TX1200 | TwinCAT PLC – IEC 61131-3 Multi-PLC on the PC

Software PLC for Windows 7/10
The TwinCAT PLC is programmed in accordance with IEC 61131-3 independently of the manufacturer. Online connections with PLC runtime systems around the world can be implemented with TCP/IP or via fieldbuses on the IPC.

TwinCAT PLC programming system
TwinCAT PLC offers all the languages in the IEC 61131-3 standard and has a powerful development environment for programs whose code size and data regions far exceed the capacities of conventional PLC systems.

Online connection via networks
Changes to programs or data are supported by a very powerful link to the runtime systems, which can also operate over a network. All the usual facilities of a PLC are available.

Any Windows programs, for instance visualisation programs or Office programs, can access TwinCAT data via Microsoft interfaces or control the PLC.

Practically oriented properties
– all defined programming languages: IL, FBD, LD, SFC, ST and CFC
– certified in accordance with base level (IL/ST)
– structured programming with modular program management
– recompilation while PLC runs with maximum data retention (online change)
– convenient library management
– source code storage in target system
– criterion analysis
– conversion between languages
– incremental compilation
– all common data types, structures, arrays, including multi-dimensional arrays
– programming support: auto-format, auto-declare, cross reference, search/replace
– project compare
– program converting in different languages
– connection with source code management tools
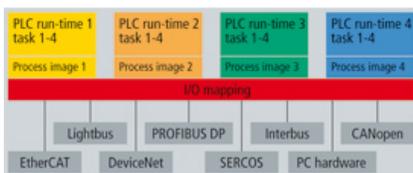
TwinCAT multi PLC
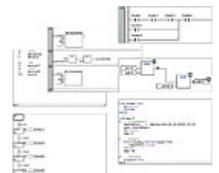
IEC 61131-3-languages

Changes of any size to program and data can be carried out "online". Error location and correction (debugging) is supported by aid of a very powerful link to the runtime system. This can also be used over a network. All the usual features of a PLC are available.

Debugging features
– Online connections with PLC runtime systems around the world can be implemented with TCP/IP or via fieldbuses.
– online change of new variables, instances or programs at runtime with maximum data retention
– online monitoring of variables in variable lists, watch windows, editors
– online status and powerflow (accumulator contents) of programs and instances
– triggering, forcing and setting variables
– single step, breakpoints
– step into, step over
– display of the current call stack
– Watch list shows a selection of variables.
– Trace function records variable values for every cycle.
– online management of all variable names and structures across the whole system

– TwinCAT ScopeView as a graphical diagnostic and analysis tool for the display of values
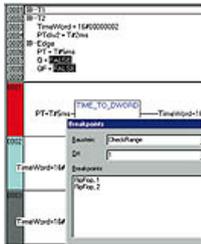
powerful debugging

Technical data	TX1200	TwinCAT PLC
PC hardware	standard PC/IPC hardware, no extras
Operating systems	version-dependent: Windows 7/10, Windows CE
Target systems	PC (x86), Windows CE devices, Beckhoff Fieldbus Controllers (BCxxxx, BXxxxx, IL230x-Cxxx)
Real-time	Beckhoff real-time kernel (only 32-bit operating systems, only one core is used)
Runtime system	max. 4 multi-tasking PLCs each with 4 tasks in each PLC run-time system, development and run-time systems on one PC or remote programming via TCP/IP
Memory	process image size, flags area, program size, POU size, number of variables only limited by the size of the user memory
Cycle time	50 µs upwards selectable (typically 1 ms)
Link time	1 µs (Intel® Core™ 2 Duo)
Programming	IEC 61131-3: IL, FBD, LD, SFC, ST, CFC, powerful library management
Debugging	online changes in programs and variables, online monitor, execution control, breakpoints, write, force, step, data trace, remote debugging via TCP/IP
Remanence	remanent and persistent data, UPS supported storage on hard disk, storage in NOVRAM as option
I/O system	free choice of fieldbus: EtherCAT, PROFIBUS DP/MC, CANopen, DeviceNet, Interbus, SERCOS, Lightbus, Ethernet (printer port, COM port, USB), PC cards: generic memory DPRAM support
Connectivity	variable access via OPC, Beckhoff ADS OCX/DLL, .NET

Ordering information	
TX1200	license for using the IEC 61131-3 PLC automation software, including programming software and runtime system

Options	
TS4100	The TwinCAT Controller Toolbox library contains blocks for basic controllers (P, I, D), complex controllers (PI, PID), pulse width modulation, ramps, signal generators, filters.
TS4110	IEC 61131-3 software library for TwinCAT PLC for temperature control
TS5810	IEC 61131-3 software library for TwinCAT PLC for controlling hydraulic axes
TS6255	IEC 61131-3 software library for TwinCAT PLC with Modbus RTU function blocks for serial communication with Modbus devices
TS6340	IEC 61131-3 software library for TwinCAT PLC for communication via serial devices
TS8010	IEC 61131-3 software library for TwinCAT PLC for execution of basic functions in the building automation area (basic library)
TS1600	The TwinCAT Engineering Interface Server integrates drivers for interfacing with Microsoft Visual Source Safe or Subversion.