

Innovative, reliable lithium-ion technology

Rapid charging and opportunity charging ensure continuous availability of machines

High level of energy efficiency

Maintenance-free

Long service life



## Lithium-ion battery 24 V (110/240/360 Ah)

### Battery system based on lithium-ion technology

Efficient, maintenance-free and long-lived – those are the advantages of our lithium-ion battery (110/240/360 Ah). With fast charging times, no maintenance and a long battery life, you not only benefit from reduced total costs. This form of energy storage also involves a high level of efficiency when charging and recuperating braking energy and facilitates energy savings of more than 20 percent.

The high-performance energy cells of the lithium-ion battery are characterized by very short charging times. After a opportunity charging time of only 30 minutes, the battery absorbs 50 percent of its capacity. After 80 minutes, it reaches its full charge status. The opportunity charging option enables you to use your vehicles continuously for up to 24 hours a day, 7 days a week without changing batteries.

Using the latest lithium-ion technology, we developed a totally maintenance-free battery featuring an impressive life expectancy of up to 3,000 full and significantly more partial discharge cycles. By comparison: The average service life for lead-acid batteries ranges from 900 to 1,200 cycles.

Battery, charger and vehicle are so fine-tuned to each other as to ensure the maximum degree of efficiency, reliability and convenience in daily operation. In addition, the battery is continually monitored by our innovative battery management system, which is already included.

Restrictions on the operation of vehicles due to escaping gases or acid from conventional lead-acid batteries do not apply to lithium-ion batteries. That means vehicles equipped with lithium-ion-based batteries can also be confidently used in food storage areas, for example.

The tried and tested features of our vehicles – rugged design, powerful 3-phase technology and outstanding ergonomics – are perfectly complemented by this modern and highly efficient storage technology.

# Technical specifications

		Size S	Size M	Size LS	Size LB	Size SBE
Technical Data	Nominal capacity	110 Ah		240 or 360 Ah		
	Nominal voltage of battery	2,816 Wh		6,144 or 9,216 Wh		
	Nominal voltage of truck	25.6 V				
	Nominal energy content	24 V				
	Cell chemistry	Lithium/iron phosphate				
	Operating temperature <sup>1)</sup>	-10°C to 55°C (no cold store)				
	Operating temperature for charging <sup>2)</sup>	0°C to 40°C				
	Protection rating/impact	P54 / same as truck control system				
	Weight (incl. additional weight)	139 kg	210 kg	370 kg	288 kg	288 kg
	Dimensions mm	660x145x590	624x207x627	800x213x785	624x284x683	624x284x627
Charge	Charge status display	Truck display 2 inches		Available truck displays		
	Charge time with external charger SLH090i 24/100	Max. 80 min				
	Opportunity charging with external charger	50% of nominal capacity after 30 min				
	Charge time with on-board charger	Max. 210 min		Unavailable		
Trucks	Available for (among others)	EJE 116/118/120	EJE 116/118/120	ECE 220/225	ERE 120	EJE 225
		EJE C20	EJE 220/225/ 230/235	ECE 310	ERE 225	ESE 120
	EJC 110/112	EJC 212/214/216	EZS 350	EJC 212/214/216	EJC 212/214/216	
	EJC 112z	EJC B12	EZS C40	EJC 220	EJC 220	
	EMD 118	EJD 118	ESE 220	EJC B14/B16	EJD 220	
	EJD 118	EJD 220	ESE 320	ERC 212/214/ 216/220	ERC 212/214/216	
			ESC 214/216/316	ERD 220	ERD 220	
			ESC 214z/216z/ 316z	EKS 110	ESD 120	
			ESD 220			

<sup>1)</sup> Different temperatures may affect battery performance.

<sup>2)</sup> In terms of battery temperatures.

# Benefit from the advantages



Comfort charger  
(for 240/360 Ah batteries)

## Long operating times

May be used continuously in economical multi-shift operation.

- Unrestricted opportunity and quick charging capacity.
- No more battery changing necessary.
- Available in combination with stand charger SLH 090i 24 V or on-board charger (for 110 Ah).

## Optimised charging processes with high-frequency charger

Extremely short charging times guarantee high level of vehicle availability and great flexibility for day-to-day warehouse tasks:

- 50 percent battery capacity is reached after only 30 minutes of charging time, so that breaks and downtimes can be used for charging.
- Full charge is reached after only 80 minutes (with the stand charger).
- The charge can be interrupted at any time with no adverse effects.
- The optional on-board charger (for 110 Ah) and the comfort charger (for 240/360 Ah) allow for convenient charging at any time.

## No battery maintenance

The lithium-ion battery is absolutely maintenance-free and does not emit gas. That largely eliminates the costs of battery upkeep, maintenance and infrastructure.

- No need to add water.
- No need for special charging areas with ventilation.
- No unpleasant odours from gases or acidification.
- No expensive battery changing systems with their heavy drain on time and human resources.
- The enclosed design (IP54) makes the battery insensitive to outside influences.

## Integrated Battery Management System (BMS)

The Jungheinrich BMS continually monitors energy management and ensures reliable operation.

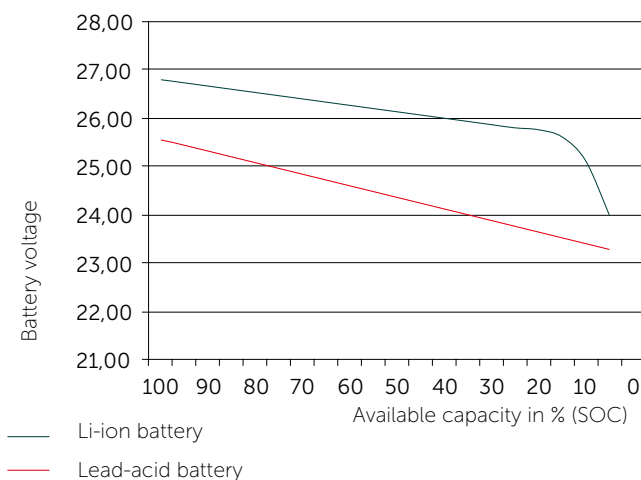
- Current charge state appears in the vehicle's display (SOC) including visualisation of recuperation (current feedback).

## High level of energy efficiency

The increased efficiency in comparison to conventional technologies significantly reduces energy costs.

- Fast and efficient charging thanks to communication between battery and charger.
- Even under extreme power requirements such as full-load operation, the full energy of the battery is available (no voltage drop as in lead-acid batteries).
- High electrochemical efficiency level for charging and for discharging/driving/lifting.
- Battery, vehicle and charger are perfectly fine-tuned to each other to save electrical energy and reduce CO<sub>2</sub> output.

## Comparison of typical voltage curves:



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The German production facilities in  
Norderstedt, Moosburg  
and Landsberg are certified. **ISO 9001**  
**ISO 14001**

Jungheinrich fork lift trucks  
meet European safety  
requirements.



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