Integrated building automation with Beckhoff technology

Jilin City shines with People’s Grand Theater

In September 2015, Jilin City in China inaugurated its People’s Grand Theater with a film festival. In only two years, a complex was erected, consisting of two theaters, four movie auditoriums and various administrative wings in an area spanning roughly 37,000 square meters. All building automation systems, including the intelligent lighting controls, were realised on behalf of the construction contractor China Railway 17th Bureau Group Co., using Beckhoff technology.
Interior views
The KM2614 with four pluggable power relays in one fieldbus module makes it possible to control consumers with high power requirements directly on the supply network. Each relay can be switched on or off manually.

Jun Han, technical director of the "Grand People’s Theater", in front of the control cabinet
As modern buildings become fancier and more complex, the scope of building automation systems increases as well, making simplification of the systems a new challenge. “The PC-based control platform from Beckhoff was totally new for us,” explains Xinsheng Wu, project manager for the low-voltage system installed at the Jilin City People’s Grand Theater. “The integrated building automation solution and the ability to control all devices from a single platform have greatly simplified the entire system. In the past, we needed different control components from two or even three manufacturers, which made the system much more complex.”

**Embedded PC, the integrated control platform for all functions**

The PC-based control architecture is much more flexible than traditional systems, as Jun Han, the theater’s technical director, notes: “To meet the requirements of this project, we only had to select the respective interfaces for the field devices and integrate them into the terminal string. The large selection of Beckhoff I/O terminals covers all building bus systems, including BACnet, EnOcean and DALI, among others. What impressed me most, however, was the fact that we needed only a single software tool for everything from planning to completion, helping us complete the entire project earlier than scheduled.”

For the building automation, intelligent lighting controls, room controls and other subsystems, there are 18 CX8090 Embedded PCs, 74 BC9050 Ethernet Bus Terminal Controllers, 250 KM2614 4-channel relay modules and approximately 200 digital and analog terminals installed in the People’s Grand Theater. “The entire building automation system is based on an integrated control platform, which simplified the project’s execution as well as future maintenance activities,” says Jun Han. “In addition, connecting the I/O terminals is easy; they are also very easy to replace, if necessary. As a result, the theater technicians don’t have to worry about finding maintenance help, performing the work completely by themselves.”

Further information:
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