

Think & Do Studio PCTNDSD

Entity Studio offers the most complete control and HMI software solution with scalability across a full range of Microsoft Windows platforms, built-in productivity analysis, enterprise connectivity, and a Unified Development Environment incorporating Microsoft® Visio® drawing technology for control logic and human-machine interface (HMI).



Rapid Development

By using Microsoft Visio for logic and HMI development, Studio ensures faster development and fewer problems. Time is further reduced by scalability built right into the product allowing the development of a single project to run on the full range of Microsoft operating systems (Microsoft 2000®, NT®, Embedded NT®, CE®).

Rapid Deployment

Studio works like programs you use today, so you can draw on the skills you already have and build on work you've already done. Getting started is easy because Studio shares the familiar Microsoft Office® toolbars and menus.

Rapid Throughput

Studio has built-in functions for quantitative benchmarking of equipment, processes, shifts, and plants. The seamless integration of productivity enhancement tools with control and communication optimizes your manufacturing systems. You can easily implement these tasks:

- Capacity planning
- Equipment utilization studies
- Preventative maintenance plans
- New and existing system optimization

Connectivity from Shop Floor to Top Floor

Easily connect and transfer data throughout the factory. Entity Studio provides a full range of enterprise connectivity to these information systems:

- SCADA
- ERP
- SPC
- MES
-utilizing the latest communication technology:
- COM.DCOM
- SQL interface to ODBC databases
- OPC 2.0 client and server
- DDE servers



Think & Do Studio - Features

DesignCenter for Control

Control Flowchart Stencils include:

- Action Blocks: Capture, Control, Move, Run Program
- Decision Blocks: Compare, Decision
- Branch/Merge: Do Loop, Wait
- Exception Blocks: Enable, Freeze
- Subcharts (Subroutine): Call, Begin, Return
- Comment Blocks: Comment
- Special: Motion, PID, SQL Express, Live!, Calculation, Communication

DesignCenter for HMI

Studio's DesignCenter provides users extensive drawing capabilities with 46 categories of automation-specific stencils that include over 1500 shapes. Studio's UDE quickly allows access to the tag name database for (HMI) development.

Main features include:

- Automation Shapes: basic, ISA, manufacturing equipment, plant equipment, control hardware and more.
- Object Animation: change in size and/or color.
- Operator Input: clickable/touchable objects such as buttons, function keys, data input fields, load recipe, and screen control.
- Trend Object: Plots up to four variables with configurable colors and scales.
- Transparency: Ability to show/hide a shape based on logical expressions.
- Data Entry Keypad with a runtime pop-up window



ProjectCenter™

From Studio's ProjectCenter, developers organize all aspects of their projects including control flowcharts, HMI screens, I/O communications, common tag name database, debugging tools, productivity tools, OPC Server, DDE Server and all related project documents.

- Familiar tree views for flowcharts and HMI screens
- Shortcut bars for tool access
- User-definable folders for improved readability
- Automatic preview of flowchart and HMI drawings
- Direct access to Studio's common tag name database
- Instant cross-referencing for tag usage through an application, including both logic and HMI screens
- Management of supplemental project documentation (such as Word documents, CAD drawings, project charts, etc.)
- One-click backup and archiving of complete projects including supplemental documentation

ConnectivityCenter™

Studio's ConnectivityCenter provides support for I/O networks, intelligent networks, serial devices, motion controllers and specialty modules from many vendors.

- Auto-discovery of I/O system devices
- Draws a graphical picture of the I/O network configured.
- Allows Point & Click I/O mapping to tag name database.
- Allows ability to monitor "live" inputs and turn on outputs to test wiring independent of control logic.
- Provides product data sheets for most drivers for quick reference.

Other Notable Features

Enterprise Integration

- Built-in SQL database interface
- Fully implemented OPC 2.0 client and server
- DDE Server
- Integrated DCOM support
- Support for Microsoft.NET for manufacturing initiative
- Support for Microsoft DNA for manufacturing architecture

Runtime Monitoring and Debugging Features

- AppTracker Debugging Tool provides Custom Watch Windows, Data Modification Tools (Force, Set, ON, OFF), ability to modify projects online for testing, and Step Flowchart Execution.
- EasyTrac™ Tool colors flowchart's execution path for debugging
- Simulation flowcharts for application testing
- Remote and RAS programming

Special Control Function Blocks

- **Motion Block**
 - Built-in diagnostics
 - Moves: Absolute move, Incremental move, Homing functions, Blended moves, Position triggered moves, Master/Slave moves, up to 4-axes coordinated moves, 2 axes arc coordinated moves, simultaneous multi-axes coordinates
 - Stop/Estop
 - Velocity change on the fly, Camming, SERCOS
- **PID Block**
 - Supports up to 64 loops
 - Independent sample rates
 - Manual/automatic/cascade loop capability
 - Bumpless transfer mode
 - Position or velocity algorithms
- **SQL Express Block**
 - Supports OLE DB provider such as Microsoft SQL Server, Microsoft Access, Oracle and ODBC.

Productivity Tools

Machine downtime and cycle time monitoring
Automatically generated actionable information charts

Calculation: Math and Data Operations

- Math Functions: +, -, /, *, \, ^, mod, (,), =, abs, cos, exp, log, log10, round, sin, sqr, tan, trunc
- Bitwise Operators: and, or, not, xor, <<, >
- String Functions: Find, Mid, Left, Right, Length



Think & Do Studio - Drivers

Detailed List of I/O, Network, Generic and Motion Control Drivers

- Allen-Bradley: SLC-500 I/O, Flex I/O
- Animatics Smartmotors with serial port connection
- Automationdirect.com: Terminator I/O family Ethernet to the DL205 family, DL305 I/O (Optomux protocol), Ethernet to the DL405 family, WinPLC backplane I/O
- DeviceNet I/O Network
- Douloi ISA bus motion cards
- Galil ISA bus motion cards
- Galil Motion Drives with Ethernet connection
- Honeywell SDS I/O Network
- Interbus I/O Network
- Logosol Servo Controllers with serial port connection
- Modbus TCP Master Driver
- Motion Engineering ISA bus motion cards
- Optimization Optilogic I/O
- Profibus DP Network
- Schneider Electric: Momentum Ethernet I/O, Momentum DeviceNet I/O, Momentum Profibus I/O, Modicon 800 I/O
- Seriplex I/O Network
- Studio's Generic: dual port RAM for interfacing to PC cards
- Studio's Generic: serial port driver with Modbus Master Functionality
- Studio's Taglink Driver (Peer-to-Peer Communications)
- Sunx S-link I/O
- Whedco Motion Drives with DeviceNet connection