

TENERGY®



----- TN299 -----

Universal Hybrid Battery Charger



IMPORTANT SAFETY WARNING

READ MANUAL in its entirety before use.

INSTRUCTION MANUAL



IMPORTANT SAFETY WARNING

Please Read Entire Manual Before Use

DO NOT Charge Any Kind of Non-Rechargeable / Primary Batteries.

- ▶ **DO NOT** Charge **Alkaline** Batteries
- ▶ **DO NOT** Charge **Carbon-Zinc** (Heavy Duty) Batteries
- ▶ **DO NOT** Charge **Lithium AA, Lithium CR 123A**, or Any Other Non-Rechargeable Lithium Metal Batteries

Failure to follow these instructions can result in severe permanent damage to battery, cause serious personal injury, or lead to a fire.

- Do not disassemble the charger.
- Only use the supplied AC Adaptor. (100-240v 50/60hz)
- The charger is for indoor use only.
- Keep the charger away heated surroundings, humidity or liquid, and remove all debris from the charger before operating.
- Keep the charger out of children's reach.

If unsure about compatability, email us at service@tenergy.com

Thank you for purchasing Tenergy TN299 Universal Hybrid Battery Charger. Please carefully read these instructions before using.



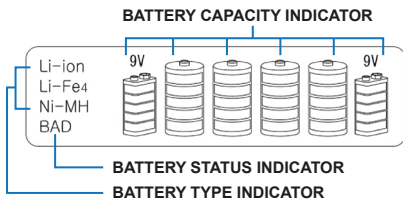
Features -----

- Fast charging capabilities of up to (4) AA/AAA/C/D (NiMH, NiCd)/18650/14500(Li-ion, LiFePO₄) and (2) 9V (NiMH, NiCd) rechargeable batteries
- LCD status display with blue backlighting
- Intelligent charging mode with auto cut-off for safety
- 100-240V/50-60Hz AC Adapter for worldwide usage.

Safety Features

- Negative Delta-V cut-off function for NiMH batteries (excluding 9V)
- CC-CV (Constant Current - Constant Voltage) charging function for Li-ion / LiFe batteries.
- Safety timer control for overcharge protection
- Short-circuit protection
- Damaged / Bad cell detection
- Reverse polarity protection

LCD Display



- **Charge:** Indicated the batteries are currently charging.
- **Bad:** Indicates the battery is damaged, faulty or expired.
- **Li-Fe4/Li-ion/NiMH:** Indicates what type(s) of battery is detected in the charger.

Operation Instructions -----

1. Insert 1 - 4 AA/AAA/C/D or 1-2 9V rechargeable Ni-MH/NiCd batteries into the charger.
2. Ensure the batteries are inserted correctly for correct +/- connection.
3. If either Li-ion or LiFe batteries are present, set the Li-ion/LiFe select button accordingly.
* Do not charge both types at the same time.
4. The Universal Hybrid Charger will automatically begin charging the batteries, and indicate the status of each battery
5. When a battery has been fully charged, the corresponding battery capacity indicator will be full.
6. The batteries are now ready for use. Remove batteries and unplug the charger when not in use.

Bad Battery Detection -----

During the charging function, if a battery is detected as damaged, faulty or expired, the LCD will display "BAD" and the status indicator will stay empty. If the Universal Hybrid Charger detects a battery as bad, that battery is unsuitable for charging.

Specifications

Input	12VvDC, 1000mA (with Supplied AC Adapter)
Charge Current	Li-ion/LiFe: 400mA (3-4pcs) / 800mA (1-2pcs) NiMH/NiCd: AA/C/D: 1A AAA: 0.5A 9V: 50mA
Charging Method	NiMH/NiCd: Negative Delta V Detection Li-ion/LiFe: Constant Current / Current Voltage
Safety Detection	Reverse-polarity, Short Circuit
Supported Consumer Batteries	NiMH/NiCd: AAA, AA, C, D, & 9V Li-ion*/LiFePO4*: 18650, 14500, 10400 **Compatibility Notice: - NOT compatible with Flat Top versions of 18650, 14500, 10400 batteries. - NOT compatible with 26650 batteries

Charging Time Table

Battery Type		Capacity	Charging Time (approx.)
NiMH / NiCd	AAA	500-1200mAh	1.25-2.8H
	AA	1300-2800mAh	1.6-3.5H
	C	1800-4500mAh	2.25-5.6H
	D	1800-9000mAh	2.25-11.25H
	9V	150-300mAh	3.75-7.75H
Li-ion / LiFePO4	2000-4200mAh	1-2 batteries: 3.1-6.6H 3-4 batteries: 6.2-13.0H	
	1500-3000mAh	1-2 batteries: 2.4-4.8H 3-4 batteries: 4.8-9.6H	

Best use with



Tenergy Centura Low Self-Discharge



Tenergy Premium Rechargeable Batteries



Item No. 30016

Tenergy 3.7V 18650 Li-Ion Battery



Item No. 30225

Tenergy 3.2V LiFePO4 14500 Battery



Item No. 30021

Tenergy 3.7V 800mAh 14500 Li-ion Battery

TENERGY CORPORATION

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