



## Specification Approval Sheet

**Name :** Alkaline Zink Manganese Dioxide battery

**Model :** AKYGA A27

**SPEC :** 12.0V / 28mAh

### Specification Modification Records

Modification Time	Descriptions	Issued Date	Approved By
	Release 1	2025-08-19	

Content

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## 1. *Scope:*

This specification is applicable to Akyga alkaline zinc-manganese dioxide battery : 27A.

### 1.1 *Designations*

IEC : 27A

Others : L828、A27、MN27、MS27、V27GA、LR27A

### 1.2 *Reference Document*

IEC 60086-1-2021- primary batteries –Part 1: General

IEC 60086-2-2021- primary batteries –Part 2: Physical and Electrical Specification

IEC 60086-5-2016- primary batteries –Part 5: Safety of batteries with aqueous electrolyte

## 2. *Chemical System:*

Alkaline-Manganese Dioxide (-) Zn | KOH | MnO<sub>2</sub>(+)

3. *Nominal Voltage:* 12.0V

4. *Average Weight:* 4.9g

5. *Nominal Capacity:*

**28mAh** (Conditions: Rated at 20KΩ at (20±2)°C, continuous discharging to the End-point Voltage of 6.0V.)

6. Electrical characteristics: Test conditions: 20°C±2°C

Items	Off-load voltage	(1.0K Ω ) On-load voltage	Acceptance criteria
Initial (Within 30 days after delivery)	≥12.4V	≥11.4V	MIL-STD105E, Class II , Double Sampling , AQL=0.4
After 12 months	≥12.2V	≥10.8V	

7. Discharge performance: Test conditions: 20°C±2°C

Discharge conditions				Minimum average duration	
Resistance	Daily period	End-point voltage	IEC standards	Initial	After 12 months
20k Ω	24 h	6. 0V	/	55h	49. 5h
1k Ω	24 h	6. 0V	/	80mins	60mins
1K Ω	1S/4S, 24h	6.0V	/	9000Pulses	8100Pulses

## Acceptance criteria:

- 1 Test nine batteries
- 2 If the average discharge time is equal to or greater than the specified figure and no more than one battery has a service out of less than 80% of the specified figure, the batteries are considered to conform to standards.
- 3 One re-test is allowed to confirm the previous result.

## 8. Safety characteristics :

Test item	Conditions	Period	Requirements	Acceptance standard
Over-discharge Characteristics	Temp.: $20 \pm 2^{\circ}\text{C}$ ; Load: $20\text{K}\Omega$ .	Continuous discharge 48 hours after discharge termination	No leakage or explosion	N=9, Ac=0, Re=1

## 9. Marking:

The following content will be printed on the battery casing:

- a) Designation: 27A
- b) Polarity marking: “+ - ”
- c) Manufacturer trademark
- d) Nominal voltage: 12V
- e) Warning: This batter is not rechargeable, May explode or leak if charged, connected reversly, disposed of in fire.

## 10. Safety precautions :

- a) Do not charge the battery as this may cause battery leakage and damage to charging equipment;
- b) Insert batteries correctly with regard to the polarities (+ and – ) marked on the battery and the equipment;
- c) Do not short circuit, heat, or put the battery into fire;
- d) Do not disassemble the battery as the internal electrolyte will corrode the skin
- e) Do not use both new and used batteries at the same time

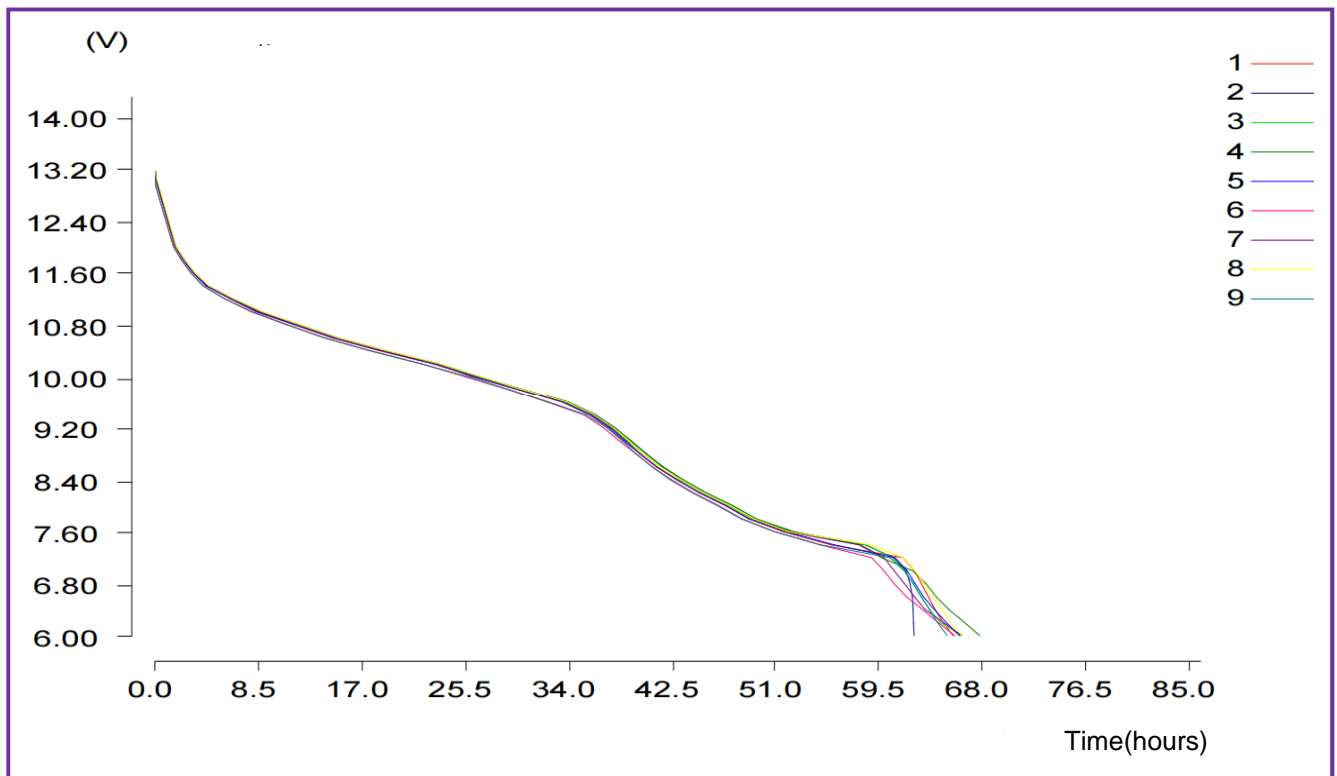
- f) Please remove the depleted battery from the appliance to avoid leakage caused by over discharge;
- g) Batteries should be kept out of reach of children to prevent accidental ingestion;
- h) Before installing the battery into the electrical appliance, wipe the cover with alcohol to better utilize and protect the appliance;
- i) Batteries should not come into contact with corrosive substances such as strong acids and alkalis.

## 11. Warranty period:

12months

## 12. Discharge curve (Test: $20 \pm 2^\circ\text{C}$ )

a)  $20\text{k}\Omega$  , 24h/day, E.P.V.:6.0V



b)  $1k\ \Omega$  , 24h/day, E.P.V.: 6.0

