



User's Manual

**ZEUS52E1K / ZEUS52ES1K
ZEUS52E2K / ZEUS52ES2K
ZEUS52E3K / ZEUS52ES3K**

IMPORTANT SAFETY INSTRUCTIONS

This manual contains important instructions. Please read and follow all instructions carefully during installation and operation of the unit. Read this manual thoroughly before attempting to unpack, install, or operate the UPS.

CAUTION! The UPS must be connected to a grounded AC power outlet with fuse or circuit breaker protection. DO NOT plug the UPS into an outlet that is not grounded. If you need to power-drain this equipment, turn off and unplug the unit.

CAUTION! The battery can power hazardous components inside the unit, even when the AC input power is disconnected.

CAUTION! The UPS should be placed near the connected equipment and easily accessible.

CAUTION! To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area, free of conductive contaminants. (Please see specifications for acceptable temperature and humidity range).

CAUTION! (No User Serviceable Parts): Risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

CAUTION! (Non-Isolated Battery Supply): Risk of electric shock, battery circuit is not isolated from AC power source; hazardous voltage may exist between battery terminals and ground. Test before touching.

CAUTION! To reduce the risk of fire, connect the UPS to a branch circuit with 10 amperes (1000 / 1500 / 2000) / 16 amperes (3000) maximum over-current protection in accordance to CE requirement.

CAUTION! The AC outlet where the UPS is connected should be close to the unit and easily accessible.

CAUTION! Please use only VDE-tested, CE-marked mains cable, (e.g. the mains cable of your equipment), to connect the UPS to the AC outlet.

CAUTION! Please use only VDE-tested, CE-marked power cables to connect any equipment to the UPS.

CAUTION! When installing the equipment, ensure that the sum of the leakage current of the UPS and the connected equipment does not exceed 3.5mA.

CAUTION! The 1000 / 1500 / 2000 / 3000 / Battery module models are only qualified maintenance personnel may carry out installations.

CAUTION! Do not unplug the unit from AC Power during operation, as this will invalidate the protective ground insulation.

CAUTION! To avoid electric shock, turn off and unplug the unit before installing the input/output power cord with a ground wire. Connect the ground wire prior to connecting the line wires!

CAUTION! Do not use an improper size power cord as it may cause damage to your equipment and cause fire hazards.

CAUTION! Wiring must be done by qualified personnel.

CAUTION! DO NOT USE FOR MEDICAL OR LIFE SUPPORT EQUIPMENT! Under no circumstances this unit should be used for medical applications involving life support equipment and/or patient care.

CAUTION! DO NOT USE WITH OR NEAR AQUARIUMS! To reduce the risk of fire, do not use with or near aquariums. Condensation from the aquarium can come in contact with metal electrical contacts and cause the machine to short out.

CAUTION! Do not dispose of batteries in fire as the battery may explode.

CAUTION! Do not open or mutilate the battery, released electrolyte is harmful to the skin and eyes.

CAUTION! A battery can present a risk of electric shock and high short circuit current. The following precaution should be observed when working on batteries

1. Remove watches, rings or other metal objects.
2. Use tools with insulated handles.

CAUTION! The unit has a dangerous amount of voltage. When the UPS indicators is on, the units may continue to supply power thus the unit's outlets may have a dangerous amount of voltage even when it's not plugged in to the wall outlet.

CAUTION! Make sure everything is turned off and disconnected completely before conducting any maintenance, repairs or shipment.

CAUTION! Connect the Protection Earth (PE) safety conductor before any other cables are connected.

WARNING! (Fuses): To reduce the risk of fire, replace only with the same type and rating of fuse.

DO NOT INSTALL THE UPS WHERE IT WOULD BE EXPOSED TO DIRECT SUNLIGHT OR NEAR A STRONG HEAT SOURCE!

DO NOT BLOCK OFF VENTILATION OPENINGS AROUND THE HOUSING!

DO NOT CONNECT DOMESTIC APPLIANCES SUCH AS HAIR DRYERS TO UPS OUTPUT SOCKETS!

SERVICING OF BATTERIES SHOULD BE PERFORMED OR SUPERVISED BY PERSONNEL KNOWLEDGE OF BATTERIES A AD THE REQUIRED PRECAUTIONS. KEEP UNAUTHORIZED PERSONNEL AWAY FROM BATTERIES!

INSTALLING YOUR UPS SYSTEM

UNPACKING

(1) UPSx1; (2) User's manual x1; (3) Input power cord (EU/UK) x2; (4) USB cable x1; (5) RS232 cable x1

INSTALLING YOUR UPS SYSTEM

HARDWARE INSTALLATION GUIDE

1. Battery charge loss may occur during shipping and storage. Before using the UPS, it's strongly recommended to charge batteries for four hours to ensure the batteries' maximum charge capacity. To recharge the batteries, simply plug the UPS into an AC outlet.
2. Connect your computer, monitor, and any externally-powered data storage device (Hard drive, Tape drive, etc.) into the outlets only when the UPS is off and unplugged. DO NOT plug a laser printer, copier, space heater, vacuum, paper shredder or other large electrical device into the UPS. The power demands of these devices will overload and possibly damage the unit.
3. To protect a fax machine, telephone, modem line or network cable, connect the telephone or network cable from the wall jack outlet to the jack marked "IN" on the UPS and connect a telephone cable or network cable from the jack marked "OUT" on the UPS to the modem, computer, telephone, fax machine, or network device.
4. Press the ON switch to turn the UPS on. If an overload is detected, an audible alarm will sound and the UPS will continuously emit one beep per

second. For resetting the unit, unplug some equipment from the outlets. Make sure your equipment carries a load current within the unit's safe range, (refer to the technical specifications).

5. This UPS is equipped with an auto-charge feature. When the UPS is plugged into an AC outlet, the battery will automatically charge, even when the unit is switched off.
6. To maintain an optimal battery charge, leave the UPS plugged into an AC outlet at all times.
7. Before storing the UPS for an extended period of time, turn the unit OFF. Then cover it and store it with the batteries fully charged. Recharge the batteries every three months to ensure good battery capacity and long battery life. Maintaining a good battery charge will help prevent possible damage to the unit from battery leakage.
8. The UPS has one USB port (default) and one Serial port that allows connection and communication between the UPS and any attached computer running the Power Master software. The UPS can control the computer's shutdown during a power outage through the connection while the computer can monitor the UPS and alter various programmable parameters.
Note: Only one communication port can be used at a time. The port not in use will automatically become disabled or the serial port will be disabled if both ports are attached.
9. To avoid electric shock, turn the unit OFF and disconnect the unit from utility power before hardwiring the UPS (in/out power cord). The in/out power cord **MUST** be grounded.

BASIC OPERATION

POWER MODULE FRONT/REAR PANEL DESCRIPTION

1. Power On/Off Button

Master ON/OFF for the UPS.

2. Function Buttons

..Scroll up, scroll down, select and cancel LCD menu.

3. Multifunction LCD Readout

Indicate status information, settings and events.

4. Battery Backup & Surge Protected Outlets

Provide battery backup and surge protection. They ensure power is provided to connected equipment over a period of time during a power failure.

5. Serial Port

Serial port provides communication between the UPS and the computer. The UPS can control the computer's shutdown during a power outage through the connection while the computer can monitor the UPS and alter its various programmable parameters.

6. EPO (Emergency Power Off) Connector

Enable Power-Off in emergency from a remote location.

7. USB port

This is a connectivity port which allows communication and control between the UPS and the connected computer. It is recommended to install the Power master software on the PC/Server connected with the USB cord.

8. SNMP/HTTP Network slot

Slot to install the optional SNMP card for remote network control and monitoring.

9. AC Input Inlet

Connect the AC Power cord to a properly wired and grounded outlet.

10. Input Circuit Breaker

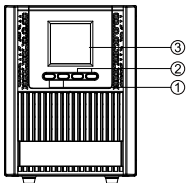
Provide input overload and fault protection.

11. Extended Runtime Battery Module Connector(only for long run models)

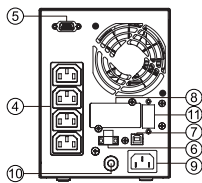
Connect to additional external battery modules.

12. Output Terminal Block

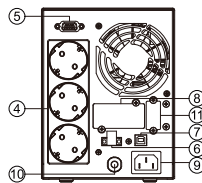
Connect to your equipment.



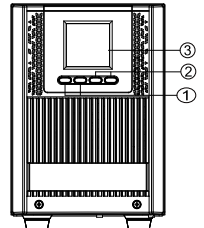
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ZEUS52ES1K



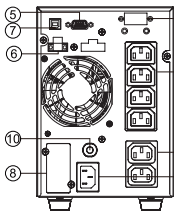
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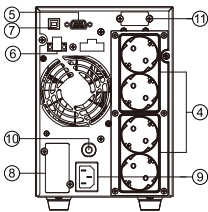
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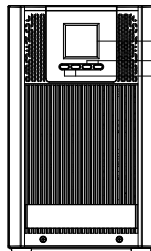
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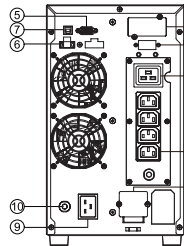
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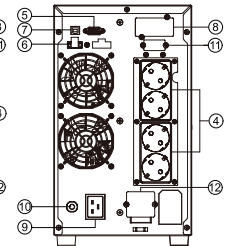
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SOFTWARE INSTALLATION

Power Master management software provides a user-friendly interface for your power systems. The graphic user-interface is intuitive and displays essential power information at a glance. Please follow procedure below to install the software.

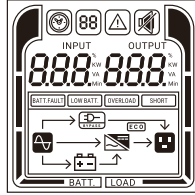
Installation procedure:

Download Power Master from the website: <http://www.powermonitor.software/>

Double-click the file and follow the installation steps.

When your computer restarts, the Power Master software will appear as a blue icon located in the system tray.

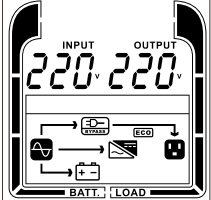
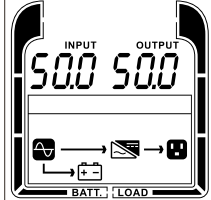
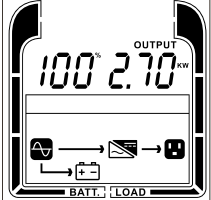
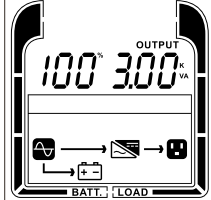


LCD Panel



OPERATION MODE LCD DISPLAY

Operation mode	Description	LCD display	Operation mode	Description	LCD display
Line mode	Utility will provide energy to loads. It will also charge the battery at the same time.		Battery mode	The unit will provide output power from battery.	
ECO mode	When the input voltage is within voltage regulation range, UPS will bypass voltage to output for energy saving.		Bypass mode	When the input voltage is within bypass voltage range, UPS will bypass voltage to output.	
Converter mode	When input frequency is within 40Hz to 70Hz, the UPS can be set at a constant output frequency, 50Hz or 60Hz.		Standby mode	Utility will charge the battery and no output voltage until switch on the UPS.	
Warning mode	The UPS is warning because of overload.		Fault mode	The UPS goes to fault mode because output is short.	

LCD DISPLAYS 6 PAGES IN TOTAL :

1	Left : AC INPUT(Voltage) V Right : OUTPUT(Voltage) V		2	Left : INPUT(Frequency) Hz Right :OUTPUT(Frequency) Hz	
3	Left : W load Percentage(%) Right : OUTPUTXXX W		4	Left : VA load Percentage(%) Right : OUTPUTXXX VA	
5	Left : Battery Capacity Percentage(%) Right : Battery voltage(v)		6	Left : Backup Time(min) Percentage(%) Right : Battery voltage(v)	

EVENT ID DESCRIPTIONS

Event ID	Description of Cause
01	Bus Start Fail: DC-DC converter or bus sensing circuit failed.
02	Bus Volt High: DC-DC converter failed.
03	Bus Volt Low: DC-DC converter failed.
04	Bus Unbalanced: DC-DC converter failed.
06	INV Start Fail: Inverter circuit failed.
07	INV Volt High: Inverter circuit or output voltage sensing circuit failed.
08	INV Volt Low: The load may be too heavy or inverter circuit failed.
09	INV Short: The inverter circuit failed.
11	Bat Volt High: The external battery module connection is wrong, or the charger failed.
12	Bat Volt Low: Batteries failed.
14	Over Load: UPS is overloaded.
18	Fan Fail: The ventilation hole has been covered, or the fans can't work.
19	Over Temperature: High ambient temperature, or the ventilation hole has been covered.
62	Bat low: Battery voltage low.
64	Over Load warning: UPS is overload.
66	EPO Off: Missing the EPO connection
68	High Temperature: High ambient temperature, or the ventilation hole has been covered. This is shown only when start up UPS.

BUTTON OPERATION

Button	Operation Description
ON	Press this button to turn on UPS. In line mode, ECO mode, or converter mode, press the "ON" button for 5 seconds to activate the battery test.
OFF	Press this button to turn off UPS.*
ENTER	Press and hold this button for 5 seconds to get into setting mode while in bypass mode, or standby mode. In setting mode, press this button to confirm selection, or press this button for long time to exit setting mode and saving changes. Press this button to scroll up in the LCD menu.
ESC	In setting mode, press this button to display next selection, or press this button for long time to exit setting mode without saving changes. Press and hold the "ESC" button for 5 seconds to disable and enable buzzer alarm. Press this button to scroll down in the LCD menu.
ENTER + ESC	Switch to bypass mode: When the main power is normal, press these two buttons simultaneously for 5 seconds, then UPS will enter to bypass mode.

LCD SETTINGS CONFIGURATION

There are 9 UPS settings that can be configured by the user.

1. Press and hold the "ENTER" button for 5 seconds to activate the setting mode.

The first configuration parameter will be displayed on the LCD screen.

Note: The manual settings programming mode can ONLY be invoked while UPS is in Bypass mode or Standby mode. To make UPS on Standby mode or Bypass mode, connect utility power to UPS and do not turn on UPS.

2. Press the "ENTER" button to select the setting you want to configure.
3. Press the "ESC" buttons to scroll through the different parameters and select the parameter you want.
4. Press the "ESC" button for 5 seconds to cancel and exit setting mode. Press the "ENTER" button for 5 seconds to save all the settings you just do and exit setting mode.

Setting item	Configure Submenu	Available Settings	Default Setting
001	Output Voltage	= [208V] [220V] [230V] [240V]	220V
002	Output Frequency	= [50Hz] [60Hz]	50Hz
003	ECO Mode *	[0%] (Disable) [10%] [15%] (Enable)	0%
004	Bypass Mode **	[DIS] (Disable) [ENA] (Enable)	Enable
005	Converter Mode	[DIS] (Disable) [ENA] (Enable)	Disable

*) When operating in ECO Mode, the efficiency of UPS is higher than that in online mode, but transfer time should not be 0ms

**) When operating in Converter Mode, the frequency of output should be always 50Hz or 60Hz, but load capacity will be derated by 40%.

*) This function would be set as 0% when Converter Mode is enabled.

**) UPS has no bypass when Converter Mode is enabled.

MAINTENANCE

Storage

To store your UPS for an extended period, cover it and store with the battery fully charged. Recharge the battery every three months to ensure battery life.

Replacement Batteries

Please refer to the front side of the UPS for the model number of the correct replacement batteries. For battery procurement, contact your local dealer.

Battery Disposal

Batteries are considered hazardous waste and must be disposed of properly. Contact your local government for more information about proper disposal and recycling of batteries. Do not dispose of batteries in fire.

TECHNICAL SPECIFICATIONS

Model	ZEUS52E1K/ZEUS52ES1K	ZEUS52E2K/ZEUS52ES2K	ZEUS52E3K/ZEUS52ES3K
Capacity (VA/W)	1000VA/900W	2000VA/1800W	3000VA/2700W
Configuration			
Form Factor	Tower		
Energy-saving Technology	Yes, ECO Mode Efficiency \geq 95%		
Input			
Voltage Range	110~300Vac \pm 5% for 1000/1500/2000/3000VA model		@ 0~50% Load \pm 5%
	140~300Vac \pm 5% for 1000/1500/2000/3000VA model		@ 50~70% Load \pm 5%
	160~300Vac \pm 5% for 1000/1500/2000/3000VA model		@ 70~80% Load \pm 5%
	180~300Vac \pm 5% for 1000/1500/2000/3000VA model		@ 80~100% Load \pm 5%
Frequency Range	40~70Hz		
Power Factor	0.99		
Cold Start	Yes		
Output			
Output Voltage	208/220/230/240Vac \pm 1%		
Output Waveform	Pure Sine Wave		
Output Frequency	50 / 60Hz (Auto-Sensing or Configurable) \pm 0.5Hz		
Transfer Time(Typically)	0ms		
Rated Power Factor	0.9		
Harmonic Distortion	THD < 3% at Linear Load, < 5% at Non-linear Load @ Nominal Input		
Crest Factor	3 : 1		
ECO Mode Voltage Regulation	\pm 10%, \pm 15% (Configurable)		
Protection			

Overload Protection	Line Mode: 105~110% Warning, transfer to bypass after 10min. 110%~130% Warning, transfer to bypass after 1min. >130% Warning, transfer to bypass after 3s. Battery Mode: 105~110% Warning, shutdown after 1min. 110%~130% Warning, shutdown after 30s. >130% Warning, shutdown after 3s.		
Short Circuit Protection	UPS Output Cut off Immediately or Input Fuse / Circuit Breaker Protection		
Battery			
Battery Type	(2)12V/9AH	(4)12V/9AH	(6)12V/9AH
Recharge Time	4 Hours (inside batteries)		
Charge current	1.0A(MAX)		
Status Indicators			
LCD Screen	Graphic LCD		
Audible Alarms	Battery Mode, Battery Low, Overload, UPS Fault, Replace Battery, Bypass Mode Charger Failure /Over Charged, Fan failure, EPO active		
Environment			
Operating Temperature	32°F to 104°F (0°C to 40°C)		
Operating Relative Humidity	20 to 90% Non-Condensing		
Management			
On-Device Features	Self Test, Auto-Charge, Auto-Restart, Auto-Overload Recovery		
Connectivity Ports	(1) Serial Port (RS232), (1) USB Port,		
SNMP/HTTP Cable	(1) Expansion Port (With optional card)		
Software			
Power Management Software	Power Master		
Physical			
Dimensions	140x191x327mm	151x225x390mm	196x342x416mm
Net Weight	10.1Kg	15.3Kg	21.3Kg

*) Within 50/60Hz±8% by default, the output frequency is synchronization with input mains. User can adjust the acceptable range for output frequency (±1, 2, 3, 4, 5, 6, 7, 8, 9, 10%). When input frequency is out of synchronization window but within 40-70Hz, UPS can stay in line mode and output frequency is regulated at 50/60Hz±0.5% with load derating by40%.

TROUBLE SHOOTING

Problem	Possible Cause	Solution
Warning		
O/P Overload	Your equipment requires more power than the UPS can provide. If the UPS is in Line Mode then it will transfer to Bypass Mode; if the UPS is in Battery Mode it will shut down.	Shut off non-essential equipment. If this solves the overload problem, the UPS will transfer to normal operation.
Battery Mode	UPS is operating on battery power.	Save your data and perform a controlled- shutdown.
Battery Low	UPS is operating on battery power and will be shutting down soon due to extremely low battery voltage.	UPS will restart automatically when acceptable utility power returns.
EPO OFF	Missing the EPO connection.	Check the EPO connection.
Fault		
Over Temperature	High ambient temperature.	1. Shut down UPS. Restart UPS to Check the fan for operation and if the ventilation hole has been covered 2. Contact your dealer for repair.
Output Short	Output short circuit.	1. Shut down UPS 2. Your attached equipment may have problems, please remove them and check again.
Bus Fault	Internal DC bus voltage is too high or too low.	1. Shut down UPS 2. Contact your dealer for repair.

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