

SMART BATTERY SYSTEM

LE300

EXTEND EVERY 12 V LEAD BATTERY SYSTEM WITH LIFEPO4 HYBRID TECHNOLOGY



SMART LITHIUM BATTERY

IDEAL FOR:





















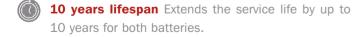


THE LE300 SMART BATTERY SYSTEM IS AN INTELLIGENT LITHIUM BATTERY. DESIGNED FOR THE EXTENSION OF 12 V LEAD-ACID BATTERY SYSTEMS. THIS HYBRID-COMBINATION ADDS CAPACITY, IMPROVES PERFORMANCE, AND INCRE-ASES THE LIFESPAN OF THE ENTIRE SYSTEM.

Working principle: The LE300 Smart Battery System takes over most of the charging cycles while the lead-acid battery functions as cheap backup storage. The lead-acid battery is charged with a higher priority, with the lithium battery taking up the excess energy. When discharging, the lithium battery is primarily discharged. This means that the

life of the lead-acid battery is significantly extended. The LE300 detects the voltage of the lead-acid battery and automatically begins to support it with a maximum current of 12.5 A. Larger loads are supplied by the lead-acid battery and the lithium battery in parallel, which means that both batteries are discharged with less current.

CORE ADVANTAGES AT A GLANCE





Safe and robust It is E1 certified for use in vehicles. The user is protected by built-in safety functions.





Winter functionality Thanks to the integrated cell heating, it can also be used in freezing temperatures.



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System voltage 12 VDC 12.8 VDC Nominal voltage Voltage range 11 - 15 VDC Battery packs used in LE300 IFpR/26/65 [8p/4s] E/-20NA/95 LiFePO4 rechargeable battery Nominal lithium capacity 28 Ah/358 Wh Usable lithium capacity 90 % (25,2 Ah/322 Wh) Numbers of cycles at room temperature 3000 full cycles (80% remaining capacity after 3000 cycles) Recommended lead acid capacity for each 70 - 125 Ah @ 12 VDC LE300 (not included) Recommended lithium/lead acid capacity 1/3 in solar home applications. Values vary depending on needed autonomy and on application. ratio (net) Continuos charging/discharign current Max. 12.5 A between 5 and 40 °C, at higher and lower temperatures current is limited. Battery efficiency > 90 % Housing dimensions 175x229x67 mm Weight Connection terminals RAST 5/mini module 4 pin/communication interface/external display Recommended wire size $1.5 - 4 \text{ mm}^2$ -20 – 50 °C ambient temperature with maximum battery life at 15 - 25 °C. Ambient temp. (operation & warehousing) Warehousing temperature 10 – 30 °C. Temp. sensor prevents lithium battery charge under -5 °C or above 55 °C cell temp. Charging starts once cell temp. is higher than -5 °C. Device has an integrated heating that is active between -20 °C and 10 °C cell temp Discharge possible between -20 °C and 60 °C cell temp. At cell temp. below -20 °C and over 60 °C system is running in pure lead acid mode for higher battery lifetime.

Low and high temperature protection, heating, charging & discharging

Lithium cell balancing

Protection features

Operation mode/compatible external batteries

Max. parallel LE300s

EXEMPLARY BATTERY PACK CONFIGURATION

Qt. of packs connected in parallel

Total nominal voltage Total lithium capacity

Continuous charging/discharging current

Recommended lead acid capacity (not included)

Battery management inclusive balancer

Overcurrent, overvoltage, short circuit, deep discharge, wrong polarity protection.

Works in combination with any 12 V lead acid battery & lead acid charge controller.

In standard version, a maximum of 24 LE300 can be connected in parallel, higher quantities possible after consulting BOS partner.

Parallel

6	2
12.8 VDC	12.8 VDC
168 Ah/2,15 kWh	56 Ah/ 716 Wh
Max. 75 A	Max. 25 A
Min 40 Ah	Min 20 Ah