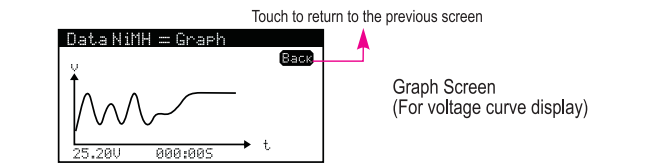




| NiMH/NiCd Program - Continued |              |                                                                                                      |
|-------------------------------|--------------|------------------------------------------------------------------------------------------------------|
| Discharge, Charge, Cycle      | Int Temp.    | Internal temperature of the charger                                                                  |
|                               | Safety Timer | Safety Timer Duration (After which the charger will turn off automatically)                          |
|                               | CAPA Cut-off | Capacity Cut-off Threshold (Beyond which the charger will turn off automatically)                    |
|                               | Resistance   | Internal resistance of the battery                                                                   |
|                               | Peak Temp.   | Highest temperature detected during the program (requires the optional temperature sensor accessory) |
| Charge, Balance, Cycle        | CHG Power    | Charging Power (= Charging voltage multiplied by charging current)                                   |
| Discharge, Cycle              | DCHG Power   | Discharging Power (= Battery voltage multiplied by discharging current)                              |



## Lead Acid Battery Program

The Pb battery program is used to charge lead acid batteries. It has the 2 operating modes: Charge and Discharge. Selecting each mode will take you to its setting screen.

**Program select = Pb**

CHG Charge Mode  
DCHG Discharge Mode

**Pb Charge Set**

Pack Volt. : 12V/6P  
Capacity : 5000mAh  
Current : 0.1A

CHG Charge Mode

Charge mode charges your battery pack to a pre-determined voltage. Charging current is automatically selected as 1C by default, but it can be manually adjusted to become higher or lower.

Return to main menu

Highlight the field to customize, and change the value of selected field

Touch briefly to select a field or to save the changes made to it; press and hold for 2 seconds to begin the program

Available settings:

| Setting Name | Setting Descriptions                                                                                                                                                                                                                                  | Option                           |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Pack Volt.   | Rated voltage of the battery                                                                                                                                                                                                                          | 2V – 24V                         |
| Capacity     | Rated capacity of the battery                                                                                                                                                                                                                         | 50-50000mAh, in 50mAh increments |
| Current      | Charging Current. Pb lead acid batteries are typically charged at low current, and the optimal charging current for is 0.1C (e.g. 0.1C for a 10Ah battery is 1A). When unsure, please follow the charging instructions from the battery manufacturer. | 0.1A to 10.0A                    |

**Pb Discharge Set**

Pack Volt. : 12V/6P  
Capacity : 5000mAh  
Current : 0.1A

DCHG Discharge Mode

Discharge mode can be used to fully discharge your lead acid battery.

Press Enter >2S=Start

Available settings:

| Setting Name | Setting Descriptions          | Option                           |
|--------------|-------------------------------|----------------------------------|
| Pack Volt.   | Rated voltage of the battery  | 2V – 24V                         |
| Capacity     | Rated capacity of the battery | 50-50000mAh, in 50mAh increments |
| Current      | Discharging Current.          | 0.1A to 5.0A, in 0.1A increments |

Program selected and elapsed time

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**Pb-6S CHG 000.00s**

Capacity : 00000mAh  
Current : 10.0A  
Voltage : 25.00V  
Resistance : No  
Peak Temp. : No sens

STOP Graph

Program and Battery Info

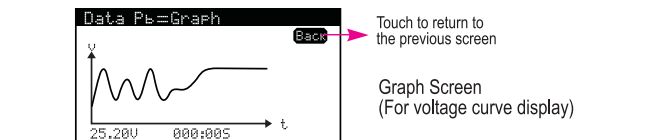
Stop the current program

Display the real time voltage curve (battery voltage vs time) for the current program

**Pb Operation Screen Info**

| Operation         | Name     | Descriptions                                                                 |
|-------------------|----------|------------------------------------------------------------------------------|
| Discharge, Charge | Capacity | Capacity that's been charged into or discharged from the battery pack so far |
|                   | Current  | Charging / Discharging Current                                               |
|                   | Voltage  | Battery Voltage                                                              |
|                   |          |                                                                              |

|                   |              |                                                                                                      |
|-------------------|--------------|------------------------------------------------------------------------------------------------------|
| Discharge, Charge | Stage        | CC (constant current) CV (constant voltage) Trickle (trickle charging)                               |
|                   | Input Volt   | DC Input Voltage, either from the charger's internal power supply or its DC Input port               |
|                   | End Volt     | The target battery voltage to achieve.                                                               |
|                   | Int Temp.    | Internal temperature of the charger                                                                  |
|                   | Safety Timer | Safety Timer Duration (After which the charger will turn off automatically)                          |
|                   | CAPA Cut-off | Capacity Cut-off Threshold (Beyond which the charger will turn off automatically)                    |
| Discharge, Charge | Resistance   | Internal resistance of the battery                                                                   |
|                   | Peak Temp.   | Highest temperature detected during the program (requires the optional temperature sensor accessory) |
| Charge            | CHG Power    | Charging Power (= Charging voltage multiplied by charging current)                                   |
| Discharge         | DCHG Power   | Discharging Power (= Battery voltage multiplied by discharging current)                              |



## Digital Power Program

This operation mode turns the charger into a DC power supply. Simply connect the charger to your device through its red/black Main Charging Port, and configure the power output from the charger's touch-screen control.

**Program select = POWER**

Setup Start

Configure the power output

Select Voltage / Current Output

Press and hold for 2 seconds to begin

**POWER Setup set**

Out Volt. : 22.2V  
Current : 10.0A  
Max. Power : 0000W

Digital Power Output Settings

Touch briefly to select a field or to save the changes made to it; press and hold for 2 seconds to begin the program

Return to main menu

Navigate to the desired field; change the value of selected field.

Available settings:

| Setting Name | Setting Descriptions | Option                          |
|--------------|----------------------|---------------------------------|
| Out Volt.    | Output DC Voltage    | 3.0V – 24.0V in 0.1V increments |
| Current      | Output DC Current    | 0.1V – 10.0V in 0.1V increments |
| Max. Power   | Maximum Power Output | 1Watt – 90Watt in 1W increments |

**POWER Mode**

Out Volt. : 22.2V  
Current : 10.0A  
Power : 0000W

STOP Graph

The real-time output current & power

Once started, the voltage, current and total power output will be displayed.

**Data POWER = Graph**

Touch to return to the previous screen

You can also touch the "Graph" button to see the "current-vs-time" curve to see how the current output changes over time.

## Data View

This program can be used to quickly check the battery and charger status (View), or to balance your LiXX batteries.

**Program select = View**

VIEW View Screen

BALANCE Balance Screen

**VIEW** View Screen

Charge: input voltage, internal temperature

Battery (if connected): battery voltage (Output Volt.), battery temperature (Ext. Temp. requires temperature probe), internal resistance.

**Data view = Unit**

For LiXX batteries with balance connector, touching the "Unit" button will display the voltage of each individual cell.

**--Battery Type--**

BALANCE Balance Screen

To balance your LiXX, touch the icon that matches your battery type, then touch the "START" button.

Warning: Be sure to verify your battery's chemistry type in order to select the correct setting. Failure to do so can damage your battery.

## Memory Program

The Memory Program allows you to save the settings of the charger's last operation, so you can load them up quickly in the future.

**Program select = Memo**

MEMO

**Battery memory [1/4]**

M01 NULL  
M02 NULL  
M03 NULL  
M04 NULL  
M05 NULL

ESC DEL LOAD SAVE

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To Save:

1. Touch one of the 20 available memory slots (M01 – M20). Empty slots are displayed as NULL
2. Touch the "SAVE" button, and the last-used operation settings will be saved in that slot.

To Load:

1. Touch one of the occupied memory slots.
2. Touch the "LOAD" button, and the operation settings in that slot will be loaded to the Setup screen for that program. Adjustments can still be made before starting the program.

To Delete:

1. Touch and hold one of the occupied memory slots for 1-2 seconds.
2. The slot label will return to NULL. Now it's available for use again.

## ATTENTION!!

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.

1. Never leave the power supply, charger and battery unattended during use.
2. Never attempt to charge batteries that are dead, damaged, wet, non-rechargeable, or of chemistry types that is not specifically mentioned in this manual.
3. Never attempt to charge a battery pack containing different types of batteries.
4. Never allow children under 14 years of age to charge battery packs.
5. Never charge a battery in extremely hot or cold places or place in direct sunlight.
6. Never charge a battery if the cable has been pinched or shorted.
7. Never connect the charger if the power cable has been pinched or shorted.
8. Never connect the charger to an automobile 12V battery while the vehicle is running.
9. Never attempt to dismantle the charger or use a damaged charger.
10. Never connect the input jack (DC input) to AC power.
11. Always use only rechargeable batteries designed for use with this type of charger.
12. Always inspect the battery before charging.
13. Always keep the battery away from any material that could be affected by heat.
14. Always monitor the charging area and have a fire extinguisher available at all times.
15. Always end the charging process if the battery becomes too hot to touch, or starts to change form (e.g. swelling/puffing) during the charging process.
16. Always connect the charge cable to the charger first, then connect the battery to avoid short circuit between the charger leads. Reverse the sequence when disconnecting.
17. Always connect the positive red leads(+) and negative black leads(-) correctly.
18. Always disconnect the battery after charging, and let the charger cool between charges.
19. Always charge in a well-ventilated area.
20. Always terminate all processes and contact local dealer if the product malfunctions.

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's settings are supported by the battery. Not doing so can result in excessive heat and other related product malfunctions, causing user injury and/or property damage.

## Warning & Error Messages

Tenergy's T180 Touch Screen Charger is designed to offer protection against various situations due to operating errors and hardware/battery malfunctions. Detected faults/errors are displayed on the LCD screen, halting any active process in order to protect the charger and the battery.

[ERROR] REVERSE POLARITY ESC → Charger output is connected to a battery with incorrect polarity

[ERROR] PROCESS INTERRUPTED ESC → Battery is not connected, or its connection is interrupted

[ERROR] OUTPUT SHORT CIRCUIT ESC → Short circuit is present at the charger's output

[ERROR] INPUT VOLTAGE ERROR ESC → Charger's DC power input is outside of the supported range of 11-18V

[ERROR] CHARGER FAILURE ESC → Potential hardware failure

[ERROR] BATTERY LOW VOLTAGE ESC → Battery voltage is too low for the chosen operation

[ERROR] BATTERY HIGH VOLTAGE ESC → Battery voltage is too high for the chosen operation

[ERROR] CELL LOW VOLTAGE ESC → Unit cell voltage too low

[ERROR] CELL HIGH VOLTAGE ESC → Unit cell voltage too high

[ERROR] CELL COUNT ERROR ESC → Balance port connection error

[ERROR] CHARGER OVERHEATING ESC → The charger is overheating

[ERROR] -- OVER POWER -- ESC → Output power exceeds the limit set in the digital power mode.

[ERROR] -- MAX CURRENT -- ESC → Output current exceeds the limit set in the digital power mode.

[ERROR] -- SAFETY TIMER -- ESC → Exceed the maximum safe time limit

[ERROR] -- MAX CAPACITY -- ESC → Exceed the maximum capacity limit

[ERROR] -- MAX EXT. TEMP -- ESC → The battery's external temperature is too high.

## Regulatory Compliance

### COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Declaration of Conformity



Product Name: T180 Touch Screen Balance Charger  
Item Number: 03180 / TN180

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the European EMC Directive 2004/108/EC

EN 55014-1:2006  
EN 55014-2:1997+A1:2001  
EN 61000-3-2:2006  
EN 61000-3-3:2008

### Instructions for disposal of WEEE by users in the European Union



This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

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