

Gotion ESC-R135-261-UL | Engineering Technical Specification

AGIM-TEC-2609-0028 · TECHNICAL · v1.1

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Engineering basis: ESC-R135-261-UL integrated outdoor AC BESS · 135 kW / 261 kWh · 480 Vac, 3-phase 4-wire, 60 Hz.



Representative Gotion 261 kWh product-family image.

1. Product identity and use

ITEM	ENGINEERING BASIS
Manufacturer / product	Gotion ESC-R135-261-UL
System class	Self-contained outdoor integrated AC ESS

ITEM	ENGINEERING BASIS
Nominal rating	135 kW / 261 kWh
AC interface	480 Vac, 3-phase 4-wire, 60 Hz

2. Electrical and battery data

PARAMETER	TECHNICAL VALUE
Cell	LFP IFP72175207-314Ah; 3.2 V, 314 Ah, 1,004.8 Wh
Pack / module	EPD166-05P52; 1P52S; 166.4 V, 52.2 kWh; approximately 340 kg
Battery system	ERD832-05P261A-UL; 5S1P / 1P260S; 832 V nominal, 314 Ah, 261 kWh
Battery voltage range	728–936 Vdc
AC interface	480Y/277 Vac, 3-phase 4-wire, 60 Hz; certified range 422.4–528 Vac
Rated output	135 kW / 135 kVA; certified ESS current 163 A
PCS hardware rating	180 A; 135 kW grid-connected and off-grid; 1.1× continuous / 1.2× for 1 minute stated overload capability
Power factor / THD	–0.99 to +0.99; grid-current THD ≤3%
Efficiency	PCS maximum 98%; published maximum system efficiency 90%
Certified SCCR	2 kA at 0.3 s; output available fault current 957 A at 200 ms
External OCPD	205 A maximum; required on each ungrounded AC conductor
Auxiliary input	480 Vac, 15 A, 60 Hz, 3-phase 4-wire
Published cycle life	>8,000 cycles at 0.5C, 25 °C, 90% DOD

3. Mechanical and environmental basis

PARAMETER	TECHNICAL VALUE
Installation class	Self-contained AC ESS; outdoor use only
Enclosure	IP55; Pollution Degree 3; OVC II battery / OVC III AC
Certified dimensions	1,350 W × 1,120 D × 2,420 H mm, including roof deflagration vent
Certified weight	2,650 kg
Certified ambient	–30 to +55 °C
Altitude	3,000 m maximum in UL 9540 certificate; derating stated above 2,000 m
Humidity	Up to 95%, non-condensing
Thermal management	Battery liquid cooling plus PCS forced-air cooling; 5 kW cooling, 2.5 kW heating, 40 L/min, 50% glycol solution
Documented service clearances	3,000 mm front / face-to-face; 1,200 mm rear; 15 mm adjacent-cabinet spacing shown in manufacturer material

4. Integrated product boundary

The integrated BESS includes:

- Five battery plug-in boxes
- Battery management system
- 135 kW bidirectional PCS
- Liquid-cooling system
- Cabinet fire detection/suppression provisions
- Cabinet control box and internal distribution
- Local EMU and touchscreen HMI
- Internal power and communication wiring

5. External project scope

The following equipment and work are external to the cabinet:

- Site transformer, switchgear and external AC disconnect
- Project-specific protection, coordination and grounding
- Revenue meter, CTs and metering enclosure
- Site EMS/SCADA, zero-export control and third-party integration
- External fire-alarm control panel and NFPA 72 work
- Site water, hydrant or other AHJ fire infrastructure
- Foundation, drainage, bollards, clearances and external cabling
- Unloading, rigging, installation, commissioning, permits, HMA and EOR services

6. Controls and communications

- EMU hardware includes a 10.1-inch 1024 × 600 capacitive touchscreen and local controller.
- System interfaces: RS-485 and dual Ethernet; PCS documentation also identifies CAN.
- Documented protocols: Modbus TCP/RTU, MQTT, IEC 60870-5-104 and CAN 2.0 across the applicable subsystems.
- Manufacturer-described functions include local monitoring, data and alarm export, remote monitoring/control, edge computing, peak shaving, backup mode and customized strategies.
- The certified configuration excludes remote updates to safety- and control-related software without the UL 5500 consideration identified in the certificate.
- The UL 60730 functional-safety assessment applies to the documented BCMU/BMU hardware and software versions.

7. Certification and safety evidence

SCOPE	EVIDENCE
Complete ESS	CSA Certificate 80275702; May 20, 2026; ESC-R135-261-UL; ANSI/CAN/UL 9540:2025 Third Edition; C/US
Battery system	CSA Certificate 80275705; May 8, 2026; ERD832-05P261A-UL; ANSI/CAN/UL 1973:2022 Third Edition
PCS / interconnection	Intertek ATM, Report 250626045GZU-001; January 27, 2026; PWS1-135M-NA / -R
BMS functional safety	CSA Report 80275706; April 22, 2026; UL 60730-1:2016 / CAN/CSA-E60730-1

SCOPE	EVIDENCE
UL 9540A	CSA Report 80275704; January 6, 2026; exact model; ANSI/CAN/UL 9540A:2025 Fifth Edition; unit-level test
Transport	CVC UN 38.3 Test Summary RZUN012026-1877; May 18, 2026; exact model, 832 V / 314 Ah / 261 kWh
NFPA 69	Atar Fire Report 20260209 Rev. 1
NFPA 68	Atar Fire Report 20260211 Rev. 1
NFPA 855 / IFC	Atar Fire analysis dated June 2, 2026 for NFPA 855:2026 and 2024 IFC

UL 9540A measured result

- One initiated cell led to thermal runaway in four cells within the initiating module; only one of five modules exhibited thermal runaway.
- No external flame, explosive gas discharge, flying debris, re-ignition, target-unit damage or adjacent-wall damage was observed.
- Maximum target-unit surface temperature: 23.7 °C.
- Maximum adjacent-wall temperature: 25.5 °C.
- Maximum heat flux at the egress path: 0.007 kW/m².
- Report conclusion: no further testing required under the referenced UL 9540A Section 9.8 performance condition.

Fire and explosion-control architecture

- Heat, smoke and lithium-battery off-gas detection are described.
- Manufacturer specification identifies STAR-X aerosol suppression at pack and cabinet levels, a roof deflagration vent and a combustible-concentration-reduction exhaust path.

North American certificate conditions

The certificate covers outdoor use and specifies a 205 A external OCPD for each ungrounded AC conductor.

Product-family AC voltage and IEC position

VARIANT	ELECTRICAL CONFIGURATION	CERTIFICATION EVIDENCE
ESC-R135-261-UL	135 kW; 480Y/277 Vac; 60 Hz	North American UL 9540 certified configuration. No IEC certificate for this exact model was identified in the package.
ESC-R125-261-CE(A)	125 kW; 400 Vac; 3-phase 4-wire; 50/60 Hz	Separate model with TÜV evidence: AE 50714006 0001 (EN IEC 61000-6-2/-6-4); AK 50715261 0001 (EN/IEC 62619 and 63056); AK 50715262 0001 (IEC 62040-1); R 50715266 0001 / AN 50715267 0001 (EN/IEC 62477-1 and EU LVD)

The listed IEC/CE certificates apply to **ESC-R125-261-CE(A)**.

Prepared by AGI&M ASSETS INC. · Engineering Technical Specification · Version 1.1