Three PC Control Solutions using Think & Do

1 Think & Do 8.0

PC-TD8-USB
USB key Development and Runtime key

PC-TD8-WEB4-USB
Four concurrent with USB key with 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 Think & Do Live!™

Completely compatible with original Think&Do Development Software applications

Think & Do Live!

PC-ENT-LIVE
Development/run-time license

PC-WPLC-LIVE
WinPLC programming pack (HMI creator and external I/O drivers not included)

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
Development/run-time license
For Think & Do Live! 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 Live! 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

Think & Do Live! for WinPLC Programming Pack (PC-WPLC-LIVE)

Just the programming features needed for the WinPLC at a low price. Includes flowchart logic, reusable subcharts, PID functions, serial drivers, Modbus TCP/IP and a free OPC/DDE server.

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)

PLC Runtime Target

H2-WINPLC3

Note: PC Runtime Target not supported

Think & Do 8.0 Overview

Think & Do™ Version 8.0 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.

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.

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Color monitor (min resolution 800x600),
Ethernet adapter

Windows 2000/XP/Vista Runtime Target

Windows 2000 (SP4), XP (SP2), Vista
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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

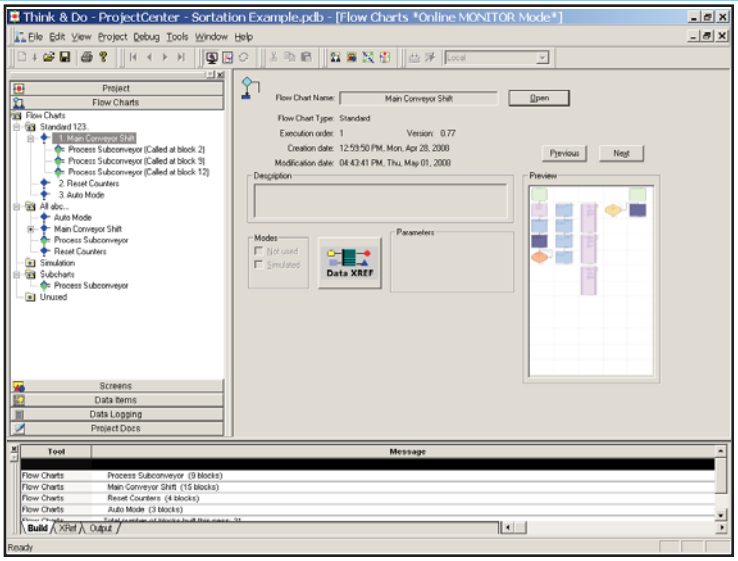
Training

Phoenix Contact offers training courses led by certified Phoenix Contact Solution Providers at their headquarters in Ann Arbor, MI. Get the most from this powerful software by understanding it inside and out. Check www.phoenixcon.com/software for training dates. Training is half price for subscribers to Premium Extended Service and Support, ESS-PREMIUM.

Features

ProjectCenter for creating your project

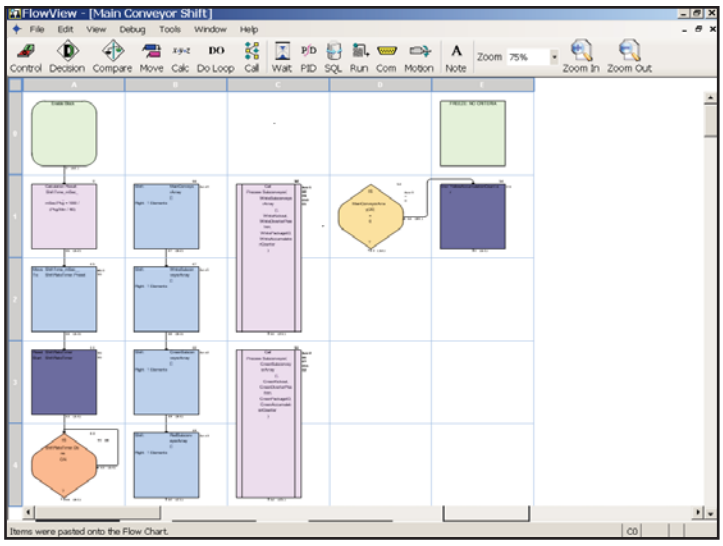
ProjectCenter is the starting point for developing your project and provides access to all Think & Do development tools, such as menus, project information and runtime settings. It provides ready access to all project elements and the fully integrated tagname database.



Think & Do 8.0 Overview

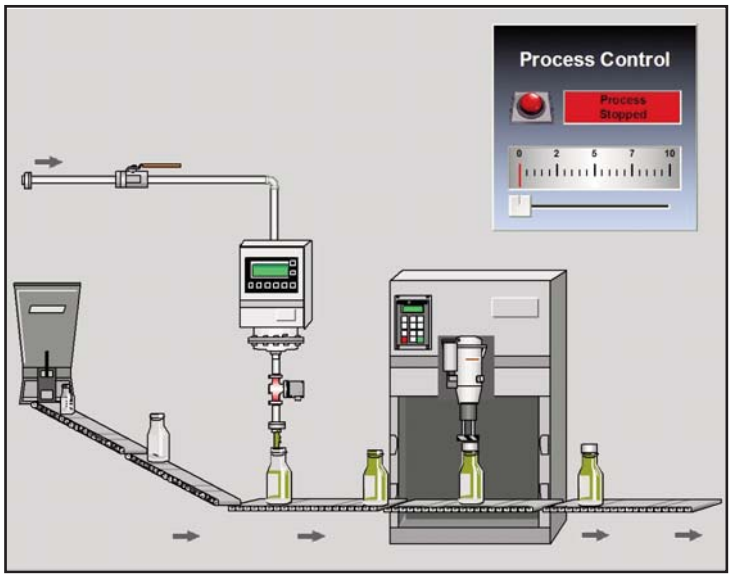
FlowView for creating control logic in easy-to-use and read control flowcharts

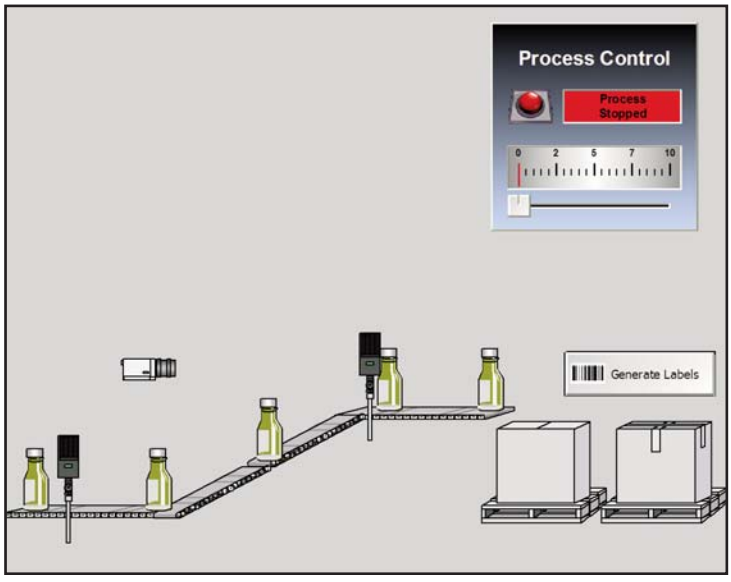
Think & Do uses flow chart control programs and FlowView is where you develop control flowcharts. Menus provide access to all commands in FlowView, as well as online help.



ScreenView for creating and editing HMI screens

The most dramatic improvement in this revision of Think & Do is the new 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.



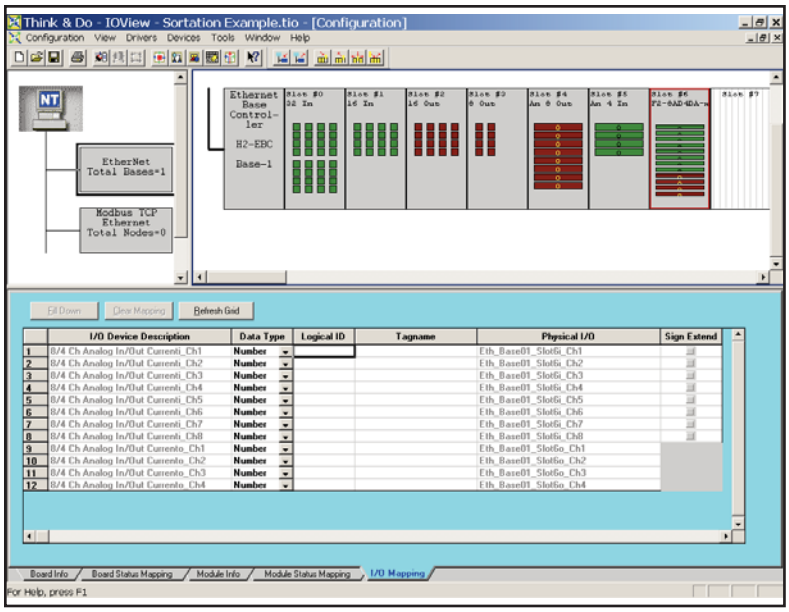


Think & Do 8.0 Overview

I/OView for configuring your project I/O

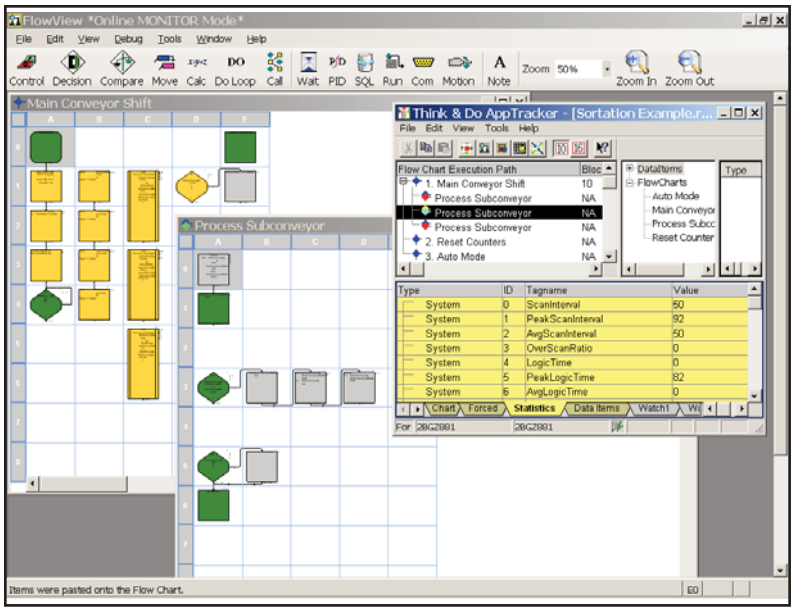
Use IOView to easily:

- 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.



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

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.

Dedicated I/O LAN

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

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

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.)

Ethernet link to production databases

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.

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

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

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	
F2-04AD-1L	4-pt in 4-20mA, 12 bit, ext 12VDC pwr	
F2-04AD-2L	4-pt in voltage, 12 bit, ext 12VDC pwr	
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	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