

# RT Series Battery Pack UL for RT 6 and 10 kVA UPS UL

RT 06E 20-007-120 BPX-B-UL

RT 10E 20-009-120 BPX-B-UL

## Extended Battery Pack

### User Guide



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# IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE INSTRUCTIONS

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This manual contains important instructions that you should follow during installation and maintenance of the Extended Battery Pack (EPB). Please read all instructions before operating the equipment and save this manual for future reference. Only qualified service personnel with knowledge of batteries and the required precautions should perform servicing.

### DANGER



Batteries present a risk of electrical shock or burn from high short-circuit current. The EPB contains **LETHAL VOLTAGES** and has its own energy source (batteries) that will carry live voltage even when not connected to a source of power. Batteries also pose a danger due leakage of hazardous chemicals.

- Remove watches, rings, or other metal objects
- Use tools with insulated handles.
- Wear protective glasses, gloves and boots.
- Do not lay tools or other metal parts on top of batteries.
- Keep unauthorized personnel away from batteries.

Failure to follow these instructions will result in death or serious injury.

### DANGER



Batteries may explode when exposed to open flame.

- Keep sparks and flames away from the batteries.
- Never dispose of batteries in a fire.
- Proper disposal of batteries is required.
- Refer to local codes for disposal requirements.

Failure to follow these instructions will result in death or serious injury.

### WARNING



To reduce the risk of fire or electric shock:

- Install or service the EBP in a temperature and humidity controlled, indoor environment, free of conductive contaminants.
- Ambient temperature must not exceed 40°C (104°F).
- Do not operate near water or excessive humidity (90% maximum).
- Overcurrent protection and disconnect switch must be provided by others.
- Install the EBP so that all wiring is inaccessible to users.
- The maximum number of EBP(s) per UPS is four.

Failure to follow these instructions may result in death or serious injury.

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## Technical Notice

If the EBP requires any type of transportation, consult with the transport company and take the recommended precautions. Always disconnect batteries prior to transportation.

If the EBP must be stored, protect it from excessive humidity and heat.

The EBP should be mounted in an environment where the temperature is within the required specs. Temperature is a major factor in determining battery life and capacity. In a normal installation, the battery temperature is maintained between 15°C and 25°C. Keep batteries away from heat sources.

Typical battery performance data are quoted for an operating temperature between 20°C and 25°C. Operating it above this range will reduce the battery life while operation below this range will reduce the battery capacity.

An unused battery should be recharged every 6 months. Temporarily connect the EBP to AC supply and activate it for the time required for recharging the batteries.

## Extended Battery Packs Introduction

Extended Battery Packs (EBP) are designed for use with the Keatec RT Series 6 and 10 kVA UPS UL series. EBP can be rack mounted in a 19" rack.

Model	Width mm	Height mm (3U)	Depth mm	Approximate Weight kg	Battery Quantity	Battery Nominal	Pack DC V
RT 06E 20-007-120 BPX-B-UL	443	131	585	65	20	12V 7Ah	+/- 120V
RT 10E 20-009-120 BPX-B-UL	443	131	585	71	20	12V 9Ah	+/- 120V

The RT 06E 20-007-120 BPX-B-UL module includes:

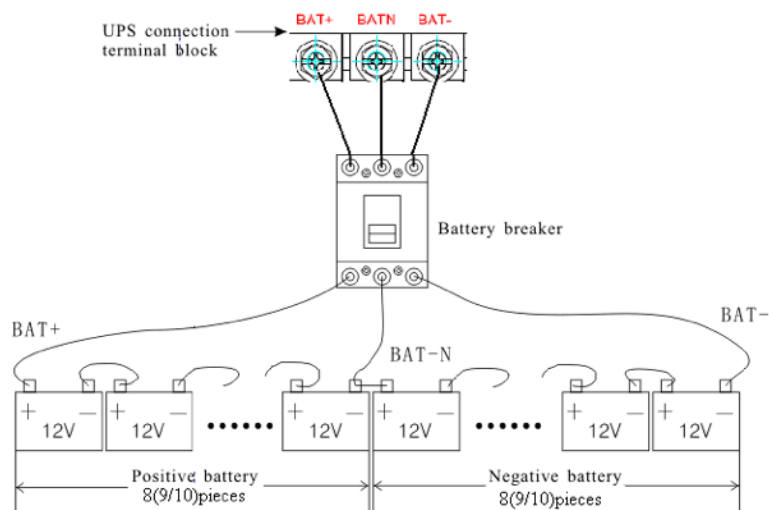
No.	Name	Specification	PCS
1	Cable 1#	Black wire 1015 10AWG 101mm 250TC*2	14
2	Cable 2#	Black wire 1015 10AWG 250mm 250TC*2	1
3	Cable 3#	Black wire 1015 10AWG 420mm 250TC*2	1
4	Cable 4#	Black wire 1015 10AWG 600mm 250TC+OI5.5-5	1
5	Cable 5#	Black wire 1015 10AWG 650mm 250TC*2	2
6	Cable 6#	4wires black 1015 12AWG 150mm*2/200mm*2 OI14-5+P30*4	1
7	Cable 7#	Red wire 1015 10AWG 550mm 250TC+OI5.5-5	1
8	Cable 8#	4wires Red 1015 12AWG 150mm*2/200mm*2 OI14-5+P30*4	1
9	Cable 9#	4wires Yellow 1015 12AWG 150mm*2/200mm*2 OI14-5+P30*4	1
10	Cable 10#	2wires black 1015 10AWG 410/100mm*2 250TC*2+BN8+ OI5.5-5	1
11	Breaker	IELHK111-71333-1-V 3P 50A/300Vdc 2KA AIRPAX UL certified	1
12	Enclosure	W443*H131*D585mm	1
13	Battery	VRLA type 7Ah 12V	20

The RT 10E 20-009-120 BPX-B-UL module includes:

No.	Name	Specification	PCS
1	Cable 1#	Black wire 1015 10AWG 101mm 250TC*2	14
2	Cable 2#	Black wire 1015 10AWG 250mm 250TC*2	1
3	Cable 3#	Black wire 1015 10AWG 420mm 250TC*2	1
4	Cable 4#	Black wire 1015 10AWG 600mm 250TC+OI5.5-5	1
5	Cable 5#	Black wire 1015 10AWG 650mm 250TC*2	2
6	Cable 6#	4wires black 1015 12AWG 150mm*2/200mm*2 OI14-5+P30*4	1
7	Cable 7#	Red wire 1015 10AWG 550mm 250TC+OI5.5-5	1
8	Cable 8#	4wires Red 1015 12AWG 150mm*2/200mm*2 OI14-5+P30*4	1
9	Cable 9#	4wires Yellow 1015 12AWG 150mm*2/200mm*2 OI14-5+P30*4	1
10	Cable 10#	2wires black 1015 10AWG 410/100mm*2 250TC*2+BN8+ OI5.5-5	1
11	Breaker	IELHK111-71333-1-V 3P 50A/300Vdc 2KA AIRPAX UL certified	1
12	Enclosure	W443*H131*D585mm	1
13	Battery	VRLA type 9Ah 12V	20

### Connection of the Extended Battery Pack to UPS

The UPS uses a positive and negative double battery framework, with 20 batteries in series. A neutral cable is retrieved from the joint between the cathode of the 10<sup>th</sup> battery and the anode of the 11<sup>th</sup> battery. Then the neutral cable, the battery positive and the battery negative are connected with the UPS respectively. The battery sets between the Battery anode and the neutral are called positive batteries and that between neutral and cathode are called negative batteries. The capacity of the batteries must be of the same type and Ah rating. The connection is shown as follows:



## Technical Notice

Factory default setting for RT 6-10 kVA UL battery quantity is 16pcs and for battery capacity is 7AH (charger current 1A). When connecting 18pcs or 20pcs batteries, please re-set the battery quantity and its capacity after UPS starts in AC mode. Charger current should be adjusted automatically according to battery capacity selected. All related settings can be done through LCD panel or monitoring software.

## Replacement of the Batteries Inside the Extended Battery Pack

If it becomes necessary to replace the batteries in the EBP follow the instructions below.



### CAUTION!

Ensure correct polarity of battery string series connections. Inter-tier and inter-block connections are from (+) to (-) terminals. Do not mix old and new batteries; do not mix different capacities or brands.

## Disassemble the Cabinet Shell

Put the battery pack on a level surface, remove the top panel, remove the battery tray top covers and battery holder for easy access, as shown in Fig. 1 & Fig. 2

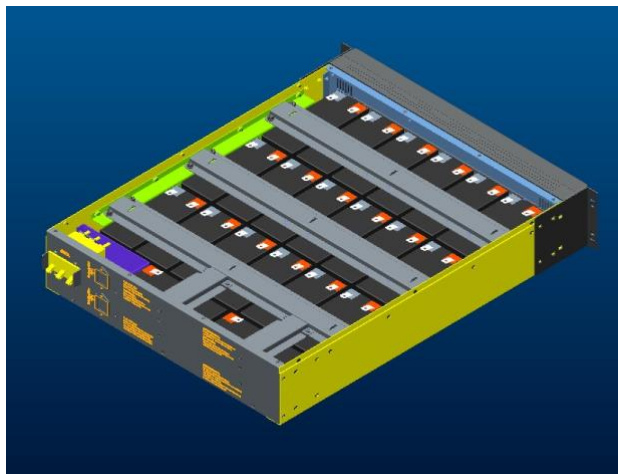


Figure 1

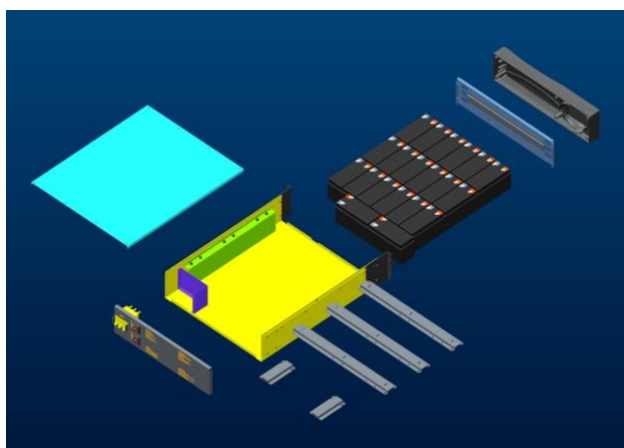


Figure 2

## Battery Installation and Connections

Divide the 20pcs batteries into 2 groups. Each group will have 10 pcs batteries connected in series as BAT+, BAT– as shown in Fig. 3.

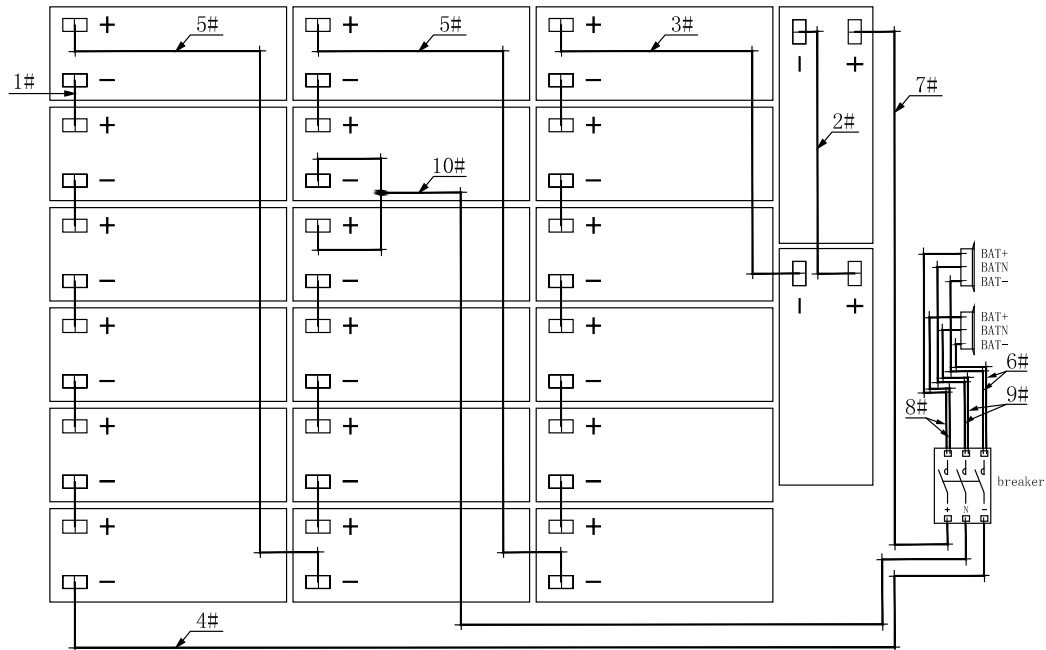


Figure 3

After the battery installation and connections are completed, confirm that BAT+ to BAT- voltages are correct with a multi-meter. Reinstall the covers if the voltages are correct.



### CAUTION

Ensure correct polarity battery string series connections. I.e. inter block connections are from (+) to (-) terminals. Do not mix new and old batteries, different capacities or brands.



### WARNING

Ensure correct polarity of string end connections to the Battery Circuit Breaker and from the Battery Circuit Breaker to the UPS terminals. i.e. (+) to (+) / (-) to (-). **Do not connect these links and do not close the battery circuit breaker unless authorized by the commissioning engineer.**