CLICK Programming Software

Productivity Suite
for Productivity3000

*Direct*SOFT
for *Direct*LOGIC PLCs

DataWorx
DataNet OPC
DataLynx
Data Collection and
Web Monitoring

Download Only

KEP*Direct* OPC Server

Download Only

Think & Do/PC Control
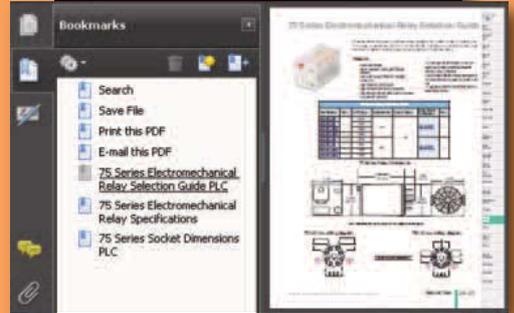
Choose your (programming) weapon!
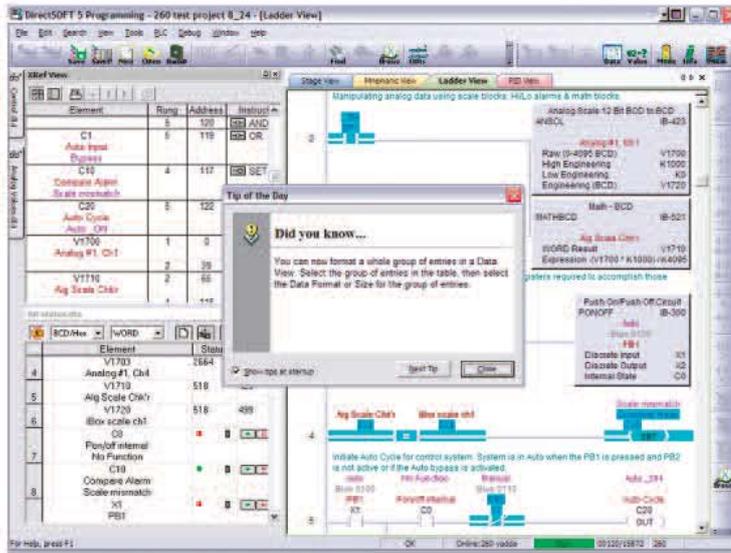
## DirectSOFT5 PLC Programming Software for DirectLOGIC PLCs

*Direct*SOFT5 (PC-DSOFT5) is our full-featured 32-bit Windows®-based programming software for the entire *Direct*LOGIC PLC family. This includes all DL05s, DL06s, DL105s as well as each CPU in the DL205, DL305 and DL405 PLC product families, all for just <--->.

We also have a FREE version of *Direct*SOFT5 (PC-DS100) available for download from our Web site, which will allow you to program and download a project size of up to 100 words.

CLICK for simple programming, FREE!

CLICK PLC is our newest micro-brick family of programmable controllers. This line of PLCs with stackable discrete modules and free programming software is the lowest cost and easiest to use high-quality machine controller on the market today. It is designed for first-time PLC customers as well as experienced users.

The free CLICK PLC programming tool was also designed with the user in mind. We simplified the programming process to make it easier to learn, faster to program, and capable of completing most of your discrete application needs with only 21 instructions!
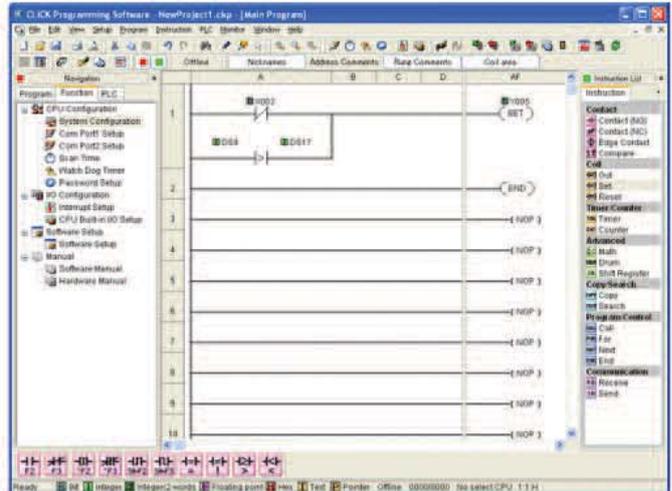
Productivity Suite offers advanced tools that make your life easier

A powerful controller needs a powerful programming package. With Productivity Suite, developed for programming the Productivity3000 Automation Controller, we've created advanced yet transparent processes in the programming environment to reduce your development time.

Timesavers include combined ladder logic and function block programming; tag name database for easier documentation; task management that minimizes scan time; advanced instructions that simplify complex tasks, and an exhaustive HELP file that covers both hardware and software topics.

Run-time editing, hot-swappable I/O modules and onboard program documentation are also tools that help you commission and troubleshoot your system more quickly and conveniently. And for a limited time, ProductivitySuite is available FREE as an online download.
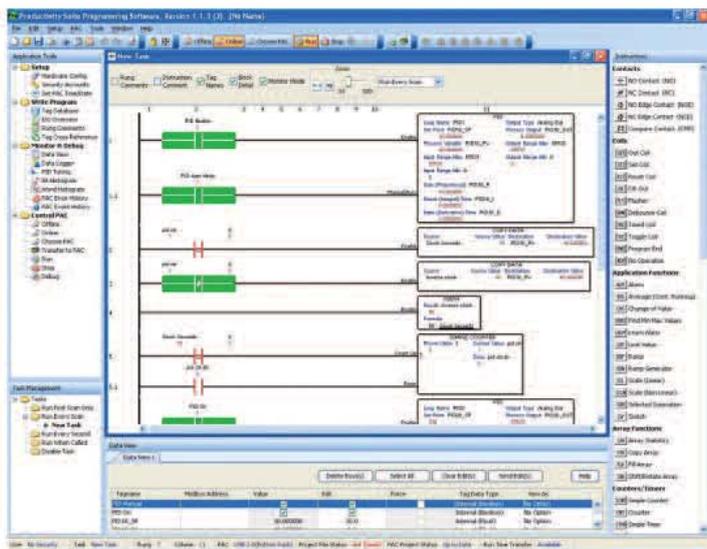
Easy data acquisition & design

DataWorx™: Connect Ethernet-enabled controllers for data collection

DataWorx easily connects your Ethernet-enabled *Direct*LOGIC PLCs, Think & Do v8.0 or Live! WinPLC controllers to standalone PCs or network servers for simple data logging. Collect data without the need for special PC programming or any 3rd party HMI, SCADA, or DAQ software application.

DataLynx™: Remote data collection over modems

DataLynx is an inexpensive data logging and storage package for remotely located PLCs or other devices that support Modbus RTU and a modem connection. DataLynx can collect data from remote locations or relay data from multiple locations back to a single location to be stored. The software offers easy setup with no programming or SCADA system required.

DataNET™: Instant access to operational data from anywhere

DataNet OPC easily connects your PLC or other OPC enabled device to a live Web page. The data is then available for viewing, logging and printing reports. The data is displayed in an easy to read table format with color coded text (for alarming) and with absolutely no HTML programming required.

DataWorx P3K™

Connect Productivity3000 controllers to database servers

DataWorx™ P3K data logging software provides an easy and inexpensive way to collect data from the Productivity3000 controller by connecting it to enterprise database systems powered by Microsoft Access, SQL or ODBC compatible servers. Report-by-exception operation eases network traffic by sending information only when needed.

Should I use DataWorx, DataWorx P3K or KEP*Direct*?

DataWorx is for simple data logging. The PLC pushes data to DataWorx, DataWorx records the data to a file on the PC. If you just need to log your PLC variables to a file, this is the easiest way.

DataWorx P3K is database interface software for Productivity3000. It puts the PAC in full control of database activities.

KEP*Direct* is an OPC server for AutomationDirect PLCs. What you connect on the other side of the server is up to you, the possibilities are wide open. The OPC client you choose controls when data moves to or from the PAC/PLC.

KEP*Direct* OPC Server for easy data acquisition or control

KEP*Direct* OPC Server connects your favorite Windows client software to AutomationDirect I/O through our EBCs (Ethernet Base Controllers), to our *Direct*LOGIC PLCs through ECOM modules or serial ports, or the Productivity3000 Ethernet connectivity.

Any industrial HMI, SCADA, data historian, MES or ERP software package that includes an OPC client interface (most do) can connect to our PLC hardware for cost-effective data acquisition or control. You can even use Visual Basic® to create data logging or simple HMI screens. (Requires OPC DA Client Tool Kit to use OPC with Visual Basic.)

PC Control with Think & Do

When a PLC just won't do - use Think & Do PC-based control. Your HMI and control share the same database, so there is no duplication. Intuitive flowcharting makes coding the control logic as easy as sketching out the control algorithm. The powerful graphics tools and readily-accessible data tags enable you to create a quality HMI so fast you'll have to experience it to truly believe it. Think & Do includes the math functions and data types found in high-level programming languages, so complex algorithms and data management are a snap. PC architecture allows Think & Do to seamlessly support a variety of specialty motion, vision systems, and field network interface PC cards. The PC and Windows allow Think & Do to provide simple communication links on serial or Ethernet networks. Think & Do simplifies connecting everything from SQL databases to barcode readers with your control application.

Automation Direct

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

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Part # Index

CLICK to get FREE Programming Software!

Simple to learn ...

The CLICK™ family is an easy-to-use controller that is cost-effective even in applications that would require just a few relays, and more flexible to boot. CLICK offers eight built-in digital inputs and six built-in digital outputs, plus expansion capability. For such a practically-priced PLC, we had to offer practical software, so we made the CLICK PLC programming package a FREE download from our Web site.

But unlike many "FREE" programming packages you may be familiar with, this software is packed with features that simplify your learning curve and shorten your programming time.

... Easy to use

This combination of RLL (Relay Ladder Logic) and Function block programming offers you a comprehensive programming environment with easy navigation and a familiar Windows look and feel.

The CLICK Programming tool allows each individual to set up their programming environment to suit their needs. Beginners may choose to program via the mouse by clicking on icons, instructions, drop-down menus, and selecting PLC addresses from the "Address Picker". More advanced users can take advantage of time-saving shortcuts.

See pages 1-6 through 1-12 for more details on the powerful features of this software.
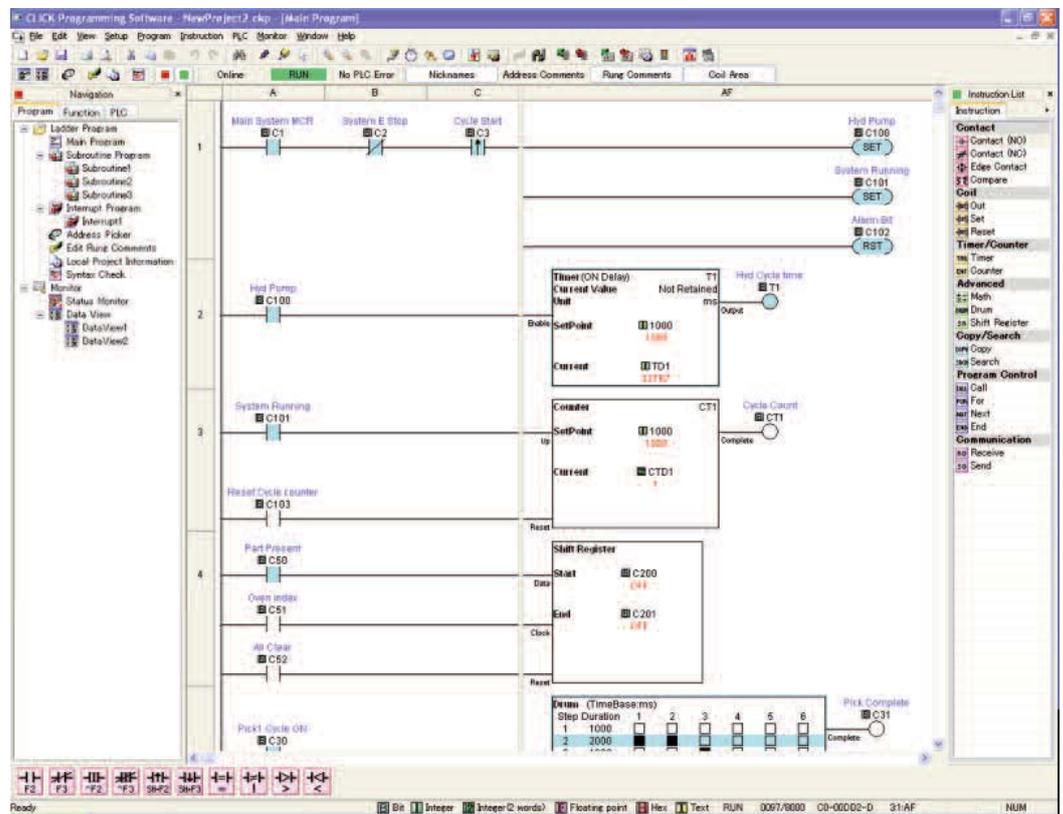
At your fingertips

The Navigation Pane puts many practical and frequently used functions within one CLICK of your mouse during configuration, commissioning and troubleshooting. Quickly move between your Main Ladder Program and Subroutines and Interrupt routines within your project. Access frequently used system functions such as System Setup, Password Utility, Comm Port Configuration, PLC Connection, Data and Project Transfer, Firmware Update and many more. Many of these functions are also available via drop-down menus. It's your choice!

Use the color-coded Window Control Toolbar to quickly and easily hide the navigation (and/or instruction) pane to maximize your ladder programming work space.
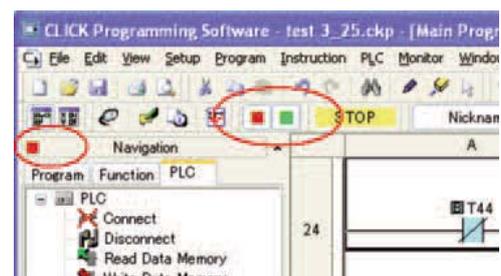
You can do a lot with 21 instructions

Instruction List

The CLICK PLC programming software offers 21 extremely powerful instructions! This instruction set offers the same flexible control you might expect from over 150 instructions in a traditional controller. Simply drag and drop these instructions onto the ladder view (the center section of the screen), and a helpful dialog box will guide you through each instruction's configuration.

The 21 CLICK PLC instructions include everything you would typically expect:

- Contacts*
- Coils
- Compare
- Set/Reset
- Timer
- Counter
- Math**
- For/Next

Then there are some advanced instuctions you might not expect:

- DRUM
- Send/Receive
- Copy
- Shift Register
- Call/Return(Subroutine)
- Search

* Contacts include Normally Open, Normally Closed, Edge-triggered and Compare
** Math includes Decimal, Floating Point and HEX math. Supports free-form formula entry.

Fill-in-the-blank Programming

Our fill-in-the-blank style instructions really make your life easier. For example, performing mathmatical calculations in a PLC typically requires a complicated set of instructions and programming gymnastics. From mixing process variable data with constants in multiple formats, to calculating complex logarithmic formulas, math computations in ladder logic can be complex, so how could we make it better? We listened to you...

Instead of having various math instructions you string together to perform complex mathmatical equations, we created a single instruction that allows you to enter formulas directly or select from the familiar calculator style layout to create your formula.
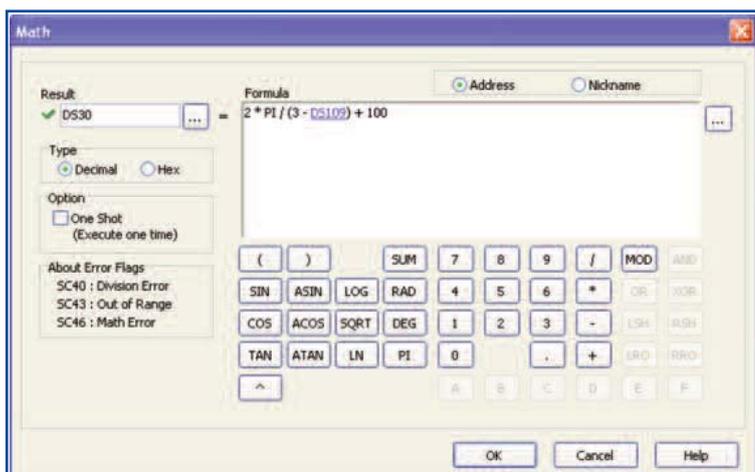
System Configuration

The CLICK software includes a configuration tool that helps you configure a CLICK PLC quickly and easily. Select the CPU, power supply, and modules you need - the software calculates your I/O count, address list, and Power Budget automatically.
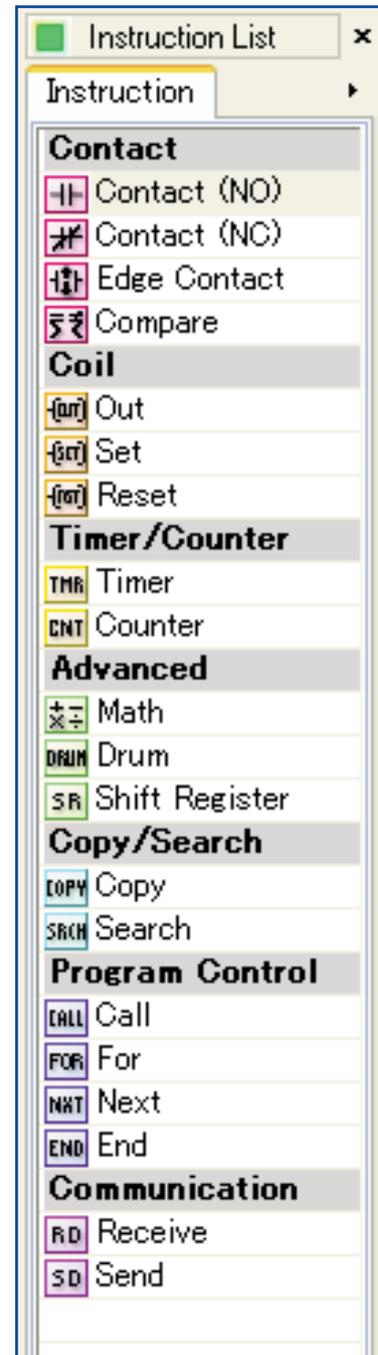
Detailed Help Files

We wanted your programming experience to be the easiest and most productive of any PLC you have ever programmed. So we spent a lot of time creating the content for the help file that gives you clear and concise definitions of the features and functionality for each instruction and the operation of the software.

Just CLICK Help ... It's that easy.

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How many other companies offer a money-back guarantee on software?

Simplified packages make your selection fast and easy

PC-DSOFT5 is our *Direct*LOGIC PLC programming package, with a host of features that make it easier to program your PLC. It supports full-featured 32-bit Windows-based programming for all six *Direct*LOGIC PLC families simultaneously, including all DL05s, DL06s, DL105s, DL205 CPUs, DL305 CPUs, DL405 CPUs, and all of their Koyo cousins. The software supports an wide array of on-line/off-line programming and documentation features, as well as *IBox* instructions.

Packages include:

- PC-DS100 (FREE): *Direct*SOFT100 programming package; programs up to 100 words in any *Direct*LOGIC CPU

- PC-DSOFT5 is the full programming package for all *Direct*LOGIC PLCs with no programming limitations, at one low price
  <--->

- PC-R50-U upgrade to Version 5 with complete *Direct*LOGIC CPU support from any older version
  <--->

Technicians like it when you use our programming and documentation tools

A well-documented program can save thousands of dollars in downtime when something breaks, but not all packages make it easy to document the program. Use our grid-based documentation editor to quickly and intuitively create rung comments, 16-character element nicknames, 6 x 18-character element descriptions, and 16-character wiring labels.

Program over Ethernet

You can program one or multiple *Direct*LOGIC PLCs from one location over an Ethernet network. Just insert an Ethernet card in your PC and an ECOM module in supported DL05, DL06, DL205 and DL405 systems to monitor and program at warp speed! An Ethernet setup wizard leads you through the steps to make the connection to your PLCs.

Features

- *IBoxes* with packetized fill-in-the-blank-style instructions make writing your program faster and easier (certain CPUs and firmware required)

- Tabbed views optimize your viewing area so you see more of what you need to see

- Customizable tool bars give you the flexibility to put what you need where you want it

- Dockable windows give you the ability to relocate views, auto-hide views and even tear them away and place them outside of the *Direct*SOFT5 workspace for full ladder viewing optimization

- Learn many features and software shortcuts with the "Tip of the Day" in *Direct*SOFT5

- Edit programs as fast as you can move a mouse or use 'hot keys' (even faster)

- Write your program with nicknames instead of data points

- View your program three different ways (RLL, Stage View, Mnemonics). Select the appropriate Tab or view them all on the same screen

- Reduced scan time by scanning only the active stages

- Spreadsheet-style documentation editor makes it super easy to create and edit your program documentation on the fly

- I/O cross-reference and element usage windows keep track of addresses used

- Print Preview to check print formatting

- Print in COLOR

- Open a Data View to examine an incredible status chart of information you select

- PID setup is a snap. Fill-in-the-blanks for alarms, mode, ramp/soak, process variable, setpoint, gain rate, etc.

- PID loop tune and trending screens are a standard feature

- Modem support is a snap since it uses the standard Windows telephony (TAPI) interface to choose modem configuration

- Our drum timers are the easiest to create and edit in the industry

- Programming support for all *Direct*LOGIC CPUs

- ASCII in/out and MODBUS instructions for DL06 and D2-260 CPUs

- Support for DL205 local I/O expansion system in D2-250-1, D2-260, and DL-405 CPUs

- Support for LCD instructions in the DL06 CPU

- Project backup feature and preferences with auto-backup settings for "file freshen" frequency

- Import/export program (mnemonics and rung comments) allows for archiving a program in a single file (txt or CSV) that does not need to be in the form of a *Direct*SOFT5 file(s) format

- Export to *C-more* operator interface CSV import format (nickname, type, PLC address) to use the same tags in our PLC program and operator interface configuration
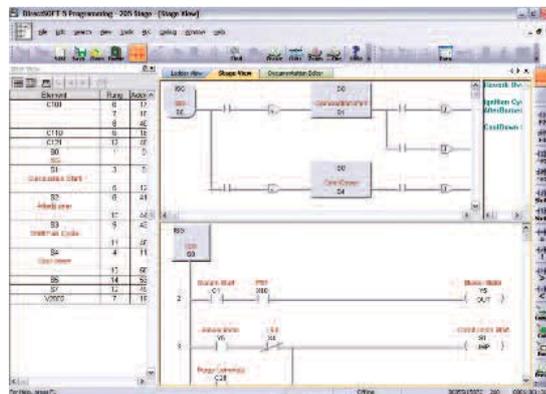
*Direct*SOFT5

*Direct*SOFT5 makes relay ladder logic easy and fast

We have taken the guesswork out of everyday programming with *IBox* instructions. The *IBox* instructions are intelligent modularized instructions that perform simple to complex ladder logic. If you need to set up an Analog card fill in the blanks; If you need to perform a math function on a value type in your formula; select a new preset for your High Speed Counter (CTRIO); even send an e-mail with your ECOM100 Ethernet communications module! Take a minute to view the *IBox* Instruction Help index to see detailed specifications of each of the 66 instructions, review which CPUs support the Ibox instructions or just get familiar with what they can do for you. Other features include:

- Point and click or function key editing to suit anyone's programming style
- Customizable Tool Bars for EVERY menu command
- Desktop Themes to allow you to customize your window and tool bar look & feel
- All toolbars can be docked to any border or even floated outside of the *Direct*SOFT window for maximum ladder viewing
- Write your program with nicknames instead of data points
- I/O cross reference and element usage windows keep track of addresses used
- Set up the D0-DCM for the DL05 & DL06 right from the menu. PLC > Setup > D0-DCM allows you to configure each of the two serial ports, no ladder code required

IBoxes are compatible with *Direct*LOGIC DL05, DL06, D2-250-1, D2-260, and D4-450 CPUs that have supporting firmware. *IBox* instruction categories include Memory, Discrete Helper, Analog Helper, Math, Communications, and CTRIO.

NOTE: Using Ibox instructions can increase the program size and PLC scan time.

Stage programming keeps the sequence in order

RLL^{PLUS} Stage programming can help break a control problem into smaller pieces and provide such benefits as:

- Stages divide the ladder program into sections that correspond to the states in a flowchart of your process
- Stages help make large programs more manageable by giving them some structure
- Your stage program can have more than one "thread" of execution. For example, you can have an alarm reporting mini-stage program (or recipe handler, data acquisition, etc.) running in parallel with the main logic. This makes stageprogramming very powerful, because most of the control functions in a system are very asynchronous
- Reduce scan time by scanning only the active stages
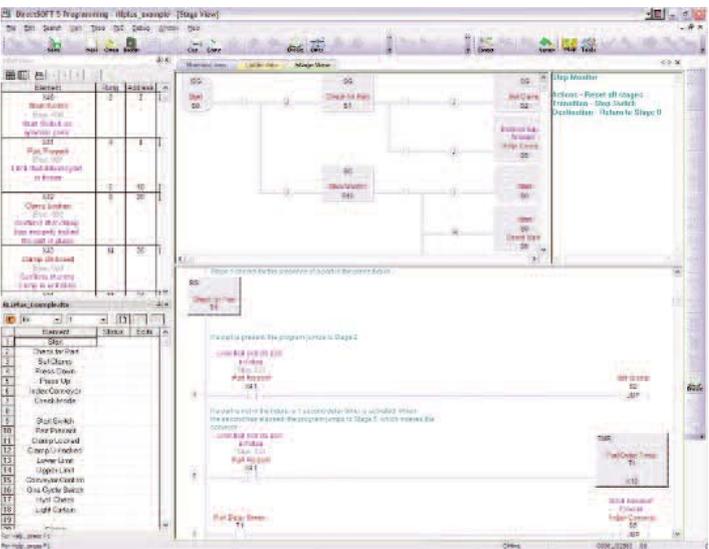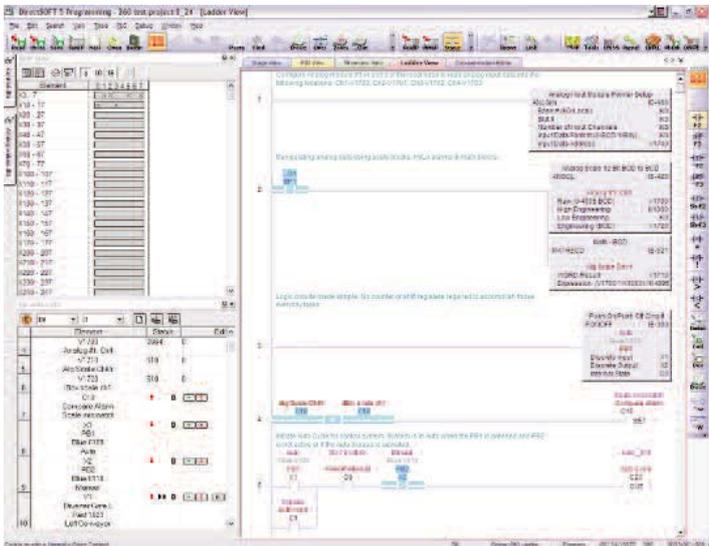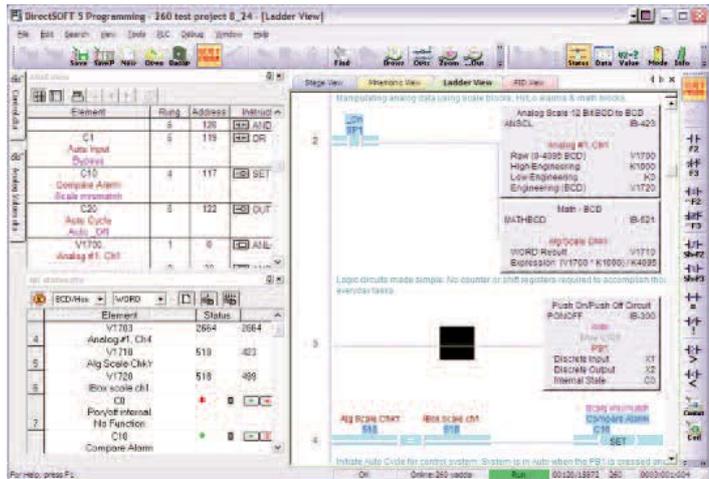
Direct SOFT5 Packages for DirectLOGIC PLCs

Programming software

PC-DSOFT5   <--->

PC-DS100   <--->

Overview

*Direct*SOFT5 Programming Software has been designed to make PLC programming and machine monitoring easier than ever before. The 32-bit Windows-based package provides simple menu and icon choices that operate similarly to those found in most standard Windows packages. With *Direct*SOFT5 you can have the power of Windows on the factory floor.

To download our free version, please visit our Web site at:

www.automationdirect.com/directsoft

Which package is right for you?

The programming software packages share the same general features, but there are a couple of key differences:

PC-DSOFT5 programs all six CPU families (DL05, DL06, DL105, DL205, DL305 and DL405).

PC-DS100 is a free, full-feature software package that allows a maximum of 100 words for programming, editing, and downloading. Larger programs can be created and saved but NOT reopened or downloaded without upgrading to the full version.

Note: you can upgrade any older purchased version of DirectSOFT, regardless of the CPU support, and obtain a full programming package with total CPU support, using PC-R50-U.

Upgrade the PC-PGM-305, PC-PGM-205, PC-PGM-105 or PC-PGM-BRICK packages to PC-DSOFT5 to support all other product families.

Number of users

The packages listed above are really "single-station" packages. That is, you can legally install them on only one computer. However, if there is only one person who primarily uses the computer (*over 80% of the time*), then you can install the software on a laptop, home office, or any other single backup computer.
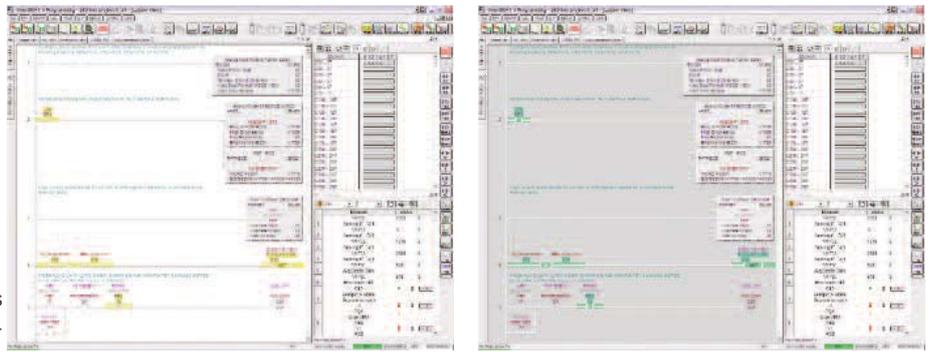
Flexible configuration allows you to customize the look and feel of the software to suit your needs and desires.

Laptop/portable computers and off-site usage

Many of you may be using laptop computers for field service work. This is perfectly acceptable as long as it adheres to the guidelines described previously.

Can I ship a copy to my customer?

No, except for a single backup copy, you cannot make, install, or distribute any additional copies. You can transfer the original copy (original CD, any applicable upgrades, and any documentation) by taking advantage of our Web registration and ownership transfer site.

Of course, this means you cannot legally keep a copy once you have transferred the original.

Maintenance releases

You can receive maintenance releases at no charge by downloading them from our Web site. These often include some minor feature enhancements along with software corrections.

Software upgrades

PC-R50-U <--->

Any release that contains major feature enhancements will be subject to the normal upgrade charge in effect at that time. The *Direct*SOFT5 upgrade part number is PC-R50-U.

Note: This upgrade will update any older packages that are already installed on your system to a full programming package with all CPU support.
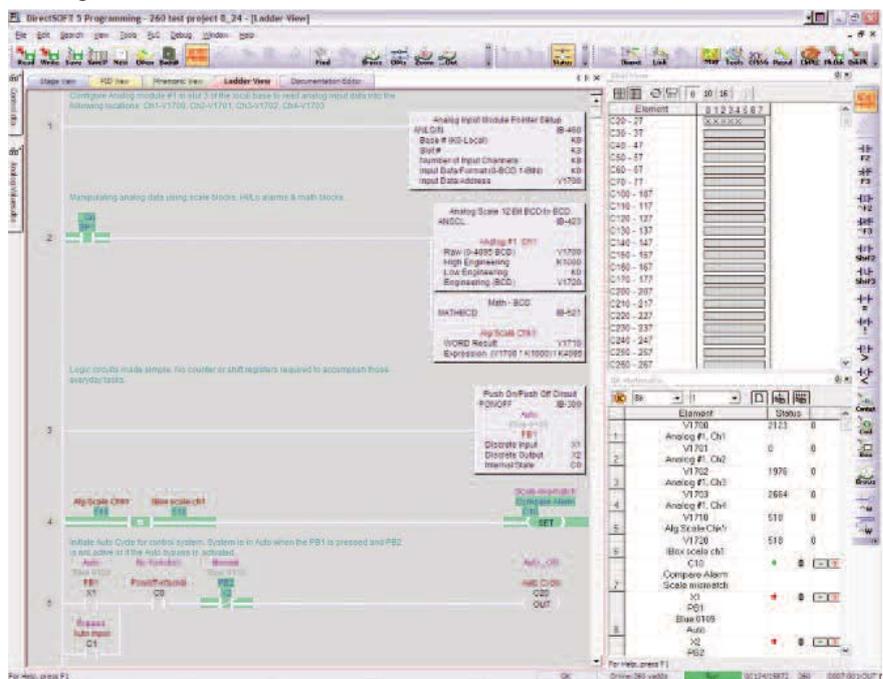
Direct SOFT5 Features

Program editing features

- "Tip of the Day" gives you programming guidance, information on short cuts and tips for taking advantage of features
- Full-screen Point and Click Editing with the mouse and icons
- Edit Tool Box contains icons and hot key equivalents for all elements
- Browsers help you find proper addresses, contacts, coils, and box instructions.
- Neat Windows 2000/XP (Home or Pro)/Vista (all 32-bit versions)/Windows 7 features fully customizable and tear-off toolbars, Tool Tips, long file names, common file browsers
- Project Information data with each project including creation and save dates, links, PLC type, project description and version, and company/ department/ programmer.
- On-screen Cross Reference in a tabbed view that automatically tracks program elements as you browse your ladder view.
- On-screen Element Usage in groups of 8, 10, or 16 points per line
- Predefined aliases for common items, such as timer and counter current values.
- Enter your program with nicknames and assign them to addresses later
- Access V-memory (Data Registers) with fill-in-the-blank Memory Editor
- Easily cut and paste single rungs or groups of rungs.
- Cut and paste rungs (with documentation) between programs
- Search for program elements by name, address, rung number, or instruction type
- Search for constants

Documentation features

- Import/export program mnemonics and rung comments to a single text file that does not have to be in *Direct*SOFT format
- Export (nickname, type, PLC address) to *C-more* in CSV format
- Grid-based documentation editor for easy access
- 16-character nicknames for addresses make troubleshooting and programming easier
- 16-character wiring information allows you to tie PLC addresses to panel wiring numbers
- 6-line x 18-character address description provides more detailed information about the program element
- Rung comments can be up to 20 lines of 69 characters each
- Cut, copy, and paste documentation between program elements

- Free-form program title page can be selected at time of printing
- Import/Export feature for all documentation

Printing features

- Print any available view, including ladders, charts, and mnemonics
- Print multiple columns
- Use zoom to enlarge or reduce print size
- Preview the printouts before you send them to the printer
- Create custom printouts by selecting exact items to include for each view
- Print program documentation, including nicknames, descriptions, rung comments, etc.
- Print program Cross Reference or Element Usage Table
- Print PLC V-memory or Data Register contents

Display and viewing features

- Tabbed views allow you to easily switch between views and optimize your viewing area
- View program ladders
- Customizable desktop themes, display colors for editing, unsaved changes, documentation, etc.
- View program mnemonics
- Stage view available for programs created with RLL^{PLUS} instructions
- Choose rung number or addresses for ladder view
- View multiple programs at the same time
- View multiple screens at once
- Use split screen to view different sections of the same program
- Use zoom to enlarge or reduce the screen area for better viewing

System setup features

- Setup D0-DCM menu is available for the DL05 and DL06 data communications module
- Set up PID loops with easy-to-use dialog boxes
- Set PLC communication parameters through PC ports, modems, or Ethernet
- Change PLC mode of operation
- Clear PLC memory by type or all
- Select or change retentive memory ranges
- Read PLC I/O configuration
- Change I/O configuration (if allowed by the PLC)
- View PLC firmware revisions

- Configure DV-1000

Online operation features

- Online help system with supported CPU instruction list
- DSLaunch as a central manager for all projects, links, and applications
- Automatically build and store communication links to the PLC, even using modems or Ethernet
- Visible indication of PLC communication link status
- Status mode provides visible power flow condition for program elements, current values for timers and counters, and current values for V-memory or Data Register locations. Event status for Drum steps, outputs, event and/or time transitions, etc.
- Custom configure Data View windows to monitor various elements
- Display nicknames in Data View
- Save and store Data View windows by name
- Choose data format for Data View Window display (BCD, binary, Hexadecimal, etc.)
- Choose status symbol (switch, text, etc.) for discrete points in Data View windows
- Change PLC values from Data View windows
- View multiple PLCs simultaneously (Ethernet)

Maintenance and debugging

- Automatic error checking during program entry
- Program syntax check
- Monitor PLC scan time
- Perform PLC I/O diagnostics
- View PLC errors and/or user error messages
- Project user backup and auto back-up facilities

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Product Index

Part # Index

Programming for DirectLOGIC PLCs

Programming versions

With *Direct*SOFT5 Programming Software, selecting which software package you need is a snap! You can select the fully loaded package at its great low price, or you may choose the FREE package. It has all of the same programming functions as the full package. However, it will only download a program up to 100 words long.

The fully-loaded version (PC-DSOFT5) will program all of our *Direct*LOGIC PLCs, some GE Series One Plus PLCs, and TI305/405 SIMATIC PLCs. Refer to the chart below to verify compatibility.

The FREE *Direct*SOFT5 package (PC-DS100) was designed to provide a more streamlined choice. You can see from the table below that the FREE version has the same support and same great features, but will only allow you to open or download a program up to 100 words long.

Also, you cannot open an offline project larger than 100 words. You can create a project as large as you want and save it to disk, but you cannot reopen or download it to a PLC without purchasing the full version (PC-DSOFT5).

PLC compatibility

If you're using our *Direct*LOGIC products, then compatibility is not an issue. All *Direct*SOFT5 packages support all *Direct*LOGIC CPUs. Our software also supports many compatible products that were offered by previous vendors of the Koyo-designed PLCs. If you're buying the software to program a compatible CPU, check the following table to make sure your CPU is supported. (Sorry, but if your CPU is not shown, then it is not supported.)

Family	CPU	*Direct*SOFT5 (full version) PC-DSOFT5	*Direct*SOFT5 (free version) PC-DS100*	CPU Firmware Version Needed to Use IBox Instructions
DL05	All	✔	✔	✔ CPU v5.10 or Later
DL06	All	✔	✔	✔ CPU v2.10 or Later
DL105	All	✔	✔	
DL205	D2-230	✔	✔	
	D2-240	✔	✔	
	D2-250	✔	✔	
	D2-250-1	✔	✔	✔ CPU v4.60 or Later
	D2-260	✔	✔	✔ CPU v2.40 or Later
DL305	D3-330**, D3-330P**	✔	✔	
	D3-340	✔	✔	
	D3-350	✔	✔	
DL405	D4-430	✔	✔	
	D4-440	✔	✔	
	D4-450	✔	✔	✔ CPU v3.30 or Later
GE® Series 1 PLUS	IC610CPU105**	✔	✔	
	IC610CPU106**	✔	✔	
TI305™/ SIMATIC® TI305™	325-07**, PPX:325-07**	✔	✔	
	330-37**, PPX:330-37**	✔	✔	
	325S-07** (or 325 with Stage Kit)	✔	✔	
	330S-37**, PPX:330S-37**	✔	✔	
	335-37, PPX:335-37	✔	✔	
TI405™/ SIMATIC® TI405™	425-CPU, PPX:425-CPU	✔	✔	
	PPX:430-CPU	✔	✔	
	435-CPU, PPX:435-CPU	✔	✔	

*** PC-DS100 is only available by download from our Website. This FREE, full-featured software package will download a program limited to 100 words.**

**** Requires Data Communications Unit (D3-232-DCU).**

Programming for DirectLOGIC PLCs

PC system compatibility

Following are the recommended system requirements for running *Direct*SOFT5 on a PC:

- 1 GHz CPU
- CD-ROM for loading software
- Windows 2000/XP (Home and Pro)/Vista (all 32-bit versions)/Windows 7 (**No** DOS, OS/2, MacIntosh, LINUX or UNIX versions, or 16-bit versions available)
- 512 MB RAM and 20 MB free hard disk space
- At least one unused serial communications port or USB port using our USB-RS232, USB-to-serial adapter and/or 10-Base-T or 10/100-Base-T Ethernet network card
- Color SVGA monitor (1024 x 768)

NOTES:

Laptops: *Direct*SOFT5 is perfectly suitable for use with laptop computers as long as they meet the requirements shown above. Most laptops can be ordered with a serial port as an option, which will allow a direct connection to our *Direct*LOGIC PLCs. If your laptop has a USB port, consider using our USB to serial adapter, USB-RS232. If your laptop has an Ethernet port and you are considering a DL05, DL06, DL205 or DL405 PLC, consider using the H*-ECOM or ECOM100 Ethernet Communications Module to connect your PC to the PLC (The D2-230 does not support the ECOM).

Monitors: Any size monitor will work, however, larger, higher resolution, monitors enhance the features of *Direct*SOFT5.

Connecting to *Direct*LOGIC PLCs

DL05 CPUs
Port 1: 9.6 Kbaud
Port 2: 300 baud-38.4 Kbaud
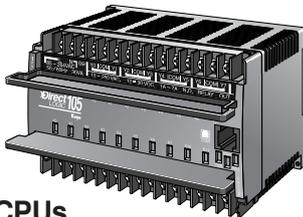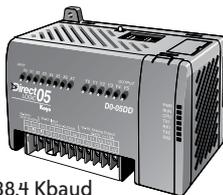
DL105 CPUs
Port 1: 9.6 Kbaud
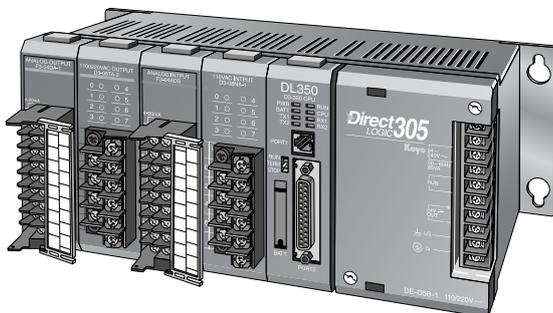
DL305 CPUs
D3-330 (requires D3-232-DCU): 300 - 19.2 Kbaud

D3-340: Port 1/2: 300 baud - 38.4 Kbaud

D3-350: Port 1: 9.6 Kbaud
Port 2: 300 baud - 38.4 Kbaud

DL06 CPUs
Port 1: 9.6 Kbaud
Port 2: 300 baud - 38.4K baud

DL205 CPUs
D2-230: Port 1: 9.6 Kbaud

D2-240: Port 1: 9.6 Kbaud
Port 2: 300 baud - 19.2 Kbaud

D2-250-1: Port 1: 9.6 Kbaud
& D2-260 Port 2: 300 baud - 38.4 Kbaud
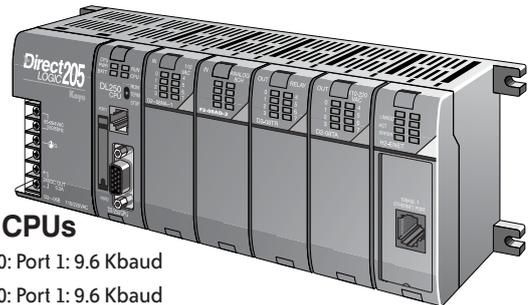
DL405 CPUs
D4-430: Port 1: 9.6 Kbaud
&D4-440: Port 2: 300 baud - 19.2 Kbaud

D4-450: Port 0: 9.6 Kbaud
Port 1: 300 baud - 38.4 Kbaud
Port 2: 300 baud - 38.4 Kbaud
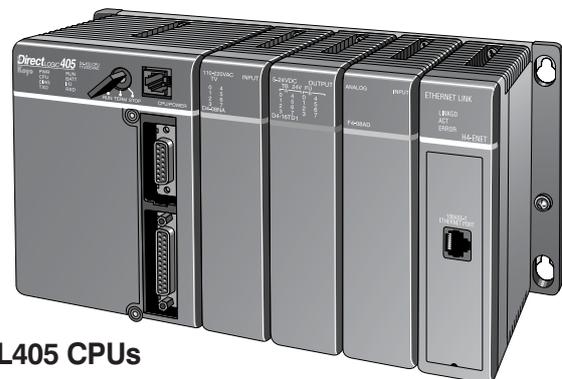
Or use an ECOM module in the DL05, DL06, DL205 (except D2-230) or DL405 local base to program over a high-speed Ethernet link.

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Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

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Tools

Pneumatics

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DirectLOGIC PLC Programming Cables

Since CPUs provide many different communication port possibilities, it is helpful to know exactly which communications cable is required. Use the table below to choose the proper cable:

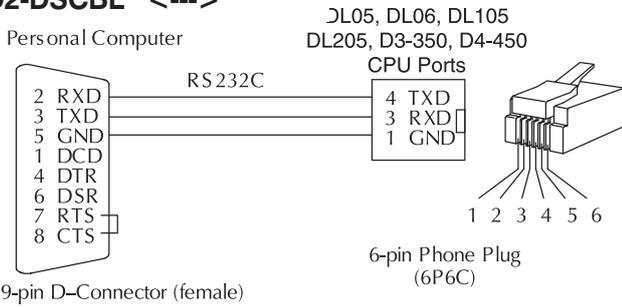| Family	CPU (or other device)	Port	Cable
DirectLOGIC DL05	All versions	Port 1	D2-DSCBL
		Port 2	D2-DSCBL
	H0-ECOM / ECOM100 (modules)	Only one	**
	D0-DCM (module)	Port 1	D2-DSCBL
		Port 2	D2-DSCBL-1
DirectLOGIC DL06	All versions	Port 1	D2-DSCBL
		Port 2	D2-DSCBL-1
	H0-ECOM / ECOM100 (modules)	Only one	**
	D0-DCM (module)	Port 1	D2-DSCBL
		Port 2	D2-DSCBL-1
DirectLOGIC DL105	F1-130 (all versions)	Only one	D2-DSCBL
DirectLOGIC DL205	D2-230	Only one	D2-DSCBL
	D2-240	Top port	D2-DSCBL
		Bottom port	D2-DSCBL
	D2-250(-1)	Top port	D2-DSCBL
		Bottom port	D2-DSCBL-1
	D2-260	Top port	D2-DSCBL
		Bottom port	D2-DSCBL-1
	D2-DCM (module)	Only one	D3-DSCBL-2
	H2-ECOM (-F) / ECOM100	Only one	**
DirectLOGIC DL305	D3-330/D3-330P	Requires DCU*	D3-DSCBL-2
	D3-340	Top port	D3-DSCBL-1
		Bottom port	D3-DSCBL-1
	D3-350	Top port	D2-DSCBL
		Bottom port	D3-DSCBL-2
	D3-DCM (module)	Only one	D3-DSCBL-2
DirectLOGIC DL405	D4-430/D4-440	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-450	Phone jack	D2-DSCBL
		Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-DCM (module)	Only one	D3-DSCBL-2
	H4-ECOM (-F) / ECOM100	Only one	**
	Slice I/O (module)	Only one	D4-DSCBL
GE® Series 1	IC610CPU105/106	Requires DCU*	D3-DSCBL-2
TI305™/SIMATIC® TI305™	325-07, PPX:325-07	Requires DCU*	D3-DSCBL-2
	330-37, PPX:330-37	Requires DCU*	D3-DSCBL-2
	325S-07 (or 325 with stage kit)	Requires DCU*	D3-DSCBL-2
	330S-37, PPX:330S-37	Requires DCU*	D3-DSCBL-2
	335-37, PPX:335-37	Phone jack	D3-DSCBL-1
		If DCU is used*	D3-DSCBL-2
TI405™/SIMATIC® TI405™	425-CPU, PPX:425-CPU	If DCU is used*	D4-DSCBL
	N/A, PPX:430-CPU	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	435-CPU, PPX:435-CPU	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	Smart slice	Only one	D4-DSCBL

Requires RS232 Data Communications Unit (D3-232-DCU).
***Requires standard Ethernet twisted pair cable (HX-ECOM) or standard fiber optic cable (HX-ECOM-F).**
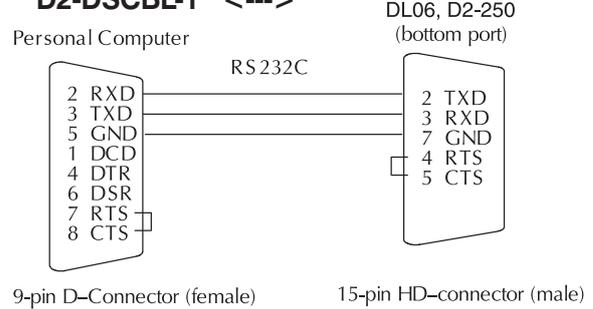
DirectLOGIC PLC Programming Cables

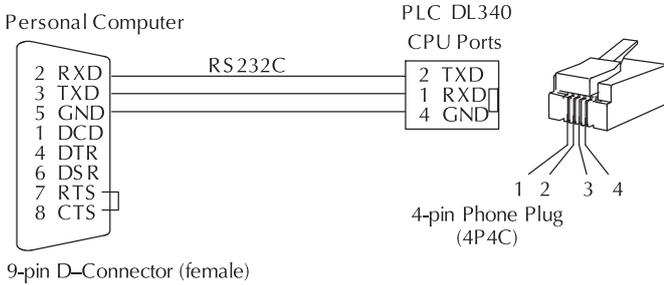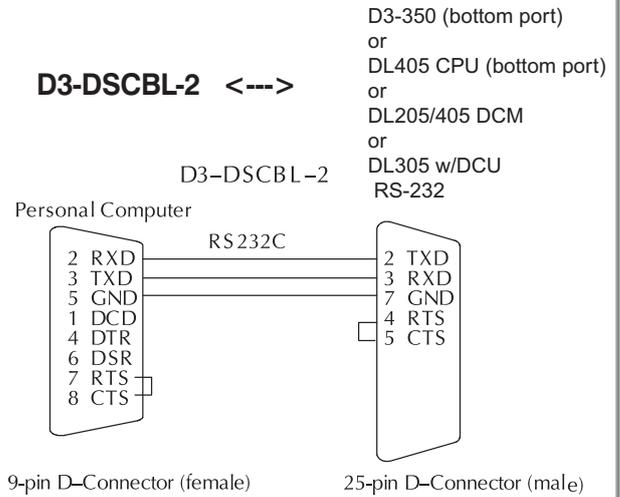Pin labeling conforms to IBM DTE and DCE standards

D2-DSCBL <--->

Personal Computer

DL05, DL06, DL105
DL205, D3-350, D4-450
CPU Ports

RS 232C

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

4	TXD
3	RXD
1	GND

9-pin D–Connector (female)

1 2 3 4 5 6

6-pin Phone Plug
(6P6C)

D3-DSCBL-1 <--->

Personal Computer

PLC DL340
CPU Ports

RS 232C

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

2	TXD
1	RXD
4	GND

9-pin D–Connector (female)

1 2   3   4

4-pin Phone Plug
(4P4C)

D4-DSCBL <--->

Personal Computer

DL405 CPU
DL405 Slice I/O
programming port

RS 232C

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

1	YOP
2	TXD
3	RXD
4	ONLINE
7	CTS
8	YOM
13	0V
14	0V
15	0V

9-pin D–Connector (female)

15-pin D–Connector (male)

D2-DSCBL-1 <--->

Personal Computer

DL06, D2-250
(bottom port)

RS 232C

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

2	TXD
3	RXD
7	GND
4	RTS
5	CTS

9-pin D–Connector (female)

15-pin HD–connector (male)

D3-DSCBL-2 <--->

D3-350 (bottom port)
or
DL405 CPU (bottom port)
or
DL205/405 DCM
or
DL305 w/DCU
RS-232

D3–DSCBL–2

Personal Computer

RS 232C

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

2	TXD
3	RXD
7	GND
4	RTS
5	CTS

9-pin D–Connector (female)

25-pin D–Connector (male)

Straight-through Patch Cable (Ethernet)

TD+	1	OR/WHT	OR/WHT	1	TD+
TD–	2	OR	OR	2	TD–
RD+	3	GRN/WHT	GRN/WHT	3	RD+
	4			4	
	5			5	
RD–	6	GRN	GRN	6	RD–
	7			7	
	8			8	

RJ 45   RJ 45

8-pin RJ 45 Connector
(8P8C)

1 2 3 4 5 6 7 8
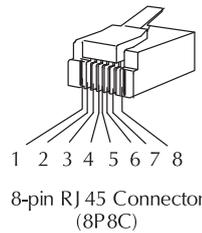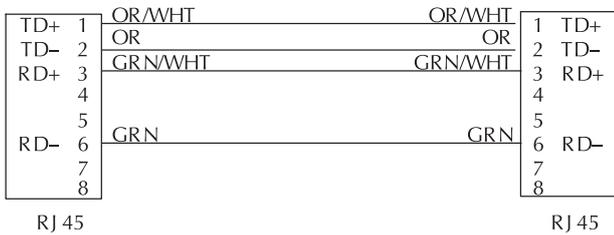
Crossover Cable (Ethernet)

TD+	1	OR/WHT	GRN/WHT	TD+	1
TD–	2	OR	GRN	TD–	2
RD+	3	GRN/WHT	OR/WHT	RD+	3
	4				4
	5				5
RD–	6	GRN	OR	RD–	6
	7				7
	8				8

RJ 45   RJ 45
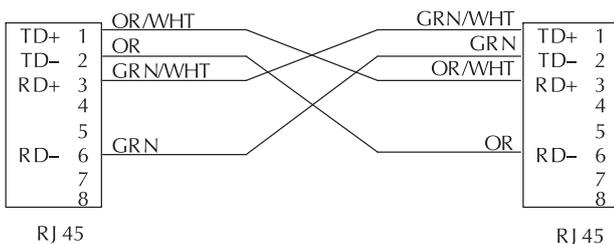
All Ethernet and ECOM patch cables should be Category 5,
UTP Cable. The diagram illustrates the appropriate wire
position in the RJ 45 connector.

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Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

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Photo Sensors

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Encoders

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DirectSOFT5 Functions

Click to start programming

Utilities, such as CTRIO WB

Documents — (Projects most recently used listed first)

Communication links to PLCs

The Launch Window

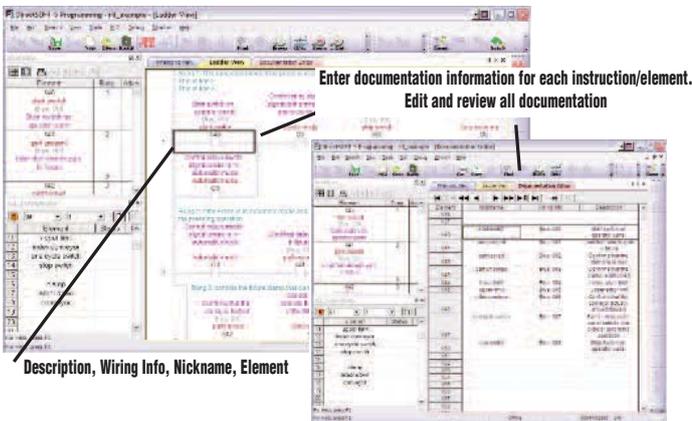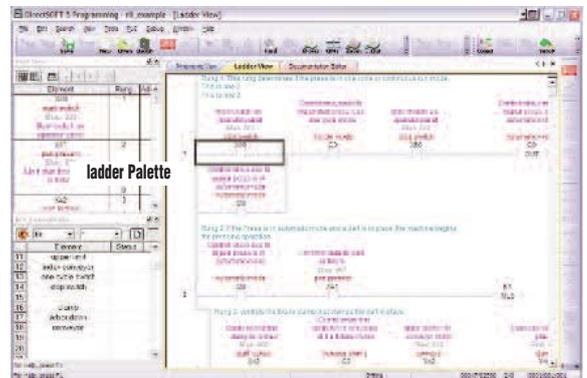The Launch Window is a centralized location to view not only all of your *Direct*SOFT5 applications and projects, but also any additional applications such as NetEdit, DN Loader, CTRIO WB, ERM WB, etc. This window is also used to create and manage PLC programs and the communications between your PC and the PLC.

Point and click editing

Once you have started a new project, there are a few different ways to start building your program. The Ladder Palette, which is attached to the right border by default, can be resized and repositioned anywhere on your desktop. This contains most of the instructions you will need. Simply click on the icon or use the Hot Key associated with that icon. Some instructions have to be accessed through one of the Browser icons. The Browsers contain all of the necessary information from various boxes, coils, and contacts. You can now customize the Ladder Palette tool bar to fit your programming style and needs.

ladder Palette

Enter documentation information for each instruction/element.
Edit and review all documentation
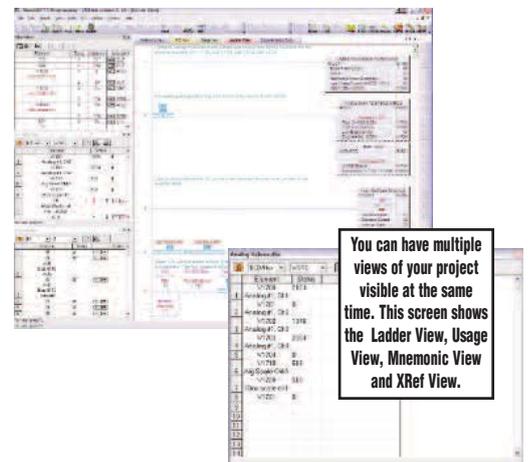
Description, Wiring Info, Nickname, Element

Documentation

Documentation is the text associated with the components and structure of your program. It helps to clarify the representation of elements by assigning four different fields: Description, Wiring Info, Nickname, and Element.

Onscreen views

*Direct*SOFT5 defaults to a new Tab view to give you the most optimized viewing area. You still have the option to view multiple windows in the original "MDI" format by simply hitting the Restore button in the upper right of the active tabbed window, or go to Windows menu and select one of the tile or cascade options. You can have multiple windows open to view such things as all of the addresses used in the program, a mnemonic view of the program instructions, and all of the instructions used.

You can have multiple views of your project visible at the same time. This screen shows the Ladder View, Usage View, Mnemonic View and XRef View.

DirectSOFT5 Functions
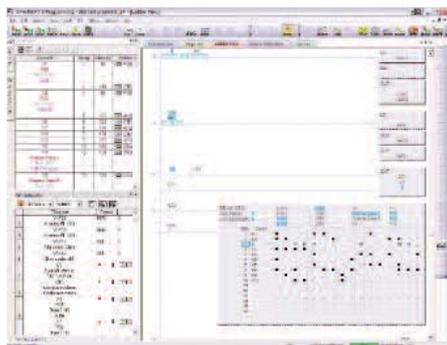

Support for drum instructions

If your PLC supports Drum instructions, you will like this feature of the programming software. Simply fill in the top of the drum with outputs and configure each step with an event and/or time-based element. Then click on the output boxes to choose the proper output states for each step and you are finished.

PID view

*Direct*SOFT5 offers an excellent PID feature. The loop and trending screens are very easy to configure. This feature has all of the views, trending, and tuning that you need to easily and successfully set up your PID loop.
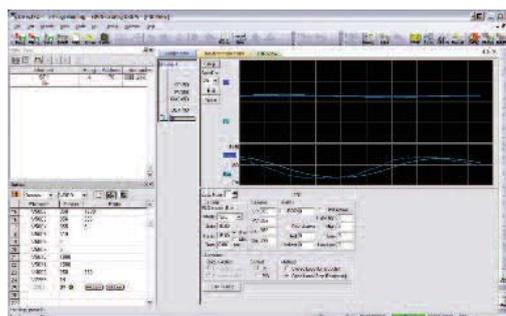
I-Box Instructions

IBox instructions are parameterized fill-in-the-blank instructions designed to make your programming experience quicker and easier than ever before. Within these *IBoxes* you will find some complicated and some simple, everyday ladder code tasks made easy and fast. There are 6 categories, including Memory, Discrete Helper, Analog Helpers, Math, Communications & Counter I/O, with 66 instructions to choose from. Here are a few examples of *IBox* instructions in *Direct*SOFT5 …

MOVED - moves a double word to two consecutive memory locations

OFFDTMR - Off Delay Timer will delay the "turning off" of the Output parameter by the specified Off Delay Time

PONPOFF - Push ON/Push OFF Circuit toggles an output state whenever its input power flow transitions from off to on

ANLGCMB - Analog Input/Output Combo Module Pointer Setup generates the logic to configure the pointer method for one analog input/output combo module on the first PLC scan following a Program to Run transition.

MATHBCD - Math - BCD Format lets you enter complex mathematical expressions like you would in Visual Basic, Excel, or C++
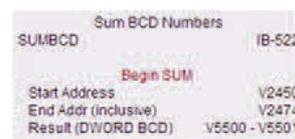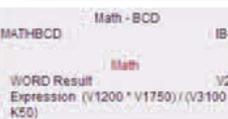
SUMBCD - Sum BCD Numbers sums up a list of contiguous 4-digit WORD BCD numbers into an 8-digit DWORD BCD result.

ECEMAIL - ECOM100 Send EMail, on a leading edge transition, will behave as an e-mail client and send an SMTP request to your SMTP Server to send the e-mail message to the e-mail addresses in the To: field

(* requires an Hx-ECOM100 100MBit communications module, capable of accessing an SMTP server, in the PLC)

CTREDRL - CTRIO Edit Preset Table Entry and Reload, on a leading edge transition to this *IBox*, will perform this dual operation to a CTRIO Output resource in one CTRIO command.

(* requires a Hx-CTRIO counter I/O module in the PLC)

PID

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Motor Controls	
Proximity Sensors	
Photo Sensors	
Limit Switches	
Encoders	
Current Sensors	
Pressure Sensors	
Temperature Sensors	
Pushbuttons/ Lights	
Process	
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Full-featured FREE Software for Productivity3000 PAC

Full-featured Productivity Suite software FREE ($495 value)

The Productivity3000 is a new generation controller, and we want everyone to see just how feature-packed it is and how productive it can make you. That's why we're offering the software for FREE (downloadable online) for a limited time - check out the tools, instruction set and programming/debug environment that will let you configure and program a system in less time than you can imagine. See pages 7-8 through 7-19 for more details on the powerful features of this software.
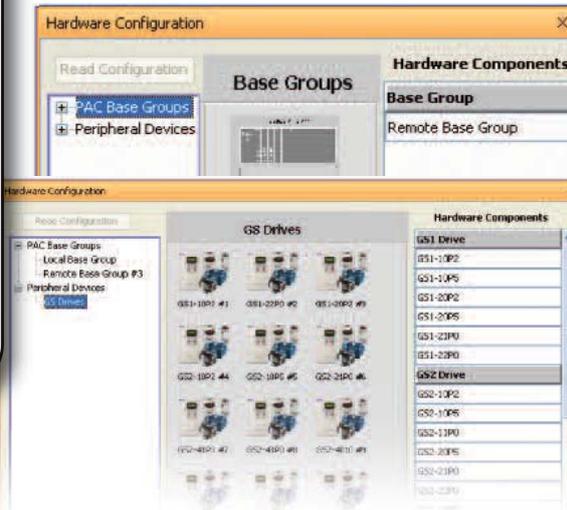
Hardware auto-discovery

One click is all it takes to detect and auto-configure the hardware connected to the system, including local and remote bases and I/O. GS drives on the internal Ethernet network are also discovered during any configuration update. This can save you literally hours and hours of setup time.

Or, configure the system offline by dragging and dropping bases and modules.

## All project files in CPU means it's not all Greek to you

With the ample memory in the CPU, there's plenty of room for the program, tag name database and all the program documentation. This means the helpful descriptions and comments are available to anybody with a PC and Productivity Suite software. This can be pretty important when it's 1 a.m., the machine is down and you're the one that has to look at the program and figure out what's wrong.

Task management boosts program speed and efficiency

The Task Manager helps organize program code and execute it for maximum speed and efficiency. Create functional tasks, name them and schedule their execution frequency - every scan, every second, or when called. A "First Scan Only" task lets you initialize values and conditions. Store specialized tasks that help debug and troubleshoot in the Disabled Tasks section.

Advanced instructions are timesavers

There are so many time-saving instructions, and they all have one thing in common - their "fill-in-the-blank" approach makes it easy to configure even the more complex tasks that previously required a whole bunch of program code. Scaling, calculator-style math, statistics, send email, it goes on and on ...
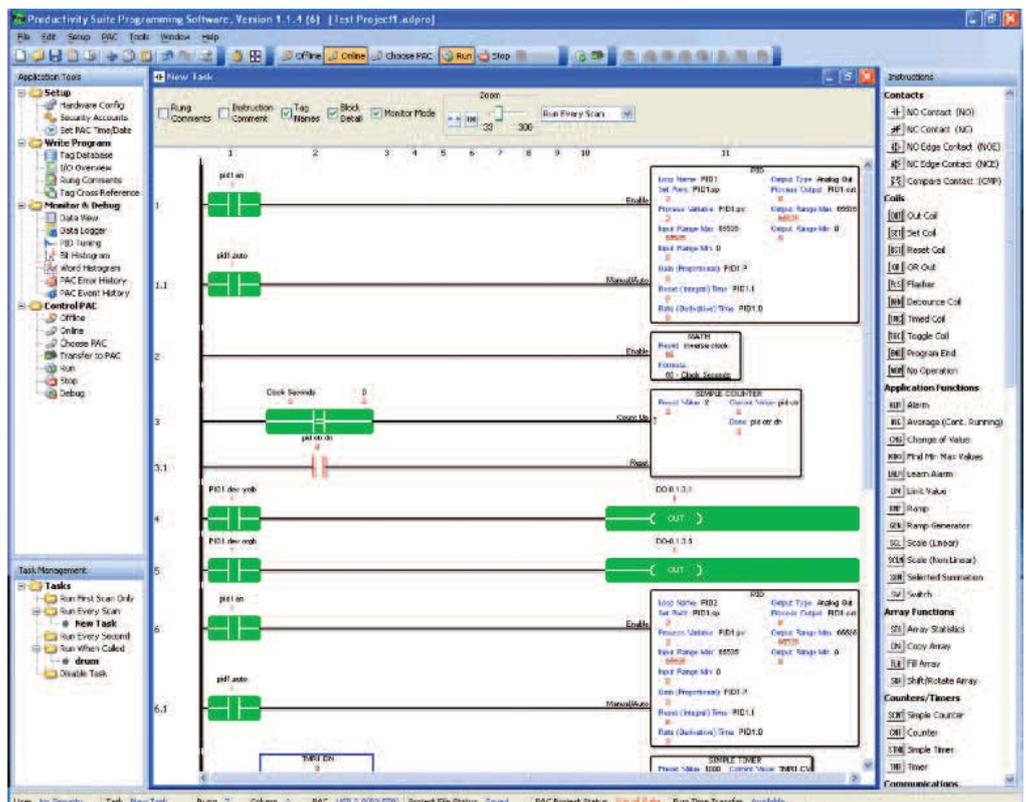
Saves you time from start to finish

Easy data logging on CPU

Easily log data to a removable mass storage device (USB) on an event or time basis. Track up to 64 data values and system errors through the Data Logger tool. And the CPU will hold the data internally until an external device is replaced.

Run-time editing

Commissioning or troubleshooting a system can be less time-consuming if you can make program edits on the fly. Download edits to the CPU without pausing I/O updates or stopping/restarting the program. From melting rubber to making paper, you can keep your process running, avoiding downtime and product waste.

Tag name database is friendly and flexible

Data memory ranges in the Productivity3000 are not fixed by data type, which is more efficient because you have the freedom to define the data types you need instead of having wasted memory for ones you do not.

Also, a tag name database means no more confusing and ambiguous memory and I/O references - add descriptive names as you program or enter all the tags before you even write one line of code. The data is stored in true database format so you can search, filter and sort; import a .csv file or use the one created every time you save the project for importing into other databases.

Help File really does help

Detailed hardware and software information is at your fingertips with the exhaustive HTML-based Help file. From "Getting Started" to detailed program instruction descriptions, it's all there when you need it. Find the help you need on a specific topic quickly, and read only what's relevant to you at the time.

Seamless database connectivity

With the integrated DataWorx instruction, connectivity to Microsoft Access, SQL or ODBC databases has never been easier (DataWorx P3K server for PC sold separately). The controller can retrieve, add, delete and update data records in the remote database.
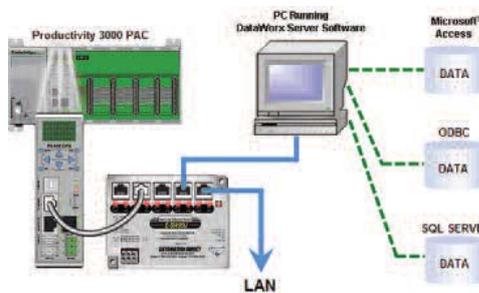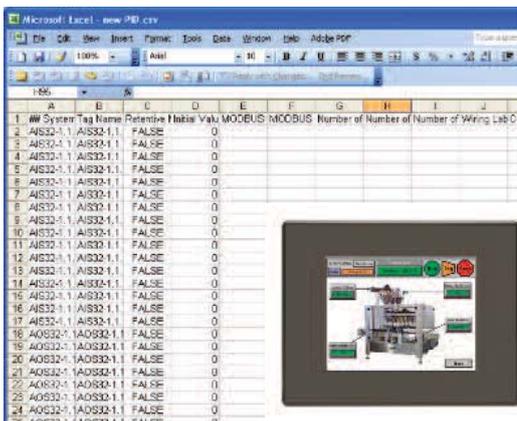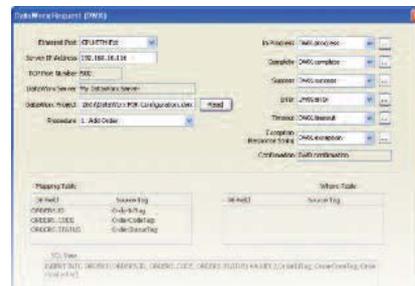
Import tags into C-more database

C-more HMI software has a direct import feature for the Productivity3000 tag database. No duplicating work - bring in all the tag names from the controller program right into C-more's database with just a few keystrokes.

Company Information

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Data Collection Made Easy

BizWareDirect
www.bizwaredirect.com

AutomationDirect and BizWareDirect offer exceptional data collection software

AUTOMATIONDIRECT has teamed up with BizWareDirect to offer its customers data-collection and monitoring software for compatible *Direct*LOGIC PLCs, Think & Do v8.0 or Think & Do Live! WinPLCs, and Productivity3000 controllers. Previoiusly, it was necessary to purchase an OPC/DDE server, write code or buy an HMI package to program, in order to collect data from AUTOMATIONDIRECT controllers.

BizWareDirect's data collection software makes it simple and cost effective to collect valuable data to enable you to make better business decisions. BizWareDirect offers software products, and a variety of engineering services to assist manufacturers and utilities to automate, monitor, and collect data from their processes through the most productive and cost-effective means possible.

DataWorx™: Connect Ethernet-enabled controllers for data collection

DataWorx packages easily connect your Ethernet-enabled *Direct*LOGIC PLCs, Think & Do v8.0 or Live! WinPLCs, or Productivity3000 controllers to standalone PCs or network servers for simple data logging. Collect data without the need for special PC programming or any 3rd party HMI, SCADA, or DAQ software application.

Applications include:

- Log valuable production data to networked PCs or file servers for statistical process-control decision making.
- Archive test data in a secure server file location with built-in date and time stamping features to satisfy quality assurance or audit procedures.
- Use in data acquisition applications as source of content for historical trending to be used by ERP or other higher-level business system applications.

Three versions are available:

- DataWorx PLC for Ethernet-enabled *Direct*LOGIC PLCs
- DataWorx WinPLC for Think & Do-based WinPLCs
- Dataworx P3K for the Productivity3000 controller

DataLynx™: Remote data collection over modems

DataLynx is an inexpensive data logging and storage package for remotely located PLCs or other devices that support Modbus and a modem connection. DataLynx can collect data from remote locations or relay data from multiple locations back to a single location to be stored. The software offers easy setup with no programming or SCADA system required.

Applications include:

- Log important data from remote processes, where Ethernet connections are unavailable, using a standard phone line.
- Monitor process data in other states and cities for trending history.
- Collect, and relay back to the plant, process history from machines in multiple locations for preventative maintenance and historical usage.

DataLynx vs. DataWorx Comparison	
DataLynx	*DataWorx*
• Modbus RTU / modem	• Ethernet
• Polling (dials & polls)	• Report-by-exception
• No PLC programming	• Uses PLC RX/WX
• No third-party programming software required	

DataNET™: Instant access to operational data from anywhere

DataNet OPC easily connects your PLC or other OPC enabled device to a live Web page. The data is then available for viewing, logging and printing reports. The data is displayed in an easy to read table format with color coded text (for alarming) and with absolutely no HTML programming required.

- Quickly determine the status of plant operations at any given moment, with no time or distance restraints.
- Log and archive data to be used as a source content for historical trend analysis.
- Archive data with built-in date and time stamping features to fulfill quality assurance procedures or to create reports for auditing processes.
- Log valuable production data for Statistical Process Control decision making.

BizWareDirect DataWorx PLC Professional software provides database access to collected data

DataWorx PLC Professional is an additional product offered by BizWareDirect that collects data from DirectLOGIC PLCs, Think & Do v8.0 or Think & Do Live! WinPLCs and other PLCs with the added feature of being able to store information into a database using SQL statements. The user can perform database operations such as storing PLC/WinPLC data and returning queries to the PLC/WinPLC. The user may configure database connectivity and operations in an easy to use GUI (as shown). Currently DataWorx PLC Professional supports Access and Microsoft SQL Server as well as ODBC connectivity. DataWorx PLC *Professional* is available through BizWareDirect. For more information, visit www.bizwaredirect.com or call 770-886-5878.
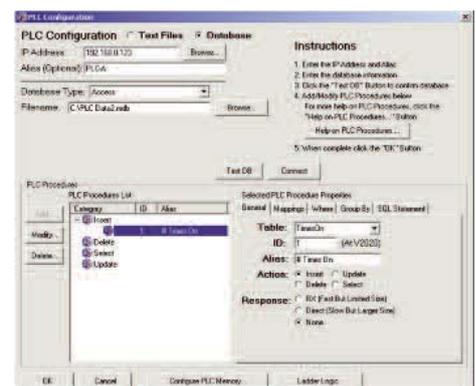
DataWorx - Data Collection over Ethernet

DataWorx software: Connect Ethernet-enabled controllers for easy data collection at an affordable price

What is it?

DataWorx Software packages easily connect your Ethernet-enabled *Direct*LOGIC PLCs, Think & Do v8.0 or Think & Do Live! WinPLCs, or Productivity3000 controllers to stand-alone PCs or network servers for simple data logging. This means that any PC or server on the network can receive valuable controller data without the need for special PC programming or any 3rd party HMI, SCADA, or DAQ software application. DataWorx is easy to set up and use, and is priced right. Without a doubt, DataWorx will save you both time and money.

NEW! With the DataWorx P3K software, you can now easily connect your Productivity3000 system to a Microsoft Access, SQL or ODBC compatible database server.

How do I use it?

Simply install the DataWorx software on a PC or file server on the same targeted Ethernet PLC network. Next, enable the controller logic to write data to your choice of delimited text files or CSV files onto the networked PCs or a file server.

Benefits of DataWorx

- Easy setup
- No SCADA software required
- At 96 bytes per device, store unlimited amounts of data
- Can receive data from an unlimited number of *Direct*LOGIC PLCs, Think & Do v8.0 or Think & Do Live! WinPLCs, or Productivity3000s
- *Direct*LOGIC PLCs, Think & Do v8.0 or Think & Do Live! WinPLCs, or Productivity3000s have complete control of storing the data
- DataWorx P3K Software connects any networked Productivity3000 system to a supported database.

Applications

- Log valuable production data to networked PCs or file servers for Statistical Process Control decision making.
- Archive test data in a secure server file location with built-in date/time stamping features to satisfy quality assurance or audit trailing procedures.
- Use in data acquisition applications as source content for historical trending to be used by higher level business system applications.
- Transferring, updating and retrieving data into/from a network database.

DataWorx system requirements:

The PC hardware requirements for DataWorx include a Pentium II with 128 megabytes of RAM and at least 10 megabytes of hard disk space free. The Server application can run on Windows 2000/XP/Vista. The Monitor application can run on Windows2000/ XP/Vista.

Product line-up

DataWorx PLC Software
Works with H0-ECOM/ECOM100, H2-ECOM(-F)/ECOM100, or H4-ECOM(-F)/ECOM100 Ethernet modules

PC-DATPLC-1   <--->

Support for one *Direct*LOGIC PLC (with HX-ECOM (100) module installed)

PC-DATPLC-UN   <--->

Support unlimited *Direct*-LOGIC PLCs (with HX-ECOM (100) modules installed)

DataWorx WinPLC Software
Works with H2-WPLC3-EN CPU

PC-DATWINPLC-1   <--->

Support for one Think & Do v8.0 or Think & Do Live! WinPLC

PC-DATWINPLC-UN   <--->

Support unlimited Think & Do v8.0 or Think & Do Live! WinPLC

DataWorx P3K Software
Works with P3-550 CPU

PC-DATP3K-1   <--->

Support for one Productivity3000 system

PC-DATP3K-UN   <--->

Supports unlimited Productivity3000 systems

PC-DATP3K-UPG   <--->

Upgrade from a single license to unlimited

File Servers

Networked PC

DATA

NEW Product

DL405

DL205

DL05 & DL06

WinPLC

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

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DataWorx PLC/WinPLC Server

The DataWorx software packages include a server application that runs as a Microsoft Windows "service". Running as a service means the DataWorx program runs whether or not anyone is presently logged in on the PC. Another advantage of the server running as a service is that the user does not need to manually start the logging every time the computer restarts. The application "listens" for information from the PLC/WinPLC and logs the data into a file configured from the Monitoring application. The server is capable of collecting up to 96 bytes of data from an unlimited number of PLCs/WinPLCs.
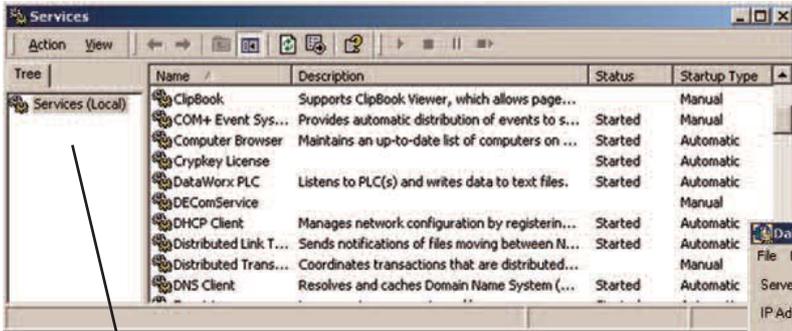
Identifies the various services that are part of the PC

Running as a Windows service

DataWorx is equipped with an easy-to-use graphical interface to start, stop, or pause services. It also provides a very simple way to install or uninstall the service.

Graphical Interface to control the services

Diagnostic Error Logging

Error log

The Server has a useful Diagnostic Error Log window to help with troubleshooting the Server if a problem arises. The Error Log shows the status of the Server. The Error Log indicates whether the Server is started, stopped, or paused, and if the data received from the PLC/WinPLC matches the data configured in the Server.
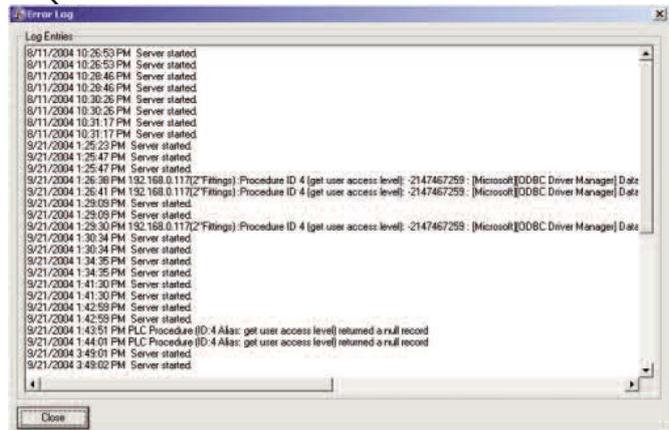
RBE (Report by Exception) technology

RBE technology is what makes DataWorx software unique. Rather than the usual data collection through polling PLCs/WinPLCs, RBE technology makes the Server "listen" for data that has changed before it stores the information. The PLC/WinPLC sends data ONLY when needed. The common method of collecting data by continuous polling adds a lot of network traffic, causes the CPU utilization to dramatically increase, and in most applications, requires a dedicated PC. In contrast, the RBE method gives the PLC/WinPLC complete control to store data to a networked PC or file server hard drive and store the data locally if the network is down.
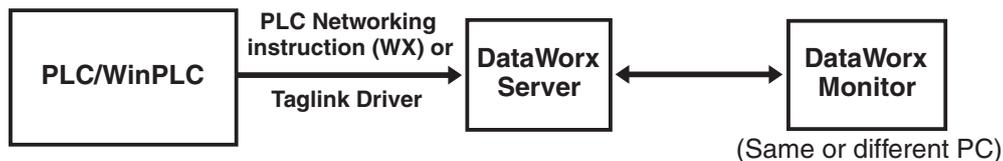
DataWorx PLC/WinPLC Monitor

The Monitor application included in the DataWorx package configures the server's file creation cycle, and PLC/WinPLC listings. The Monitor also allows the user to view or save the data files stored on the server. Files can be opened and viewed in Notepad, Excel, or another chosen program. The user may select to create files on a daily, monthly, or yearly basis. The Monitor application is able to conveniently run from any PC that is networked with the server.

Data viewed in Notepad

Data viewed in Excel

DataWorx Monitor allows viewing of saved files on the server

PLC Configuration screen

View the various reports that are stored on the server for each PLC/WinPLC
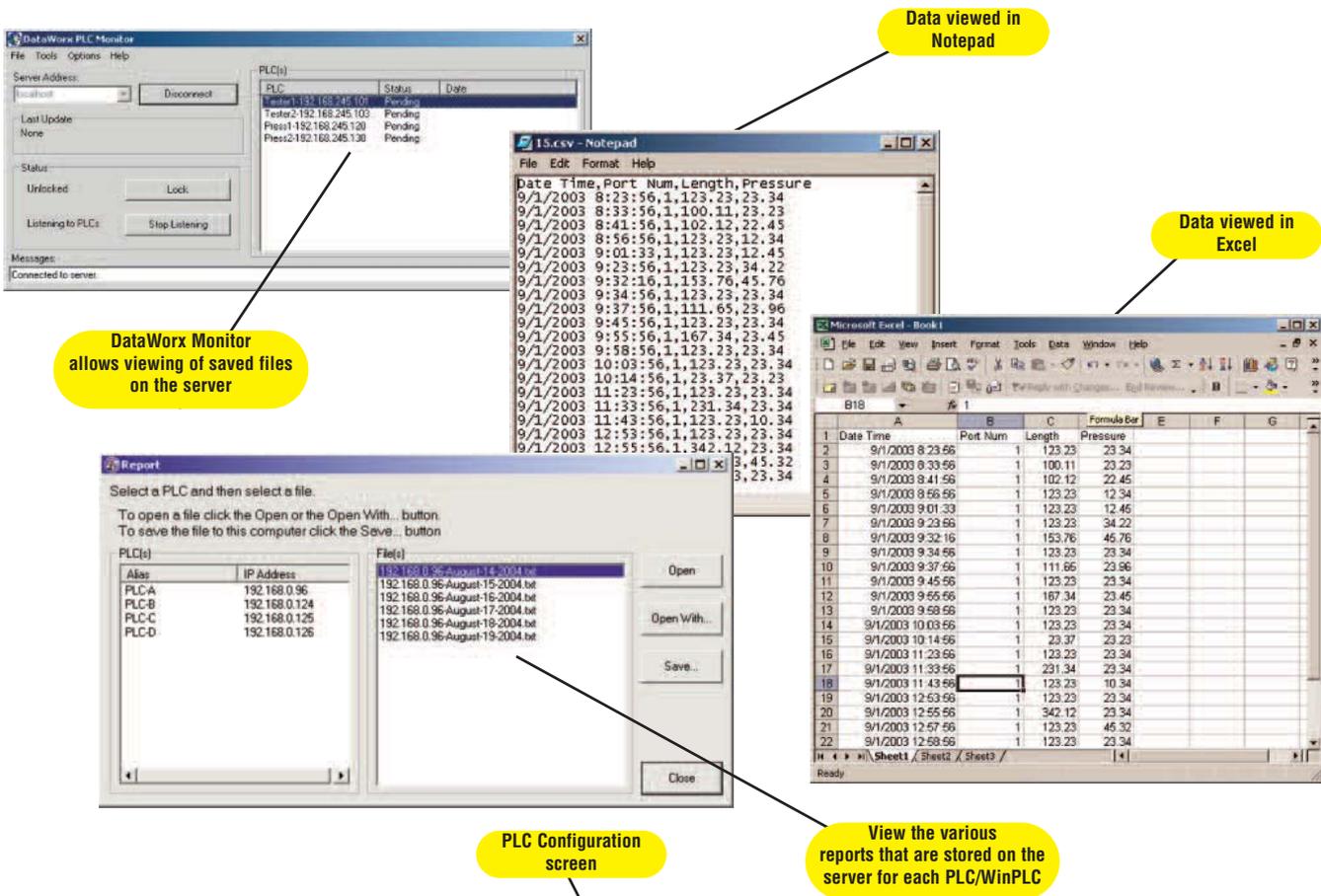
Configuration

Using the Monitor application, users can configure the server to log data to the server's hard drive in a comma or tab delimited text file. Users can also include a date and time stamp in the file, and an alias for each data item sent. The alias can be used as the file's header.

Archiving

The server can be configured to archive the log files into a zip file that can be copied to an archive directory for easy management. In the directory, files can be deleted automatically according to the parameters set by the user. Archiving can occur daily, monthly, or yearly as needed.

Automation Direct

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

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DataWorx Productivity3000 Server

The DataWorx P3K server software maximizes the value of your industrial data by allowing you to collect data and connect your Productivity3000 system to networked database servers. Collect real-time data from the plant floor and store it into a standard Microsoft Access, SQL server or ODBC compatible database. The unique report-by-exception technology allows direct communication between the Productivity3000 and the database(s). It gives control of the data logging and storage to the CPU so it can send data only when needed, greatly reducing the amount of network traffic.

Connect your Productivity3000 to your Enterprise system

What is it?

DataWorx P3K gives you an inexpensive solution for connecting your Productivity3000 controller to enterprise systems by providing direct database inter-action. Productivity3000 is able to conduct its own database operations, so records are always accurate and up-to-date. DataWorx P3K connects people to the plant, putting valuable information in the hands of those who need it to make crucial decisions.

Productivity 3000 PAC

PC Running BizwareDirect DataWorx P3K Server

Microsoft Access

CPU Ethernet Port

PAC IP 192.168.11.62

PC Workstation IP 192.168.16.116

LAN
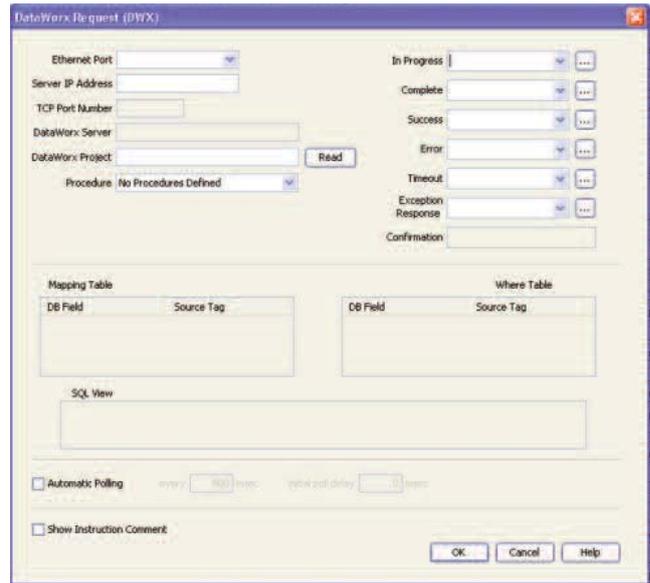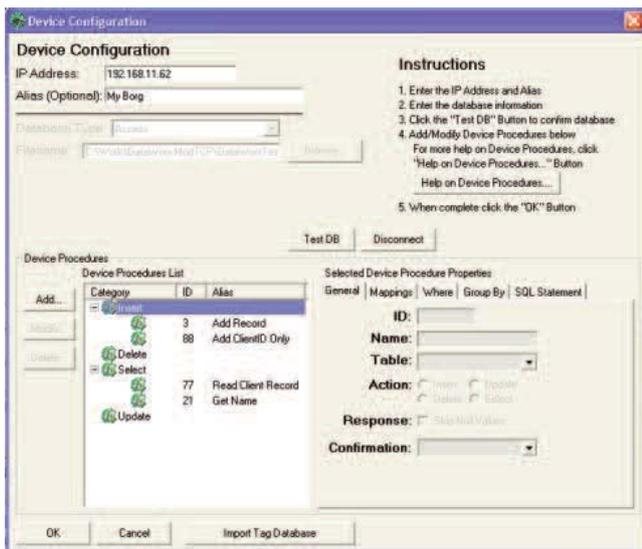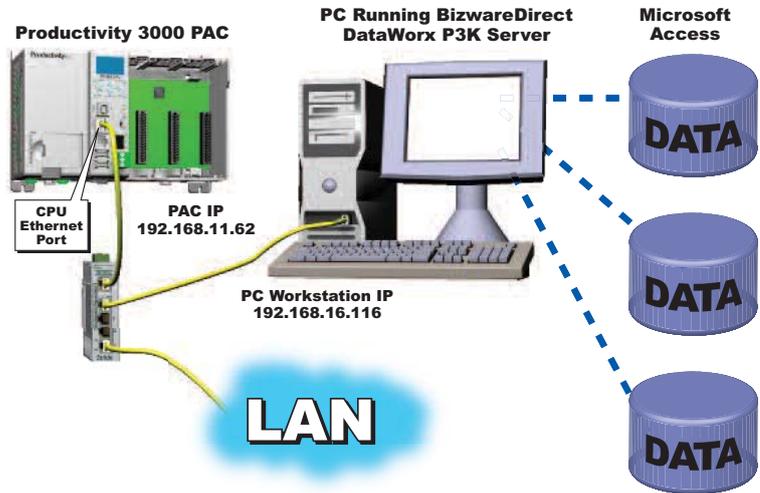
DATA

DATA

DATA

Benefits of DataWorx P3K

- Makes industrial data directly and readily available to those who need it to make organizational decisions
- Allows data to flow freely between plant floor and your IT enterprise system
- Report-by-exception technology eases network traffic
- Gives PAC complete control over data storage and retrieval
- Easy installation, no database programming necessary
- No SCADA system needed
- Store unlimited amounts of data

Built-in Ladder Instruction

The Productivity3000 has incorporated a DataWorx instruction to simplify the config-uration and data transfer between the controller and enterprise network.
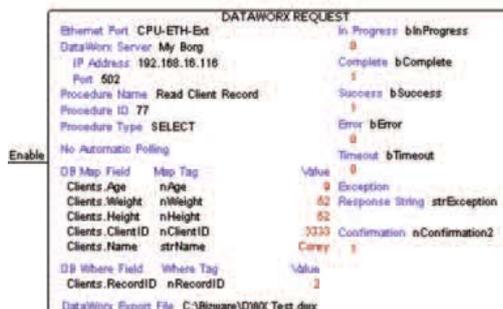
Practical Applications

- Enable your industrial devices to track plant-floor progress and maintain a precise inventory to increase efficiency and accuracy.
- Store, set and change recipes to improve reliability in operations using multiple formulas and set-points.
- Log valuable production data into a data base for convenient storage, easy retrieval and organized displays.
- Archive test data in a secure database with built-in date/time stamping features to satisfy quality assurance or audit procedures.

DataNet OPC Data Management Software

Innovative software that gives you instant access to operational data - from anywhere.

What is it?

DataNet OPC uses OPC technology to display real-time data from industrial devices on a live Web page. The data is then available for viewing and printing reports from any computer, anywhere the Internet or company intranet is accessible. The data is displayed in an easy-to-read table format. Absolutely no HTML programming is required to take advantage of DataNet OPC's many practical features, all of which allow users to determine the status of their plant operations quickly - from anywhere their business might lead them.

How do I use it?

With DataNet OPC, setup is quick and easy. Simply install the software on a PC or file server (an OPC server, such as our Kep*Direct* Server, is *required* to use this product). DataNet OPC can be installed as a standalone Web server or as a Microsoft IIS add-on. Next, configure the Web page and, if applicable, the data-logging function. To setup or make changes to the configuration, use the configuration facility that is conveniently provided via the DataNet OPC Web page.

Benefits of DataNet OPC

- Data is available on any computer, anywhere the Web page is accessible
- There is no limit on the number of simultaneous viewers, so management always has instant access to the data
- Packages are available to log an unlimited amount of data for archival purposes
- Dynamic colors allow users to determine the status of plant operations at a glance
- A useful math tool performs calculations on data before displaying
- Absolutely no HTML programming is required
- Installation and setup is quick and easy

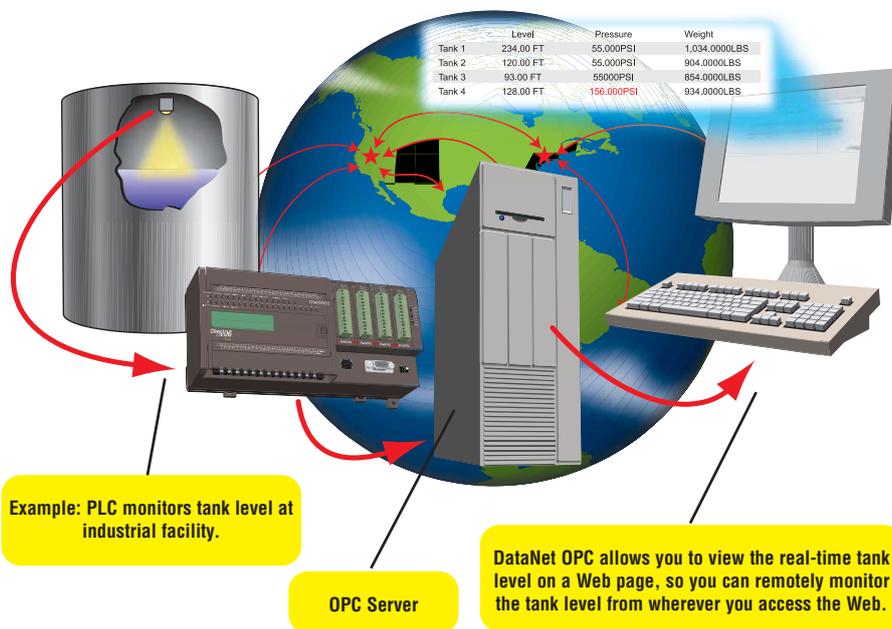|	Level	Pressure	Weight
Tank 1	234.00 FT	55.000PSI	1,034.0000LBS
Tank 2	120.00 FT	55.000PSI	904.0000LBS
Tank 3	93.00 FT	55000PSI	854.0000LBS
Tank 4	128.00 FT	156.000PSI	934.0000LBS

Example: PLC monitors tank level at industrial facility.

OPC Server

DataNet OPC allows you to view the real-time tank level on a Web page, so you can remotely monitor the tank level from wherever you access the Web.

Practical Applications

- Make the Web page available over the company intranet to monitor plant operations from anywhere in the plant or administrative offices, while keeping internal data private
- Publish data to the Internet to allow instant access to organizational data - from anywhere. Publish to a hidden address to allow access by management and plant personnel only; or keep others informed by allowing public access to the page
- Log and archive valuable data to create reports for process control decision making or for historical trend analysis

DataNet OPC fits your organizational needs

DataNet OPC can work within your existing infrastructure to increase the connectivity between management and plant floor operations.

DataNet OPC makes data more accessible

The DataNet OPC Web page is capable of displaying and logging an unlimited amount of data, from an unlimited number of devices.

Data is displayed in a table format and can be refreshed at any interval, as specified by the user. A column-configuration page allows the user to control the Web page's appearance, while a row-configuration page allows the user to designate and manipulate the data being displayed. A password-protected security feature is included, which when activated, prevents any unauthorized changes from being made to the configuration.

BizWareDirect

www.bizwaredirect.com

Make industrial data more accessible and useful to those who need it!

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

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DataNet OPC Data Management Software

DataNet OPC makes archiving industrial data simple

In addition to displaying data conveniently on a Web page, DataNet OPC packages are available that log data into a text file for archival purposes. Through the easy-to-use configuration facility, the user is able to specify which sets of data should be logged, and at what time intervals. This software package also has a useful trigger-command option, which allows the user to specify that data be logged only at certain times or under certain conditions. These historical logs, like the real-time data, are conveniently accessible directly from the DataNet OPC Web page. Simply download and save the log files for your records, for company-wide analysis or for planning initiatives.

DataNet OPC makes data more useful

DataNet OPC supplies the user with a range of viewing options designed to convert raw industrial data into useful information. A descriptive name can be assigned to the DataNet OPC Web page, as well as to each individual row of data, aiding in future analysis and on-the-spot monitoring. A useful calculating tool allows the user to define mathematical operations, which DataNet OPC will perform on the specified data before displaying and/or logging it. With DataNet OPC, the user is able to request that certain cells automatically change colors based upon their data values. This is a very functional feature that can be used as a warning system, alerting plant managers and personnel of abnormalities in plant operations.

Product Lineup

DataNet OPC Software

PC-DNETOPC-10   <--->

    Support for up to 10 Web Values. Data logging is included.

PC-DNETOPC-30   <--->

    Support for up to 30 Web Values. Data logging is included.

PC-DNETOPC-60   <--->

    Support for up to 60 Web Values. Data logging is included.

PC-DNETOPC-UN   <--->

    Support for an unlimited number of Web Values. Data logging is included   .<--->

Upgrade Program

> Note: Upgrade packages are not distributed on a CD. Your new upgrade package serial number will be shipped to you on an upgrade document. Upon receipt, register your product online to enable the new features.

PC-DNETUPG-20   <--->

    Upgrade from PC-DNETOPC-10 to PC-DNETOPC-30. Add 20 Web Values. No data logging is included.

PC-DNETUPG-30   <--->

    Upgrade from PC-DNETOPC-30 to PC-DNETOPC-60. Add 30 Web Values. Data logging is included.

PC-DNETUPG-UN   <--->

    Upgrade from PC-DNETOPC-60 to PC-DNETOPC-UN. Add unlimited Web Values. Data logging is included.

System Requirements

- Windows NT/2000/2003/XP/Vista
- Internet Explorer 6.0 or later
- OPC server (we recommend our Kep*Direct* for PLCs Data Server)
- OPC 1.0 and OPC 2.0 compliant

BizWareDirect's Professional version - more features and more interactive display

DataNet OPC Professional, offered by AutomationDirect technology partner BizWareDirect, has enhanced features that will make industrial data even more valuable to your company. Multiple display pages help keep data tables organized and allow employees to find what they need - without sifting through an enormous amount of information they do not need. Employees will no longer need to spend their time constantly monitoring operational data because the Professional version has an added feature that will send e-mail alerts to warn plant managers and personnel when data is out of the specified "normal" range.

DataNet OPC Professional can help you to make a lasting impression on management, customers and others outside the plant walls, by creating easy-to-understand trend graphs of logged data. The Professional software package also displays and logs data from remotely located OPC servers, converts binary data, and allows configurable font sizes. For those seeking the ultimate in data display and logging, DataNet OPC Professional will increase efficiency and connect system operations to those who make the company decisions. For more information, visit **www.bizwaredirect.com** or call **(770) 886-5878**.

DataLynx: Remote Data Collection Software

DataLynx Software: remote data collection made easy

What is it?

DataLynx data collection software is an inexpensive data logging and storage package for PLCs using a PC. Any PLC or other device that supports Modbus RTU, along with a modem connection, works well with DataLynx. This software package is an ideal solution for collecting data from remote locations or relaying data from multiple locations back to a single location to be stored.

DataLynx polls remote Modbus-enabled devices over standard phone lines using off-the-shelf modems. The DataLynx Server runs as a service and collects and stores your data into comma or tab-delimited file formats. DataLynx can also be configured to automatically archive data files into a .zip file every month or year and delete the files as well.

How do I use it?

DataLynx is an easy software to install and use. No additional programming by the user is necessary. Simply install the DataLynx software on a PC or file server and configure the remote Modbus-enabled device phone number and memory address.

Benefits of DataLynx

- Easy setup, no programming necessary
- No SCADA system required
- Collect data from remote locations
- Stores unlimited amounts of data
- Monitors unlimited number of PLCs or Modbus devices
- Troubleshoot instantly

DataLynx vs. DataWorx Comparison	
DataLynx	*DataWorx*
• Modbus RTU / modem	• Ethernet
• Polling (dials & polls)	• Report-by-exception
• No PLC programming	• Uses PLC RX/WX
• No third-party programming software required	

Applications

- Log important data from remote processes using a standard phone line where Ethernet connections are unavailable.
- Monitor process data in other states and cities for trending history.
- Collect process history from machines in multiple locations for preventative maintenance and historical usage.

Product lineup

DataLynx Software

PC-DATLYNX-1   <--->
Support one PLC

PC-DATLYNX-5   <--->
Support up to five PLCs

PC-DATLYNX-10   <--->
Support up to 10 PLCs

PC-DATLYNX-UN   <--->
Support unlimited PLCs
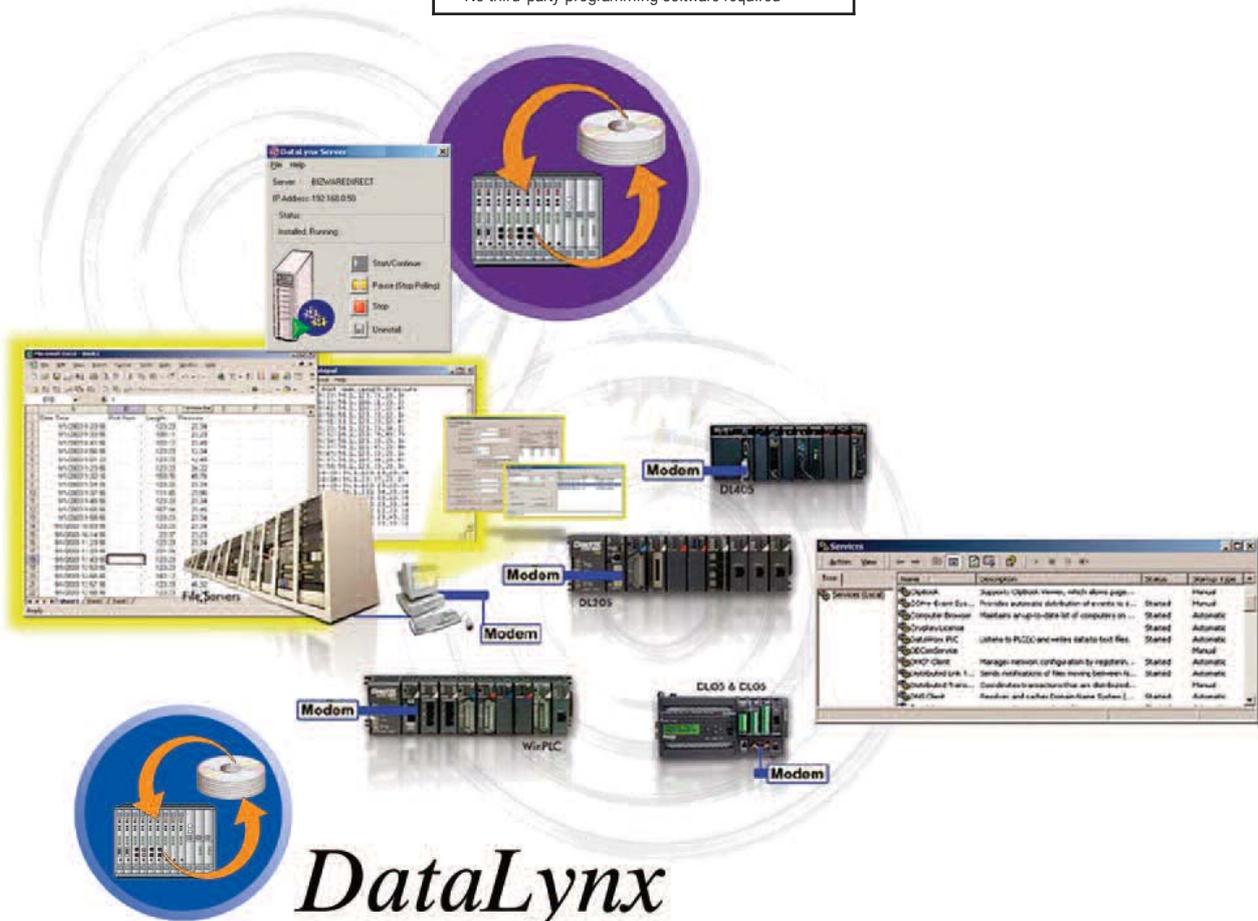
DataLynx

PLC MODEM DIAL UP SOFTWARE

Automation Direct

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

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KEP*Direct* OPC Server

Connect *Direct*LOGIC PLCs, Productivity3000 PAC, DURApulse or GS drives or your PC via OPC for easy data acquisition or control at an affordable price

What is it?

The KEP*Direct* OPC Server provides a way to connect your favorite Windows client software to AUTOMATIONDIRECT *Direct*LOGIC PLCs, Productivity3000 controllers, Ethernet I/O through our EBCs (Ethernet Base Controllers), or *DURAPULSE* and GS AC motor drives with an Ethernet interface module (GS-EDRV100) installed. This means that any industrial HMI, SCADA, data historian, MES or ERP software package that includes an OPC client interface (most do) can connect directly to *Direct*LOGIC PLC serial or Ethernet ports; Productivity3000 PAC; DL205, DL405, Terminator Ethernet I/O; or *DURAPULSE* and GS series AC drives by way of a GS-EDRV100 module. The KEP*Direct* OPC Server provides an interface to your controllers, Ethernet I/O or drives using industry-standard OPC technology so you are free to choose almost any software package. Best-in-class PLCs, along with best-in-class software, should be *your* choice with the KEP*Direct* OPC Server.

What's it got?

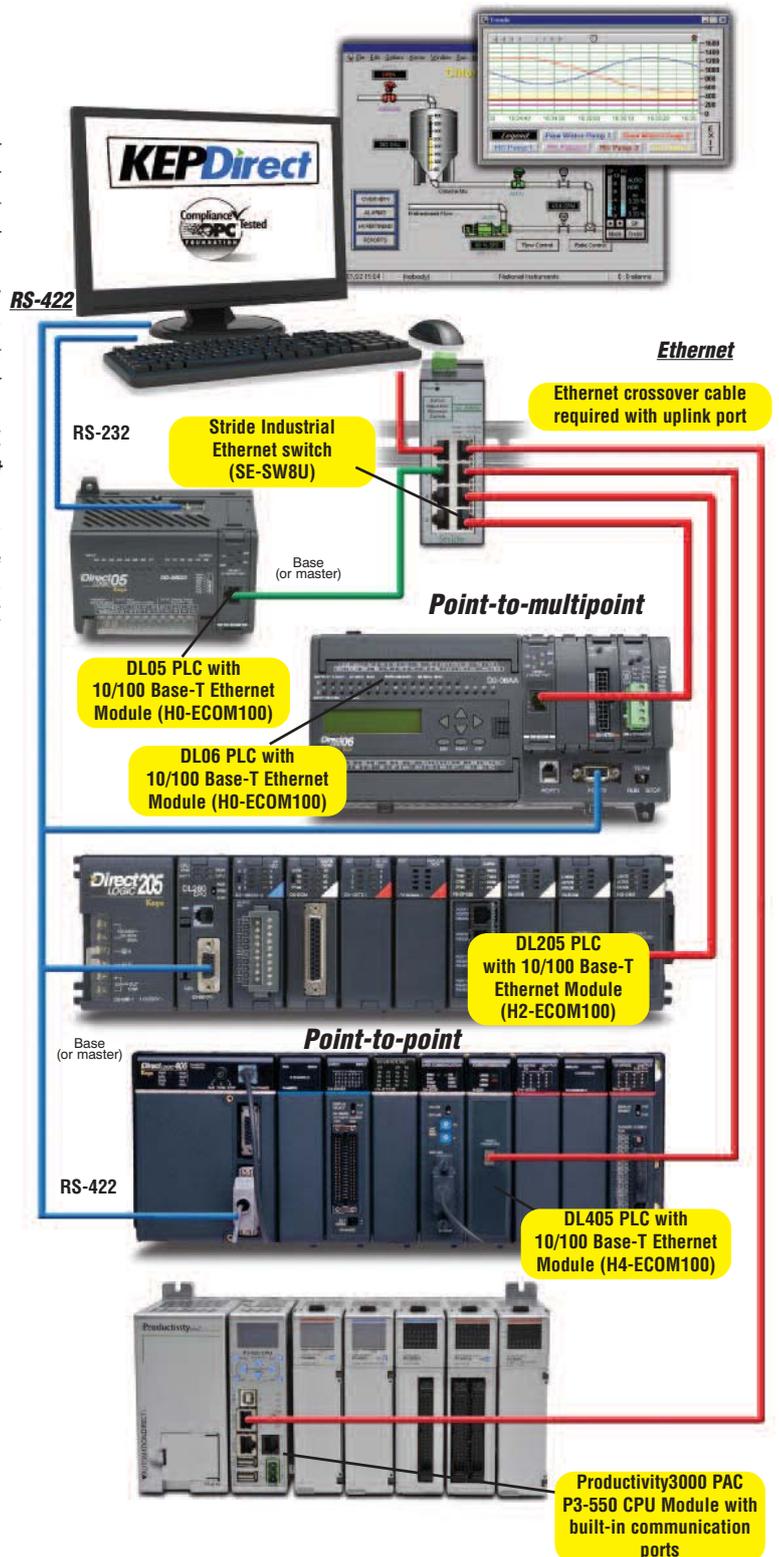- High-performance, certified OPC-compliant connectivity via Ethernet, with unparalleled compatibility and performance
- DL05, DL105, DL06, DL205, and DL405 support through RS-232, RS-422 serial or DirectLogic ECOM and Productivity3000 Ethernet interfaces
- DL205, DL405 and Terminator EBC or GS-EDRV module Ethernet interfaces
- OPC Quick Client application included for testing and easy troubleshooting
- Automatically generate tag names by importing *Direct*SOFT project Nicknames and Descriptions or Productivity3000 Tag database.

Serial and Ethernet Connections Example

RS-422

Ethernet

Ethernet crossover cable required with uplink port

RS-232

Stride Industrial Ethernet switch (SE-SW8U)

Base (or master)

Point-to-multipoint

DL05 PLC with 10/100 Base-T Ethernet Module (H0-ECOM100)

DL06 PLC with 10/100 Base-T Ethernet Module (H0-ECOM100)

DL205 PLC with 10/100 Base-T Ethernet Module (H2-ECOM100)

Base (or master)

Point-to-point

RS-422

DL405 PLC with 10/100 Base-T Ethernet Module (H4-ECOM100)

Productivity3000 PAC P3-550 CPU Module with built-in communication ports
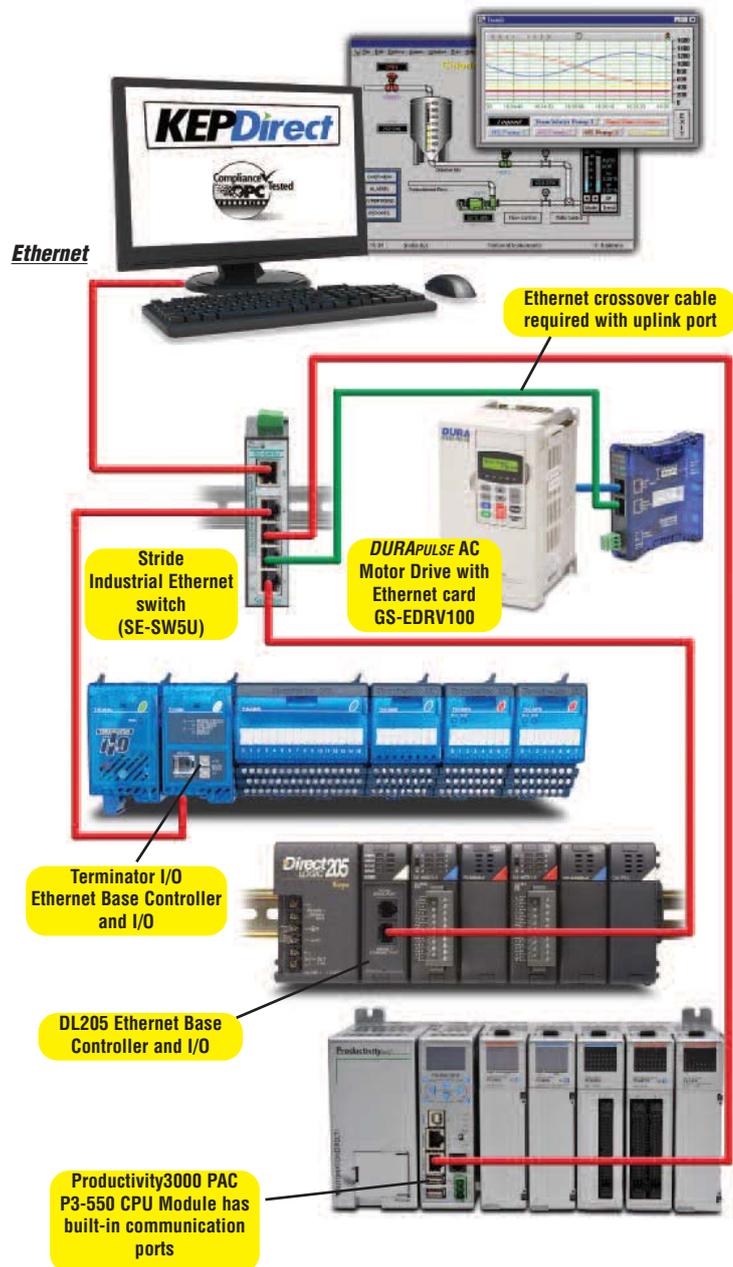
KEP*Direct* OPC Server Software

How do I use it?

Simply install the KEP*Direct* OPC Server on the same PC (*or on the same network*) as your client application, then enable the OPC client driver for direct access to your AutomationDirect device on the network.

What can I do with it?

- Connect your favorite HMI or SCADA software to low-cost AutomationDirect PLC, PAC, Ethernet I/O or Durapulse or GS Drives systems over a serial or Ethernet network.
- Design a low-cost data acquisition/monitoring system using affordable AutomationDirect control devices.
- Interface custom Visual Basic® or Visual C++® applications to AutomationDirect systems and eliminate time consuming driver development.
- Requires OPC DA Client Tool Kit to use OPC with Visual Basic.

Product line-up

PC-KEPOPC supports all drivers   <--->

Ethernet Connections Example

Ethernet

Ethernet crossover cable required with uplink port

Stride Industrial Ethernet switch (SE-SW5U)

DURA*PULSE* AC Motor Drive with Ethernet card GS-EDRV100

Terminator I/O Ethernet Base Controller and I/O

DL205 Ethernet Base Controller and I/O

Productivity3000 PAC P3-550 CPU Module has built-in communication ports

Company Information

Systems Overview

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Field I/O

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Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

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It's all included in the KEP*Direct* Server

Import *Direct*SOFT Nicknames and Productivity3000 Tagnames

The KEP*Direct* OPC Server supports automatic tag generation through importing of *Direct*SOFT project element Nicknames and the Productivity3000 Tag database. For *Direct*SOFT PLCs, export your project element documentation into the *.CSV format, then use the KEP*Direct* setup wizard to import this file and generate tag names within your server project. For Productivity3000 PACs, simply import the project *.CSV file located in your default project directory. Tags are organized according to the controller's datatypes – 'X', 'Y', 'C', 'V', etc. – for the *Direct*LOGIC or – 'AIF32', 'AOS32', 'DI', 'DO', 'F32', 'S32', etc. – for the Productivity3000. These are displayed in a tree structure with your Nicknames and Descriptions applied so any OPC client is able to access them. The easy-to-use KEP*Direct* OPC Server graphical interface displays complete OPC Channel, Device and Group structure along with detailed diagnostics.

I/O configuration and tag mapping for Ethernet I/O

The KEP*Direct* OPC Server recognizes the types of I/O for all connected EBC nodes, and can map them to tags. No wasting time determining your I/O addressing scheme or tag names. Follow the Setup Wizard and your tags are displayed in a tree structure, ready for any OPC client to access them. The simple graphical interface displays complete OPC Channel, Device and Group structure along with a detailed diagnostics window.

Quick Client tests network connections and toggles I/O

The KEP*Direct* OPC Server includes a Quick Client software application for checking your network. Test your connection by clicking on the icon from the server interface and viewing your I/O status in real time. You can also toggle discrete I/O and read/write values to analog modules. The Quick Client can save you time and money debugging your I/O system, even before you begin developing your client application.

Built-in powerful data scaling

The KEP*Direct* OPC Server includes a complete data scaling facility allowing you to configure each data point for the engineering units your application requires. No need to perform extensive math calculations in your client software to manipulate your data. Linear and square root scaling are supported across several data types including Byte, Word, DWord and Float, with user defined decimal point location. Additional scaling features include high and low limits, and clamping to limit the data range received to/from your client application.

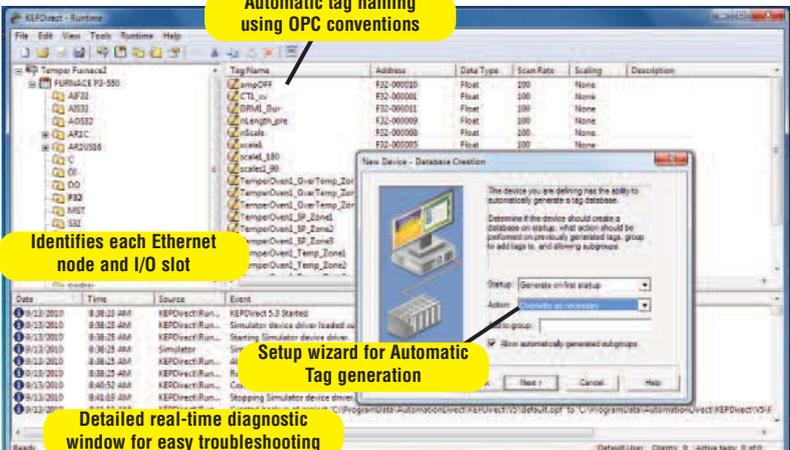Automatic tag naming using *Direct*SOFT Nicknames and Descriptions
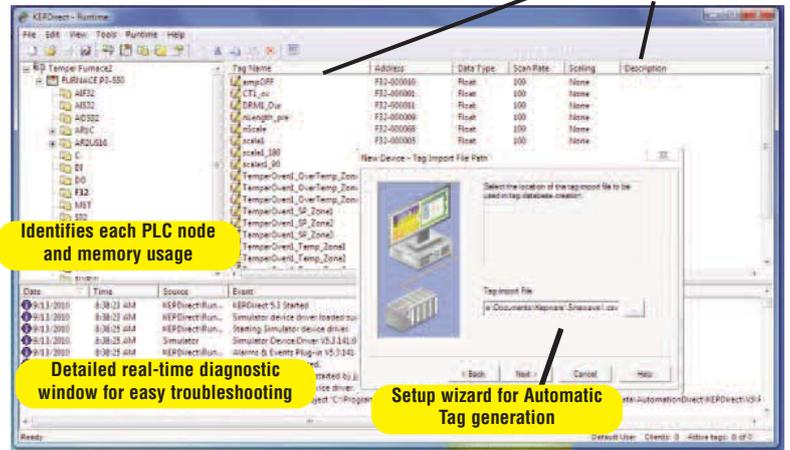
Identifies each PLC node and memory usage

Detailed real-time diagnostic window for easy troubleshooting
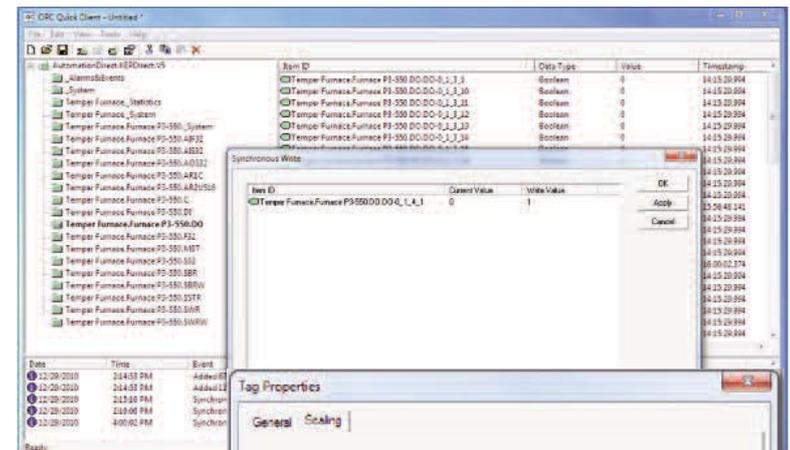
Setup wizard for Automatic Tag generation

Automatic tag naming using OPC conventions
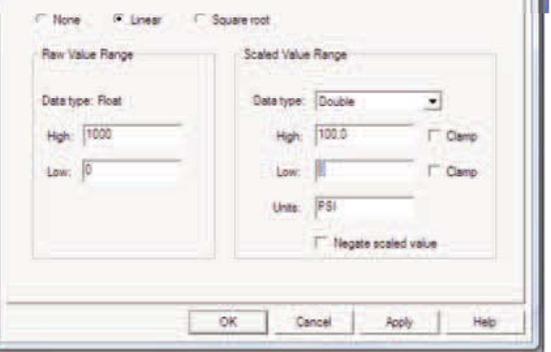
Identifies each Ethernet node and I/O slot

Setup wizard for Automatic Tag generation

Detailed real-time diagnostic window for easy troubleshooting

KEP*Direct* OPC Server

OPC client/server relationship

OPC overview

OPC is an industry standard created by a number of worldwide leading hardware and software suppliers in cooperation with Microsoft. The OPC Data Access specification, as maintained by the OPC Foundation, is a non-proprietary technical specification that defines a set of standard interfaces based upon Microsoft's OLE/COM technology. An OPC server (driver) allows items such as distributed control systems, programmable logic controllers, I/O systems and smart field devices to communicate with a wide range of HMI/SCADA (client) software packages residing on a PC. Traditionally, each software or application developer was required to write a custom interface, or server/driver, to exchange information with hardware field devices. OPC eliminates this requirement, allowing manufacturing customers true plug and play connectivity and the freedom to choose products based on their automation requirements.

DDE support

While KEP*Direct* OPC Server is first and foremost an OPC server, it is recognized that a number of legacy applications still depend upon DDE for their underlying client server technology. Early in the development of Windows, Microsoft provided a generic client server technology called DDE (Dynamic Data Exchange). DDE provided a basic architecture that would allow many Windows applications from a wide range of vendors to share data. But there was one problem – DDE was not designed for the industrial market, lacking much of the speed and robustness desired in an industrial setting. However, this did not stop DDE from becoming a dominant client/server architecture, largely due to its availability in most Windows applications.
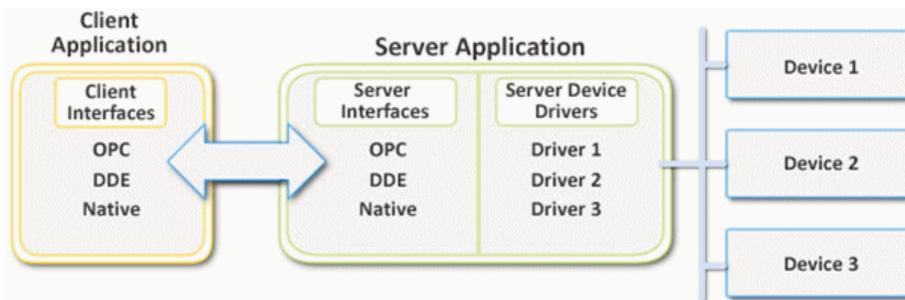
Where OPC fits in

Although OPC is primarily used for accessing data from a network server, OPC interfaces can be used in many places within an application. At the lowest level, they can get raw data from the physical devices into a SCADA or DCS. The architecture and design makes it possible for an OPC server to allow a client application to access data from many OPC servers. The data can be provided by many different OPC vendors running on different nodes via a single object.

AutomationDirect and Kepware partner to create KEP*Direct* OPC Server

For those of you familiar with OPC servers, you might recognize the name "KEP" in the KEP*Direct* OPC Server name. Kepware Inc., the industry leading provider in OPC server products, has partnered with AUTOMATIONDIRECT to allow us to offer our own tailor-made version of the world famous KEPServerEX. The KEP*Direct* OPC Server offers all the same powerful and easy-to-use features of the KEPServerEX, but only for connectivity to our products. The result is a top quality OPC server technology connecting to best-value PLCs or Ethernet I/O for a combination that can't be beat.

Application connectivity

KEP*Direct* OPC Server supports the following client/server technologies:

- OPC Data Access Version 1.0a
- OPC Data Access Version 2.0
- OPC Data Access Version 3.0
- OPC Unified Architecture v1.0
- OPC Alarm and Events v1.01
- FASTDDE for Wonderware
- SuiteLink for Wonderware
- PDB for GE's iFix
- DDE Format CF_Text
- DDE Format XL_Table
- DDE Format AdvancedDDE

OPC Data Access 1.0a was the original specification the OPC Foundation developed back in 1996. Many of the OPC clients in use today support this original specification. Version 3.0 is the latest version of the OPC DA interface and makes better use of the underlying Microsoft COM technologies. The DDE formats are the standard DDE formats as defined by Microsoft. To provide the broadest range of connectivity, KEP*Direct* OPC Server simultaneously supports all of the client server technologies listed above.

Automation Direct

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

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KEP*Direct* OPC Server

System requirements

KEP*Direct* Servers have been designed to place as little stress on your PC system as possible while providing the level of performance you expect. The following system requirements are recommended:

Minimum system requirements:

- 2.0 GHz Processor
- 1 GB installed RAM
- 180 MB available disk space
- Ethernet Card (required for Ethernet drivers or serial drivers that utilize Ethernet encapsulation)
- Super VGA (800 x 600) or higher resolution video adapter and monitor
- Keyboard and Microsoft mouse or compatible pointing device

Supported operating systems:

- Windows 7 Pro and Ultimate*
- Windows 2000 SP4
- Windows XP* SP2 (strongly recommended for industrial settings)
- Windows Server 2003* SP2 (strongly recommended for industrial settings)
- Vista Business/Ultimate*
- Windows Server 2008* (strongly recommended for industrial settings)

*Includes support for 64 bit operating systems.

Major OPC clients supported

- Rockwell Software's RSView32®
- GE's Cimplicity®
- Iconics' Genesis32®
- Cutler Hammer's PanelMate PC Pro
- Think & Do Live!
- Think & Do v8.0
- Wonderware's InTouch® and OPCLink®
- Intellution's Fix Dynamics® and OPC PowerTool®
- Siemen's WinCC®
- Kepware's OPC QuickClient
- National Instrument's LabVIEW
- National Instrument's Lookout
- Lookout *Direct*

KEP*Direct* OPC Server objects

Channel object

Each protocol or driver used in a KEP*Direct* OPC Server project is referred to as a channel. A channel is a specific communications driver. A KEP*Direct* OPC Server project can consist of many channels, each with unique communications drivers or each with the same communications driver. Each channel name must be unique in a KEP*Direct* OPC Server application. The channel name entered will be part of the OPC browser information.

Device object

Unlike the channel name, device names can be the same from one channel to the next. The device name is a user-defined logical name for the device. The device name and channel name will be part of the OPC browser information as well as a DDE item name. Within an OPC client the combination of channel name and device name would appear as "ChannelName.DeviceName".
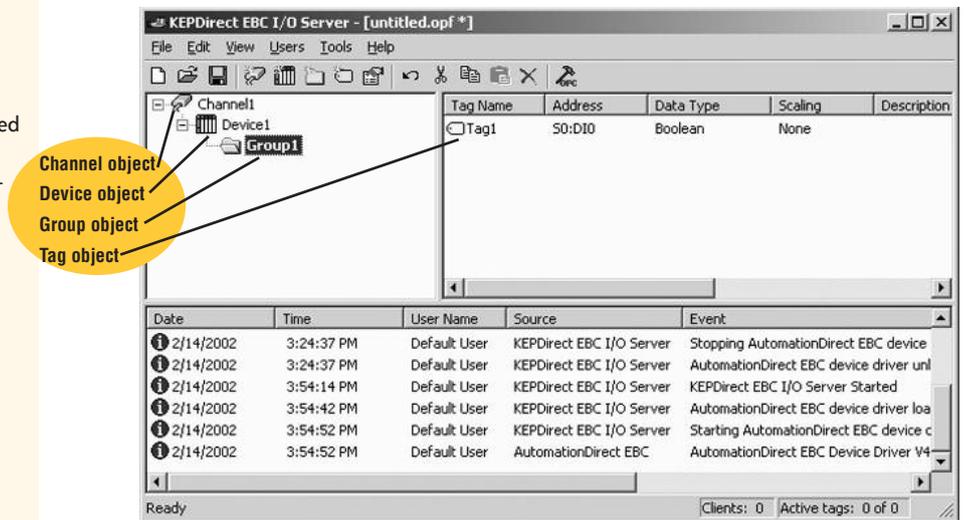
Group object

KEP*Direct* OPC Server allows tag groups to be added to your project. Tag groups allow you to tailor the layout of OPC data in logical groupings that fit the needs of your application. Using tag groups allows multiple sets of identical tags to be added under the same device. This can be very convenient when a single device handles a number of similar machine segments. From an OPC client standpoint, the use of tag grouping allows you to segregate your OPC data into smaller tag lists, which can make finding a specific tag easier when browsing the server.

Tag object

KEP*Direct* Server allows both dynamic tags, (tags entered directly at the OPC client that specify device data) and user-defined tags. User-defined tags have the benefit of allowing the tag to be browsed from an OPC client that supports tag browsing. User-defined tags also support tag scaling. Unlike many of the dialogs you will find in KEP*Direct* OPC Server, the tag properties dialog has a number of features that are driven by icons. The tag name is part of the OPC browse data. Tag names must be unique within a given device branch or tag group branch. If your application is best suited by using blocks of tags with the same names, use tag groups to segregate the tags.

If it's in your cabinet, it's in our catalog!
Over 10,000 In-stock Quality Products

Starting with the enclosure, we carry everything you need to build an electrical control system, right down to the wire and tools. And we have the devices that go in the panel, such as logic controllers, HMI, drives, relays, and motor controls. If you're maintaining existing systems, we've got great prices on MRO parts such as circuit breakers, fuses, motors, pneumatics and pilot devices. In addition to our catalog all our products are available to **order 24/7 at www.automationdirect.com**

Value Pricing

Our everyday prices on industrial control products are well below the list prices of more traditional automation companies because, with our direct business model and focus on high efficiency, AUTOMATIONDIRECT has the **lowest overhead in the industry.** We pass the savings on to you by offering high-quality products at low prices.

FREE Award Winning Support

Almost 99% of AUTOMATIONDIRECT customers responding to surveys say they would recommend us to someone else, and they do! And we've been **voted tops in service by independent magazine surveys nine years running**.

FREE & Fast Shipping*

The majority of our products are stocked for same-day shipping, when you place your order by 6 p.m. EST.

* Same day shipping with approved company credit or credit card.
Free 2-day (transit) shipping for orders over $300; other expedited services extra.
See Web site or catalog Terms and Conditions for all details and exceptions.

PC Control: The Smart Way to a Complete Solution

Why should I use PC control?

PLCs provide a great solution for many applications, but when your application goes beyond straight-forward ladder logic controlling simple I/O, PC control can be the smarter way to go.

When you have a PLC system that includes an HMI with motion control and/or a vision system, you not only spend time developing and debugging each system independently, you also have to spend significant effort integrating the separate controllers. The result is often difficult to support. Even small changes require editing multiple databases and complex debugging. Add coprocessor modules for communications, complex math algorithms or string/array data manipulation and you start to wonder why there isn't an easier way.

Well, there is, and it's called Think & Do PC Control. Think & Do, America's leading PC control software, brings you all the tools you need to easily handle complex applications.

If your application requires:

- HMI as well as control
- Advanced data manipulation (even string arrays) and advanced math functions
- Data exchange with business applications (from spreadsheets to ERP systems)
- One or more third-party PC cards, such as those for motion control or vision systems
- Communication with serial or networked field devices
- Storage or access to large amounts of data
- Large number of PID loops (up to 64)
- Open architecture for C/C++ or VisualBasic

It requires Think & Do PC Control!

Why is Think & Do PC control so much easier?

With Think & Do, your HMI and control share the same database, so there is no duplication. Intuitive flowcharting makes coding the control logic as easy as sketching out the control algorithm. The powerful graphics tools and readily-accessible data tags enable you to create a quality HMI so fast you'll have to experience it to truly believe it. Think & Do includes the math functions and data types found in high-level programming languages, so complex algorithms and data management are a snap. PC architecture allows Think & Do to seamlessly support a variety of specialty motion, vision systems, and field network interface PC cards. The PC and Windows allow Think & Do to provide simple communication links on serial or Ethernet networks. Think & Do simplifies connecting everything from SQL databases to barcode readers with your control application.

If you say PCs can't do control, you haven't tried Think & Do PC control.

Three PC Control Solutions using Think & Do

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

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1

Think & Do 8.0

PC-TD8-USB   <--->
Keyless Development and USB Runtime key; non-keyed environment provides free WinPLC programming.

PC-TD8-WEB4-USB   <--->
Full development package plus four concurrent runtime sessions with USB key; Web viewing capability

ESS-BASIC   <--->
Extended service and support; Basic 1 year

ESS-PREMIUM   <--->
Extended service and support; Premium 1 year

Includes:

- Flowchart logic
- Superior HMI features
- Easy SQL interface
- Web view capable (requires web view version)
- Importing screens
- Integrated serial communication
- Modbus TCP, Modbus RTU and Modbus Plus support
- Integrated motion control
- Integrated vision control
- PID process control (64 loops)
- Powerful debugging tools
- Offline logic testing
- Common database for HMI, logic and motion

Choose Think & Do 8.0 when you need

1. to communicate to an SQL database
2. a superior HMI with animation and advanced graphics

System requirements

Development System

Windows 2000 (SP4), XP (SP2), Vista
Pentium IV compatible processor
256 MB RAM (512 MB or higher recommended),
750 MB available hard disk space
CD-ROM drive
64 MB or higher video adapter
Color monitor (min resolution 800 x 600),
Ethernet adapter

Windows 2000/XP/Vista Runtime Target

Windows 2000 (SP4), XP (SP2), Vista
Pentium IV compatible processor
256 MB RAM (512 MB or higher)
500 MB available hard disk space
CD-ROM drive
64 MB or higher video adapter
Color monitor or flat panel display for HMI min resolution 800x600)
Ethernet adapter

PLC Runtime Target

H2-WINPLC3

2

Completely compatible with original Think&Do Development Software applications

Think & Do Live!

PC-ENT-LIVE   <--->
Development/run-time license

Includes:

- Flowchart logic
- HMI creator
- Reuseable subcharts
- Integrated serial communication
- Integrated motion control
- OPC Client and Server
- Modbus TCP & Modbus RTU Support
- PID process control (64 loops)
- Powerful debugging tools
- Offline logic testing
- Common database for HMI, logic and motion
- Productivity Analysis tools
- WinPLC support

Choose Live! when

1) HMI requirements are moderate
2) no SQL is required
3) projects are created by a single developer

System requirements

Development System

Windows NT/2000/XP-Certified Pentium 133
Windows NT/2000/XP Operating System
Ram Requirements:
Windows NT - 32 MB
Windows 2000- 64 MB
Windows XP - 128 MB
450 MB available hard disk space
CD-ROM drive
Color monitor (min resolution 800 x 600)

Windows Runtime Target

Windows NT/2000/XP-Certified Pentium 300 (or higher)
Windows NT/2000/XP Operating System
128 MB RAM
300 MB available hard disk space
CD-ROM drive (optional)
Color monitor or flat-panel display for HMI (min resolution 640 x 480)
I/O scanner or network card

PLC Runtime Target

H2-WINPLC3

3

The WinPLC is our lowest cost PC control solution

The WinPLC, a hybrid PC/PLC solution

H2-WPLC3-EN   <--->
CPU module for Think & Do, 8 MB ROM/8 MB RAM

The WinPLC is a truly unique hybrid solution providing Think & Do PC control programming benefits on a PLC-style device. Develop applications with Think & Do and download them to the WinPLC.

Use a WinPLC when you need:
1. The advantages of PC control: complex math, data manipulation and connectivity
2. A PLC's rugged industrial form, non-volatile memory and standard PLC I/O

Or when:
1. A standard OI will suffice for your HMI
2. You don't need a PC

System requirements

Think & Do Live! for WinPLC Programming (PC-TD8-USB)

The non-keyed development environment for Think & Do 8.0 provides FREE programming for the WinPLC. Includes flowchart logic, reusable subcharts, PID functions, serial drivers, Modbus TCP/IP and a free OPC/DDE server.

Development System

Windows NT/2000/XP-Certified Pentium 133
Windows NT/2000/XP Operating System
RAM Requirements:
Windows NT - 32 MB
Windows 2000- 64 MB
Windows XP - 128 MB
450 MB available hard disk space
CD-ROM drive
Color monitor (min resolution 800 x 600)

PLC Runtime Target

H2-WINPLC3

Note: PC Runtime Target not supported

Think & Do 8.0 Overview

Think & Do™ Version 8.0 (PC-TD8-USB) is an integrated control environment that lets you do more with a given PC platform. It supports development, deployment and operation of high-value automated control systems for material handling and manufacturing. Think & Do 8.0 provides an intuitive, open-architecture environment that readily integrates with hardware and software components from virtually all major suppliers.

Projects created with Think & Do 8.0 integrate seamlessly with enterprise information systems to provide valuable data about system operation. Major components of Think & Do 8.0 are:

- ProjectCenter: Provides ready access to all project elements and the fully integrated tagname database using the Data Item Explorer.
- FlowView: For creating control logic.
- ScreenView: For creating HMI screens.
- I/O View: For configuring project I/O.
- AppTracker: For fast, graphical debugging.
- Runtime Engine: Provides a robust, deterministic project execution environment.

Think & Do 8.0 makes it easy to target your project to the Microsoft Windows platform that best suits your needs Whether you create a project for a Certified PC or CE, scaling for a different platform requires only minor adjustment. There are four USB key versions available, so selecting the product that best meets your needs is easy. There are two USB key development packages, one with and one without web viewing capabilities.

Extended Software Service and Support (ESS) Products

We offer two extended support products, a basic package and a premium package. The *basic* ESS package, **ESS-BASIC** (<--->), is a one-year subscription and includes:

- 8 AM to 5 PM EST telephone support directly from Phoenix Contact
- E-mail support
- USB-Parallel key swaps
- Defective or damaged key replacements
- Software maintenance updates.

The premium ESS package, **ESS-PREMIUM** (<--->), is also a one-year subscription. It contains everything in the basic package, plus:

- Webex training seminars
- A 50% discount on training seats
- Major software platform updates
- Upgrade from Think & Do Live! version 5.x to Think & Do 8.0 plus hardware key
- Or an upgrade from Think & Do Studio version 7.x via a hardware key field upgrade or replacement.

Note: ESS products cannot be purchased online. The order must be phoned in (800-633-0405) and a valid software serial number is required.

Conversion from Think & Do Studio and Live!

Studio: Flowcharts developed in Studio can be converted to Think & Do 8.0, but HMI screens cannot be converted.

Live!: Flowcharts and HMI screens developed in Live! cannot be converted to Think & Do 8.0.

Think & Do 8.0
PC-TD8-USB   **<--->**
Includes keyless development and USB runtime key. Use to develop or modify a Think & Do v8 project on a PC. Non-keyed environment provides free WinPLC programming.

PC-TD8-WEB4-USB   **<--->**
Full development package plus four concurrent runtime sessions with USB key; Web viewing capability

Demo Mode

To see if Think & Do 8.0 is right for you, you can install and use it for up to 40 hours within a 30-day time period at no cost.

System requirements

Development System
Windows 2000 (SP4), XP (SP2), Vista
Pentium IV compatible processor
256 MB RAM (512 MB or higher recommended),
750 MB available hard disk space
CD-ROM drive
64 MB or higher video adapter
Color monitor (min resolution 800x600),
Ethernet adapter

Windows 2000/XP/Vista Runtime Target
Windows 2000 (SP4), XP (SP2), Vista
Pentium IV compatible processor
256 MB RAM (512 MB or higher)
500 MB available hard disk space
CD-ROM drive
64 MB or higher video adapter
Color monitor or flat panel display for HMI min resolution 800x600)
Ethernet adapter

PLC Runtime Target

H2-WPLC3-EN

Training

Phoenix Contact offers training courses led by certified Phoenix Contact Solution Providers at their headquarters in Ann Arbor, MI.

Check   www.phoenixcon.com/software for training dates. Training is half price for subscribers to Premium Extended Service and Support, ESS-PREMIUM.

Think & Do 8.0 Overview

Features

ProjectCenter for creating your project

ProjectCenter is the starting point for developing your project and provides access to all Think & Do development tools, such as menus, project information and runtime settings. It provides ready access to all project elements and the fully integrated tagname database.
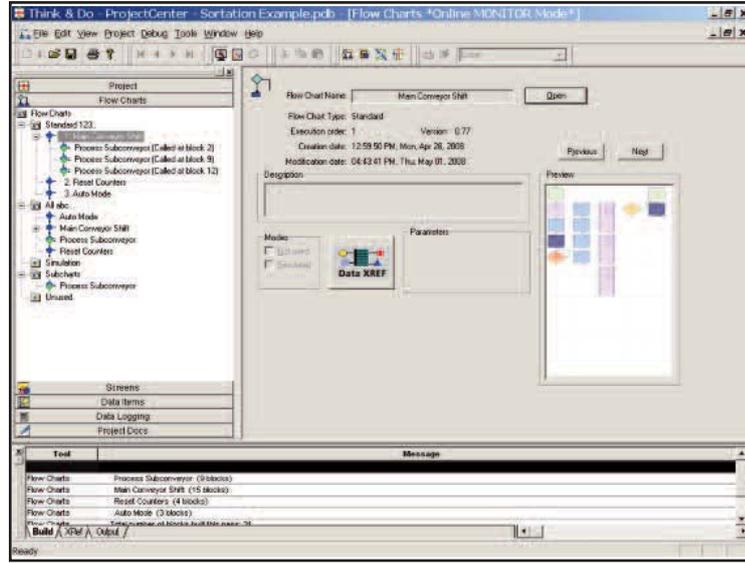
FlowView for creating control logic in easy-to-use and read control flowcharts

Think & Do uses flow chart control programs and FlowView is where you develop control flowcharts. Menus provide access to all commands in FlowView, as well as online help.
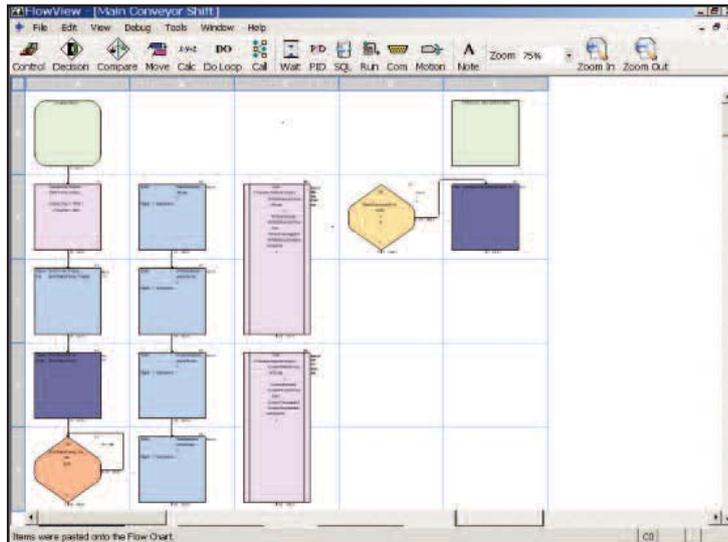
ScreenView for creating and editing HMI screens

The most dramatic improvement in this revision of Think & Do is the HMI screen tool. ScreenView appears in an independent window that provides a complete HMI screen development environment. The graphical capabilities and functionality in v8.0 far surpass any previous screen tools we have employed for this PC-based control environment.

Automation Direct

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

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Terminal Blocks & Wiring

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Think & Do 8.0 Overview

I/OView for configuring your project I/O

Use IOView to easily:

- Specify inputs, outputs, and data items
- Configure I/O
- Add I/O drivers and devices
- Map I/O
- Scan and monitor I/O
- Use a watchdog timer
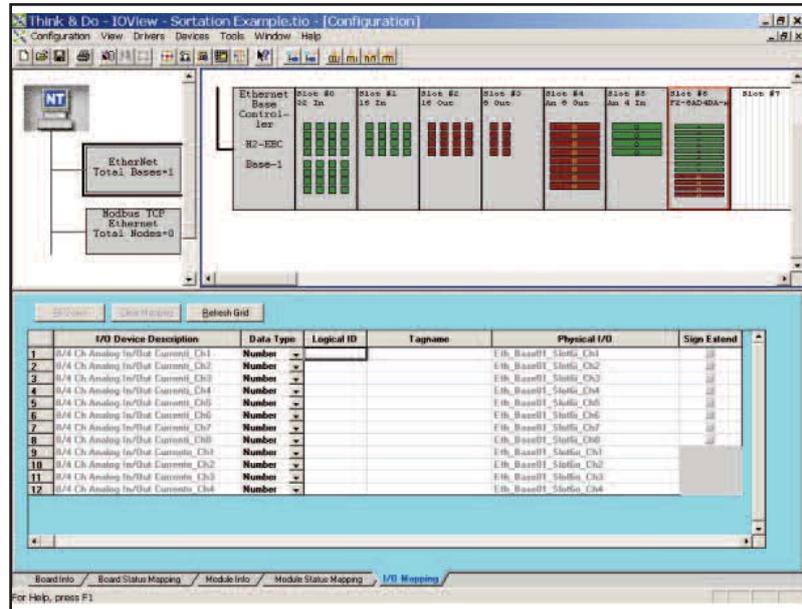
AppTracker provides a fast, graphical debugging tool

AppTracker is a stand-alone application. It can run even if the development tools in ProjectCenter are not running and can help identify problems easily during development.

Think & Do Live! Overview

Think & Do Live! (PC-ENT-LIVE) is a full-featured control and Human Machine Interface (HMI) development tool. A common tag database and built-in HMI make Live! a great low cost PC-based control solution. Live! contains these features:

Flowcharts for control

- Easy- to-use and easy-to-read flowcharts for control let you program like your machine or process operates, rather than one device at a time
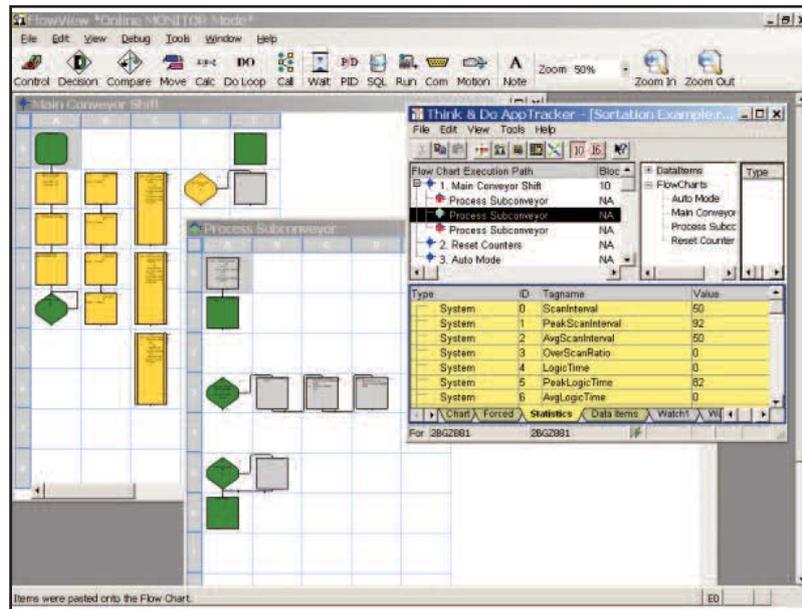- Subcharts (subroutine flowcharts) let you develop your logic once and reuse it on multiple projects
- Online changes are supported with graphical debugging to simplify troubleshooting your application
- Develop for Windows 2000, Windows XP and Windows CE platforms in the same environment

Built-in HMI with same database

- Full screen editor with over 2,000 bitmapped graphic symbols, such as buttons, lights, pumps, motors, conveyors, and tanks
- Single database for HMI and control functions means there are no communication errors
- Text, numeric display, messaging, and trend charts
- Import any bit map or metafile format graphics to display CAD drawings, company logos, or digital photographs
- Function key and touch screen support to give you flexibility in design

Communicate to business systems

- OPC (OLE for process control) support allows easy connectivity to other standard software applications at host and ERP levels
- DCOM/COM for communications to other programs or for network communications
- OCX allows direct connections to Visual Basic® and C++ user programs
- Easy serial communication and string manipulation

For control, HMI, motion, PID, and serial communications

Chances are you think your application out in flowcharts, so why not use them to program the control logic? Think & Do Live! is completely compatible with original Think & Do Development Software applications.

Choose Live! when:

- You do not currently use or do not plan to use Windows Vista Operating System
- HMI requirements are moderate
- Hardware costs must be kept low
- SQL communications are not required
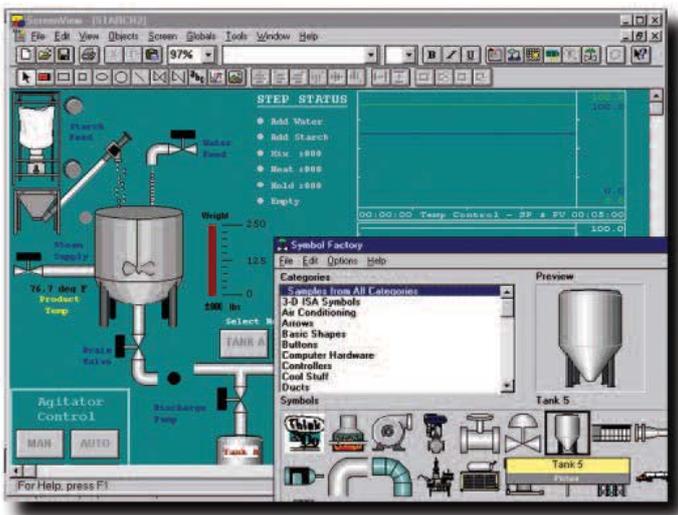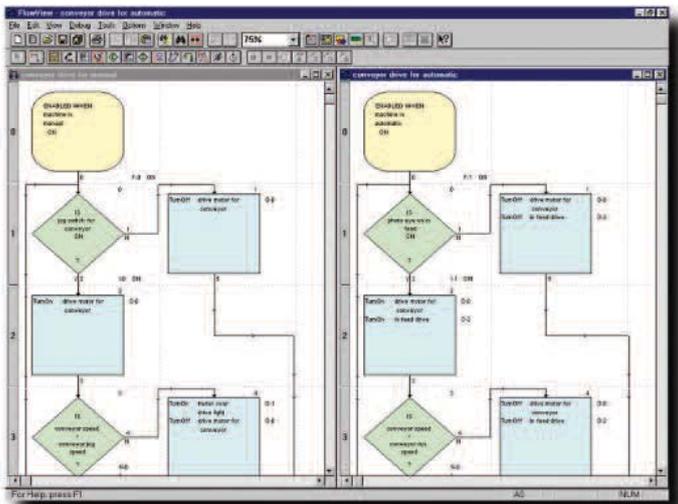
System requirements

Development System
Windows NT/2000/XP-Certified Pentium 133
Windows NT/2000/XP Operating System

RAM Requirements:
Windows NT - 32 MB
Windows 2000- 64 MB
Windows XP - 128 MB
450 MB available hard disk space
CD-ROM drive
Color monitor (min resolution 800 x 600)

Windows Runtime System
Windows NT/2000/XP-Certified Pentium 300 (or higher)
Windows NT/2000/XP Operating System
128 MB RAM
300 MB available hard disk space
CD-ROM drive (optional)
Color monitor or flat-panel display for HMI (min resolution 640 x 480)
I/O scanner or network card

PLC Runtime Target
H2-WINPLC3

NOT Vista operating system compatible

Automation Direct

Company Information

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C-more & other HMI

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Think & Do Live! Overview

Lots of features for a little price

Think & Do Live! Development & Runtime Licenses
PC-ENT-LIVE   **<--->**
Includes one Live! development and runtime license.
Use to develop or modify a Think & Do Live! project on a PC .

Think & Do Live! Extended Service Support
ESS-ENT-LIVE   **<--->**
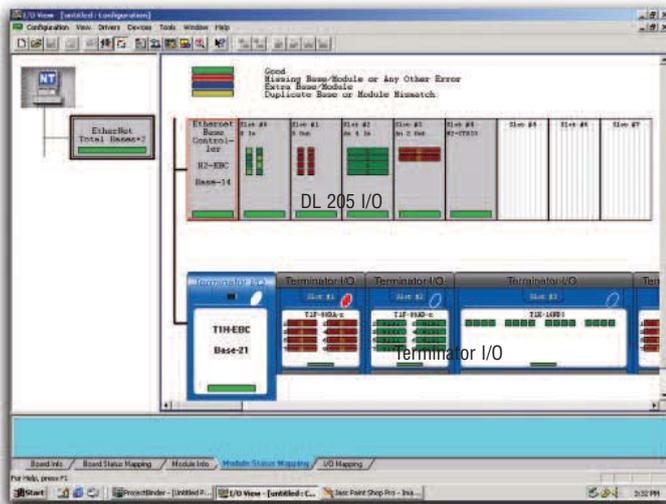One-year extended service support subscription for
Think & Do Live! , including telephone support, email support,
software maintenance updates and discounts on training seminars.

Easy connection to I/O and serial devices

- All I/O drivers are included, with virtually no limit on I/O tags including Ethernet, Profibus, DeviceNet and SDS
- Built-in serial communication block within the flowchart environment allows easy communication to barcode readers, drives, and other smart devices
- All motion drivers are included for both serial and PC-card based motion
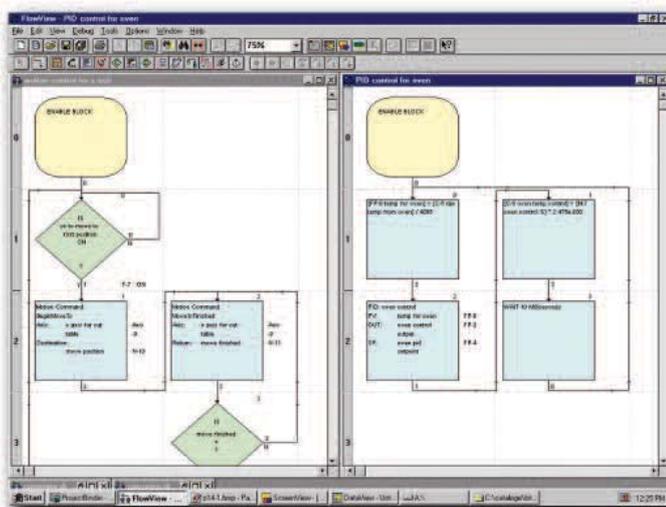
Integrated motion and PID control with easy-to-use flowchart blocks

- Common flowchart language for motion control independent of the motion card you choose
- All motion parameters accessible to flowcharts and screens
- Several motion drivers supported; check the Phoenix Contact Web site for the latest list
- Easy to synchronize motion and control with your flowchart logic
- 64 full function PID loops
- Advanced PID functions like cascaded loops, bumpless transfer, anti-windup and wildflow variables allow you to perform complex process control applications
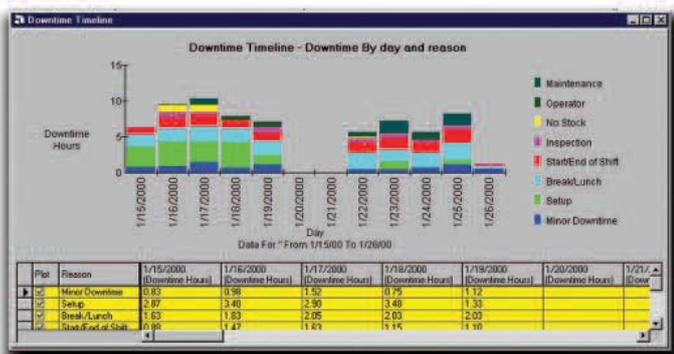
Productivity analysis tools

- Downtime analysis — monitor machine downtime by reason codes to identify production bottlenecks
- Cycletime analysis — View machine cycle time by hour, shift or operator to enable you to increase machine and production yield
- Capacity analysis — compare production yield versus maximum capacity to determine maintenance schedules, identify supply problems, or to justify new equipment purchases

Also includes

Powerful debugging and offline logic testing tools

Check out
www.phoenixcon.com/software for full details

PC Control with Field I/O

Think & Do, with your choice of I/O, is a powerful, flexible solution for all your automation needs. The example below uses Ethernet, but Think & Do PC Control supports DeviceNet, Profibus, and other popular fieldbus networks as well.

Business System

Uplink to Office LAN

Control PCs using separate Ethernet ports to isolate the control networks from the business LAN(s)

Ethernet link to production databases

Data tags from other PCs are shared over LAN for HMI and control

Main factory floor PC coordinates production, manages product database, and controls material handling systems

Dedicated I/O LAN

Terminator I/O distributes small groups of I/O at control points throughout the process

Ethernet Base Controller's [TIH-EBC(100)] on-board serial port provides a link to label printer/applicator or another serial device.

Fail-safe mode choices:
1) All I/O off
2) Timer-based I/O hold
3) Preset pattern
(For all distributed I/O mastered from a PC.)

DL205 I/O on Ethernet supports a wide range of I/O, including the H2-CTRIO counter module

Think & Do Live! controls automated grinding machine. Local HMI with touchscreen replaces pushbuttons

Third-party PC motion card controlling three-axis servo system for grinding heads.

Industrial modem connection supplies machine support data to OEM

Third-party PC card interface to Ethernet vision inspection system

SE-SW8U Stride industrial Ethernet switch

GPIB/IEEE488 to legacy Laser Surface Analyzer

Think & Do Live! controls application of specialty surfaces in oven using complex flow calculations. Also performs visual inspection of finished product

All industrial hardware shown is available in this catalog

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

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Product Index

Part # Index

PC Control on a WinPLC

The WinPLC has open PC functionality and maintains what you love about PLCs, including the PLC package and price.

The WinPLC is a product that brings the best of the PC control and the PLC worlds to a common platform. PLCs control more automation than any other form of controller. However, it often isn't enough just to control I/O for today's business-aware applications. From the proprietary operating system and ladder logic programming to the hardware design, PLCs were not designed for handling string or array data, complex math, or network collaboration with other software applications and intelligent devices. For success with these applications, use the WinPLC.

The WinPLC module fits into the CPU slot of the popular DL205 series PLC bases for fast, convenient control of DL205 I/O modules. Programs are downloaded on the WinPLC just like a PLC. However, the WinPLC uses Windows CE, a real time operating system, with the advantages of PC software such as OPC, ActiveX® and other Microsoft communication tools. The WinPLC offers both deterministic control and PC connectivity. Control, data management, communication and integration with business systems are easy with the WinPLCs advanced software development tools.

Develop projects for the WinPLC with Think & Do 8.0 (non-keyed environment provides free WinPLC programming) or Think & Do Live!, which includes flowchart logic, reusable subcharts, PID functions, serial drivers, Modbus TCP and a free OPC/DDE server.

Or, for qualified OEMs or software developers, the WinPLC comes in a CE-only version *(available from Host Engineering directly)* for VB and C++ programmers to develop their own control code. If you are interested in the CE-only version, visit **www.hosteng.com** for details.

WinPLC features

- Fits into DL205 CPU slot
- Backplane communications to DL205 I/O
- 100 MHz CPU
- 8 MB ROM/8 MB RAM
- Microsoft® Windows® CE operating system
- 10 Mbps Ethernet port and RS232 serial port

Best of the PC world

- Easily handles complex math algorithms and string or array data
- Easy serial communications
- Built-in Ethernet port
- Standard Windows (Win CE)
- Seamless integration with HMI, SCADA and Enterprise systems
- Advanced software development tools

  * The WinPLC does not support Think & Do PC Control Software's HMI graphics, SQL communications, productivity analysis, and some motion control features.

Best of the PLC world

- Direct backplane access to I/O
- Standard micro PLC form factor
- Diskless operation
- Non-volatile program and data memories
- Logic control independent of HMI
- Low cost

It's more than a PLC, it's a WinPLC !

WinPLC CPU

For Think & Do
8 MB ROM/ 8 MB RAM

H2-WPLC3-EN (100 MHz)....<--->

WINPLC Starter Kit

WinPLC Starter Kit for building a PC-based control system with the WinPLC. Includes a DL205 4-slot base with power supply, H2-WPLC3-EN WinPLC, 10 ft. Ethernet connecting cable, PC Ethernet Adapter card, DL205 8-point input simulator module, and DL205 8-point relay output module. Develop flowchart programs for the WinPLC with the FREE PC-TD8-USB Think & Do Demo download, which operates as a fully functioning software with no restrictions or timed limitations when targeting the WinPLC.

NOTE: WinPLC Starter Kit orders are limited to one per customer.

PC-WPLC-START ....<--->

Serial Communications via EBC or WinPLC

Attributes	Value
Serial Port	COM2
Device Name	WinPLC_Slot0_PortA
Serial Port Settings	
Access Type	Generic Serial Communication
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1
Flow Control	None
Receive Buffer Size	2048
Transmit Buffer Size	2048
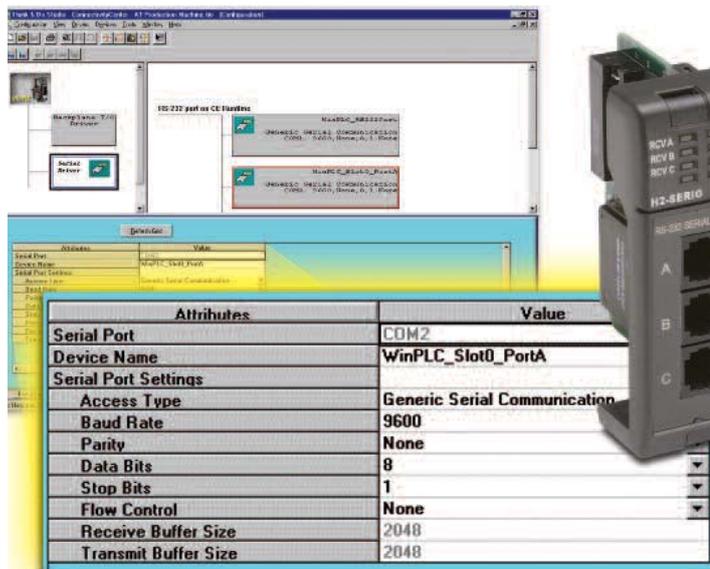
H2-SERIO

H2-SERIO-4

Easy point and click access to set communication parameters for each port individually

H2-SERIO   <--->
H2-SERIO-4 <--->

H2-SERIO / H2-SERIO-4

In addition to the built-in serial port on the WinPLC or EBC, you can also add as many as nine additional serial ports for Think & Do applications. Install up to three H2-SERIO(-4) modules into a WinPLC base or up to eight modules into an H2-EBC base (limits are power budget and number of slots in the base). These modules have "PC-like" serial ports to communicate to multiple serial devices, such as barcode scanners, scales, printers and modems.

The H2-SERIO has three RS-232C ports, while the H2-SERIO-4 has two RS-232C ports and one RS-422/485 terminal.

All Think & Do products include advanced string and array functions that make manipulating serial data a snap. Both Think & Do and Think & Do Live! support easy point-&-click access to set baud rate, parity, data bits, and stop bits for each port. Think & Do allows each port to be designated as a Modbus slave or a generic serial device. Each port on the H2-SERIO(-4) module is capable of full hardware handshaking.

See the DL205 PLC section for H2-SERIO and H2-SERIO-4 specifications and wiring information.

Note: While the H2-SERIO(-4) will support virtually any serial device, processing large amounts of serial data will increase system response time. This is important to consider when using multiple H2-SERIO(-4) modules, especially in a WinPLC local base that also includes an H2-ERM, H2-CTRIO or other specialty modules.

Due to the large amount of data inherent with serial devices, the H2-SERIO(-4) module is not supported across an H2-ERM - H2-EBC link. The H2-SERIO(-4) module is only supported in a WinPLC local base and in H2-EBC/H2-EBC100 bases connected to a PC system master.

Ethernet I/O from a WinPLC Base

H2-ERM   <--->
H2-ERM-F <--->

H2-ERM(-F)

The Ethernet Remote Master H2-ERM (-F) allows a WinPLC solution to expand beyond a single I/O base, over a high speed Ethernet link. Add an H2-ERM to a WinPLC local base and connect it with one EBC (Ethernet Base Controller) to control larger amounts of I/O or to distribute your I/O for more convenient wiring. Both Think & Do Studio and Think & Do Live! support the H2-ERM module.

The H2-ERM connects to your control network using a Category 5 UTP cable for cable runs up to 100 meters. Use repeaters to extend distances.

Our fiber optic version uses industry standard 62.5/125 ST-style fiber optic cables and can be run up to 2,000 meters.

Specifications	H2-ERM	H2-ERM-F
Communications	10BaseT Ethernet	10BaseFL Ethernet
Data Transfer Rate	10Mbps	
Link Distance	100 meters (328 ft.)	2K meters (6560 ft.)
Ethernet Port	RJ45	ST-style fiber optic
Ethernet Protocols	TCP/IP, IPX	
Power Consumption	530mA @ 5VDC	670mA @ 5VDC
Usage	One ERM per WinPLC system	

The WinPLC with the H2–ERM can be configured in complex systems with any of several specialty modules. Therefore, to ensure reliable performance on any system, default support for the H2–ERM product is one H2–ERM with one H2–EBC.

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C-more & other HMI

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Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

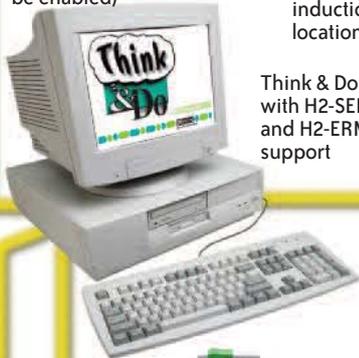Enclosures

Tools

Pneumatics

Appendix

Product Index

Part # Index

A PC with WinPLC System

A great material handling solution

Data flows between control system and order processing system

Induction station

WinPLC controls conveyors from warehouse pick area to induction area. The WinPLC with Ethernet Remote Master (H2-ERM) and 3-port serial module (H2-SERIO(-4)) has serial interfaces to a tote scanner and operator interfaces.

DL205 remote I/O base with Counter module (H2-CTRIO) for counting and pulse output

Multi-port Ethernet card(s) save the cost of a managed switch (IP- forwarding must be enabled)

PC controls sortation machine and has HMI and motion control. Tracks packages from induction to diverting location

Terminator I/O on Ethernet for fastest response

Think & Do Live! with H2-SERIO(-4) and H2-ERM support

Serial link to tote scanner

Touch panel

Terminator I/O combines I/O modules with a terminal block base for very compact I/O enclosures along sortation system

Data tag links between WinPLC and PC systems

SE-SW8U Stride industrial Ethernet switch

Touch panel

WinPLC used here for local logic. Don't need local logic? Use an H2-EBC for the same I/O and serial functionality with Live! or Studio V8.0

Packing stations

WinPLC with local I/O for indicator lights, packing station sensors and interlocks to take-away conveyors. H2-SERIO(-4) 3-port serial modules provide links to packing station devices. Operators pack and weigh the packages, and apply and scan each label before sending packages to the shipping area.

Add packaging station modules as required

Up to 10 serial ports per WinPLC base

Note: Large volumes of serial data will impact WinPLC I/O scan time.

I/O Selection Guide for PC Control

Our PC-based control architecture allows you to choose I/O from our most complete and flexible I/O families. AUTOMATIONDIRECT I/O also supports the most popular control networks, such as Ethernet, Profibus and DeviceNet. Check out this chart to see most of the available options. Refer to I/O specifications in the PLC or Field I/O section for a complete list.

DL205 Discrete Input Modules

D2-08ND3	8-pt 12-24VDC sink/source	<--->
D2-16ND3-2	16-pt 24VDC sink/source	<--->
D2-32ND3	32-pt 24VDC	<--->
D2-32ND3-2	32-pt 5-15VDC	<--->
D2-08NA-1	8-pt 110VAC	<--->
D2-08NA-2	8-pt 170-265VAC, 2 commons	<--->
D2-16NA	16-pt 110VAC	<--->

DL205 Discrete Output Modules

D2-04TD1	4-pt 12-24VDC sink	<--->
D2-08TD1	8-pt 12-24VDC sink	<--->
D2-08TD2	8-pt 12-24VDC source	<--->
D2-16TD1-2	16-pt 12-24VDC sink, 0.1A/pt 1.6A/mod	<--->
D2-16TD2-2	16-pt 12-24VDC source, 0.1A/pt 1.6A/mod	<--->
D2-32TD1	32-pt 24VDC sinking	<--->
D2-32TD2	32-pt 24VDC sourcing	<--->
D2-08TA	8-pt 18-220VAC	<--->
D2-12TA	12-pt 18-110VAC	<--->
D2-04TRS	4-pt isolated relay 5-30VDC or 5-250VAC	<--->
D2-08TR	8-pt relay, 5-30VDC or 5-240VAC	<--->
F2-08TR	8-pt relay, 10A/com, 5-30VDC or 5-240VAC	<--->
F2-08TRS	8-pt relay 12-28VDC, or 12-250VAC	<--->
D2-12TR	12-pt relay, 5-30VDC or 5-250VAC	<--->

DL205 Combination Discrete Modules

D2-08CDR	Combo 4-pt 24VDC in and, 4-pt relay out	<--->

DL205 Analog Modules

F2-04AD-1	4-ch input, 4-20mA 12 bit res	<--->
F2-04AD-2	4-ch input, voltage 12 bit res	<--->
F2-08AD-1	8-ch input 4-20mA, 12-bit res	<--->
F2-08AD-2	8-ch input voltage, 12-bit res	<--->
F2-02DA-1	2-ch output 4-20mA, 12-bit res	<--->
F2-02DA-2	2-ch output voltage, 12-bit res	<--->
F2-02DA-1L	2-ch 4.20 mA out 12-bit, ext 12VDC pwr	<--->
F2-02DA-2L	2-ch voltage out 12-bit, ext 12VDC pwr	<--->
F2-02DAS-1	Isolated, 2-ch 4-20mA 16-bit out	<--->
F2-02DAS-2	Isolated, 2-ch voltage 16-bit out	<--->
F2-08DA-1	8-ch, 4-20mA, 12-bit out	<--->
F2-08DA-2	8-ch, 0-5VDC or 0-10V, DC, 12-bit out	<--->
F2-4AD2DA	4-ch in /2-ch out., 4-20mA 12-bit res.	<--->
F2-8AD4DA-1	8-ch in/4-ch out, current, 16-bit	<--->
F2-8AD4DA-2	8-ch in/4-ch out, voltage, 16-bit	<--->
F2-04RTD	4-channel RTD, 0.1 DEG C res	<--->
F2-04THM	4 ch thermocouple or, 16-bit volt. input	<--->

DL205 Specialty Modules

H2-CTRIO	DL205 high speed counter with pulse out	<--->
F2-08SIM	8-pt input simulator	<--->
H2-SERIO(-4)	3-port serial for Win PLC	<--->

DL405 Discrete Input Modules

D4-08ND3S	8-pt 12-24VDC source	<--->
D4-16ND2	16-pt 12-24VDC source	<--->
D4-16ND2F	16-pt 12-24VDC input, fast response	<--->
D4-32ND3-1	32-pt 24VDC sink/source	<--->
D4-32ND3-2	32-pt 5-12VDC sink/source	<--->
D4-64ND2	64-pt 20-28VDC source	<--->
D4-08NA	8-pt 110-220VAC	<--->
D4-16NA	16-pt 110VAC	<--->
D4-16NA-1	16-pt 220VAC	<--->
D4-16NE3	16-pt 12-24VAC/VDC sink/source	<--->
F4-08NE3S	8-pt 90-150VAC/DC sink/source isolated	<--->

DL405 Discrete Output Modules

D4-08TD1	8-pt 12-24VDC sink	<--->
F4-08TD1S	8-pt 24-150VDC sink/source isolated out	<--->
D4-16TD1	16-pt 5-24VDC sink	<--->
D4-16TD2	16-pt 12-24VDC source	<--->
D4-32TD1	32-pt 5-24VDC, sink	<--->
D4-32TD1-1	32-pt 5-15VDC, sink	<--->
D4-32TD2	32-pt 12-24VDC, source	<--->
D4-64TD1	64-pt 5-24VDC sink	<--->
D4-08TA	8-pt 18-220VAC	<--->
D4-16TA	16-pt 18-220VAC	<--->
D4-08TR	8-pt relay 5-30VDC or, 5-250VAC	<--->
F4-08TRS-1	8-pt relay 12-30VDC or, 12-250VAC	<--->
F4-08TRS-2	8-pt relay 12-30VDC or, 12-250VAC	<--->
D4-16TR	16-pt relay 5-30VDC or, 5-250VAC	<--->

Network Bus Interfaces and I/O Bases

DL205 and DL405 bases, Terminator I/O power supplies and terminal bases, Bus adapter modules for PC control: DL205 (Ethernet, Profibus, DeviceNet, SDS); DL405 (Ethernet); Terminator I/O (Ethernet, Profibus, DeviceNet)

DL405 Analog Modules

F4-04AD	4-ch analog input voltage/current	<--->
F4-04ADS	4-ch isolated analog voltage/current	<--->
F4-08AD	8-ch analog input, voltage/current	<--->
F4-16AD-1	16-ch analog input, current, 12-bit	<--->
F4-16AD-2	16-ch analog input, voltage, 12-bit	<--->
F4-04DA-1	4-ch analog output, current, 12-bit	<--->
F4-04DA-2	4-ch analog output, voltage, 12-bit	<--->
F4-04DAS-1	4-ch isolated, 16-bit analog out, 4-20mA	<--->
F4-04DAS-2	4-ch isolated 16-bit analog output, voltage	<--->
F4-08DA-1	8-ch analog output, current	<--->
F4-08DA-2	8-ch 0-5VDC or 0-10VDC, 12-bit analog out	<--->
F4-16DA-1	16-ch analog output, current	<--->
F4-16DA-2	16-ch 0-5VDC or 0-10V DC 12-bit analog out	<--->

DL405 Temperature Modules

F4-08RTD	8-ch RTD	<--->
F4-08THM	8-ch thermo F/type, (J,E,K,R,S,T,B,N,C)	<--->

DL405 Specialty Modules

D4-HSC	DL405 high speed counter	<--->
D4-16SIM	8/16 pt input simulator	<--->

Terminator I/O Discrete Input Modules

T1K-08ND3	8-pt 12-24VDC sink/source	<--->
T1K-16ND3	16-pt 12-24VDC sink/source	<--->
T1K-08NA-1	8-pt 110VAC	<--->
T1K-16NA-1	16-pt 110VAC	<--->

Terminator I/O Discrete Output Modules

T1K-08TD1	8-pt 12-24VDC sink	<--->
T1K-08TD2-1	8-pt 12-24VDC source	<--->
T1H-08TDS	8-pt 12-24VDS isoated sink/source	<--->
T1K-16TD1	16-pt 12-24VDC sink	<--->
T1K-16TD2-1	16-pt 12-24VDC source	<--->
T1K-08TA	8-pt 110-240VAC	<--->
T1K-08TAS	8-pt 110-240VAC isolated commons	<--->
T1K-16TA	16-pt 110-240VAC	<--->
T1K-08TR	8-pt relay 5-30VDC or 5-240VAC	<--->
T1K-16TR	16-pt relay 5-30VDC or 5-240VAC	<--->
T1K-08TRS	8-pt isolated relay 5-30VDC or 5-240VAC	<--->

Terminator I/O Analog Modules

T1F-08AD-1	8-ch analog input 4-20mA 14-bit res	<--->
T1F-08AD-2	8-ch analog input voltage 14-bit res	<--->
T1F-08DA-1	8-ch analog output 4-20mA 12-bit res	<--->
T1F-08DA-2	8-ch analog output voltage 12-bit res	<--->
T1F-16AD-1	16-ch analog input 4-20mA 14-bit res	<--->
T1F-16AD-2	16-ch analog input voltage 14-bit res	<--->
T1F-16DA-1	16-ch analog output 4-20mA 12-bit res	<--->
T1F-16DA-2	16-ch analog output voltage 12-bit res	<--->
T1F-14THM	14-ch thermocouple 16-bit res	<--->
T1F-8AD4DA-1	I/O 8-ch analog input 4-ch analog output, current	<--->
T1F-8AD4DA-2	I/O 8-ch analog input 4-ch analog output, voltage	<--->

Terminator I/O Specialty Modules

T1H-CTRIO	High-speed counter with pulse out	<--->

Note: All networked I/O has fail-safe mode choices 1. All I/O off 2. Leave I/O in last state 3. Fail-safe pattern

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