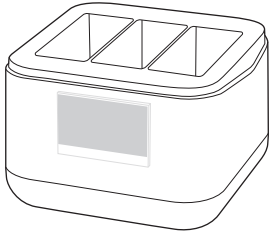


INTELLIGENT FAST CHARGING HUB

for Hero 13 Batteries **Instructions**



SYMIK

Introduction

The Intelligent Fast Charging Hub (hereinafter referred to as "charging hub") is designed to charge three Hero 13 Batteries rapidly, accurately and safely. User can check the battery charge level (SOC) by inserting the battery or pressing the push button once.

The charging hub is equipped with 3 independent 12W Max charger channels with the total power limited to 24W. When the charging hub with batteries inserted is connected to a power adapter, the charging hub will charge the batteries. Depends on the power adapter capabilities, the charging hub is able to find the optimal charging strategies. If the connected power adapter has less than needed power, the intelligent algorithm is capable of distributing power dynamically between the charger channels so that the minimum charging time is needed.

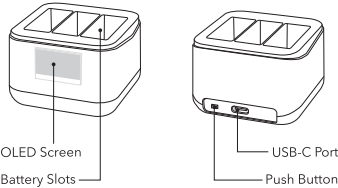
The OLED screen shows key information such as SOC, charging power, voltage, current, source (Power adapter) capabilities, and USB-C voltage. In addition, the charge power can be adjusted from 6W to 12W for each channel. The charge termination SOC can also be adjusted for advanced users.

MUST READ

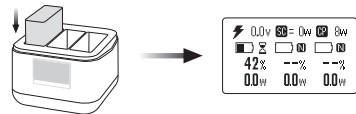
Due to the accuracy limitations of the Hero13 battery fuel gauge, you may see the charging is terminated when the battery reports a State of Charge (SOC) lower than 100% (In rare conditions even as low as 93%). This is because the fuel gauge has errors. If you remove the battery from the charging hub and leave it alone for 2-3 minutes, the battery will adjust the SOC back to 99-100% indicating the battery is fully charged.

This charging hub is equipped with high accuracy charging management chips from Texas Instruments, making sure your batteries are neither over charged nor under charged.

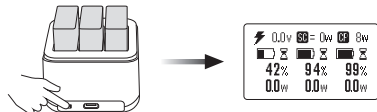
Charging Hub Diagram



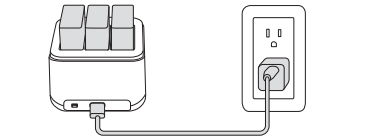
Quick Start Guide



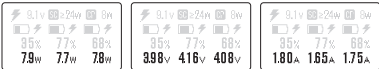
1. Insert a battery, the charging hub will wake up and display the battery info. The charging hub will auto power off in 16 seconds if there is no user input (Push Button press or power source plug in).



2. When there is battery present in the charging hub, press the Push Button will wake up the charging hub as well.



3. Charging will start when there is USB power detected.

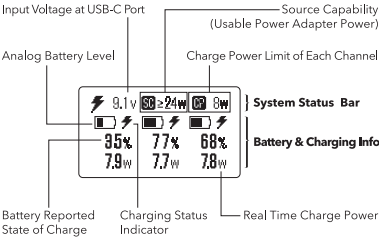


4. Press the Push Button to scroll the charging information.

5. When the charging hub is not plugged into a power source and not in adjust mode, press and hold the Push Button for 4 seconds will power off the charging hub.



OLED Screen View Introduction



Charging Status Legends

No Battery	Battery Idle (Waiting)
Evaluating Charge	Charging
Battery Done (Charging)	Delay Caused By Battery Temperature

Advanced Operations

Charge Termination SOC Adjust

When the charging hub is powered on, press and hold the Push Button for over 2 seconds (but less than 4 seconds) and then release, the stop sign icon will start flashing.

Press the push button to adjust the termination SOC. Press and hold the Push Button to confirm the SOC selection and jump to the charge power option.

If the termination SOC is set to a value other than 100%, the charging will terminate when the battery SOC becomes equal to or higher than the termination SOC.



Charge Power Adjust

When the CP Icon is flashing, press the push button to adjust the charge power of each channel. Please note that the maximum total power of the charger is limited to 24W due to thermal limitations. Therefore, if the charge power is set to 12W each channel, there will only be 2 channels charging simultaneously in some conditions. The default charge power is 8W which provides good charging speed and efficiency.

Press and hold the Push Button to confirm the power selection, save the settings and exit to the main screen.



Beginner Assist Feature

The charging hub is equipped with a beginner assist feature which restores factory default settings after a power cycle (Power off and power on again). However, the algorithm also counts how many times the user saved the settings. If the user saved over 12 times, the algorithm will not restore the default values anymore. Allowing the user to save the Charge Termination SOC and Charge Power settings for next time use. Please note, the algorithm only counts valid save processes meaning if the adjust and save was aborted (timed out or powered off during adjust), the save will not be counted.

Trouble Shooting and Recommendations

1. This charging hub shows more information compared to other chargers; therefore, it is easy for the user to get confused. The user shall understand the limitations of the battery technologies and tolerances of electronics and measurements when interpreting the information. Please note that all the information provided are for rough reference only. Please do not rely on the info to claim battery manufacture warranty etc.
2. It is normal to see the charging hub continues to charge the battery for up to 30 minutes after the battery reports 100% SOC. This is because the battery fuel gauge can be off and the error will be calibrated after the charge is terminated. You can use the battery as soon as it shows 100% SOC or wait till the charge is terminated. Either way will not do any harm to the battery.
3. For the same fuel gauge error reason, you may see the charging is terminated when the battery reports an SOC lower than 100% (In rare conditions even as low as 93%). If you remove the battery from the charging hub and leave it alone for 2-3 minutes, the battery will adjust the SOC back to 99-100% indicating the battery is fully charged.
4. Some aftermarket batteries cannot accept 8W or higher charge power. Adjust the charge power to 6W for successful charging.
5. The battery case stops charging the battery if the battery temperature is not within the range of 0° C and 60° C (32° F and 140° F). The charging speed can be reduced if the battery temperature is lower than 10° C (50° F) or over 45° C (113° F).

Specifications

Operating Temperature:	0° to 40° C (32° to 104° F)
USB-C Input:	5V 3A; 9V 2.7A; (24W Max)
Charge Power (Per Channel):	Up to 12W adjustable
Charging Time at Room Temp:	20% to 90% in 45min @ 8W 0% to 90% in 55min @ 8W 0% to 100% in 85min @ 8W 20% to 90% in 30min @ 12W

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