

TURNIGY®
power systems



T240

REAKTOR

AC/DC 10A Touch Charger

USER MANUAL

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INTRODUCTION

Thank you for purchasing the Reaktor T240 charger. Designed for both rookies and professional, this system is extremely versatile for the safety and the best use of your system, please read this manual carefully.



SPECIFICATION

Product Model:	T240 Reaktor AC/DC 10A Touch Charger	Accessories
AC Input Voltage	100-240V	 Adapter Board 2 set
DC Input Voltage	11-18V	
Charge Power	AC INPUT (CH1+CH2=150W) DC INPUT (120W*2)	
Charge Current	0.1-10A*2	 Extra Cable x2 pcs
Discharge Current	0.1-2A*2	
Lilon/LiPo/LiLo/LiFe/LiHV	1-6cells*2	
NiCd/NiMH	1-15cells*2	 Extra Cable x1pc
PB	2-20V*2	
Smart Battery	I/II/III*2	
Net Weight	0.48kg	 AC Cord x1pc
Dimension	145x105x64mm	



CAUTION and NOTES

-  This charger is **ONLY** suitable for charge rechargeable LiPo, LiFe, LiHV, NiCd, NiMH, Smart and Pb batteries. Do not attempt to charge dry cells, charge other types of batteries may cause fire or explosion.
-  Set up the Input Power Limit/Low Input VOLT Cutoff correctly in the USER SETTING of the
-  DC power supply.
-  Pay attention to the charger during use. Do not leave the charger unattended.
-  Never charge the dead or damaged batteries.
-  Do not attempt to charge a battery pack containing different types of batteries.
-  Do not use damaged cables.
-  Do not use the charger close by a flammable object. Use only in well-ventilated areas.
-  Only charge the rechargeable batteries that meet the product specifications of this charger.
-  **DO NOT** allow water, moisture or foreign objects into the charger.
-  **DO NOT** use in humid locations. Do not operate with wet hands.
-  **DO NOT** attempt to disassemble the charger.
-  **DO NOT** use the charger on fleecy materials, such as carpets, blankets, beds and cushions.
-  **DO NOT** block the cooling fan and the air inlet.

Strongly recommend balancing Lithium packs. An unbalanced pack may damage during discharging.

General default charging current is preset at 1C. Please read manual carefully of the battery and setup the suitable current to charge the battery. Higher C charging/ discharge current may damage the battery, even cause fire.

BATTERIES INFO and MAX CHARGE CURRENT

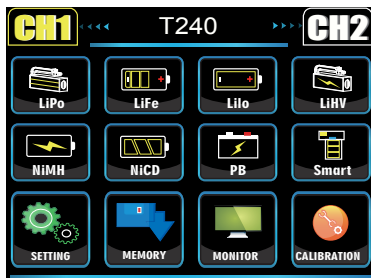
Battery Type	No. of Cells	Rated Voltage (V)	Charging Current (A)
LiHV	1	3.8	0.1 - 10.0A
	2	7.6	0.1 - 10.0A
	3	11.4	0.1 - 10.0A
	4	15.2	0.1 - 10.0A
	5	19.0	0.1 - 10.0A
	6	22.8	0.1 - 10.0A
LiPo	1	3.7	0.1 - 10.0A
	2	7.4	0.1 - 10.0A
	3	11.1	0.1 - 10.0A
	4	14.8	0.1 - 10.0A
	5	18.5	0.1 - 10.0A
	6	22.2	0.1 - 10.0A
Lilo	1	3.6	0.1 - 10.0A
	2	7.2	0.1 - 10.0A
	3	10.8	0.1 - 10.0A
	4	14.4	0.1 - 10.0A
	5	18	0.1 - 10.0A
	6	21.6	0.1 - 10.0A
LiFe	1	3.3	0.1 - 10.0A
	2	6.6	0.1 - 10.0A
	3	9.9	0.1 - 10.0A
	4	13.2	0.1 - 10.0A
	5	16.5	0.1 - 10.0A
	6	19.8	0.1 - 10.0A
NiMH / NiCd	1	1.2	0.1 - 10.0A
	2	2.4	0.1 - 10.0A
	3	3.6	0.1 - 10.0A
	4	4.8	0.1 - 10.0A
	5	6	0.1 - 10.0A
	6	7.2	0.1 - 10.0A
	7	8.4	0.1 - 10.0A
	8	9.6	0.1 - 10.0A



Battery Type	No. of Cells	Rated Voltage (V)	Charging Current (A)
NiMH / NiCd	9	10.8	0.1 - 10.0A
	10	12	0.1 - 10.0A
	11	13.2	0.1 - 10.0A
	12	14.4	0.1 - 10.0A
	13	15.6	0.1 - 10.0A
	14	16.8	0.1 - 10.0A
	15	18	0.1 - 10.0A
Pb	1	2	0.1 - 10.0A
	2	4	0.1 - 10.0A
	3	6	0.1 - 10.0A
	4	8	0.1 - 10.0A
	5	10	0.1 - 10.0A
	6	12	0.1 - 10.0A
	7	14	0.1 - 10.0A
	8	16	0.1 - 10.0A
	9	18	0.1 - 10.0A
	10	20	0.1 - 10.0A
	11	22.0	0.1 - 10.0A
	12	24.0	0.1 - 10.0A

LiPo	Voltage Level : 4.2V/Cell Max Charge Voltage : 3.7V/Cell Discharge Voltage Cut off Level : 3.0V/Cell or Higher
Lilo	Voltage Level : 4.1V/Cell Max Charge Voltage : 3.6V/Cell Discharge Voltage Cut off level : 3.0V/Cell or Higher
LiFe	Voltage Level : 3.8V/Cell Max Charge Voltage : 3.3V/Cell Discharge Voltage Cut off Level : 2.0V/Cell or Higher
LiHV	Voltage Level : 4.35V/Cell Max Charge Voltage : 3.8V/Cell Discharge Voltage Cut off Level : 3.2V/Cell or Higher
NiMH NiCd	Voltage Level : 1.6V/Cell Max Charge Voltage : 1.2V/Cell Discharge Voltage Cut off Level : 0.80V/Cell or Higher
Pb	Voltage Level : 2.45V/Cell Max Charge Voltage : 2.0V/Cell Discharge Voltage Cut off Level : 1.50V/Cell or Higher

MAIN MENU INFO



Main Menu



3.2 Inch
Touch Screen



Security
Settings



Battery Management, Checking
Battery Capacity, Voltage,
Balancer



Memory : Save Six
operation data



Calibrate Charger

NOTE: Please read carefully before doing anything!!

CH1 CH2 means CH-2 or CH-1 Swift image.

- Note:**
1. Two Channel are independent, and you can use different mode to operate .
 2. If Channels has been not used, **CH1** or **CH2** press image, will automatically return to main menu for operations
 3. If Channels Has been used, **CH1** or **CH2** press image, will automatically return.

PROGRAM OF LiPo/LiLo/LiFe/LiHV

Please replace this instruction as below:

Instruction for charging LiPo, Lilo, LiFe, LiHV, please follow the below steps:

Step 1: Select Channel and Select Battery Type on the menu (Image 1)

Step 2: Select and adjust you desire battery related parameters (image 2)

Step 3: Select "Start" operation will begin (image 3)



Image 1

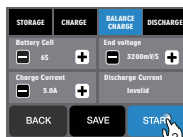


Image 2

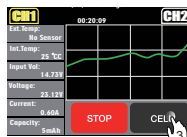


Image 3

MODE 1 : STORAGE
MODE 2 : CHARGE
MODE 3 : BAL CHARGE
MODE 4 : DISCHARGE

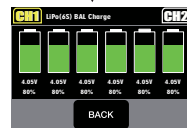


Image 4

Warning! Next Step will be an example during operation. (T240 DUO)

WORKING INTERFACE

Step 3: If you often use the same battery, please touch Save icon (Image2) to enter into Save interface. Touch Unused icon to save the data and it will be easy for you to charge next time.

Note: 8 groups data can be saved



Image 1

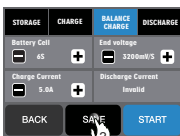


Image 2

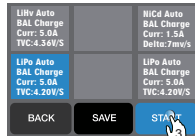


Image 5

Step 4. Select previous date to START (Image 5) to balance charging (Image 3), or touch BACK icon into previous step (Image 2), and touch START to balance charge, (Image 6)

WORKING INTERFACE

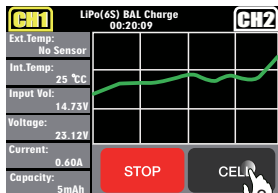


Image 3

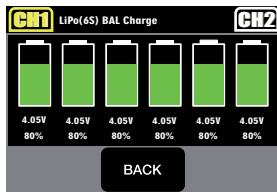


Image 4

Image 6

- NOTE:**
1. Image 3 show the graphic photo for LiPo Charging current and voltage.
 2. Image 4 show each cell voltage and percent during LiPo charging.
 3. Image 3 show all setting data for LiPo Charging.

CH1 **CH2** means CH-2 or CH-1 Swift image

- Note:
1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation.
 2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly.
 3. Two Channels are independent, and you can use different mode to operate.

PROGRAM OF NiMH/NiCd

Instruction for charging NiMH please follow the below steps:

Step 1. Enter to Menu, Select Battery Type (Image 8)

Such as: NiMH, Enter into "SET PARAMETER FOR NiMH BATTERY" (Image 9)

Step 2. Select "CHARGE" MODE, And set the related parameters (Image 9)

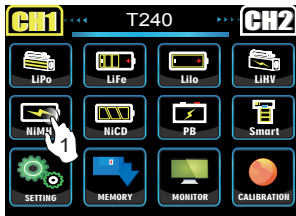


Image 8

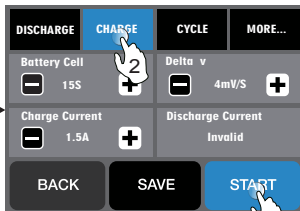


Image 9

MODE 1 : CYCLE
MODE 2 : CHARGE
MODE 3 : DISCHARGE

Next step will be an example at "MODE 2" (T240 DUO)
Note: 8 groups data can be saved.

Step 3: If you often use the same batteries, We Highly suggest you to save the feature by selecting "Save icon" in the parameter menu. Click unused icon to save the data and it will be easy for you to charge next time. (Image 10-11)

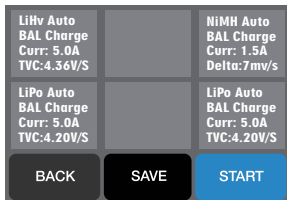


Image 10

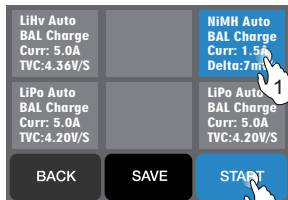


Image 11

WORKING INTERFACE

Step 4. Select previous data to START (Image 11) to Discharge (Image 12), or touch BACK icon to previous step (Image 9), and touch START to charge. (Image 12)

WORKING INTERFACE

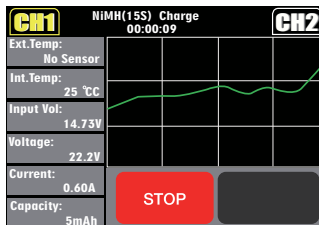


Image 12

CH1 **CH2** means CH-2 or CH-1 Swift image

- Note:**
1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation.
 2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly.
 3. Two Channels are independent, and you can use different modes to operate.

PROGRAM of PB(lead-Acid)

Instruction for charging Pb please follow the below steps:

Step 1: Select Channel and Select Battery Type on the menu (Image 13)

Step 2: Select and adjust you desire battery related parameters (image 14)

Step 3: Select "Start" operation will begin (image 13)

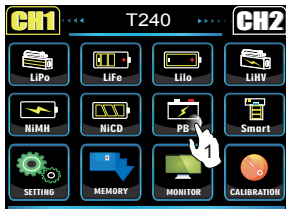


Image 13

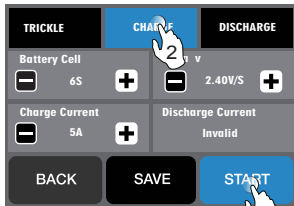


Image 14

MODE 1 : TRICKLE
MODE 2 : CHARGE
MODE 3 : DISCHARGE

Next step will be example at "MODE 2" (T240 DUO)

Step 3. If you often use the same battery, please touch Save icon (Image 14) to enter into Save interface. Touch Unused icon to save the data and it will be easy for you to charge next time. (Image 15-16) **Note: 8 groups data can be saved**

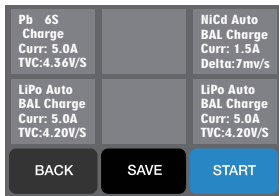


Image 15

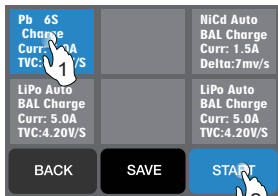


Image 16

WORKING INTERFACE

Step 4. Select previous data to START (Image 16) to balance charging (Image 17), or touch BACK icon into previous step (Image 16), and touch START to balance charge (Image 17)

WORKING INTERFACE

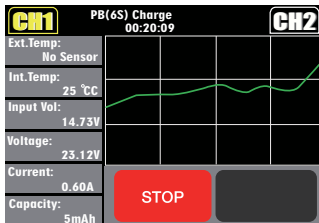


Image 17

- Note:**
1. Image 17 show the graphic photo for LiPo Charging current and voltage.
 2. Image 17 show each cell voltage and percent during LiPo charging.
 3. Image 17 show all setting data for NiMh Charging.

CH1 CH2 means CH-2 or CH-1 Swift image.

- Note:**
1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation.
 2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly.
 3. Two Channel are independent, and you can use different mode to operate.

PROGRAM OF SMART

Instruction for charging Smart Battery please follow the below steps:

Step 1: Select Channel and Select Battery Type on the menu (Image 1)

Step 2: Select and adjust you desire battery related parameters (image 2)

Step 3: Select "Start" operation will begin (image 3)

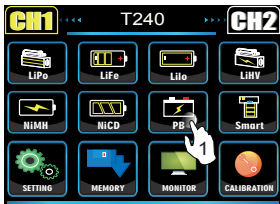


Image 18

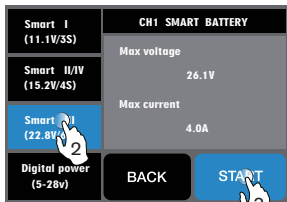
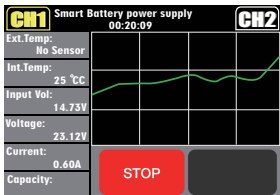


Image 19

MODE1 : SMART I
MODE2 : SMART II
MODE3 : SMART III
MODE4 : User set

Next step will be example at "MODE 4"

Step 2. Select START (Image 19) to charging (Image 20)



Note: Image 20 show the graphic photo for the current and voltage for the smart charge.

Image 20

CH1 CH2 means CH-2 or CH-1 Swift image.

- Note:**
1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation.
 2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly.
 3. Two Channel are independent, and you can use different mode to operate.

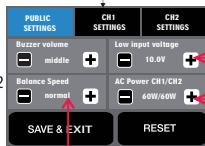
PROGRAM OF SETTINGS

Step 1. Enter to Menu, Select Setting (Image 21), into set interface. (Image 22-24)

Image 21



Image 22



Set the volume of the buzzer. Keep Beep default: **Middle, Low/ Middle/High/Off optional**

In this menu, you can set the cutoff input voltage of the power supply of the charger to protect your power supply. The charger will cutoff working when input voltage lower than the setting value, Range from 11.0-18.0V, Default: 10.0V

In this menu, you can set the charge power limit to meet your power supply. The charge will work under the setting value.

Balance control of LiPo/LiLo/LiFe/LiHV, you can set the balance control to meet your demand. **Normal/Fast/Slow optional**. Default: **Normal**
* **Fast**: Balance speed fastest, less accurate. ***Slow**: Balance Speed lowest, more accurate.

***Normal**: Balance speed and accurateness between Fast and Slow

Image 23



In this menu, you can set the cutoff internal temperature to protect your battery. The charger will cutoff working when the internal temperature is higher than the setting value range from 30°-85°C, Default: 80°C

In this menu, you can set the cutoff capacity to protect your battery. The charger will cutoff working when the capacity is more than the setting value. Range from off - 65.0Ah, Default: 10.0Ah

Image 24

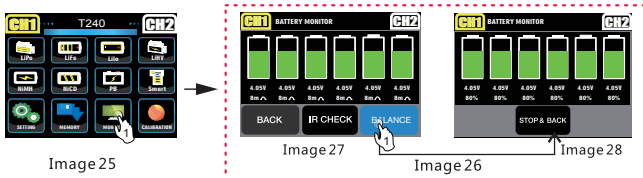


In this menu, you can set the cutoff external temperature to protect your battery. The charger will cutoff working when the external temperature is higher than the setting value (an External temperature sensor is needed). Range from 30-85°C, Default: 60°C

In this menu, you can set a safety time to protect your charger and battery. The charger will cutoff working when the safety time is up to the setting value. On/Off optional, range from 1-600 minutes, Default: 240 minutes

PROGRAM OF MONITOR/CALIBRATION

ONE: Enter into Menu, select Monitor (Image 25) and into BATTERY MONITOR (Image 26)



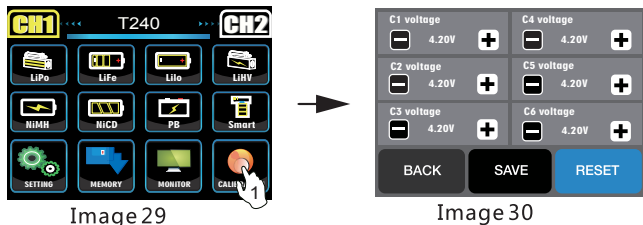
- 1) Meter LiXx (LiPo/LiLo/LiFe/LiHV) battery status. (Image 27)
- 2) Meter LiXx (LiPo/LiLo/LiFe/LiHV) battery internal resistance. (Image 27)
- 3) LiXx (LiPo/LiLo/LiFe/LiHV) battery balancer. (Image 28)

CH1 CH2 means CH-2 or CH-1 Swift image

- Note:**
1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation.
 2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly
 3. Two Channel are independent, and you can use different mode to operate

TWO:

- Step 1. Enter to Menu, select Calibration (Image 29), into "CHARGER CALIBRATION" (Image 30)
- Step 2. Select "RESET" (Image 30) recover original setting (Image 30)



PROGRAM OF MEMORY

Step 1. Enter into Menu, select Memory (Image 31)

Step 2. Select correct icon as exact battery typeimage 32, and select "Modify" icon, (Image 33)



Image 31

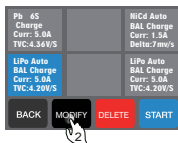


Image 32

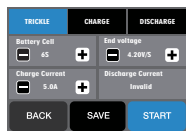


Image 33

Step 1. Enter into Menu, select Memory (Image 31)

Step 2. Select "START" icon (Image 32), and select "CELL" Icon (Image 34) (Image 35)



Image 31

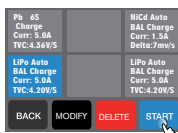


Image 32

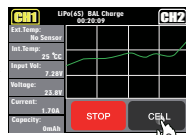


Image 34

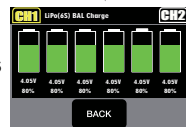


Image 35

ERROR INFORMATION

ERROR INFORMATION

ERROR!
INPUT VOLTAGE ERROR

<NOTE>

The charger will send out an alert and pop-up window if the battery packs setting is incorrect (Image 38).

ERROR!
INPUT VOLTAGE ERROR

Input voltage is higher than 30V, check the power supply, then restart the charger

ERROR!
INPUT VOLTAGE TOO LOW

Input voltage is lower than the value of LOW INPUT VOLTAGE CUT-OFF, check the power supply, then restart the charger.

ERROR!
REVERSE POLARITY CHECK

Reverse polarity, check the connection between the charger and the battery, correct the connection, then restart the work.

ERROR!
BATTERY CHECK DISCONNECT

Battery disconnect, check the connection between the charger and the battery, then restart the work.

ERROR!
BATTERY CHECK OVER VOLTAGE

Total voltage of the battery is over the termination voltage control (TVC), check the battery and the TVC setting, then restart.

ERROR!
BATTERY CHECK LOWER VOLTAGE

Total voltage of the battery is lower than the termination voltage control (TVC), check the battery and the TVC setting, then restart.

ERROR!
BATTERY CHECK CELL COUNT ERROR

Cell count detected by the charge is different from the setting, check the battery cell count and reset the cell count of the work.

ERROR!
BATTERY CHECK OVER CELL VOLT

Cell voltage of the battery pack is over the termination voltage control (TAC), check the battery and the TVC setting, then restart.

ERROR!
BATTERY CHECK LOWER CELL VOLT

Cell voltage of the battery pack is lower the termination voltage control (TVC), check the battery and the TVC setting, then restart.

ERROR!
BATTERY CHECK FULL BATTERY

Full battery, no need to charge.

ERROR!
OVER Ext. TEMP CUTOFF

External temperature is higher than the setting value, cutoff. Capacity is over than the setting value, cutoff.

ERROR!
OVER CAPACITY CUTOFF

Capacity is over than the setting value, cutoff.

ERROR!
SAFETY TIME OUT CUTOFF

Time is up to the setting value of Safety Timer, cutoff.

SUPPORT AND SERVICES

WARRANTY

Hobbyking provide a period of one year product warranty from the date 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 use guideline in this manual.

LIABILITY EXCLUSION

This charger is designed and approved exclusively for charge the types of battery stated in this manual. HobbyKing do not accept any liability if the charger is used for any purpose other than that stated. We are unable to ensure you follow the instructions come with the charger, and we have no control over the methods you employ for using, operating and maintaining this device. For this reason we are obliged to deny the liability for loss, damage or costs which are incurred due to the incompetent or incorrect use and operation of this product, 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 products which were immediately and directly involved in the event in which the damage occurred

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