512

# ABAT100 Series Battery Management System

## Installation and Operation Instruction V1.1

Acrel Co.,LTD

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# Declaration

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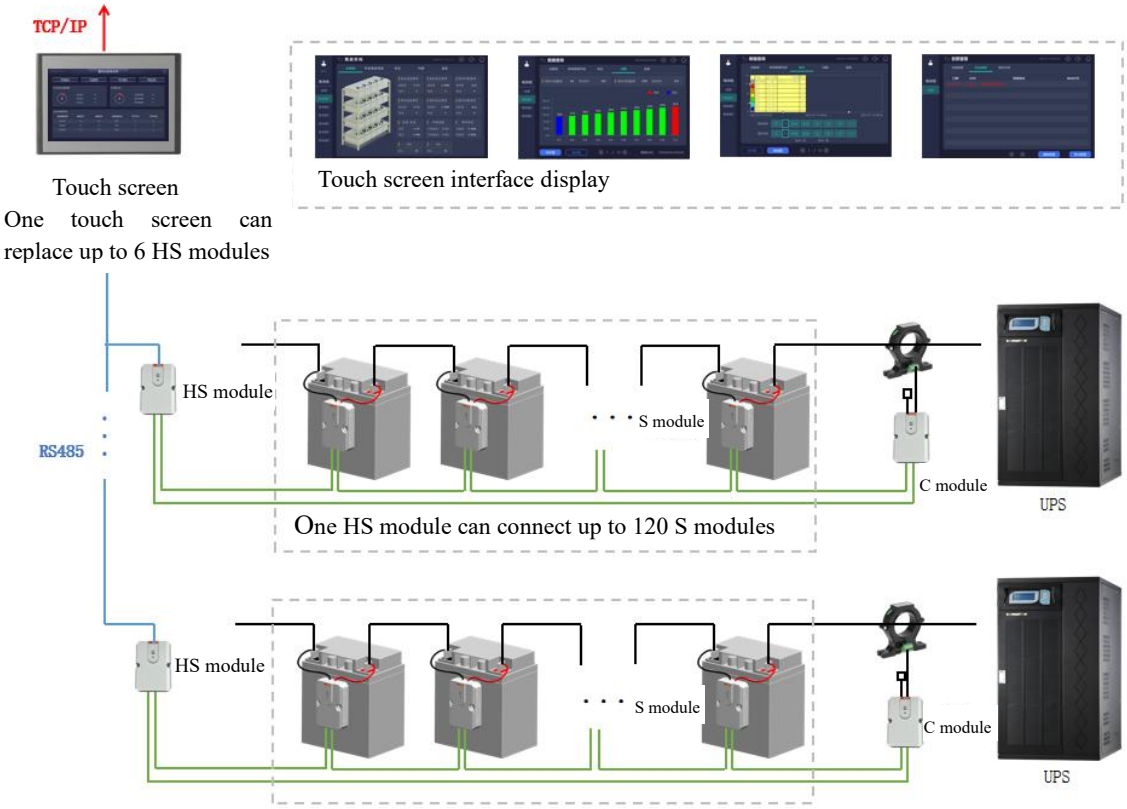
## 1 Summary

This product is used for centralized display and management of data and alarms of battery.

## 2 Networking Architecture

Solution 1： Touch Screen Serial Port Networking Solution

Upload to third-party platforms



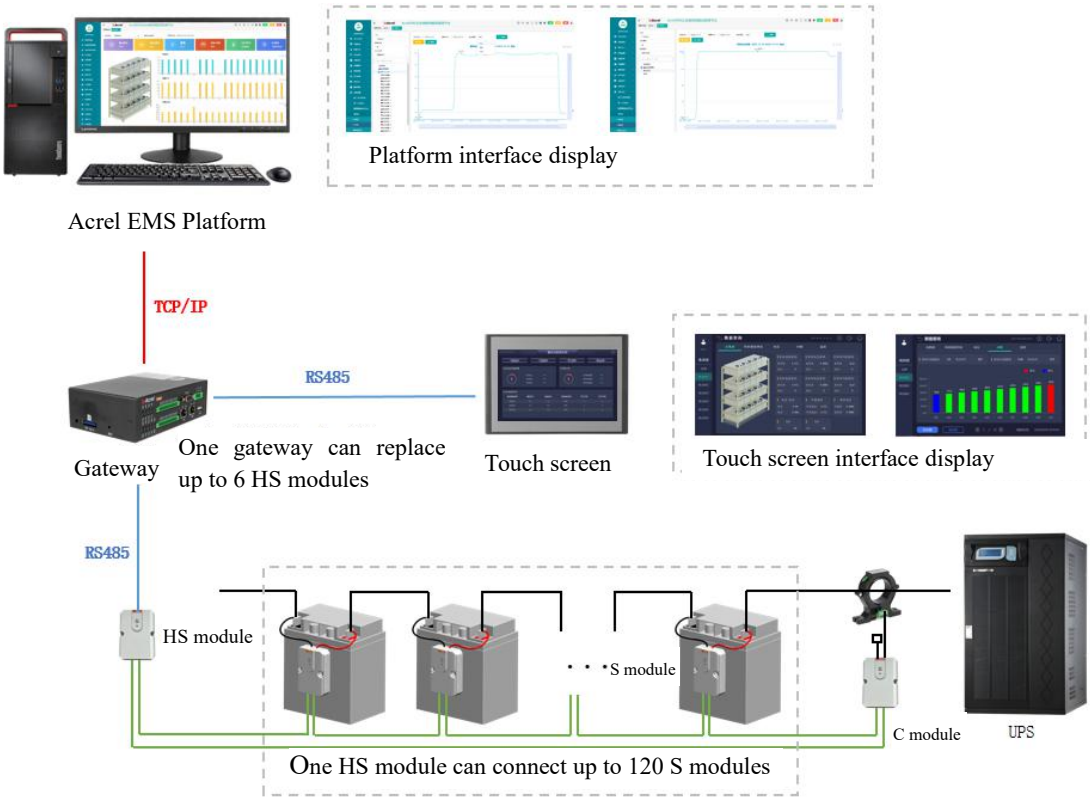

ABAT100-HS:manage one set of batteries at a time,with a maximum of 120 batteries per set.
ABAT100-S-02/6/12:monitor a 2/612 battery,monitor battery voltage,internal resistance,and negative electrode temperature.
ABAT100-C:monitor a charging and discharging current and an ambient temperature,with a maximum current range of 1000A.

Fig1 Networking solution 1



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Solution 2：EMS，EIOT Networking Solution




ABAT100-HS:Manage one set of batteries at a time.

ABAT100-S-02/6/12:Monitor a battery,monitor battery voltage,internal resistance,and negative electrode temperature.

ABAT100-C:Monitor a charging and discharging current and an ambient temperature.

Fig2 Networking solution 2

## 3 Installation of Touch Screen

### 3.1 appearance and installation

#### 3.1.1 7-inch touch screen appearance and installation

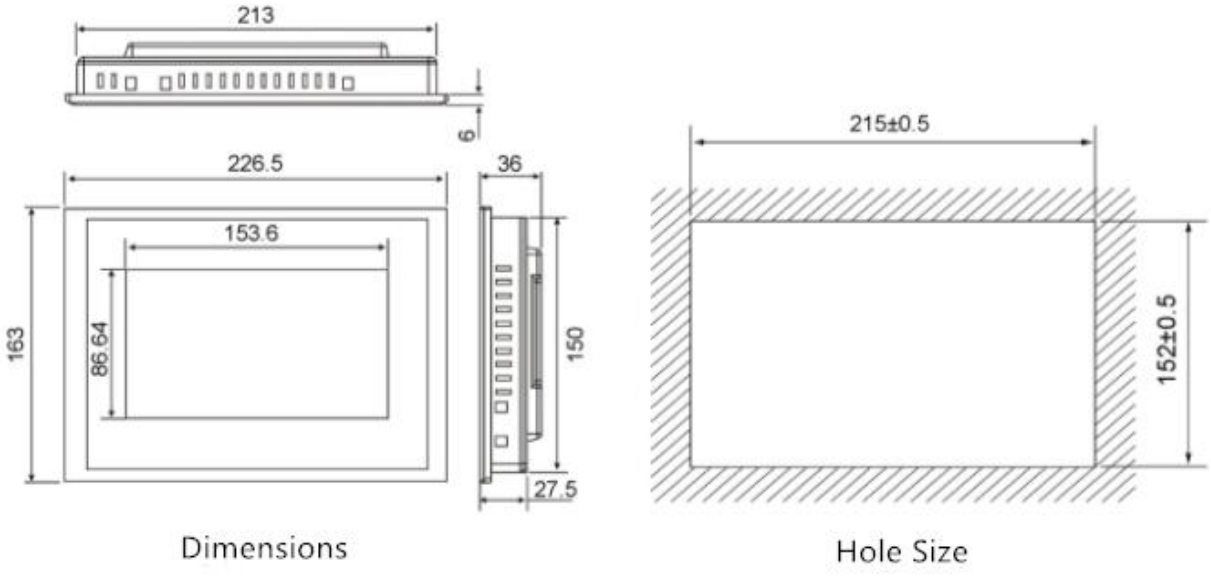



Fig3 7-inch touch screen installation



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### 3.1.2 10-inch touch screen appearance and installation

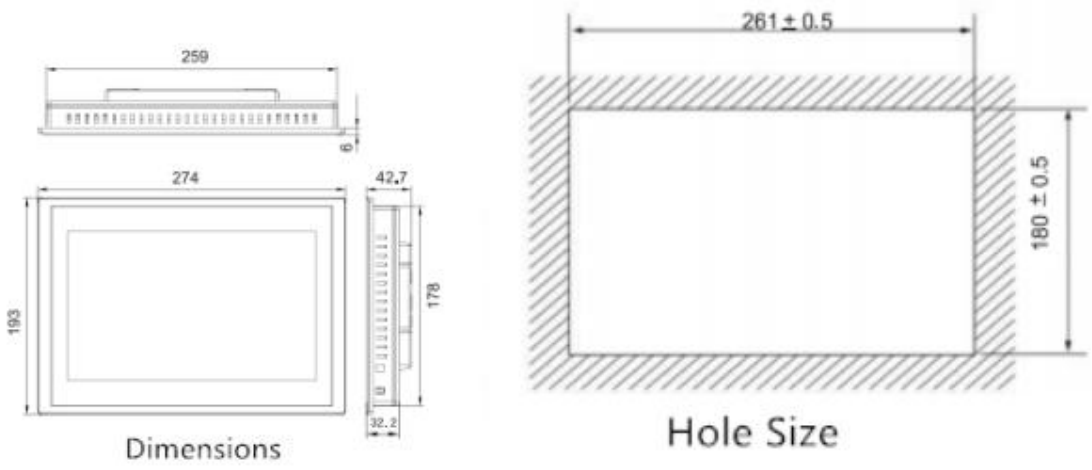
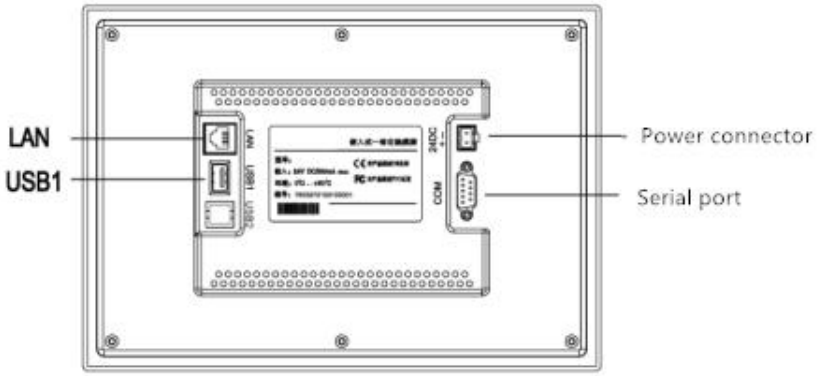



Fig4 10-inch touch screen installation

### 3.2 Touch Screen Interface Description

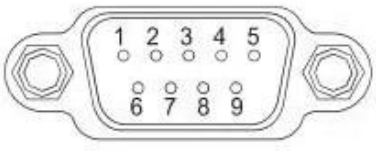



| | |
|---|---|
| Serial port（DB9） | 2×RS485 |
| USB1 | Main port, compatible with USB2.0 standard |
| LAN（RJ45） | Ethernet interface |
| Power connector | 24V DC ±20% |

Fig5 Touch screen interface description

DB9 Definition

**Serial port pin definition**




Serial port pin definition

| interface | PIN | pin definition |
|---|---|---|
| COM1 | 2 | RS232 RXD |
| | 3 | RS232 TXD |
| | 5 | GND |
| COM2 | 7 | RS485 + |
| | 8 | RS485 − |
| COM3 | 4 | RS485 + |
| | 9 | RS485 − |

Fig6 Serial port pin definition diagram



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Fig7 Supporting adapter board for touch screen

Communicate by serial port as shown above：7,8 To gateway

### 3.3 Installation

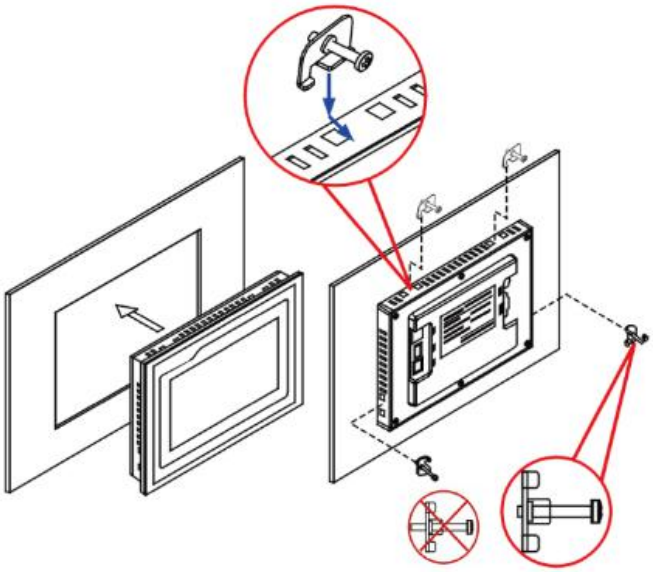


Fig8 Installation diagram of touch screen



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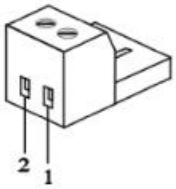
## 3.4 Wiring

Step 1: Strip the 24V power cord and insert it into the power plug terminal

Step 2: Use a flat-blade screwdriver to tighten the power plug screws

Step 3: Insert the power plug into the power socket of the product

schematic diagram and pin definition of the power plug are as follows




| PIN | definition |
|---|---|
| 1 | + |
| 2 | – |



24V DC only, independent power supply and the power supply is 15W

Fig9 Touch screen power wiring step diagram

## 4 Touch Screen Instructions

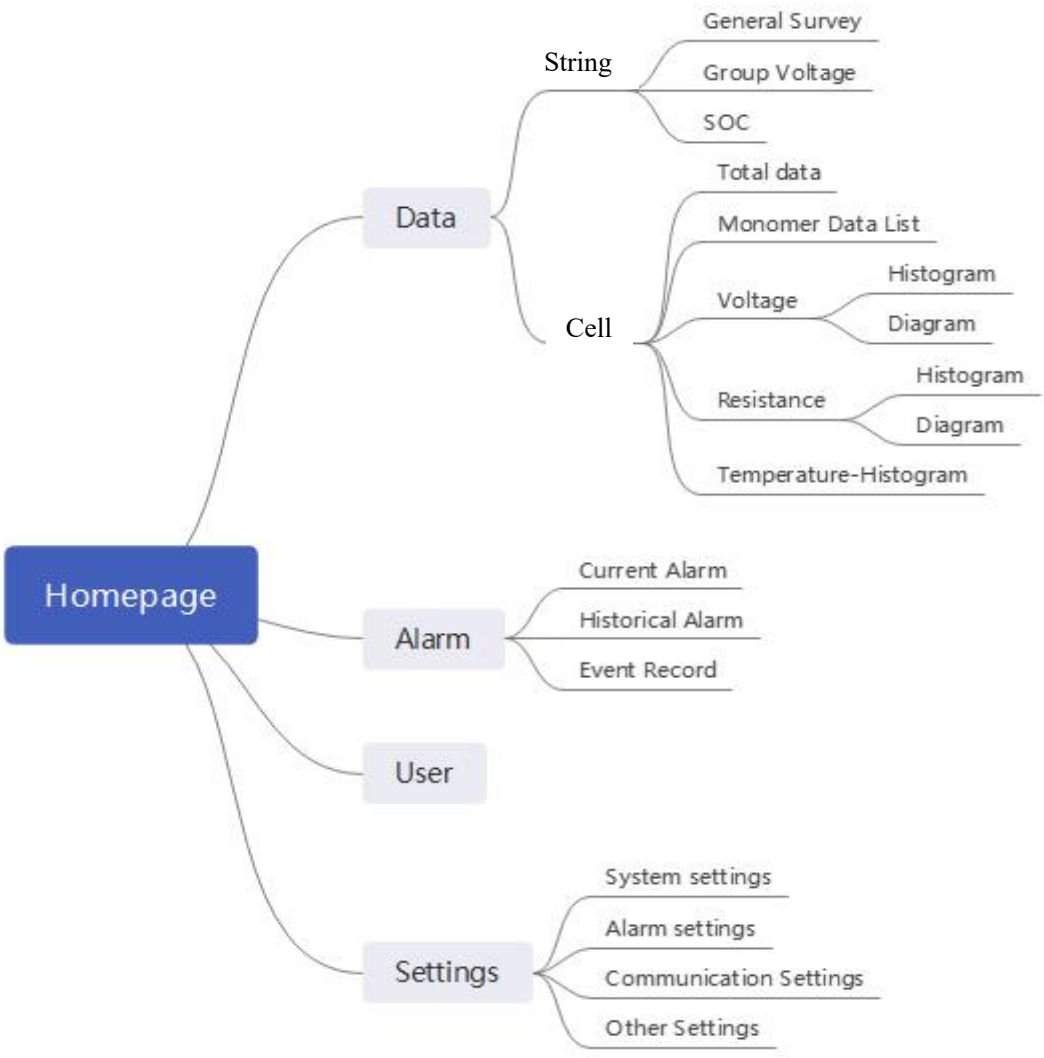



Fig10 Instructions for using touch screen software



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## 4.1 Homepage

The first page as shown. Display battery String general survey and alarm number.




## 4.2 Data Query-Battery String Data General Survey

Display group voltage, current, charge status, SOC, SOH and other data of battery String.






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## 4.3 Data Query-Battery String Group Voltage General Survey

Display group voltage by histogram.




## 4.4 Data Query-Battery String SOC General Survey

Display SOC by histogram.






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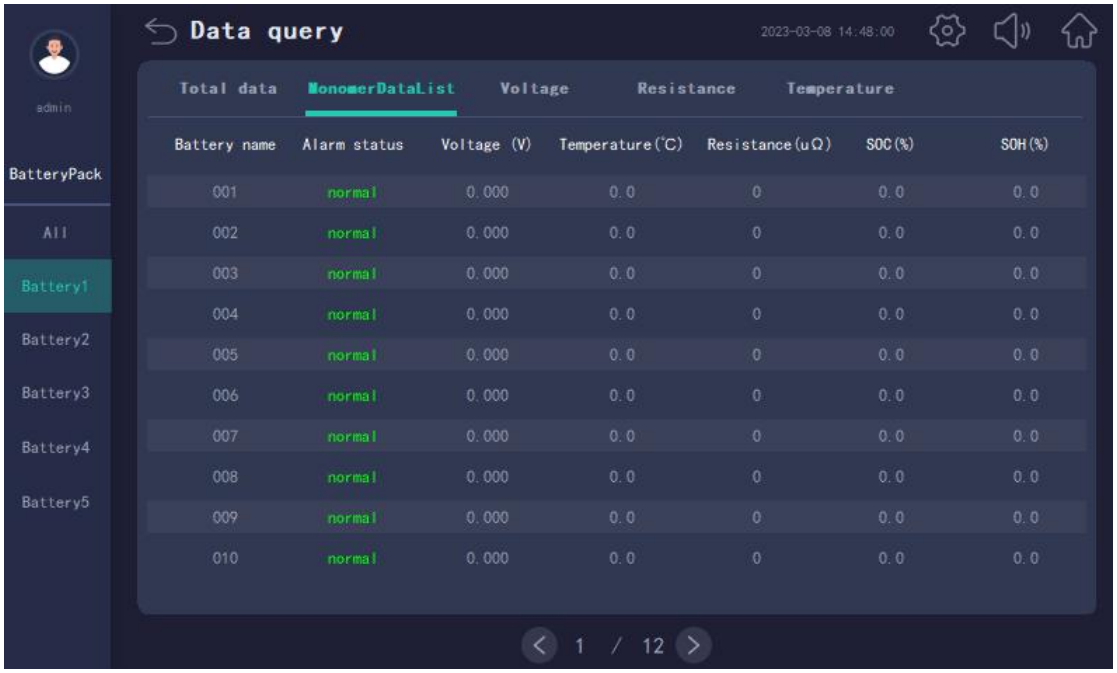
## 4.5 Data Query-Total Data of Cell Battery

Display voltage, temperature, resistance, SOC, of Cell battery String.




## 4.6 Data Query-Monomer Data List

Display battery name, alarm status, voltage, temperature, resistance, SOC, SOH of each battery in each String. Each battery String can have 120 batteries data at most.



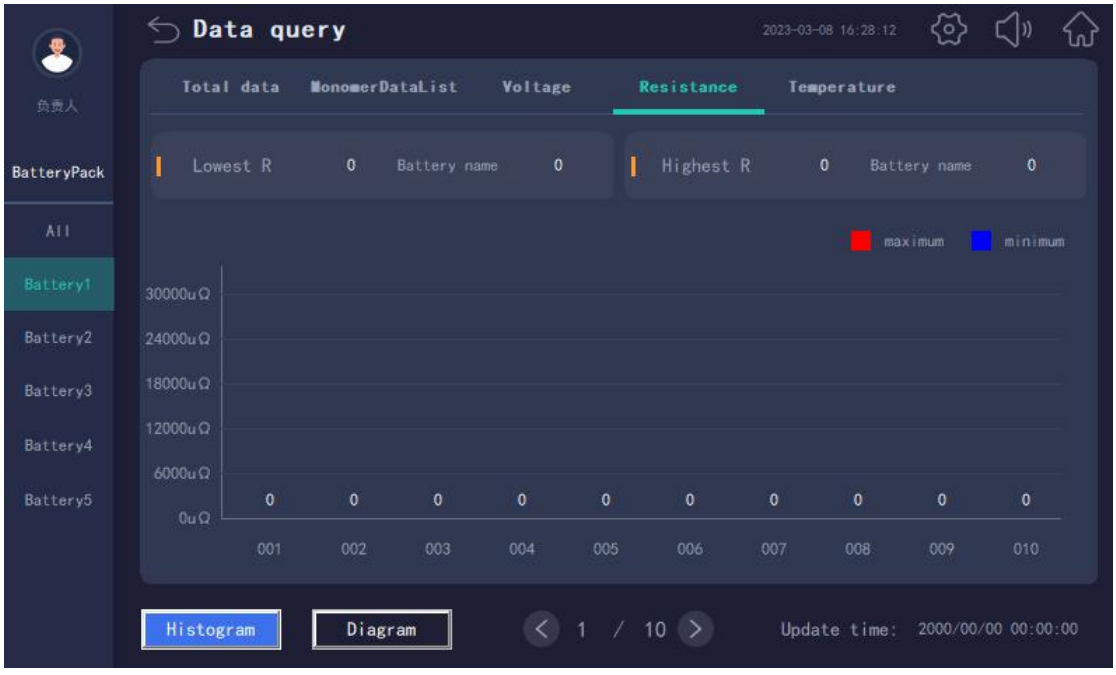



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## 4.7 Data Query-Histogram of Cell Battery Voltage, Resistance and Temperature

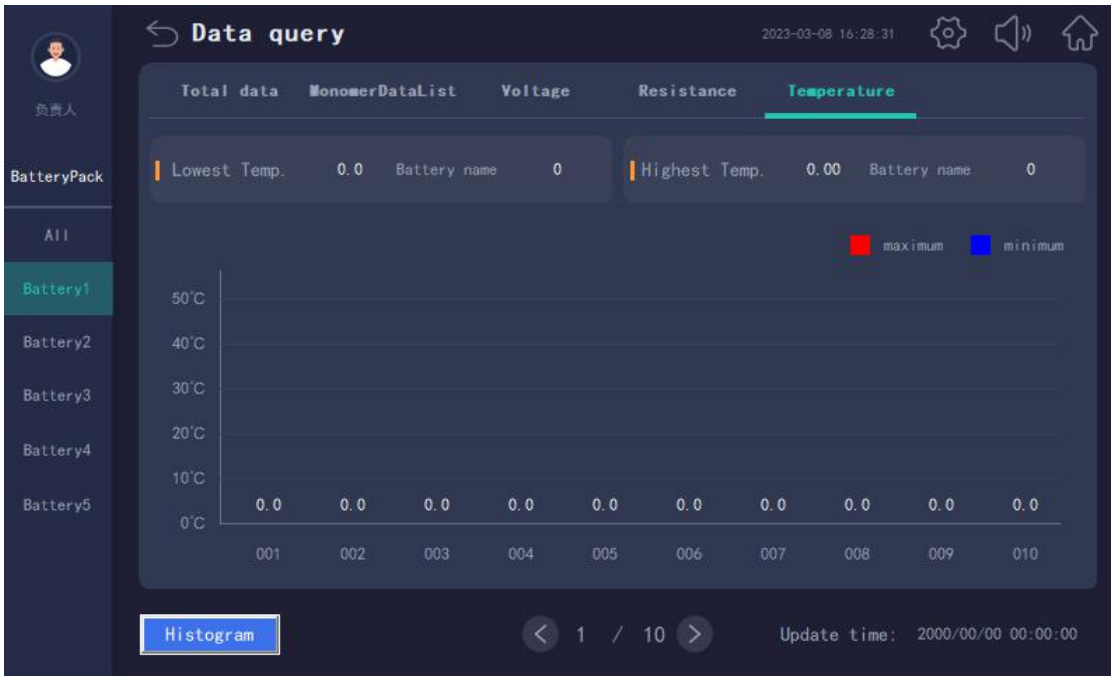
Display each battery data by histogram. Minimum in blue, Maximum in red.



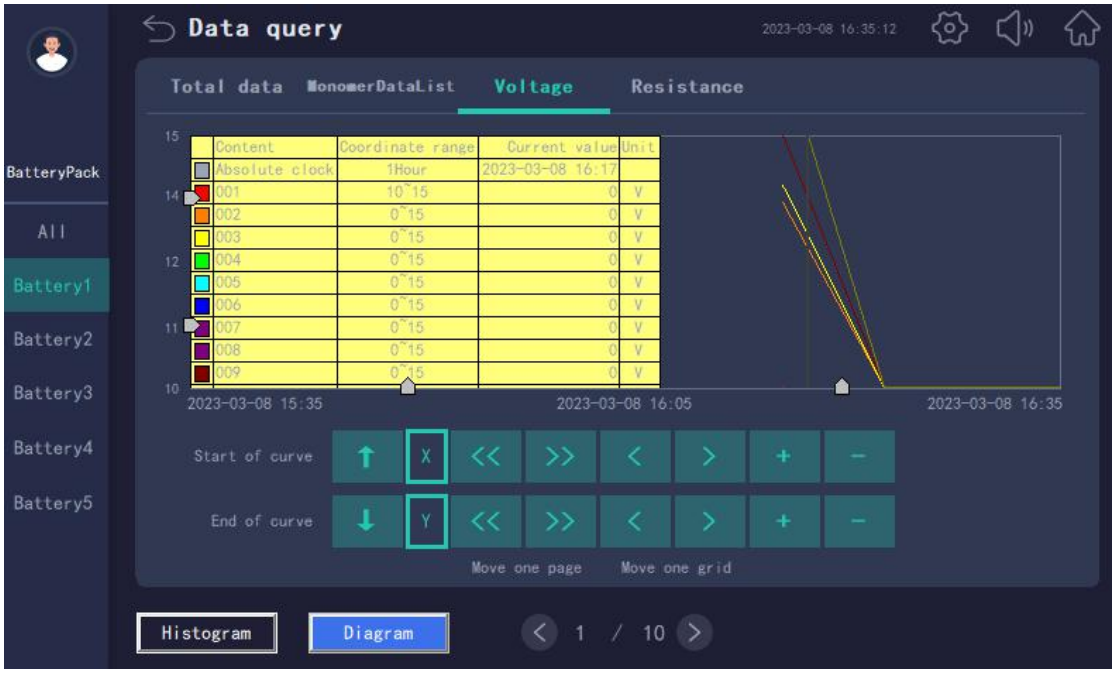



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## 4.8 Data Query-Diagram of Cell Battery Voltage, Resistance and Temperature

Display diagram of each battery. 10 Batteries in each page at most. Get data in brief by point at screen.






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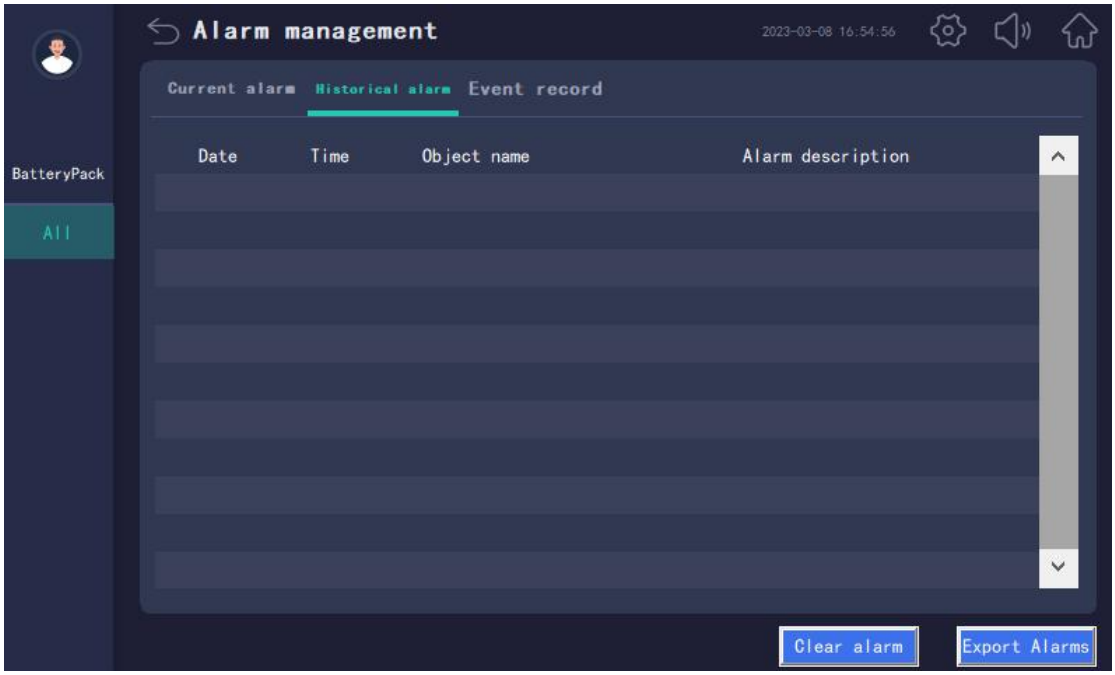
## 4.9 Alarm Query-Current Alarm

Press  can confirm alarm and make it silence.




## 4.10 Alarm Query-Historical Alarm

Attention: Only login user “admin” can clear alarm successfully.





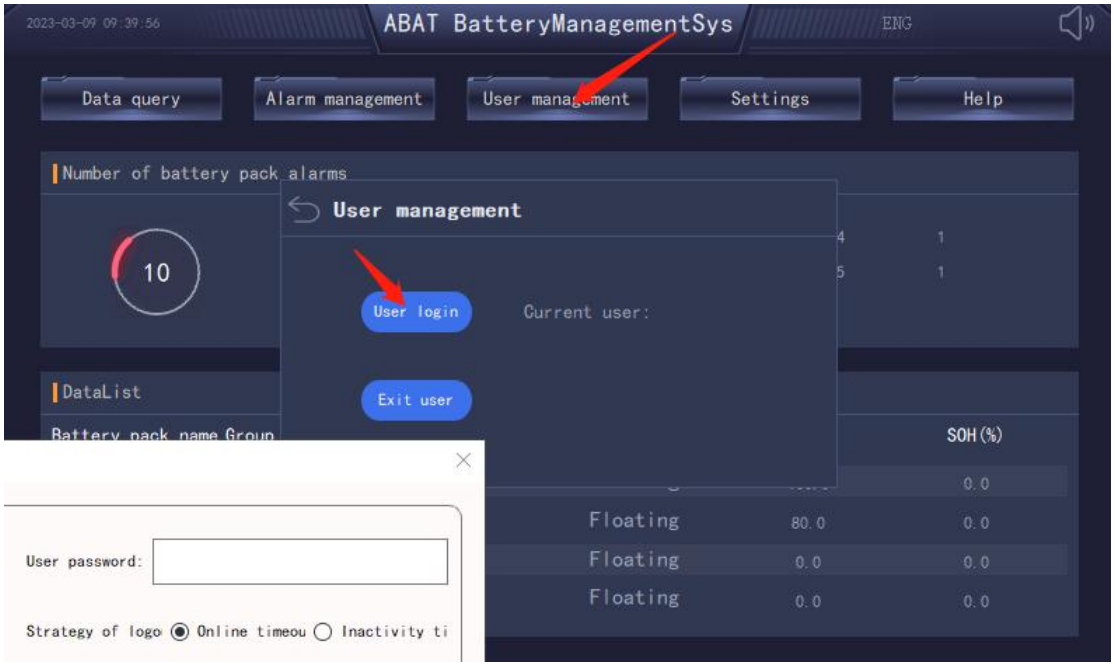

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## 4.11 Alarm Query-Event Record

Attention: Only login user “admin” can clear events successfully.




## 4.12 User Management




Admin password: 10000. Allowed to “Settings” and setup.

## 4.13 Parameter Settings-System Settings

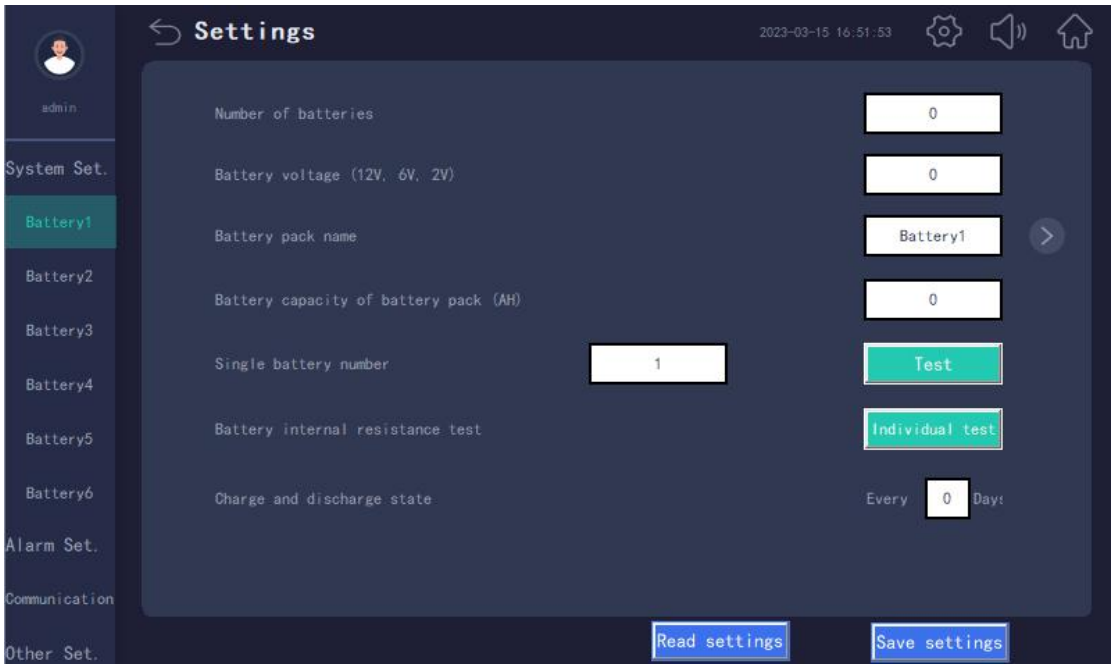
Set the number of batteries, voltage, battery String name, capacity of battery String, internal resistance test of each battery String.

Set the data in the collector pointed.

Press “Save settings” to save the change.



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## 4.14 Parameter Settings-Alarm Settings




The parameters in this page is read from communication collector directly. Set these parameters should transport into communication collector.

Set alarm limits value of Cell voltage overcharge, over-discharge, over floating charge, under floating charge and uneven individual voltage.

Set alarm limits value of group voltage overcharge, over-discharge, over floating charge and under floating charge.

Set alarm limits value of current overcharge and over-discharge.

Set alarm limits value of environmental over temperature, under temperature and temperature rise.

Set alarm limits value of battery over temperature, under temperature and uneven temperature.

Set alarm limits value of over ,under and uneven internal resistance.

Set alarm limits value of battery String insulation resistance.

Set lower alarm limits value of SOC and SOH.



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## 4.15 Parameter Settings-Communication Settings




Available acquisition mode：Serial port acquisition mode, EMS acquisition mode and EIOT acquisition mode.

Serial port acquisition mode：Touch screen collect data from ABAT100-HS by RS485.

EMS acquisition mode： An assorted EMS solution is provided. The data of ABAT100-HS collector use ANET gateway serial port to collect and transport by network port2 to the touch screen.

EIOT acquisition mode： An assorted EITO solution is provided. The data of ABAT100-HS collector use AWT200-1E4S gateway serial port to collect and transport by network port to the touch screen.

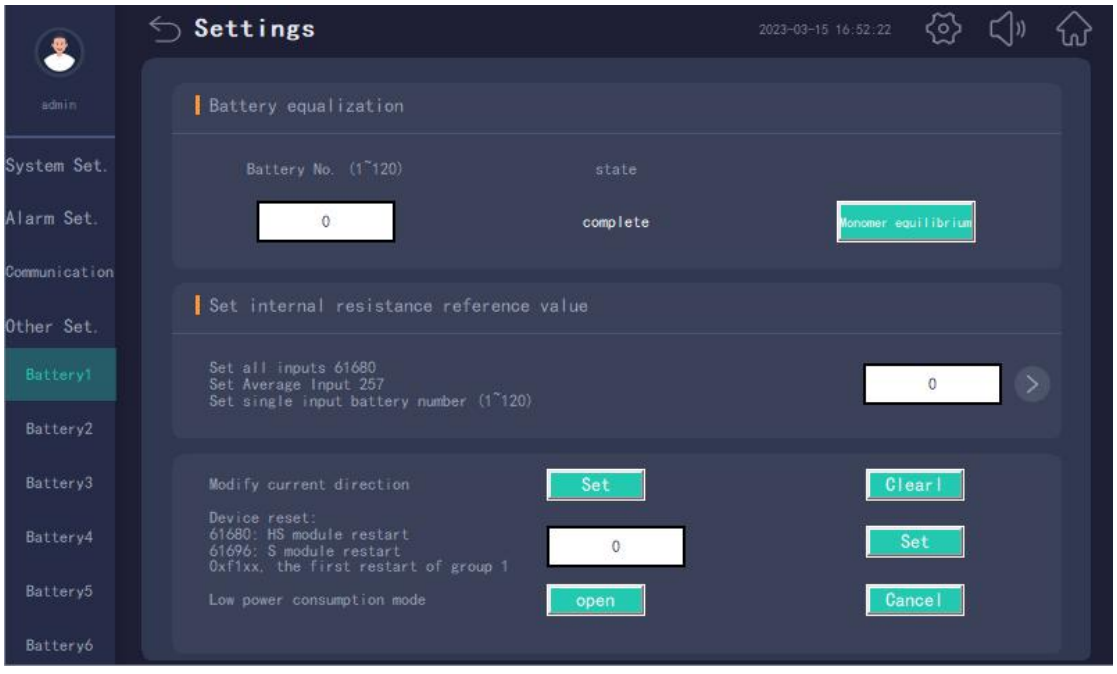
Set IP address: The IP address is belong to the touch screen.

Number of collectors: Set the number of ABAT100-HS collectors.

Set meter address: The ABAT100-HS collectors address only can be set when connect with Cell ABAT100-HS collector. The 1~6 address on the touch screen is corresponding to the battery String 1~6.After setting,click on the read address to confirm whether the write was successful.

Set 485 forwarding address:modify this address when using 485 forwarding data processing on the touch screen.

## 4.16 Parameter Settings-Other Settings






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Set battery equalization, internal resistance reference value, current direction, device reset and low power consumption mode.

Battery equalization: Balance the voltage of Cell battery not to high or to low.

Internal resistance reference value: Set after replace the batteries.

Change current direction: Set when the Haul connected in opposite direction.

Device reset: Reset to test Cell battery HS Module.

Low power consumption mode: If the battery will not be charged in a long time, can open this mode to make HS low power consumption.

Clear I: Clear current to calibrate HALL sensor. Only can be pressed with no load.

## 5 Data Forwarding File

Only apply for touch screen serial port acquisition mode and forward by network port.



蓄电池触摸屏转发地址表.xlsx



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Manual revision record

| Data | Old version | New version | Revision |
|---|---|---|---|
| 2023.3.17 | | V1.0 | 1. First writing |
| 2023.5.24 | V1.0 | V1.1 | 2. Update images and descriptions of 4.1and 4.15 |



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