**Universal Power System UPS** 

# **EARTH Series Low Frequency Online UPS**



# **Universal Power System Ltd.**

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GALAXY Series High Frequency Online Modular UPS  $\sqrt{}$  EARTH Series Low Frequency Online UPS High Frequency Online UPS VENUS UPS

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# **EARTH Series Low Frequency Online UPS**

EARTH series Low frequency UPS range from 3KVA to 500KVA, 3 Ph in 3 Ph out / 3 Ph in 1 Ph out/ 1 Ph in 1 Ph out, along with abundant options, can meet customers' diversified requirements.

Series	Main features	Optional		
EARTH MF33 3 in 3 out (10, 20, 30, 40, 60, 80,100,120KVA)	<ul> <li>Fully digital, dual DSP controlled</li> <li>Transformer based, superior overload capacity</li> <li>High input power factor 0.95 (with filter)</li> <li>Rated at 0.9 output power factor</li> <li>6 pulse rectifier (12 pulse optional)</li> <li>High efficiency 91%~93%</li> <li>6 cabinets paralleling directly</li> <li>Easy dual bus configuration architecture</li> <li>Large LCD display (ARM controlled, 7 inch TFT screen for 30KVA and above)</li> </ul>	<ul> <li>Harmonic filter</li> <li>Bypass load sharing inductor</li> <li>Class C surge protection device</li> <li>Parallel cable</li> <li>Load Bup prophyring (LPS) applied</li> </ul>		
EARTH MF33 3 in 3 out (160, 200, 300, 400, 500KVA)	<ul> <li>Fully digital, dual DSP controlled</li> <li>Transformer based, superior overload capacity</li> <li>High input power factor 0.95 (with filter)</li> <li>Rated at 0.9 output power factor</li> <li>12 pulse rectifier (6 pulse optional)</li> <li>High efficiency 93%~95%</li> <li>6 cabinets paralleling directly</li> <li>Easy dual bus configuration architecture</li> <li>7 inch TFT LCD display (ARM controlled)</li> </ul>	<ul> <li>Load Bus synchronization (LBS) ci</li> <li>SNMP/JBUS/MODBUS/Dry contact</li> <li>Battery Ground Fault Detector</li> <li>Battery temperature sensor</li> <li>UPS Ambient Signal Adapter</li> </ul>		
EARTH MFD31 3 in 1 out (30, 40, 50, 60, 80KVA)	<ul> <li>Fully digital</li> <li>Transformer based, superior overload capacity</li> <li>6 pulse rectifier (12 pulse optional)</li> <li>High input power factor 0.95 (with filter)</li> <li>High efficiency 92%</li> <li>Large LCD display (MCUcontrolled)</li> <li>PWM fan speed regulation</li> </ul>			
EARTH MF31 3 in 1 out (10, 15, 20, 30KVA)	<ul> <li>Transformer based</li> <li>superior overload capacity</li> <li>Input Surge Protection</li> <li>High input power factor 0.95 (with filter)</li> <li>High efficiency 92%</li> <li>LCD+LED display</li> <li>PWM fan speed regulation</li> </ul>	<ul> <li>&gt; 5th harmonic filter</li> <li>&gt; Input isolation transformer</li> <li>&gt; Bypass isolation transformer</li> <li>&gt; SNMP/RS485/Dry contact card</li> </ul>		
EARTH MF11 1 in 1 out (3, 6, 10, 15, 20KVA)	<ul> <li>&gt; Transformer based</li> <li>&gt; superior overload capacity</li> <li>&gt; Input Surge Protection</li> <li>&gt; High input power factor 0.95 (with filter)</li> <li>&gt; High efficiency 92%</li> <li>&gt; LCD+LED display</li> <li>&gt; PWM fan speed regulation</li> </ul>			

# **EARTH Series** Low Frequency Online UPS 3 phase in 3 phase out 10~120KVA

# Application

Industry Automation protection Power Protection for Transportation, Electricity, Medical service, Stadium Small to Mid Data Centers Banking, Insurance, Stock Service Centers Communication Network Management Center **Experimental Instruments** 

# **Product Description**

EARTH MF33 series 10~120KVA low frequency UPS is transformer based, fully digital, online double conversion, highly intelligent UPS which integrate digital control, information technology, network connectivity. With powerful information gathering system, signal processing system and full protection system, It offers perfect sine wave output which suits all kinds of load. With digital architecture and abundant options which you can customize specially for your needs, EARTH MF33 series provide all kinds of power protection to your investment

## Advance Architecture

**High Power Factor** 

**Dual DSP Controlled** 

**Highly Environment Adaptive** 

Wide input voltage tolerance (±25%)

Wide input frequency range (45~65Hz)

**Superior Overload Capacity** 

**Advanced Battery Management** 

real power

pollution

and reliable

Online Double Conversion, complete isolation between load and Grid/Generator

# N+X Paralleling Redundancy

Zero phase shift output isolation transformer based. Superior overload capacity. Minimize the neutral to earth voltage and load harmonic current to protect inverter. Powerful capacity to handle 100% unbalanced load

High rated output power factor 0.9, deliver more

High input power factor 0.95 (with filter), lower

# **Highly Adapt to Generator**

Power Walk In function lower down the inrush current of system start, so to minimize the requirement for generator capacity

# Intelligent Fan Speed Regulation

Fully digitally controlled by dual DSP, more stable consumption

LBS

# DC Cold Start

directly, convenient operation option for user

# Auto Restart

superior overload capacity and short circuit capacity (5s) to ensure system stability and safety under extreme harsh condition EOD (End of Discharging)

# Modular like Design for

# Power Device

maintenance easier

Temperature compensation function Battery discharge time assessment, periodic self detection

Battery switch status gathering, detection and control

EARTH Series Low Frequency Online UPS



Up to 6 cabinets direct paralleling, no need centralized bypass cabinet

LBS (Load Bus Synchronization) enable two independent UPS systems to form Dual Bus Architecture for higher reliability

Automatically adjust fan speed according to inside temperature and load rate to obtain lower noise, longer fan life and less energy

Start the UPS into battery (charged) mode

The UPS can be programmed to auto restart after invert shutting down when the battery reaches

IGBT based SVPWM inverter. Power devices built in rectifier, static switch and inverter are equipped with independent dissipaters. Combine with front access design, make installation and

### Large LCD Display

ARM controlled large LCD (7 inch TFT for 30KVA and above) provides real time UPS operating tatus and parameters information in bilingual

#### **Full Protection**

Self-diagnose when starting Full software and hardware protection (short circuit, inverter overheat, battery voltage low & high, surge)

## **Flexible Operation Mode**

Normal mode, Battery mode, Bypass mode, Maintenance mode, Auto-restart mode, Source Share mode, ECO mode, Frequency converter mode

## **Multiple Connectivity Choice**

Standard: R232/R485, Optional: SNMP/JBUS/MODBUS/Dry contact card. Flexible connectivity for real time management

## **Abundant Options**

Harmonic filter Bypass load sharing inductor Class C surge protection device Parallel cable/LBS cable SNMP/JBUS/MODBUS/Dry Contact card Battery Ground Fault Detector Battery Temperature Sensor UPS Ambient Signal Adapter

# **Technical Specifications**

Мо	del	MF3310	MF3320	MF3330	MF3340	MF3360	MF3380	MF33100	MF33120	
Cap	pacity (KVA/KW)	10/9	20/18	30/27	40/36	60/54	80/72	100/90	120/108	
Input										
	Nominal voltage (Vac)	380/400/415								
Z	Voltage range (Vac)	± 25%								
ain ir	Phase	three phase five wire (3L+N+PE)								
nput	Frequency range (Hz)	45~65								
	Input power factor	>0.95 (with filter)								
B	Nominal voltage (Vac)	380/400/415								
/pas:	Voltage range (Vac)		+	10%, +15%, +	20% (setting);	-10%, -20%	, –30% (settin	g)		
s inp	Phase			thr	ree phase five	wire (3L+N+F	PE)			
Ę	Bypass tracking (Hz)			±2% (	±0.5%, ±1%,	±2%, ±3%	setting)			
Out	put									
Volt	age (Vac)				380/400/-	415±1%				
Pov	ver factor				0.	.9				
Fre	quency (Hz)	Synchronized with bypass								
Wa	ve form	Sine wave, THDV<1% (linear load)								
Transfer time (ms)		0								
System efficiency		≥91% ≥92%				≥93%				
Ove	erload		105%~110%: 60min; 110%~125%: 10min; 125%~150%: 1min; >150%: 10s							
Bat	ery									
Battery voltage (Vdc)		384 (348	optional) 384 (348/360 optional)							
Env	ironment									
Ope	erating temperature (°C)	-10~40								
Sto	age temperature (°C)	-25~55 (battery excluded)								
Hur	nidity range	0~95% (no condensing)								
Ope	erating altitude (m)	<1500								
Noi	se (dB)	<55 <60					60			
Oth	er Characteristic									
Alarm function Overload, main fault, UPS fault, battery voltage low, etc										
Pro	Protection function short circuit, overload, overheat, battery voltage low, output voltage low & high, fan fault				ult					
Cor	Communication interface standard: RS232/RS485; optional: SNMP/JBUS/MODBUS/Dry contact card									
Physical										
Dimension (W*D*H mm)		480*63	30*970	550*80	0*1200	750*75	0*1600	900*85	60*1700	
Net	weight (kg)	200	230	420	460	530	620	800	900	
Sta	ndards				YD/T109	5-2008				

\*Standard type: 6 pulse (6P), option: 5th harmonic filter \*Optional type: 12 pulse (12P), option: 11th harmonic filter

# **EARTH Series** 3 phase in 3 phase out 160~500KVA

...... Low Frequency Online UPS Application Industry Automation protection Power Protection for Transportation, Electricity, Medical service, Stadium Large IDC Center Banking, Insurance, Stock Service Centers Communication Network Management Center **Product Description** 

EARTH MF33 series 160~500KVA low frequency UPS is transformer based UPS which address the needs of high end business. Features with double conversion architecture topology, advanced DSP control technology, latest large power IGBT and SCR devices. MF33 offer you more value through its reliable and efficient digital architecture which integrate digital control, information technology, network connectivity into one. It offers perfect Sine wave output which suits all kinds of load condition.

## **Advance Architecture**

**High Power Factor** 

**Dual DSP Controlled** 

more stability and reliability

real power

pollution

control

Online Double Conversion, complete isolation between load and Grid/Generator

Zero phase shift output isolation transformer based Superior overload capacity. Minimize the neutral to earth voltage and load harmonic current to protect inverter. Powerful capacity to handle 100% unbalanced load

High Rated Output Power Factor 0.9, deliver more

Fully digitally controlled by twin DSP, features with

High input power factor 0.95 (with filter), lower

# **Highly Adapt to Generator**

Power Walk In function lower down the inrush current of system start, so to minimize the requirement for generator capacity

# Intelligent Fan Speed Regulation

Automatically adjust fan speed according to inside temperature and load rate to obtain lower noise, longer fan life and less energy consumption

# DC Cold Start

Auto Restart

Power Device

Wide input frequency range (45~65Hz)

LBS

# Superior Overload Capacity

**Highly Environment Adaptive** 

Wide input voltage tolerance (±25%)

Superior overload capacity and short circuit capacity (5s) to ensure system stability and safety under extreme harsh condition

## **Advanced Battery Management**

Advanced battery management technology which match the battery features to prolong the battery life Temperature compensation function included Battery discharge time assessment, periodic self

detection Battery switch status gathering, detection and IGBT based SPWM inverter. Power devices built in rectifier, static switch and inverter are equipped with independent dissipaters. Combine with front access design, make installation and maintenance easier

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## N+X Paralleling Redundancy

Up to 6 cabinets direct paralleling, no need for centralized bypass cabinet

LBS (Load Bus Synchronization) enable two independent UPS systems to form Dual Bus Architecture for higher reliability

Start the UPS into battery (charged) mode directly, convenient operation option for user

The UPS can be programmed to auto restart after invert shutting down when the battery reaches EOD (End of Discharging)

# Modular like Design for

#### 7 inch LCD Display

ARM controlled 7 inch TFT provides real time UPS operating status and parameters information in bilingual

#### **Full Protection**

Self-diagnose when starting Full software and hardware protection (short circuit, inverter overheat, battery voltage low & high, surge)

## **Flexible Operation Mode**

Normal mode, Battery mode, Bypass mode, Maintenance mode, Auto-restart mode, Source Share mode, ECO mode, Frequency converter mode

## **Multiple Connectivity Choice**

Standard: RS232/RS485 Optional: SNMP/JBUS/MODBUS/Dry contact card. Flexible connectivity for real time management

## **Abundant Options**

Harmonic filter Bypass load sharing inductor Class C surge protection device Parallel cable/LBS cable SNMP/JBUS/MODBUS/Dry Contact card Battery Ground Fault Detector Battery Temperature Sensor UPS Ambient Signal Adapter

# Technical Specifications

Model		MF33160	MF33200	MF33300	MF33400	MF33500			
Capacity (KVA/KW)		160/144	200/180	300/270	400/360	500/450			
Input									
	Nominal voltage (Vac)	380/400/415							
Main ir	Voltage range (Vac)	± 25%							
	Phase	three phase five wire (3L+N+PE)							
Iput	Frequency range (Hz)	45~65							
	Input power factor	>0.95 (with filter)							
ß	Nominal voltage (Vac)	380/400/415							
/pass	Voltage range (Vac)	+10%, +15%, +20% (setting); -10%, -20%, -30% (setting)							
s inp	Phase		three	phase five wire (3L+N	+PE)				
Ę	Bypass tracking (Hz)		±2% (±0	.5%, ±1%, ±2%, ±3	% setting)				
Out	tput								
Vol	tage (Vac)			380/400/415 ± 1%					
Pov	ver factor			0.9					
Fre	quency (Hz)		Sy	nchronized with bypa	SS				
Wave form		Sine wave, THDV<1% (linear load)							
Transfer time (ms)		0							
System efficiency		≥93% ≥95%							
Overload		1059	%~110%: 60min; 110%	~125%: 10min; 125%	~150%: 1min; >150%:	10s			
Bat	tery								
Bat	tery voltage (Vdc)		(standa	rd 384)/(396/408 custo	omized)				
Env	vironment								
Op	erating temperature (°C)	-10~40							
Sto	rage temperature (°C)	-25~55 (battery excluded)							
Hur	midity range	0~95% (no condensing)							
Op	erating altitude (m)			<1500					
Noi	se (dB)	<	65	<7	70	<75			
Oth	er Characteristic								
Alarm function		Overload, main fault, UPS fault, battery voltage low, etc							
Pro	tection function	short circuit, overload, overheat, battery voltage low, surge protection (optional)							
Cor	mmunication interface	standard: RS232/RS485; optional: SNMP/JBUS/MODBUS/Dry contact card							
Physical									
Dimension (W*D*H mm)		1200*900*1900 (6P)/	1500*900*1900 (12P)	1440*990	*1900 (6P)/1760*990*1	900 (12P)			
Net weight (kg)		1200 (6P)/1750 (12P)	1400 (6P)/1880 (12P)	1750 (6P)/2550 (12P)	2000 (6P)/3000 (12P)	3600(12P)			
Sta	ndards			YD/T1095-2008					

\*Standard type: 12 pulse(12P), option: 11th harmonic filter \*Optional type: 6 pulse(6P), option: 6th harmonic filter

# 1.Fully Digital, Twin DSP Controlled

UPS is fully Digital controlled.

Built in DSP+CPLD control board offers excellent performance, high system stability,self protection and self diagnose capability.



# 3. High Rated Output Power Factor

High rated output power factor 0.9, handle load between  $\cos \phi$  lagging 0.9 and leading 0.9 without KW derating.



# **5.Leading Paralleling Technology**

6 cabinets paralleling directly.



# 2.Zero Phase Shifting Transformer

Zero phase shifting output isolation transformer based. Features with superior overload capacity, extremely small Neutral to Earth voltage and harmonic current, and capacity to handle unbalanced loads (when carrying 100% unbalanced loads, phase shifting  $120^{\circ} \pm 1^{\circ}$ , voltage unbalanced  $220V \pm 2\%$ ).



# 4. Superior Overload Capacity

Superior overload capacity, highly ensured reliability.



# 6.Dual Power Supply

Adopting dual power supply to ensure system reliability.



# EARTH Series Low Frequency Online UPS 3 phase in 1 phase out Digital 30~80KVA

# Application

Industry Automation protection Power Protection for Transportation, Electricity, Medical service, Stadium Small to Mid Data Centers Banking, Insurance, Stock Service Centers Communication Network Management Center Experimental Instruments



# **Product Description**

EARTH MFD31 series 30~80KVA fully digital low frequency online UPS is transformer based, which address the customers' needs for high reliability, stability, quality and efficiency. Features with DSP control, double conversion topology, input harmonic filter, 6 pulse (12 pulse optional) rectifier, IBGT based SPWM inverter, MFD31 series offer load perfect Sine wave to fulfill all kinds of businesses' requirement for highly reliable, highly stable, highly usefficient, uninterruptible power supply.

## Advance Architecture

Online Double Conversion, complete isolation between load and Grid/Generator Output isolation transformer based

# **DSP Controlled**

Fully digitally controlled by DSP, features with more stability and reliability

## Input Surge Protection

Input surge protection board design for higher grid adaption

## **Highly Environment Adaptive**

Wide input voltage tolerance Wide input frequency range

## **Superior Overload Capacity**

Superior overload capacity and short circuit capacity to ensure system stability and safety under extreme harsh condition

# Intelligent Fan Speed Regulation

Automatically adjust fan speed according to inside temperature and load rate to obtain lower noise, longer fan life and less energy consumption

# Advanced Battery Management

Advanced battery management technology which match the battery features to prolong the battery life. Temperature compensation function included

Battery discharge time assessment, periodic self detection

Battery switch status gathering, detection and control

# N+X Paralleling Redundancy

Up to 6 cabinets direct paralleling, no need for centralized bypass cabinet

# LBS

LBS (Load Bus Synchronization) enable two independent UPS systems to form Dual Bus Architecture for higher reliability

## Highly Adapt to Generator

Power Walk In function lower down the inrush current of system start, so to minimize the requirement for generator capacity

# **DC Cold Start**

Start the UPS into battery (charged) mode directly, convenient operation option for user

## LCD+LED Dispaly

LCD+LED display provides real time UPS operating status and parameters information

# **Full Protection**

Self-diagnose when starting Full software and hardware protection (short circuit, inverter overheat, battery voltage low&high, surge)

# **Multiple Connectivity Choice**

Standard: R232, Optional: R485, SNMP Dry contact card Flexible connectivity for real time management

## **Abundant Options**

Input isolation transformer Bypass isolation transformer Dry contact card RS485 SNMP

# **Technical Specifications**

Мо	del	MFD3130	MFD3140	MFD3150	MFD3160	MFD3180		
Capacity (KVA/KW)		30/24	40/32	50/40	60/48	80/64		
Inp	ut							
	Nominal voltage (Vac)	380						
$\leq$	Voltage range (Vac)	304~456						
ain ir	Phase	three phase five wire (3L+N+PE)						
Iput	Frequency range (Hz)			50 (60) ± 10%				
	Input power Factor	>0.95 (with filter)						
φ	Nominal voltage (Vac)	220						
ypas	Voltage range (Vac)	160~275						
s inp	Phase	single phase three wire (L+N+PE)						
ŭţ	Bypass tracking (Hz)			50 (60) ± 5%				
Ou	tput							
Vo	tage (Vac)			220 ± 1% or 230V ± 1%	, >			
Po	wer factor			0.8				
Fre	quency (Hz)			50 (60)				
Wa	ve Form	Sine wave, THDV<2% (linear load)						
Tra	insfer time (ms)	0						
Sys	stem efficiency	≥92%						
Ov	erload capacity	105%~110%: 60min; 110%~125%: 10min; 125%~150%: 1min; >150%: 10s						
Battery								
Ba	ttery voltage (Vdc)		(348/3	60 optional)/(384 custo	omized)			
En	vironment							
Ор	erate temperature (°C)			-10~40				
Sto	rage temperature (℃)	-25~55 (battery excluded)						
Hu	midity range	0~95% (no condensing)						
Op	erating altitude (m)	<1500						
No	ise (dB)	<55						
Otł	ner Characteristic							
Ala	rm function	Overload, main fault, UPS fault, battery voltage low, etc						
Pro	tection function	short circuit, overload, overheat, battery voltage low, surge protection (optional)						
Со	mmunication interface		standard: RS232;	optional: RS485/SNM	P/Dry contact card			
Physical								
Dir	nension (W*D*H mm)	550*80	0*1200		750*720*1600			
Ne	t weight (kg)	330	520	590	630	820		
Cto	indards			YD/T1095-2008				

\*Standard type: 6 pulse (6P), option: 5th harmonic filter \*Optional type: 12 pulse (12P), option: 11th harmonic filter

# **EARTH Series** . . . . . Low Frequency Online UPS 1 in 1 out/3 in 1 out 3~30KVA

# Application

Industry Automation protection Power Protection for Transportation, Electricity, Medical service, Stadium Small Data Centers Communication Network Management Center Office Automation Experimental Instruments

# **Product Description**

EARTH MF11/31 series 3~30KVA low frequency online UPS is transformer based, which address the customers' needs for high reliability, stability, stability and quality. Features with double conversion topology, input harmonic filter, IBGT based SPWM inverter, MF11/31 series offer load perfect Sine wave to fulfill all kinds of businesses' requirement for highly reliable, highly stable, high quality, uninterruptible power supply.

## Advance Architecture

Online Double Conversion, complete isolation between load and Grid/Generator Output isolation transformer based

## **Input Surge Protection**

Input surge protection board design for higher grid adaption

# Superior Overload Capacity

Superior overload capacity and short circuit capacity to ensure system stability and safety under extreme harsh condition

# **Highly Environment Adaptive**

Wide input voltage tolerance Wide input frequency range

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# Intelligent Fan Speed Regulation

Automatically adjust fan speed according to inside temperature and load rate to obtain lower noise, longer fan life and less energy consumption

# LCD+LED Display

LCD+LED display provides real time UPS operating status and parameters information

# **DC Cold Start**

Start the UPS into battery (charged) mode directly, convenient operation option for user

# **Full Protection**

. . . . .

Self-diagnose when starting Full software and hardware protection (short circuit, inverter overheat, battery voltage low & high, surge)

# **Multiple Connectivity Choice**

Standard: R232, Optional: RS485, SNMP Dry contact card Flexible connectivity for real time management

# **Abundant Options**

Input isolation transformer Bypass isolation transformer Dry Contact card RS485 SNMP

# **Technical Specifications**

Mo	del	MF1103	MF1106	MF1110	MF1115	MF1120			
Capacity (KVA/KW)		3/2.4	6/4.8	10/8	15/12	20/16			
Inp	out								
	Nominal voltage (Vac)	220 or 230							
Main ir	Voltage range (Vac)	160~275							
	Phase	single phase three wire (L+N+PE)							
Iput	Frequency range (Hz)			50 (60) ± 10%					
	Input power Factor	>0.95 (with filter)							
B	Nominal voltage (Vac)	220 or 230							
/pas	Voltage range (Vac)	160~275							
s inp	Phase	single phase three wire (L+N+PE)							
Ę	Bypass tracking (Hz)			50 (60) ± 5%					
Ou	tput								
Vo	Itage (Vac)		:	220 ± 1% or 230V ± 1%	, o				
Po	wer factor			0.8					
Fre	equency (Hz)			50 (60)					
Wa	ave Form		Sine v	vave, THDV<2% (linea	r load)				
Tra	ansfer time (ms)	0							
Sy	stem efficiency		≥85%		≥9	02%			
Ov	erload		100%~110%: lo	ng term; 110%~125%:	: 20s; >125%: 1s				
Ba	ttery								
Ba	ttery voltage (Vdc)	48		19	92				
En	vironment								
Op	erating temperature (°C)			-10~40					
Sto	orage temperature (°C)	-25~55 (battery excluded)							
Hu	midity range	0~95% (no condensing)							
Op	erating altitude (m)	<1500							
Noise (dB)		<55							
Other Characteristic									
Alarm function Overload, main fault, UPS fault, battery voltage low, etc									
Pro	Protection function short circuit, overload, overheat, battery voltage low, output voltage low & high					& high			
Со	mmunication interface		standard: RS232; optional: RS485/SNMP/Dry contact card						
Physical									
Dir	nension (W*D*H mm)	210*563*602	210*563*602	305*586*927	380*660*980	380*660*980			
Ne	t weight (kg)	30	55	100	180	220			
Sta	andards			YD/T1095-2008					

# **Technical Specifications**

CONVOY series		MF3110	MF3115	MF3120	MF3130			
Са	pacity (KVA/KW)	10/8	15/12	20/16	30/24			
Inp	out							
	Nominal voltage (Vac)	380						
Main input	Voltage range (Vac)	304~456						
	Phase		three phase five	wire (3L+N+PE)				
	Frequency range (Hz)		50 (60)	) ± 10%				
	Input power factor		>0.95 (w	vith filter)				
B	Nominal voltage (Vac)	220						
/pas	Voltage range (Vac)	160~275						
s inp	Phase		single phase thre	ee wire (L+N+PE)				
Ļ	Bypass tracking (Hz)		50 (60	) ± 5%				
Ou	tput							
Vo	tage (Vac)		220 ± 1% of	r 230V ± 1%				
Po	wer factor		0	.8				
Fre	equency (Hz)		50	(60)				
Wa	ive form	Sine wave, THDV<2% (linear load)						
Transfer time (ms)		0						
System efficiency		≥85% ≥92%						
Overload		100%~110%: long term; 110%~125%: 20s; >125%: 1s						
Ba	ttery							
Ba	ttery voltage (Vdc)		192		240			
En	vironment							
Op	erating temperature (°C)	-10~40						
Sto	prage temperature (°C)	-25~55 (battery excluded)						
Hu	midity range	0~95% (no condensing)						
Op	erating altitude (m)	<1500						
No	ise (dB)	<55						
Oth	ner Characteristic							
Ala	Irm function	Overload, main fault, UPS fault, battery voltage low, etc						
Protection function short circuit, overload, over			t, overload, overheat, battery	erheat, battery voltage low, surge protection (optional)				
Со	mmunication interface	S	standard: RS232; optional: RS485/SNMP/Dry contact card					
Physical								
Dir	nension (W*D*H mm)	380*664*946	380*664*946	380*664*946	555*750*1200			
Ne	t weight (kg)	135 200 245 300						
Sta	Indards		95–2008					