



E-LAM

Laminated Busbar Solutions



What is Laminated Busbar?

E-LAM Laminated Busbar is a multi-layer construction of conductors: it is formed by laminating copper or aluminum conductors separated by thin dielectric materials into a single structure. Laminated Busbar systems are a custom-design, superior power distribution method designed for today's electrical and electronic systems that handle thousands of amperes. Laminated Busbars offer ease of assembly with their customizable structure and compact design, providing a durable structure. Furthermore, they bring reliable and modular solutions that you need in various fields.

Advantages

E-LAM Laminated Busbar Systems offer better electrical and mechanical performance when compared to traditional power distribution cabling systems, especially cable bundles.

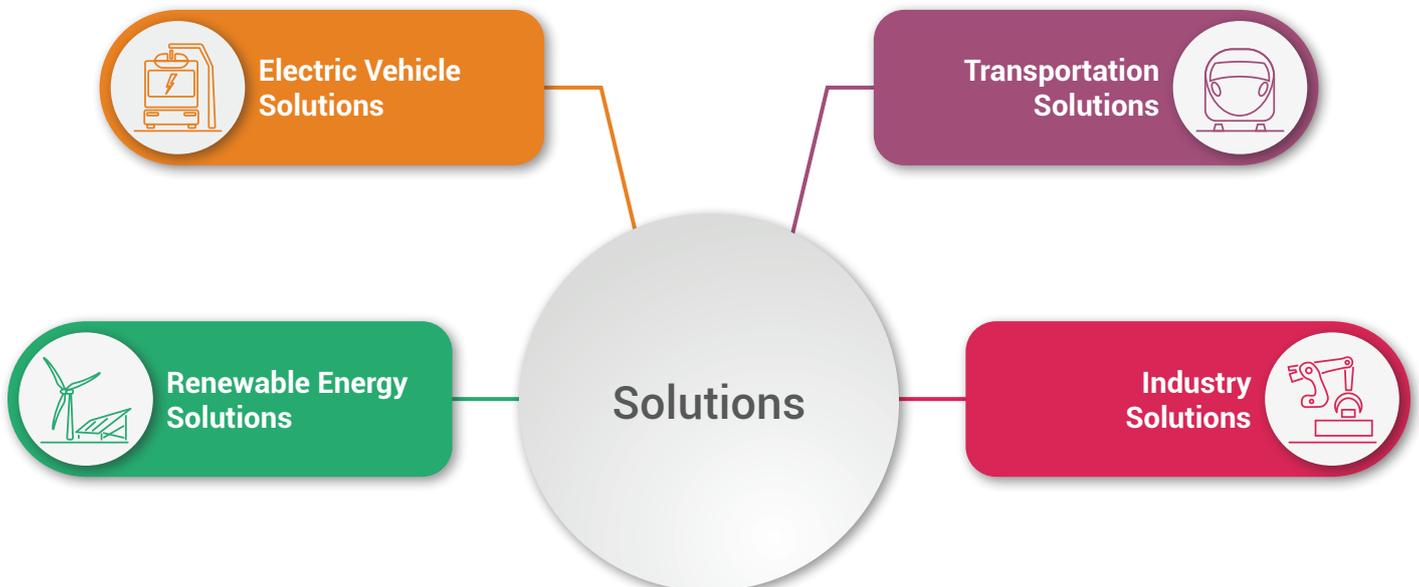
Advantages of Laminated Busbar;

- High Current Carrying Capacity
- High Electrical Insulation
- High Short Circuit Resistance
- Low Inductance Values
- High Capacitance Values
- Modular Structure and Compact Design
- Wide range of uses
- Reliable Structure
- Reducing Assembly Time
- Low Switching Losses
- Thermal Performance



E-LAM Laminated Busbar Solutions

E-LAM Laminated Busbar Solutions are custom-produced to suit the specific application area, systems, and customer preferences. It is designed by experienced engineers to have low resistance and inductance values and high current carrying capacity as a result of optimization work.

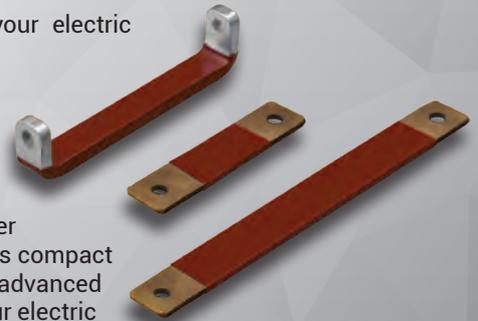




Electric Vehicle Solutions

Advanced laminated busbar technology increases the performance of your electric vehicle.

Provides thermal, mechanical and electrical protection for your electric vehicle. **E-LAM** Laminated Busbar systems are based on powerful electric motor drivers, large capacity battery groups, power inverters, reliability and high performance in the efficient distribution of power from the charging source to the battery and throughout the vehicle. It provides optimum power transfer, reduces energy loss and increases overall system efficiency. With its compact design and excellent thermal management, the laminated busbar provides advanced heat dissipation, ensuring the highest performance and safe operation of your electric vehicle.



Applications:

- Battery Module and Package Connections
- DC/DC, AC/DC Converters
- Powertrain
- Energy Transmission to the Internal Parts of Electric Vehicles (Air conditioning, panels, headlights, music systems, etc.)





Transportation Solutions

E-LAM brings unique advantages when it comes to operating and protecting the electric powertrain and power storage systems in railway vehicles.

E-LAM best meets the needs of the electric and hybrid transportation market in power management solutions of customer-specific designs.



Applications:

- Battery Module and Package Connections
- DC/DC, AC/DC Converters
- Powertrain
- Motor Drives



Renewable Energy Solutions

E-LAM Laminated Busbar offers the safest and most optimized solutions for your renewable energy systems, taking into account technical requirements, environmental conditions and physical factors. As the renewable energy sector evolves, Laminated Busbar offers a robust and reliable solution for power transmission in solar, wind and other sustainable energy systems.

Consisting of multiple conductive layers laminated with insulating materials, busbars minimize electrical losses for maximum energy and provide enhanced thermal advantage.

Their compact and customizable design enables seamless integration into a variety of renewable energy installations, enabling energy distribution. It increases the reliability and productivity of your renewable energy infrastructure, making a significant impact in your quest for sustainability.



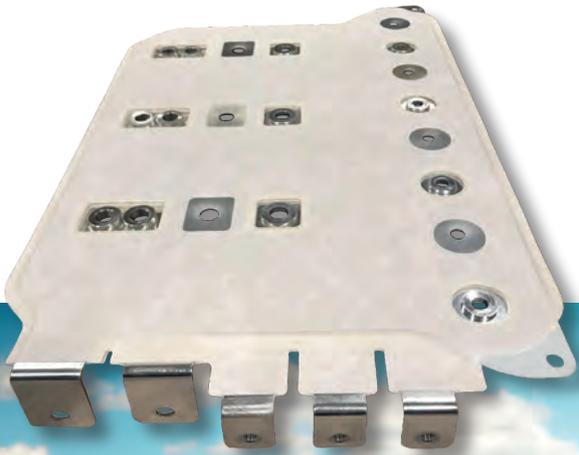
Solar Energy Systems



Wind Energy Systems



Energy Storage Centers

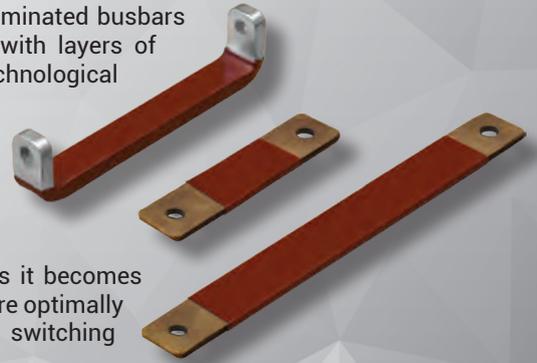




Industry Solutions

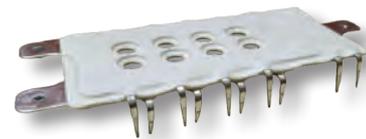
Industrial environments require robust and efficient power systems. Laminated busbars offer the ideal synergy of performance and reliability. Manufactured with layers of conductive material surrounded by dielectrics, busbars offer the latest technological solution for modern industrial needs. Its optimized, customer-specific design without compromising performance enables easy integration into various industrial installations. **E-LAM** laminated busbars provide consistent performance by providing many advantages with their customer-specific designs.

Silicon Carbide (SiC) semiconductor technology is today's industrial as it becomes increasingly accepted in applications, all EAE laminated busbar models are optimally designed, minimizing undesirable "voltage spikes" caused by the high switching nature of Silicon Carbide (SiC) applications.



Applications:

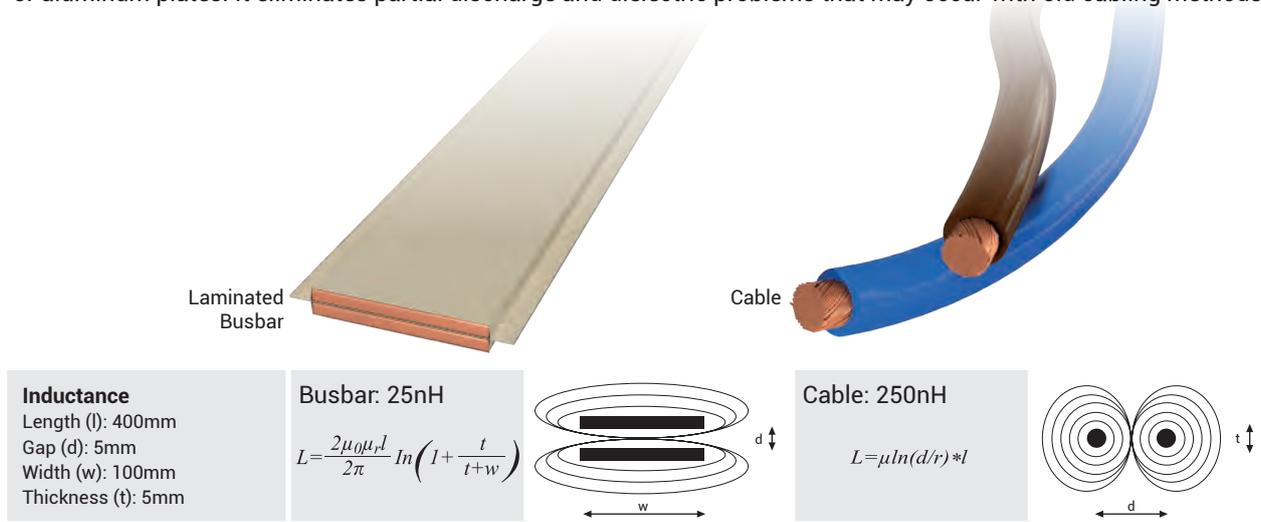
- LV / MV Converter Systems
- Power Regulating Systems
- Automation Systems
- Battery Module and Package Connections
- DC/DC, AC/DC Converters
- Powertrain



Laminated Busbar Electrical Design

The important properties of laminated busbars are resistance, inductance and capacitance. As the performance parameters of electronic equipment and components become more stringent, these characteristics become more important. These characteristics are important in solving the two most important problems for designers (resistance and noise) when determining the impedance of a power distribution organ. Therefore, it is important to understand the electrical properties of laminated busbar.

Below shows the laminated busbar, equivalent cable structure and mathematical models. Laminated Busbar consists of parallel conductor plates separated by insulating materials. Thanks to this configuration, it provides homogeneously distributed high thermal performance thanks to low voltage losses, minimized eddy currents and large surface area copper or aluminum plates. It eliminates partial discharge and dielectric problems that may occur with old cabling methods.

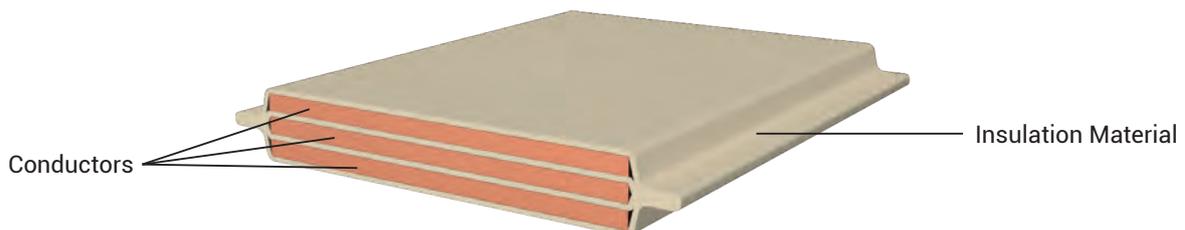


Inductance is the ability to store energy in the form of a magnetic field.

E-LAM Laminated Busbars are designed for the lowest possible inductance. Low inductance means low characteristic impedance and more noise damping.

Insulation

Laminated busbars are covered with insulation layers of many different types and structures. Insulation capacity is increased with multi-layered and high temperature resistant glass fiber reinforced polyester materials, eliminating partial discharge and dielectric problems. Epoxy coated busbars provide maximum insulation in cross sections suitable for the required power and in a structure suitable for the design, allowing power transfer at constant values for many years.



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