



Ultrafast-charging turnkey solutions for Automated Guided Vehicles (AGVs)

All in one: LTO battery, embedded controller and charging platform providing our customers with the most efficient AGV powering solution



What?

Leclanché's turnkey battery solutions perfectly align with your specific application by integrating the battery and charging solution with your application. Our lithium-titanate battery (LTO) chemistry makes it the longest-lasting lithium-ion technology.

How?

Our multi-skilled engineering teams are fully dedicated to the development of the most effective battery solutions in order to respond to your immediate and future energy storage needs. We rely on our proprietary, in-house technology for the most critical battery components (cells, battery management systems (BMS), security, mechanics) to comply with ever-evolving international norms and standards.

Why?

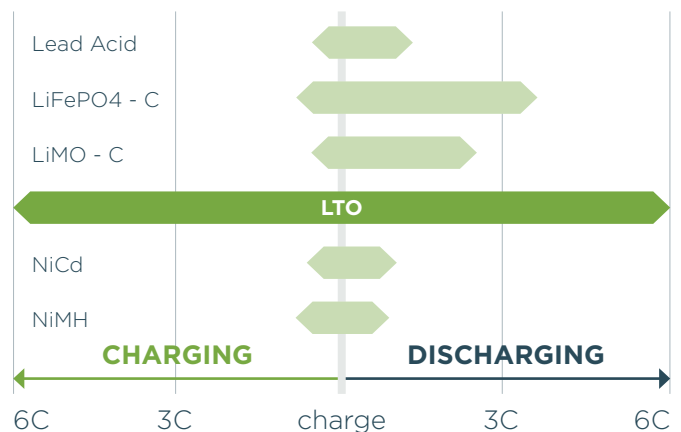
We have more than one century of experience in energy storage. Our very own cell-manufacturing facility and full vertical integration are the reasons why we are Europe's most unique lithium-titanate provider.

An efficient energy system is crucial for the effective use of AGVs

Maximized Total Cost of Ownership (TCO)

System productivity is directly impacted by how AGVs are powered. Our ultra-fast charging technology **drastically reduces the AGV's battery-charging time**, keeping vehicles on the production line longer and maximizing productivity. Our batteries can be charged in just 10 minutes (Leclanché's LTO cells support up to 6C) without causing a reduction in overall battery life.

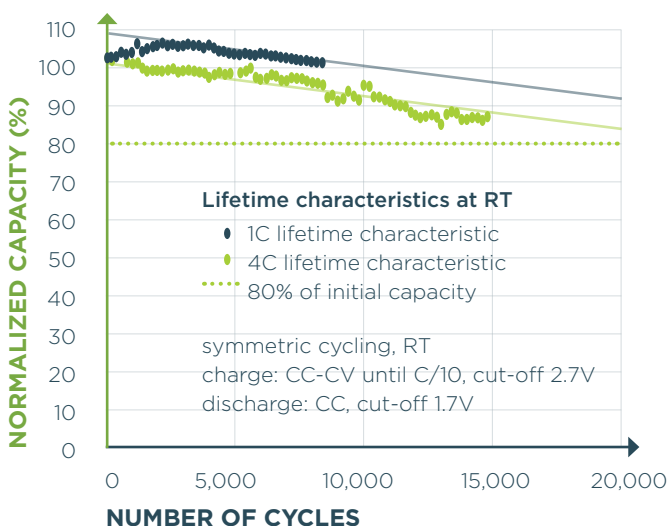
The battery and charging infrastructure are industry 4.0 fully-oriented and completely integrated into the AGV's frame. This allows the AGV's footprint to be reduced and the charging infrastructure shared. The LTO battery is the best in class technology for this purpose.



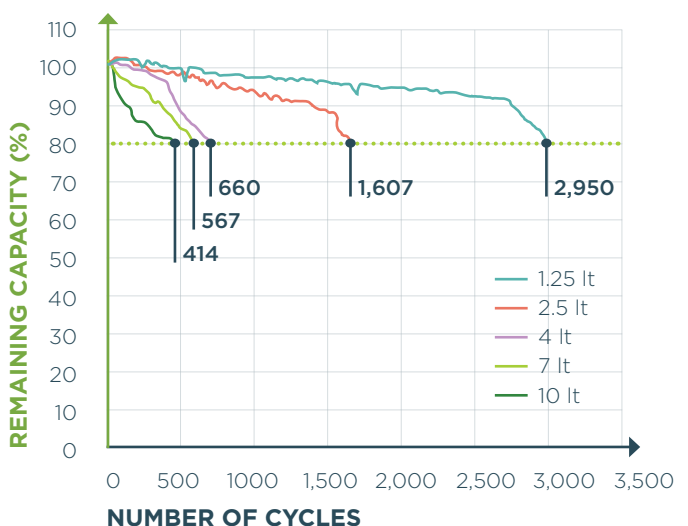
A battery that lasts as long as its vehicle

Our LTO battery offers **the longest lifetime and most robust operation**. It is nearly maintenance-free and supports a tremendous number of charges and functions within a wide range of temperatures, without CC compromising safety or aging prematurely.

LTO chemistry



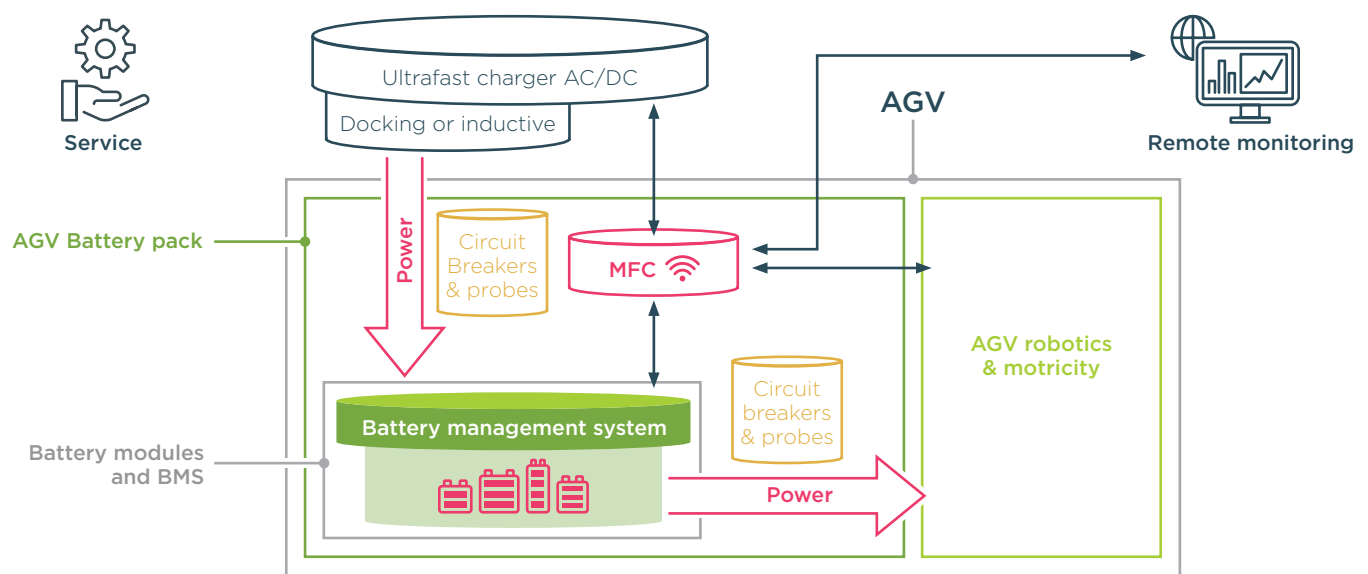
Graphite-based chemistries



Integrated intelligence ensures safety

A dedicated BMS monitors vital battery parameters such as cell voltage, current and temperature for the safest possible operation. An embedded multifunctional controller (MFC) interfaces and controls the BMS, vehicle and charging equipment. This MFC defines the charging strategy in function of the state

of charge (SOC) and state of health (SOH) reported by the BMS. The MFC communicates the battery's voltage and current to the charger in real-time and reports operating information to the AGV. This charging solution works with a connected charging pole as well as an inductive platform.

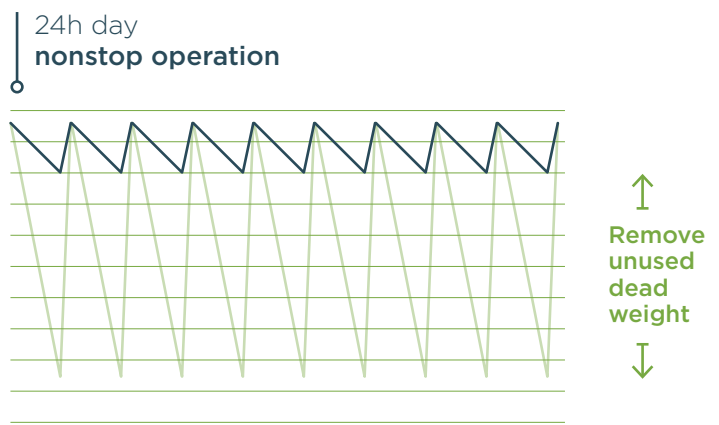


Opportunity charging may result in a negative energy balance if the battery chemistry does not allow for “ultra-fast charging.” This inevitably leads to stopped operations in order to allow for a complete recharge. Neutral charging with LTO technology, on the other hand, enables nonstop operation.

Negative energy balance



Neutral energy balance



Charger characteristics

Wired Charging

	Charger 24V - 360A Ref. 031300975	Charger 48V - 360A Ref. 031400005	Charger 80V - 360A Ref. 031300989	Docking & contact plate Ref. 031300979
Dimensions (mm)	656x522x1057	656x522x1057	811x503x1601	500x400x732
Weight (Kg)	200	244	430	40

Electrical Characteristics

Power Max (kW)	12	32	50	N/A
Input Voltage (V)	3x400	3x400	3x400	N/A
Max continuous current (A)	360*	360*	360*	400
Communication	CAN	CAN	CAN	N/A

*greater current possible

Max Voltage: 60V

Wireless/Inductive Charging

	16 kW Ref. 031301010	5.5 kW Ref. 031301011	2.5 kW Ref. 031301012	1.1 kW Ref. 031301013
Dimensions Tx/Rx (mm)	284x284x316 / 284x284x102	284x284x316 / 284x284x102	284x284x92 / 284x284x73	284x284x92 / 284x284x73

Electrical Characteristics

Input Voltage (VAC)	3x400	3x400	240	240
Output (VDC)	16..60	18..60	18..60	18..38
Output current	0..200	0..100	0..40	0..30
Boost current (5 min)	250	125	125	N30A
Communication	CAN	CAN	CAN	N/CAN

Batteries

24V / 120Ah
2.88 kWh
Ref. 031010706

24V / 140Ah
3.36 kWh
Ref. 034000938 (3PZS)
Ref. 034000940 (4PZS)

48V / 280Ah
13.44 kWh
Ref. 031010701

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Dimensions (mm)	672x625x190	821x633x210 or 310	1220x785x365
Weight (Kg)	120	246 or 400	1200

Electrical Characteristics

Nominal Voltage (V)	24	24	48
Min Voltage (V)	20	20	42
Max Voltage (V)	26	26	52
Nominal Discharge Current (A)	160	160	225
Max Discharge Current (A)	250 (30s)	250 (30s)	360 (30s)
Nominal Charge Current (A)	400	360	400
Max Charge Current (A)	425	360	400
Communication with Host	CAN / RS232	CAN / RS232	CAN / RS232

Operating Conditions

Cycles @80%/100% DoD	20000/15000	20000/15000	20000/15000
Storage Temp. (°C)	0/45	0/45	0/45
Operating Temp. (°C)	5/45	5/45	5/45

Compliance

Transport	UN38.3	UN38.3	UN38.3
Safety	IEC 62619	IEC 62619	IEC 62619
EMC	IEC 61000	IEC 61000	IEC 61000
EMC+	EN12895	On request	EN12895

Leclanché SA (Headquarters)

Avenue des Sports 42 / CH - 1400 Yverdon-les-Bains / Switzerland

Leclanché GmbH

Industriestrasse 1 / D - 77731 Willstätt / Germany

Leclanché North America, Inc.

12222 Merit Drive / Suite 1550
Dallas, TX 75251 / USA



info@leclanche.com
www.leclanche.com