

48V+ Residential Battery Pack



48V

NOMINAL
VOLTAGE

200Ah

CAPACITY

9.8kWh

ENERGY
CAPACITY

6K+

CYCLE
LIFE

-20/+60°C

OPERATING
TEMP

20yr

DESIGN
LIFE

IP21

ENCLOSURE
RATING

Zero

MAINTENANCE

ENERGY STORAGE YOU CAN BANK ON

Series R 48V+ Residential Battery

- Sodium-Ion NFPP
- Wall-Mountable Enclosure
- 48V / 200Ah / 9.8 kWh



The Series R 48V+ is a complete residential and light commercial energy storage system in a compact, wall-mountable enclosure. Built on Coulomb Technology's Sodium-Ion NFPP chemistry, it delivers **6,000+ cycle life**, a 20-year design lifespan, and worry-free operation across a wide temperature range — with zero thermal runaway risk and no toxic materials.

Designed for homeowners, solar integrators, and off-grid applications where safety and longevity matter most. The Series R pairs seamlessly with solar PV systems and Smart EMS software for intelligent energy management.

Complete system includes:

- Sodium-Ion prismatic cells (15S2P)
- LCD display with system monitoring
- IP21 rated enclosure for indoor use
- Built-in BMS with 8 intelligent protections
- Smart EMS integration (EnergiOS™)
- Non-hazardous shipping & installation

KEY BENEFITS



Safety-First Design

Sodium-Ion NFPP chemistry is inherently non-flammable — zero thermal runaway incidents, no toxic gas emissions, and safe for indoor residential installation.

- ✓ Zero thermal runaway incidents
- ✓ No toxic gas emissions
- ✓ Non-hazardous shipping
- ✓ Safe for garages & basements



Extreme Performance

Reliable operation from -20°C to 60°C — works in garages, basements, and outdoor enclosures with no thermal management needed and minimal derating.

- ✓ -20°C to 60°C operating range
- ✓ No thermal management required
- ✓ Minimal capacity derating
- ✓ Works in unheated spaces



Exceptional Longevity

6,000+ cycles at 80% DoD and a 20-year design life — outlasting lithium-ion alternatives by 2x and lead-acid by 4x, with minimal degradation over time.

- ✓ 6,000+ cycles @ 80% DoD
- ✓ 20-year design life
- ✓ Minimal capacity degradation
- ✓ No replacement needed for 20 years

WHERE THE SERIES R PERFORMS



HOME / RESIDENTIAL
Home Backup Power

Keep refrigerators, lights, Wi-Fi, medical devices, and security systems running during outages — automatically, silently, safely.



SOLAR / RENEWABLE
Solar Energy Storage

Store excess solar generation and use it at night or during peak hours — maximize self-consumption and reduce grid dependency.



EV / SMART CHARGING
EV Home Charging

Charge your EV overnight using stored solar energy or off-peak grid power — cut charging costs and reduce grid demand with intelligent scheduling.



OFF-GRID / REMOTE
Off-Grid Living

Power cabins, tiny homes, RVs, boats, and remote properties — pair with solar for fully self-sufficient, zero-emission energy independence.

- EnergiOS™
- Coulomb AI™
- GridIQ™
- 8 BMS Protections

THREE TECHNOLOGIES. ONE INTELLIGENT PLATFORM.

Not Just a Battery — An Intelligent Energy Platform

The Series R integrates with Coulomb Technology's Smart EMS platform — a suite of three proprietary software technologies that transform your battery into an active, revenue-generating energy asset. Monitor, optimize, and control your energy in real time from any device.



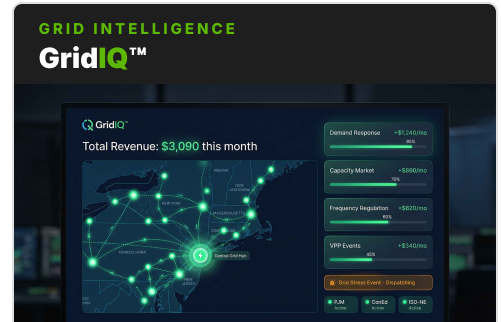
The intelligent operating system for your energy storage. Provides real-time monitoring, automated charge/discharge scheduling, and seamless solar integration.

- Real-time SOC, power flow & health monitoring
- Automated TOU & solar charge scheduling
- Remote access via web & mobile app
- Alerts, diagnostics & OTA firmware updates



Machine learning algorithms that learn your energy usage patterns, weather forecasts, and utility rates to autonomously optimize dispatch and maximize savings.

- Predictive load forecasting & solar yield modeling
- Autonomous dispatch optimization
- Dynamic rate arbitrage (TOU, demand charges)
- Continuous learning — improves over time



Advanced grid interaction capabilities enabling virtual power plant participation, demand response programs, and utility incentive monetization.

- Virtual power plant (VPP) participation
- Demand response & utility incentive programs
- Grid frequency regulation support
- Export control & islanding management

8 INTELLIGENT BMS PROTECTIONS

| | | | |
|-------------------------------|---------------------------------|---------------------------------|----------------------------|
| Overcharge Protection | Overcurrent Protection | Overdischarge Protection | Overheat Protection |
| Temperature Management | Short Circuit Protection | Balanced Power | Reverse Connection |

TOTAL COST OF OWNERSHIP ADVANTAGE

| | | | |
|--|--|---|---|
| 20yr DESIGN LIFE VS. 3-5 YR LEAD-ACID | Zero MAINTENANCE COST OVER LIFETIME | 6K+ CYCLES @ 80% DOD VS. 500-1,000 LEAD-ACID | 40% BILL REDUCTION WITH TOU OPTIMIZATION |
|--|--|---|---|

- **No replacement costs** — 20-year design life saves \$3,000–\$8,000 vs. lead-acid over 20 years.
- **ITC eligible** — qualifies for 30% federal Investment Tax Credit when paired with solar PV.
- **Zero maintenance overhead** — no watering, no equalization, no acid spill cleanup.
- **Utility incentives** — GridIQ™ enables demand response and VPP revenue participation.

RESEARCH & DEVELOPMENT PARTNERS



SERIES R — 48V BATTERY



NOMINAL VOLTAGE

48v

51.2V nominal (15S NFPP)

CAPACITY

200Ah

9.8 kWh usable energy

CYCLE LIFE

6K+

At 80% DoD, 25°C

WEIGHT

130kg

260 lbs — wall-mountable

OPERATING TEMP

-20/+60°C

Discharge range

DESIGN LIFE

20yr

At 25°C ambient

| PARAMETER | VALUE / DESCRIPTION | UNIT |
|--------------------------------|--|------|
| MODEL | Series R — 48V Residential Battery Pack | — |
| NOMINAL VOLTAGE | 48 (51.2V nominal, 15S configuration) | VDC |
| CAPACITY | 200 (9,800 Wh usable energy) | Ah |
| CELL CONFIGURATION | 15S2P prismatic sodium-ion (NFPP) | — |
| MAX CHARGE VOLTAGE | 60 | VDC |
| DISCHARGE CUT-OFF | 0 | VDC |
| MAX CHARGE / DISCHARGE CURRENT | 100 | A |
| CYCLE LIFE | 6,000+ @ 80% DoD, 25°C | — |
| DESIGN LIFE | 20 years @ 25°C | — |
| OPERATING TEMP (DISCHARGE) | -20°C to +60°C / 25% RH | — |
| STORAGE TEMP | 0°C to +45°C / 25% RH | — |
| DIMENSIONS (L×W×H) | 790 × 520 × 175 mm | — |
| WEIGHT | 130 kg (260 lbs) | — |
| ENCLOSURE RATING | IP21 — indoor use | — |
| BMS PROTECTIONS | 8 intelligent protections (overcharge, overcurrent, overdischarge, overheat, temperature, short circuit, balanced power, reverse connection) | — |
| DISPLAY | LCD display with system monitoring | — |

CERTIFICATIONS

UL 1973

UL 9540

UN 38.3

Cell Level

UL 9540A TESTING

Cell: Tested & Passed

Module/System: In Progress

WARRANTY

Cell: 3 Years

System: 5 Years

Extended warranty available

QUALITY ASSURANCE & TEST SCOPE

- ✓ Visual, Mechanical & Dimensional Inspection
- ✓ BMS Protections & LCD Display Verification
- ✓ Functional & Conditioning Cycles
- ✓ 3 × 0.2C Capacity Verification (80% DoD)
- ✓ Baseline OCV & Self-Discharge Measurement
- ✓ IP21 Seal & Enclosure Integrity Verification