Tycorun Smart Battery Swapping Cabinet H12TKRD2

1. Product Overview

This intelligent terminal device is designed to address the challenges of battery charging and swapping for low-speed electric vehicles. Tycorun Smart Battery Swapping Cabinet integrates a series of components including control panels (with a cabinet control system), charging modules, fire extinguishers, and cabinet structures. It provides real-time monitoring of current, voltage, power, and environmental conditions during charging, with intelligent anomaly detection. Upon detecting any abnormality, the system immediately halts charging and alerts maintenance personnel for prompt intervention, effectively preventing potential safety hazards. Users can locate nearby battery swapping cabinets via app and perform battery swaps through QR code scanning on the cabinet's interactive interface. The cabinet features intelligent battery recognition (BMS supports handshake communication protocol) and other advanced functionalities.

2. System Framework

The system framework consists of: app, a charging and battery-swapping cloud platform, battery-swapping cabinets (including cabinet control systems and charging modules), battery-swapping batteries (with BMS)

3. Product Appearance and Function

H12TKRD2 Battery Swap Cabinet

No.	Functional characteristics
1	Multiple battery swap options are available: scan code, swipe card, offline, or empty cell (with full cell option).
2	Outdoor IP54 protection.
3	Communicate with the smart charger to get its status (output voltage, charging current, charging time, operating status, etc.).
4	The system communicates with the battery, automatically identifies battery parameters for charging, and collects operational data for health monitoring.
5	The interior lighting illuminates when the door is opened during battery swapping, facilitating nighttime charging plug insertion and removal, while the lights dim after the door is closed to conserve energy.
6	The control system uses CAN communication.
7	Offline storage capacity, with a history of over 50,000 records.
8	The charging status light of each compartment is displayed in real time.
9	Keep the door open after maintenance.
10	An independent online maintenance platform with remote fault diagnosis, OTA updates, and mobile operation support.
11	The battery compartment features a hard-wired charging plug and a custom-designed battery track, enabling hassle-free battery swapping.
12	The entire cabinet is equipped with air conditioning for cooling, ensuring stable operation in high-temperature environments.

4. Technical Parameters

4.1 Electrical Parameters

Project	Serial model no			
	BTA-H12TKRHD2C-10K3	BTA-H12TKRHD2C-16K2	BTA-H12TKRHD2C-15K7	BTA-H12TKRHD2C-9K7
Maximum power of the machine	10300w	16200w	15700w	9700w
Number of smart charging modules	**Route 12 Nt9015-800**	**Route 12 Zy9020-1300**	**Route 12 Zy9020-1300**	**Route 12 Nt9015-800**
Maximum charging power per slot	**800w**	**1300w**	**1300w**	**800w**
Maximum charging current per slot	**15a**	**20a**	**20a**	**15a**
Applicable battery voltage level	**48v/60v/72v**			
Air conditioner power	**580w**		**Not have**	
Charging mode	Cc/cv (intelligent control)			
Input voltage range	Single-phase ac 176–264v / three-phase ac 312–418v			

Standby power	≤100w
Suona	4 ω5w
Any meter for measuring electricity	Single-phase, CAN communication, with remote meter reading capability

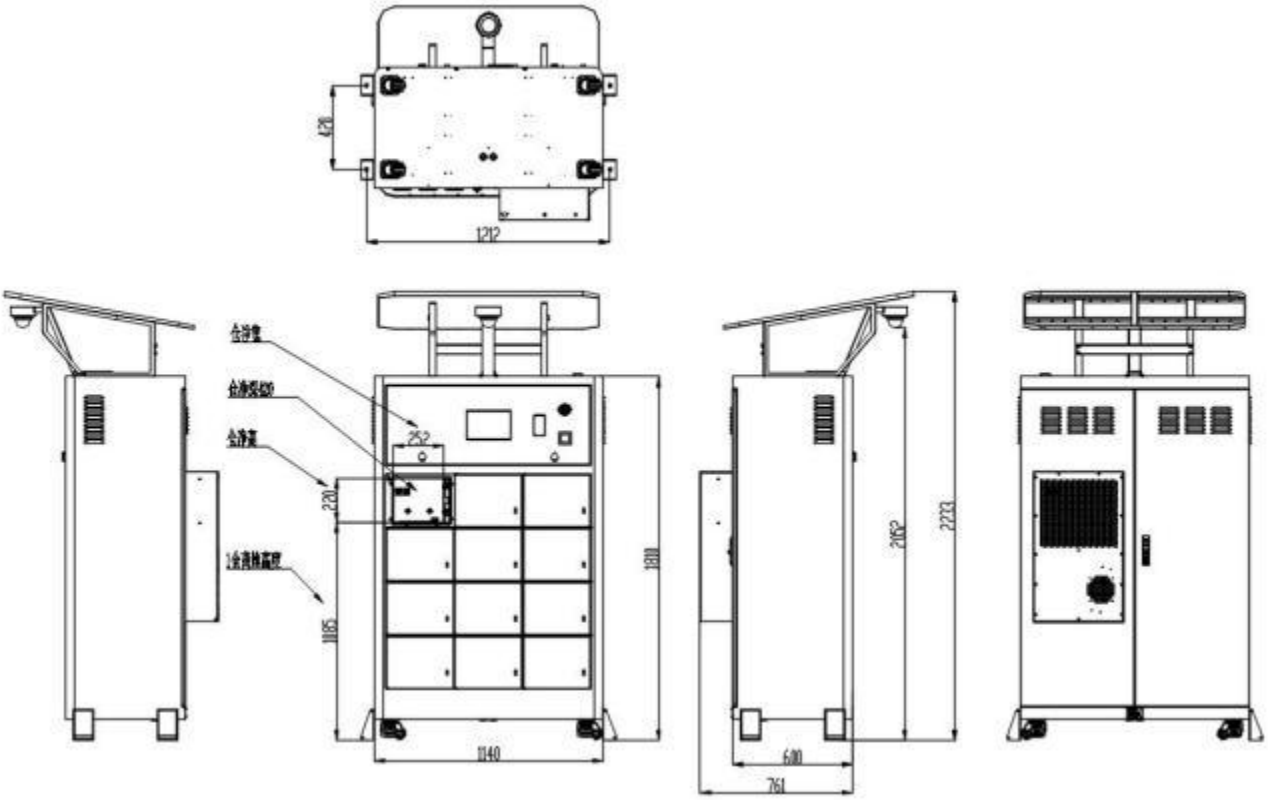
4.2 Working Environment

Storage temperature	-20℃~70℃
Working temperature	-10℃~55℃ (heating components required for cold environments)
Humidity	5% ~ 75% no condensation
Heat dissipation method	Fan/air conditioner
Work environment	Outdoor

4.3 structural parameters

Cabinet dimensions	**Depth 600 mm, width 1140 mm, height 1810mm (excluding the height of the canopy and antenna)**
Material thickness	The shell is 1.2mm thick, the compartment door is 1.2 mm, the load-bearing partition is 1.5 mm, and the foot iron is 3.0 mm.
Construction material	Steel plate + stainless steel
Appearance process	Painting + screen printing
Effective size of battery compartment	**Depth 420*width 252*height 220mm (note: Ensure compatibility with the size of the battery swap)**
Ground clearance of the warehouse floor	**Approximately 1085mm (depending on the base configuration, the height from the ground may vary)**
Battery compartment experience optimization	Design of the slide rail assist in the warehouse
Battery compartment load capacity	30kg
Battery compartment count	12
Battery compartment plug configuration	**The single compartment comes with standard 2+6 charging ports (note: Match the battery charging port)**

Overall cabinet structural dimensions diagram:



4.4 Charging Status

Charged state	Indicator light color
Charging in progress	Red always on
Charging (reaching the threshold)	Green flashing
Full	Always green
Hitch	Yellow always on
Door open status	Yellow flashing
Short position	Not bright

5. Protection

5.1 Dust and Water Resistance

Standard	Level (no canopy)
GB4208-2008	IP54

5.2 Lightning Protection

Lightning protection index	Testing standard
GB4208-2008	TBD

5.3 Fire Protection System

No	Project	Parameter
1	Working environment temperature range	-10℃~+55℃
2	Relative humidity of working environment	≤95%rh
3	Material	Gas adhesive
4	Total time of smoke blowing	≤4s
5	Applicable space	≤0.3m³
6	Initiation temperature of fire extinguishing device	170±20℃
7	Time of fire extinguishing device activation	≤ 3 seconds
8	Maximum working pressure of smoke generator	≤1.8mpa
9	Weight of fire extinguishing agent	10±2%g
10	Device validity period	3 years

6. Safety Specification Characteristics

The dielectric strength between the terminal and ground (housing) and the non-electrically connected circuits shall withstand the test voltage specified in the table below. The test voltage is 50Hz AC voltage, and no corona, ionization, arc, or breakdown shall occur between the tested terminals.

7. Packaging and Transportation

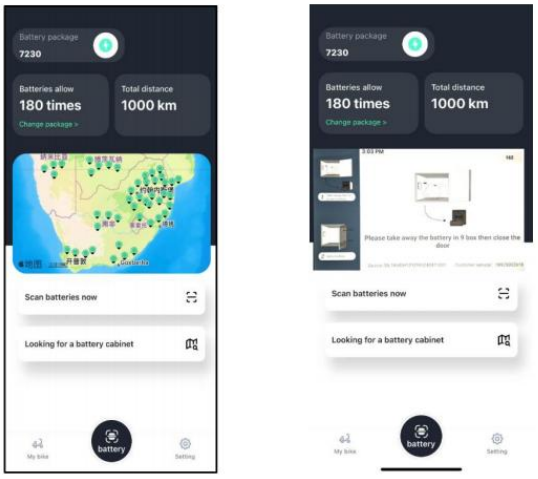
7.1 Packaging

The packaging box displays the product name, specifications, and quantity, and contains the manufacturer's quality department inspection certificate and installation accessories.

7.2 Transportation

This packaging is suitable for transportation by automobile, ship, aircraft, train, etc. During transportation, the product must not be subjected to severe mechanical impact, direct sunlight, rain exposure, or inverted. During loading and unloading, the product should be handled gently to avoid dropping, rolling, or heavy pressure.

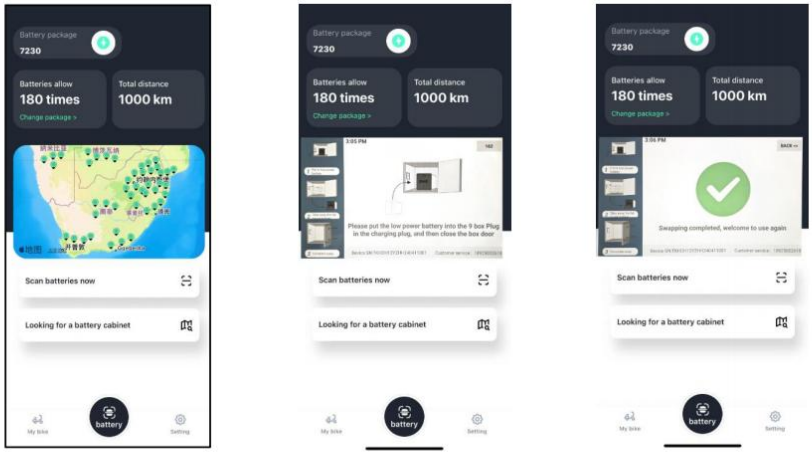
8.Software Process



点击首页"扫码" → 取电步骤（开仓门 → 取出新电池 → 关仓门 → 结束）

Click "Scan code" on the home page → Steps to take out the batteries

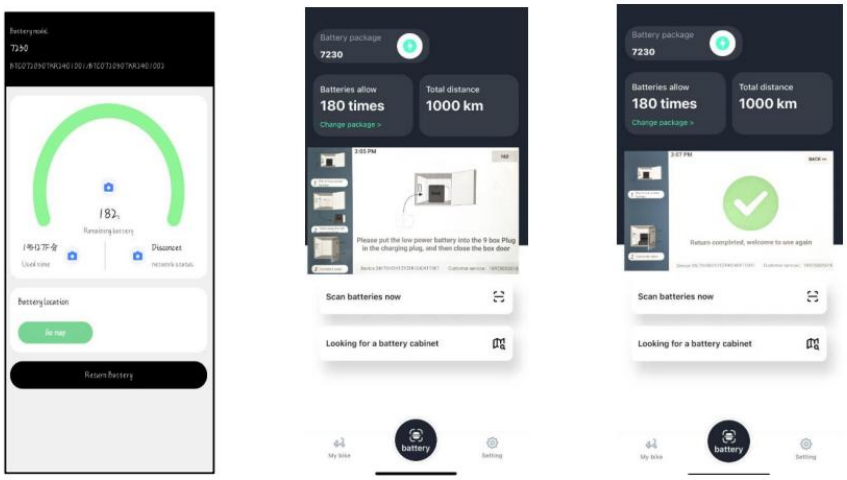
(Open the door → Take out the new batteries → Close the door → Finish)



点击首页"扫码" → 换电步骤（开仓门 → 放入空电池 → 取出新电池 → 关仓门 → 结束）

Click "Code" on the home page → Change the battery

(Open the door → Put in the empty battery → Take out the new battery → Close the door → Finish)



查看"我的电池" → 点击"退还" → 退电步骤（开仓门 → 取出电池 → 关仓门 → 结束）

View "My Battery" → Click "Return Battery" → Steps to return battery
(Open door → Remove battery → Close door → End).