PRODUCT SPECIFICATION

Product Name: High Voltage Box

Product Model: TB-PDU1525

Version: V1.1

Compiler: Bin	Reviewer: Ethan	Ratify: Gary
2025-4-15	2025-4-15	2025-4-15

The copyright of this document belongs to Shenzhen Tringo Control Co., Ltd., and it shall not be copied without written approval!

Revision Record

Date	Revised Version	Revision Note	Reviser
2025-4-15	V1.0	Newly formulate	Bin
2025-4-21	V1.1	Parameters revision	Yuan

Catalog

1. Overview 4
1.1. Introduction 4
1.2. Model Description 4
1.3. Application environment 4
2. Key components List 5
3. Product Structure 5
3.1. Structural Dimensions 5
3.2. Port definition 6
4. Schematic diagram 7
5. Precautions 7

1. Overview

1.1. Introduction

The High Voltage Box is the power circuit management unit in high-voltage energy storage systems. The TB-PDU1525 High Voltage Box is designed for battery energy storage systems with a voltage level of up to DC1500V and a current level of up to 250A. It provides key functions including battery cluster voltage and current acquisition, battery cluster circuit relay control, and battery cluster protection.

It also supports data processing and charge/discharge control for each battery pack within the cluster, enabling multiple management functions at the cluster level.

1.2. Model Description

TB-PDU1525:

Battery cluster total voltage ≤ 1500 VDC, rated current ≤ 250 A

1.3. Application environment

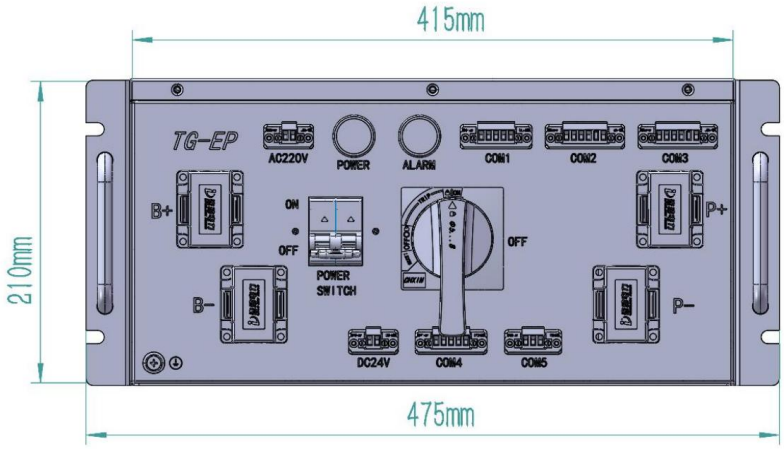
Index item	Parameter
Use ambient temperature range	-20℃ ~ 70℃
Storage environment temperature range	-40℃ ~ 85℃
Use ambient humidity range	5 ~ 95（45℃±2℃）%RH
Storage environment humidity range	≤95（45℃±2℃）%RH
Atmospheric pressure	76 ~ 106 Kpa
Altitude	≤2000 m
Heat dissipation mode	Natural heat dissipation
IP rating	IP20

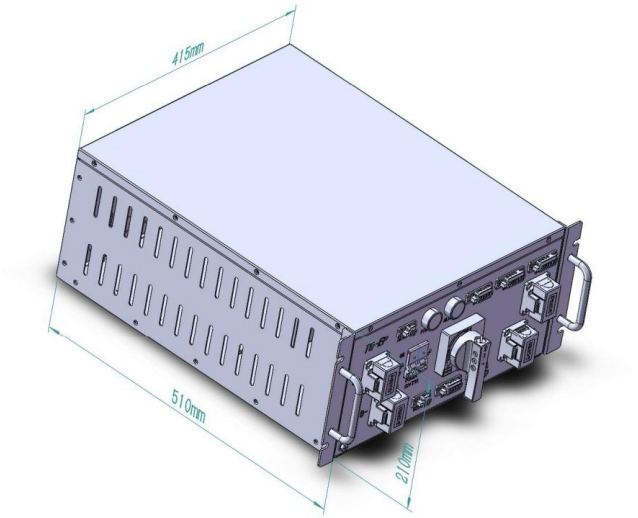
2. Key components List

No.	Component	Qty.	Unit	Sign	Function
1	Control Board	1	PC	BCU	Brand: TG-EP Battery Cluster Master Control Board
2	Circuit Breaker	1	PC	QF1	Manual switching and automatic tripping for battery cluster circuits
3	Pre - charge Contactor	1	PC	KM1	Automatic switching for pre-charge circuits
4	Main circuit Contactor	2	PC	KM2/KM3	Automatic switching for battery cluster positive/negative circuits
5	DC Fuse	1	PC	FU1	Overcurrent protection for main circuits
6	Pre - charge Resistor	1	PC	R1	Current limiting for pre-charge and circulation circuits
7	Miniature Circuit Breaker	1	PC	QF2	Control power supply switching
8	DC Shunt	1	PC	R2	Current measurement
9	AC/DC power supply	1	PC	DY1	Power supply for BCU

3. Product Structure

3.1.Structural Dimensions

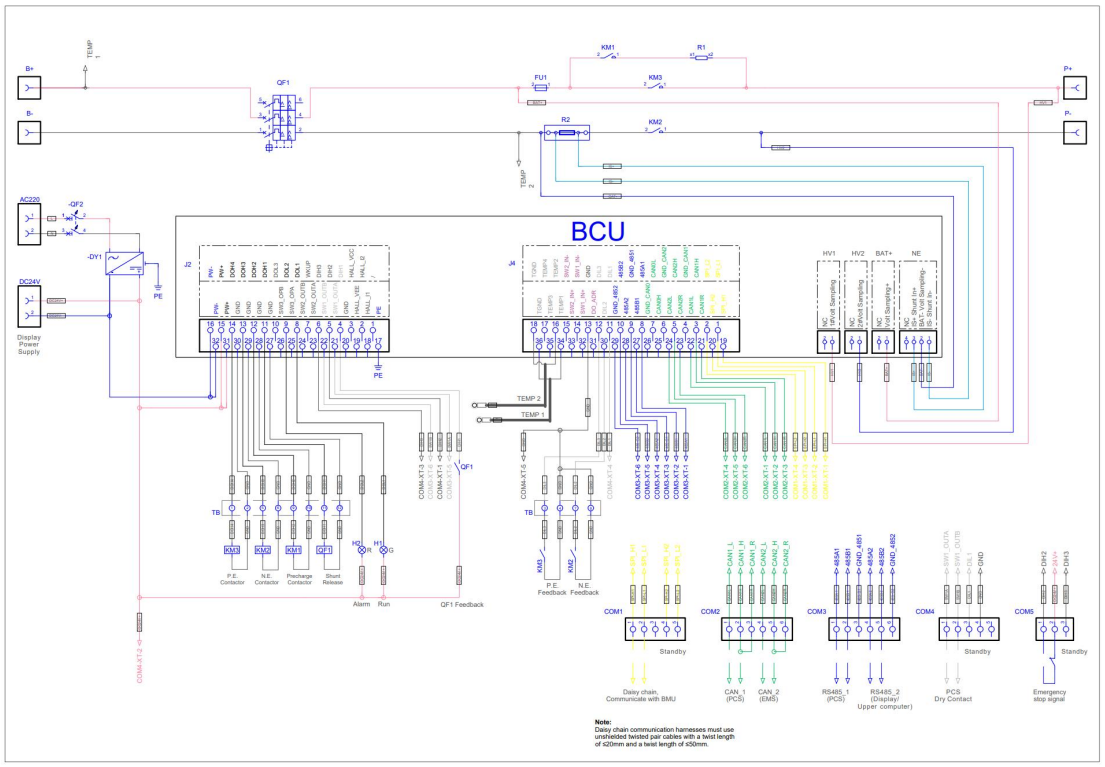




3.2.Port definition

Port Definition	Description	Remarks
B+	Battery cluster positive input	input Connect to battery cluster positive terminal
B-	Battery cluster negative input	Connect to battery cluster negative terminal
P+	High-voltage box positive output	Output from HV box to PCS positive terminal
P-	High-voltage box negative output	Output from HV box to PCS negative terminal
AC 220V	External AC Input	External AC 220V power input supplies power to the AC/DC switching power supply of the BMS inside the high voltage box.

4. Schematic diagram



5. Precautions

- Prevent electrostatic discharge, moisture, and water ingress during use.
- Ensure correct polarity when connecting battery modules; reverse polarity is prohibited.Verify full insertion of terminals during harness-to-module connections.
- Avoid excessive power harness lengths and crossing with communication cables.
- Wear insulating gloves when handling HV terminals (Total Positive/Negative).
- Confirm input voltage is within specifications before powering on the HV box.
- Never touch HV terminals while the unit is energized.
- Strictly follow sequential power-on/shutdown procedures.
- Use twisted-pair shielded cables for CAN/RS485 communication .
- The Company reserves the final right to interpret this document.

Shenzhen Tringo Control Co., Ltd.

Company add（RD center): 4F, Bldg.4, Nantai Yunchuang Valley, Fenghuang Str., Guangming Dist., Shenzhen, CN

Web：www.tg-ep.com

Our company reserves the right to modify the equipment parameters without prior notice.