

SPEKTRUM®

S100 USB C Smart Charger



Instruction Manual Bedienungsanleitung Manuel d'utilisation Manuale di Istruzioni

Scan the QR code and select the Manuals and Support quick links from the product page for the most up-to-date manual information.

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SPMXC2090

NOTICE

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Horizon Hobby, LLC. For up-to-date product literature, visit horizonhobby.com or towerhobbies.com and click on the support or resources tab for this product.

Meaning of Special Language

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

WARNING: Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.

NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.

 **WARNING:** Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. Do not attempt disassembly, use with incompatible components or alter product in any way without the approval of Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

Age Recommendation: Not for children under 14 years. This is not a toy.

 **WARNING:** To reduce the risk of fire or electric shock, carefully follow these instructions.

 **CAUTION:** This appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

- Children should be supervised to ensure they do not play with the appliance.
- Cleaning and user maintenance shall not be performed by children without supervision.

General Charging Warnings



WARNING: Failure to exercise caution while using this product and comply with the following warnings could result in product malfunction, electrical issues, excessive heat, FIRE, and ultimately injury and property damage.

- **NEVER LEAVE CHARGING BATTERIES UNATTENDED DURING USE.**
- **NEVER CHARGE BATTERIES OVERNIGHT.**
- The power supply must deliver power at Safety Extra Low Voltage (SELV).
- Never attempt to charge dead, damaged or wet battery packs.
- Never attempt to charge a battery pack containing different types of batteries.
- Never allow children under 14 years of age to charge battery packs.
- Never charge batteries in extremely hot or cold places or place in direct sunlight.
- Never charge a battery if the cable has been pinched or shorted.
- Never connect the charger if the power cable has been pinched or shorted.
- Never connect the charger to an automobile 12V battery while the vehicle is running.
- Never attempt to dismantle the charger or use a damaged charger.
- Never attach your charger to both an AC and a DC power source at the same time.
- Never connect the input jack (DC input) to AC power.
- Always use only rechargeable batteries designed for use with this type of charger in the correct programming mode.
- Always inspect the battery before charging.
- Always keep the battery away from any material that could be affected by heat.

- Always monitor the charging area and have a fire extinguisher available at all times. Always end the charging process if the battery becomes hot to the touch or starts to change form (swell) during the charge process.
- Always connect the charge cable to the charger first, then connect the battery to avoid short circuit between the charge leads. Reverse the sequence when disconnecting.
- Always connect the positive red leads (+) and negative black leads (-) correctly.
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always charge in a well-ventilated area.
- Always terminate all processes and contact Horizon Hobby if the product malfunctions.
- Charge only rechargeable batteries. Charging non-rechargeable batteries may cause the batteries to burst, resulting in injury to persons and/or damage to property.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.



WARNING: Never leave charger unattended, exceed maximum charge rate, charge with non-approved batteries or charge batteries in the wrong mode. Failure to comply may result in excessive heat, fire and serious injury.



CAUTION: Always ensure the battery you are charging meets the specifications of this charger and that the charger settings are correct. Not doing so can result in excessive heat and other related product malfunctions, which can lead to user injury or property damage. Please contact Horizon Hobby or an authorized retailer with compatibility questions.

Specifications

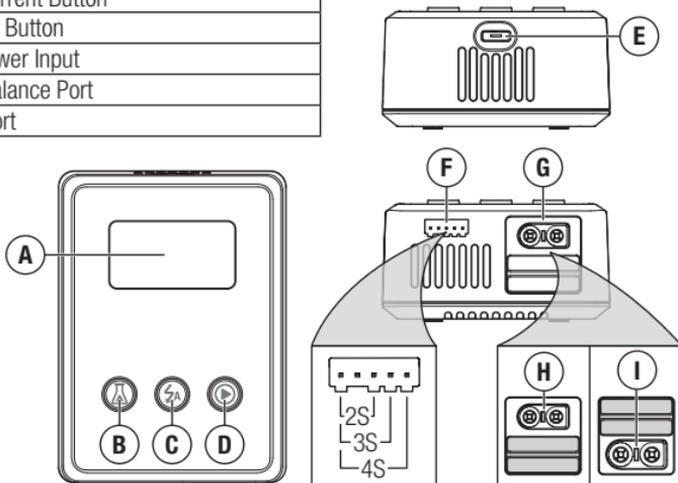
Output Port Connector	IC3 [®] and IC5 [®] (EC3™/EC5™ compatible)
Input Voltage (required power supply, <i>not included</i>)	DC 5-20V
USB-C Input Power	
<i>Minimum</i>	10W
<i>Recommended</i>	65W
<i>Maximum</i>	100W
Charge Current	1, 2, 3 or 6A (selectable)

Rated Battery Capacity	15,000mAh max
Balance Current	0.5A/Cell Max
Balance Cells	2-4S
Supported Battery Types (cell count)	LiFe/LiPo/LiHv (1-4S) Smart NiMH (1-12S)
Display	LED
Operating Temperature	0-40°C (32-104°F)
USB-C to USB-C Cable (included)	2A rated

Diagram

A	LED Display
B	Battery Type Button
C	Output Current Button
D	Start/Stop Button
E	USB C Power Input
F	Battery Balance Port
G	Charge Port

H	IC3 Battery Charge Port
I	IC5 Battery Charge Port



Operating the Charger

Buttons

Operation of the charger is accomplished using the push buttons on the top of the charger.



Battery Type



Output Current



Start/Stop Charging

- Press the Battery Type button to select the correct battery type.
- Press the Output Current button to select the appropriate charge output current.
- Press the Start/Stop button to begin or end the charging cycle.

Charging

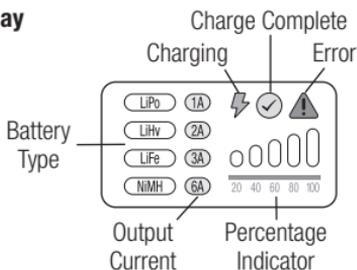


WARNING: Always check charging parameters before initiating the charge process. Charging any battery with improper settings, including charging a battery in the wrong mode, can result in property damage and fire.

Smart Batteries

If charging a Spektrum Smart Battery, the battery type, charge current rate and capacity are set automatically and the charger will begin charging automatically when the battery and the balance lead (if available) are connected to the charger. G1 Spektrum Smart batteries are compatible with G2 Spektrum Smart chargers.

Display



Charge Port Connector Selection

The charging port is capable of charging with an IC3 or IC5 connector.

- Slide the port cover down to use the IC3 connector.
- Slide the port cover up to use the IC5 connector.



IMPORTANT: Do not remove the charging port cover.

1. To power on the charger, connect a recommended USB-C power supply (*not included*) and the included USB-C cable to the input port on the S100 charger. The charger will beep twice to indicate power is on, and the percentage indicator bars will briefly display the input voltage.

Input Voltage		
Indicator Bars	Voltage	Power Supply Wattage
20 glows	5V	10-20W
20-40 glow	9V	21-40W
20-60 glow	12V	41-60W
20-80 glow	15V	61-80W
20-100 glow	20V	81-100W

2. Connect the battery to the appropriate charge port.
3. Connect the battery balance lead, if available, to the charger balance port. Ensure the balance lead is positioned fully to the left side of the port.
4. Press the Battery Type button until the correct battery type is shown on the display.
5. Press the Output Current button until the desired charging current is shown on the display.
6. Press and release the Start/Stop button to begin charging.

During The Charging Process

While the battery is charging the Percentage Indicator shows the battery charge level, as shown by the following table:

Battery Charge Indicator Levels	
Indicator Bars	Charge %
20 flashing	<10%
20 solid	10–20%
20 solid with 40 flashing	20–30%
20–40 solid	30–40%
20–40 solid with 60 flashing	40–50%
20–60 solid	50–60%
20–60 solid with 80 flashing	60–70%
20–80 solid	70–80%
20–80 solid with 100 flashing	80–90%
20–100 solid	90–100%

When the fast charge cycle is complete, the charger will beep twice and the display will show the Charge Complete icon. The charger is balancing the battery cells.

Stopping the charging cycle



WARNING: Always stop the charging cycle or remove power supplied to the charger if you notice any irregularities (like a swollen battery) during charging.

To stop the charging cycle, press and release the Start/Stop button.

When charging is complete:

The charger will beep twice to indicate the fast charging is done. Once the charger is finished balancing the battery's cells it will double beep twice.

1. The main screen will display the Charge Complete icon.
2. Disconnect the battery from the charger.

Charging Errors

Charging errors are indicated by the error icon flashing on the display and one or more percentage indicator bars illuminated to show the specific error. Use the table at the right to find the error, make the necessary changes and restart the charger to clear the error.

Charging Errors	
Indicator Bars	Error
20	Input voltage too low
100	Input voltage too high
20,40	Cell voltage too low
80,100	Cell voltage too high
40	The balance port connection is abnormal
60	Abnormal battery connection
80	Overcurrent or short circuit protection
40,60	Abnormal input voltage
60,80	Over temperature protection
40,80	Overvoltage protection
40,60,80	Lost battery connection
60,80,100	Overheating – Smart battery reports an over temperature event
All on	Other errors

Limited Warranty

What this Warranty Covers – Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship for a period of 1 year from the date of purchase.

What is Not Covered – This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by

anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations or (vii) use that violates any applicable laws, rules, or regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT,

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy – Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability – HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law – These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

WARRANTY SERVICES

Questions, Assistance, and Services – Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services – If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/service-center_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along

with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

NOTICE: Do not ship Li-Po batteries to Horizon. If you have any issue with a Li-Po battery, please contact the appropriate Horizon Product Support office.

Warranty Requirements – For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions

have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

Non-Warranty Service – Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting

the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.

Warranty and Service Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	2904 Research Road Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com 877-504-0233	
	Sales	websales@horizonhobby.com 800-338-4639	
European Union	Horizon Technischer Service	service@horizonhobby.de	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	

FCC Information

Supplier's Declaration of Conformity S100 G2 USB C Smart Charger (SPMXC2090)

 This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

 **CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may

cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC
2904 Research Road
Champaign, IL 61822
Email: compliance@horizonhobby.com
Web: HorizonHobby.com

IC Information

IC: CAN ICES-3 (B)/NMB-3(B)

This Class B digital apparatus complies with Canadian ICES-003.

Compliance Information for the European Union



EU Compliance Statement:

S100 G2 USB C Smart Charger (SPMXC2090); Hereby, Horizon

Hobby, LLC declares that the

device is in compliance with the following: EU Low Voltage Directive 2014/35/EU; EU EMC Directive 2014/30/EU; RoHS 2 Directive 2011/65/EU; RoHS 3 Directive - Amending 2011/65/EU Annex II 2015/863.

The full text of the EU declaration of conformity is available at the following internet address: <https://www.horizonhobby.com/content/support-render-compliance>.

EU Manufacturer of Record:

Horizon Hobby, LLC
2904 Research Road
Champaign, IL 61822 USA

EU Importer of Record:

Horizon Hobby, GmbH
Hanskampring 9
22885 Barsbüttel Germany

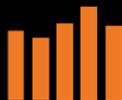
WEEE NOTICE:



This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.



E328



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CN201721563463.4. Other patents pending.