ことひら システム
Kotohira System

DI Series

Online Low Frequency Transformer based UPS 1-30KVA (1/1 Phase, 3/1 Phase)

System Introduction

This UPS is a full-digitized with European MCU controlled single phase input/single phase output or 3 phase input /single phase output online UPS. It provides reliable, stable, and constant AC power for computer equipment,telecommunication devices, precision equipment instrument, and network termination equipment (NTE). UPS systems protects all these devices from losing data or information due to power outage, interruption or disruption to truly and comprehensively solve power issues, such as power outage, power surge, voltage sags, temporary over-voltage, temporary under voltage, frequency offset,power disturbances, switching transients, and harmonic wave distortion.

System Features

High Performance Index

◆ Advanced SCR Rectifier and IGBT Inverter Technology. Online 1/1 or 3/1 double conversion structure.
◆ Adapt with output isolated transformer technology to fit 200、220、230、240Vac，50/60Hz Grid Systems；
◆ Wide Input Range from Single Phase 160-280Vac、3 Phase 286-475Vac ，50/60 Hz±5%，High Adaptive Capacity to Mains Grid
◆ High Overload Ability -- surge current protection technology to carry sudden impact for 0% to 100% load immediately without transfer to bypass；
◆ Overall Efficiency 85%. 98% under ECO Mode；
◆ Full-Digitized Non-master slave parallel redundancy technology. Parallel circumfluence ≤5%；
◆ Intelligent Charging Design. It equips with BAT low/over charged sensor to protect the charger. Real-time diagnosis on Battery status and response data simultaneously；
◆ Large Color Dot-matrix LCD+LED Screen with multi-functional keyboard to check system parameters, such as fault histories, operational statuses self-diagnosis periodically discharge settings, etc.
◆ Battery Self-testing can be done on the LCD directly. Battery Capacity, UPS working mode (Online or ECO) can be set on the screen. All history faults and statistics can be seen on the screen to help user analyze the working summary of the UPS.
◆ Monitoring can be done by WAN/LAN SNMP adapter or Cloud Monitoring Adapter. UPS equips with RS232, USB, EPO ports, and can choose RS485 and Dry-contact as optional accessories.
◆ Front to Rear Ventilation Design to reduce the defective rate of the product.
◆ Smart Size.

Safe and Reliable

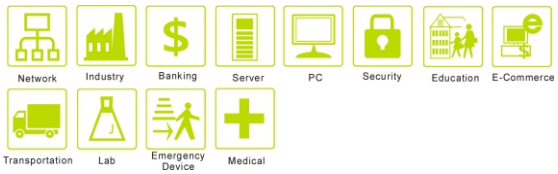
◆ MCU control to operate all power conversion sessions during the operations, which has higher system reliability than traditional UPS systems.
◆ Output Isolated Transformer Built-in. It can reduce impacts and interferences from Load Harmonic Wave Current and N-Wire Voltage.
◆ Special Design on battery connectors to save the shock hazards from mis-operation；
◆ 90% of system components are from international brands. All devices has been aged and fully tested for at least 24 hours before leaving the factory.

Rich Optional Accessories

The System can use SNMP Network Adapter, RS485/Dry Contact, USB port,and EPO function to build up a remote control and monitoring system.

Technology Points

- MCU control provides higher system reliability than traditional UPS systems.;
- Wide Input Voltage and Frequency Range.;
- Non-Master Slave digital parallel redundancy feature;
- Advanced Battery Management system;
- High Overload Ability;
- Dot Matrix Color Screen for friendly and intuitive display;
- Online Double Conversion technology with output isolated transformer
- Smart Size compared to the same size of the UPS in the market. All UPS equipped with wheels.

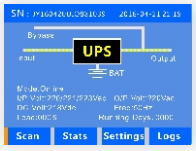


Screen Details

◆ Welcome Screen

Welcome screen to show Manufacturer and Logo

◆ Main Page



1. UPS Working Diagram
2. Working Mode: Online BAT Bypass ECO
3. Input Voltage
4. Output Voltage
5. BAT Voltage
6. Output Frequency
7. Load %
8. Working (Days)
9. Serial Number
10. Calendar and Time

◆ UPS Information Screen

1. Product Model
   2. Product Structure
   1/1 Phase Input/Output
   3/1 Phase Input/Output
3. Serial Number
4. Version Number
5. Working Days
6. Serial Number
7. Calendar and Time

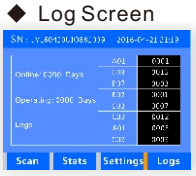
◆ Working Screen

1. I/P Status:Normal/ Alarm
2. O/P Status:Normal/ Alarm
3. B/P Status:Normal/ Alarm
4. Load Status:Normal/ Alarm
5. CHAR Status:Normal/ Alarm
6. ECO Mode:Off/On
7. INV. Status: Normal/ Alarm
8. Rect. Status:Normal/ Alarm
9. INV Temp
10. TX Status:Normal/Alarm
11. Working Days
12. Serial Number
13. Calendar

◆ Setting Screen

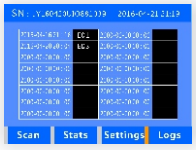
1. BAT Test: User can test Battery status with selected time period in 10s from 1 min upto deep cycle test.
2. Set ECO mode
3. Set Time, Date and Language

◆ Log Screen



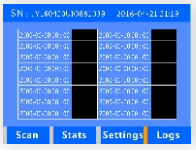
1. Online Days:It means the time from UPS 1st Starts up till it completely shuts down.
2. Working Days: It means the time from the 1st time installation till now.
3. Event Logs: It calculates the accumulated total time for code E01- E08 faults or abnormals

◆ Log Screen 2



1. It shows the actual detail single log event in time and date upto in total 32 logs.
2. Serial number can also be found on the top of the screen for warranty claim
3. Time and date will also be shown

◆ Log Screen 3

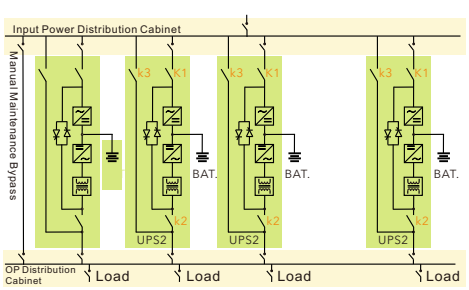


1. It shows the actual detail single log event in time and date upto in total 32 logs.
2. Serial number can also be found on the top of the screen for warranty claim.
3. Time and date will also be shown.

Specification

Model	DI10S/DI10L	DI20S/DI20L	DI30S/JY30L	DI60S/DI60L	DI80L	DI100L	DI150L
Capacity	1KVA/0.8KW	2KVA/1.6KW	3KVA/2.4KW	6KVA/4.8KW	8KVA/6.4KW	10KVA/8KW	15KVA/12KVA
Host Machine Specification							
UPS Structure	Online Double Conversion						
Appearance	Low Frequency with Output Isolated Transformer						
Overall Efficiency (AC-AC)	> 85%						
Noise (In 2 meters)	< 50dB						
Working Temp	-10-40℃						
Storage Temp	-25~60℃ (Without Batteries)						
Humidity	<95%Non-Condensing						
Safety Standard	IEC62040						
Parallel Redundancy	Available						
Protections	Overload, Short-Circuit, Over Temp., Utility Power Voltage High/low, BAT Voltage High/low						
DC Start	Available						
Generator Compatibility	Available						
Display	LCD Display: Multi-Language with all kinds of messages. Input Output Status, ECO Mode Settings, INV. Temp. TX Status Calendar, Time, Serial Number, Model, Structure, History Logs, Battery Test. LED Indicators: UPS States Indicator						
Mute	Auto						
Cabinet Standard	IP20						
Cooling System	Intelligent Speed Control Cooling Fan						
Elevation	< 1000M , Without Derated						
Rectifier Specification							
Input Voltage	220/200/230/240Vac Single Phase						
Input Voltage Range	160-280Vac						
Input Frequency Range	50Hz±5%						
Soft-Start	>20 Seconds						
Output Specification							
Output Voltage	220/200/230/240Vac						
Output PF	0.8						
Output Voltage Regulation	220Vac±1%(Static Load) , 220Vac±2% (50~0% Sudden Change)						
Output Freq	50Hz±0.1% (BAT Mode)						
Distortion	<1% (Linear Full Load) , <3% (Non-Linear Full Load)						
Frequency Tracking Range	46-54Hz						
Output Waveform	Pure Sine Wave						
Overload	> 125%: More than 1 Min ; > 150%: More than 300ms					> 125%: More than 10 Mins ; > 150%: More than 1 Min	
Noise Suppression	EMI/RFI Wave Filter						
Crest Ratio	3 : 1						
Short-Circuit	Circuit Auto Protection Output Voltage/Current 0						
Output Abnormal	INV. Output Auto-Locked Protection						
Bypass Specification							
Static Bypass Transfer Time	0ms						
Static Bypass Range	220Vac (-15~+15%)						
Frequency Range	±1Hz, ±2Hz, ±3Hz Adjustable						
Bypass -> INV Transfer Time	2ms						
Frequency Tracking Speed	0.5-2hz/s						
Manual Maintenance Bypass	None					Available	
Alarm Specification							
Alarm	Utility Power Fault, BAT Voltage Low, Overload,UPS Fault						
Mute	Auto						
Battery Specification							
Type	Sealed Lead Acid Maintenance Free						
Model Rated Volts/Units	72Vdc /6Units	72Vdc /6Units	96Vdc /8Units	192Vdc or 96Vdc	192Vdc /16Units	192Vdc /16Units	192Vdc /16Units
Built-in BAT.Model Charging Current	1A	1A	1A	1A	1A	1A	1A
Ext. Model Charging Current	Std. 5A	Std. 5A	Std. 5A	Std. 5A	Std. 5A	Std. 5A	Std. 5A
BAT Low	Shutdown Protection						
Communication Specification							
Communication Port	Rs232 (Std.) ; /SNMP/RS485/ Dry Contact (Optional Accessory)						
Remote Software	Multi-functional Monitoring System, Online and BAT Mode Status, BAT Fault, Remote Control						
Physical Parameters							
Std. Size mm W×D×H	220×510×395			220×610×635	———	———	———
Ext. Size mm W×D×H				220×610×475	220×610×715	220×610×715	220×610×715
RM. Size mm W×D×H	430×580×178/4U			430×580×220/6U	———	430×600×266/8U	———
Std. Net Weight Kg	37.5	38.5	49	84	———	———	———
Ext. Net Weight Kg	22.5	23.5	29	44	63	60	70
RM. Net Weight Kg	———	23	29	43	———	60	———

Note Specification are subject to change without further notice.



Parallel Redundancy upto 8 units

Specification

Model	DI60L31	DI100L31	DI150L31	DI200L31	DI300L31
Capacity	6KVA/4.8KW	10KVA/8KW	15KVA/12KW	20KVA/16KW	30KVA/24KW
Host Machine Specification					
UPS Structure	Online Double Conversion				
Appearance	Low Frequency with Output Isolated Transformer				
Overall Efficiency (AC-AC)	> 85%				
Noise (In 2 meters)	< 50dB				
Working Temp	-10-40℃				
Storage Temp	-25~60℃ (Without Batteries)				
Humidity	<95%Non-Condensing				
Safety Standard	IEC62040				
Parallel Redundancy	Available				
Protections	Overload, Short-Circuit, Over Temp., Utility Power Voltage High/low, BAT Voltage High/low				
DC Start	Available				
Generator Compatibility	Available				
Display	LCD Display: Multi-Language with all kinds of messages. Input Output Status, ECO Mode Settings, INV Temp. TX Status Calendar, Time, Serial Number, Model, Structure, History Logs, Battery Test. LED Indicators: UPS States Indicator				
Mute	Auto				
Cabinet Standard	IP20				
Cooling System	Intelligent Speed Control Cooling Fan				
Elevation	< 1000M , Without Derated				
Rectifier Specification					
Input Voltage	380Vac ±25% 3 Phase				
Input Voltage Range	286-475Vac				
Input Frequency Range	50Hz±5%				
Soft-Start	>20 Seconds				
Output Specification					
Output Voltage	220/200/230/240Vac				
Output PF	0.8				
Output Voltage Regulation	220Vac±1%(Static Load) , 220Vac±2% (50~0% Sudden Change)				
Output Freq	50Hz±0.1% (BAT Mode)				
Distortion	<1% (Linear Full Load) , < 3% (Non-Linear Full Load)				
Frequency Tracking Range	46-54Hz				
Output Waveform	Pure Sine Wave				
Overload	> 125%: More than 1 Min ; > 150%: More than 300ms				
Noise Suppression	EMI/RFI Wave Filter				
Crest Ratio	3 : 1				
Short-Circuit	Circuit Auto Protection Output Voltage/Current 0				
Output Abnormal	INV. Output Auto-Locked Protection				
Bypass Specification					
Static Bypass Transfer Time	0ms				
Static Bypass Range	220Vac (-15~+15%)				
Frequency Range	±1Hz, ±2Hz, ±3Hz Selectable				
Bypass -> INV. Transfer Time	2ms				
Frequency Tracking Speed	0.5-2hz/s				
Manual Maintenance Bypass	None			Available	
Alarm Specification					
Alarm	Utility Power Fault, BAT Voltage Low, Overload,UPS Fault				
Mute	Auto				
Battery Specification					
Type	Sealed Lead Acid Maintenance Free				
Model Rated Volts/Units	348-384Vdc/29-32 units adjustable				
Ext. Model Charging Current	5-10A				
BAT Low	Shutdown Protection				
Communication Specification					
Communication Port	Rs232 (Std.)/SNMP/RS485/ Dry Contact (Optional Accessory)				
Remote Software	Multi-functional Monitoring System, Online and BAT Mode Status, BAT Fault, Remote Control				
Physical Parameters					
Ext. Size mm W×D×H	220×610×715	220×610×715	310×670×820	310×670×820	310×670×820
Ext. Net Weight Kg	67	74	99	117	125

Note Specification are subject to change without further notice.