

# Powerbank HotSwap QC



## Function and operation

Version 1.1

The long-term power supply of cameras with QC powerbanks via a battery dummy is sufficient for many hours for recording a time-lapse or astrophotography. For extremely long exposures, the capacity of the powerbank used may not be sufficient. Changing the powerbank would inevitably result in the recording being aborted.

The **PB\_HotSwap\_QC** adapter allows changing the powerbank without interrupting the power supply to the camera.

In addition to changing the powerbank without interruption, the **PB\_HotSwap\_QC** also enables an expansion of the powerbank capacity. This is especially intended for long-term shootings where access to the camera is not possible for a longer period of time.

### Function of the **PB\_HotSwap\_QC** adapter:

The **PB\_HotSwap\_QC** uses the Quick Charge (QC3.0) and Power Delivery (PD) function of power banks to provide the voltage required for the camera. To connect to the powerbank, the adapter is equipped with 2 USB-C jacks. For connection to the camera or battery dummy, the **PB\_HotSwap\_QC** adapter has a cable with a DC connector 5.5x2.1mm suitable for most battery dummies.

The **PB\_HotSwap\_QC** is connected between the powerbanks and the camera with the battery dummy.



When the PB\_HotSwap\_QC adapter is connected to a QC3.0 or PD powerbank, it requests a voltage of 8.4V from the PB. This is signaled by a slow blinking of the corresponding LED.

As soon as the powerbank delivers the set voltage, this is indicated by the permanently lit LED on the PB\_HS\_QC adapter.

If the powerbank cannot supply the requested voltage (PB is not QC3.0 capable), the LED flashes quickly. In this error case, the adapter requests the voltage from the powerbank again.

Only when the corresponding LED on the adapter is permanently lit, the voltage is available for the camera and is supplied with power via the PB\_HS\_QC and the powerbank.

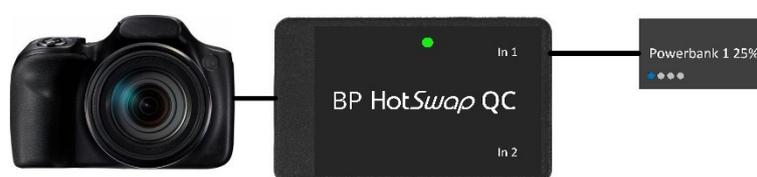
The second USB-C port on the PB\_HS\_QC can be used to connect a 2nd powerbank in parallel to the first. The adapter prevents a direct connection of the two connected powerbanks and supplies the camera with the powerbank that currently provides the higher voltage.

To prevent the PB from switching off when the camera's power consumption is low, the PB\_HS\_QC simulates a permanently connected consumer.

For the connection between PB\_HS\_QC and the powerbank, 2 USB-C to USB-A cables are included. If you want to connect the PB\_HS\_QC to a USB-C port of a PB, you can use a corresponding USB-C cable or attach a USB-OTG adapter to the USB-A connector.

### Change the powerbank with the PB\_HotSwap\_QC Apdapter:

The currently connected powerbank has only 25% remaining charge



A 2nd fully charged powerbank can now be connected in parallel to the second USB-C input of the PB\_HS\_QC adapter. As soon as the LED of the newly connected powerbank lights up permanently...



... the empty power bank can be removed. The new powerbank takes over the supply of the camera without interruption.



### Expansion of the powerbank capacity:

You don't always have access to the equipment at all times, e.g. when shooting animals with a PIR sensor or photo trap. To ensure that the camera is permanently supplied with power, you can also connect 2 powerbanks in parallel to the PB\_HS\_QC adapter. This way the capacity is extended or doubled and the camera is supplied until both PBs are empty. The powerbanks can also have different capacities. If a powerbank with e.g. 20,000mAh and another with 15,000mAh is connected, this results in a total capacity of 35,000mAh.



### Battery charge indicator:

The powerbank supplies the voltage until the bitter end and only then switches off. Thus, the camera always gets the voltage of a fully charged battery. So you can't see the charging state of the PB on the camera. Rather, you have to watch the charge indicator of the powerbank to know when the powerbank has to be changed.

Some PB show the state of charge in % 25%

others usually have 4 LED's ● ◎ ◎ ◎ corresponding to 25, 50, 75 and 100%.

It is recommended to change the PB from a residual charge of approx. 25%. Especially for a PB with LED display, only one LED left means a charge between 0 and 25%.

### Supply of 12V equipment:

The PB\_HS\_QC can also be used to power equipment that requires a voltage of 12V such as a slider or LED lighting. To set the PB\_HS\_QC to 12V, the housing must be opened. To do this, press between the halves of the housing with a knife or fingernail and remove the upper part.

A jumper with the designation **12V** is located between the two USB-C sockets. If this jumper is closed with the red jumper, the **PB HS QC** is set to 12V.



To signal that the PB\_HS\_QC is set to 12V, the LED flashes in a rhythm of 5 seconds after successful connection to the PB.

**Important! Do not use a PB\_HS\_QC set to 12V for the operation of a camera.**

Mounting the PB\_HS\_QC on the tripod:

When using additional equipment such as the PB\_HS\_QC or even a power bank, it is important to attach this equipment securely and stably to the tripod.



With the practical tripod mounting adapter, the PB\_HS\_QC can be easily and quickly mounted on a tripod leg or ball head.



#### Function test:

You should test the function of the PB\_HS\_QC in conjunction with the powerbank(s) before using it. Connect the powerbank(s) to the PB\_HS\_QC and check if the LEDs on the PB\_HS\_QC are permanently on. Shoot the camera via the battery dummy and switch on the camera. Release the camera and / or switch on the Life view. If the camera works as usual, everything is ready for the long-term power supply of the camera with the PB\_HotSwap\_QC.

#### Specification:

Input voltage:	5V -12V USB	2 x USB-C socket
Output voltage:	8.2V (12V)	DC Connector 5.5x2.1mm
Output current:	2.5A max	
Dimensions:	60x37x17mm	(LxWxH)
Cable length:	approx. 0.5 m	

#### Scope of delivery:

PB HS QC Adapter:	1x
USB-C to USB-A cable:	2x 0.5m
Tripod mount:	1x
Velcro tape:	1x



#### Safety instructions:



The **PB\_HotSwap\_QC** is operated at the user's own risk. The user is liable for property damage and personal injury resulting from the operation of the **PB\_HotSwap\_QC**.

The **PB\_HotSwap\_QC** is designed for indoor and outdoor use. When used in damp rooms and outdoors, the corresponding safety regulations must be observed. When operating outdoors, the user is required to provide adequate protection against the weather.