

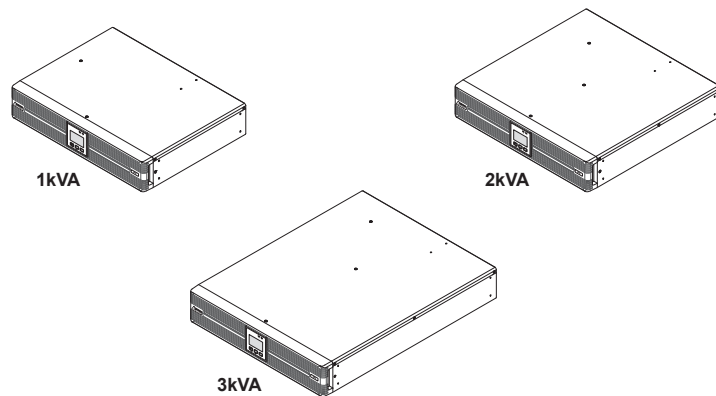
Delta UPS - Amplon Family

R Series, Single Phase
1/ 2/ 3 kVA

Installation & Operation Quick Guide

ENGLISH

1 Product Introduction



The R series UPS, available in 1kVA, 2kVA and 3kVA, is a single-phase on-line Uninterruptable Power Supply (UPS) system, which outputs reliable sine wave power to your electrical equipment. The product is designed with advanced technology and high quality components. Its output power factor is up to 0.9, and efficiency in on-line mode reaches 93% (for 2kVA/ 3kVA). The unit not only protects your electrical equipment by providing secure and reliable uninterruptable power supply but also produces greater electric power efficiency at less cost.

The Amplon Family R series UPS is a light, compact and easy to use solution for IT applications and features rated nominal power capacities of 1kVA, 2kVA and 3kVA. Each kVA model has internal batteries and each model can be connected to the optional Delta external battery pack(s). The nominal rating voltage of the internal batteries is 24V (1kVA), 48V (2kVA) and 72V (3kVA). Please see the table below for details.

Model No.	Power Rating	Remarks
UPS102R2000B0B1 UPS102R2000B1B1 UPS102R2000B0B2	1kVA	With internal batteries (2 pcs 9Ah sealed lead-acid batteries; battery voltage: 24Vdc)
UPS202R2000B0B1 UPS202R2000B1B1 UPS202R2000B0B2	2kVA	With internal batteries (4 pcs 9Ah sealed lead-acid batteries; battery voltage: 48Vdc)



Model No.	Power Rating	Remarks
UPS302R2000B0B1 UPS302R2000B1B1 UPS302R2000B0B2	3kVA	With internal batteries (6 pcs 9Ah sealed lead-acid batteries; battery voltage: 72Vdc)



NOTE:

1. The R Series UPS can connect to the optional Delta external battery pack(s).
2. For more information about the optional Delta external battery pack(s), please contact your dealer.

2 Safety Instructions

• Placement and Installation

1. Read the Quick Guide carefully to ensure correct and safe usage of the product.
2. Install the UPS in a well-ventilated area, away from rain, excess moisture, dust, flammable gas or explosives.
3. To reduce the risk of fire or electric shock, install the UPS in a temperature and humidity controlled indoor area free of conductive contaminants. Please refer to [10 Technical Specifications](#) for operating temperature and relative humidity.
4. Leave adequate space at least 15cm around each side of the UPS for proper ventilation.

• Connection warnings

1. Make sure the UPS is well grounded to avoid a possible risk of current leakage.
2. The installation of protective devices (a DC non-fuse breaker or a DC fuse) is highly recommended when the UPS is connected to the power source and critical loads.
3. The protective devices connecting to the UPS must be installed near the UPS and must be easily accessible for operation.
4. Do not use extension cord to connect the UPS to an AC outlet.
5. Do not plug the UPS input power cord into its own output receptacles.
6. Prior to moving or reconnecting the UPS, disconnect the AC input power and ensure the UPS is powered off; otherwise, hazardous voltage may still exist at the output receptacles of the UPS, which presents a possible risk of current leakage.
7. Please ensure the length of the output power cord is shorter than 10m.

• Usage warnings

1. The UPS is an EMC Class A product, which may cause wireless interference in your living environment. Precautions need to be taken to prevent possible interference.
2. The UPS can be used to power computers and associated peripheral devices, such as monitors, modems, cartridge tape drives, external hard drives, etc.


3. It is strictly forbidden to connect the UPS to:

- regenerative loads
- loads with half-wave controlled rectifier circuit
- loads with asymmetrical current

4. The external slits and openings in the UPS are provided for ventilation. To ensure reliable operation of the UPS and to protect the UPS from overheating, these slits and openings must not be blocked or covered.

5. Before usage, you must allow the UPS to adjust to room temperature (20°C~25°C) for at least one hour.

6. Do not splash any liquid on the UPS and be sure to prevent any foreign material from dropping into the UPS. Do not put beverages on or nearby the UPS.

7. In an emergency, hold and press the  button, and release it after you hear one beep to turn off the UPS. Meanwhile, cut off the mains to shut down the UPS.


8. Never use cleaning liquid or spray to clean the UPS. Before cleaning, make sure you have (1) completely shut down the UPS, (2) unplugged the UPS from the power outlet, and (3) disconnected the unit from the Delta external battery pack(s).

9. Only qualified personnel can perform maintenance service. Do not open or remove the covers or panels of the UPS to avoid high voltage electric shock.

10. You must contact Delta customer service if either of the following events occur:

- Liquid is poured or splashed on the UPS.
- The UPS does not run normally after carefully following the instructions in this Quick Guide.

• Battery Precautions

1. Do not dispose of the battery or batteries in a fire. The batteries may explode. Do not open or damage the battery or batteries. The released electrolyte is harmful to the skin and eyes and may be toxic.
2. Servicing batteries and battery packs should be performed or supervised by qualified service personnel who are knowledgeable in batteries, battery packs and the required precautions.
3. The risk of dangerous voltage is possible when the batteries are still connected to the UPS even though the UPS is disconnected from the mains. Do not forget to disconnect the battery cable to completely cut off the battery source.
4. To ensure battery performance, idle batteries must be fully recharged every three month if the UPS needs to be stored for an extended period of time. Whenever you recharge the batteries (internal and external), please fully charge them until the Battery Level Bar Graph  shown on the UPS's LCD is fully on.
5. Since new batteries often do not provide full capacity after an initial charge, it may be necessary to carry out a number of discharge/ recharge cycles before optimum performance is achieved.

6. Only use the same type of batteries from the same supplier. Never use old, new and different Ah batteries at the same time.
7. A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:
 - Remove watches, rings or other metal objects.
 - Use tools with insulated handles.
 - Wear rubber gloves and boots.
 - Do not lay tools or metal parts on top of batteries.
 - Disconnect the charging source prior to connecting or disconnecting battery terminals.
8. Do not reverse or short circuit the polarity + and – when connecting the batteries because this will destroy the device and constitute a risk of electric shock or fire.

! WARNING:

1. Even though the UPS is disconnected from the mains, a battery may still present electrical shock and short circuit current hazard. Ensure to cut off the battery source prior to the UPS maintenance.
2. When the Delta external battery pack(s) is(are) connected to the UPS, the installation of the protective devices (a DC non-fuse breaker or a DC fuse) is required to protect the unit.

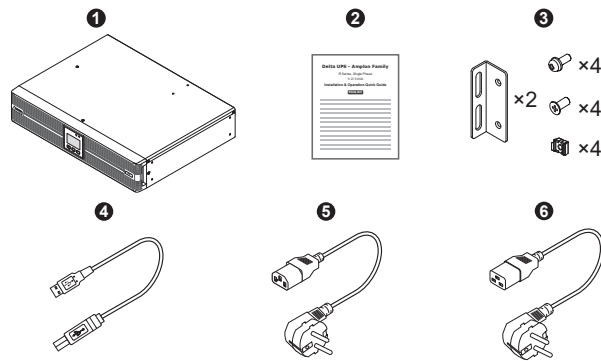
3 Standard Compliance

- CE
- IEC/ EN 62040-1
- IEC/ EN 62040-2 Category C2

4 Packaging List

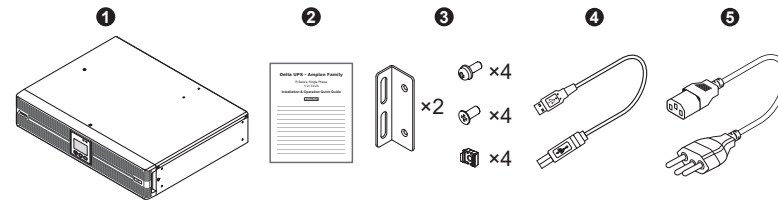
The UPS package contains the following items. Please check if any item is missing. If there is anything missing, please immediately contact the dealer.

• UPS102/ 202/ 302R2000B0B1



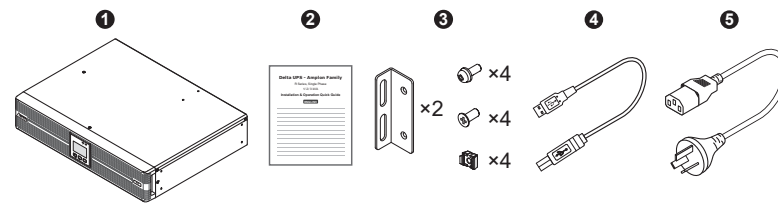
No.	Item	Q'ty	1K	2/ 3K
1	UPS	1 PC	✓	✓
2	Installation & Operation Quick Guide	1 PC	✓	✓
3	Bracket Ear	1 SET	✓	✓
4	USB Cable	1 PC	✓	✓
5	Input Power Cord 10A	1 PC	✓	X
6	Input Power Cord 16A	1 PC	X	✓

• UPS102/ 202/ 302R2000B1B1



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3	Bracket Ear	1 SET	✓	✓
4	USB Cable	1 PC	✓	✓
5	Input Power Cord	1 PC	✓	✓

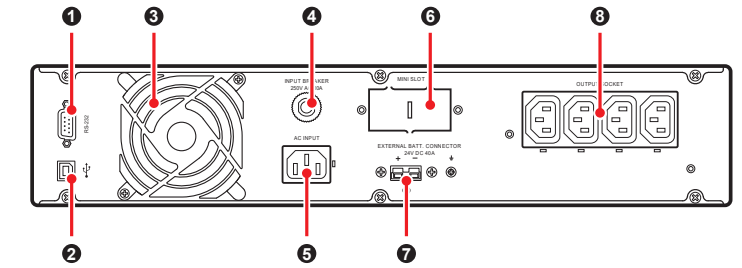
• UPS102/ 202/ 302R2000B0B2



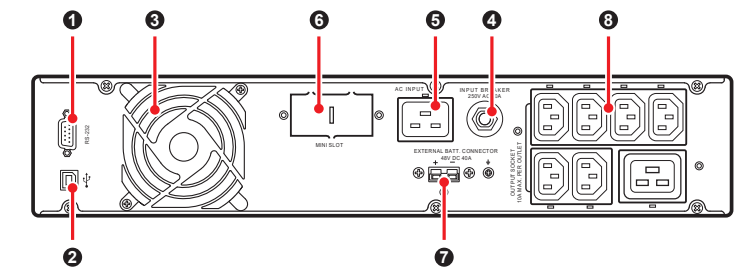
No.	Item	Q'ty	1K	2/ 3K
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4	USB Cable	1 PC	✓	✓
5	Input Power Cord	1 PC	✓	✓

5 Rear Panel

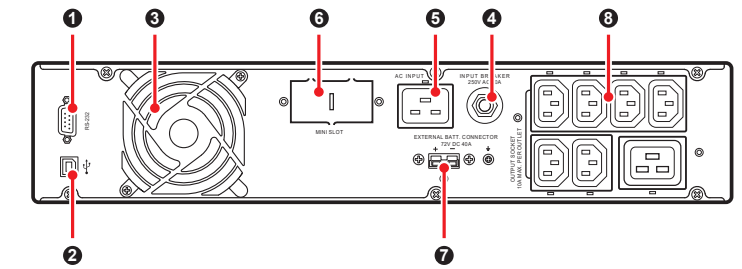
• UPS102R2000B0B1



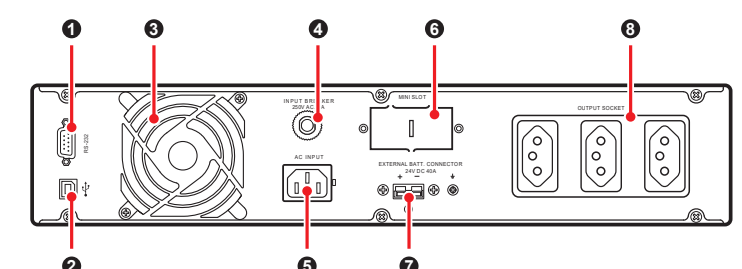
• UPS202R2000B0B1



• UPS302R2000B0B1

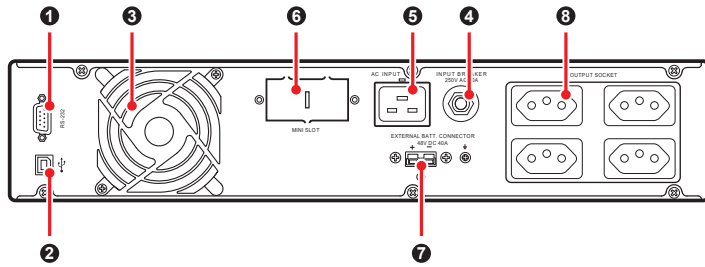


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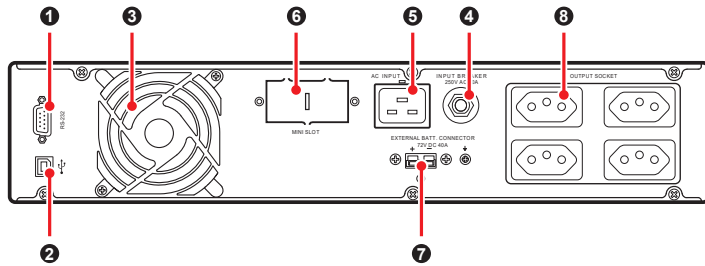


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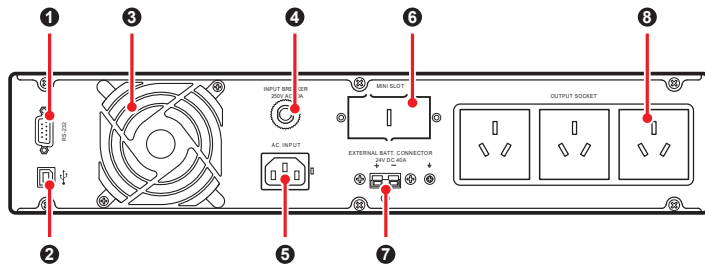
• UPS202R2000B1B1



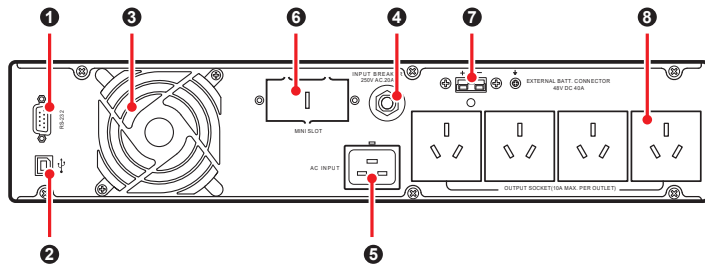
• UPS302R2000B1B1



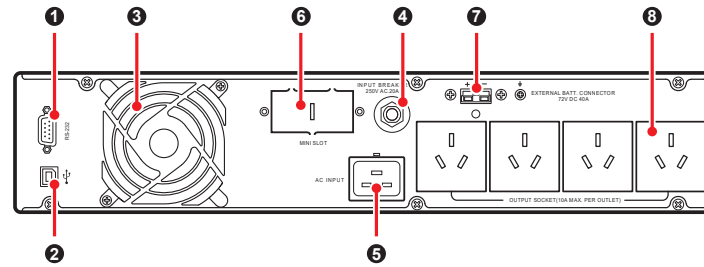
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• UPS202R2000B0B2

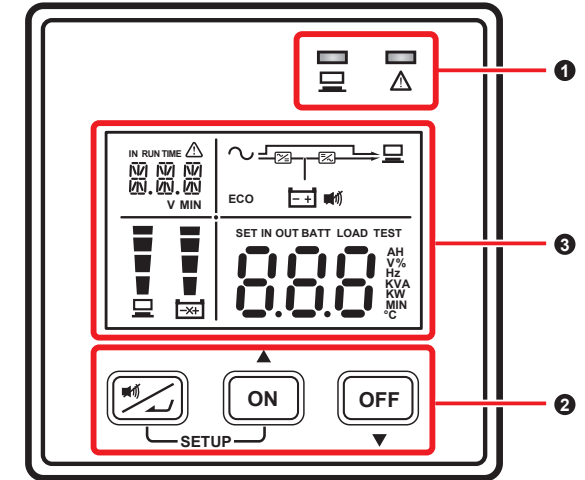


• UPS302R2000B0B2



No.	Item	Functions
1	RS-232 Port	Communicates with a PC, so you can monitor the status of the UPS. (UPSentry 2012 Software is required. Please download it from http://www.deltapowersolutions.com/en/mcis/software-center.php).
2	USB Port	NOTE: Do not use the USB port and the RS-232 port at the same time. If you connect the USB cable to the USB port, the RS-232 port will be disabled right away.
3	Fan	Cools and ventilates the UPS.
4	Input Breaker	Prevents the UPS from damage caused by high current and protects the utility power from further damage when the UPS fails.
5	AC Input (Input Socket)	Connects the UPS to the mains.
6	Mini Slot	Connects a Mini SNMP, a Mini Relay I/O or a Mini MODBUS card (optional) to manage the UPS.
7	External Batt. Connector	Connects the Delta external battery pack(s) to extend back up time (+, -, and \perp terminals are included). 1 kVA : 24Vdc.40A 2 kVA : 48Vdc.40A 3 kVA : 72Vdc.40A
8	Output Sockets	Connect the loads to the UPS.

6 Operational Panel













- 1 6.1 LED Indicators
- 2 6.2 Multi-function Buttons
- 3 6.3 LCD Display
- 3 6.4 7-segment Display
- 3 6.5 16-segment Display


6.1 LED Indicators

Icon(s)	Description
	Indicates the output status. • ON (green): Output; OFF : No output.
	1. ON : The UPS detects an internal fault or an environmental fault. The error code will appear on the 16-segment display. 2. Flashing : When the icon is flashing, it would be accompanied with other icon(s) to indicate the according warning message(s). For example: a. (): There is no battery or battery replacement is required. b. (): Overload. c. (): Charging voltage is too high or too low.

Continue to the Next Page ⇨⇨

6.2 Multi-function Buttons

Icon(s)	Description
	<ul style="list-style-type: none"> • Buzzer Off: When the buzzer is on, press the button for 0.1 second to turn the buzzer off. Please note that the buzzer will automatically turn on when a new alarm occurs. The buzzer can't be manually turned on after it has been muted. <p>In setup mode, the button is used to confirm or change your parameter. For more details, please refer to 6.2.1 Setup Mode.</p>
	<ul style="list-style-type: none"> • Turn On: Press and hold the button for 3 seconds, and release it after you hear one beep. • Battery Test: Only applicable for on-line mode. Press and hold the button for 3 seconds, and the UPS will transfer to run in battery mode to perform a battery test. After the battery test completes, the LCD will show the test result and the UPS will return to on-line mode automatically. <p> NOTE: The UPS will not perform the battery test if the batteries are not fully charged.</p> <ul style="list-style-type: none"> • Scrolling Up/ Increasing Number: Press the button for 0.1 second to go to the previous display or to increase number. In setup mode, press the button for 0.1 second to go to the previous parameter.
	<ul style="list-style-type: none"> • Turn Off: Press and hold the button for 3 seconds, and release it after you hear one beep. • Fault Clear: When the UPS has a fault condition, press and hold the button for 3 seconds, release it after you hear one beep and the UPS will clear the fault condition. <p> NOTE: When the UPS clears the fault condition, it means that the buzzer/ warning message has been turned off. To eliminate the fault detected, please refer to 8 Troubleshooting for relevant solutions.</p> <ul style="list-style-type: none"> • Scrolling Down/ Decreasing Number: Press the button for 0.1 second to go to the next display or to decrease number. In setup mode, press the button for 0.1 second to go to the next parameter.
	<ul style="list-style-type: none"> • Entering into the setup mode Press the  and  buttons at the same time for 3 seconds and the UPS will enter into the setup mode. • Exiting from the setup mode When the UPS is in setup mode, press the  and  buttons at the same time for 3 seconds to exit the setup mode.

-  **NOTE:**
1. When the LCD display gets dim, press any of the above-mentioned buttons to wake up the LCD display and enable each button function.
 2. Only qualified service personnel can perform setup action.
 3. For more information about the setup mode, please refer to **6.2.1 Setup Mode**.

6.2.1 Setup Mode

Please note that only qualified service personnel can perform setup action. In setup mode, you can set up the following items. For some settings, they can't be set in certain operation modes. Please refer to the table below for relevant information.



Setup Item		Standby mode	On-line mode	Bypass mode	Battery mode	ECO mode	Frequency converter mode
The code shown on the 16-segment display	Meaning						
INV ^{*1}	Inverter Voltage Setup	V	X	V	X	X	X
INV ^{*1}	Inverter Frequency Setup	V	X	V	X	X	X
COV	Frequency Converter Setup	V	X	V	X	X	X
STB	Standby Bypass Setup	V	V	V	V	V	V
ECO	ECO Setup	V	V	V	V	V	X
ALM	Overload Alarm Setup	V	V	V	V	V	V
BUZ	Buzzer Setup	V	V	V	V	V	V
BYP	Bypass Range Setup	V	V	V	V	V	V
CAP	Battery Capacity Setup	V	V	V	V	V	V
STG	Battery String Setup	V	V	V	V	V	V
AST	Auto-Start To On-line Setup	V	X	V	X	X	X
PF	Power Factor Setup	V	X	V	X	X	X
RST	Restore Default Setup	V	X	V	X	X	X

-  **NOTE:**
- *¹ Both of the 'Inverter Voltage Setup' and 'Inverter Frequency Setup' use the same code, but you can tell whether the UPS is in 'Voltage' or in 'Frequency' setup by checking the information shown on the 7-segment display.













Continue to the Next Page ⇨⇨

The table below lists each setup item's setting parameters.

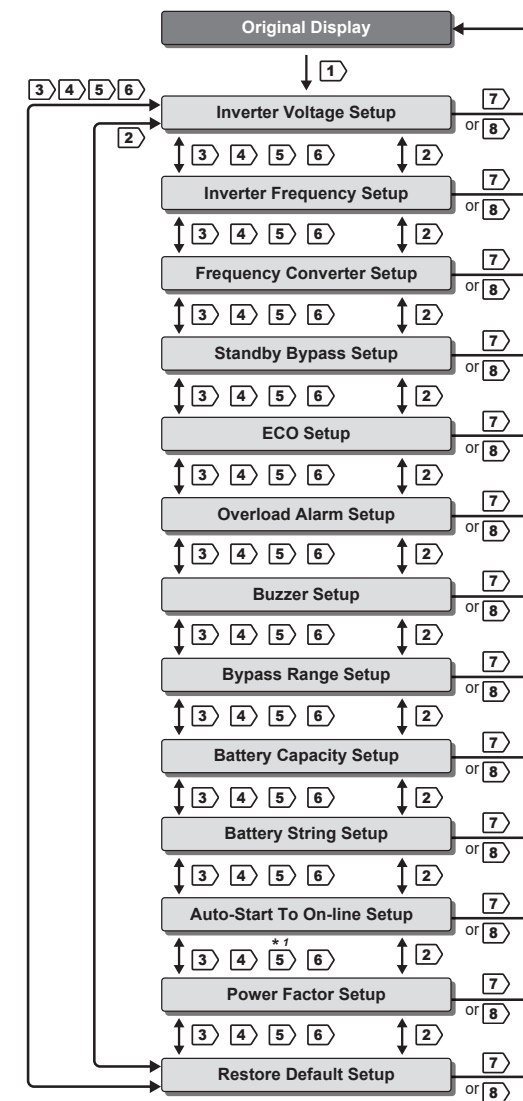
Setup Item		Setting Parameters ^{*1}
The code shown on the 16-segment display	Meaning	
INV	Inverter Voltage Setup	200V, 208V, 220V (Default), 230V, 240V
INV	Inverter Frequency Setup	50Hz (Default), 60Hz
COV	Frequency Converter Setup	OFF (Default), ON ^{*2}
STB	Standby Bypass Setup	OFF, ON (Default) ^{*3}
ECO	ECO Setup	OFF (Default), ON
ALM	Overload Alarm Setup	60%, 70%, 80%, 85%, 90%, 95%, 100%, 105% (Default)
BUZ	Buzzer Setup	ENA (Enable) (Default), DIS (Disable)
BYP	Bypass Range Setup	5%, 6%, 7%, 8%, 9%, 10%, 11%, 12%, 13%, 14%, 15% (Default), HI1, HI2, HI3 ^{*4}
CAP	Battery Capacity Setup	0AH (Default), 5AH, 7AH, 9AH, 12AH, 15AH, 24AH, 33AH, 38AH, 40AH, 50AH, 65AH, 80AH, 100AH, 120AH, 150AH, 200AH ^{*5}
STG	Battery String Setup	0 (Default), 1, 2, 3, 4, 5, 6, 7, 8, 9 ^{*5}
AST	Auto-Start To On-line Setup	OFF (Default), ON ^{*6}
PF	Power Factor Setup	70, 80, 90 (Default)
RST	Restore Default Setup	NA (Default), DEF ^{*7}

- NOTE:**
- ^{*1}: The setting parameters are described in text format; please refer to actual icons or codes shown on the LCD display when performing the setup action.
 - ^{*2}: If the setting is set to 'ON', the UPS will automatically disable the bypass function.
 - ^{*3}: If the setting is set to 'OFF', the UPS will run in standby mode whenever the utility AC power is connected to the UPS or whenever you press the OFF  button in on-line mode.
If the setting is set to 'ON', the UPS will run in bypass mode whenever the utility AC power is connected to the UPS or whenever you press the OFF  button in on-line mode.
In standby mode, the UPS has no output voltage; in bypass mode, the UPS has output voltage. In either standby mode or bypass mode, the batteries will be charged.
 - ^{*4}: The percentage here indicates the bypass tolerance range for the current 'Inverter Voltage' setting. For HI1, the tolerance range is -20% ~ +15%; for HI2, -25% ~ +15%; for HI3, 120Vac ~ 276Vac.
 - ^{*5}: If the UPS is not connected to the Delta external battery pack(s), you don't need to adjust the setting. Just keep the default setting as '0'.
If the UPS is connected to the Delta the external battery pack(s), you have to set up 'CAP' and 'STG' these two items based on the battery capacity and the strings of the Delta external battery pack(s). Only use the parameters of the Delta external battery pack(s) for the battery setting but not those of the UPS's internal batteries. If the parameters of the Delta external battery pack(s) do not match the UPS's built-in setting options, please choose the closest parameters for the battery setting.
 - ^{*6}: This setup item only affects the UPS's operation mode whenever the utility AC power is connected to the UPS.
If the setting is set to 'OFF', the UPS will operate according to the 'STB' setting.
If the setting is set to 'ON', the UPS will start up and run in on-line mode automatically.
 - ^{*7}: When you select 'DEF', each of the parameters will be restored to the default value. If any setting deviates from the default value or is different from what you expect, you may adjust the setting.

• For setup procedures, please refer to the following:

- 1 Simultaneously press the two buttons   for 3 seconds to enter the setup mode.
- 2 Press the  button for 0.1 second or press the  button for 0.1 second to view the previous or the next display.
- 3 Press the  button for 0.1 second to enter the item that you want to set up.
- 4 Press the  button for 0.1 second or press the  button for 0.1 second to increase or decrease the parameter value.
- 5 Press the  button for 0.1 second to confirm your parameter setup.
- 6 After that, press the  button for 0.1 second or press the  button for 0.1 second to go to the previous or the next setup item.
- 7 In setup mode, simultaneously press the two buttons   for 3 seconds, the LCD will exit from the setup mode.
- 8 In setup mode, if you don't press any button for more than 2 minutes, the LCD will exit from the setup mode and go back to the original display automatically.

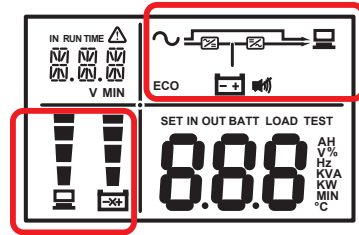
• Setup Mode Flow Chart



Continue to the Next Page ⇨⇨

**NOTE:**

*1 In standby mode or in bypass mode, if you change the 'AST' setting from 'OFF' to 'ON' and execute the step 5 to confirm such change, the UPS will exit from the setup mode and run in 'Auto-Start to On-line' mode right away.

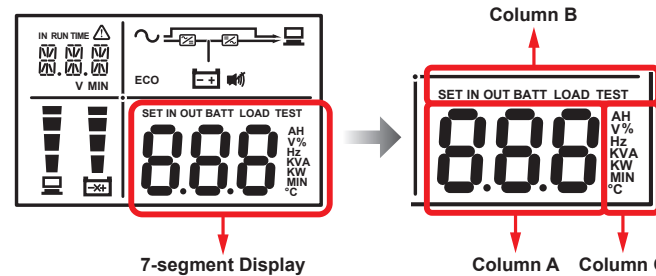
6.3 LCD Display

Icon(s)	Naming	Description
~	AC Icon	Indicates the input power status. 1. ON : Within the acceptable bypass range. 2. Flashing : Out of the acceptable bypass range but sufficient to let the UPS operate in on-line mode. 3. OFF : Out of the acceptable bypass range and not sufficient to let the UPS operate in on-line mode.
☐	Output Icon	Indicates the output status. 1. ON : There is output. 2. OFF : There is no output.
☐	Battery Power Icon	Indicates the battery power status. 1. ON : The battery power is on. 2. OFF : The output is not supplied by the batteries.
~	Standby Mode Graph	Illuminates when the UPS is operating in standby mode.
~	On-line Mode Graph	Illuminates when the UPS is operating in on-line mode.
☐	Battery Mode Graph	Illuminates when the UPS is operating in battery mode.
~	ECO Mode Graph	Illuminates when the UPS is operating in ECO mode.
~	Frequency Converter Mode	Illuminates when the UPS is operating in frequency converter mode (the icon ~ & ☐ will flash while these two icons ~ & ☐ remain on).

Icon(s)	Naming	Description
~	Bypass Mode Graph	Illuminates when the UPS is operating in bypass mode.
ECO	ECO Mode	Illuminates when the UPS is operating in ECO mode. 1. ON : ECO function is enabled and the connected loads are fed by the utility AC power. 2. Flashing : ECO function is enabled and the connected loads are fed by the double conversion.
☐	Buzzer Off Icon	Illuminates when the buzzer is disabled.
☐	Load Level Bar Graph	Indicates the load level status. ON : load level (%) *1. NOTE : When the UPS is overloaded, the warning icon ⚠ will flash and the 7-segment display will flash with a load level value.
☐	Battery Level Bar Graph	Indicates the battery level status. 1. ON (☐): The remaining battery capacity (%) *1. 2. Flashing (☐): Low battery. 3. Flashing (☐): There is no battery or battery replacement is required *2.

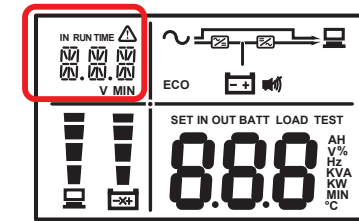
**NOTE:**

- *1 means that:
1%~25%: the 1st segment will illuminate.
26%~50%: the first two segments will illuminate.
51%~75%: the first three segments will illuminate.
76%~100%: all segments will illuminate.
- *2 If you need to replace the batteries or the Delta external battery pack(s), please contact service personnel.

6.4 7-segment Display**NOTE:**

Please read the columns A, B and C together to understand the LCD information, such as input voltage, estimated remaining backup time, etc.

Column A	Meaning	Column C	Meaning
8.8.8	The 7-segment display shows readings or words.	AH	Ampere hour
Column B	Meaning	V	Voltage
SET	Setup mode	%	Percentage
IN	Input	Hz	Frequency
OUT	Output	KVA	kVA
BATT	Battery	KW	kW
LOAD	Load	MIN	Minute
TEST	Test	°C	The UPS's internal temperature

6.5 16-segment Display

Display	Meaning
☐.☐.☐	The 16-segment display shows numbers or error codes.
IN	Input
RUN TIME	Estimated remaining backup time.
V	Voltage
MIN	Minute

Display	Meaning
	<p>Warning icon</p> <ol style="list-style-type: none"> ON: The UPS detects an internal fault or an environmental fault. The error code will appear on the 16-segment display. Flashing: When the icon is flashing, it would be accompanied with other icon(s) to indicate the according warning message(s). <p>For example:</p> <ol style="list-style-type: none"> (): There is no battery or battery replacement is required*1. (): Overload. (): Charging voltage is too high or too low.



NOTE:

*1 If you need to replace the batteries or the Delta external battery pack(s), please contact service personnel.

7 Turn-on/ Turn-off Procedures

Turn-on Procedures	Turn-off Procedures
<p>If you don't connect the Delta external battery pack(s) to the UPS:</p> <ol style="list-style-type: none"> Verify if the UPS's input cord meets with N, L & G of the wall socket. Plug the UPS's input cord into the wall socket. Press and hold the button for 3 seconds and release it after you hear one beep. The UPS starts self-inspection. When the graph appears on the display, the UPS runs in on-line mode. 	<p>If you don't connect the Delta external battery pack(s) to the UPS:</p> <ol style="list-style-type: none"> Make sure all loads connected to the UPS have been completely shut down. Press and hold the button for 3 seconds, and release it after you hear one beep. Disconnect the UPS from the AC power.
<p>If you connect the Delta external battery pack(s) to the UPS:</p> <ol style="list-style-type: none"> Verify if the UPS's input cord meets with N, L & G of the wall socket. Check the '+' and '-' poles of the Delta external battery pack(s) and ensure that wiring is correct. Connect the Delta external battery pack(s) to the UPS. Plug the UPS's input cord into the wall socket. 	<p>If you connect the Delta external battery pack(s) to the UPS:</p> <ol style="list-style-type: none"> Make sure all loads connected to the UPS have been completely shut down. Press and hold the button for 3 seconds, and release it after you hear one beep.

Turn-on Procedures	Turn-off Procedures
<ol style="list-style-type: none"> Press and hold the button for 3 seconds and release it after you hear one beep. The UPS starts self-inspection. When the graph appears on the display, the UPS runs in on-line mode. 	<ol style="list-style-type: none"> Disconnect the UPS from the AC power. Disconnect the UPS from the Delta external battery pack(s).



NOTE:

For more information about the connections of the Delta external battery pack(s), please refer to the *Delta External Battery Pack for Amplon R 1/ 2/ 3kVA UPS Installation & Operation Quick Guide*.

8 Troubleshooting

When you see the following problems occur, please follow the solutions shown below.


A. About the error codes shown on the 16-segment display:

Error Code	Meaning	Possible Cause	Solution
E11	Charger Warning	Charging voltage is too high or too low.	Please contact service personnel.
E12	Fan Fault	Fan is damaged or stuck.	<ol style="list-style-type: none"> Check if foreign matter is stuck in the fan. If yes, please remove it. Please contact service personnel.
E13	Temperature Out of Range	The UPS temperature is out of range.	<ol style="list-style-type: none"> Check whether the UPS has adequate ventilation. Decrease the loads. Check whether the fan runs normally. Clean the filters (if you have installed any).
E14	+/- DC BUS High/ Low	<ol style="list-style-type: none"> There are inductive loads such as transformers connected to the UPS output. Abnormalities are detected in the UPS. 	<ol style="list-style-type: none"> Turn on the UPS after the loads have been connected to the UPS in bypass mode. Please contact service personnel.
E16	Inverter Fault	Abnormalities are detected in the UPS.	Please contact service personnel.
E18	DC-DC Fault	Abnormalities are detected in the UPS.	Please contact service personnel.

Error Code	Meaning	Possible Cause	Solution
E19	Abnormal Output/ Inverter Voltage	Abnormalities are detected in the UPS.	Please contact service personnel.
E21	O/P Short	A short-circuit issue has been detected in output.	<ol style="list-style-type: none"> Check whether the output has a short-circuit issue. Contact service personnel.
E77	Charger Fault	Charger is damaged.	Please contact service personnel.
MBB	MBB Shutdown	The cover of the manual bypass box is removed.	Please contact service personnel.
OVL	Overload Shutdown	The UPS is overloaded.	Decrease the connected loads.
SD0	REPO Shutdown	Emergent shutdown is executed.	After emergent events are eliminated, follow the turn-on procedures to start up the UPS.
SD1	RPO Shutdown	Remote shutdown is executed from dry contact.	After the remote shutdown events are eliminated, follow the turn-on procedures to start up the UPS.
SD2	'Shutdown After' Shutdown	UPS delay shutdown is triggered.	Please contact service personnel.
SD3	'Battery Save' Shutdown	Shutdown is enabled after the UPS has run in battery mode for a specific time.	Please contact service personnel.
SD4	Battery Low Shutdown	The UPS transfers into battery mode due to AC utility abnormality. However, the battery power is almost used up.	<ol style="list-style-type: none"> Check the main AC source and the status of the input power cord. Please contact service personnel.
SD5	'Cold Start Battery Empty' Shutdown	The batteries are damaged or battery lifetime is due.	Please contact service personnel.

Continue to the Next Page ⇨⇨

B. About other problems that might happen:

No.	Problem	Possible Cause	Solution
1	Overload	The UPS is overloaded.	Decrease your connected loads.
2	Battery Missing	Internal battery cables are not connected or not firmly connected.	1. Please contact service personnel. 2. Connect the internal battery cables and connect them firmly.
3	Weak Battery/ Battery Replacement	The batteries are damaged or battery lifetime is due.	Please contact service personnel.
4	Abnormal Input (when the AC icon  is flashing)	The AC input voltage or frequency is out of the acceptable bypass range.	1. Check if the AC input voltage or frequency is abnormal. 2. Please contact service personnel.



NOTE:

If all possible causes are eliminated but the alarm still appears, please contact your local dealer or customer service.

9 Optional Accessories

No.	Item	Function
1	Mini SNMP Card	Monitors and controls the status of the UPS via a network system.
2	Mini Relay I/O Card	Increases the quantity of dry contacts.
3	Mini MODBUS Card	Lets the UPS have MODBUS communication function.
4	Cable & Wire Mount Assembly	Fastens an IEC output cable to prevent the cable from coming off.
5	Tower Stands	Sustain the UPS vertically.
6	Rail Kit	Fixes the UPS in a rack cabinet firmly.



NOTE: For more details, please contact your local dealer or customer service.

10 Technical Specifications

Model		R-1K	R-2K	R-3K
Power Rating		1kVA/0.9kW	2kVA/1.8kW	3kVA/2.7kW
Waveform		Pure Sine Wave		
Input	Nominal Voltage	200*1/208*1/220/230/240 Vac		
	Voltage Range	175 ~ 280 Vac (100% load); 80 ~ 175 Vac (50% ~ 100% load)		
	Frequency	50/60 Hz (± 10 Hz)		
	Power Factor	> 0.99 (full load)		
Input	iTHD	< 3%		
Output	Power Factor	0.9		
	Voltage	200*1/208*1/220/230/240 Vac		
	Voltage Regulation	± 1% (linear load)		
	Frequency	50/60 Hz (± 0.05 Hz)		
Output	vTHD	< 3% (linear load)		
	Overload Capability	< 105%: continuous; 105% ~ 125%: 1 minute; 125% ~ 150%: 30 seconds		
	Cress Factor	3:1		
	Connection Suffix B0B1	IEC C13 x 4	IEC C13 x 6 IEC C19 x 1	IEC C13 x 6 IEC C19 x 1
	Connection Suffix B1B1	Brazilian socket x 3	Brazilian socket x 4	
Connection Suffix B0B2	Argentinian socket x 3	Argentinian socket x 4		
Efficiency	On-line Mode	91%	Up to 93%	

Model		R-1K	R-2K	R-3K
Battery	Battery Voltage	24 Vdc	48 Vdc	72 Vdc
	Backup Time*2 (Internal Batteries Only)	6.5 minutes	7 minutes	7 minutes
	Recharge Time (Internal Batteries Only)	3 hours to 90%		
	Charge Current	1.5A		
Audible Noise*3		< 40 dBA	< 43 dBA	< 43 dBA
Display		LED indicators & LCD display		
Communication Interfaces		MINI Slot x 1, RS-232 Port x 1, USB Port x 1		
Physical	Dimensions (W x D x H)	440 x 335 x 88 mm	440 x 430 x 88 mm	440 x 565 x 88 mm
	Weight	11.5 kg	20.6 kg	27.5 kg
Environment	Operating Altitude	1000 meters (without derating)		
	Operating Temperature	0 ~ 50°C*4		
	Relative Humidity	5% ~ 95% (non-condensing)		



NOTE:

- *1 When the UPS is de-rated to 90% of its capacity.
- *2 When the total load of the UPS reaches 75%.
- *3 If the UPS is running in room temperature and below 75% load capacity.
- *4 When the operating temperature is at 40~50°C, the UPS will be de-rated to 80% of its capacity.
- Please refer to the rating label for the safety rating.
- All specifications are subject to change without prior notice.

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