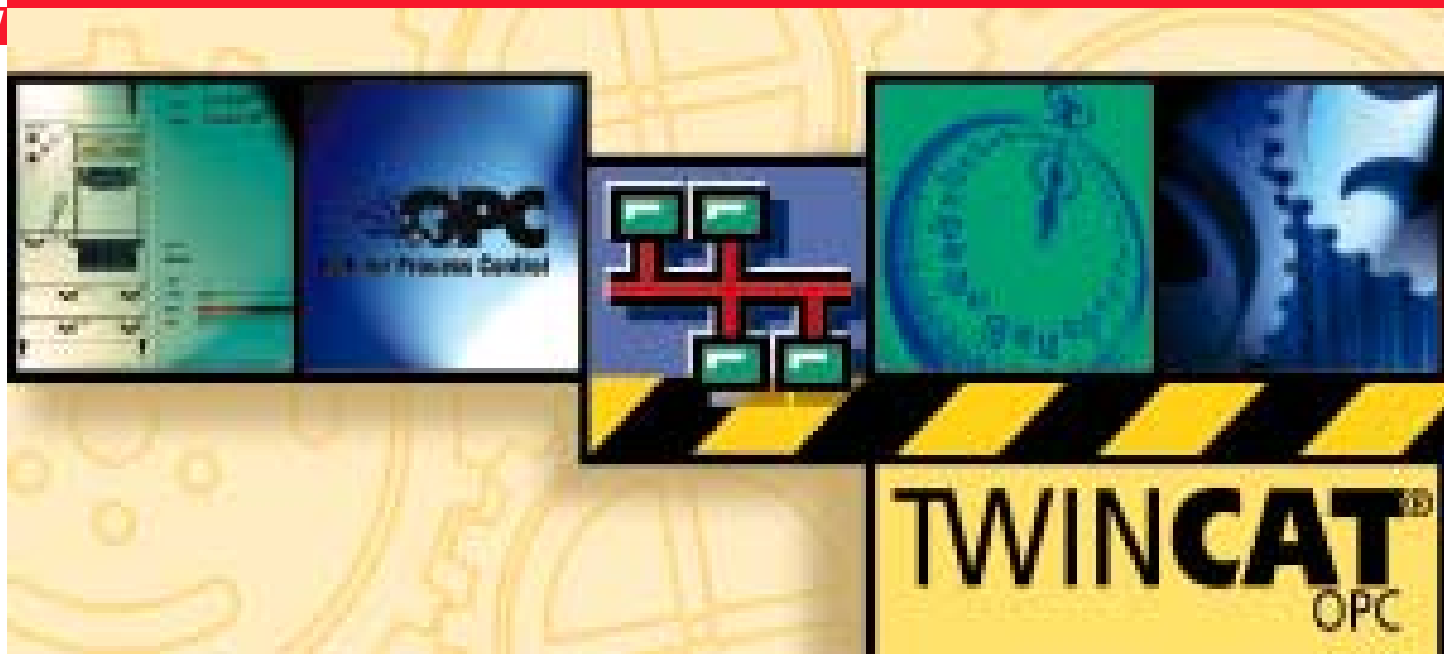



# Extending the Beckhoff OPC Products



## General Features of the Beckhoff OPC Server

In addition to the OPC access to TwinCAT, Beckhoff is now offering an OPC Server solution for its Control Panel products. Both the OPC Servers are being fundamentally restructured: the result is that certified OPC products are available for DataAccess (DA) and that an Alarm&Event (A&E) solution is also now available.

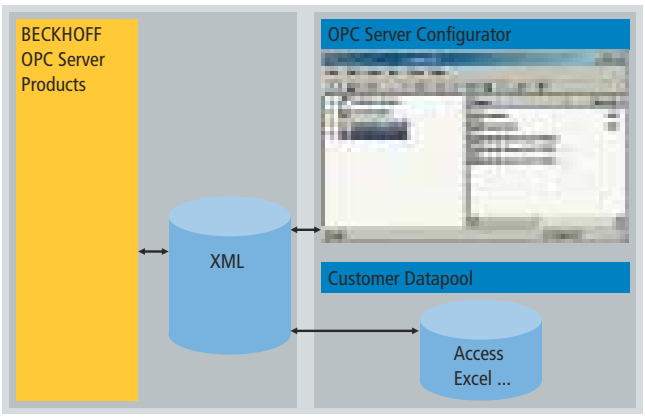
DataAccess servers inform their clients at specified intervals of current process values. Alarm&Event-Server provides various categories of events to their clients: thus a "condition-related" event details information that an item of process data has passed above or below a previously specified limit.

DataAccess clients can obtain information about existing data items by reading the server's "namespace". Alarm&Event servers make a corresponding "eventspace" available. Other functions can control the behavior of an A&E server: Events can be activated, deactivated or simply acknowledged.

The new Beckhoff OPC concept also includes open access to the configuration of the OPC Server via XML: As an alternative (or as an addition) to the Beckhoff OPC configuraton tool it is possible to configure the server via XML from existing customer database.

In addition to the namespace and the eventspace, other features of the Beckhoff OPC Server can be defined with the configuration tool, or via XML: Simulation signals allow the OPC client/server communication to be tested without accessing physical I/O. The simulation algorithm allows sinusoidal, ramp and random signals, e.g. to configure in amplitude, slope and offset and so on.
Also interesting is the new facility for the online conversion of process values: configurable linear conversions allow process values in units of "degrees Celsius" to appear in the OPC client as "degrees Fahrenheit", or "inches" as "centimeters".

The DataAccess servers now also allow an OPC item to be defined as an array or structure: Example: An OPC client has to pass 5000 formula parameters via the TwinCAT OPC Server to TwinCAT PLC. Instead of 5000 distinct item calls now only one call is issued thus minimizing the operating system load. Data consistency into the destination device is of course ensured here.



# TwinCAT OPC Server

The OPC Server is an element of the proven TwinCAT system architecture: Individual parts of the software (such as TwinCAT PLC, TwinCAT NC, ...) are looked on as independent devices, and the exchange of messages is handled through a consistent ADS interface. Since the TwinCAT OPC Server uses this ADS communication, a wide variety of applications are becoming available: Through the TwinCAT OPC Server it is possible to access all the ADS devices such as TwinCAT PLC/ NC/CAM/IO/CP. Through ADS, the Beckhoff Bus Terminal Controllers and Beckhoff Fieldbus PLC Box products can be reached.

It is further possible to link any of the fieldbusses supported by TwinCAT: Lightbus, Profibus, Interbus, CANopen, DeviceNet, ControlNet, SERCOS interface, Ethernet, USB and generic DPRAM. All of them can be combined in one control system.

The TwinCAT OPC Server has been implemented for Windows NT and Windows 2000 platforms (Windows CE under development).

| Technical data | TwinCAT OPC |
|---|---|
| Operating system | Windows NT, Windows 2000 (Windows CE in preparation) |
| Open concept | Configuration of the OPC Server via XML: namespace, eventspace, simulation signals, conversions<br>Data exchange with all variables in all TwinCAT ADS devices: TwinCAT I/O, TwinCAT CP, TwinCAT CAM, TwinCAT NC, TwinCAT PLC runtime systems, Beckhoff BCxxxx Bus Terminal Controllers and Beckhoff ILxxxx-Cxxx Fieldbus PLC Boxes |
| OPC specifications | DataAccess 1.0a and 2.0, Alarm&Events |
| OPC interfaces | Implementation of IOPC BrowseServerAddressSpace (optional) for browsing the OPC variables |
| Simulation | Configurable simulation signals such as sine, ramp, random or none can be set for each variable in order to test OPC client/server communication without access to physical I/O by the OPC Server |
| Conversion | Online conversion of process values, configurable conversion algorithm for e.g. linear conversion of "inch <=> centimetre" |
| Configuration | Auto-configuration through a link to PLC projects or symbol upload |
| Independent of the fieldbus | Access to all the fieldbusses supported by TwinCAT: Lightbus, Profibus DP/MC, CANopen, DeviceNet, Interbus, SERCOS interface, Ethernet, PC hardware (Printer Port, COM Port), PC cards: generic memory DPRAM support |



# Control Panel OPC Server

The Control Panel OPC Server permits easy access to the extended functionality of the Control Panel. The status of the special keys, the LEDs or potentiometers is available over the OPC standard interface. Also it is possible to lock out the keyboard, mouse or Touch Pad, or to check the signals for the UPS (uninterruptible power supply). Pre-configured XML files with descriptions of the Control Panel are linked to the OPC Server, and are available as "namespace". This allows the OPC client to find the desired Control Panel functionality quickly.

The Control Panel OPC Server has been implemented for Windows 9x, Windows ME, Windows NT and Windows 2000 platforms.

| Technical data | Control Panel OPC |
|---|---|
| Operating system | Windows 9x, Windows ME, Windows NT, Windows 2000 |
| Open concept | Configuration of the OPC Server via XML: namespace, eventspace, simulation signals, conversions |
| OPC specifications | DataAccess 1.0a and 2.0, Alarm&Events |
| OPC interfaces | Implementation of IOPC BrowseServerAddressSpace (optional) for browsing the OPC variables |
| Simulation | Configurable simulation signals such as sine, ramp, random or none can be set for each variable in order to test OPC client/server communication without access to physical I/O by the OPC Server |
| Conversion | Online conversion of process values, configurable conversion algorithm for e.g. linear conversion of "inch <=> centimetre" |
| Configuration | Linking XML descriptions containing the structure of the Control Panel |