

Direct^{LOGIC} Programmable Logic Controllers (PLC)



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DirectSOFT⁶



DirectLOGIC Programmable Controller Overview

DirectLOGIC Programmable Controller Overview



See DS section

DL05: Offers cost-effective features with an expansion slot

The DL05 series is a fixed I/O PLC with eight inputs and six outputs with one option card slot, and features you won't find in most bricks — six I/O combinations of AC, DC and relay I/O, and advanced programming functions such as PID.

- Eight inputs and six outputs
- 2 K program memory
- 4 K data memory
- Two built-in communication ports
- Over 250 instructions, including four PID loops
- Removable terminal block
- 12/24 VDC powered versions
- Discrete and analog I/O modules
- Thermocouple and RTD modules
- Ethernet and serial communications modules
- 1-channel high-speed input/pulse output module
- Memory cartridge/real-time clock module
- DeviceNet™ slave modules
- Basic CoProcessor module

DL205: Micro-modular PLC with a wide range of I/O and communications modules

If your application requires the flexibility of a modular system, a DL205 PLC is a low cost, yet extremely versatile solution.



See D2 section

- CPU with 30.4K memory and up to 16,384 I/O
- Four base sizes available
- 16 built-in PID loops
- AC/DC input/output modules
- Up to 10 A relay outputs
- 12-bit and 16-bit analog I/O modules
- Thermocouple and RTD input modules
- Ethernet and serial communications modules
- Ethernet and serial remote I/O
- High-speed counter/pulse output modules
- Basic CoProcessor module
- Ethernet and DeviceNet slave controller modules
- Triple port serial module



See DS section

DL06: Mighty micro PLC with 36 I/O and four expansion slots

The DL06 series combines its fixed I/O of 20 inputs and 16 outputs with four option card slots for expansion all in the same package. With the DL06, you can use the same PLC panel layout for all applications from 36 to 100 I/O.

- 20 inputs and 16 outputs
- 7.5 K program memory
- 7.3 K data memory
- Two built-in communication ports - one RS232 and one RS232/422/485 port
- Over 275 instructions, including eight PID loops and ASCII
- Removable terminal blocks
- Built-in 300 mA 24 VDC auxiliary power supply
- 12/24 VDC powered versions
- Built-in real-time clock/calendar
- Discrete and analog I/O modules
- Thermocouple and RTD modules
- Ethernet and serial communications modules
- High speed input/pulse output module
- DeviceNet™ slave modules
- Basic CoProcessor module
- Optional plug-in LCD display

DL405: Specialty modules for complex applications

The DL405 PLC product line has a wide choice of specialty I/O modules, including high-speed counting, temperature controller, and magnetic pulse input.



See D4 section

- Two CPUs, up to 46.8K memory and 16,384 I/O
- Three base sizes with built-in power supply
- 16 built-in PID loops
- AC/DC input/output modules
- 10 A relay outputs
- 12-bit and 16-bit analog I/O modules
- Thermocouple and RTD input modules
- Ethernet and serial communications modules
- Ethernet and serial remote I/O master and slave modules

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

DirectSOFT6 programs the entire DirectLOGIC family

PC-DSOFT6 is our *DirectLOGIC* 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 *DirectLOGIC* PLC families simultaneously, including all DL05s, DL06s, DL105s (retired), DL205 CPUs, DL305 CPUs (retired), DL405 CPUs, and most of their JTEKT cousins. The software supports a wide array of on-line/off-line programming and documentation features, as well as IBox instructions.

Packages include:

- PC-DS100/version 6 (FREE): **DirectSOFT100** programming package; programs up to 100 words in any *DirectLOGIC* CPU.
- PC-DSOFT6 is the full programming package for all *DirectLOGIC* PLCs with no programming limitations, at one low price **DirectSOFT Windows full-featured programming and documentation software, USB drive or download. For use with all DirectLOGIC PLCs.**
- PC-R60-U upgrade to Version 6 with complete *DirectLOGIC* CPU support from any older purchased version **DirectSOFT Windows programming and documentation software upgrade, USB or download, upgrades current DirectSOFT 16-bit or 32-bit software to DirectSOFT v.6.0.**

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 19-character element descriptions, and 16-character wiring labels.

Program over Ethernet

You can program one or multiple *DirectLOGIC* PLCs from one location over an Ethernet network. Just insert an ECOM 100 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.

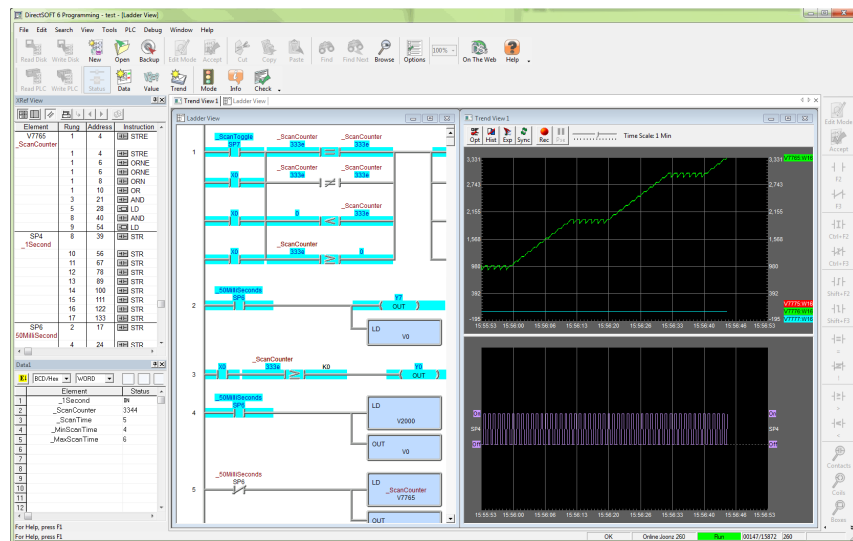
What's New in DirectSOFT6?

- Over 40 new IBoxes available
- Configurable toolbars
- Extremely fast status updates
- New Trend View feature for monitoring and debugging (seen below)
- Graphic Ladder View
- Ladder box leg labels
- Graphic Stage View

What else is included?

- IBoxes have packetized fill-in-the-blank-style instructions that 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 *DirectSOFT6* workspace for full ladder viewing optimization
- Learn many features and software shortcuts with the "Tip of the Day" in *DirectSOFT6*
- 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 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 a 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 standard
- 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 *DirectLOGIC* CPUs
- ASCII in/out and MODBUS instructions for DL06 and D2-262 CPUs
- Support for DL205 local I/O expansion system in D2-262 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 *DirectSOFT6* 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



DirectSOFT6 for DirectLOGIC PLCs

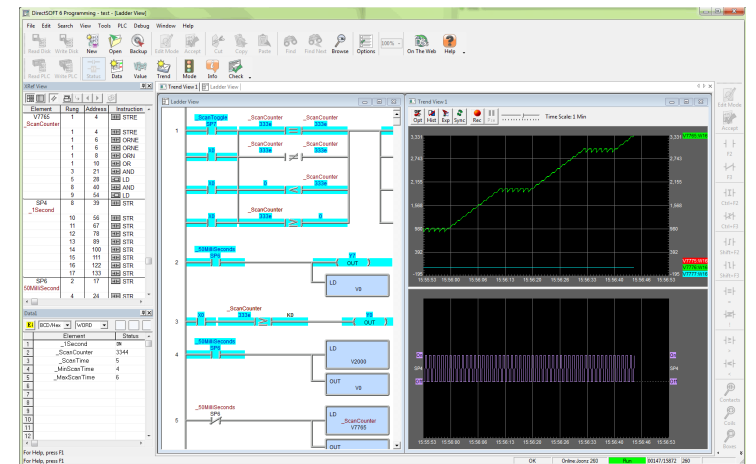
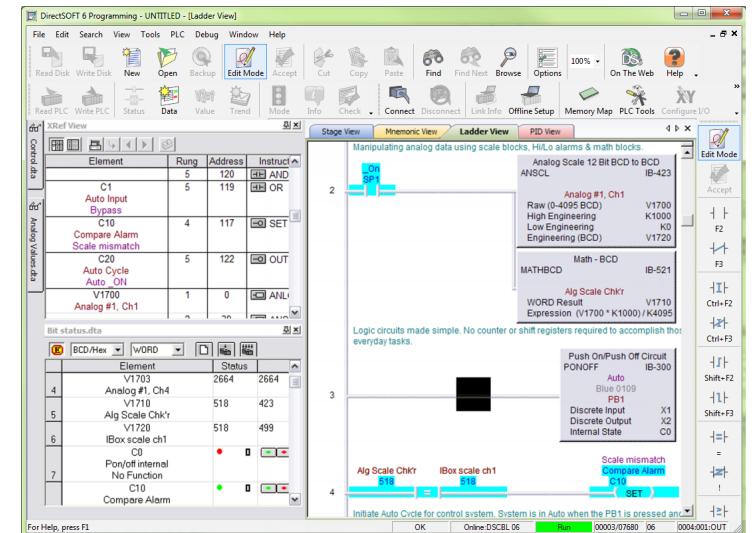
DirectSOFT6 makes programming your PLC easy and fast

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 just fill in the blanks; If you need to perform a math function on a value, simply 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 105 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 *DirectSOFT* 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

The 40+ new IBoxes in *DirectSOFT6* are compatible with *DirectLOGIC* DL05, DL06, D2-262 and D4-450 CPUs that have supporting firmware, as well as with the new D4-454 CPU. IBox instruction categories include Memory, Discrete Helper, Analog Helper, Math, Communications, and CTRIO.

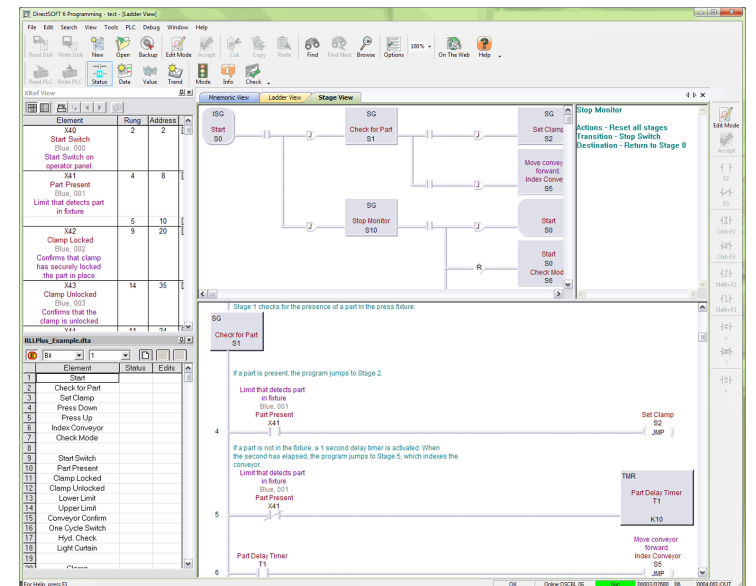
NOTE: Using Ibox instructions can increase the program size and PLC scan time.



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
- Reduce scan time by scanning only the active stages



NOTE: For current operating system requirements, please visit the DirectSOFT6 software page at www.AutomationDirect.com

DirectSOFT6 Packages for DirectLOGIC PLCs

Programming software

PC-DSOFT6 DirectSOFT Windows full-featured programming and documentation software, USB or download. For use with all DirectLOGIC PLCs.

PC-DS100 DirectSOFT Windows limited programming and documentation software, free download only. For use with all DirectLOGIC PLCs.

Overview

DirectSOFT6 Programming Software has been designed to make DirectLOGIC PLC programming 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 DirectSOFT6 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?

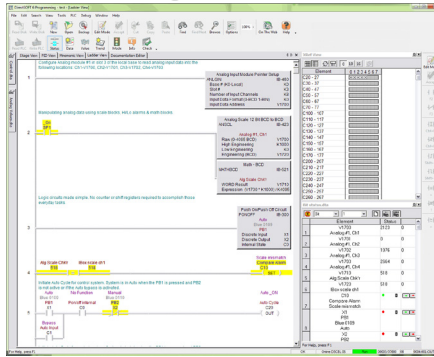
The programming software packages share the same general features, but there are a couple of key differences:

PC-DSOFT6 programs all six CPU families (DL05, DL06, DL105 (retired), DL205, DL305 (retired) 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 purchasing the full version.

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.

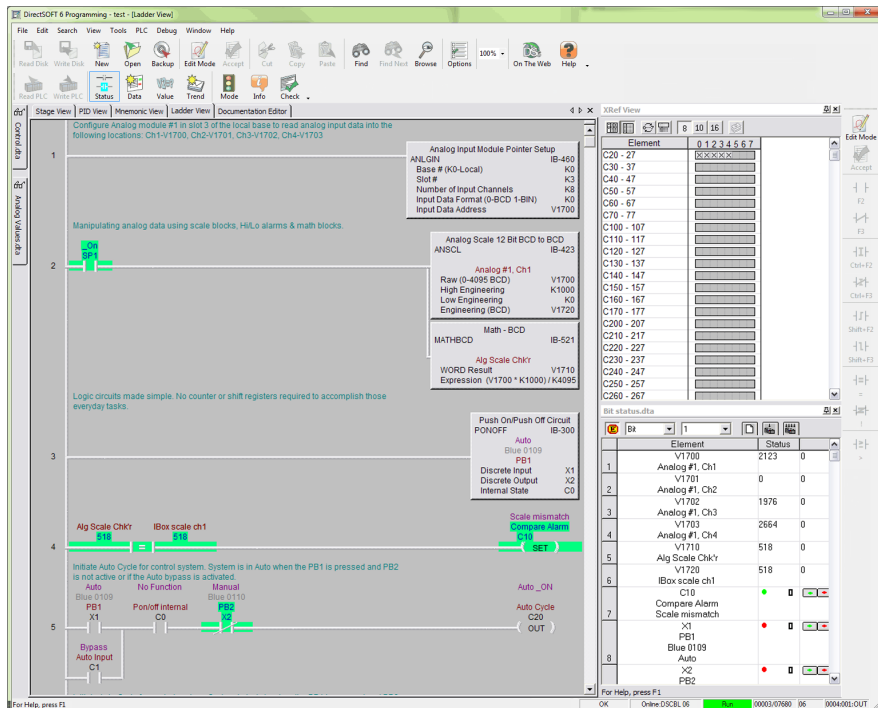
Laptop/portable computers and off-site usage

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 USB drive, 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-R60-U DirectSOFT Windows programming and documentation software upgrade, USB or download, upgrades current DirectSOFT 16-bit or 32-bit software to DirectSOFT v.6.0. Any release that contains major feature enhancements will be subject to the normal upgrade charge in effect at that time. The DirectSOFT6 upgrade part number is PC-R60-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.

DirectSOFT6 Features

Program editing features

- "Tip of the Day" gives you programming guidance, information on shortcuts 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
- 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 the 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 text file that does not have to be in **DirectSOFT** 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 19-character address description provides more detailed information about the program element
- Rung comments can be up to 20 lines of 70 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

- D0-DCM Setup 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

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)

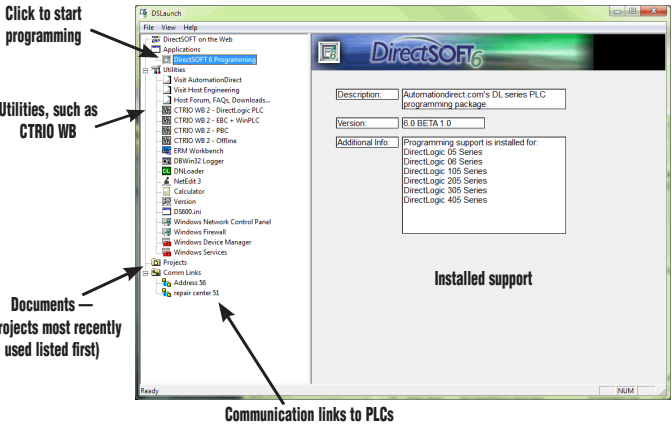
Maintenance and debugging

- 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
- Visually monitor data values using the Trend View feature

NOTE: For current operating system requirements, please visit the DirectSOFT6 software page at www.AutomationDirect.com

Online operation

DirectSOFT6 Functions

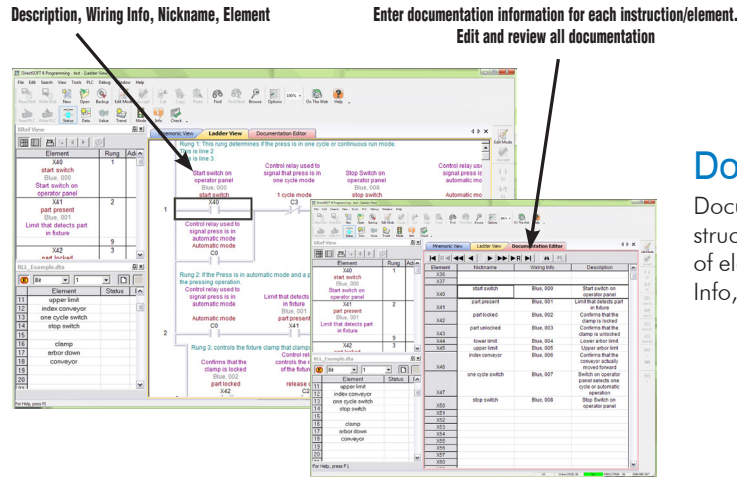
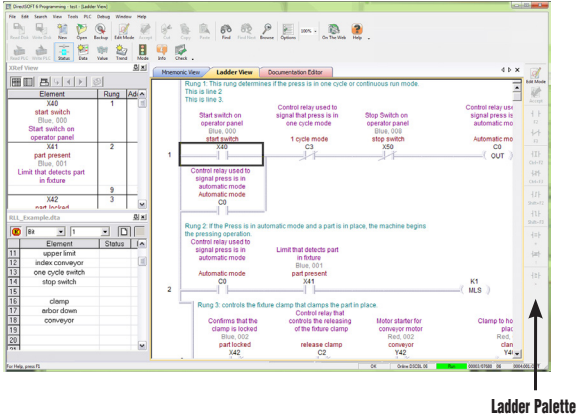


The Launch Window

The Launch Window is a centralized location to view not only all of your *DirectSOFT6* 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.

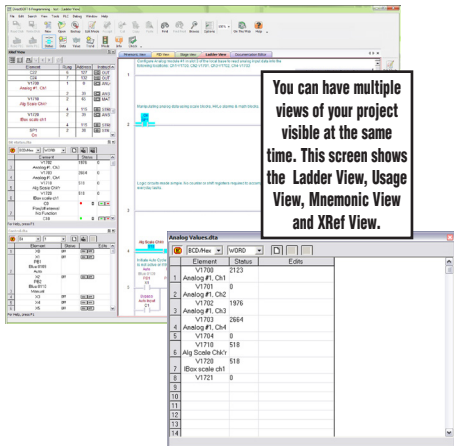
Point and click editing

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.



Documentation

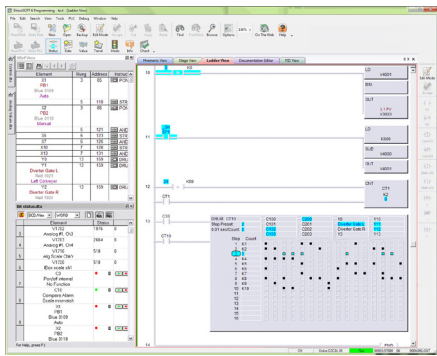
Documentation is the text associated with the components and structure of your program. It helps to clarify the representation of elements by assigning four different fields: Description, Wiring Info, Nickname, and Element.



Onscreen views

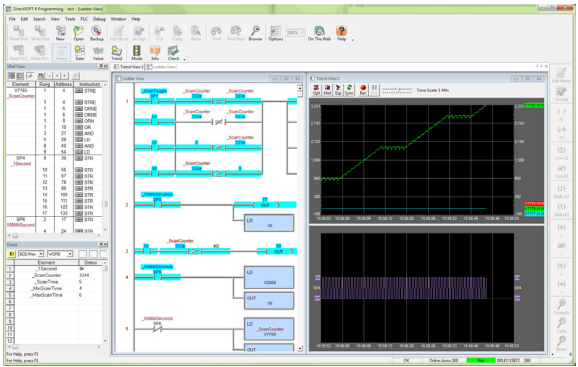
DirectSOFT6 defaults to a Tab view to give you the most optimized viewing area. You still have the option to view multiple windows in the original “MDI” format by simply hitting the Restore button in the upper right of the active tabbed window, or go to Windows menu and select one of the tile or cascade 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.

DirectSOFT6 Functions



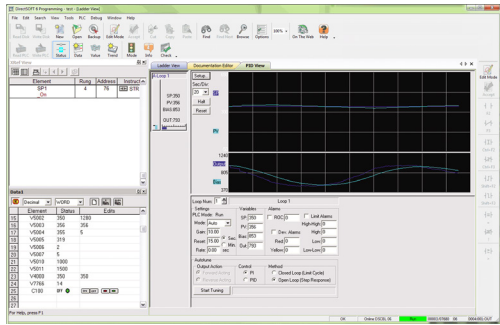
PID view

DirectSOFT6 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.



Trend view

DirectSOFT6 contains a new debugging tool called Trend View. Trend View is used to visually monitor the values of DL controller data elements over time. The Trend View can monitor any readable numeric location, any readable bit location or any constant value.



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 105 instructions to choose from. Here are a few examples of IBox instructions in *DirectSOFT6* ...

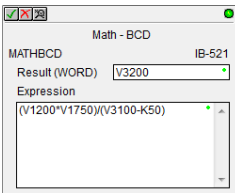
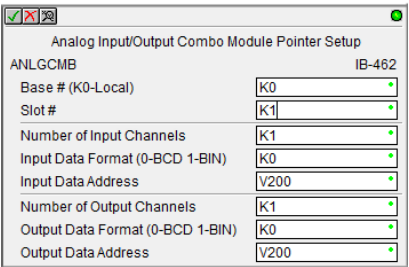
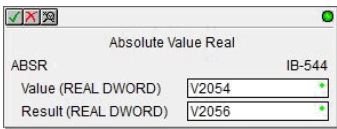
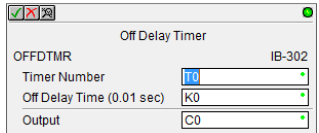
MOVER - Copies a 32-bit floating point number that is stored in two consecutive V-Memory locations to the specified location which is also two consecutive V-Memory location

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

ABSR - Returns the absolute value of the Real (floating point) number found in the specified V-Memory locations

ANLGCMCB - 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++



Programming for *Direct*LOGIC PLCs

Programming versions

With *Direct*SOFT6 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-DSOFT6) 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*SOFT6 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-DSOFT6).

PLC compatibility

If you’re using our *Direct*LOGIC products, then compatibility is not an issue. The *Direct*SOFT6 package supports all *Direct*LOGIC CPUs. Our software also supports many compatible products that were offered by previous vendors of the JTEKT-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	<i>Direct</i> SOFT6 (full version) PC-DSOFT6	<i>Direct</i> SOFT6 (free version) PC-DS100*	CPU Firmware Version Needed to Use IBox Instructions
<i>DL05</i>	All	✓	✓	✓ CPU v5.10 or Later
<i>DL06</i>	All	✓	✓	✓ CPU v2.10 or Later
<i>DL105 (retired)</i>	All	✓	✓	
<i>DL205</i>	D2-230 (retired)	✓	✓	
	D2-240 (retired)	✓	✓	
	D2-250 (retired)	✓	✓	
	D2-250-1 (retired)	✓	✓	✓ CPU v4.60 or Later
	D2-260 (retired)	✓	✓	✓ CPU v2.40 or Later
<i>DL305 (retired)</i>	D3-340	✓	✓	
	D3-350	✓	✓	
<i>DL405</i>	D4-430 (retired)	✓	✓	
	D4-440 (retired)	✓	✓	
	D4-450 (retired)	✓	✓	✓ CPU v3.30 or Later
	D4-454	✓	✓	
<i>GE® Series 1 PLUS</i>	IC610CPU105**	✓	✓	
	IC610CPU106**	✓	✓	
<i>TI305™/ SIMATIC® TI305™</i>	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	✓	✓	
<i>TI405™/ SIMATIC® TI405™</i>	425-CPU, PPX:425-CPU	✓	✓	
	PPX:430-CPU	✓	✓	
	435-CPU, PPX:435-CPU	✓	✓	
<i>Kostac S-Series</i>	PZ1	✓	✓	
	PZ2	✓	✓	
	PZ3	✓	✓	
	SC-4X	✓	✓	
	SG-8/8B	✓	✓	
	SL-4	✓	✓	
	SU-5/5E/5M	✓	✓	
	SU-6/6B/6H/6M	✓	✓	
	SZ-3	✓	✓	
	SZ-4/4M	✓	✓	
	TJ-435/435-AS	✓	✓	
* 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 (retired)).				

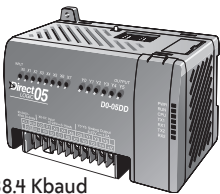
Programming for *Direct*LOGIC PLCs

Connecting to *Direct*LOGIC PLCs



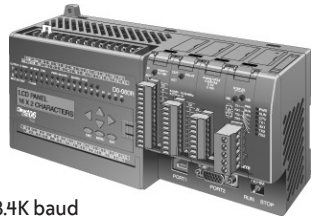
DL05 CPUs

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



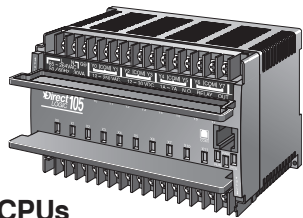
DL06 CPUs

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



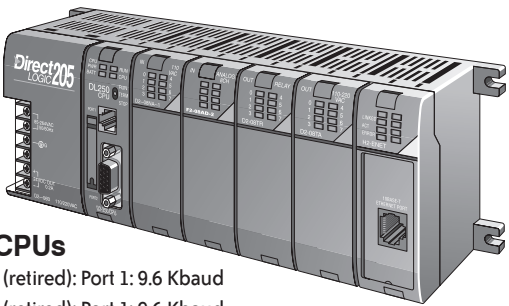
DL105 CPUs
(retired)

Port 1: 9.6 Kbaud



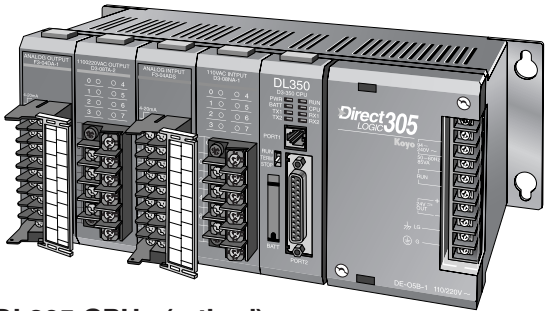
DL205 CPUs

D2-230 (retired): Port 1: 9.6 Kbaud
D2-240 (retired): Port 1: 9.6 Kbaud
Port 2: 300 baud - 19.2 Kbaud
D2-250-1 (retired): Port 1: 9.6 Kbaud
D2-260 (retired): Port 2: 300 baud - 38.4 Kbaud
D2-262: Port 2: 300 baud - 38.4 Kbaud



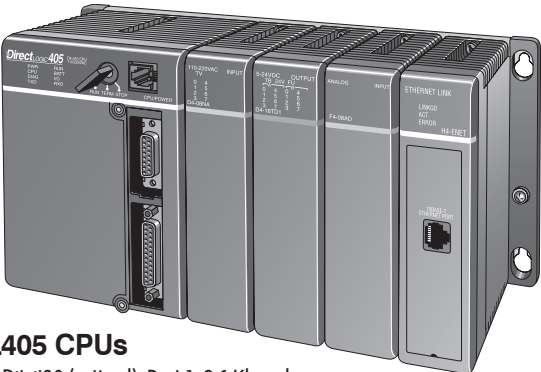
DL305 CPUs (retired)

D3-340: Port 1/2: 300 baud - 38.4 Kbaud
D3-350: Port 1: 9.6 Kbaud
Port 2: 300 baud - 38.4 Kbaud



DL405 CPUs

D4-430 (retired): Port 1: 9.6 Kbaud
D4-440 (retired): Port 2: 300 baud - 19.2 Kbaud
D4-450 (retired): Port 0: 9.6 Kbaud
Port 1/3: 300 baud - 38.4 Kbaud
Port 2: 300 baud - 38.4 Kbaud
D4-454: Port 0: 9.6 Kbaud
Port 1/3: 2.4 Kbaud - 38.4 Kbaud
Port 2: 2.4 Kbaud - 38.4 Kbaud



Or use an Hx-ECOM100 module in the DL05, DL06, DL205 (except D2-230) or DL405 local base to program over a high-speed Ethernet link.

DirectLOGIC PLC Programming Cables

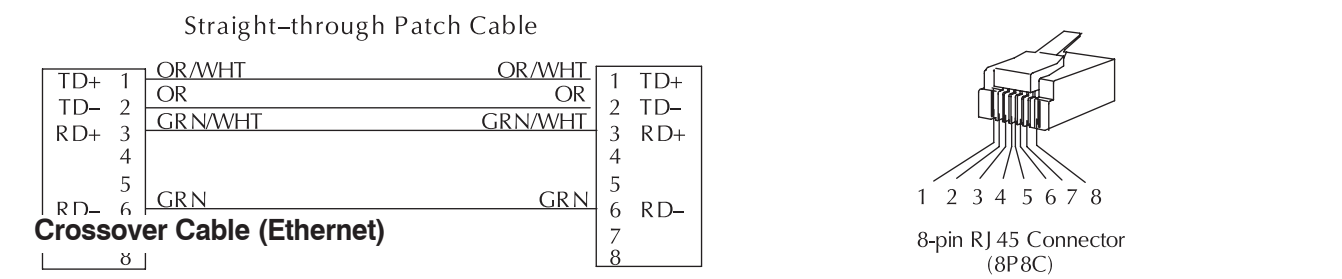
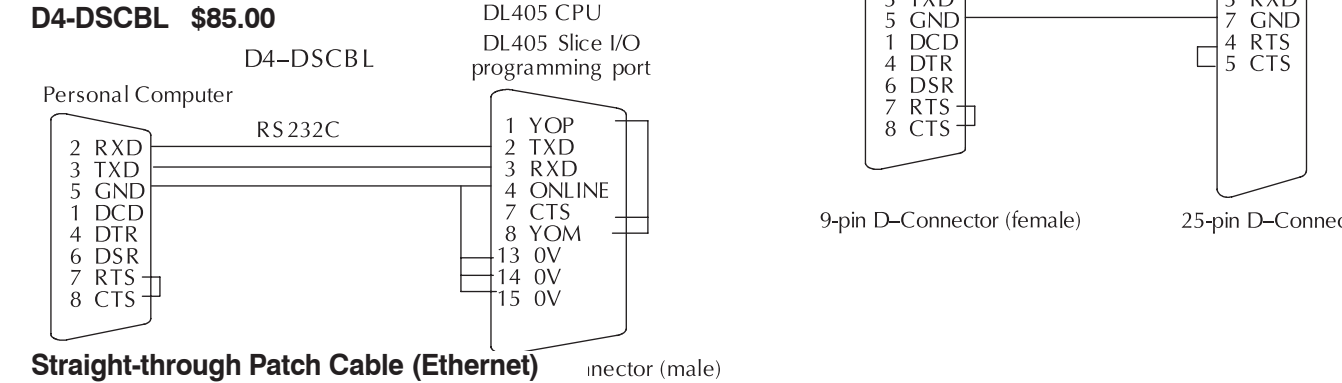
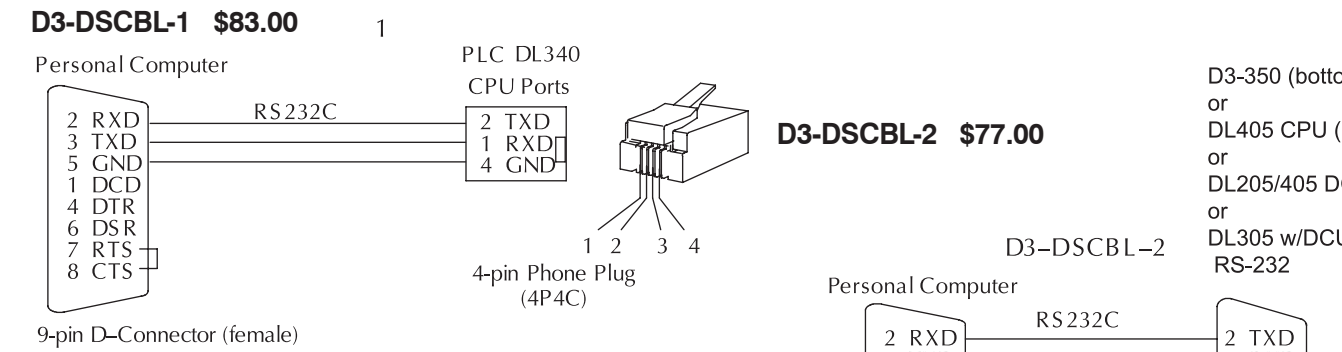
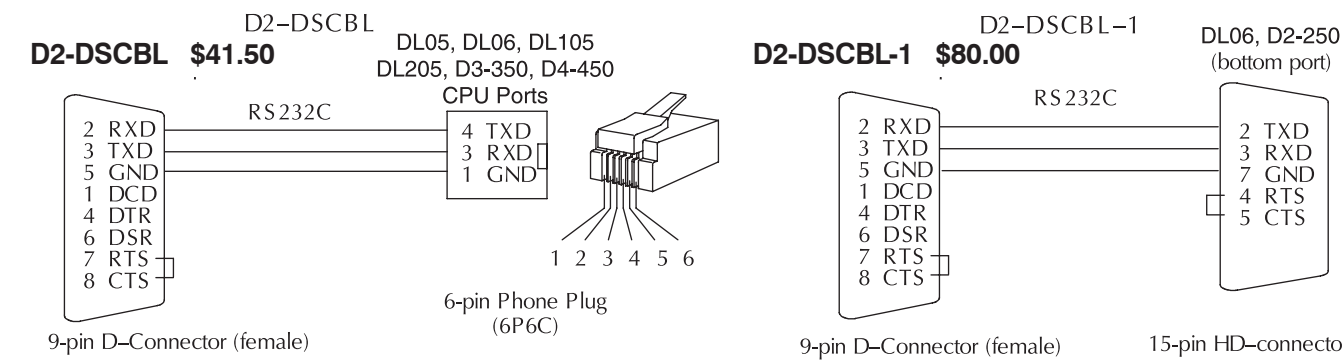
Since CPUs provide many different communication port possibilities, it is helpful to know exactly which communications cable is required. Use the table below to choose the proper cable:

Family	CPU (or other device)	Port	Cable
DirectLOGIC DL05	All versions	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
		Port 2	D2-DSCBL (EA-MG-PGM-CBL optional)
	H0-ECOM / ECOM100 (modules)	Only one	**
	D0-DCM (module)	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
DirectLOGIC DL06	All versions	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
		Port 2	D2-DSCBL-1
	H0-ECOM / ECOM100 (modules)	Only one	**
	D0-DCM (module)	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
DirectLOGIC DL105 (retired)		Port 2	D2-DSCBL-1
	F1-130 (all versions)	Only one	**
	D2-230	Only one	D2-DSCBL (EA-MG-PGM-CBL optional)
	D2-240	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
DirectLOGIC DL205		Bottom port	D2-DSCBL (EA-MG-PGM-CBL optional)
	D2-250(-1) (D2-250-1 CPU is retired)	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D2-DSCBL-1
	D2-260	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D2-DSCBL-1
	D2-262	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D2-DSCBL-1
	D2-DCM (module)	Only one	D3-DSCBL-2
DirectLOGIC DL305 (retired)	H2-ECOM (-F) / ECOM100	Only one	**
	D3-340	Top port	D3-DSCBL-1
		Bottom port	D3-DSCBL-1
	D3-350	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
DirectLOGIC DL405		Bottom port	D3-DSCBL-2
	D3-DCM (module)	Only one	D3-DSCBL-2
	D4-430/D4-440 (retired)	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-450 (retired)	Phone jack	D2-DSCBL (EA-MG-PGM-CBL optional)
		Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-454	Phone jack	D2-DSCBL (EA-MG-PGM-CBL optional)
DirectLOGIC DL405		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	**
DirectLOGIC DL405		Slice I/O (module)	Only one
			D4-DSCBL
	IC610CPU105/106	Requires DCU*	D3-DSCBL-2
GE® Series 1			D3-DSCBL-2
	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
TI305™/SIMATIC® TI305™		If DCU is used*	D3-DSCBL-2
			D3-DSCBL-2
	425-CPU, PPX:425-CPU	15-pin port	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
TI405™/SIMATIC® TI405™		Bottom port (25-pin)	D3-DSCBL-2
			D3-DSCBL-2
	Smart slice	Only one	D4-DSCBL
			D4-DSCBL

* Requires RS232 Data Communications Unit (D3-232-DCU (retired)).
**Requires standard Ethernet twisted pair cable (HX-ECOM) or standard fiber optic cable (HX-ECOM-F).
***USB-RS232-1 adapter is another option for USB communication.

DirectLOGIC PLC Programming Cables

Pin labeling conforms to IBM DTE and DCE standards



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