Product datasheet

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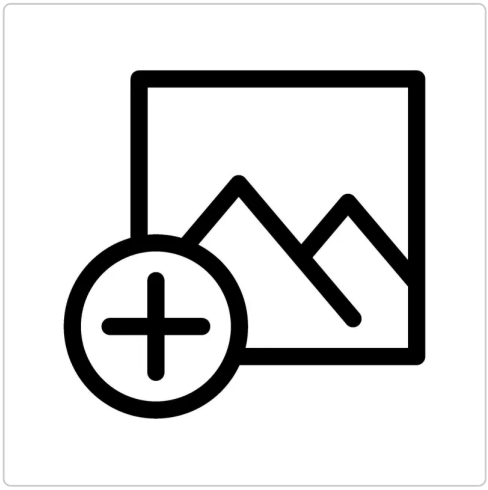
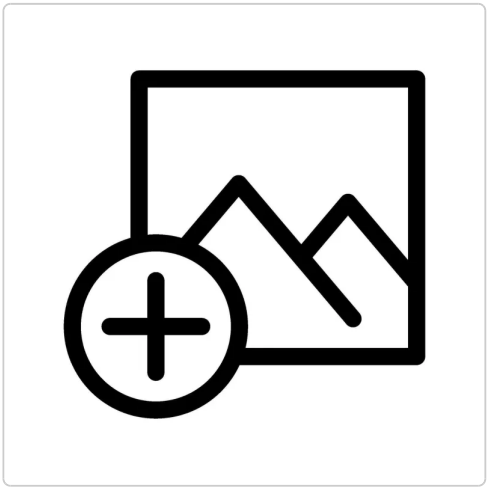
INNO TECH - Ranger EV LFP Battery - 48V 210Ah





Reference : INN-RANGEREV-51V-210AH

Brand : INNOVATION TECH

Options :

No variants

3D Model : Available

EAN-13 : 3762552428004

The INNOVATION TECH INN-LFP-48V-210AH, in its special Polaris Ranger EV version, is a 48 V LiFePO4 lithium battery designed as a direct replacement for the original lead-acid pack made of eight 12 V XC2 155 Ah batteries. It follows a plug-and-play integration logic on the vehicle, with engineered compatibility for the original Delta-Q charger, DC-DC converter and Sevcon controller, while delivering a major weight reduction with equivalent working range.

This Polaris Ranger EV replacement battery is based on a 51.2 V nominal architecture, 210 Ah and around 10.75 kWh, with an isolated CANopen BMS, integrated precharge and aluminium enclosure. It has been designed, tested and validated to reuse the original mounting points of the lead-acid batteries and to fit into a complete replacement approach rather than an open conversion requiring a full vehicle redesign.

Direct replacement

Polaris Ranger EV lithium battery

The role of this Polaris Ranger EV lithium battery is clear: replace the original lead-acid pack with a single assembly that is lighter, more stable in operation and better monitored, without losing the vehicle's functional consistency. Where the original architecture with eight 12 V XC2 155 Ah monoblocs results in high weight, numerous inter-battery links and regular connection maintenance, this LiFePO4 version concentrates energy, monitoring and safety functions in one pack specifically designed for the Ranger EV. The practical benefit is not only reduced onboard weight, but also lower constraints linked to uneven ageing between multiple lead-acid blocks.

The battery operates over a 44 to 57.6 V range with a nominal voltage of 51.2 V, a capacity of 210 Ah and an onboard energy content of approximately 10.75 kWh. It delivers 210 A continuously, 400 A for up to 2 minutes and 600 A for 30 seconds, with up to 200 A charging current and up to 200 A regenerative current as long as state of charge allows. This current capability helps preserve traction behaviour on a utility electric vehicle subject to repeated accelerations, loaded operation, frequent manoeuvres or use on loose ground.

Battery data

Reference	INN-LFP-48V-210AH
Application	Special replacement battery for Polaris Ranger EV
Battery type	LiFePO4
Nominal voltage	51.2 V
System class	48 V
Voltage range	44 to 57.6 V
Capacity	210 Ah
Nominal energy	10.75 kWh
Continuous discharge current	210 A
Maximum discharge current	400 A for up to 2 min
Boost current	600 A for up to 30 s
Maximum charge current	200 A
Maximum regenerative current	200 A
BMS	Isolated CANopen
Default CAN bit rate	125 kbps
Balancing	Active up to 1 A
Internal measurements	Voltage and temperature of each cell
Precharge	Integrated
Event logging	Yes
Operating temperature	-20 °C to +45 °C
Charge temperature	0 °C to +45 °C
Storage temperature	-20 °C to +50 °C
Protection rating	IP43
Enclosure	Aluminium
Weight	85 kg
Dimensions	685 x 480 x 290 mm
Mounting	Flat on its base
Series connection	Up to 2 packs in master/slave via CAN
Parallel connection	Not supported
Discharge power connector	Amphenol PL-082X-301
Charge power connector	Amphenol PL-082X-60
Signal connector	TE Connectivity AMPSEAL 23-way
Charger compatibility	Original Delta-Q charger engineered
Power electronics compatibility	Original Sevcon controller engineered
Auxiliary compatibility	Original DC-DC converter engineered
Fixing	Reuse of original lead-acid battery mounting points

Replaced architecture	8 x 12 V XC2 155 Ah type Trojan T1275 / US Battery

Charge and traction

Delta-Q charger and Sevcon controller

The isolated CANopen BMS is another strong point of this 48 V replacement battery for Polaris Ranger EV. It monitors cell voltages and temperatures one by one, publishes the main pack states and manages the internal logic for safety, charging, discharging and diagnostics. In a well-executed integration, this level of supervision gives better control over actual operating conditions than a traditional lead-acid pack, without turning the vehicle into a prototype. The pack has specifically been engineered to remain compatible with the original components of the targeted Ranger EV, which gives the integration a true industrial replacement logic rather than an opportunistic adaptation.

The integrated precharge is part of this overall consistency. It controls DC bus energisation and avoids excessive inrush currents on capacitive loads present in the power electronics. On a Polaris Ranger EV equipped with its original controller, this function helps preserve startup quality and secure the sequence of operating states. The end user is not looking here for a generic 48 V lithium battery, but for a Ranger EV replacement battery able to restore vehicle service with an integration level already worked out upstream.

Vehicle mounting

Original mounting points

Mechanical integration has been designed in the same spirit. With a 685 x 480 x 290 mm aluminium enclosure weighing 85 kg, this battery clearly differs from the total mass of the lead-acid pack it replaces, while still keeping an installation compatible with the target vehicle. Reusing the original lead-acid battery mounting points greatly simplifies installation and limits structural rework on the Ranger EV. This is a key aspect on a working machine: the objective is not to add a theoretically compatible system, but to install a plug-and-play lithium battery that respects the geometry, interfaces and operating conditions of the original vehicle.

Field use

Polaris Ranger EV lead-acid pack replacement

This lithium replacement battery for Polaris Ranger EV is intended for vehicles whose original lead-acid pack has become a drawback in terms of weight, maintenance or operational stability. It is especially relevant when the machine must remain available, keep its original operating logic and avoid a heavy electrical architecture redesign. In this context, compatibility with the original Delta-Q charger, DC-DC converter and Sevcon controller is a concrete advantage: the conversion remains focused on the battery itself rather than on a complete redesign of onboard equipment.

The most visible operational benefit is the major weight reduction compared with the original lead-acid pack. On a Ranger EV, this lower mass directly affects available payload, dynamic behaviour and overall mechanical stress on the vehicle. It also removes common constraints associated with lead-acid traction batteries, such as electrolyte monitoring, terminal maintenance or progressive imbalance between blocks. For a utility fleet, site vehicle or service machine, this change can improve operational consistency without changing the driving logic or the main components already in place.

At the same time, the battery keeps a genuine traction role rather than acting as a simple static energy storage unit. Its current capability, regenerative management, active balancing up to 1 A and internal event logging make it suitable for environments where operational reliability matters as much as energy capacity. For integrators and maintenance teams, this also makes long-term battery behaviour easier to monitor, with a more structured reading of pack states and faults than with a traditional pack split across several lead-acid monoblocs.

From an integration standpoint, this special version follows a direct replacement logic for Polaris Ranger EV, while still keeping the normal requirements of an onboard lithium pack. Installation must remain clean, mechanically secure and electrically consistent, especially around power and signal interfaces. The Amphenol and AMPSEAL connectors used on the pack require careful wiring, and the IP43 rating means the battery must be properly protected against severe splash environments. This battery is not designed as a universal block to be fitted indiscriminately on any 48 V vehicle: its value comes from a targeted, validated and repeatable integration on the relevant Ranger EV.

Workshop questions

Does this battery directly replace the original lead-acid batteries of the Polaris Ranger EV?
Yes. This version has been developed as a plug-and-play replacement battery for the targeted Ranger EV, reusing the original mounting points.

Is the vehicle's original charger retained?
Yes. The battery has been engineered to operate with the original Delta-Q charger of the relevant Polaris Ranger EV.

Do the original controller and DC-DC converter remain compatible?
Yes. Compatibility with the original Sevcon controller and DC-DC converter is part of the scope of this special version.

What is the main benefit compared with the lead-acid pack?
The pack maintains equivalent working range while significantly reducing onboard weight and removing the maintenance constraints specific to multi-block lead-acid batteries.

Ranger EV service

This 48 V lithium battery for Polaris Ranger EV is intended for projects seeking a clean, coherent and industrialisable replacement of the original lead-acid pack, without moving to a complete vehicle redesign. Its value lies as much in integration compatibility as in electrical performance: same vehicle logic, significantly reduced weight, more advanced supervision and simplified operation. For a reliable and repeatable replacement, final validation must still remain linked to the actual vehicle being treated, its original electrical condition and the conformity of the installation performed.

Frequently associated searches for this product: Polaris Ranger EV battery replacement, 48 V utility lithium pack, Delta-Q charger compatibility. See the related category

Product sheet written by **Mathieu S.** and reviewed by the EVEA Distribution technical team — Last updated on 2026-04-03.