

LiFePO₄ battery, 12 V 200 Ah with built-in battery management system (BMS)

Nominal capacity	200 Ah
Nominal voltage	12.8 V
Cell type	Lithium iron phosphate (LiFeYPO ₄)
Cycle life	>3000 (80 % DoD)-5000! (70 % DoD)
Charging voltage	14.4 V
Discharge voltage	10.5 V (BMS disconnects consumer at approx. 9 to 10 V)
Max. charging current	100 A
Recommended charging current	<50 A
Max. discharge current	200 A
Max. pulse discharge current (<5 s)	400 A
Connections	M8 female thread
Self-discharge (per month)	<3 %
Internal resistance	≤50 mΩ
Self-consumption (BMS)	<100 μA
Operating temperature	-20 to +65 °C
Storage temperature	-20 to +65 °C (non-condensing)
Housing	Black-enamel aluminum, ABS cover
Approx. dimensions in mm (length x width x height)	332x312x272
Approx. weight in g	32,000 ±200

LiFePO₄ batteries

Batteries using lithium iron phosphate (LiFeYPO₄) can withstand high current, are suitable for universal use and have a low weight. Their innovative design offers a high intrinsic safety; there is no explosion hazard even under extreme conditions.

- Intrinsically safe design
- Longer service life, >1000 cycles (DoD 100 %) / >3000(80 % DoD)-5000!(70 % DoD)
- High usable capacity (almost 100 %)
- Very low self-discharge, no trickle charging required
- Considerably lower weight: at least 1/3 lighter than iron batteries
- No rate-capacity effect
- No sulfation
- No degassing

Information on the built-in BMS

The built-in battery management system (BMS) protects the battery against overcharging, deep discharging, overloading and (momentary) short circuiting. Additionally, the battery is automatically balanced during charging.

After a disconnection due to an undervoltage (<9 V), the BMS may have to be released by connecting

the battery to a suitable charger. When doing so, the charger must already provide an output voltage when the battery is connected.

Note: Chargers that provide high charging currents often have a switching charging output, which requires a battery voltage >9 V to be switched. In this case, briefly connect a 12 V source (e.g. a different battery or voltage source, max. 14.4 V) to the battery, which was deactivated by undervoltage, to reactivate it. Alternatively, a charger with switching output can first be connected to a battery in working order and quickly switched to the deactivated battery because a certain delay occurs until the charging output is switched off again.

Thanks to the low self-consumption of <math><100 \mu\text{A}</math>, also longer storage times without trickle charging are possible.

Operation with a battery monitor

Check that the following settings are adjusted when a battery monitor is connected:

- Voltage for automatic synchronization: 14.0 to 14.2 V (12 V battery) or 28.0 to 28.4 V (24 V battery)
- Peukert constant: 1.05
- Self-discharge: 3 %
- Nominal discharge value (C-rate): 2 h

Safety instructions

- Observe the maximum charging current.
- Observe the proper polarity.
- Do not short-circuit the battery contacts (risk of overheating, fire and explosion).
- Prevent overcharging and deep discharging.
- Do not use the battery if its housing is damaged.
- The housing may be opened by properly trained personnel only.
- Keep away from fire (risk of explosion).
- Do not leave the battery exposed to direct sunlight (risk of overheating).
- Protect the battery against humidity. Store in a dry place.

Charging instructions

- Charging instructions
- Only use chargers with the proper charging voltage and CC/CV charging mode (also referred to as 'IU mode').
- No trickle charging is required, not even during longer storage periods without connected consumers. Recharging after six months is recommended.
- Do not use chargers with anti-sulfation program.
- No memory effect (the battery must not be fully discharged before recharging).
- Information on connection to solar-powered charge controllers: All solar-powered charge controllers with the suitable charging voltage (as specified above) can be used.