

power distribution systems - prefabricated EAE bus piping

With their modular configuration, EAE E-Line Busbar power distribution systems respond to every energy requirements in all sectors: tertiary, industrial and infrastructure. The natural and constant changes in the layouts of the facilities, addition of machines, the simple relocation of site, and new power supply needs at various points can happen without in any case having to cut the power supply of the installation. E-Line Busbar busbar systems provide versatile, easy solutions to install, economical and modern for the relocation of machinery and equipment similar in all commercial, office or industrial building applications. All modifications and additions can be carried out easily without interrupting the operation.

Power is distributed through insulated bars within a sheet of metal or aluminum casing and is reliably distributed using junction boxes. These can be safely connected or removed from sockets distributed along the length of the busbar, without the need to interrupt the energy supply to other equipment supplied by the same busbar.

E-Line Busbar buses comply with regulatory requirements and have international test certificates. These prefabricated pipes can be expanded, replaced, moved or reused whenever necessary. It is very easy, economical and safe to operate the installation by using the junction boxes placed along the busbar route.

ADVANTAGES OF USING THE EAE BUS VERSUS CABLE DISTRIBUTION SYSTEM

1.Modular and portable structure manufactured with high technology

With a modular structure, busbar systems are functional and flexible. The system can be easily adapted to changes in buildings and factories. It can be moved within the facility or dismantled and transported to another location. The cables, which remain as initially installed, are not modular. Depending on conditions, wired systems are nearly impossible to move and reinstall or require costly overhauls. Most disassembled cables are discarded as they are not reusable.

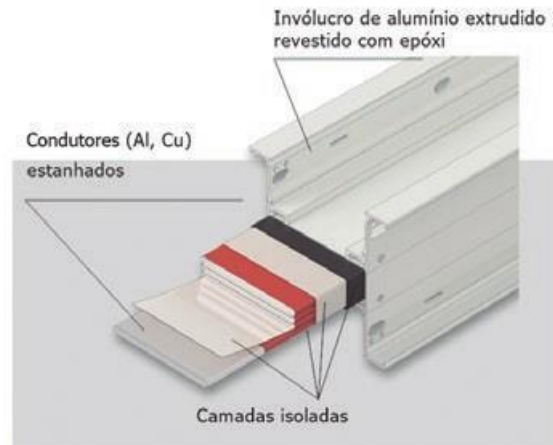


Figure 1.

2.Minimum voltage drop

The impedance values of EAE bus systems are very low due to their structure. Since the resistance R and the inductive reactance X of the system can be premeasured to precise values, the voltage drops can be calculated very close to the operational value in the project design phase. Especially on compact EAE E-Line Busbar buses, the voltage drop is as low as possible. The X reactance value is much higher in cable systems due to the large distance between the phase conductors. Also, this value varies depending on the cable layout (rigging). For the same current ranges, the value of reactance X is approximately 3 times greater in wired systems.

$$\Delta U = \sqrt{3} \cdot L \cdot I \cdot (R \cdot \cos\phi + X \cdot \sin\phi) \cdot 10^{-3} \quad [V]$$

3.Short circuit resistance

The ability to withstand the dynamic and thermal force of a short-circuit is very high in this type of EAE buses. Therefore, this type of busbars in pipelines are very unlikely to be damaged by short-circuits that may occur in the installation, in the loads supplied. For example $I_{cw} = 15$ kA for 250 A, $I_{cw} = 120$ kA for 3200 A.

4.High performance in heat dissipation

The metal casing of the EAE buses offers high heat dissipation performance with its large cooling surface. Especially on compact EAE buses, heat dissipation is very effective.

5.Fire resistance and halogen free

All components of the EAE busbar systems are halogen free (they do not emit toxic gas in a possible fire). Having a metal casing, busbar systems are not a flammable system like cable systems. During a fire,

the busbar system equipment does not propagate the fire. In accordance with the IEC 60331 Standard, EAE busbar power distribution systems are capable of providing uninterrupted power for 3 hours.



Figure 2.

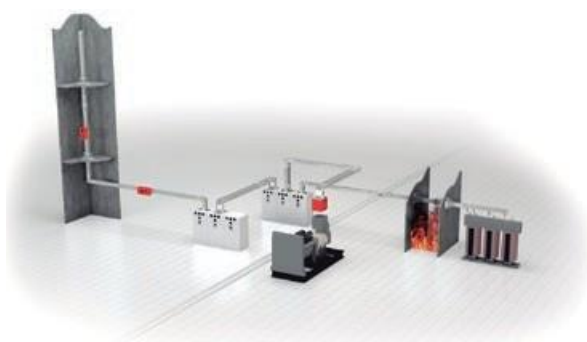


Figure 3.

6. Modern and aesthetic look

E-Line busbar systems offer a modern and aesthetic look. Space requirements are minimal which allows more space in the building to be made available for other needs. The dimensions are quite small due to its high power distribution capacity.

7. Simple Design

With approximate values of the requirements for exploration and use of energy, the busbar systems facilitate and speed up the entire conception and project of a building, allowing to reach the list of materials, even if the exact layout is not available.

8. Diversity

Considering the high capacity of busbar systems that operate as a common power distribution pool, the system diversity factor can be applied so that power needs can be optimized at the lowest cost, which is not possible with cable systems.

9. Dimensions of main distribution boards

When using these busbar systems framed in more global solutions, the dimensions of the main distribution boards are smaller, less need to create separations, divisions.

10. Flexibility with *plug-in* system

If there is a need to expand the installation, more energy consumption needs, for additional machines or relocations, such expansion or adaptation is easy through any plug-in point, without cutting the line supply, allowing the other loads to remain in operation ensuring the continuity of service of the installation.

11. Fast Installation - Low Installation Cost

Busbar systems save almost 50% of the installation time compared to cable systems, which reduces the waiting time until the installation is operational. In conclusion, thanks to EAE bus systems, the power system can be installed and completed very easily and quickly within the programmed time, at a lower cost.

12. Resistance to mechanical impacts

EAE busbars are resistant to external impacts thanks to their metal casing.



Figure 4.

13. Low maintenance cost

EAE bus systems require much less maintenance.

14. Economic

EAE prefabricated busbar power distribution systems offer more cost-effective solutions compared to cable systems. EAE buses are not only cost-effective at the very start of the investment, commissioning time, but also reduce the total cost of material and labor compared to traditional distribution systems. EAE bus systems offer a total cost savings of 30-40%, depending on the current range and number of machines placed in the facility and the sector of application.

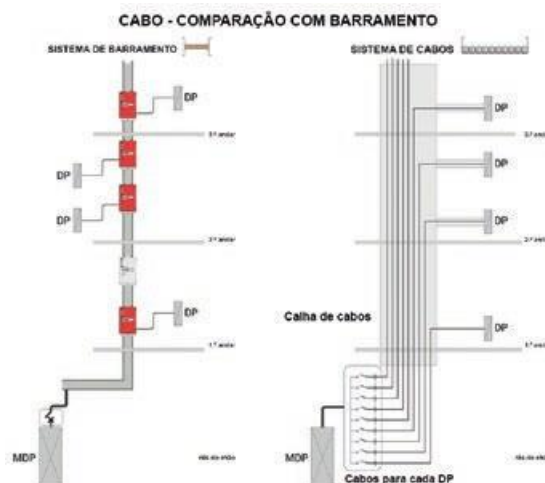


Figura 5. 

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