ENERPOWER

Product Specifications

Product Details

Product Description	Rechargeable Li-Ion Battery for electric bikes
Brand	ENERpower
Product Name	DP-5C / ENERpower Megiddo 48V
Specifications	48V / 20Ah / 960Wh
Date	2026-06-01

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1. Scope

This specification applies to the rechargeable lithium-ion battery pack TCRFD331304YW.

2. Product Images

3. General Specifications

No.	Item	Specification	Notes
1	Nominal Voltage	48 V	
2	Factory Voltage	49.5 ± 0.5 V	
3	Rated Capacity	20 Ah	Standard charge: CC-CV (3 A, 54.6 V, 0.025C cut-off) Standard discharge: 0.2C to over-discharge protection
4	Minimum Capacity	19.6 Ah	Standard charge: CC-CV (3 A, 54.6 V, 0.025C cut-off) Standard discharge: 0.2C to over-discharge protection
5	Internal Resistance	≤ 150 mΩ	Measured at AC 1 kHz after standard charging
6	Cell Configuration	13S4P	Cell matching criteria: ΔR ≤ 3 mΩ, ΔV ≤ 3 mV
7	Dimensions	See dimensional drawing	
8	Weight	Approx. 4.70 kg	Battery pack only
9	Charge Voltage Limit	54.6 V	CC-CV charging method
10	Standard Charge Current	3 A	
11	Maximum Charge Current	5 A	
12	Discharge Cut-Off Voltage	35.1 V	
13	Standard Discharge Current	20 A	
14	Maximum Discharge Current	30 A	

15	Operating Temperature	Charging: 0°C to 45°C Discharging: -20°C to 45°C	
16	Storage Temperature	Up to 1 year: -20°C to 25°C Up to 3 months: -20°C to 45°C Up to 1 month: -20°C to 60°C	Humidity ≤ 70% RH
17	Reverse Polarity Protection (Charging Port)	Supported	Charging port voltage below 5 V
18	Discharge During Charging	Not permitted	
19	Battery Level Indicator	Red: around < 25% Red + 1 x Green: 26%-50% Red + 2 x Green: 51% - 75% Red + 3 x Green: 76% - 100%	
20	Low-Voltage Power Switch	Included	
21	Charging Connector	DC 5.5 x 2.1 mm	
22	Discharge Connector	4-pin connector Pin 1: P+ Pin 2: P+ Pin 3: P- Pin 4: P-	 Pin order: P+ | P+ | P- | P-

4. Electrical Protection Parameters

Protection Function	Parameter	Min.	Typical	Max.	Tolerance	Unit
Overcharge Protection	Protection Voltage	-	4.250	-	±30 mV	V
Overcharge Protection	Release Voltage	-	4.150	-	±50 mV	V
Overcharge Protection	Protection Delay Time	500	-	1500	-	ms
Overcharge Protection	Recovery Method	-	Automatic	-	-	-
Over-Discharge Protection	Protection Voltage	-	2.70	-	±50 mV	V
Over-Discharge Protection	Release Voltage	-	3.000	-	±80 mV	V
Over-Discharge Protection	Protection Delay Time	500	-	1500	-	ms
Over-Discharge Protection	Recovery Method	-	Connect charger	-	-	-
Discharge Overcurrent Protection	Protection Current	72	80	88	-	A
Discharge Overcurrent Protection	Protection Delay Time	1200	-	2800	-	ms

Discharge Overcurrent Protection	Recovery Method	-	Disconnect load	-	-	-
Short-Circuit Protection	Protection Function	-	Supported	-	-	-
Short-Circuit Protection	Protection Delay Time	-	600	-	-	µs
Short-Circuit Protection	Recovery Method	-	Disconnect load	-	-	-
Temperature Protection	Discharge Protection Temperature	70	75	80	-	°C
Temperature Protection	Recovery Temperature	65	70	75	-	°C
Temperature Protection	Recovery Method	-	Automatic recovery when the temperature returns to the normal range	-	-	-
Cell Balancing	Balancing Start Voltage	-	4.18	-	-	V
Cell Balancing	Balancing Current	-	55	-	-	mA
Quiescent Current	Self-Consumption Current	-	≤80	-	-	µA
Internal Resistance	BMS Main Circuit Resistance	-	≤40	-	-	mΩ

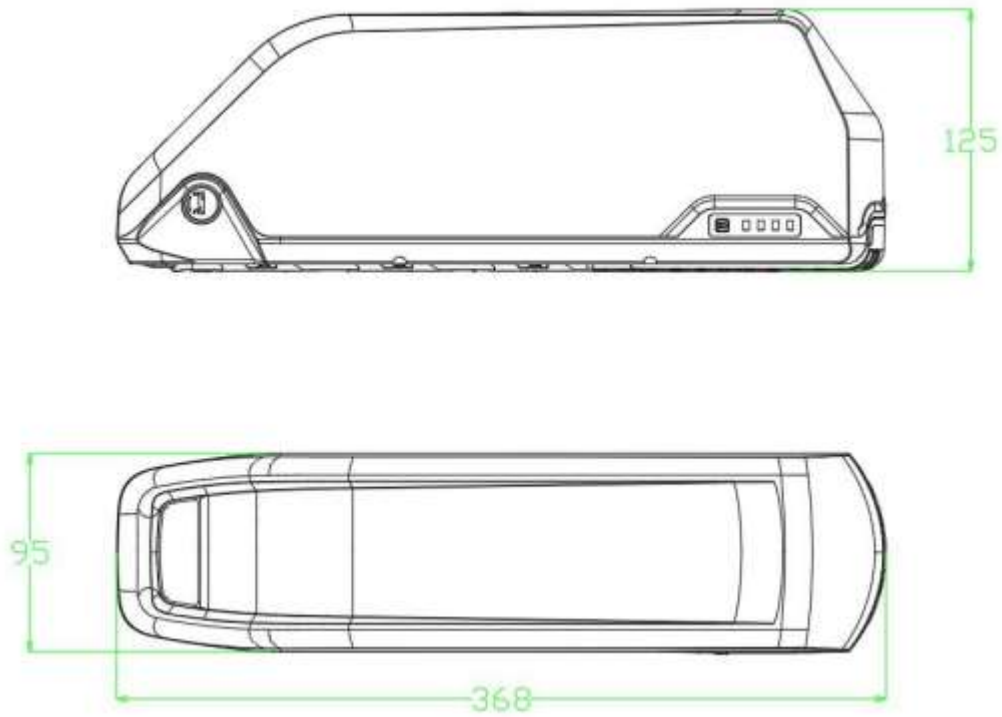
5. Main Components

No.	Component	Model	Specification / Parameters
1	Battery Cells	INR21700-50GB	Samsung 50GB, 3.66 V, 5000 mAh
2	Battery Management System (BMS)	B-ZYDY-1324-AP02-B	13S, 30 A
3	Charging Connector	DC 5.5 x 2.1 mm	
4	Discharge Connector	Various	XT-60, XT-90, Anderson Powerpole
5	Power Switch Connector	SM-2P	Battery Side: SM-2Y Housing Side: SM-2A
6	Battery Housing (Customer-Supplied)	DP-5C	Black
7	Discharge Base Assembly	-	4-pin contact base with XT90 connector Exposed cable length: 200 mm

Accessory illustration:

6. Dimensions

Units: mm



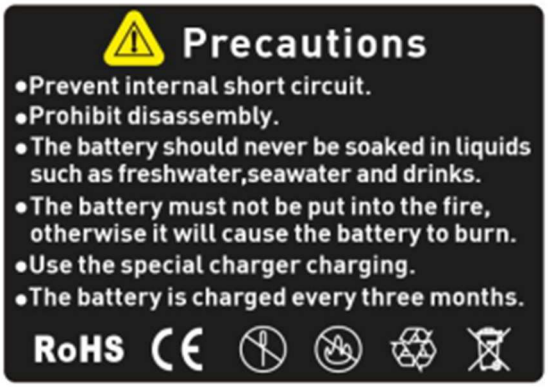
7. Labels

Product Label

50 × 30 mm silver label

Warning Label

50 × 35 mm gloss black label



Label Illustration

8. Packaging

- Shipping cartons shall be marked appropriately.
- Each battery shall be individually packed in a protective bubble bag.
- Inner protective padding shall be used inside the carton.
- Cartons shall be sealed and secured with packing straps.
- Pallets and corner protectors shall be used where applicable.
- Stacking height must comply with carton load-bearing limits.

9. Operating Instructions

General

This document applies only to battery packs manufactured by ENERdan GmbH.

Intended Use

If the battery is to be used in applications or operating conditions not covered by this specification, additional testing may be required. Please contact the supplier before use.

Liability

The manufacturer assumes no responsibility for damage, injury, or accidents caused by use outside the conditions specified in this document.

Product Updates

The manufacturer reserves the right to provide written updates regarding correct operation and handling procedures.

Charging Requirements

- Do not exceed the maximum charging current specified in this document.
- Do not exceed the specified charging voltage.
- Use only chargers designed for lithium-ion batteries.
- Charge only within the specified temperature range.
- Observe correct polarity at all times.
- Reverse charging is prohibited.

Discharging Requirements

- Do not exceed the maximum discharge current.
- Discharge only within the specified temperature range.
- To prevent over-discharge during storage, recharge the battery at least every three months.
- Batteries stored for more than six months should undergo a full charge/discharge cycle before use.

Storage Requirements

- Store at 10°C to 25°C.
- Recommended humidity: 60 ± 20% RH.
- For storage periods longer than three months, remove the battery from the equipment.
- Store in a cool, dry environment.
- Recharge every three months to maintain approximately 50-70% state of charge.

10. Safety Precautions

- Do not use or store the battery near heat sources or open flames.
- Use only approved chargers.
- Do not reverse battery polarity.
- Do not connect directly to wall outlets or vehicle power sockets.
- Do not expose the battery to fire.
- Do not short-circuit the terminals.
- Do not transport or store together with metal objects.
- Do not puncture, crush, strike, throw, or deform the battery.
- Do not solder directly to the battery terminals.
- Do not disassemble or modify the battery.
- Do not place the battery in a microwave oven or pressure vessel.
- Do not mix with primary batteries or batteries of different types, capacities, or brands.
- Stop using the battery immediately if it emits odor, heat, smoke, discoloration, or deformation.
- Do not leave the battery connected to a charger for extended periods.
- Keep out of reach of children.
- Do not expose the battery to direct sunlight or excessive heat.
- If electrolyte enters the eyes, rinse immediately with clean water and seek medical attention.

11. Specification Revisions

This specification may be revised without prior notice.

12. Other Matters

Any matters not covered by this specification shall be agreed upon between the supplier and customer.

13. Contact Information

For technical questions, product information, or support, please contact:

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