

Building and Industrial Automation Trends Require Connectivity

Do you have the right products to create seamless connections in tight spaces?

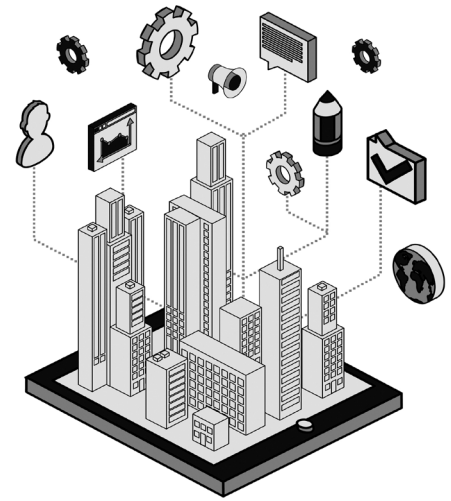
SITUATION

Connected system innovations found in commercial buildings are carrying over into industrial building infrastructure and production lines where automation is focused on buildings systems, including climate control, security and safety as well as advanced manufacturing processes.

More complex, connected and modularized buildings require a significant increase in the number of internal systems that use multiple printed circuit board (PCB), wire-to-board and flex assemblies for sensors, cameras and multiple active module PCBs. Assemblies demand connectors with improved signal integrity (SI) for speed and robustness in tight spaces. And while connectivity is increasing, it must be accomplished without an increase in the product profile.

The next wave of features propelled by industrial internet of things (IIoT) innovation will require increased internal PCB, wire-to-board and flex assembly density within the same application profile. This will drive more modularity, with complex circuitry requiring additional semiconductors, memory, capacitors and resistors on multiple boards, increasing low-profile connector demand.

Do you know enough about the latest interconnectors to address these challenges?



TREND 1:

More Features Need More Power

- Feature-rich devices require more power in the same space, demanding low-to-mid power connections.
- More applications will have low volt motors, lighting and power supplies that will require low-power connection points.
- The demand for compactness with increased internal density will drive space savings for wire-to-board and flex board connection points.

TREND 2:

Real-Time Information Requires Faster Connections

- Sensors and cameras are processing and interpreting more information at higher processing speeds, requiring connectors with superior SI performance. Consider the need for high-performing, durable interconnects early in the development process.
- Higher resolution displays require increased EMI and SI performance
- Antenna bands have evolved to drive more information at higher processing speeds, requiring more active and passive components.

TREND 3:

Space Constraints Require Profile Flexibility

- The inside profile of building automation applications is becoming more space constrained. Increased modularity limits the space from the connector and other components, requiring more profile and orientation micro connector options.
- Having multiple profile and orientation micro connector options gives designers and building managers flexibility to address space, location and connector entry-point challenges.

WHAT'S TRENDING

The Right Connector for Seamless Building Integration

Industrial building designers, owners and managers consider automation an investment rather than a luxury. Digital infrastructure now must be designed to support scalability and simplified integration of smart, connected systems.

For example, building automation systems (BASs) have decreased energy usage and costs by processing data and aligning building systems from sensors to control lighting fixtures, HVAC equipment and more. This example can be extended to production lines that have realized an increase in vision and scanning equipment to optimize production cost and efficiency.

The ability of these building and production line systems to orchestrate the automation of disparate information (audio/video, security cameras and access systems) dramatically increases the modularity in these applications. In turn, this increases demand for high-performing connection points. Molex's deep experience developing connectors with retention and mechanical features that perform well in low-profile, space-saving environments supports the goals of BAS designs.



Contact Mouser to learn how these Molex products can support your building automation system designs:

- [Pico-Lock Connector System](#)
- [Micro-Lock Plus Wire-to-Board Connector System](#)
- [Pico Clasp Wire-to-Board Connectors](#)
- [Pico EzMate Connector System](#)

SOLUTION: **Pico-Lock Wire-to-Board Connectors**

- Side positive locking system for high retention force and max space savings
- Ultra-low-profile right-angle design
- Up to 3.5A per circuit design



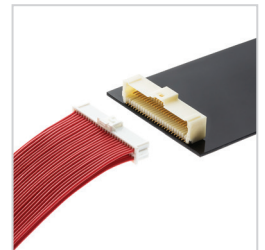
SOLUTION: **Micro-Lock Plus Wire-to-Board Connectors**

- Design flexibility with multiple pitches, mating orientations, dual-and single-row options
- Robust low-profile mechanical locking system for optimal retention force



SOLUTION: **Pico-Clasp Wire-to-Board Connectors**

- Design flexibility with multiple pitches, mating orientations, dual-and single-row options
- Robust low-profile mechanical locking system for optimal retention force



SOLUTION: **Pico-Ezmate Wire-to-Board Connectors**

- Top entry design for ease of use
- Ultra-low profile height (1.20mm) provides vertical space savings
- Polarizing key prevents mismatching



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