

# Intelligent battery charger for automotive and industrial applications - changing the game

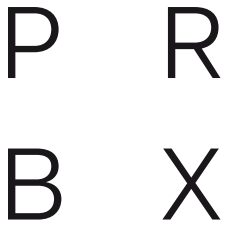
**Press Release**  
**October 25, 2016**

**Powerbox, one of Europe's largest power supply companies and a leading force for 4 decades in optimizing power solutions for demanding applications, introduces a new product within its Automotive Line, the Smart DC/DC ENA200-Charger. Designed to meet new market requirements for intelligent and flexible charging solutions for automotive and industrial demanding applications, the ENA200-Charger includes the latest technologies for intelligent charging. Part of the "One package to fit all" program developed with our customers, the ENA200-Charger fits into the same IP21 packaging as the isolated DC/DC converters ENA100 and ENA200. The ENA200-Charger includes a micro-controller with very advanced firmware to guarantee optimum charging and longer battery life-time. The unit includes pre-defined charging algorithms for standard Lead Acid, Absorbed Glass Matte (AGM), Gel Cell and Calcium, though application-defined profiles can be uploaded at the Powerbox configuration center to meet customer's specific application. The ENA200-Charger includes load temperature monitoring and intelligent spark control. The ENA200-Charger is available in two input voltages for 12V and 24V systems, delivering smart adjusted voltage for 12V batteries with up to 15A charging current and peak power up to 216W. For safety, the unit provides galvanic isolation of 500VDC (input/output/case).**

The new generation of automotive equipment and demanding industrial applications such as mining machinery, forest industry, trucks and containers, geo-localization, forklift & electrical cleaning vehicles are demanding more simple and efficient power solutions with built-in intelligence to adjust load charging to an almost infinite range of applications. Designers often face challenges when developing systems requiring autonomous equipment powered by local batteries, in the selection of battery technology but also in the type of charger. They are concerned by the size of the battery charger, which nowadays is often integrated into a much smaller envelope.

The Powerbox ENA200-Charger has been designed to bring simplicity to integration. Built-in low profile IP21 polycarbonate housing, it is as small as 116 x 88 x 18mm (4.57 x 3.46 x 0.70 inches), making it one of the thinnest DC/DC chargers on the market. The integrated baseplate includes four mounting holes for mechanical attachment to a vehicle chassis or assembly plate. The low weight, less than 500 grams, contributes to excelling performance in vibration testing (5-50 Hz, acceleration  $\pm 7,35m/s^2$ ).

The ENA200-Charger includes over-temperature, short-circuit and reverse-voltage protection but also a well programmed spark protection function, constantly measuring the connection to the battery prior charging. By default



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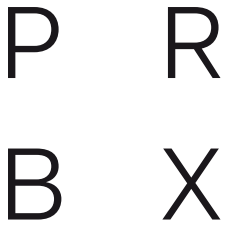
the charger will not start charging if the voltage is below 5V though this limit can re-programmed for specific applications.

“Industrial automotive applications are integrating battery chargers within confined envelopes requiring highly efficient and low profile chargers. Using low profile technology and integrated components, our designer developed a brand new range of chargers with built-in intelligence” said Patrick Le Fèvre, Marketing and Communication Director at Powerbox. “The ENA200-Charger is part of the “One Package to Fit All” project developed in close co-operation with our partners and customers, aiming to reduce time to market whilst reducing inventory.”

Available in two input voltages 12V (9V to 18V) and 24V (18V to 32V), 15A/256W peak, the ENA200-Charger offers three pre-configured modes of charging (Lead Acid Standard, AGM, Gel Cell and Calcium). A front switch makes it possible to select the charging mode and four LED's indicate the charge state from low to full charge, plus one red LED to warn in case of fault. The charging type is based on 5 steps ; IUIU + pulse. Standard profiles are suitable for a large majority of applications though charging curves can be customized on demand and configured at one of the Powerbox Configuration Centers. For charge monitoring and load optimization, the ENA200-Charger includes an input to connect a NTC temperature sensor to unit.

With efficiency and reliability in mind, the ENA200-Charger is based on a low-component count platform, push-pull with a secondary power-train using diode emulated synchronous rectification and combined low-loss switching components. The layout is optimized for efficient current-flow and reduced EMI. The product has a power efficiency greater than 95%. At no load, the input current is lower than 100mA and in standby mode input current is lower than 1mA.

Designed to meet immunity standard ISO7637-2, the ENA200-Charger sustains 2kV surge and applicable parts of the EMC EN61000. The ENA200-Charger is RoHS II and REACH compliant.



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#### **About Powerbox**

*Founded in 1974, with headquarters in Sweden and local operations in 15 countries on four continents, Powerbox serves customers around the globe. We focus on four major markets - industrial, medical, railway and transportation, and defense - for which the company designs and markets premium quality power conversion systems for demanding applications. Our mission is to use our expertise to increase our customers' competitiveness by meeting their entire power needs. Every aspect of our business is focused on that goal, from the design of the advanced components that go into in our products to our customer service. Powerbox is recognized for technical innovations that reduce energy consumption and the company's ability to manage the full product lifecycle, minimizing environmental impacts.*

For more information

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