

Busbar Solutions for Aerospace and Defense

Overcoming the Constraints of Conventional Wiring

Aerospace and defense design engineers are tasked with enhancing system performance and reliability within stringent size and weight constraints. Conventional wiring harnesses present a significant obstacle, adding physical bulk and creating parasitic losses that impede efficiency. Additionally, their numerous connections create failure points susceptible to vibration and thermal stress.






A Strategic Advantage with Busbars

Busbars resolve these design constraints by replacing a complex wiring harness with a single, unified conductor system. This approach enhances reliability by replacing numerous solder and crimp joints with a single, solid conductor, establishing a more compact and weight-efficient architecture. Busbars feature a unified construction that produces distinct electrical advantages, yielding lower resistance and inductance for more stable and efficient power delivery to critical systems.

FEATURED MOLEX BUSBARS
FOR AEROSPACE AND DEFENSE APPLICATIONS



Rigid Busbars	Flexible Busbars	Laminated Busbars
		
With a solid, pre-formed construction, rigid busbars deliver high-current power with high mechanical strength in static environments subject to intense vibration.	When routing power through complex geometries and absorbing mechanical stress, flexible busbars offer a distinct advantage in applications involving constant vibration or movement.	For high-density applications where controlled impedance and electromagnetic interference (EMI) mitigation are critical, laminated busbars achieve these goals by integrating multiple conductors into a single, low-profile component.
Key Features		
High-current capacity	Space adaptability	Compact, space-saving design
High mechanical strength	Vibration resistance	Low parasitic inductance
Efficient thermal management	High stress tolerance and reduced failure points	Improved heat dissipation
Simplified assembly	Ease of installation	Streamlined system integration
Common Aerospace and Defense Applications		
On-vehicle power distribution	Avionics	Unmanned vehicles
Radar systems	Radar systems	Radar systems
Inverters	Missile guidance	Maritime propulsion
Ships and submarines	Satellites	Spacecraft
Variable frequency drives	Electronic warfare	Inverters

Secure
High-Power
Connectivity



Molex completes the power pathway with a portfolio of high-power connectors and cable assemblies designed to integrate with our busbar systems, offering:

- Reliable high-current and high-voltage operation
- Design flexibility through a range of configurations
- Dependable operation in demanding aerospace and defense environments

Explore High-Power Solutions

Empowering Your Next
Aerospace and Defense Mission

Molex supports mission-critical applications through direct collaboration with our regional Field Application Engineers (FAEs) and dedicated busbar design teams, providing responsive, quick-turn support. The expertise of Molex is built upon more than 50 years of aerospace and defense industry experience and a foundation of secure manufacturing in our ITAR-registered facility.

Discover how Molex Busbars integrate compact designs to reduce system weight and deliver efficient power, enhancing the safety and reliability of your most demanding applications.

Visit molex.com to view our full portfolio of **busbar solutions**.