



TwinCAT HVAC library extended

With useful new software function blocks for room automation including light control, air conditioning and sun shading, Beckhoff has rounded off the functionality of its extensive software kit for system-spanning building automation. These function blocks enable planners and operators of buildings to implement energy-saving room automation.

The requirements for energy efficiency in buildings will constantly increase. A substantial part of the demanded energy savings is achieved with the help of universal room automation and the adaptation of the primary systems to suit the local requirements. The integral approach of Beckhoff in building automation planning, using the TwinCAT software library for heating, ventilation and air conditioning (HVAC) and the Bus Terminal I/O system, enables maximum energy efficiency with low system costs and a rapid return on investment.

New software function blocks for improved interoperability of individual systems

In order to achieve the required interoperability, Beckhoff has extended the TwinCAT HVAC library for the control of heating, ventilation and air conditioning systems by implementing functions from the field of room automation. Using coordinated PLC function blocks it is possible to combine the functions for shading, lighting, ventilation, heating and cooling with one another in relation to time and presence. The following new core functions are available for energy-efficient room automation:

- **Lighting:** light circuit, automatic light, daylight circuit, constant light control, twilight circuit
- **Sun protection:** weather protection, sun protection with or without louvre adjustment, thermo-automatic function, automatic twilight function, shading correction
- **Room climate:** energy level selection with or without start optimization, setpoint value determination, function selection (control function), air quality control, room temperature control, load optimization

Time and presence-dependent control saves energy and costs

With integrated room automation, a building can be controlled time-dependently in different modes of operation, in order to save both heating and cooling energy during longer periods of vacancy. Nevertheless, the system must quickly reach the comfort temperature and also a good air quality at peak times. With the aid of occupancy sensors the individual systems can be used in different areas of the building for different functions.

The lighting is directly connected with the facade using the library. Only an effective interconnection helps save lighting energy, to use as much daylight as possible without glare and to guarantee a constant lighting intensity. For the efficient control of a facade it is also necessary to know which objects in its environment have an effect on it. Objects that cast shadows on part of a building are taken into account in the TwinCAT HVAC library. Beyond that the ventilation system or, if installed, motor-driven windows can be integrated for effective cooling on summer nights, for example.

Further Information:

www.beckhoff.com/TC-PLC-HVAC