



IOT/DIGITAL BUILDING NETWORK CONNECTED SYSTEM



Technology Center Building Uses Molex Infrastructure to Seamlessly Integrate Motorized Shades

BUSINESS CHALLENGE

Lighting glare from large windows interfered with ability of employees to work effectively in brand-new, state-of-the-art headquarters building.

The brand-new, state-of-the-art technology center promised to deliver impressive ROI in terms of energy savings and positive impact on occupant comfort, productivity and space utilization. But only days after it officially opened for business, employees on the south side of the building where large windows overlooked a beautiful green park reported that they found it extremely difficult to work in the early afternoon. The direct sunlight hitting their computer monitors created a blinding glare that made reading the screen impossible, even after adjusting their desk and monitor levels.

Installing either manually operated or motorized shades would block the glare but create a new set of issues. Most importantly, unless they were constantly adjusted properly, shades would also block the light and the view. Manually operated shades are usually left in one position all day long, since few people are willing to take the initiative and time to adjust them. However, installing motorized shades appeared to be prohibitively costly as well as extremely disruptive to install. Electrical versions required running power conduit to the windows and building perimeter. Battery-operated options were less reliable and would place major demands on maintenance staff to replace batteries. Plus, such extensive battery use would have a negative impact on the green focus of the building.

SOLUTION

Molex IoT/Digital Building Network Connected System enables easy, cost-efficient motorized shade installation.

The good news is that the building featured Molex's IoT/Digital Building Network Connected System, digital infrastructure designed to support scalability and simplified integration of smart, automated and connected systems now and in the future. Molex developed the IoT/Digital Building Network Connected System to help customers address the challenges of designing cost-effective and energy-efficient modern office buildings. Integrating gateways, sensors, cables and software proven in other connected enterprise platforms, the intelligent, low-voltage power over internet (PoE) system uses a native IP-based technology to transform commercial buildings and workspace designs through continuous sensor feedback.

With this infrastructure in place, it was easy and cost-efficient for the building's owners to add low-voltage Cat cables to power low-voltage motorized shades. Additional benefits included the ability to provide DC power via the same Cat cables and to control the shades using the same system in place for managing the building's biodynamic lighting. Scheduling, occupancy, and daylight sensors provide fully automated shade control that minimizes heat build-up and eliminates glare, reinforcing the smart, adaptive nature of the building.

This easy-to-install solution also dramatically reduces cost and workplace disruption. The only costs are the additional components necessary for this application expansion. Leading window and shade manufacturers covering the market have already adopted Molex's PoE technology for their motorized shades, offering a wide choice of options.

The PoE powered and controlled shades maximize energy savings and employee comfort. They allow natural light to enter the room while controlling unwanted, uncomfortable glare. Heating and cooling cost savings can be substantial and employee productivity improved with the right daylighting control strategy.



KEY FEATURES

Automated, adaptive and seamlessly integrated

- DC power ideal for low-voltage DC motor and sensor applications
- Power and data over a single-layer infrastructure using category cable
- Ethernet standards are proven, future-proof and scalable
- PoE controlled shades are integrated with the lighting network infrastructure
- Grouping and zoning is digital and done by software
- Highly automated thanks to existing sensor array already present for lighting automation
- Synergistic with dynamic/bio-adaptive Molex lighting control controls
- Rest API and Bacnet Interface for seamless integration with BAS and 3rd party system

KEY BENEFITS

Versatile design is scalable for future needs

- Significant energy savings and improved efficiency
- Building usage optimization enhances occupant comfort, productivity and performance
- Reduces installation cost and maintenance
- Adjustable configuration and control for future changes and needs
- Elegant, functional and optimized to take advantage of natural light
- Highly integrated building
- Data for prescriptive and preventive operation/maintenance
- Enabled for IoT emerging technologies and applications



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