

UBR Series



Lithium Ion Battery Solution for High power UPS

Features

High performance and high energy density

- Max capacity 62.1KWh
- Max output power up to 450kW

High Safety and protection

- Integrate MCCB and fast-melting fuse in main DC BUS line
- Pre-charge circuit to avoid inrush current
- Cell monitoring and rack BMS protection
- SOC and SOH information available locally and remotely
- Dual auxiliary power supply (DC & AC)
- Cell level: Safety certified with UL1973, IEC62619, JIS8715-2

System design features

- 19" with black color exterior with standard rack
- Top & bottom independent battery system
- Top side power & signal connection
- Dual battery loop design
- Easy Installation & Service: Plug-in connector design with pre-wired cabinet solution

High integration with UPS system

- Battery status accessible in UPS HMI
- Dynamic remaining discharge time calculation
- Support UPS N+1 structure



Datacenter



Telecom



Industrial



Network



Banking



Security



Lab



Medical



Metro



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Battery System Specification

| System Component | Cell | UPS 3U Module | UPS Battery Cabinet |
|-------------------------|---------------------------------|----------------------------|----------------------------------|
| Configuration | 1S1P | 14S1P | 70S2P*2 |
| Nominal Capacity | 222 Wh | 3.1 kWh | 62.1 kWh |
| Nominal Voltage | 3.7 Vdc | 51.8 Vdc | ±259 Vdc |
| Operation Voltage Range | 2.7 Vdc – 4.15 Vdc | 42.0 Vdc - 57.8 Vdc | ±210 Vdc - ±289 Vdc |
| Output Power | 1.8 KW (max) | 22.5 KW (max) | 450 KW (max) |
| Dimensions | 166.6mm(H)x110.1mm(W)x38.2mm(D) | 690mm(D)x214mm(W)x121mm(H) | 1090mm(L) x 600mm(W) x 2000mm(H) |
| Weight | 1.4 Kg | 29.2 Kg± 0.3kg | 900kg |

Prismatic Cell-technology

DeltaP140-222-0

High Power

- Up to 4 C-rate continuous
- 8 C-rate in pulse

Ultra Long Life

- More than 4000 cycles @ SOC range 90%-10%, 1C rate , 25 °C, EOL: 70% SOH

Safety and reliability

- UL1973, IEC62619, JIS C 8715-2 certified.



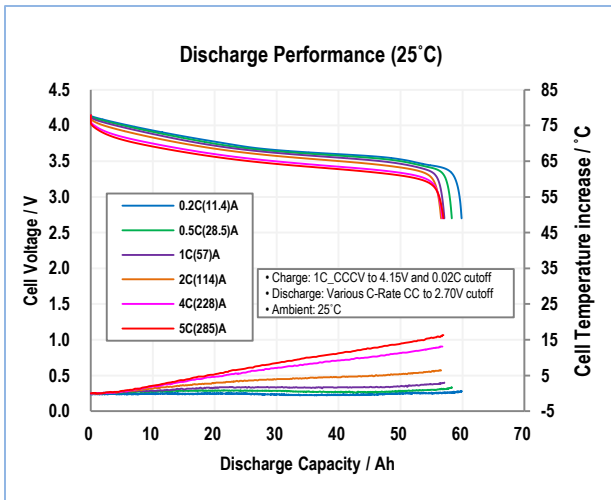
Specification

| | |
|-----------------------|---|
| Nominal Voltage | 3.7 V (NCM Chemistry) |
| Nominal Capacity | 60 Ah |
| Nominal Energy | 222 Wh |
| Energy Density | 339 Wh/ L, 158 Wh/ Kg |
| Dimension (mm) | 110.1 (W)x 38.2 (D)x 155.6 (H) |
| Weight | 1.4 Kg +/- 100g |
| Certifications | UL1973 IEC62619 JIS C 8715-2 (S-Mark) UN 38.3 IEC 62660-3 |
| Operating Temperature | Charge: 0°C to +55°C, Discharge: -20°C to +55°C |

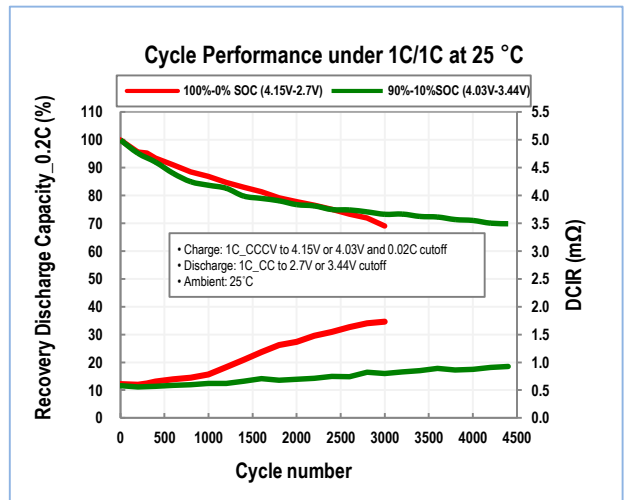
Lithium Ion Battery Solution for High Power UPS

Battery cell performance

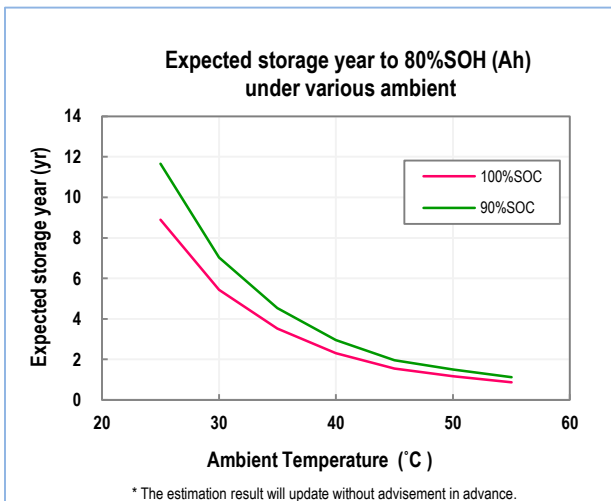
Model: DeltaP140-222-0



a) discharging performance

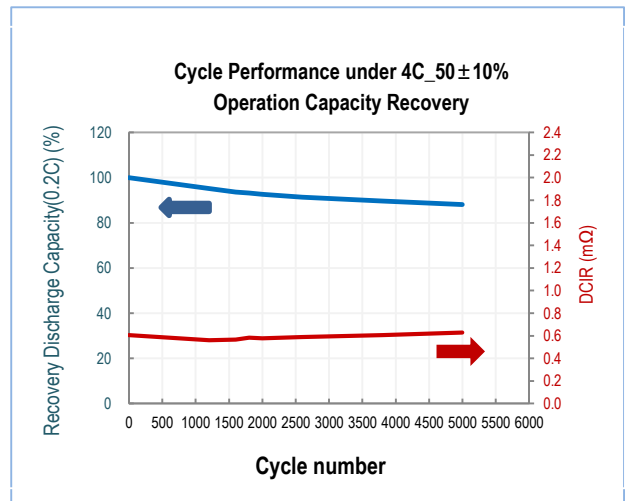


b) Cycle life performance



* The estimation result will update without advisement in advance.

c) Calendar life performance



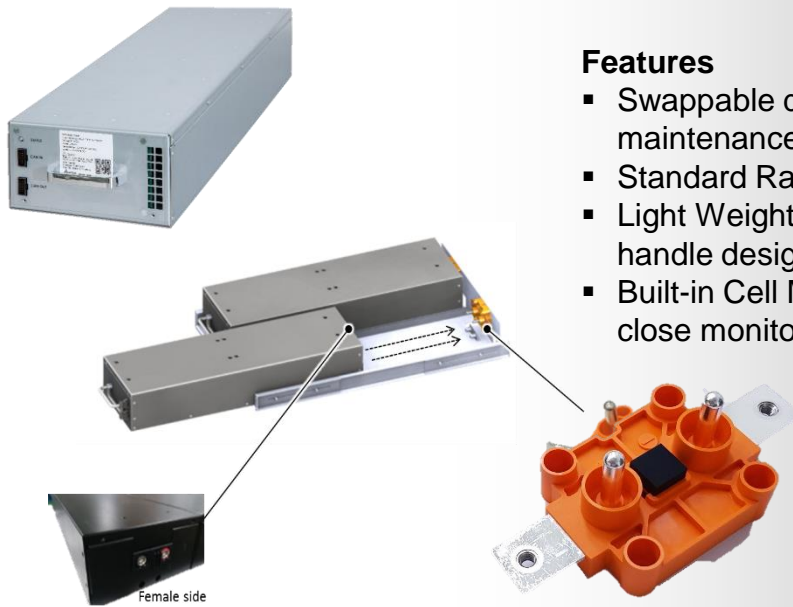
d) DCR degradation characteristic

* Estimation is based on limited database, for reference only. The estimation result will update without advisement in advance.

Lithium Ion Battery Solution for High power UPS

Battery System Features

Battery Module



Features

- Swappable design, eases for maintenance.
- Standard Rack mount type 3U height.
- Light Weight <30kg with foldable handle design.
- Built-in Cell Monitoring unit to keep close monitor each cell operation.

Battery Management System

Features

- High Power Application Design
- Built-in Safety Breaker(MCCB)
- Fast melting fuse
- Pre-charge circuit
- Dual Relay/Diode Protection Loop
 - Relay protection (Charge)
 - Diode connection (Discharge)
- Functional Safety Standard (IEC 60730)
- Integrated Battery Management Unit (BMU)



Lithium Ion Battery Solution for High power UPS

Technical Specifications

| Item | Specification | |
|-----------------------------------|---|---------|
| Installation Capacity | 31.0KWh | 62.1KWh |
| Applied Cell type | DELTA P140-222-0 (60Ah) | |
| Nominal Voltage | ±259Vdc | |
| Maximum Voltage | ±289.1V | |
| Max Charging Power | 45KW | 90KW |
| Max Discharging Power | 225KW | 450KW |
| Minimum Voltage | ±210V | |
| Communication Bus | <i>Internal</i> CAN2.0 <i>External</i> CAN 2.0, Dry Contact, Modbus RTU/TCP (Optional) | |
| Environment Operation Temperature | 5°C ~ +35°C | |
| Dimension | 1090mm(L) x 600mm(W) x 2000mm(H) | |
| Total Weight (approximate) | 615kg | 900kg |
| Storage humidity | 5 ~ 85% | |
| Ingression Protection Level | IP 20 class Function | |
| Permissible Altitude | ≤2000m | |
| Additional Accessories | Master BMS | |
| Safety standard | <i>Certified</i> UL1973 (Cell / Module) IEC62619 (Cell / Rack) JIS C 8715-2 (S-Mark) (Cell) UN 38.3 (Cell / Module) IEC 62477-1 (BMS) IEC 60730 (BMS) | |
| Quality Standard | ISO9001 | |

Lithium Ion Battery Solution for High power UPS

Back-up Time (in minutes)

| UPS Power (kW) | Power Factor | Inverter Efficiency | Battery Power (kW) | 1 Rack 1 string (31.1kWh) | 1 Rack 2 strings (62.1kWh) | 2 Racks 3 strings (93.2kWh) | 2 Racks 4 strings (124.2kWh) |
|----------------|--------------|---------------------|--------------------|---------------------------|----------------------------|-----------------------------|------------------------------|
| 100 | 1 | 95.0% | 105.3 | 13.4 | 28.2 | 42.4 | 56.5 |
| 150 | 1 | 95.0% | 157.9 | 7.8 | 18.6 | 28.2 | 37.6 |
| 200 | 1 | 95.0% | 210.5 | 4.9 | 13.4 | 21.0 | 28.2 |
| 250 | 1 | 95.0% | 263.2 | N/A* | 10.1 | 16.1 | 22.3 |
| 300 | 1 | 95.0% | 315.8 | N/A | 7.9 | 13.4 | 18.7 |
| 350 | 1 | 95.0% | 368.4 | N/A | 6.2 | 11.3 | 15.8 |
| 400 | 1 | 95.0% | 421.1 | N/A | 4.9 | 10.0 | 13.4 |
| 450 | 1 | 95.0% | 473.7 | N/A | 1.5 | 7.9 | 11.6 |
| 500 | 1 | 95.0% | 526.3 | N/A | N/A* | 6.5 | 10.1 |
| 600 | 1 | 95.0% | 631.6 | N/A | N/A | 4.9 | 7.9 |
| 750 | 1 | 95.0% | 789.5 | N/A | NA | N/A | 5.3 |
| 1000 | 1 | 95.0% | 1052.6 | N/A | NA | NA | NA |
| 1250 | 1 | 95.0% | 1315.8 | N/A | N/A | NA | NA |

| UPS Power (kW) | Power Factor | Inverter Efficiency | Battery Power (kW) | 3 Racks 5 strings (155.2kWh) | 3 Racks 6 strings (186.3kWh) | 4 Racks 8 strings (248.4kWh) | 5 Racks 10 strings (310.5kWh) |
|----------------|--------------|---------------------|--------------------|------------------------------|------------------------------|------------------------------|-------------------------------|
| 100 | 1 | 95.0% | 105.3 | 70.6 | - | - | - |
| 150 | 1 | 95.0% | 157.9 | 47.1 | 56.5 | - | - |
| 200 | 1 | 95.0% | 210.5 | 35.3 | 42.4 | 56.5 | - |
| 250 | 1 | 95.0% | 263.2 | 28.2 | 33.9 | 45.2 | 56.5 |
| 300 | 1 | 95.0% | 315.8 | 23.5 | 28.2 | 37.6 | 47.1 |
| 350 | 1 | 95.0% | 368.4 | 19.6 | 24.2 | 32.3 | 40.3 |
| 400 | 1 | 95.0% | 421.1 | 17.4 | 20.9 | 28.2 | 35.3 |
| 450 | 1 | 95.0% | 473.7 | 15.5 | 18.6 | 25.1 | 31.4 |
| 500 | 1 | 95.0% | 526.3 | 13.4 | 16.7 | 22.6 | 28.2 |
| 600 | 1 | 95.0% | 631.6 | 11.1 | 13.4 | 18.6 | 23.5 |
| 750 | 1 | 95.0% | 789.5 | 7.8 | 10.1 | 14.3 | 18.6 |
| 1000 | 1 | 95.0% | 1052.6 | 4.9 | 6.5 | 10.1 | 13.4 |
| 1250 | 1 | 95.0% | 1315.8 | NA | 1.9 | 7.0 | 10.1 |