

IBS Intelligent Battery System GmbH

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Lithium Ion Battery User Guide

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Product description

The IBS Li-Ion batteries combine high performance with low weight. The 100Ah weighs only 14.7kg compared to an AGM battery of approx.28kg with the same capacity. Since the IBS battery has a capacity of 100%, four times the capacity per kilogram is available. With a 100Ah AGM battery, only 50% (50Ah) is used.

The IBS 100Ah Lilon battery delivers 150A for 40 minutes, which is an absolute top value. A lead acid battery of the same size reaches its limit after 15 minutes.

A characteristic of the lithium ion phosphate (LiFePO₄) battery is that the cell voltage is 0.6V higher than a lead-acid battery, this improves performance in many devices such as inverters or 12V compressor refrigerators.

The IBS-Lilon100 is suitable as a powerful auxiliary battery and should be installed in the vehicle interior, since this battery is equipped with power electronics (BMS). This BMS protects the battery against over- and under-voltage, overcurrent and deep discharge. The battery delivers up to 160A continuous current and briefly 200A. To get more power, the batteries can be connected in series and in parallel. The battery is specially designed to protect against mechanical damage, e.g. protected from an accident. At -20 °C, 50 to 80% of the capacity is still available, depending on the load. The IBS batteries must not be used as a starter battery.

IBS has adapted the IBS product range for the new lithium batteries for many years. The double battery system IBS-DBS (from version 8.1), the IBS-DBR-Li and the new version of the IBS-DBM20A (from version 2.7) are ideally suited for the use of these high-performance batteries. Unsuitable chargers can run hot due to the high charging capacity, alternators should charge the Lilon on-board battery via an IBS Dual Battery system or InCarCharger (DBM20A, Booster). The IBS Ultra Sine inverters from IBS 400W / 800W / 1600W deliver much more power due to the high available energy. The applications are versatile and due to the large weight savings ideal for camping, expedition, service and emergency vehicles.

Further 24V Lilon high-capacity batteries for the solar sector are in preparation.

Applications

- Motorhomes, campers
- 4WDs / expedition / rally
- Yacht / Boating
- Solar (stand-alone and remote systems)
- Commercial and industrial use
- Energy back-up for computers, communication and medicine
- Mobile energy for artisans

Warning

Series and parallel connection

- Connect a maximum of four batteries in series.
- Connect a maximum of four batteries in parallel.
- Do not connect different Lilon capacities in parallel
- Do not switch in series and parallel at the same time.
- The voltage difference between the batteries should be less than 50mV before they are connected in series or in parallel.

200A continuous discharge

- Batteries with a 200A BMS activate the over temperature protection if a current of 200A flows for too long.
- Batteries with a capacity of 100Ah or less may be discharged with 200A for a maximum of 20 minutes.
- Batteries with a capacity of 150Ah or more may be discharged with 200A for a maximum of 30 minutes.
- Check connected inverter power; do not operate 1600W on full load on Lilon50A!

Delivery content

- 50/100/180Ah lithium ion battery, SOC 30% when delivered, charge the battery immediately
- 2x M8 connection screws
- Manual

Specifications

Technical specifications

Battery Type	IBS-Lilon50	IBS-Lilon100	IBS-Lilon180
Usable capacity	50Ah / 0.64kWh	100Ah / 1.28kWh	180Ah / 2.3kWh
Battery type	Li-Ion (LiFePO4)	Li-Ion (LiFePO4)	Li-Ion (LiFePO4)
Continuous discharge (max. <5sec)	50A (100A)	160A (320A)	160A (320A)
Nominal voltage	12.8V	12.8V	12.8V
Charging current 0.2C -0.5C	10A	20	60A
Charging current max.	25A*	60A*	60A*
Charge cycles (DoD 80% / 50%)	3400 - 5000	3400 - 5000	3400 - 5000
Temperature range	-20°C- 55°C	-20°C- 55°C	-20°C- 55°C
Discharge voltage	14.6V +/- 0.2V	14.6V +/- 0.2V	14.6V +/- 0.2V
Battery management system	Yes	Yes	Yes
Continuous power of connected inverter	500W	2kW	2kW
Weight	6.8kg	14.7kg	23kg
Dimensions	198x165x170mm	329x172x214mm	485x170x220mm
Battery poles	2xM8	2xM8	2xM8
Transport certificate	Yes (UN38.3)	Yes (UN38.3)	Yes (UN38.3)
EMC/CE	Yes	Yes	Yes

* With charging currents greater than 0.2-0.5C, the lifespan of the battery is reduced due to the heating during charging.

Operating and storage temperatures

Temperature range in operation	charge	0-+45°C
	discharge	-20-+60°C
Storage temperature range	1 month	-20-+60°C
	3 months	-20-+45°C
	6 months	-20-+25°C

Quality feature, test certificate

The IBS lithium ion batteries are tested by **Anbotek Compliance Laboratory** to guarantee maximum reliability in operation, the IBS batteries have to pass the following tests:

- height simulation (pressure)
- Heat test + 75 °C to -40 °C
- Mechanical load 13kN
- Vibration
- Shock 50-100g
- Short circuit 1h at 0.1Ohm
- 18-22V overcharge
- Overload, high continuous currents

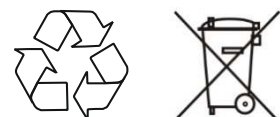
UN38.3

Manual Version: Li-Ion-battery_e_2.docx



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**RoHS
OK**



MADE IN PRC FOR IBS

Händler:

Serial number: