

Innovative, reliable lithium-ion technology

Rapid charging and opportunity charging ensure continuous availability of vehicles

High level of energy efficiency

Maintenance-free

Long service life

LI-ION
technology



Lithium-ion battery 48 V (360/480 Ah)

Battery system based on lithium-ion technology

Efficient, maintenance-free and long-lived – those are the advantages of our lithium-ion battery (360 / 480 Ah). With fast charging times, no maintenance and a long battery life, you do 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 an opportunity charging time of only 40 minutes, the battery (360 Ah) 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.

Because of the extended temperature range from –20 to 55°C the truck can be used indoor and outdoor

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.

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Technical specifications

		Reach trucks		Tow tractors / Electric counterbalance trucks			
		Size MH	Size LH	Size S	Size SB	Size MB	Size LB
Technical Data	Nominal capacity	360 or 480 Ah					
	Nominal voltage of battery	18,432 or 24,576 Wh					
	Nominal voltage of truck	51.2 V					
	Nominal energy content	48 V					
	Cell chemistry	Lithium/iron phosphate					
	Operating temperature ^{1),2)}	-20°C to 55°C					
	Operating temperature for charging ²⁾	0°C to 55°C					
	Protection rating / impact	IP54 / same as truck control system					
	Weight (incl. Additional weight)	1,005 kg	1,210 kg	375 kg	708 kg	856 kg	1,013 kg
	Dimensions in mm	1,220 x 352 x 784	1,220 x 424 x 784	816 x 414 x 618	830 x 522 x 627	830 x 630 x 627	830 x 738 x 627
Charge	Charge status display	in the truck display and while charging on the charger					
	Charge time with external charger SLH090i 48 / 300	80 min or 90 min					
	Opportunity charging external charger	50 % of nominal capacity after 30 min or 40 min					
	Charge time with external charger SLH090i 48 / 150	160 min or 180 min					
	Opportunity charging external charger	50 % of nominal capacity after 60 min or 80 min					
Trucks	Available for (among others)	ETV 214 ETV 216 ETV 318 ETV 320 ETV 325 ETV 335 ETV C16 ETV C20 ETV Q20 ETV Q25	EZS 570	EFG 213 EFG 215	EFG 216k EFG 218k EFG 316k EFG 318k EZS 570XL	EFG 216 EFG 218 EFG 220 EFG 316 EFG 318 EFG 320	

¹⁾ Different temperatures may affect battery performance.

²⁾ In terms of battery temperatures.

Benefit from the advantages

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 charger SLH 090i 48 V 300 A or 150 A.

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 40 minutes of charging time, so that breaks and downtimes can be used for charging.
- Full charge is reached after only 80 minutes with SLH 090i 48 V 300 A.
- The charging can be interrupted at any time with no adverse effects.
- Convenient charging with the comfort charging plug is possible 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:

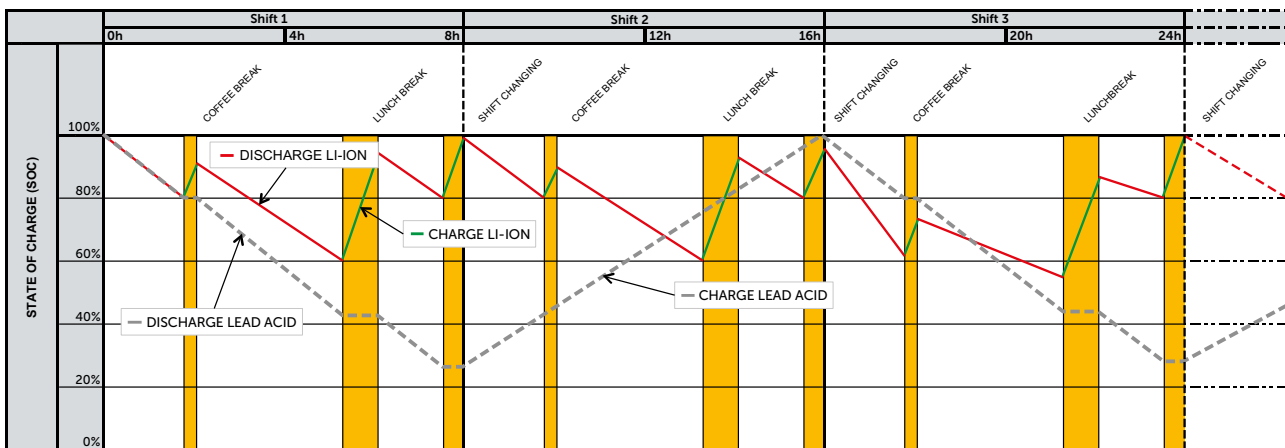
- Current charge state appears in the vehicle's display (SOC) including visualisation of recuperation (energetic recovery system).

High level of energy efficiency

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

- Fast and efficient charging due 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 CO₂ output.

Typical charge and discharge history:



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Jungheinrich AG (Suisse)
ISO 9001 / ISO 14001 /
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Les usines de production
de Norderstedt, Moosburg
et Landsberg en Allemagne
sont certifiées

ISO 9001
ISO 14001

Les matériels Jungheinrich
sont conformes aux normes
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