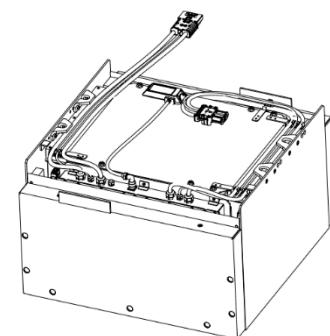
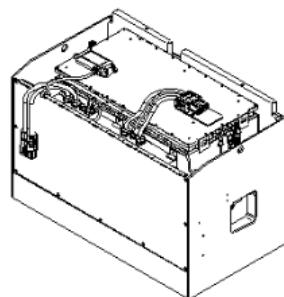
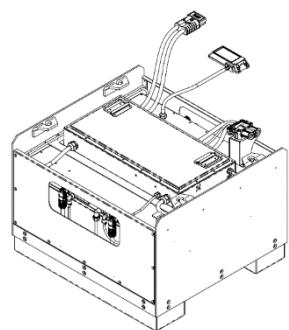
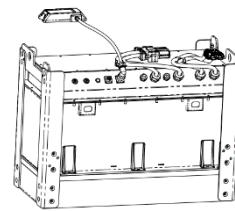
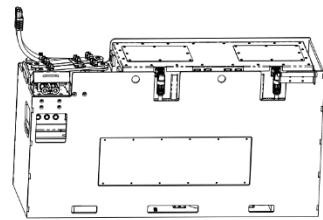




# OPERATOR MANUAL OF LI-ION BATTERY PACK



**Shanghai Hirano Environmental Technology Co.,Ltd**



## Safety Precautions

please observe

### ■ Safety precaution

The instructions of the following safety symbols are important.

Make sure to read and follow them carefully.

Failure to do so may lead to accidents, injuries, or death.

 <b>DANGER</b>	<b>(DANGER)</b> Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
 <b>WARNING</b>	<b>(WARNING)</b> Indicates a hazardous situation that if not avoided, could result in death or serious injury.
 <b>CAUTION</b>	<b>(CAUTION)</b> Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury, or property damage.

### ■ Pictographs

 <b>PROHIBITION</b>	<b>(PROHIBITION)</b> Indicates prohibited acts and operations.
 <b>INSTRUCTION</b>	<b>(INSTRUCTION)</b> Indicates acts and operations you must do.



## DANGER

 PROHIBITION	Do not short circuit, spark this product and expose this product to high heat, flammable and explosive gases.
 PROHIBITION	Do not touch the positive and negative electrode at the same time. In addition, do not operate this product with wet hands. There is a risk of electric shock.
 PROHIBITION	Do not apply excessive vibration, shock or excessive pressure such as turn over, throw or roll this product during transportation, loading or using. There is a risk of fire, smoke, explosion.



## WARNING

 PROHIBITION	Do not transport or storage this product with metal products. Because the metal products are conductive and may cause a large current by a short circuit, there is a risk of heating fire, smoke, or explosion.
 PROHIBITION	Do not disassemble, repair or modify this product. If any alterations become necessary, contact the dealer. It may cause battery fault, leakage of electricity or other injury accident.
 PROHIBITION	Do not splash this product directly with water or other liquids. When water penetrates the battery, it may cause electrical short circuit. It may cause heating, cracking or fire.

 PROHIBITION	Do not charge this product under a circumstance which may cause heating in this product like covered by a blanket. It may cause a heating or fire.
 PROHIBITION	Do not connect the charging/discharging plug to this product or the charger when the connection is abnormal. Do not connect the plug to the positive and negative electrodes in opposite directions. it may cause overheating or electric shock.
 PROHIBITION	Do not unplug the charging/discharging plug during energization. It may cause spark, damage to the product, even accident.
 PROHIBITION	Do not place combustible material on or near the product while charging or discharging. There is a risk of fire or smoke or etc.
 INSTRUCTION	When using this product, please use the ENELORE charger exclusively for this product, and follow the charger operator manual. Using others charger may cause heating, fire, explosion, etc.
 INSTRUCTION	In case of liquid leakage, abnormal odor, sound, smoke, overheating, deformation and other abnormal conditions of battery, please keep this product away from combustibles stop the operation immediately, turn off the power supply, and contact the dealers.
 INSTRUCTION	In case of fire or smoke, turn off the power supply, keep the combustibles away from battery. Put out the fire with plenty of water, or you can use carbon dioxide extinguisher to extinguish fire. If only the wire catches fire, use powder fire extinguisher.
 INSTRUCTION	Hold the charging/discharging plug when unplugging. If you pull the plug too hard, the cable will get damaged and it may cause fire and electric shock.
 INSTRUCTION	If the charging/discharging plug got damage, replace it immediately to avoid short circuit and electric shock.

 INSTRUCTION	Turn off the power supply before regular inspection.
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 CAUTION	
 PROHIBITION	This product is exclusively the power supply system for forklift trucks. Do not use it for other purposes. It may cause battery failure.
 PROHIBITION	Do not open the repair cover without instruction from a professional technician. There is a risk of electric shock and damage to the product.
 PROHIBITION	Do not open the battery pack (the part with a built-in battery module) without permission during regular inspection. There is a risk of electric shock by touching the energized part.
 PROHIBITION	Do not operate the vehicle while charging.
 PROHIBITION	Do not store this product in high temperature or dewy environment (temperature: over 40°C, or humidity above 95%) for a long time (more than one month). It may cause damage to the control electronic parts of the product.
 PROHIBITION	If this product continues to be used in a low power state, the protection function will be activated and the power supply will be cut off. In this case, do not restart the battery. Charge this product before restarting. It may cause over-discharging and the damage cannot be repaired. Also, it may cause heating.
 INSTRUCTION	Charge at the allowable operating temperature (0-45°C). The service life of this product may be affected when battery is charged in an environment above or below the allowable operating temperature.

 INSTRUCTION	The soc <State of charge> of battery is 40% ~ 60% before delivery. Before operation for the first time, be sure to fully charge it.
 INSTRUCTION	If soc <State of charge> is less than 10% (the power indicator only shows one red light), it needs to be charged immediately. If continuing to use, it may cause the battery to suddenly shutdown.
 INSTRUCTION	In case the power indicator displays error, refer to the troubles and trouble-shooting (page11) in this manual. If this does not resolve the error case, please ask the dealer immediately to repair.
 INSTRUCTION	When connecting this product to load apparatus like the light or heater, contact the dealers first. contact dealers first. Overload may cause damage to this product.
 INSTRUCTION	If you did not use the battery and store the battery for a long time (more than 3 months), turn off the battery and charge it to about 50%. After long term storage, regular inspection is needed before use.
 INSTRUCTION	Recommended ambient temperature :0 ~ 1 month: -40°C~ + 60°C, 1 ~ 3 months: -20°C~ 60°C, 3 months or longer:0 ~ 40°C. It is recommended to keep the ambient humidity at 25%-70% RH.
 INSTRUCTION	If soc is less than 10% (the power indicator only shows one red light), long-term storage (more than one month) will cause over-discharge, It may affect the service life of this product and the damage cannot be repaired.
 INSTRUCTION	If there is dust or metal fragments on the surface of battery, clean it with a wet cloth.
 INSTRUCTION	When mounting the battery on the truck, and demounting the battery from the truck, please call for the dealer to do it.

## CONTENTS

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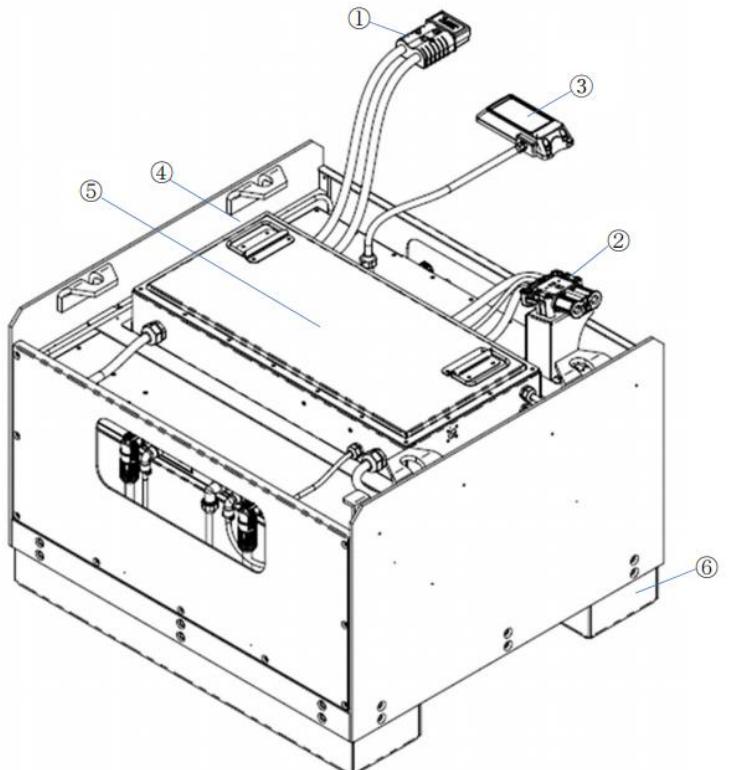
# 1. Name and function of battery parts

1.1 Model A / Model B (for (40-)8/7FB(H) 10-25)

No.	Designation	Function
①	Discharge plug	Connect it with forklift truck when discharging
②	Charge plug	Connect it with charger when charging
③	Power indicator	Display the battery level and fault message
④	Power on/off button	Turn on/off the battery
⑤	Battery control box	Control or check battery internal information
⑥	Counter weight blocks (for High capacity, Super capacity)	Increase battery weight

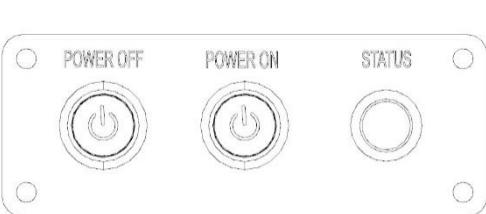


④ Picture of real products

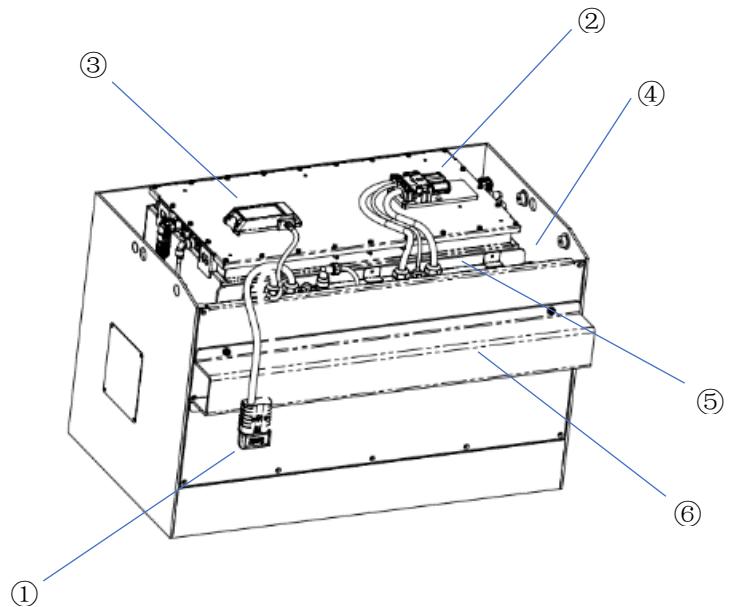


## 1.2 Model C (for 8/7FBE15-20, 8FBN20-25)

No.	Designation	Function
①	Discharge plug	Connect it with forklift truck when discharging
②	Charge plug	Connect it with charger when charging
③	Power indicator	Display the battery level and fault message
④	Power on/off button	Turn on/off the battery
⑤	Battery control box	Control or check battery internal information
⑥	Bracket (for 8FBE20)	Increase battery width

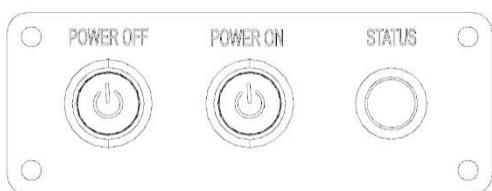


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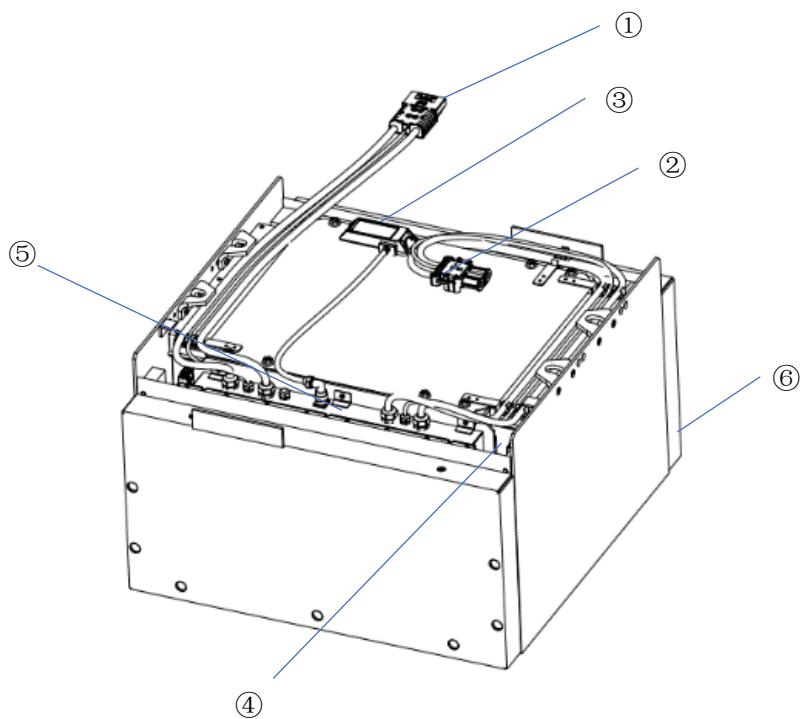


### 1.3 Model E/Model F/Model G (for 8/7FB(H)30-J35, 3TE25, 8FBN30)

No.	Designation	Function
①	Discharge plug	Connect it with forklift truck when discharging
②	Charge plug	Connect it with charger when charging
③	Power indicator	Display the battery level and fault message
④	Power on/off button	Turn on/off the battery
⑤	Battery control box	Control or check battery internal information
⑥	Counterweight (for High capacity)	Increase battery weight

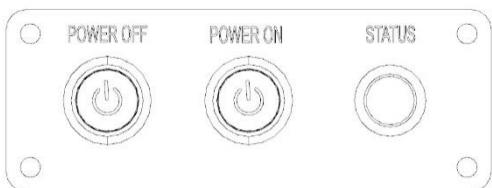


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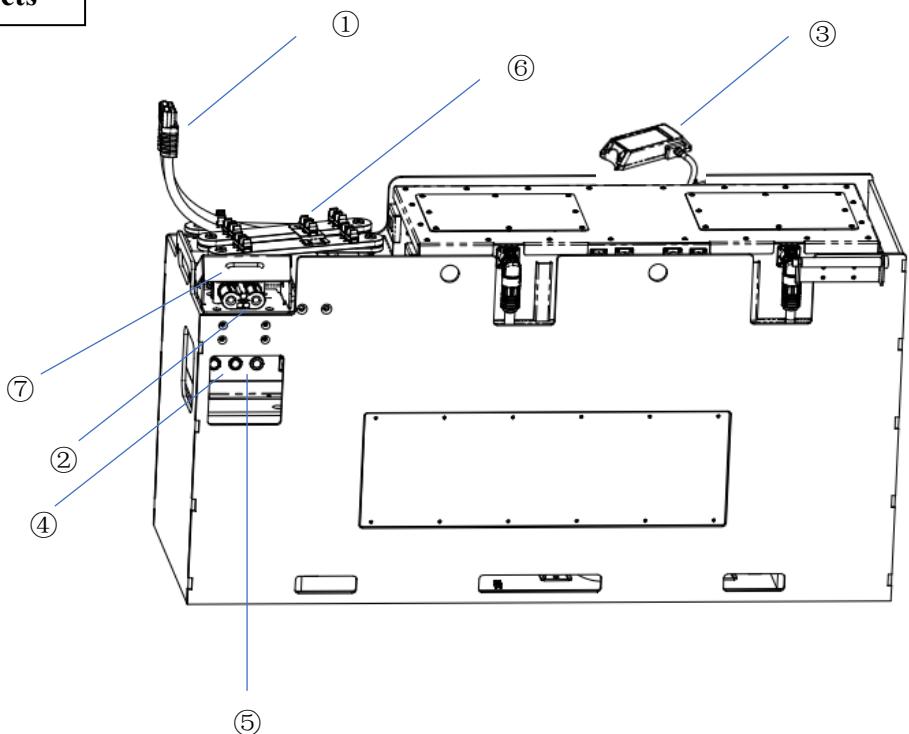


## 1.4 Model H (for 8/7FBR(S) 14-30, 8FBP15, 8FBS (S) 14-18)

No.	Designation	Function
①	Discharge plug	Connect it with forklift truck when discharging
②	Charge plug	Connect it with charger when charging
③	Power indicator	Display the battery level and fault message
④	Power on/off button	Turn on/off the battery
⑤	Battery control box	Control or check battery internal information
⑥	Cable folding device (for STD)	Cable guide function
⑦	Charge plug cover	Increase plug waterproof performance

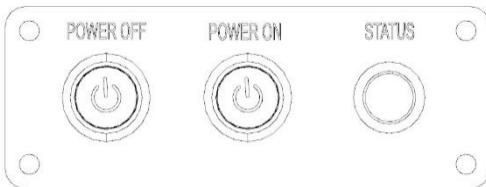


④ Picture of real products

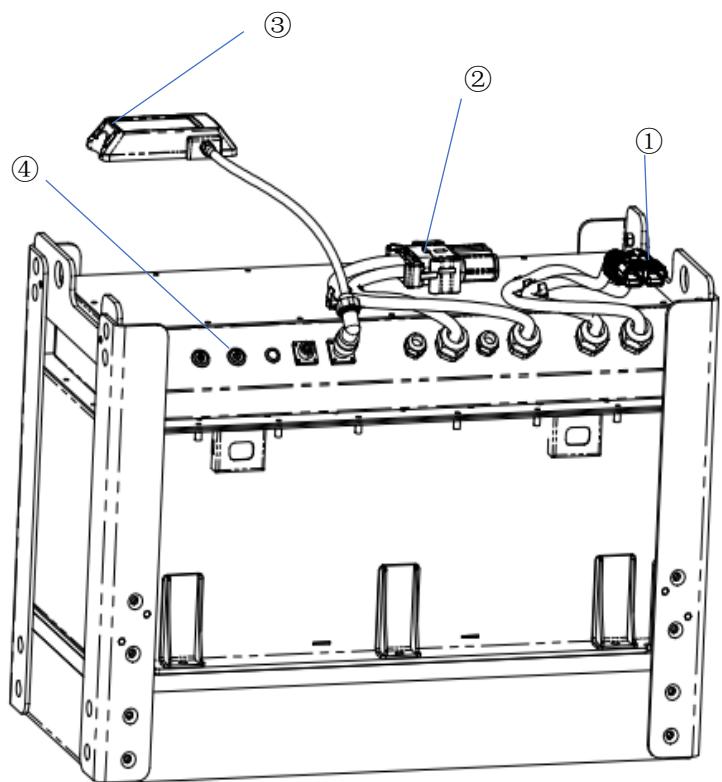


## 1.5 Model J (for 4CBT)

No.	Designation	Function
①	Discharge plug	Connect it with forklift truck when discharging
②	Charge plug	Connect it with charger when charging
③	Power indicator	Display the battery level and fault message
④	Power on/off button	Turn on/off the battery



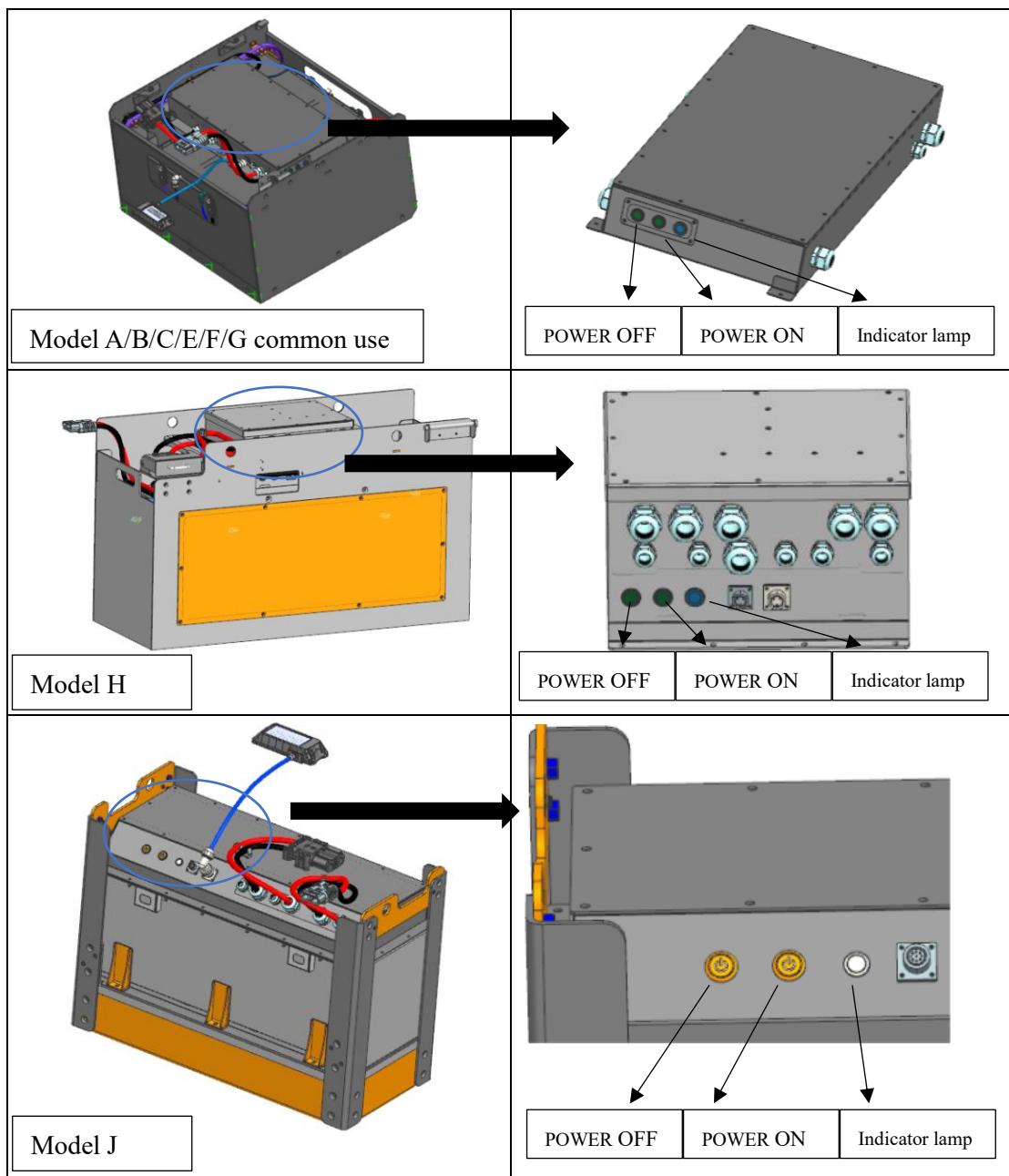
④ Picture of real products



## 2. Method of operation of battery

### 2.1 How to start

- ① Press the power-on button for about 5 seconds until you hear the sound like “bee”.  
(LED light illuminates sequentially on the power indicator.)



- ② Confirm the indicator lamp turns green light, battery boots successfully.

## 2.2 How to shutdown

Press the power off button for about 5 seconds, until the indicator lamp turns off, battery shuts down successfully.

## 2.3 How to charge

Please refer to the operator manual of charger for lithium-ion battery.

### Advice:

When the battery is not used for more than 2 weeks, it will shut down automatically in order to prevent excessive electricity power consumption. If you want to restart the battery, please follow 2.1 How to start ①②.

## Attachment: Instructions of power indicator

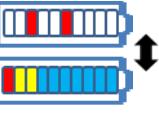
(\*the number of LED lights to represent the battery's power)

LED light	Battery Level	Display
10	Over 95%	
9	Over 85%	
8	Over 75%	
7	Over 65%	
6	Over 54%	
5	Over 43%	
4	Over 32%	
3	Over 21%	
2	Over 10%	
1	Under 10%	

### 3. Troubles and trouble-shooting

No.	Error Code	Display	Content	System's action	Trouble-shooting
1	101		Charging current $\geq 240A$ , lasts more than 3 seconds	Alarm activated, stop charging.	Stop using, contact the dealers
2	102 /105		①Cell voltage $\geq 3.7V$ , lasts more than 3 seconds ②Battery pack voltage $\geq 58.4V$ , lasts more than 3 seconds	Alarm activated, stop charging.	Stop using, contact the dealers
3	103		Cell temperature $\geq 70^{\circ}C$ , lasts more than 3 seconds	Alarm activated, stop charging.	Stop using, contact the dealers
4	106		Charging relay's voltage differ with cell voltage $\geq 5V$ , lasts more than 10 seconds	Alarm activated, stop charging.	Stop using, contact the dealers
5	175		BMU (1) voltage data cannot be collected for more than 10 seconds.	Alarm activated, stop charging/ discharging.	Restart battery
6	176		BMU (2) voltage data cannot be collected for more than 10 seconds.	Alarm activated, stop charging/ discharging	Restart battery
7	177		BMU (3) voltage data cannot be collected for more than 10 seconds.	Alarm activated, stop charging/ discharging	Restart battery
8	178		BMU (4) voltage data cannot be collected for more than 10 seconds.	Alarm activated, stop charging/ discharging	Restart battery
9	179		An error occurred in the data acquisition of the current sensor for more than 10 seconds.	Alarm activated, stop charging/ discharging	Stop using, contact the dealers
10	180		BMS data saving errors occurred 3 times or more in a row.	Alarm activated, stop charging/ discharging	Stop using, contact the dealers
11	181		BMU1 communication errors last more than 10 seconds.	Alarm activated, stop charging/ discharging	Restart battery

12	182		BMU2 communication errors last more than 10 seconds.	Alarm activated, stop charging/discharging	Restart battery
13	183		BMU3 communication errors last more than 10 seconds.	Alarm activated, stop charging/discharging	Restart battery
14	184		BMU4 communication errors last more than 10 seconds.	Alarm activated, stop charging/discharging	Restart battery
15	190		Max cell voltage differ with min cell voltage $\geq 0.6V$ , lasts more than 10 seconds	Alarm activated, stop charging/discharging	Stop using, contact the dealers
16	191		The maximum minimum temperature of the module varies by more than 12 degrees C and more than 10 seconds.	Alarm activated, stop charging/discharging	Stop using, contact the dealers
17	197		In the discharging state, the cell voltage $\geq 3.800V$ , lasts more than 5 seconds.	Alarm activated, stop discharging.	Stop using, contact the dealers
18	198		When charging, detected current larger than 5A for more than 120s.	Alarm activated, stop discharging.	Stop using, contact the dealers
19	201		Discharging current $\geq 700A$ , lasts more than 10 seconds	Alarm activated, stop discharging.	Discharging current below 700A back to normal.
20	202		Battery pack voltage $\leq 40.5V$ , lasts more than 10 seconds	Alarm activated, stop discharging.	Charge immediately
21	203		Cell temperature $\geq 70^{\circ}C$ , lasts more than 3 seconds	Alarm activated, stop discharging.	Stop using, contact the dealers
22	204		Cell temperature $\leq -20^{\circ}C$ , lasts more than 3 seconds	Alarm activated, stop discharging.	After using the battery for some time, when the battery temperature is higher than $0^{\circ}C$ , the fault will be automatically relieved.
23	205		Cell voltage $\leq 2.53V$ , lasts more than 3 seconds	Alarm activated, stop discharging.	Charging immediately

24	206		Discharging relay's voltage differ with cell voltage $\geq 5V$ , lasts more than 10 seconds	Alarm activated, stop discharging.	Stop using, contact the dealers
25	210		When charging, detection discharge relay voltage $\geq 20V$	No alarm, able to charge. (back to normal after the voltage on one side of the discharge relay is less than 20V).	Restart the battery

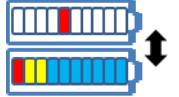
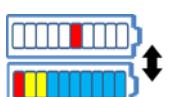
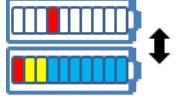
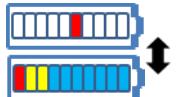
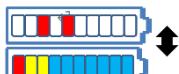
**Attention:**

Error codes are only shown in diagnosis tool system.

When battery breaks down, please take a picture of the power indicator and send it to the dealers.

## 4. Alarms and handling method

Alarm is not a fault, it is the battery use to close to the protection value of the state to send an alarm, can continue to use, but need to pay attention to investigate the cause of the alarm, in order to better safe environment operation for the purpose.

No.	Alarm code	Display	Phenomenon	Handling method
1	104		The battery temperature is below 0°C, LED7 flashing and fully lit screen interactive display; Buzzer alarm	Because the temperature is too low to charge, the heater starts automatically when heating. Charging starts automatically when the battery temperature returns to above 0°C.
2	111		Charging current is close to the limit value; LED5 flashing and fully lit screen interactive display; Buzzer alarm	Can continue to use, but need to check and deal with the reason for the high charging current value.
3	112/115		When the package voltage or unit voltage is close to the limit value, LED5 flashing and fully lit screen display alternately; Buzzer alarm	Can continue to be used, but it is necessary to check and deal with the cause of the high voltage.
4	211		Connecting the promise discharge current and the protection zone approach to the luminary alert, LED4 lights off, interactive display;	Can continue to use, but need to check and deal with the cause of high continuous discharge current.
5	212/215		Because the battery voltage is close to the protection value, LED6 flickers and lights up the screen alternately; Buzzer alarm	Although it can continue to discharge; Find out the cause of the continuous voltage rise, do not output high voltage
6	-		When the battery temperature rises to 45°C during charging, switch to the safe charging mode (0.35C) to suppress the temperature rise.	It can be recharged. When the battery temperature drops, it automatically resumes and turns off the quick-charge mode.

## 5. Regular inspection

- Conduct pre-operation check and regular inspection in accordance with the following list.
- When adjusting or replacing this product, please ask the dealer to do.
- For regular point inspection of chargers, please refer to charger operator manual.

### ■ Regular inspection list

Items	Regular point inspection	
	Once a week	Pre-operation
Damage of cable cover	○	
Damage of charge/discharge plug		○
Plug loose		○
Foreign matter adhering to the plug connection		○
Damage of power indicator's cable	○	

## 6. Specifications

### 6.1 Model A (for 8/7FB(H) 10-18)

Items	Specifications		
Model	LB-48456-003-A0	LB-48456-003-A1	LB-48456-003-A2
Truck model	8/7FB10-18	8/7FBH10-18	8/7FB10-18 with Fork Pocket
Voltage	51.52V	←	←
Capacity	456Ah	←	←
Max current	350A	←	←
Voltage range	40~58.4V	←	←
Operating temperature	-20~40°C	←	←
Use height	Below 3000m	←	←
Dimension	815*740*475mm	←	←
Option	-	-	Fork Pocket
Weight	660Kg	784Kg	745Kg
Other	●BMU    ●Monitoring temperature    ●Battery protection function		

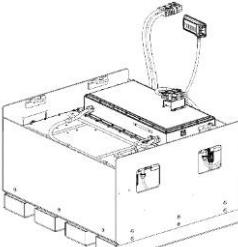
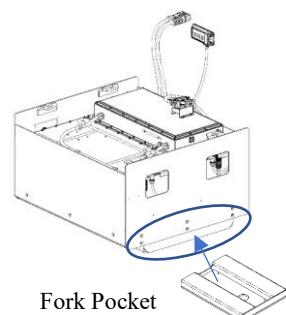
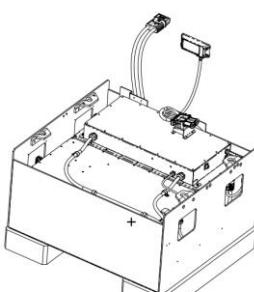
Model	LB-48456-003-A0 (STD Type)	
Drawing		

Model	LB-48456-003-A1	LB-48456-003-A2
Drawing		

## 6.2 Model B (for 8/7FB(H)20-25, 40-8/7FB15-25)

Items	Specifications			
Model	LB-48604-003-B0	LB-48604-003-B1	LB-48604-003-B2	LB-48604-003-B4
Truck model	8/7FB20-25 40-8/7FB15	8/7FBH20-25 with Fork Pocket	8/7FB20-25	40-8/7FB20-25
Voltage	51.52V	←	←	←
Capacity	604Ah	←	←	←
Max current	350A	←	←	←
Voltage range	40~58.4V	←	←	←
Operating temperature	-20~40°C	←	←	←
Use height	Below 3000m	←	←	←
Dimension	905*815*475mm	←	←	←
Option	-	-	Fork Pocket	-
Weight	820Kg	1068Kg	905Kg	1155Kg
Items	●BMU    ●Monitoring temperature    ●Battery protection function			

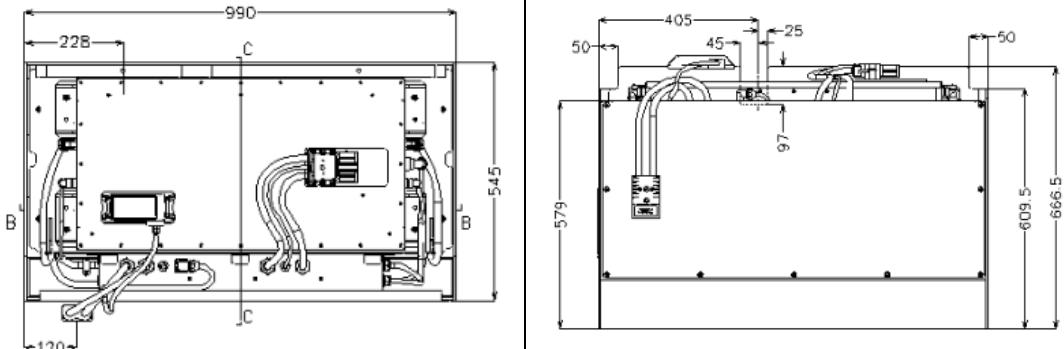
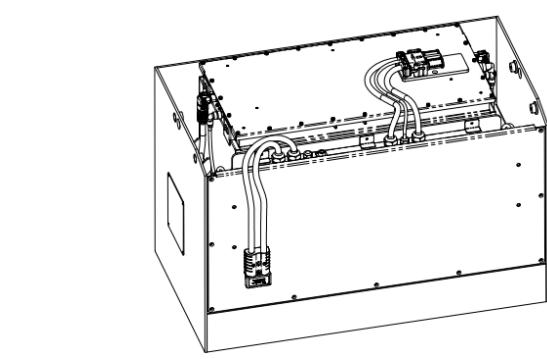
Model	LB-48604-003-B0 (STD Type)	
Drawing	<p>Front View Dimensions:</p> <ul style="list-style-type: none"> <li>Total width: 905 mm</li> <li>Front panel height: 175 mm</li> <li>Front panel depth: 16.5 mm</li> <li>Front panel thickness: 36 mm</li> <li>Side panel height: 815 mm</li> <li>Side panel depth: 403 mm</li> <li>Side panel thickness: 36 mm</li> <li>Bottom panel height: 391 mm</li> <li>Bottom panel depth: 200.5 mm</li> </ul> <p>Side View Dimensions:</p> <ul style="list-style-type: none"> <li>Total width: 417.5 mm</li> <li>Total height: 475 mm</li> <li>Total depth: 57.5 mm</li> <li>Bottom panel height: 140 mm</li> </ul>	

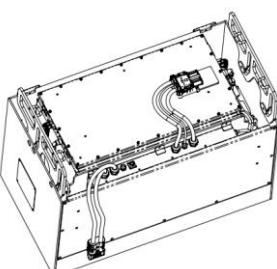
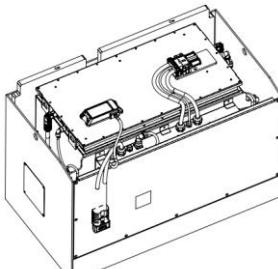
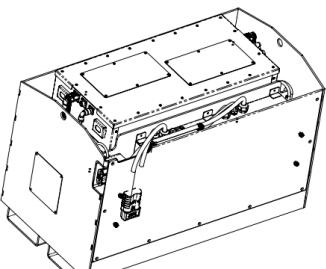
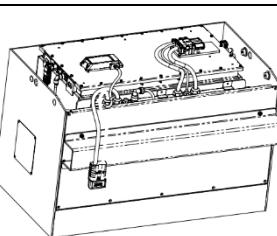
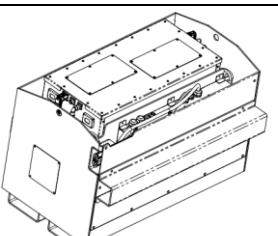
Model	LB-48604-003-B1	LB-48604-003-B2	LB-48604-003-B4
Drawing		 Fork Pocket	

### 6.3 Model C (for 8/7FBE15-20, 8FBN20-25)

Items	Specifications				
Model	LB-48604-103-C0	LB-48604-003-C4	LB-48604-003-C5	LB-48604-003-C7	LB-48604-003-C8
Truck model	8/7FBE15-18 8FBN15-18	8FBN20-25 only for 48V565Ah	8FBE15-20 Including 2t 390Ah	8FBE20	8FBE20
Voltage	51.52V	←	←	←	←
Capacity	604Ah	←	←	←	←
Max current	350A	←	←	←	←
Voltage range	40~58.4V	←	←	←	←
Operating temperature	-20~40°C	←	←	←	←
Use height	Below 3000m	←	←	←	←
Dimension	990*545*609.5mm	←	←	←	←
Option	-	-	Fork Pocket	-	Fork Pocket
Weight	660Kg	805Kg	660Kg	660Kg	660Kg
Other	●BMU	●Monitoring temperature	●Battery protection function		

Items	Specifications				
Model	LB-48456-003-C0	LB-48456-003-C4	LB-48456-003-C5	LB-48456-003-C7	LB-48456-003-C8
Truck model	8/7FBE15-18 8FBN15-18	8FBN20-25 only for 48V565Ah	8FBE15-20 Including 2t 390Ah	8FBE20	8FBE20
Voltage	51.52V	←	←	←	←
Capacity	456Ah	←	←	←	←
Max current	350A	←	←	←	←
Voltage range	40~58.4V	←	←	←	←
Operating temperature	-20~40°C	←	←	←	←
Use height	Below 3000m	←	←	←	←
Dimension	990*545*609.5mm	←	←	←	←
Option	-	-	Fork Pocket	-	Fork Pocket
Weight	660Kg	805Kg	660Kg	660Kg	660Kg
Other	●BMU	●Monitoring temperature	●Battery protection function		

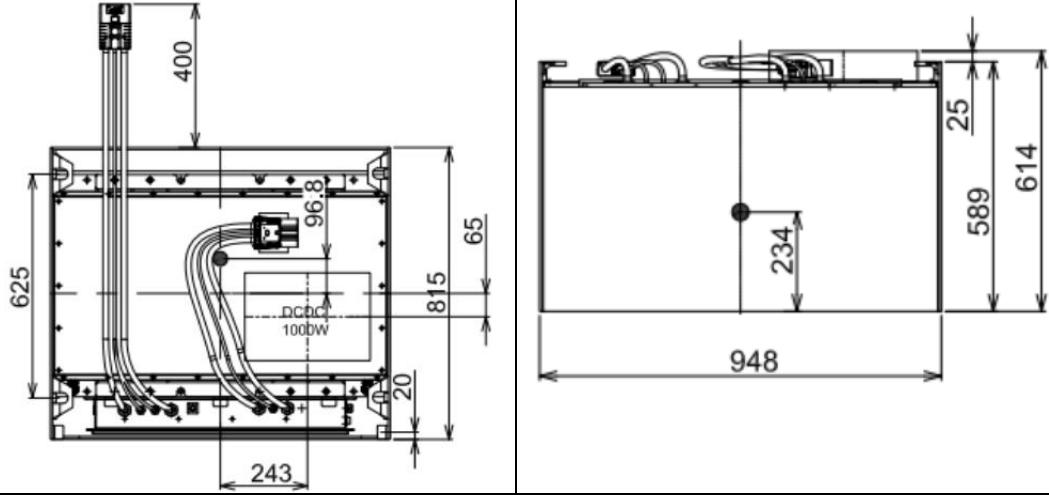
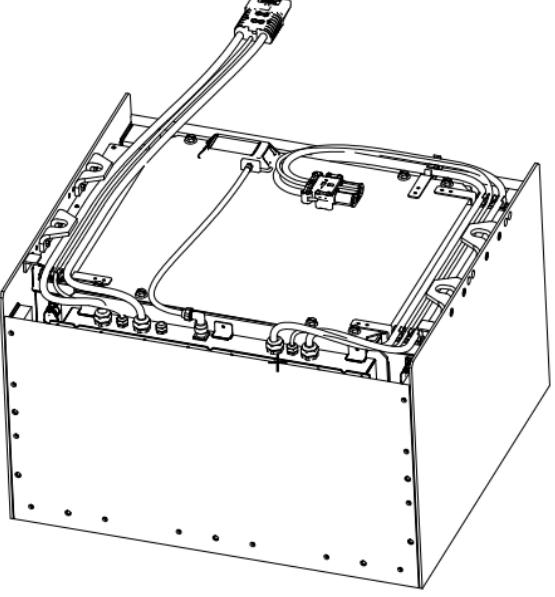
Model	LB-48604-003-C0 (STD Type)	
Drawing	 <p>Front View Dimensions:</p> <ul style="list-style-type: none"> <li>Total Width: 990 mm</li> <li>Left Panel Depth: 228 mm</li> <li>Right Panel Depth: 545 mm</li> <li>Bottom Panel Depth: 120 mm</li> <li>Front Panel Height: 579 mm</li> <li>Side Panel Height: 666.5 mm</li> <li>Side Panel Width: 405 mm</li> <li>Side Panel Depth: 50 mm</li> <li>Front Panel Depth: 45 mm</li> <li>Front Panel Width: 25 mm</li> <li>Front Panel Height: 97 mm</li> </ul>	 <p>3D View of the unit.</p>

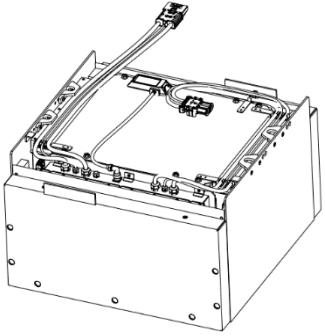
Model	LB-48604-003-C3 LB-48456-003-C3	LB-48604-003-C4 LB-48456-003-C4	LB-48604-003-C5 LB-48456-003-C5
Drawing			
Model	LB-48604-003-C7 LB-48456-003-C7	LB-48604-003-C8 LB-48456-003-C8	
Drawing			

## 6.4 Model E (for 8/7FB(H)30-J35)

Items	Specifications	
Model	LB-80302-003-E0	LB-80302-003-E1
Truck model	8/7FB30-J35	8FBH30-J35
Voltage	80.5V	←
Capacity	302Ah	←
Max current	350A	←
Voltage range	62.5～91.25V	←
Operating temperature	-20～40°C	←
Use height	Below 3000m	←
Dimension	948*815*589mm	←
Option	-	-
Weight	920Kg	1370Kg
Other	•BMU      •Monitoring temperature •Battery protection function	

Items	Specifications	
Model	LB-80604-003-E0	LB-80604-003-E1
Truck model	8/7FB30-J35	8FBH30-J35
Voltage	80.5V	←
Capacity	604Ah	←
Max current	350A	←
Voltage range	62.5～91.25V	←
Operating temperature	-20～40°C	←
Use height	Below 3000m	←
Dimension	948*815*589mm	←
Option	-	-
Weight	920Kg	1370Kg
Other	•BMU      •Monitoring temperature •Battery protection function	

Model	LB-80604-003-E0 (STD Type) LB-80604-003-E0 (STD Type)
	
Drawing	

Model	LB-80302-003-E1 LB-80604-003-E1
Drawing	

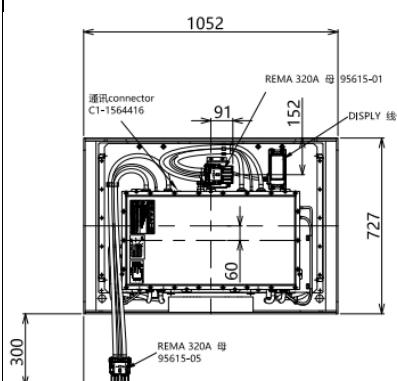
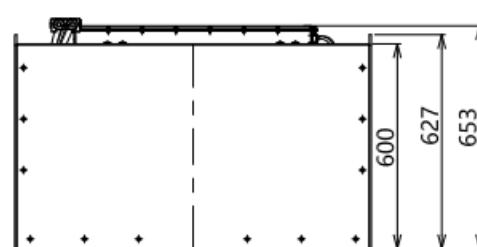
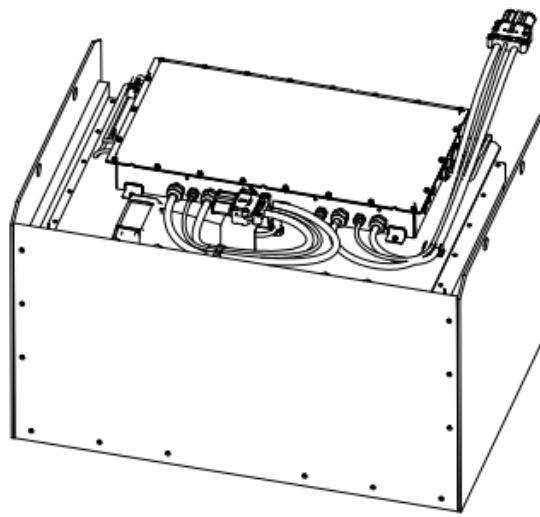
## 6.5 Model F (for 3TE25)

Items	Specifications
Model	LB-80604-003-F0
Truck model	3TE25
Voltage	80.5V
Capacity	604Ah
Max current	350A
Voltage range	62.5~91.25V
Operating temperature	-20~40°C
Use height	Below 3000m
Dimension	1156*708*784mm
Weight	1028Kg
Other	●BMU ●Monitoring temperature ●Battery protection function

Model	LB-80604-003-F0 (STD Type)	
Drawing	<p>日本向け: アンダーソン SBX350 海外向け: REMA320A</p>	

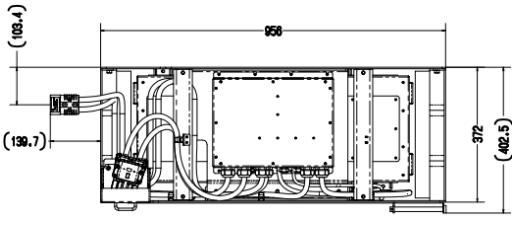
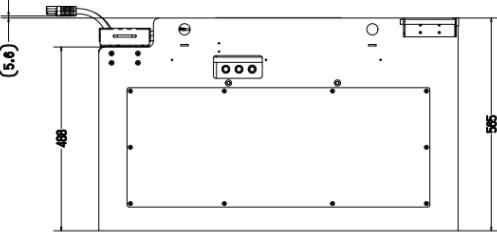
## 6.6 Model G (for 8FBN30)

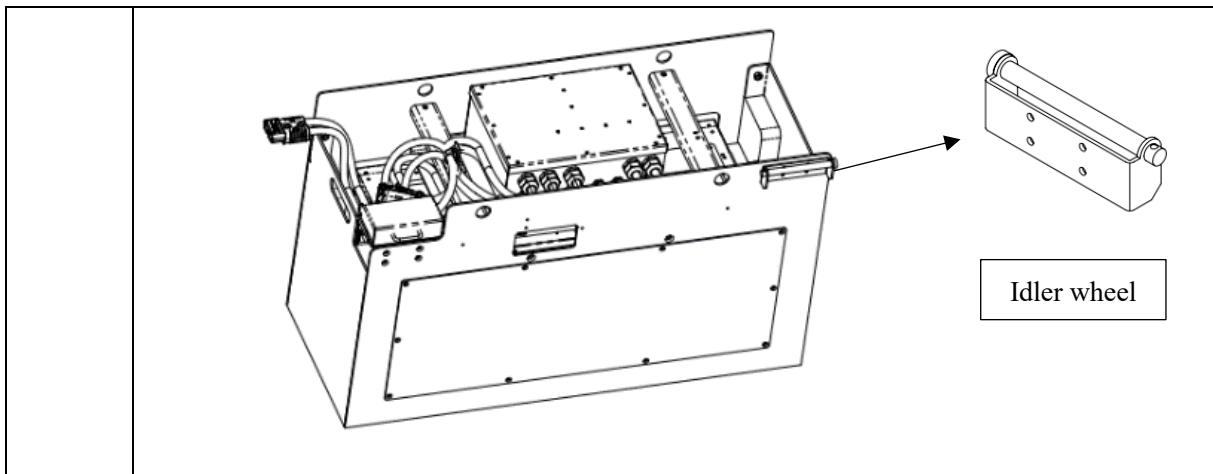
Items	Specifications	
Model	LB-80302-003-G0	LB-80604-003-G0
Truck model	8FBN30	8FBN30
Voltage	80.5V	←
Capacity	302Ah	604Ah
Max current	350A	←
Voltage range	62.5~91.25V	←
Operating temperature	-20~40°C	←
Use height	Below 3000m	←
Dimension	1052*727*627mm	←
Weight	964Kg	964Kg
Other	•BMU    •Monitoring temperature    •Battery protection function	

Model	LB-80302-003-G0 (STD Type) LB-80604-003-G0 (STD Type)	
Drawing	 	
		

## 6.7 Model H (for 8/7FBR(S)14-30, 8FBP15, 8FBS(S)14-18)

Items	Specifications					
Model	LB-48228-003-H0	LB-48302-003-H0	LB-48228-013-H0	LB-48456-003-H0	LB-48228-003-H9	LB-48456-003-H9
Truck model	8/7FBR(S)14-18 8FBP15 8FBS(S)14-18	8/7FBR(S)14-18	8/7FBR(S)20-30	8/7FBR(S)20-30	8/7FBR30	8/7FBR30
Voltage	51.52V	←	←	←	←	←
Capacity	228Ah	302Ah	228Ah	456Ah	228Ah	456Ah
Max current	350A	←	←	←	←	←
Voltage range	40~58.4V	←	←	←	←	←
Operating temperature	-20~40°C	←	←	←	←	←
Use height	Below 3000m	←	←	←	←	←
Dimension	956*372*565m m	←	1150*403*600mm	←	←	←
Option	Idler wheel & charge plug cover	Idler wheel & charge plug cover & Cable folding device		STD	←	
Weight	470Kg	←	700Kg	←	←	←
Other	●BMU ●Monitoring temperature ●Battery protection function					

Model	LB-48228-003-H0 (Reach out) LB-48228-003-H0 (Freezer sample, Reach out)	
Drawing		

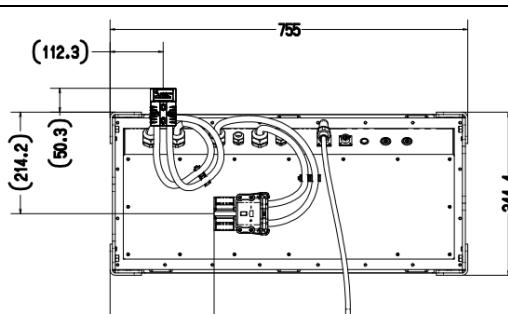
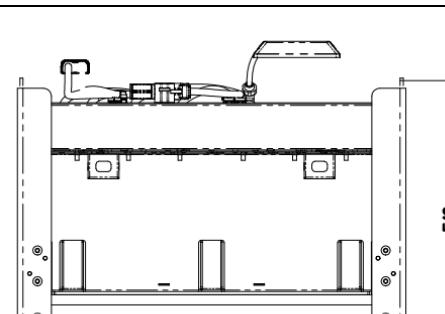
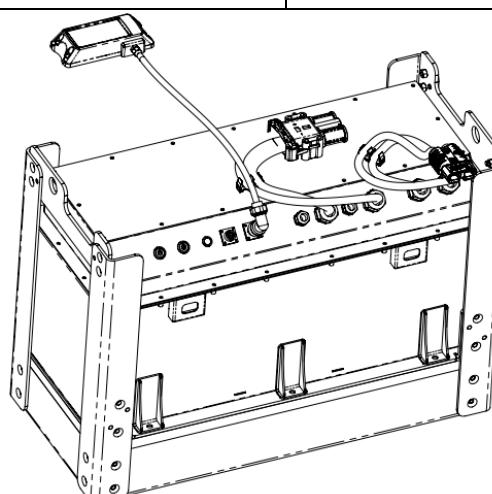


Model	LB-48228-013-H0 (2 ton, Reach Out) LB-48456-003-H0 (2 ton, Reach Out)	
Drawing		

Model	LB-48228-003-H0	LB-48456-003-H0
Drawing		
Model	LB-48456-003-H9	LB-48228-003-H9
Drawing		

## 6.8 Model J (for 4CBT)

Items	Specifications
Model	LB-48228-003-J0
Truck model	4CBT(Y)2-4
Voltage	51.52V
Capacity	228Ah
Max current	350A
Voltage range	40~58.4V
Operating temperature	-20~40°C
Use height	Below 3000m
Dimension	755*344.4*542mm
Weight	355Kg
Other	●BMU   ●Monitoring temperature   ●Battery protection function

Model	LB-48228-003-J0 (STD Type)	
	 	
Drawing		

## 7. Warranty



1. Legitimate users of the "ENELORE" logo and product name of Shanghai Hirano Environmental Technology Co.,Ltd, who use the trademark without permission according to the provisions of the law, will be investigated for legal responsibility.
2. The company is exclusively responsible for the revision, interpretation and explanation of this warranty certificate, and reserves the right to make changes to the warranty without prior notice.
3. Shanghai Hirano Environmental Technology Co.,Ltd will provide warranty services within the warranty period according to the following terms, conditions and restrictions. Unless otherwise stipulated by national laws, Shanghai Hirano Environmental Technology Co.,Ltd is responsible for repairing the products, that is, any defects of the products will be solved by repairing and replacing parts. The written warranty liability stated in this warranty certificate is the only warranty applicable to the product and no liability for incidental damages.

### **Warranty Period**

Shanghai Hirano Environmental Technology Co.,Ltd for the product warranty conditions are as follows:

1. This product is under normal service conditions.
2. Warranty is given only for malfunctions caused by materials and factory manufacturing.
3. The commencement date of Warranty Period is the earlier date of the following:
  - (a) the day of first activation of this product by the user after arrival of this product at the port in the country of the user; or
  - (b) the day on which six months from the day of arrival of this product at the port in the country of the user.
4. Warranty period for the battery cells of the Products:
  - 1) 5 years from the commencement date as provided in section 3 above;
  - 2) 10000 hours of use of the Products.
5. Warranty period for the battery packs consisting of the Products. Three years from the commencement date as provided in Section 3 above.
6. Warranty perishable articles is 1 year, like Charging/Discharging plug, Fuse, Display lights, Power indicator, Power on/off button.
7. After expiration the warranty period, Hirano provide paid service for the product's maintenance

In the event of failure caused by the following reasons, Hirano do not bear the warranty liability:

- The user will lose the right to claim the warranty if the battery underwent usage outside of the specified usage or unauthorized modification of the installation, resulting in failure.
- Damage caused by force majeure factors is not covered by the quality warranty, such as natural disasters.
- Violation of the operation manual or incorrect operation (the contents of the internal storage of the battery would be evidence)
- Failure due to accidents or improper storage conditions.
- Failure caused by the user uncooperating with the advice to suspend usage of product and repair in the wake of potential failure.

## 8. Recycling

The lithium-ion batteries pack cannot be discarded carelessly. If the user needs to scrap the battery pack, please contact us and send it to local designated place by Hirano, Hirano is responsible for free recycling. (The local designated place is updated on official website later.)



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          (+86) 21-59895728(Straight line)  
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