120	170	220	450	120	170	220	450
	Power module	45							





# MTR-RM Modular Online UPS

25-600kVA (25 & 30 kVA module)  
(380V/400V/415V)



The RM series modular UPS provides the most compact footprint of less than 2m<sup>2</sup> with maximum capacity of 900kVA. With best reliability and high performance, it has been leading the domestic market for years. RM series is considered to be the best power protection solution for large data centers, as well as for sensitive electronics.

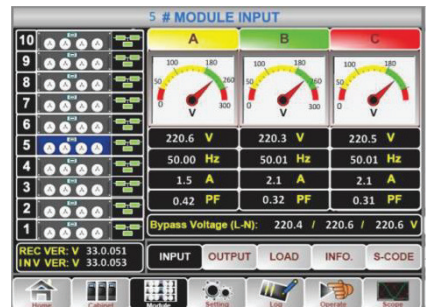
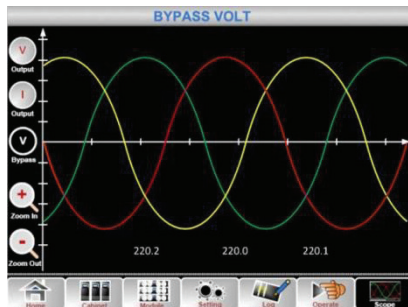
### Independent LCD for each Power Module

Each Power Module has independent LCD, give users' direct overview of status data and alarm in real time



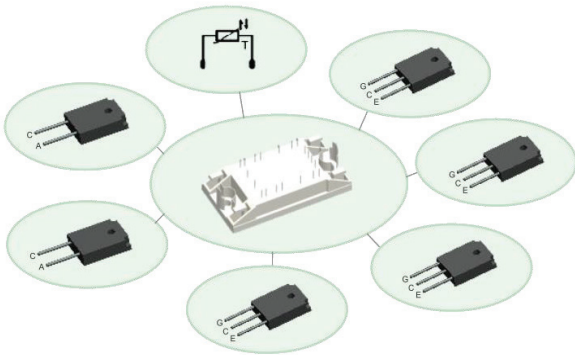
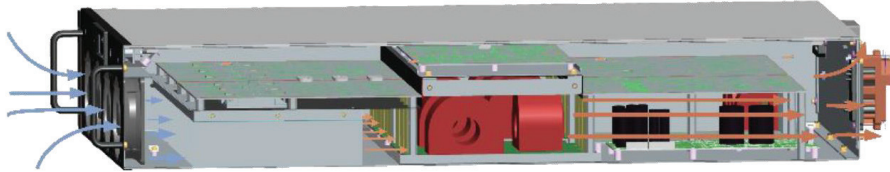
### Friendly Interface

10.4" LCD Touch Screen Display Provides graphical and text based information of alarms, status data, instructions that users can have more friendly and safer operation



### Isolated Air Flow

The hot-swappable power modules take unique structure design. In the design, PCB boards and heat-sinks are in two completely different layers, cooling air flows in the lower layer, while keeping the upper PCBs free of dust, which allows the UPS run in dusty environments, significantly improving its stability and environmental adaptability.



### Unique Design for High Reliability

Modular IGBT and SCR design, one modular IGBT or SCR equals many discrete IGBT and SCR components, bringing in extremely high reliability. All components in one module, less fault points, higher reliability. All components integrated as one modular design, smaller disparity. Less space needed, UPS with compact design and higher power design. Integrated inner thermal sensor, can display the inner temperature directly.

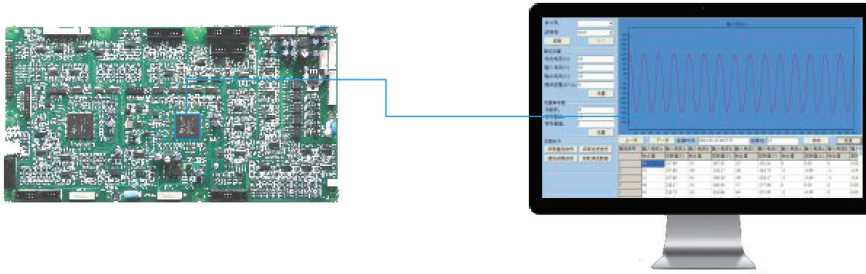
### High Density, Modular, Scalable

High power density footprint for 300kVA is 0.66m<sup>2</sup>, power density 400KW/m<sup>2</sup>, saving valuable data center space.  
Scalable from 30kVA to 900kVA (27kW to 810kW), max 30 power modules in parallel.  
Inherently N+X redundant Hot swappable power module and bypass & monitoring module. Additional charging module, extra charging current 50A\*N for long time back up application.



### Critical Waveform Recording

UPS can record and save the data of the main parameters automatically when faults happen and can be used for further analysis.  
 Can record data information and present as waveform for further analysis.  
 Can easily spot the causes of the failures, avoid future similar faults.

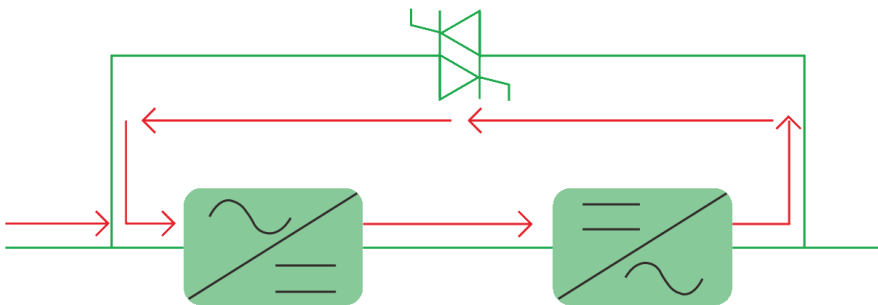


### Smart Sleep

Smart Sleep function can intelligently make some power modules go to sleep, when load is relatively low, improving the total system efficiency and saving customers on power and cooling costs.  
 Improving efficiency, reducing power and cooling costs.  
 Easy setting with just two steps. Customer can sleep mode and rotation period.  
 Power modules working in rotation, prolong the life time.

### Self-aging

Self-aging is an advanced function applied in all three phase UPS, Self-aging function can test UPS under different load situation without real load, saving more than 90% of energy.  
 Simulate different load conditions without connecting to any real load, saving 90% of energy.  
 Available in both single and dual inputs connection.  
 On site setting supported, easy for factory testing.



### Programmable Dry Contacts

Programmable dry contacts are available in all RM and MST-Pro series UPS. Customers can easily expand or modify the definition of each pin.  
 Abundant options with three inputs and four output, all programmable.  
 Easy setting, just pull the -down menu and set.  
 Compatible with all the RM and MST-Pro.



Module Model	RM600/30X	RM300/30X	RM180/30X	RM500/25X	RM250/25X	RM150/25X	
Capacity	600kVA	300kVA	180kVA	500kVA	250kVA	150kVA	
	540kW	270kW	162kW	500kW	250kW	150kW	
Power Module	PM30X(30kVA/27kW)			PM25X(25kVA/25kW)			
<b>Input</b>							
Phase	3 Phase + Neutral + Ground,400V/415V (line to line)						
Voltage range	304-478Vac (line-line),full load;						
	228V-304Vac (Line-Line),load decrease linearly according to the min phase voltage						
Frequency range	40Hz ~ 70Hz						
Power Factor	>0.99						
THDi	THDi<3% @ 100% linear load						
<b>Output</b>							
Voltage	380V/400V/415V						
Voltage Regulation	1.50%						
Power factor	0.9			1			
THDu	THD<1% (linear load ), THD<5.5% (None-linear load)						
Crest Factor	3:1						
Overload Capability	110% for 1 hour; 125% for 10 minutes ;150% for1 minute; >150% for 200ms						
<b>BATTERY</b>							
Voltage	±240VDC						
Charge Power	±1%						
Precision							
Charge Power	20%*System Power						
<b>System</b>							
System Efficiency	Normal mode: 95%; ECO mode: 99%; Battery mode: 95%						
Display	10.4" color touch screen LCD + LED + Keyboard						
IP Class	IP20						
Interface	Standard: RS232, RS485, Dry contacts, USB;						
	Optional: SNMP, Expansion dry contact card						
Operation/Storage Temperature	0-40°C / -40-70°C						
Relative Humidity	0-95% (non-condensing)						
Noise	72dB @ 100% load,	65dB @ 100% load,	72dB @ 100% load,	65dB @ 100% load,			
	68dB @ 45% load	62dB @ 45% load	68dB @ 45% load	62dB @ 45% load			
	(1 meter away)	(1 meter away)	(1 meter away)	(1 meter away)			
<b>Physical</b>							
Dimension (WxDxH)	Cabinet	2000*1050*2000 (mm)	600*1100*2000 (mm)	600*1100*1600 (mm)	2000*1050*2000 (mm)	600*1100*2000 (mm)	600*1100*1600 (mm)
	Power module	PM30X / PM25X: 460*790*134 (mm)					
Weight	Cabinet	660kg	220kg	165kg	660kg	220kg	165kg
	Power module	PM30X: 34kg			PM25X: 32kg		