

## Product Data Sheet

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Product Number: TNP-AL2A-4P

Model: AA 1.5v

Description: Alkaline Zinc-Manganese Dry Battery

Picture:



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### Scope:

This specification defines the technical requirements for 1.5 alkaline cells under the brand Techni-Pro. If not otherwise specified, the technical requirements and dimensions for cells should meet or exceed the requirements of GB/T 8897.1-2008, GB 8897.2-2008.

### Reference documents:

GB8897.1-2008 (IEC60086-1:2000, IDT) Primary Batteries-Part 1: General GB8897.2-2008(IEC60086-2:2001, MOD) Primary Batteries-Part 2: Physical and technological specifications GB8897.5-2006(IEC 60086-5:2005, MOD) Primary Batteries-Part 5: Safety of batteries with aqueous electrolyte

### Chemical systems, voltage and designation:

- Chemical systems: Alkaline Manganese battery, Zinc-manganese dioxide
- Nominal voltage: 1.5v
- Designation: IEC&GB (China) AL2A
- ANSI Number: AA

## AL2A Battery Dimensions:



Measure No.	Max	Min *
A	50.5	49.2
C	9.5	8.0
F	5.5	3.0
G	2.5	1.0
Ø	14.5	13.5

## Voltage and Short current

Item	OCV (V)	CCV (V)	SCC (A)
Initial	$1.56 \leq OCV \leq 1.65$	$\geq 1.45$	$\geq 6.0$
After 12 months	$\geq 1.56$	$\geq 1.4$	$\geq 5.0$

OCV measurement: the inner resistance of Voltage meter is above 1M  $\Omega$ .

C.C.V measurement: After 0.2+/- 0.01 sec by R=5.0 $\Omega$

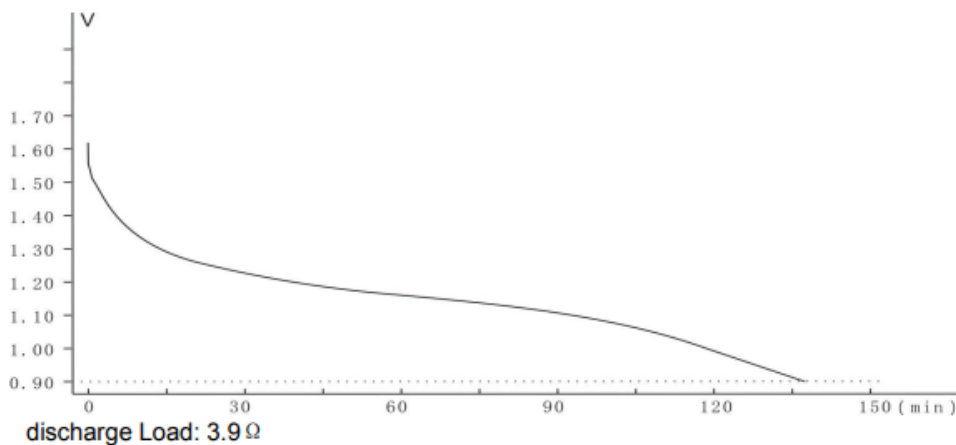
SCC measurement:  $\pm 0.5\%$

AL2A discharge performance:

Discharge conditions				Average Minimum Discharge time
Load	Daily period	E. P. (V)	Initial	Delayed discharge performance after 12 months
3.9Ω	1h/d	0.8V	7.2h	6.8h
3.3Ω	4min/h, 8h/d	0.9V	330min	300min
24Ω	15s/m, 8h/d	1.0V	42.0h	41.0h
43Ω	4h/d	0.9V	82.0h	81.0h
1000mA	10s/m, 1h/d	0.9V	400time	350time
250mA	1h/d	0.9V	7.5h	7.0h
100mA	1h/d	0.9V	22.0h	21.0h
1500mW/2s 650mW/28	10T/h	1.05V	65time	60time
3.9Ω	24h	0.9V	360min	340min

Initial: 60 days after production. Test conditions: 20°C±2°C and 60± 15%RH

Schematic diagram of discharge:



## Leakage Resistance:

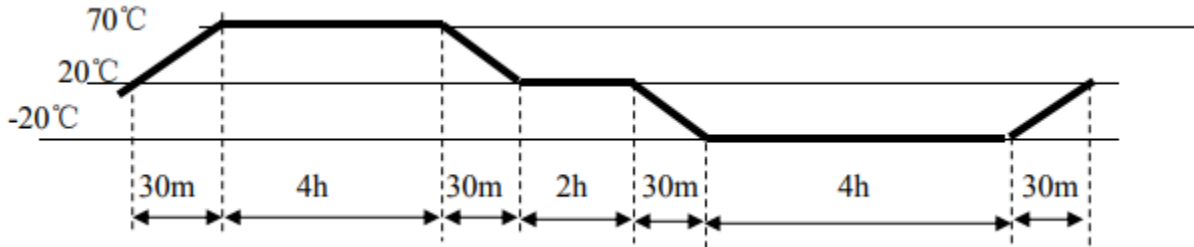
ITEM	TEST CONDITIONS	SAMPLE SIZE	REQUIREMENTS	ACCEPTANCE
OVER DISCHARGE	10Ω 24h/d for 48h at 20°C±2°C,	n= 9 PCS	NO LEAKAGE; MAX OF 0.35MM HEIGHT INCREASE	Ac= 0, Re= 1
High Temperature and Humidity Storage	Exposed to a temperature of 60°C± 2°C and RH90±5% for a period of 3 weeks	n= 20 pcs	No leakage	Ac= 0, Re= 1
45°C Dry Storage	Stored for 12 weeks at 45°C	n= 20 pcs	No Leakage	Ac= 0, Re= 1

## Safety Requirement:

Item	Test Conditions	Sample Size	Requirements of IEC60086-5:2005& GB8897.5-2006	Acceptance *
Partial Use	Stored at 45°C±2°C for 30days after undischarged batteries were test discharged 3.9Ω 24h/d, EPV=1.0V	n = 5 pcs	No leakage, no explosion	Ac= 0, Re= 1
Thermal Shock	See the following <b>note 1</b> , total 10 cycles	n = 5 pcs	No explosion	Ac= 0, Re= 1
Incorrect Installation (3 + 1 anti- charge test)	Place three undischarged and unconditioned batteries in a series with one test sample battery reversed, Complete the circuit until vent activation or until the temperature of the reversed battery returns to ambient.	n = 5 pcs	No explosion	Ac= 0, Re= 1
Free Fall	Drop each undischarged battery Two times, oriented in each of three mutually perpendicular face (six total) from a	n = 5 pcs	No explosion	Ac= 0, Re= 1

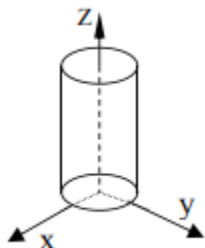
	height 1 meter, onto a concrete surface, see the following note 2			
Over Discharge	Discharge one test sample battery(C1) with 43Ω resistance load until EPV is 0.6V, connect three undischarged batteries and the sample battery in series with a 7.5Ω resistance load(R1) as shown in note 3, Maintain the circuit until the CCV of the series string reaches 1.2V	n = 5 pcs	No explosion	Ac= 0, Re= 1

Note 1: Thermal shock \*



additionally.

Note 2: Free Fall



## Inspection Rules:

Deliver inspection: Depending on GB2828

Number	Test	Item	IL	AQL
1	Dimensions	5	S-2	0.4
2	Appearance	--	II	1.0
3	Discharge capacity	7	--	--
4	Open-circuit voltage	4.5	II	1.0

Routine Inspection: Depending on GB2829 and QB/T2389.

## Inspection for service output:

- Samples shall be tested for service output.
- If the average value is equal to or more than the value of Table 1, and if the number of batteries showing a value less than 80% of the value in Table 1 is 1 or less. The batteries are considered to conform to the requirement.
- If the average value is less than the value of Table 1, or if the number of batteries
- Showing a value less than 80% is 2 or more, the test shall be repeated with a different 9 pieces. At the second test, if the average value is equal to or more than the value of Table 1, and if the number of the batteries showing a value less than 80% of the value of Table 1 is 1 or less, these batteries are considered to conform to the requirement. \*If the manufacturer wants to modify the product technology specification, we won't inform you additionally.
- At above second test, if the average value is less than the value of Table 1, or if the number of batteries showing a value less than 80% of the value of Table 1 is 2 or more, the batteries are considered not to conform to the requirement. —Third test shall not be performed.

## Instructions for use:

- Always select correct size and grade of battery most suitable for intended use.
- Replace all batteries of a set at the same time.
- Clean the battery contacts and those of the equipment prior to battery installation.
- Ensure that batteries are installed correctly regarding polarity {+ and -}.
- Remove batteries from equipment which is not in use for an extended period.
- Remove exhausted batteries promptly.

## Display and Storage:

- Batteries shall be stored in well ventilated, dry and cool conditions.
- Battery cartons should not be piled in several layers
- Batteries should not be exposed to direct sunlight for a long period of time
- Batteries should not be placed in areas where they get wet.
- Do not mix unpacked batteries so to avoid mechanical damage and/or short circuit

## Storage Life:

- Storage life of batteries are ten years at  $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$  and RH  $60 \pm 15\%$ .

## Marks:

- Designation.
- Polarity of terminals.
- Nominal voltage; \*
- Mercury content.
- Name or trademark, manufacturer, or supplier.
- Cautionary advice

## Important Notice:

1. This data sheet contains typical information specific to products manufactured at the time of its publication.
2. Contents herein do not constitute a warranty and are for reference only.

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