

# User Manual

VER: B

Thank you for purchasing this product. We strongly recommend reading this user manual carefully before using, and keeping this user manual for future reference.

## For Your Safety

Improper using of the Li-ion battery pack may cause heat, smoke, fire, or explosion. Please be sure to keep in mind the following precautions.

### ⚠ DANGER

- Charge with SWIT chargers only.
- Do not use battery in fire or hot places to prevent overheating, cracking and other hazards.
- Do not use battery beyond charge, discharge and storage environment temperature.
- Do not charge the battery in the car or in direct sunlight.
- Do not pierce the battery shell or try to open the shell and decompose the battery.
- Do not squeeze the battery shell which may cause physical damage.
- Do not use housing damaged battery.
- Keep the battery terminals clean and never short-circuit the battery terminals.
- Keep out of the reach of children.

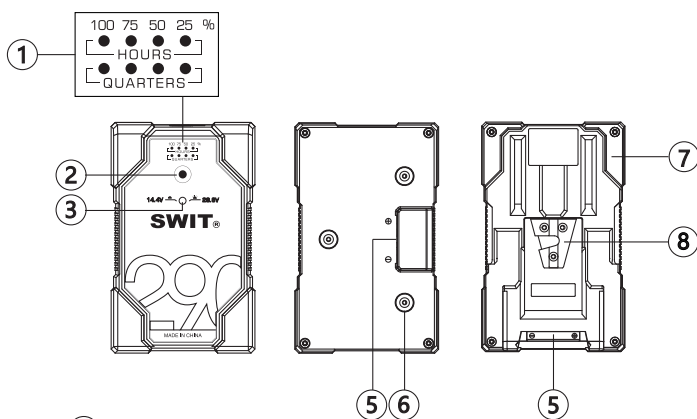
### ⚠ WARNING

- Fully charged battery will discharge naturally and please use it as soon as it gets charged.
- The battery may become warm in use or while being charged. This is normal.
- Store the battery in cool and dry conditions.
- For long time storage, please remove the battery from the equipment.
- Do not use, store or place the battery in an electrostatic area.
- Make sure the input voltage, power consumption of the equipment to be powered meet the battery specifications.

## Features

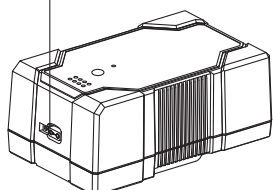
- ◆ 14.4V/28.8V Bi-voltage auto switch
- ◆ Compatible with ALEXA LF/65 high voltage cameras
- ◆ Compatible with high voltage cine lights
- ◆ Compatible with all normal voltage cameras
- ◆ Compatible with normal voltage chargers
- ◆ 6A fast charging support by using SWIT fast charging charger
- ◆ 8-LED remaining time indicators
- ◆ D-tap power output socket
- ◆ Strong 1.5m drop-off proof
- ◆ Multiple circuit protections
- ◆ Enter into the sleep mode after ten days' standing

## Product Appearance



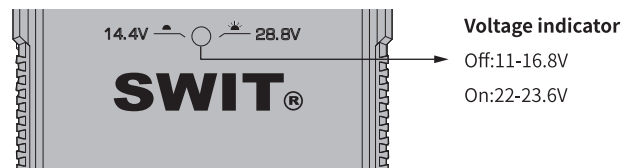
**PB-H290S/A appearance**

- ① LED power indicators
- ② Power check button
- ③ 14.4V/28.8V status indicator
- ④ D-tap power output socket
- ⑤ Power electrodes
- ⑥ Gold-mount shape lock
- ⑦ Protective rubber covers
- ⑧ V-wedge



## Bi-voltage Switching

The battery can output 14.4V(11-16.8V) or 28.8V(22-33.6V) by internal circuit switching.  
When the voltage indicator LED is OFF, the battery is in 11-16.8V system;  
When the voltage indicator LED is ON, the battery is in 22-33.6V system.

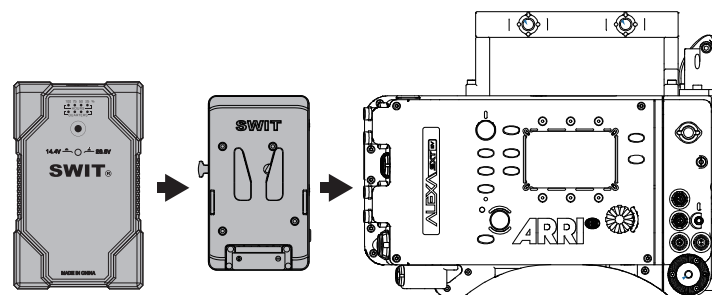


### Working 14.4V (11-16.8V) Mode

In default condition, the voltage is "OFF", means the battery is 14.4V(11-16.8V) system, and can power normal 14.4V equipment and charge by normal 14.4V charge system.

### Working 28.8V (22-33.6V) Mode

To active the 28.8V (22-33.6V) power output, there' re following 2 ways:  
(1) By SWIT particular KA-A20S V-mount plate for ALEXA and AMIRA cameras.

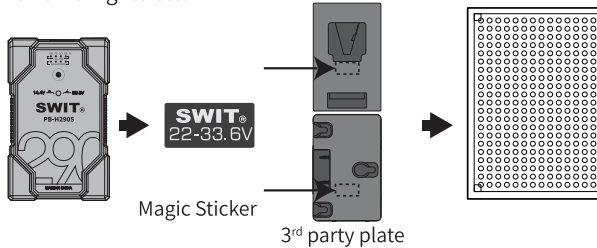


KA-A20S Plate

- ◆ The KA-A20S V-mount plate is particularly designed for ARRI Cameras; Compactible with ALEXA LF, ALEXA 65, ALEXA SXT and AMIRA
- ◆ When the battery is mounted to KA-A20S plate, it will outputs 22-33.6V automatically, to power ALEXA LF/65/SXT and AMIRA cameras. age automatically, to power ALEXA LF/65/SXT and AMIRA cameras.
- ◆ When the battery outputs 22-33.6V, both the battery D-tap socket (only PB-H290S) and the plate D-tap/LEMO sockets will output regular 16V voltage for other camera-top equipment.

## Working 28.8V (22-33.6V) Mode (Continue)

(2) By SWIT "Magic Sticker" on 3<sup>rd</sup> party V-mount/Gold-mount plates, for Cine Lights etc.



**Position:** Below and close to V-wedge holder, and left/right center, or close to the lower middle of Gold-mount plate

- ◆ Attach the magic sticker on the particular position of any standard 3<sup>rd</sup> party V-mount/Gold-mount plates, and mount the battery on, the battery will detect the magic sticker and automatically output 22-33.6V voltage.
- ◆ When battery outputs 22-33.6V, the battery D-tap socket (only PB-H290S/A) will output regulated 16V, while the 3<sup>rd</sup> party V-mount/Gold-mount plates D-tap socket (if they have) will output 22-33.6V.

### ⚠ Caution

- Never attach the Magic Sticker to the battery directly!
- Make sure the Magic Sticker is firmly attached to the V-mount plate, will not fall off from the V-mount plate and will not adhere to the battery.
- Only attach the magic sticker to the battery mount plate of the equipment which can accept 22-33.6V high voltage input!
- Do not attach the Magic Sticker to the V-mount plate of chargers.
- With the magic sticker attached, the battery plate will output 22-33.6V high voltage from D-TAP socket (if it has). Always check the equipment to be powered from D-tap socket and make sure it can accept 22-33.6V input voltage!
- If changing battery mount plate from the equipment, please remove the Magic Sticker to avoid misuse.

### D-tap socket

The battery provides a D-tap power socket on the top side (only PB-H290S/A).

- ◆ When the battery is working 11-16.8V system, the D-tap will output 11-16.8V voltage together with the battery, and Max load 120W/10A.
- ◆ When the battery is working 22-33.6V system, the D-tap will output regular 16V voltage, and Max load 50W/3A.
- ◆ The D-tap socket does not support charging input.

### ⚠ Caution

- Please make sure to check the ⊕ ⊖ polarity of D-tap connector before plug-in.
- Please do not force the D-tap connector to the battery D-tap socket if feeling difficult, and check the D-tap connector shape and polarity again.

### LED Power Indicators

The battery provides 8 LEDs to indicate remaining power percentage and remaining working time.

- ◆ When battery is discharging, press "Power Check" button, the light number of upper 4 LEDs indicates remaining working quarters, calculated by the current load. The LED will flash when remaining time is less than 15min to remind changing battery.
- ◆ When battery is free, press "Power check" button, the upper 4 LEDs will light up, to indicate the remaining capacity percentage 25%, 50%, 75% and 100%.
- ◆ When the battery is charging, the upper 4 LEDs flash constantly, indicates the capacity percentage 25%, 50%, 75%, 100%.

### Charging

- ◆ Charge with SWIT chargers only.
- ◆ Max charging current is 6A.
- ◆ The D-tap socket does not support charging input.
- ◆ The battery should be charged under temperature range of 0-40°C however 10-30°C is recommended for optimizing the charging performance.
- ◆ Fully charged battery will discharge naturally and please use it as soon as it gets charged.

### Discharging

- ◆ The battery has 11-16.8V or 22-33.6V bi-voltage output, please refer to the "Bi-voltage switching" chapter.
- ◆ The battery pack should discharge under temperature range of -20°C ~ -50°C, however -10-40°C is recommended for a better performance.
- ◆ Make sure the total power consumption should not exceed battery max output power, otherwise the internal protection circuit will active and cut off power to protect the battery cells.
- ◆ At low temperature, the battery internal resistance will increase, and will short the discharging time.

### Multiple Circuit Protections

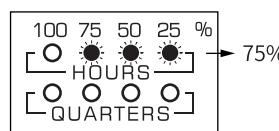
The battery has an MCU to measure and record the real time data. And will cut off power when over-voltage, over-load, high-temperature or low-temperature is detected.

- ◆ For over-load protection, please remove the battery from equipment and it will automatically recover after 2min standing.
- ◆ For overheat protection, place it in a cool place and the battery will automatically recover after cooling.
- ◆ For under-voltage protection, after a long time not using, please charge the battery in time, and the battery will recover by itself.
- ◆ For over-voltage protection, please discharge the battery to reduce the voltage, and the battery will recover by itself.

### Life Cycle

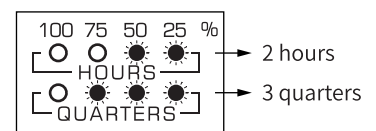
- ◆ The battery life may vary depending on frequency of use, storage and operation environment.
- ◆ The battery life will be reduced if frequently used with full load applications.
- ◆ The battery life is also reduced if stored in fully charged and/or empty conditions for extended periods.

#### In charging or free



75% capacity remains  
(LED display red)

#### In discharging



2h45min working time remains  
(LED display green)

### Specifications

Model	PB-H290S(V mount), PB-H290A(Gold mount)		PB-H196S(V mount), PB-H196A(Gold mount)	
Discharging mode	11-16.8V	22-33.6V	11-16.8V	22-33.6V
Nominal voltage	14.4V	28.8V	14.4V	28.8V
D-tap output voltage	11-16.8V	16V	/	/
Capacity	290Wh,20.1Ah	290Wh,10.05Ah	196Wh,13.6Ah	196Wh,6.8Ah
Max load	Electrodes	250W,20A	250W,10A	200W,16A
	D-tap	120W,10A	50W,3A	/
	In total	250W	250W	200W
Cell chemistry	Li-on			
Max charging current	16.8V/10A		16.8V/7A	
environment	Charging	0~40°C(10~30°C recommended)		
	Discharging	-20~50°C(-10~40°C recommended)		
	Storage	-20~50°C		
Dimension	162X101X69mm		162X101X53mm	
Net weight	1.58Kg		1.2Kg	