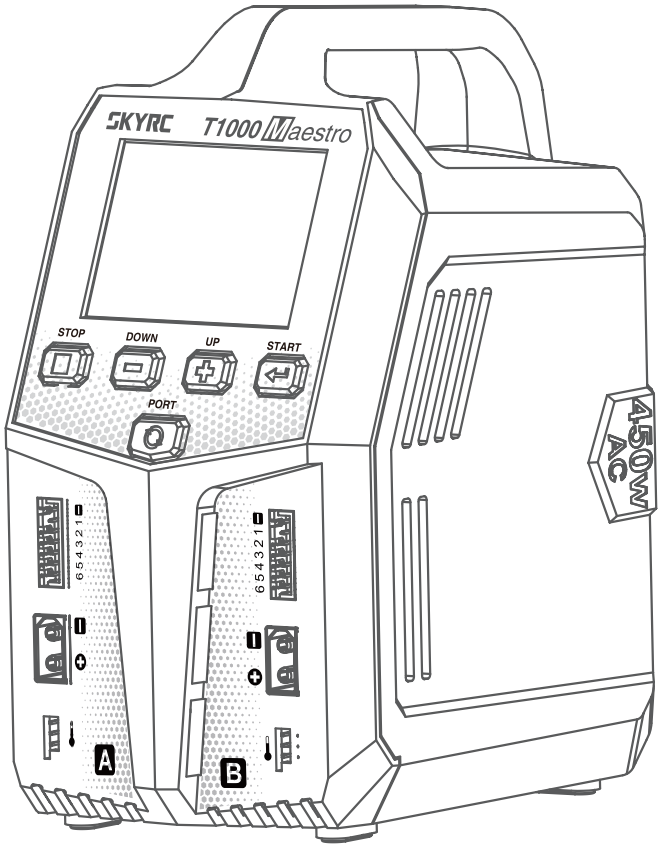
T1000 Maestro

AC/DC Dual Balance Charger/Discharger

Instruction Manual



SKYRC

SK-100182

V1.1

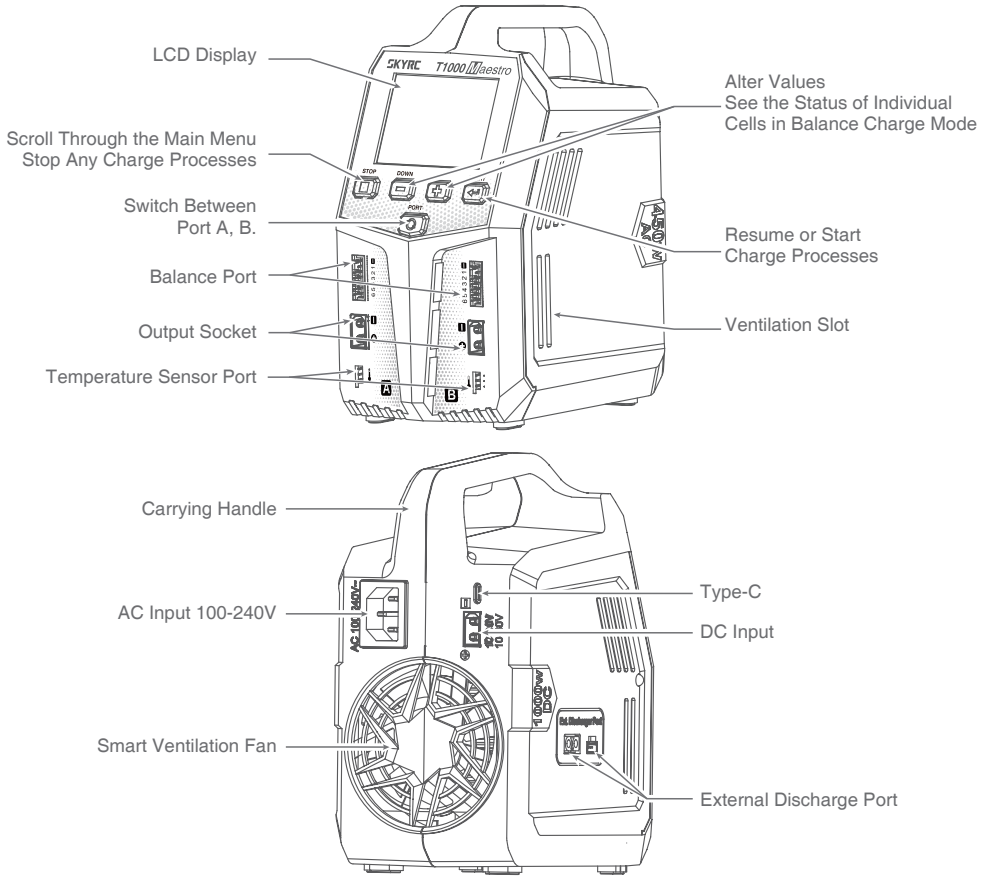
Introduction

Greetings and thank you for your purchase of SkyRC T1000 Dual Balance Charger. As a new member of the T family, T1000 will take you on an exciting and delightful journey in the world of model aircraft and RC car.

T1000 has independent dual ports and supports most batteries in the RC industry. As a dual input charger, the T1000 can be used for various charging scenarios, while the handle increases portability. The meticulously designed interface and its powerful functions make it stands out from the crowd, leaving your choices out of the way.

For first-time use, please read the instructions, warnings, and safety tips carefully. Incorrectly charging a battery or using the charger in the wrong way can cause a fire or explosion.

Wishing you a pleasant experience with this charger.



Specifications

Item	Option	Specification
Model		T1000
Input voltage	AC	100-240V (50/60Hz)
	DC	10-30V
Input current		35A MAX
Charge power	AC	450W MAX
	DC	1000W MAX
Discharge power	Main port	10W
	Balance port	37W MAX
	External discharge	350W MAX
Charge current	LiPo/LiFe/LiIon/LiHV/NiMH/NiCd/Pb	0.1-20.0A
	Parallel	20.0-35.0A
Discharge current	LiPo/LiFe/LiIon/LiHV/NiMH/NiCd/Pb	0.1-2.0A
	External discharge * Working with external discharger BD350 which can be purchased separately.	0.1-40.0A
Balance current	LiPo/LiFe/LiIon/LiHV	1.5A MAX
Battery type	LiPo/LiFe/LiIon/LiHV	1-6S
	NiMH/NiCd	4-15S
	Pb	3S/6S/12S
Operation	LiPo/LiFe/LiIon/LiHV	Balance, Charge, Discharge, Storage, Parallel
	NiMH/NiCd	Charge, Cycle, Re-peak, Discharge
	Pb	Normal, AGM Charge, Cold Charge, Discharge
DC output	Voltage	5-27V
	Current	1.0-15.0A
Size	L*W*H	190.3*153.5*100mm
Net Weight		1370g

Warning

T1000 is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the charger by a person responsible for their safety.

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

- **Never leave charging batteries unattended during use.**
- **Never charge batteries overnight.**
- **Never attempt to charge dead, damaged, or wet battery packs.**
- **Never attempt to charge a battery pack containing different types of batteries.**
- **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 cord has been pinched or shorted.**
- **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.**
- **Always use the charger with the correct charging and discharging program.**
- **Always use only rechargeable batteries designed for use with this type of charger.**
- **Never use the charger on car seats, carpets, or similar surfaces.**
- **Always operate the charger away from flammable and explosive materials.**

Standard Battery Parameters

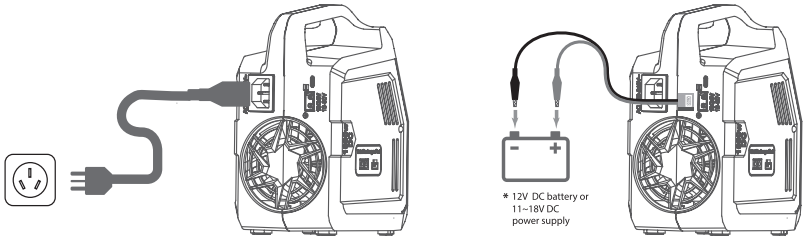
	LiPo	LiIon	LiFe	LiHV	NiMH	NiCd	Pb
Nominal voltage	3.7V/cell	3.6V/cell	3.3V/cell	3.7V/cell	1.2V/cell	1.2V/cell	2.0V/cell
Max. charge voltage	4.2V/cell	4.1V/cell	3.6V/cell	4.35V/cell	1.5V/cell	1.5V/cell	2.4V/cell
Storage voltage	3.8V/cell	3.7V/cell	3.3V/cell	3.90V/cell	N/A	N/A	N/A
Allowable fast charge current	≦1C	≦1C	≦4C	≦1C	1C-2C	1-2C	≦0.4C
Min. discharge voltage	3.0-3.3V/cell	2.9-3.2V/cell	2.6-2.9V/cell	3.1-3.4V/cell	0.1-1.1V/cell	0.1-1.1V/cell	1.8~2.0V/cell

Select the correct operating procedure in accordance with the battery parameters.
Incorrect settings may cause the battery to burn or even explode.

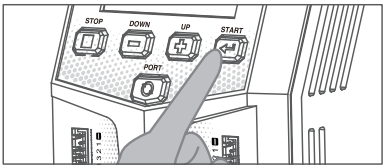
Operation

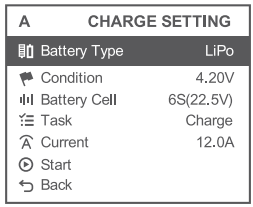
Be familiar with the key instructions and operations before starting the operation.

1. Connect the AC or DC power source, and T1000 powers up and enters the main interface;



2. From the main interface, press the Start button to enter the charging settings;
   (To switch A/B ports, press the Port button.)





3. Set proper cut-off voltage, as well as the correct battery type, number of batteries, and task program. In the case of lithium batteries, balance charging is highly recommended;
4. Start the program after setting up.

Upon completion, disconnect the battery from the charger.

Parallel Charge

The Parallel mode is available only for lithium batteries, which cannot be used for other types of batteries.

1. Select the correct battery type (LiPo/LiFe/LiIon/LiHV);
2. Choose the option of Parallel charge;
3. Adjust the charging current (20.0-35.0A is adjustable);
4. Start the program after setting up.

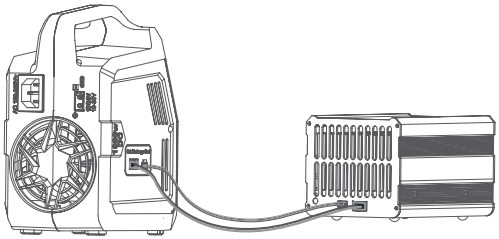
Notice:

- Ensure that AC and DC power is not connected simultaneously;
- With the single port, charging power is 450W; with the dual ports, charging power is intelligently distributed;
- Before connecting the battery, turn on the charger;

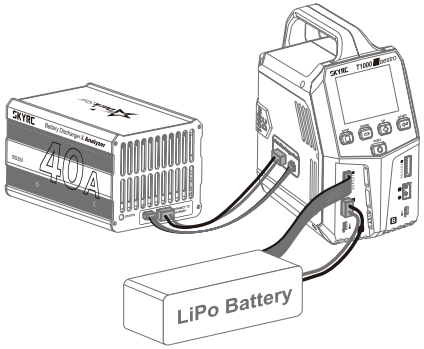
External Discharge

T1000 is capable of external discharge. A discharge current of 40.0A can be reached with BD350 discharger connected.

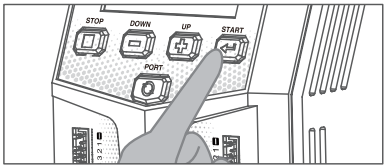
1. Upon connecting the power supply, T1000 automatically powers up and enters the main interface;
2. Connect BD350 discharger to T1000;



3. Connect the battery to T1000 on Port A;



4. Select Discharge: set the cut-off voltage, the discharge current, and the number of cells;
5. Start the program after setting up.



Notice:

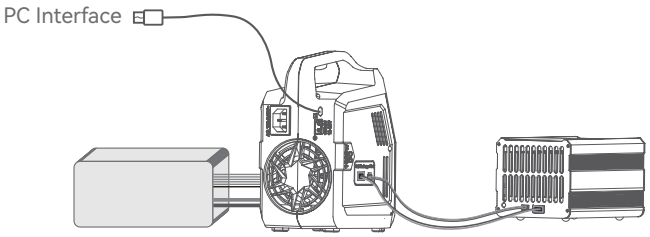
- BD350 discharger is not included and must be purchased separately.
- External discharge is available only on Port A;

Charger Master

T1000 is capable of charging and discharging through the computer. Various parameters, including charge time and capacity, can be displayed visually, as well as charge current and voltage in a curve.

In addition, battery performance can be analyzed through the Charger Master.

1. Download the latest **Charger Master** onto your desktop.
   Unzip and open it after downloading;
2. Power on your T1000;
3. Connect T1000 to your computer via a USB type-C cable;

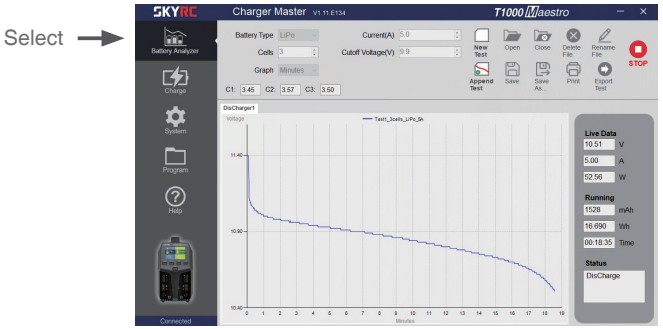


4. On the top left of the Charger Master, choose the option of Charge;
5. Set the parameters on the corresponding ports. Click to start the program after setting up.

Battery Analyzer

T1000 is capable of analyzing the battery performance with BD350 discharger connected, helping players choose a more suitable battery for competitions and gain better achievements.

1. Launch the Charger Master and select Battery Analyzer on the top left;

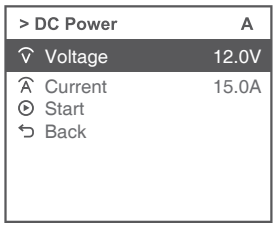


2. Specify the battery type, discharge current, cut-off voltage, and other parameters;
3. Click New Test to start the testing after setting up;
4. When the first test completes, click Append Test to start the second test. The third and further tests follow suit.

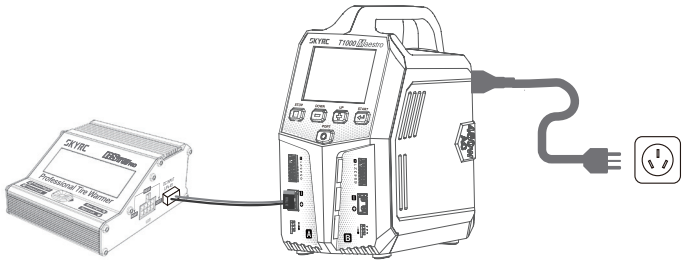
Up to ten groups of test data are visualized as curves, which are clear at a glance for players.

DC Power

1. On the main interface, hold the Start button for seconds to enter the system setting.
2. Select the option of DC Power, then adjust the output voltage and current.



3. Press Start to activate the power function after setting up.
4. Connect your desired DC equipment.

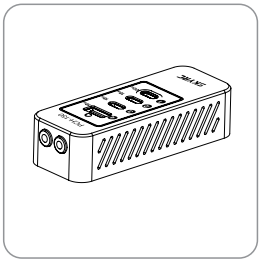


Notice:

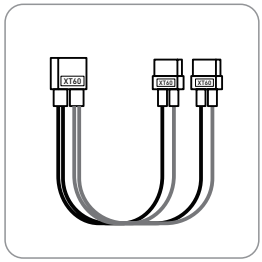
- On the DC Power interface, press the Port button to switch A/B ports;

Optional Parts

BD350 Discharger
SK-600147-01



PCH-150 Charging Board
SK-600148-01



Parallel Charging Cable
SK-600023-19

Charging Settings

On the main interface, press the Start button to enter charging settings, in which you can switch A/B ports by pressing the Port button.

Menu	Definition
Battery Type	Select your desired battery type. (LiPO, LiIon, LiFe, LiHV, Pb, NiMH, NiCd)
Battery Cell	Select the number of battery cells corresponding to the battery type. (Li-xx: 1-6S, Ni-xx: 1-15S, Pb: 3S/6S/12S)
Task	Select the program to be performed. (Balance CHG, Charge, Storage, Discharge, Parallel, etc.)
Condition	Set the cut-off voltage as per the task.
Current	Set the charge or discharge current.
Start	Start the current program.
Back	Back to the main interface.

System Setting

On the main interface, hold the Start button for seconds to enter the system setting.

Menu	Option	Definition
Task Parameters	Safety Timer	Customize a period for program protection.
	Max.Capacity	Customize the protection of capacity.
	Trickle Charge	Enable/disable trickle charge.
	Back	Back to the previous interface.
System Settings	Language	Select your desired system language.
	Max.Input Power	The maximum charge power. AC Input: 450W DC Input: 1000W
	Min.Input Voltage	In DC Input, set the minimum voltage for input protection.
	LCD BackLight	Adjust the brightness of the screen.
	Volume	Adjust the volume of the key and beep.
	Completion Signal	Choose the way you'd like to be reminded when the program completes.
	Back	Back to the previous interface.
DC Power	Voltage	Set the output voltage. (5.0~27.0V)
	Current	Set the output current. (1.0~15.0V)
	Start	Enable DC power output and return to the main interface.
	Back	Back to the previous interface.
Power for Tire Waemer - A	N/A	Activate to power SkyRC Tire Warmer on port A
Power for PD Hub - B	N/A	Activate to power SkyRC PD Hub on Port B
Battery Meter	N/A	Measure the battery voltage and internal resistance. (Switch A/B ports by pressing the Port button.)
System Self-checking	N/A	
Factory Settings	N/A	Restore to the factory settings.
System Info	N/A	Check the current system status.
System Upgrade	N/A	Upgrade the system.
Back	N/A	Back to the previous interface.

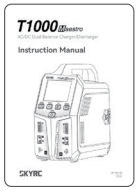
Errors and Warnings

In the event of a fault, the charger will display an error message and sound an alarm.

Error Message	Explanation
Error: DC Input Low!	DC input voltage is lower than preset!
Error: DC Input High!	DC input voltage is higher than preset!
Error: Battery Break!	The battery may be broken!
Cell Error	The cells do not match.
Battery Type Error!	The battery type is wrong!
Error: Overcharge!	The battery is overcharged!
Error: Over Time!	The program is timed out!
Error: Internal Temp. Too High!	The internal temperature is high!
Error: Battery Temp. Too High!	The battery temperature is high!
Error: Over Load!	The charger is overloaded!
Error: Reversed Polarity	The battery connection is reversed.
Error: Fully Charged	The battery is fully charged already!
Error: Outlet Overload	The output is overloaded.
Error: Balance Connection Break	The balance connection disconnects.
Error: Cell Volt Diff.	The voltage difference between each cell is high.
Error: AC to DC Too Low!	The input voltage is too low.
Error: Power Setting Error	The DC power setting is incorrect.

Package

1*T1000 unit



1*User manual

1*AC power cord

Firmware Upgrade Notice

To recover from a firmware upgrade failure, please follow these steps:

1. Hold the STOP and START buttons simultaneously, then connect the power cord; T1000 will power on with a blue screen notice.
2. Connect T1000 to your computer via a Type-C USB cable;
3. Launch the Charger Master on your computer;
4. When the status shows CONNECTED, click to check for new firmware;
5. Click to upgrade after detecting a new firmware;
6. Wait for the progress bar to finish and reach 100%;

The waiting takes about 5 minutes.

Conformity Declaration

SkyRC T1000 satisfies all relevant and mandatory CE directives and FCC Part 15 Subpart B.

Test Standards	Title	Result
EN 60335-1	Household and similar electrical appliances - Safety - Part 1: General requirements	Conform
EN 60335-2-29	Household and similar electrical appliances – Safety – Part 2-29: Particular requirements for battery chargers.	Conform
EN 55014-1	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	Conform
EN 55014-2	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity Product Family Standard	Conform
EN 61000-3-2	Electromagnetic compatibility (EMC) – Part 3-2: – Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	Conform
EN 61000-3-3	Electromagnetic compatibility (EMC) - Part 3-3: Limitation of voltage supply systems for equipment with rated current ≤ 16 A.	Conform
FCC Part Subpart 15B	Title 47 Telecommunication PART 15 - RADIO FREQUENCY DEVICES Subpart B - Unintentional Radiators	Conform

This symbol means that you must dispose of electrical from the general household waste when it reaches the end of its useful life. Take your charger to your local waste collection point or recycling center. This applies to all countries of the European Union, and other European countries with a separate waste collection system.

Warranty and Service

Liability Exclusion

This charger is designed and approved exclusively for use with the types of battery stated in this Instruction Manual. SkyRC accepts no liability of any kind if the charger is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the charger, and we have no control over the methods you employ for using, operating, and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage, or costs that are incurred due to the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those SkyRC products which were immediately and directly involved in the event in which the damage occurred.

Warranty and Service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the time of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period, we

will repair or replace free of service charge for products deemed defective due to those causes.

This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification, or as a result of failure to observe the procedures outlined in this manual.

Note:

1. The warranty service is valid in China only.
2. If you need warranty service overseas, please contact your dealer in the first instance, who is responsible for processing guarantee claims overseas. Due to high shipping costs, and complicated custom clearance procedures to send back to China, please understand that SkyRC can't provide warranty service to overseas end users directly.
3. If you have any questions which are not mentioned in the manual, please feel free to send an email to info@skyrc.com

This content is subject to change.

Latest version can be downloadedfrom www.skyrc.com

If you have any question about this document,please contact SkyRC by sending a message to info@skyrc.com

SKYRC

Manufactured by
SKYRC TECHNOLOGY CO., LTD.
www.skyrc.com

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