## TwinCAT PLC HVAC

TwinCAT PLC HVAC is an extensive TwinCAT PLC library with function blocks for automating all building services. In addition to conventional HVAC functions relating to energy generation and distribution, it also includes room automation functions for lighting, shading and air-conditioning.

## TwinCAT PLC Building Automation Basic

The TwinCAT PLC Building Automation Basic software library allows the implementation of all functions which are important for room automation. Among these are lighting (constant light control, light dimmer,…), facade control, scaling functions, filter blocks, timer functions and peak load limiter for energy optimisation.

## BACnet (Building Automation Control Network)

BACnet (Building Automation Control Network) is a standardised, manufacturer-independent communication protocol for building automation. Areas of application include HVAC, lighting control, safety and fire alarm technology. Implementation of this protocol is carried out as server as well as client and can be run on all Beckhoff Industrial PCs and Embedded PCs. All services of a BBC (BACnet Building Controller) are supported such as for example, common data use (DS), alarm and event processing (AE), time-tabling (SCHED), trend recording (T) as well as device and network management (DM).

### BACnet revision 12

Embedded PCs corresponding to the ISO 16484-5:2012 standard:

**Ordering information CX8091 and CX9020 with BACnet/IP image (license key included)**

- ordering number of the CX8091 (no further ordering option necessary) (see page 204)
- ordering number of the CX9020-xxxx (see page 214) + CX1800-1052

**Ordering information CX5010/CX5020**

- CX50x0 with Windows CE | Ordering number of the CX + CX1800-1052 (BACnet/IP image, license key included)
- CX50x0 with Windows XPe | Ordering number of the CX + Supplement TwinCAT BACnet/IP (TS8020, license key necessary), TwinCAT 2.11 R3

### BACnet revision 6

Embedded PCs corresponding to the ISO 16484-5:2010 standard:

**Ordering information CX9001/CX9010 with BACnet/IP image (license key included)**

- ordering number of the CX9001-xxxx + CX1800-1044
- ordering number of the CX9010-xxxx + CX1800-1044

**Ordering information CX5010/CX5020**

- CX50x0 with Windows CE | Ordering number of the CX + CX1800-1044 (BACnet/IP image, license key included)
- CX50x0 with Windows XPe | Ordering number of the CX + Supplement TwinCAT BACnet/IP (TS8020, license key necessary), TwinCAT 2.11 R3

### Target system

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### Min. TwinCAT level

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### Further information

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We reserve the right to make technical changes.
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**The FIAS (Fidelio Interface and Application Specification) interface is a world-leader in hotel management software. The TwinCAT FIAS Server is a software package for communication between TwinCAT PLC and a system with a FIAS standard interface. The communication takes place using TCP/IP. The connection of hotel management software and automation system helps to optimise the energy consumption: e.g. the climate control is automatically adjusted for an unoccupied room; if there is strong sunlight the shading is automatically activated.**

**Crestron is one of the leading manufacturers of AV control systems. The TwinCAT Crestron Server enables communication between a TwinCAT PLC and a Crestron control. Both systems are connected by Ethernet. SIMPL user macros are available for programming the Crestron controller. The required function blocks are included in the TwinCAT PLC library. Read and write access to the other device is available from the Crestron controller and the TwinCAT PLC.**

**Bang & Olufsen is recognised all over the world for its unmistakable range of high-quality audio, video and multimedia products. The TwinCAT Bang & Olufsen server enables communication between a TwinCAT PLC and a Bang & Olufsen audio/video installation. For the TwinCAT PLC a corresponding PLC library is available, which enables access to the Bang & Olufsen Masterlink gateway. The data exchange is bidirectional via Ethernet.**

**TwinCAT Building Automation is a software package that covers all technical building automation services. In addition to modules for conventional HVAC applications it also covers room automation including lighting, air-conditioning and shading. Essentially, the software package consists of three components:**

**TwinCAT BA PLC Libraries**
The TwinCAT BA PLC libraries contain basic functions for control, signal processing, special mathematical functions, alarm processing and general system functions.

**TwinCAT BA PLC Templates**
The TwinCAT BA PLC templates consist of ready-made TwinCAT program blocks for sensors, actuators, complete modules for system components and for entire heating, ventilation and air-conditioning system installations/plants.

**TwinCAT BA Project Builder**
The TwinCAT BA Project Builder is a configuration program for defining system components and assigning them to individual templates. Based on this information, the project files for TwinCAT PLC Control functions and the TwinCAT System Manager can be generated for each controller.

**The TwinCAT Building Automation Framework includes a configuration program (TwinCAT Building Automation Manager) and a PLC library. The PLC library is configured such that a complete application program with the main room automation functions is available, including lighting, shading, climate control, time switching functions, scene management, weather stations and energy consumption monitoring. All actuators and sensors are registered in the TwinCAT Building Automation Manager, grouped together and linked with the Bus Terminals. The logical ordering of sensors to actuators is also done in the TwinCAT Building Automation Manager. From this information the configuration program generates and activates the I/O links for all devices entered in the system and writes all necessary parameters in the controller.**

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Windows NT/2000/XP, Windows 7, Windows CE
www.beckhoff.com/TS8035

Windows NT/2000/XP, Windows 7, Windows CE
www.beckhoff.com/TS8036

Windows NT/2000/XP, Windows 7, Windows CE
www.beckhoff.com/TS8037

Windows NT/2000/XP, Windows 7, Windows CE
www.beckhoff.com/TS8040

Windows NT/2000/XP, Windows 7, Windows CE
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