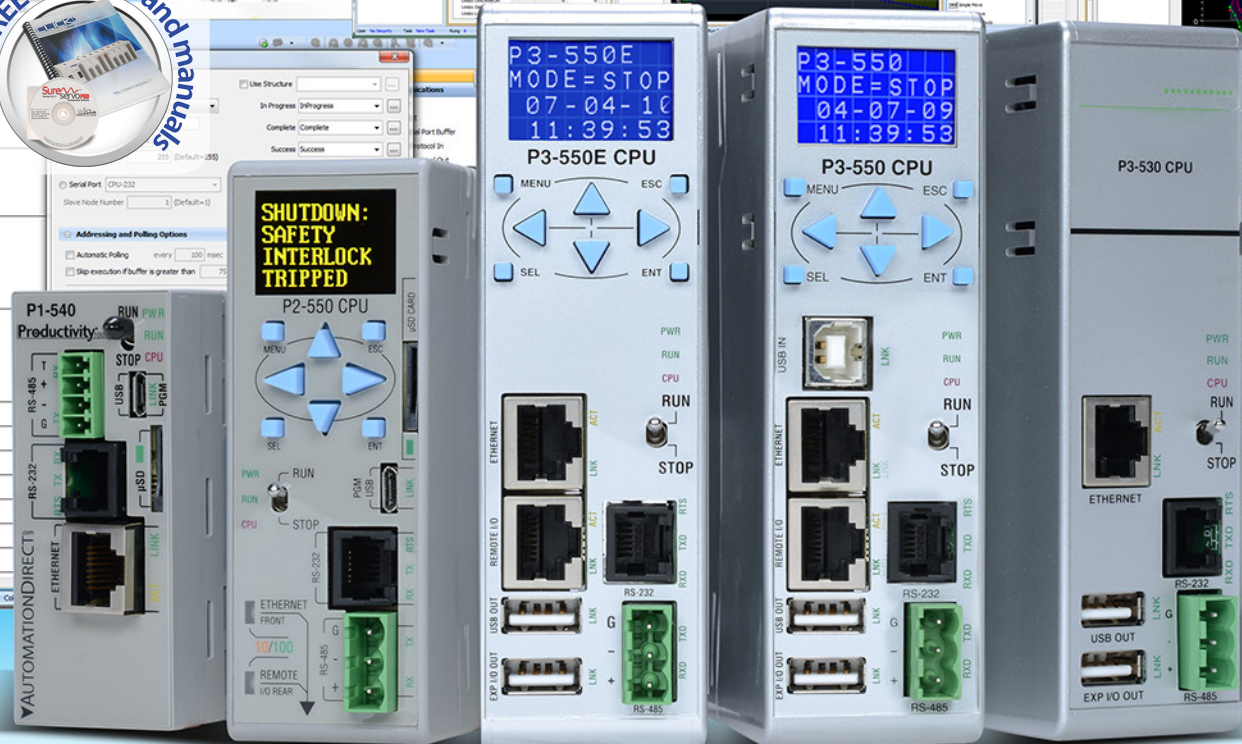


Up-to-date price list:  
[www.lamonde.com/pricelist](http://www.lamonde.com/pricelist)  
 FREE Technical Support:  
[www.lamonde.com/support](http://www.lamonde.com/support)  
 FREE Videos:  
[www.lamonde.com/videos](http://www.lamonde.com/videos)  
 FREE Documentation:  
[www.lamonde.com/documentation](http://www.lamonde.com/documentation)  
 FREE CAD drawings:  
[www.lamonde.com/cad](http://www.lamonde.com/cad)



# Productivity<sup>®</sup> Series

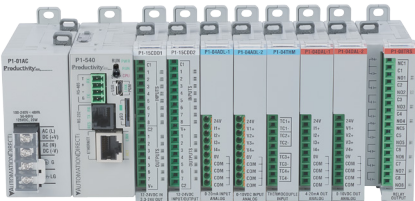
## Software Overview



Affordable automation for everyone!

Productivity<sup>®</sup>Series

Productivity<sup>®</sup>1000



Only for CPU - value leader!

The Productivity1000 series PLC is the super compact yet highly capable member of our Productivity controller family. Packed with many of the features you love about the Productivity family but housed in a smaller, slimmer design and with a CPU price of , the Productivity1000 PLC will deliver the time, space, and budget savings your project needs.

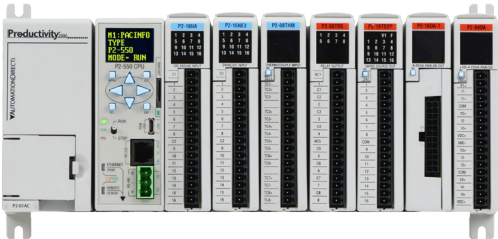
Top hardware features:

- 50MB user memory easily handles complex applications
- 4 built-in communication ports for easy connectivity to your PC or various industrial networks: micro USB, Serial RS-485, Serial RS-232, Ethernet 10/100Mbps
- Data logging up to 32GB on a microSD card (sold separately)
- Slim, stackable, super compact design
- Add up to 8 I/O modules for a total of 128 discrete I/O points or 32 analog I/O channels
- Choose from spring clamp, screw terminal or the popular ZipLink wiring solution for your I/O wiring needs

GO TO:  
OVERVIEW PDF

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TECH SPECS PDF

Productivity<sup>®</sup>2000



CPU with 5 built-in comm ports

The Productivity2000 PLC is where value meets power. This controller was designed to provide advanced features at an extremely affordable price and lowest cost of ownership in its class. Considering the memory, performance, options, free software, free support and everything else this controller has to offer, it really does stand above the competition.

Top hardware features:

- 50MB user memory easily handles complex applications
- 5 built-in communication ports including: (1) plug-and-play USB programming port, (1) general purpose Ethernet 10/100Mbps port, (1) remote I/O Ethernet 10/100Mbps port and (2) serial ports
- Data logging up to 32GB on a microSD card (sold separately)
- Programmable 4-line OLED message display on CPU for system status and tag data readouts
- OLED displays on select analog modules for real-time, no meter required measurements

Micro-modular rack-based system

- Full lineup of 29 discrete, analog and specialty I/O modules including high-speed
- Up to 480 local I/O points and 4,320 total I/O through remote expansion
- Auto-discover local and remote PLC bases, I/O and GS series drives
- Hot-swappable I/O, no module placement restrictions, no power budget limitations

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Productivity<sup>®</sup>3000



Expansive I/O and 7 built-in comm ports

The Productivity3000 PLC is a communications powerhouse with numerous networking options built in. It's also the I/O leader of the group with over 59,000 I/O points possible through local and remote expansion.

Top hardware features:

- 50MB user memory easily handles complex applications
- Industry-leading 7 communications ports built in including: USB programming port, local expansion, and Ethernet remote I/O ports (CPUs are available with less ports at a reduced cost)
- Data logging to external USB drive
- Programmable 4-line LCD message display on CPU for system status and tag data readouts
- LCD displays on all analog modules for real-time, no meter required measurements

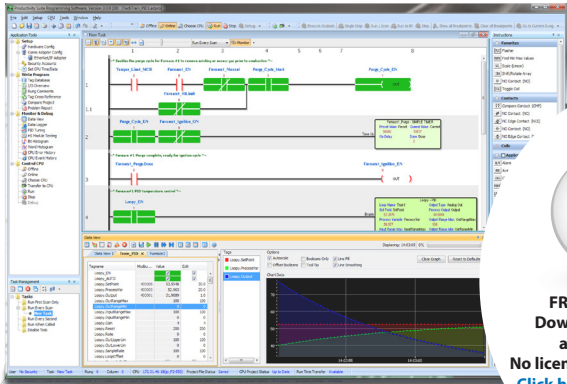
Modular rack-based system

- Full lineup of 39 discrete, analog and specialty PLC I/O modules including high-speed
- High-density I/O modules - up to 64 discrete I/O points per module
- Support for local expansion and remote I/O bases, up to 59,840 I/O points plus (plus additional networkable Modbus and Ethernet/IP field I/O)
- Auto-discover local and remote PLC bases, I/O and GS drives
- Hot-swappable I/O, no module placement restrictions, no power budget limitations
- ABS certified for marine applications (standard of excellence in marine and offshore classification)

GO TO:  
OVERVIEW PDF

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Productivity<sup>®</sup>Suite



FREE  
SOFTWARE



FREE Software!  
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Full featured PLC programming software with no strings attached

No more "pay as you go" software with an annual subscription year after year...this is **FREE software - developed and supported in the USA.**

Top software features:

- Tag-based programming with no pre-defined memory addresses
- Auto-discovered I/O modules and GS drives
- Advanced "fill-in-the-blank" instructions
- Helpful Data view, I/O view, Graph view, and histogram dialogs for insight into system performance
- Task Manager for increased efficiency
- Pre-defined structure data types
- Seamless corporate database connectivity
- Graphical HTML-based help file
- Run-time editing
- ProNET networking for easy CPU data sharing
- Project file and user documentation stored in CPU
- Tag database export to C-more HMI
- Tag I/O reassignment to simplify offline configuration
- Easy project conversion to/from each PLC in family
- Project and database compare feature
- Web server and mobile access

GO TO:  
PDF OVERVIEW

Productivity Series offers...

- FREE Productivity Suite advanced tag name programming software
- Rugged, dependable hardware
- Modbus RTU and TCP, ASCII, EtherNet/IP, ProNET and both serial and Ethernet custom protocols
- Built-in data logging
- Built-in web server for system status and data file access
- Remote iOS app for data monitoring
- 30 days of FREE online training
- FREE technical support
- FREE 2-day shipping
- FREE manuals
- FREE access to online resources
- Full 2-year warranty



Visit  
[www.ProductivityPLC.com](http://www.ProductivityPLC.com)  
for complete details  
and FREE software download



# Fast programming with FREE software...

## Developed inhouse with customer feedback

Productivity Suite is our FREE programming software for the Productivity Series of controllers. Our own engineers developed this software at our headquarters near Atlanta, Ga. It was designed with input from our technical service team who communicate on a daily basis with our customers. As a result, Productivity Suite was built to meet the needs of our customers and it provides a quick, user-friendly way to program our Productivity family of PLCs. Based on customer feedback we have continually improved our software since its first release. Now Productivity Suite is even better with numerous features added to make your Productivity Series programming even more productive.

## And it's FREE!

That's right, get all of the benefits without any extra cost. Forget licenses or licensing fees, download the software to as many PCs as needed or take it for a test drive and try it before you buy it. After all, you bought the controller, why pay more to control it?

Compare our FREE price to the \$874\* retail price of the RSLogix 5000 Enterprise Series software (Mini Edition) used with the \$2,701.30\* Allen Bradley CompactLogix PLC CPU (1769-L33ER) and ask yourself what exactly you are paying so much for.

**BREAK  
FREE  
FROM A-B!**

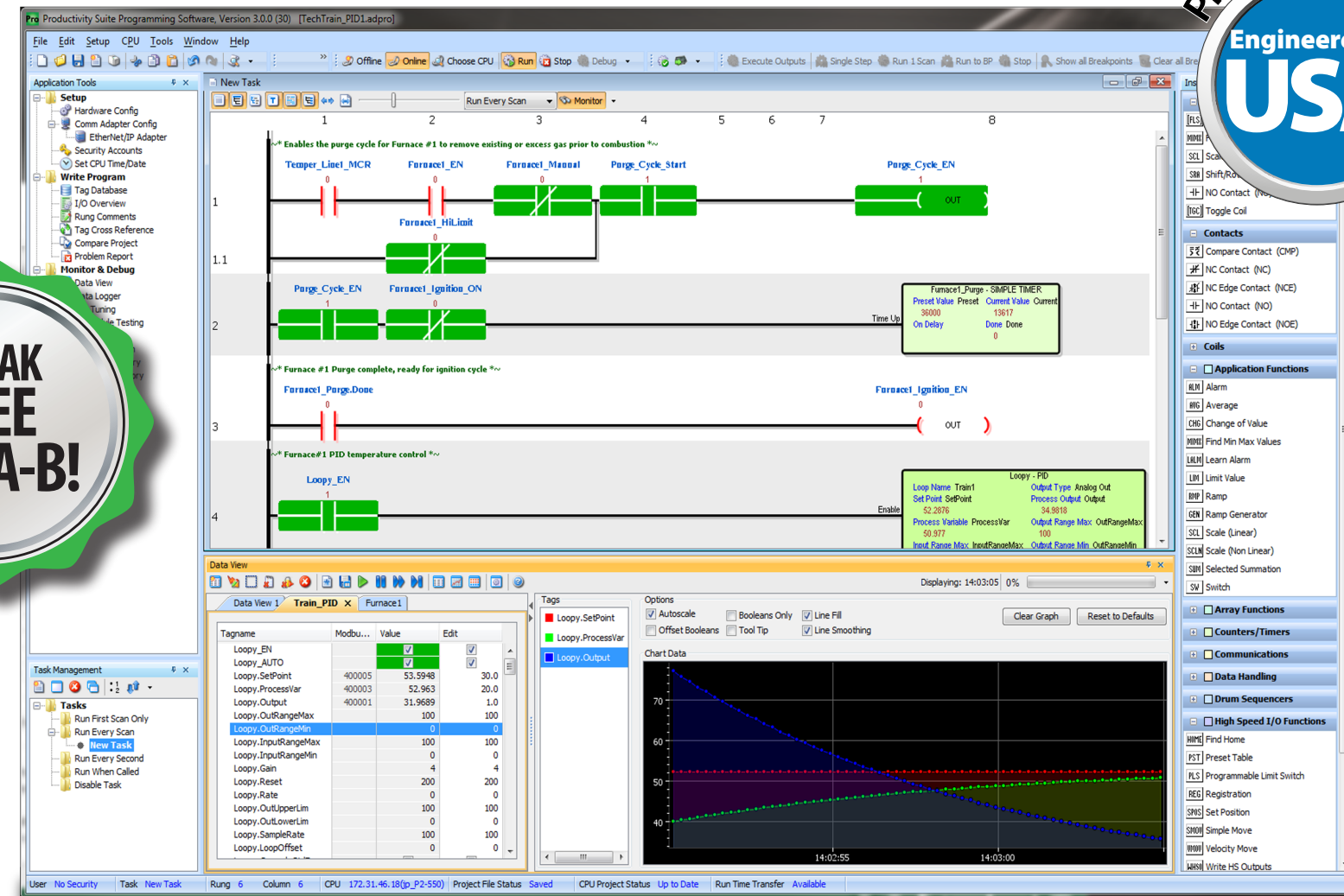
**FREE  
SOFTWARE**



**FREE Software!**  
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**Get more than you  
paid for with  
Productivity!**

# Productivity<sup>®</sup>Suite



## Tag name based control that's powerful and easy to use

Don't let your controller control you. With Productivity Suite you have the freedom to define user tags with no limits or fixed boundaries. Configure timers, counters, integer words or any other data types you decide on. With tag name based programming, there are no pre-defined, fixed memory maps and no wasted, unused memory allocations.

- No limits on PID loops\*
- No limits on Counters\*
- No limits on Timers\*

\*Limited only by the available memory in the PLC.

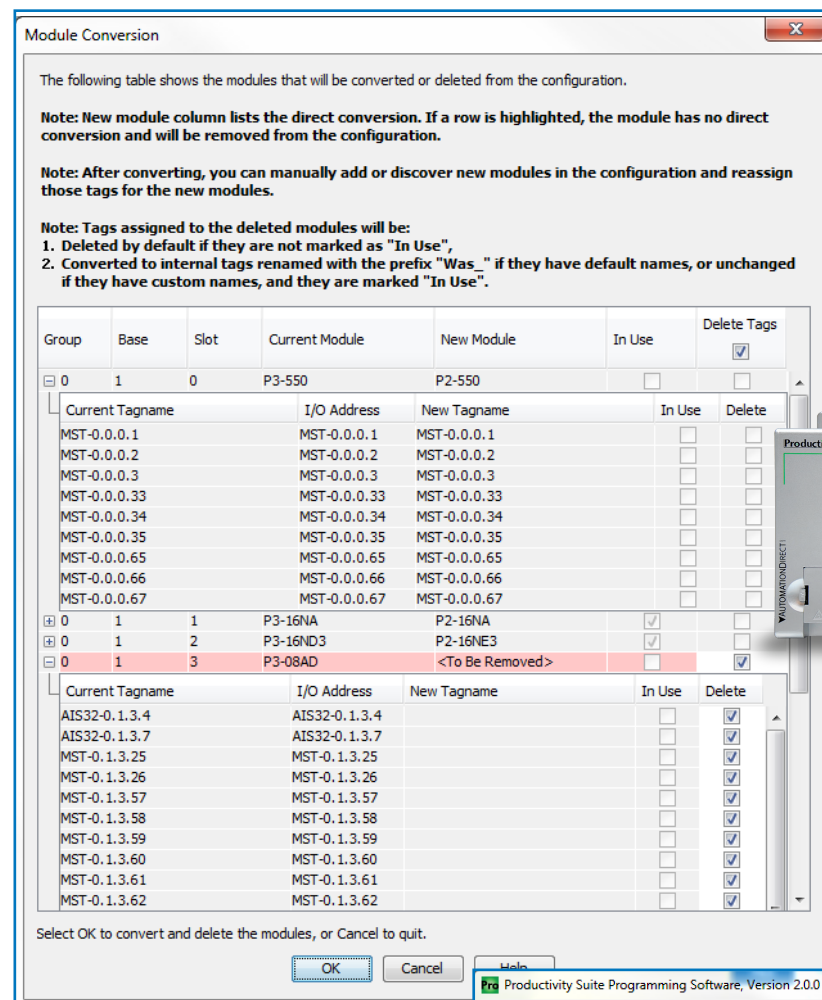
Tag name based control also offers the ability to descriptively identify the tags in your program. Older, fixed memory controllers force the use of pre-defined nomenclature for the data types. Which would you rather see when troubleshooting: T4:01 or Oven1\_Purge\_Timer.Pre? The tag name helps identify the element as a numeric value for the oven purge timer's preset, making its purpose immediately clear. In addition, the tag database format of the Productivity Suite software can be easily shared between other tag name-based systems. HMI, SCADA and data logging devices with tag name based software can be configured with ease by simply exporting the tag database from Productivity Series and importing it directly into these devices.



\*Allen Bradley hardware price taken from [www.radwell.com](http://www.radwell.com) 10/18/2017.  
Allen Bradley software price taken from [www.rexelusa.com](http://www.rexelusa.com) 10/18/2017.



# FREE software that makes your job easier!



## Productivity Suite

### Easy project conversion

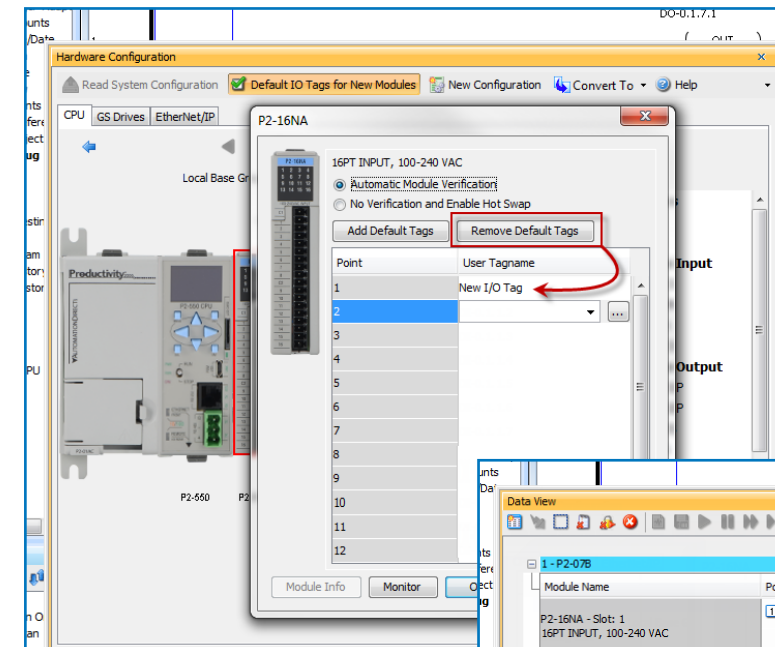
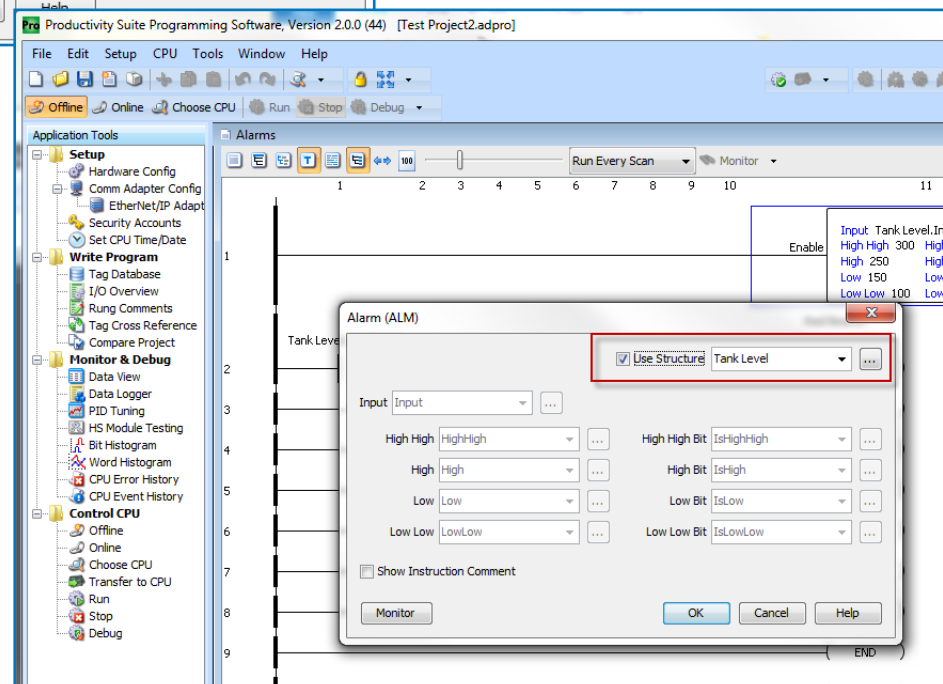
Productivity Suite software was designed to work with any controller in the Productivity family. Easily convert existing projects from Productivity3000 to Productivity2000 to Productivity1000 or vice versa using the integrated conversion utility.



### Pre-defined structures make programming automatic

Take the work out of tag creation. With instructions requiring multiple tags, Productivity Suite now offers pre-configured tag structures. Simply give the instruction a common tag name and the defined suffixes will be added automatically.

You can always un-check "Use Structure" and swap out previously defined tags with the ones defined by the "Use Structure" option. These tags are created for convenience, and to decrease programming time, but you have the freedom to use any tag you please.

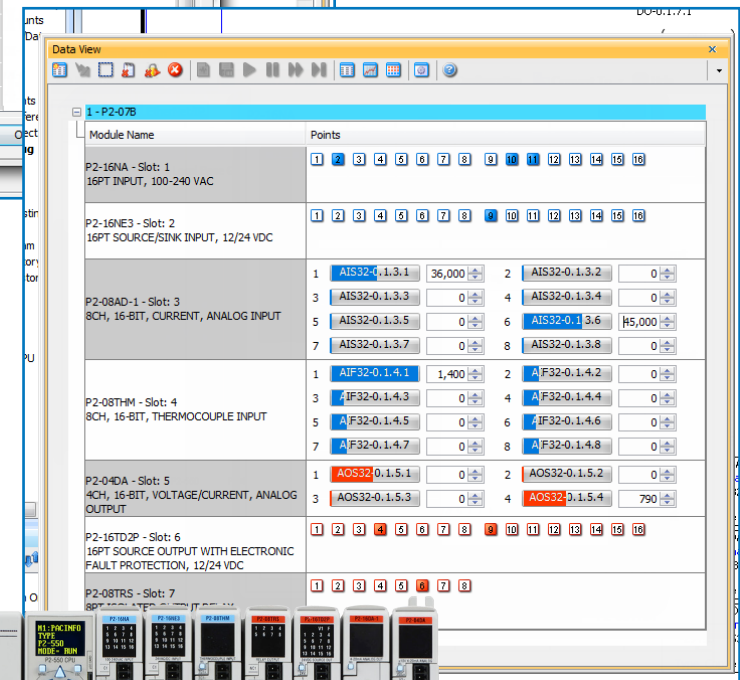


### Tag I/O reassignment saves you time, and time is money

Start programming now! Tag I/O reassignment allows you the freedom to develop your code now and assign your I/O later. Create your user tags offline and swap them out for the default tags once the hardware is available.

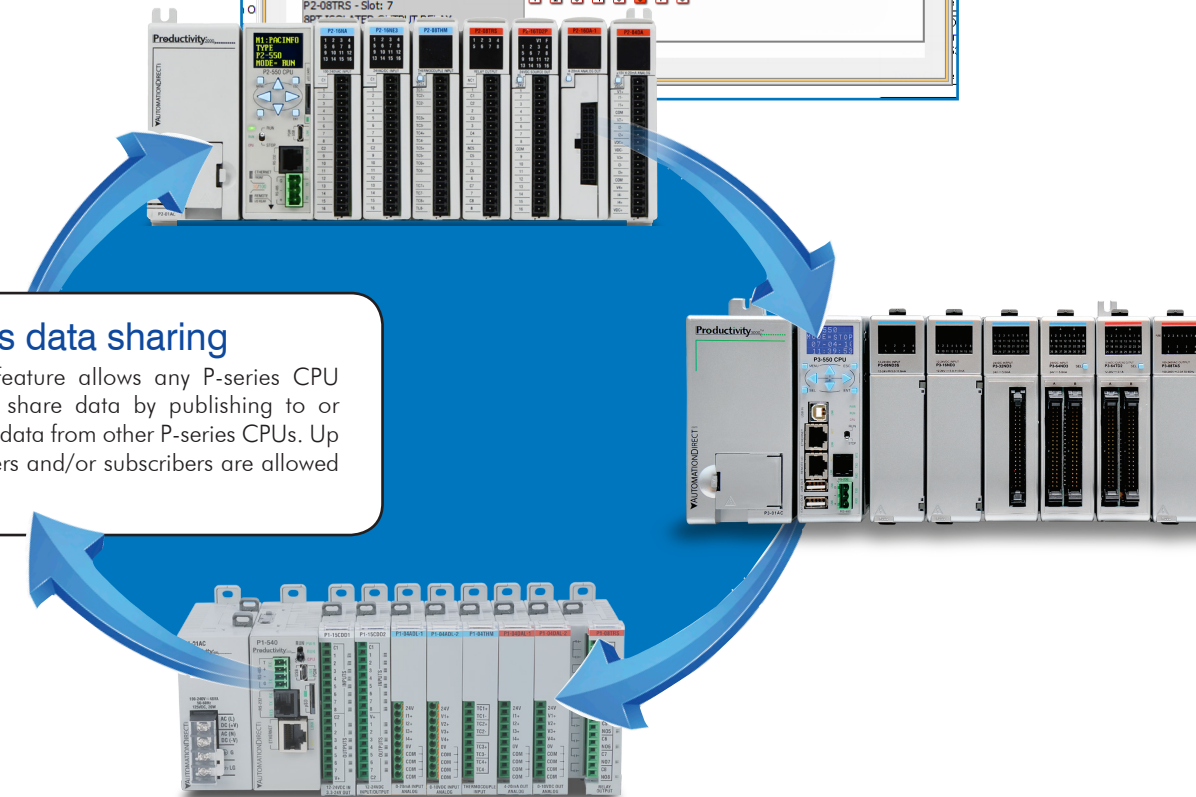
### Graphical I/O view

The I/O View gives you a quick and friendly way to monitor all hardware points in a system. Force discrete points on and off or edit raw analog values easily with this tool.



### Seamless data sharing

The ProNET feature allows any P-series CPU to seamlessly share data by publishing to or subscribing to data from other P-series CPUs. Up to 32 publishers and/or subscribers are allowed per CPU.



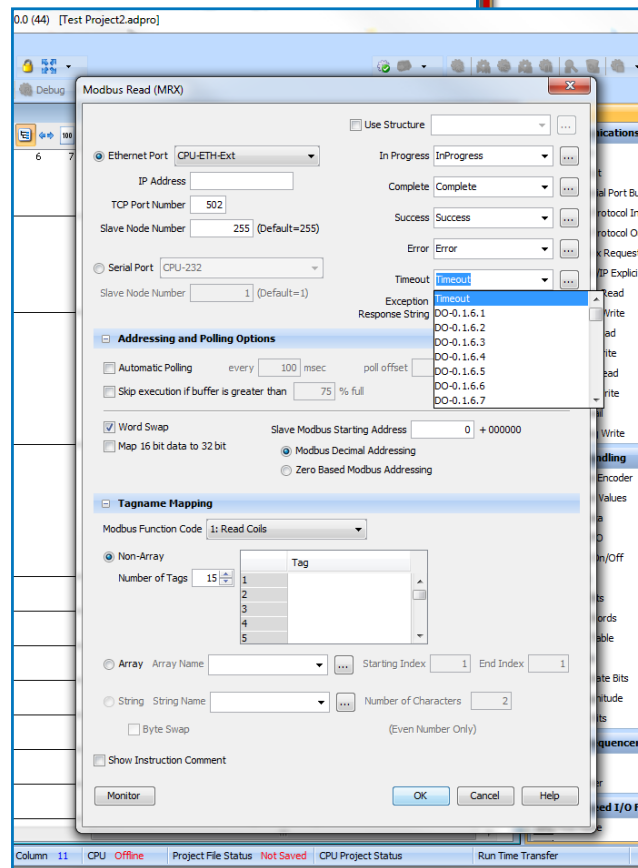
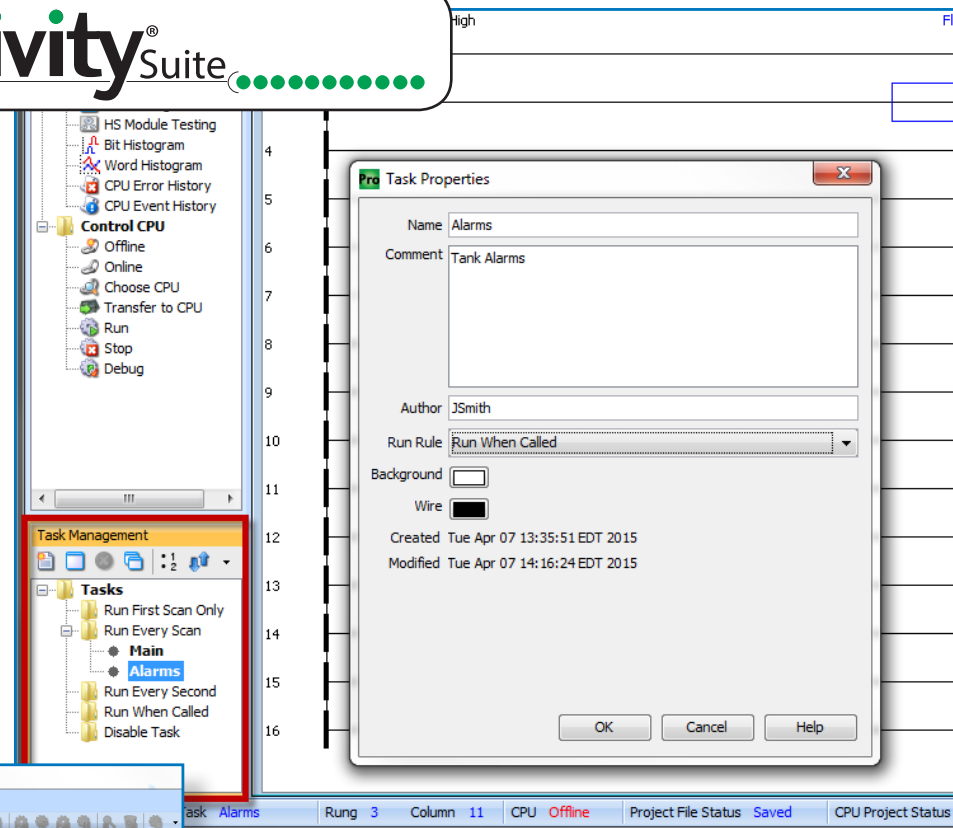


# FREE software that makes you more efficient!

## Productivity Suite

### Task management options for increased efficiency

The Task Manager helps organize and execute program code for maximum speed and efficiency. Create functional tasks, name them, and schedule their execution frequency - every scan, every second, or when called.



### Convenient fill-in-the-blank style function blocks

Math, PID, array, communication, data handling, high speed and application function blocks are available and easily configured with user friendly selections.

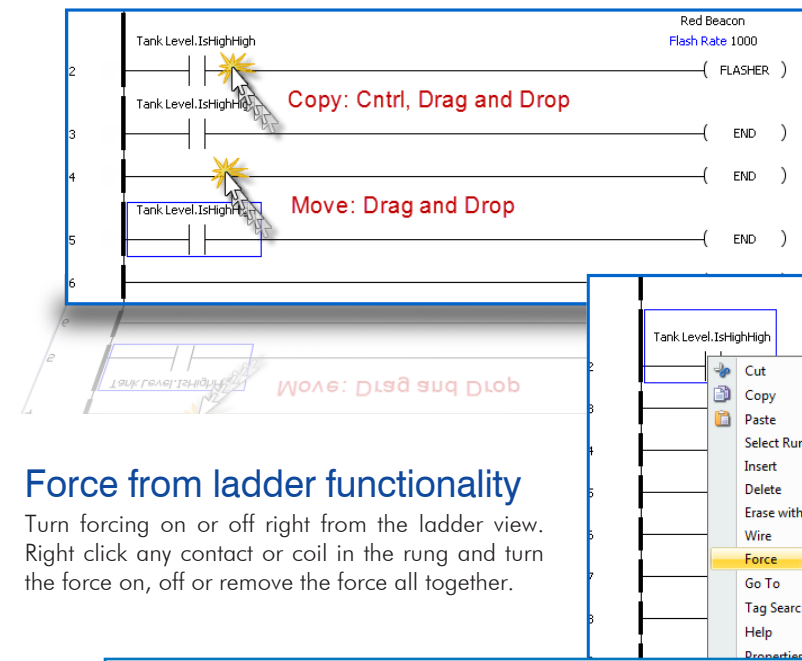
**FREE SOFTWARE**



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### Helpful favorite instructions list

Speed up your programming time by placing your most commonly used instructions in your Favorites list, where they are readily available and easily accessible.

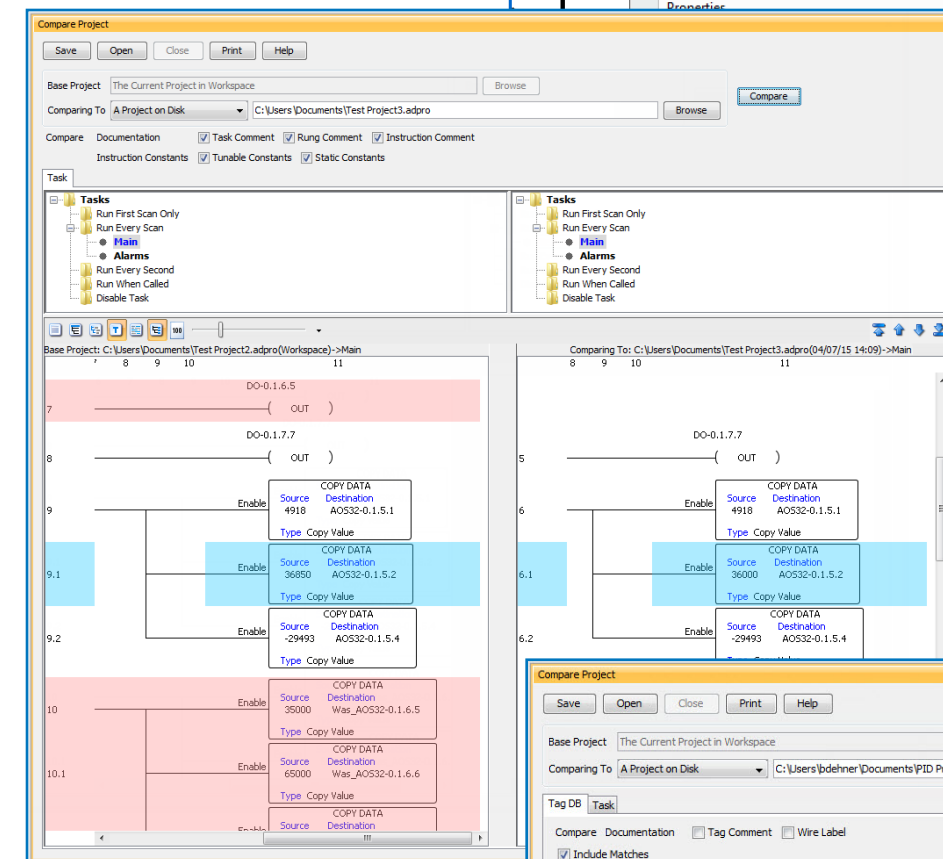


### Force from ladder functionality

Turn forcing on or off right from the ladder view. Right click any contact or coil in the rung and turn the force on, off or remove the force all together.

### Drag and drop instructions for added ease of use

It's easier than ever to move or copy instructions within the ladder editor window. Moving an instruction is a simple drag and drop, any broken rungs will be repaired automatically, or hold Control while you drag and drop to create a complete copy. It's that easy!

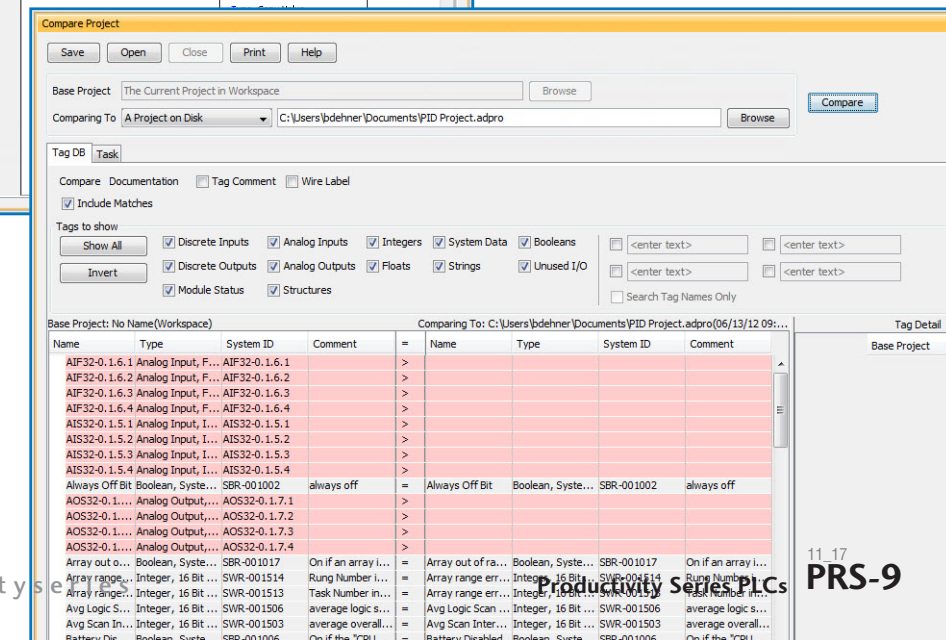


### Project compare... go online with confidence

Unequal code? Find out why with the Productivity Suite's Compare Project function. Perform project-to-project comparisons and get detailed information on the differences.

### Tag database compare

Know which tags are missing, deleted or different from one project to the next with the convenient tag database compare feature. With this feature there is no more guessing and you'll know exactly if and what changes were made from previous versions of your tag database.





# FREE software that gives you a head start

Productivity Suite was designed with many features intended to work hand-in-hand with certain field devices and third party software. This level of integration gives us a clear advantage over many other programmable controllers and is intended to help with system development.

## Auto-discover GS series drives

When connected to the P2000 or P3000 CPU's Remote I/O port via an Ethernet connection, GS series drives are auto-discovered in the controller's hardware configuration. All drive parameters can then be edited from within the Productivity Suite software. The system can also be configured to write these parameters to the drive with each program transfer, making troubleshooting and replacement in the field a cinch!

### DURAPULSE GS4 Series Drives (with optional Ethernet module)



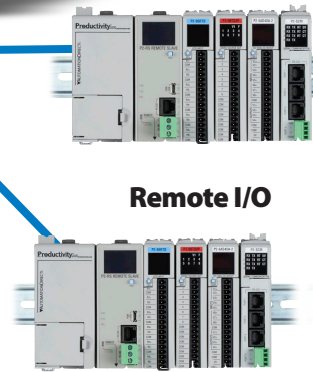
### GS Series Drives (with GS-EDRV100 Ethernet interface)



GS-EDRV100

## Auto-Discovered

### Remote I/O



## Auto-discover remote I/O bases

Any base connected to the P2000 or P3000 CPU's Remote I/O port will automatically be added to the hardware configuration when you read the system configuration.

SureServo



GS Drives



## Built-in Instructions

## ViewMarq displays

The integrated VMW function block instruction was created specifically for communication with ViewMarq message displays. This instruction provides all the needed parameters and even simplifies string creation by allowing you to copy and paste data from the ViewMarq configuration utility.



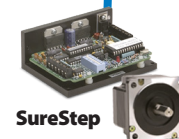
ViewMarq LED Message Displays



EtherNet/IP devices

## EtherNet/IP devices

Easy-to-use scanner and adapter configuration windows, as well as an MSG function block instruction for Explicit Message setup and control, connect EtherNet/IP devices quickly.



SureStep



Serial &amp; Ethernet MODBUS devices

## Modbus devices

When talking to Modbus devices over serial or Ethernet, the Modbus Read (MRX) and Modbus Write (MWX) instructions make it easy to get connected.

**FREE**  
SOFTWARE



**FREE Software!**  
Download as often  
as you need.  
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# Productivity Suite

## Share your database and speed up development

Productivity Suite's tag database can easily be exported to a .CSV file and then imported into other devices/software that use the same tag naming convention. This can provide valuable time savings with project development and help ensure deadlines are met.

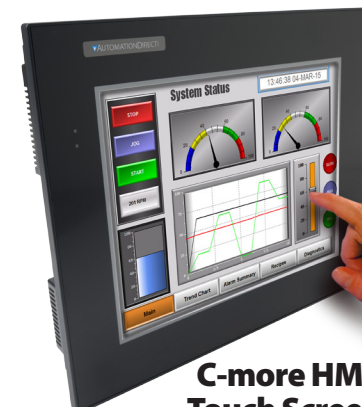
## DataWorx database

When you need to exchange data with an SQL or MS Access database, the built-in DataWorx Request software instruction gives you the tools you need to interface with the DataWorx server. Retrieve, add, delete or update data records in the chosen database.

For DataWorx database software go to:  
[www.bizwaredirect.com](http://www.bizwaredirect.com).



DataWorx P3K



C-more HMI Touch Screen

## Shared Tag name database



HMI/SCADA

## HMI/SCADA

Easily import tags into SCADA software for quick and easy additions to existing projects or to speed up new project development.



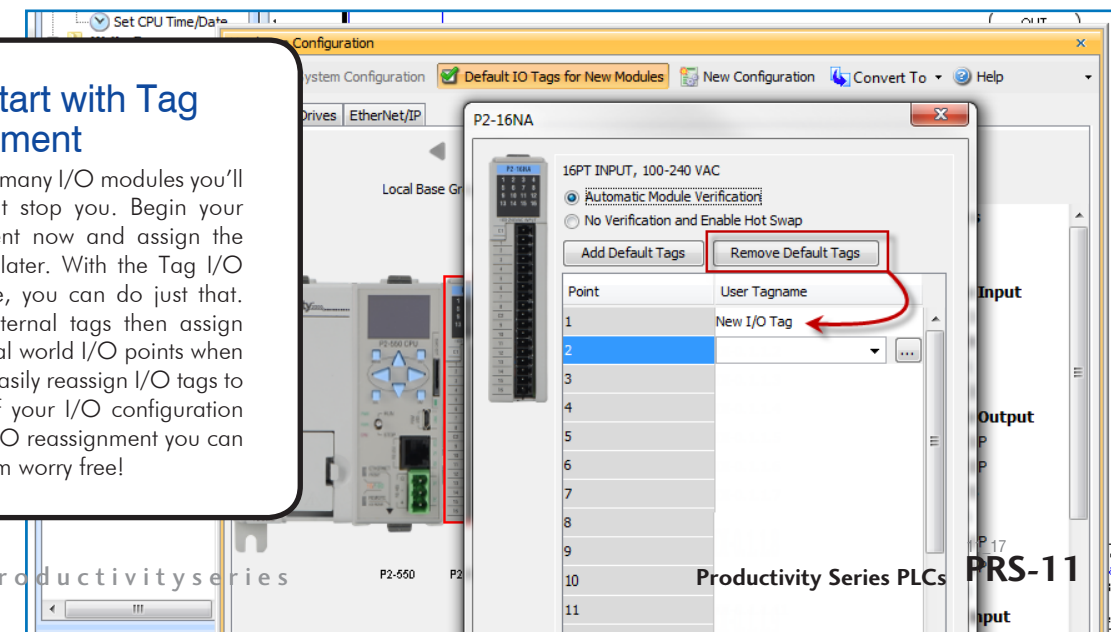
KepDirect OPC Server

## KepDirect

KEPDirect OPC server software connects the Productivity CPU to any 3rd party software with an OPC client interface.

## Get a head start with Tag I/O Reassignment

Not sure exactly how many I/O modules you'll need? Don't let that stop you. Begin your program development now and assign the required I/O points later. With the Tag I/O reassignment feature, you can do just that. Start coding with internal tags then assign those tags to your real world I/O points when you are certain. Or easily reassign I/O tags to a different module if your I/O configuration changes. With Tag I/O reassignment you can start fast and program worry free!



Productivity Series PLCs PRS-11



# FREE software that's field friendly

## Data View tools

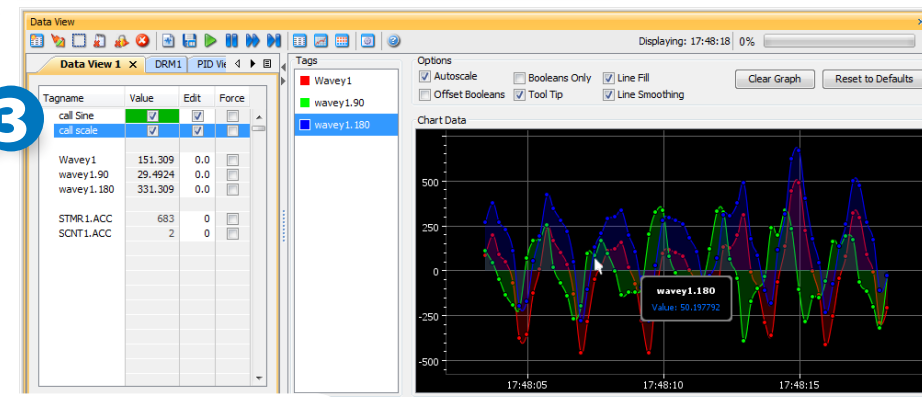
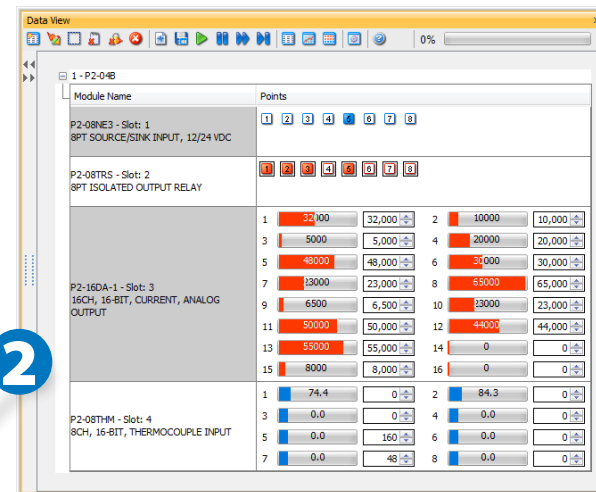
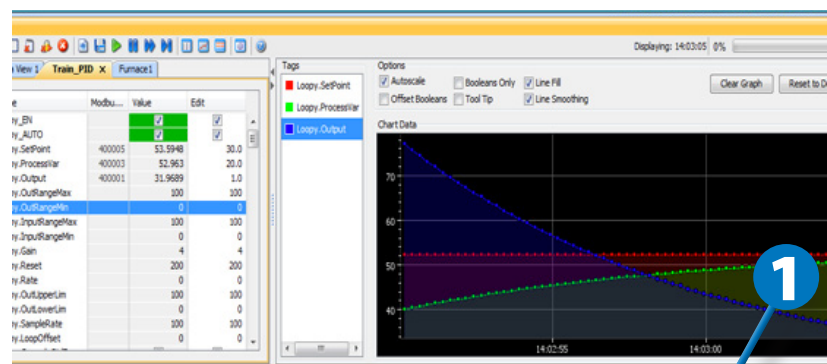
The Data View feature gives you three unique tools in one and each provides invaluable assistance when troubleshooting.

**1.** The basic Data View window lets you monitor, edit and force all tag values regardless of data type. Boolean, signed or unsigned integer, bit of word, string tag, or structure, you can view and edit them all right here! You can also configure each Data View tab to monitor entire instructions, view all forcible tags, view all Modbus address, etc.

The Data View panel is a modal window, meaning that you can change its position in the software layout: dock it, tab it, pin it or float it. You can even drag it outside of the programming software for added usability.

**2.** I/O View is an optional view that gives you a graphical representation of your current hardware configuration. You can easily scan your hardware configuration module-by-module with full editing and forcing capabilities. Force discrete points and change analog I/O values right from this window.

**3.** Graph View is a simple trend graph that you can set up quickly for instant feedback. Drag tags right from your Data View into the Graph view and configure as needed.



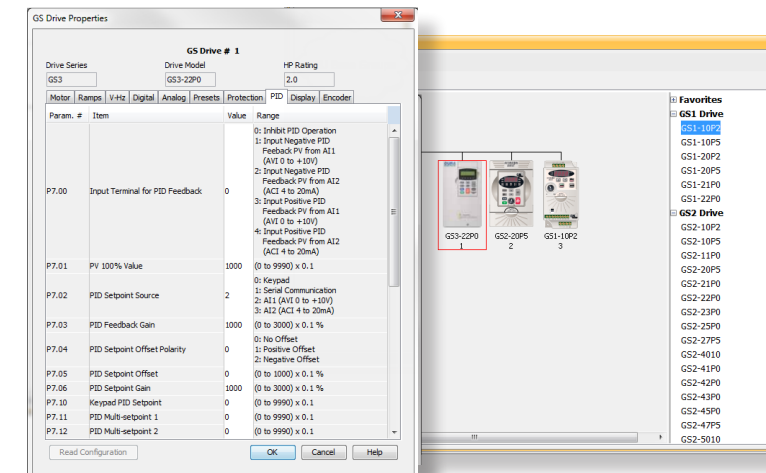
## Helpful tag names

Tag name based controllers provides you with a higher level of documentation than a typical fixed address PLC. When troubleshooting a system or application, it is always easier to identify a physical input, output or even an internal memory location if it has a real-world name. Consider this: X15, I:4/3, C200, B3:0/2 mean very little with respect to what they are actually related to in your process. However, 'System Start\_PB1', 'Auto Mode\_SW1' or 'Batch Seq\_Enabled' are very clear and concise. These common descriptors can be added to a fixed memory address but a tag name based controller makes it simple by embedding the description into the tag. This allows for better naming conventions and results in a more well-written and documented program.

## Configure replacement drives instantly!

One of the most overlooked benefits of the Productivity Series controllers is the integrated GS series drive configuration capability. Not only can Productivity Suite auto-discover newly installed drives and provide all parameters needed for drive configuration (when used with P2000/P3000 only), but you can also save drive configurations in the project. These saved parameters can be written to the new drive with a project transfer, eliminating the need for manual configuration of the drive parameters on the keypad or using yet another configuration utility.

Consider the downtime you could save when replacing a drive in the field, if all it took was a simple download to configure the replacement drive exactly like the one you just removed.



## Runtime edits

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.

## Built-in data logging

Knowledge is power, especially when troubleshooting! Having historical data available to you when trying to find or correct an issue can make a huge difference. The micro SD card or USB slot on the Productivity CPU allows you to log up to 32GB of tag data. This data is saved in .CSV format on a removable micro SD card or USB pen drive and can be easily downloaded to your PC or the most current data log can be emailed via the Send Email instruction.

You can also access the data via a standard browser using the CPU's built-in Web server. Once enabled, simply enter your CPU's IP address into a browser's address bar, enter the appropriate security credentials when prompted, and you have access to system data (error history, CPU status, scan time, etc.) and any data log files. You can view, download or delete these files through the Web browser.

This gives you a quick and convenient troubleshooting tool that you can use to track historical patterns, examine equipment performance, or record data from a newly installed repair.



**If you need assistance, give us a call. Our technical support staff is highly-trained, field-experienced and always happy to help.**

www.monde.com/productivityseries

## Productivity Suite





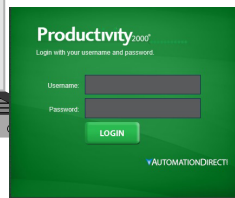
# FREE software that keeps you connected

## At the office...



### Web Server

With the Productivity CPU's integrated Web Server, you can access Data Logger files stored on an installed flash device (optional) as well as monitor system status via the (read-only) System Tags.



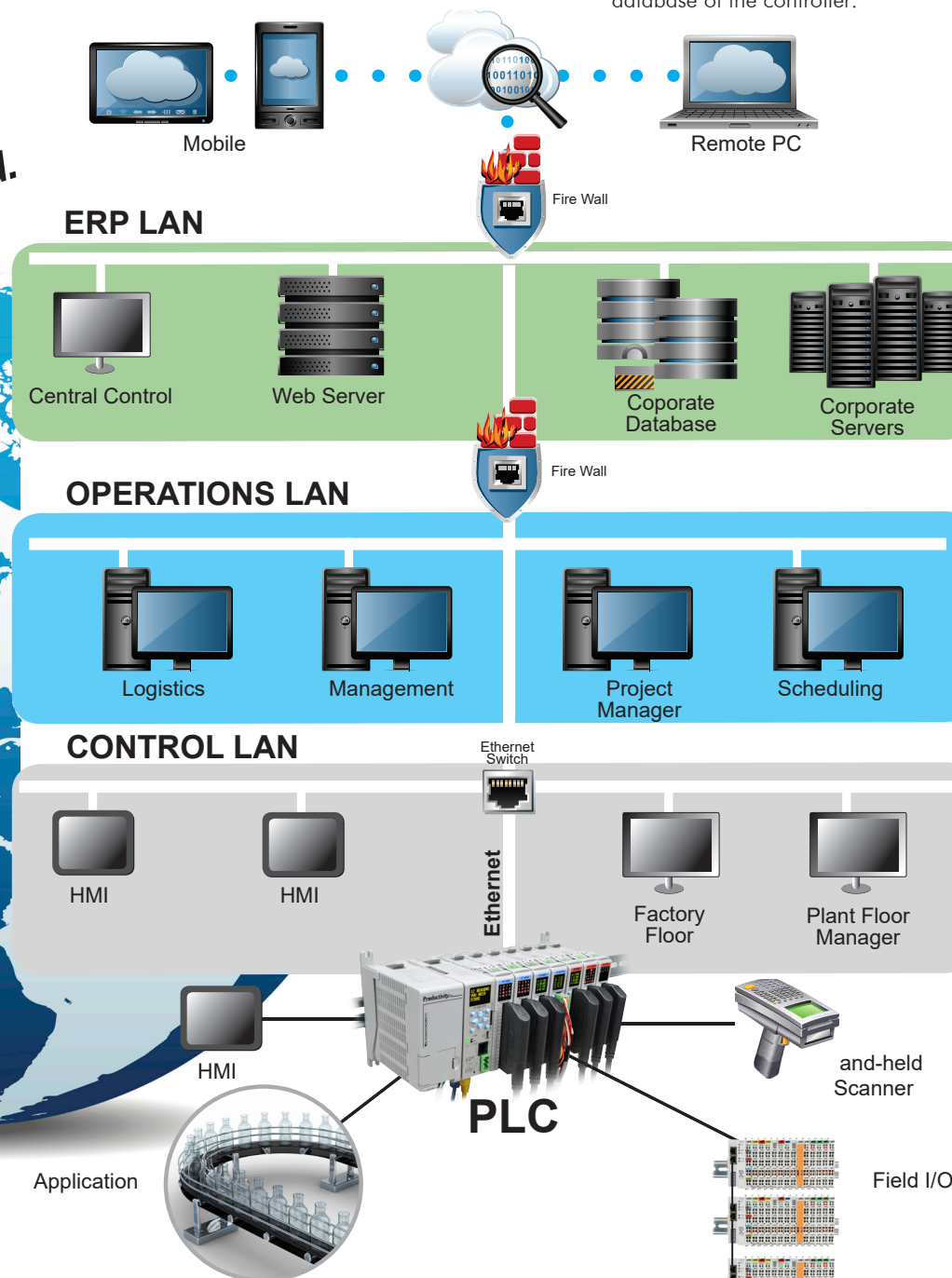
## ...or on the go!



### Apple iOS PACDATA app

The FREE PAC/PLC Data Remote Monitor App allows you to connect to remote systems from a Wi-Fi or cellular network connection. The Remote user can monitor the local PLC system and user tags configured for remote access inside the tag database of the controller.

From Factory Floor to  
anywhere in the world.

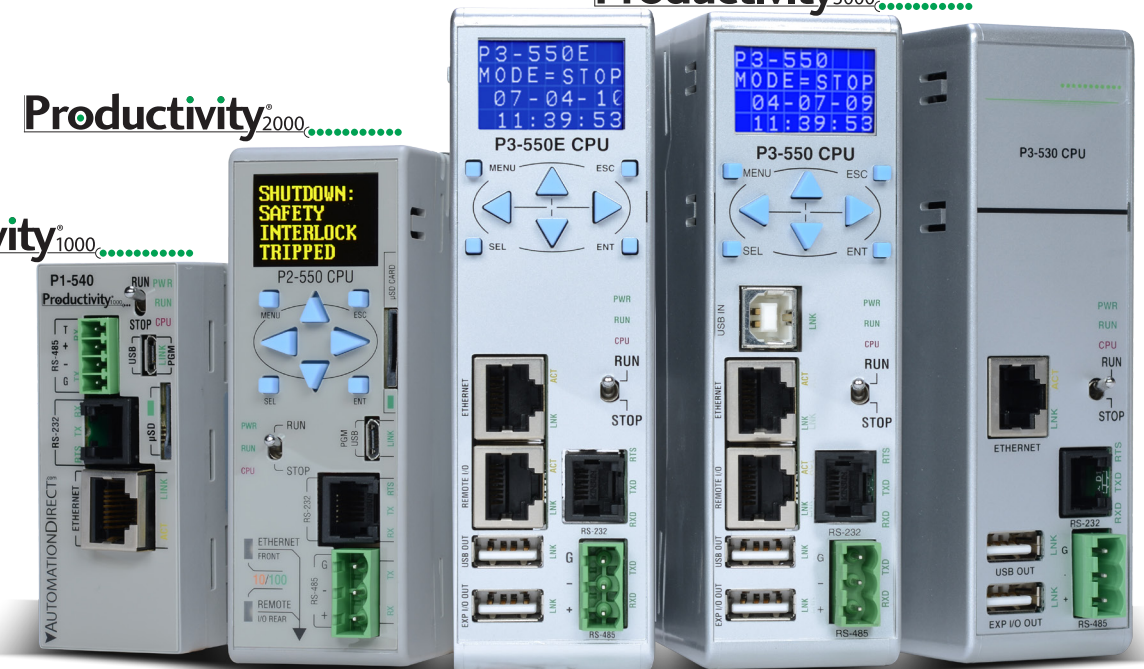


## Productivity<sup>®</sup>Series.....

## Productivity<sup>3000</sup>.....

## Productivity<sup>1000</sup>.....

## Productivity<sup>2000</sup>.....



(P1-540)

(P2-550)

(P3-550E)

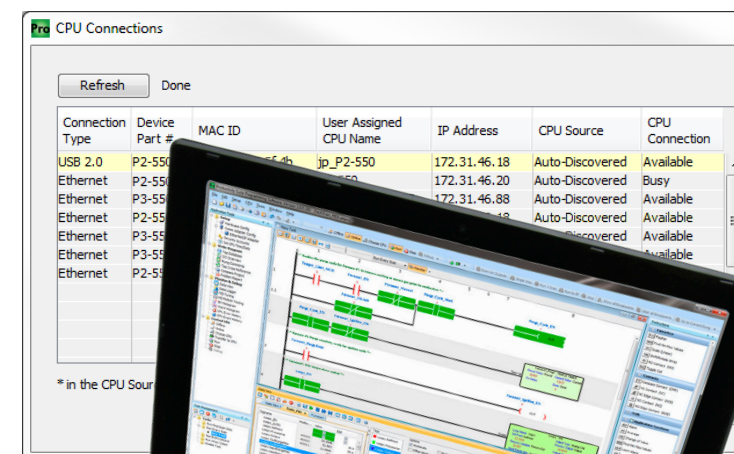
(P3-550)

(P3-530)

## EtherNet/IP<sup>™</sup> Modbus<sup>®</sup>

### Program via USB or Ethernet

The Productivity Suite software supports PLC configuration and programming via either USB or Ethernet connection. The PLC Connections dialog box (shown below) allows you to connect to any PLC on your network for programming or data monitoring operations. The PLC Connections dialog even displays PLCs that are on other subnets, and will allow you to change the IP address and name of those PLCs so that you can connect to and program those as well. The "Blink CPU Display" buttons are a great way to make sure you are connected to the intended PLC, before risking a program transfer.



### Communicate via popular protocols

The Productivity Series CPU comes standard with two of the top industrial Ethernet protocols in our market. Modbus TCP and EtherNet/IP are a must for any up-to-date networked control system. Combine that with Productivity Suite's easy-to-use function blocks and you'll be connected in no time! Productivity Series CPUs support (P3-530 CPU does not support EtherNet/IP):

- EtherNet/IP Scanner (CPU is the master)
  - Explicit Messaging
  - Implicit (I/O) Messaging
- EtherNet/IP Adapter (CPU is the slave)
  - Explicit Messaging
  - Implicit (I/O) Messaging
- Modbus TCP Client (CPU is the master)
- Modbus TCP Server (CPU is the slave)
- Modbus RTU Master (CPU is the master)
- Modbus RTU Slave (CPU is the slave)
- Full Duplex ASCII (RS-232 and RS-485 ports)
  - Supports simultaneous reads and writes
- Custom Protocol
  - Serial, create your own custom protocol packets
  - Ethernet, create your own custom protocol packets
    - o via TCP
    - o via UDP



# FREE software with a user-friendly programming environment

## Customizable layout

The Productivity Suite is organized into a set of fully-dockable and configurable "Panels". Dock them, un-dock them, and rearrange them to suit your programming style.

## Application tools

The Application Tools pane allows quick access to many of the advanced features of the Productivity Suite.

## Main ladder/task area

This is where you create your ladder program. Create/organize your Tasks in this area, and drag and drop instructions from the Instructions Pane. The Application Specific Instructions built in to the Productivity Suite will save you time, and ignite your productivity.

## Application specific instructions

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 used to require a whole bunch of program code. Consider these two frequent ladder logic headaches - finding an average value from a dynamic tag value or its min./max. values. With Productivity Suite you just fill in the blanks. How productive is that! Scaling, calculator-style math, statistics, send email, the list goes on and on.

These are the available ladder logic instructions for the Productivity Series. The best way to learn more about the Productivity series instructions is to download the free software. You can also access the comprehensive online help files for detailed information about the individual instructions at [www.ProductivityPLC.com](http://www.ProductivityPLC.com).

The screenshot displays the Productivity Suite Programming Software interface. The left pane shows the 'Application Tools' menu with categories like Setup, Write Program, Monitor & Debug, and Control CPU. The main area shows a ladder logic program with rungs and instructions. The right pane shows the 'Instructions' list, categorized into Favorites, Contacts, Coils, Array Functions, Data Handling, Math Functions, Program Control, String Functions, and System Functions. The bottom pane shows the 'Task Management' window with a list of tasks and their execution status.

**Application Tools**

- Setup
  - Hardware Config
  - Comm Adapter Config
  - EtherNet/IP Adapter
  - Security Accounts
  - Set CPU Time/Date
- Write Program
  - Tag Database
  - I/O Overview
  - Rung Comments
  - Tag Cross Reference
  - Compare Project
- Monitor & Debug
  - Data View
  - Data Logger
  - PID Tuning
  - HS Module Testing
  - Bit Histogram
  - Word Histogram
  - CPU Error History
  - CPU Event History
- Control CPU
  - Offline
  - Online
  - Choose CPU
  - Transfer to CPU
  - Run
  - Stop
  - Debug

**Task Management**

- Tasks
  - Run First Scan Only
  - Run Every Scan
  - Run Every Second
  - Run When Called
  - Changeover
  - Exception Subroutine
  - Just Testing
  - Disable Task

**Instructions**

- Favorites**
  - [FLS] Flasher
  - [FMM] Find Min Max Values
  - [SCL] Scale (Linear)
  - [SRA] Shift/Rotate Array
  - [+I] NO Contact (NO)
- Contacts**
  - [C] Compare Contact (C...)
  - [NC] NC Contact (NC)
  - [NCE] NC Edge Contact (NCE)
  - [NO] NO Contact (NO)
  - [NOE] NO Edge Contact (NOE)
- Coils**
  - [DBN] Debounce Coil
  - [FLS] Flasher
  - [NOP] No Operation
  - [OR] OR Out
  - [OUT] Out Coil
  - [END] Program End
  - [RST] Reset Coil
  - [SET] Set Coil
  - [TMC] Timed Coil
  - [TGC] Toggle Coil
- Application Funct...**
  - [ALM] Alarm
  - [AVG] Average
  - [CHG] Change of Value
  - [FMM] Find Min Max Values
  - [LALM] Learn Alarm
  - [LIM] Limit Value
  - [RMP] Ramp
  - [GEN] Ramp Generator
  - [SCL] Scale (Linear)
  - [SCLN] Scale (Non Linear)
  - [SUM] Selected Summation
  - [SW] Switch
- Array Functions**
  - [STA] Array Statistics
  - [CPA] Copy Array
  - [FLB] Fill Array
  - [PBA] Pack Boolean Array
  - [PWA] Pack Word Array
  - [SRA] Shift/Rotate Array
  - [UPBA] UnPack Boolean Array
  - [UPWA] UnPack Word Array
- Counters/Timers**
  - [CNT] Counter
  - [SCNT] Simple Counter
  - [STMR] Simple Timer
  - [TMR] Timer
- Communications**
  - [HIN] ASCII In
  - [HOUT] ASCII Out
  - [RCR] Clear Serial Port Buffer
  - [CPI] Custom Protocol In
  - [CPO] Custom Protocol Out
  - [CPS] Change Port Settings
  - [DWR] DataWorx Request
  - [EMSG] EtherNet/IP Explicit M...
  - [GSR] GS Drives Read
  - [GSW] GS Drives Write
  - [MRW] Modbus Read
  - [MWX] Modbus Write
  - [RX] Network Read
  - [WX] Network Write
  - [EMAL] Send Email
  - [UMW] ViewMarq Write
- Data Handling**
  - [ABSE] Absolute Encoder
  - [CMPB] Compare Values
  - [CPD] Copy Data
  - [FIFO] FIFO/LIFO
  - [FIB] First Bit On/Off
  - [INC] Inc/Dec
  - [LOG] Logical Bits
  - [LOGW] Logical Words
  - [LKUP] Lookup Table
  - [PKB] Pack Bits
  - [PKW] Pack Word
  - [SFR] Shift/Rotate Bits
  - [SMAG] Sign Magnitude
  - [UPKB] UnPack Bits
  - [UPKW] UnPack Word
- Drum Sequencers**
  - [DRM] Drum
  - [SEQ] Sequencer
- High Speed I/O F...**
  - [HOM] Find Home
  - [PST] Preset Table
  - [PLS] Programmable Limit S...
  - [REG] Registration
  - [SPDS] Set Position
  - [SMOV] Simple Move
  - [WMOV] Velocity Move
  - [WHSW] Write HS Outputs
- Math Functions**
  - [DATA] Data Statistics
  - [MATH] Math Editor (MATH)
  - PID**
    - [PID] PID Loop
    - [RPS] Ramp / Soak
  - Program Control**
    - [CALL] Call Task
    - [FOR] For Loop
    - [BRK] For Loop Break
    - [NXT] Next
    - [RFT] Return From Called Task
    - [STP] Stop Program
    - [FLT] User Defined Fault
  - String Functions**
    - [CMP\$] Compare Strings
    - [CPC] Copy Character
    - [EXT\$] Extract String
    - [FND\$] Find String
    - [PK\$] Pack String
    - [LEN\$] String Length
    - [UPK\$] UnPack String
  - System Functions**
    - [LCD] Display Page
    - [RTC] Set CPU Time

## Powerful task manager

Have you ever had to write custom ladder logic to get a section of code to only execute periodically and not every scan? Or what about ladder code that only needs to run on the first scan? With the Productivity Suite Task Manager you simply break up your ladder logic into separate tasks and then drag them into the appropriate categories. In the screen shot to the left, the task (or ladder logic routine) Setup and Initialization has been placed in the "Run First Scan Only" category, and will only execute once at start-up.

Combined with the ability to make run-time edits, the Task Manager is a powerful coding and debugging tool. Keep a task in the "disabled" category while you are developing it, and then drag it into the "Run Every Scan" to test it. Place data collection and other periodic tasks in the "Run Every Second" category and improve the scan time of your main routine.

Give it a try - we think you'll agree - the Task Manager offers true productivity enhancement.

## Collapsible Categories

Instructions are organized into collapsible categories, with a Favorites category at the top, where you can keep your frequently used instructions. It's just one more way that the Productivity Suite Software enables you to be more productive.

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# FREE software that's helpful and that customers love

## Comprehensive help files

Help Files are always available with detailed information on hundreds of topics and the latest version is embedded within your FREE copy of Productivity Suite. If that's not enough, give us a call at between 9am - 6pm weekdays. Won't cost you a penny and we're always glad to help.



Click here to browse the actual help files that are in software

**Call Task (CALL) Instruction**

Task to Run:

☐ Show Instruction Comment

OK Cancel Help

Call Task Instruction (CALL)	Boolean	Integer, 8 Bit Unsigned	Integer, 16 Bit	Integer, 16 Bit Unsigned	Integer, 16 Bit BCD	Integer, 32 Bit	Integer, 32 Bit BCD	Float, 32 Bit	String	Constant	Notes
a Task To Run											Select the Name of the Task.

**Application Example** In this application example, there are three fill stations located in three major cities that only require periodic control. Each Fill Tank will be controlled using the Call Task instruction.

CALL TASK Fill Tank Miami CALL TASK Fill Tank Boston CALL TASK Fill Tank Atlanta

**Simple Move (SMOV) Instruction**

Stop Setup - Immediate Stop	Stop Setup - Ramp To Stop at the Maximum Configured Rate	Enable Registration

**Application Example** In this example, the Simple Move instruction is used to rotate the rotary table of a switch plate production system. Each blank plate is rotated under the drill press and held there until the plate is drilled. The Simple Move instruction indexes the rotary table the appropriate distance for each new plate. Once drilled, the switch plates are then rotate out and stacked for Packaging.

**SIMPLE MOVE**

Module Name: Drill Press #1  
Channel: 1 Channel Name: Rotary Table  
Move Setup:  
Addressing: Absolute  
Direction: Positive  
Target: Table Index Count  
1000  
Velocity: Table Index Speed  
500  
Acceleration: Table Accel  
1000  
Deceleration: Table Decel  
1000  
Step Setup  
Immediate Stop

**PID Loop (PID) Instruction**

**Cascade PID Operation** Cascade PID Loop Control can improve your system performance when compared to a Single Loop Control if your process demonstrates one of the following characteristics:

- When disturbances in a secondary process directly affects your primary process.
- In this case a **Cascade Controlled System** can limit the effects of disturbances on the second process variable on the primary output.
- When the **Process Gain** or the actuator of your secondary process is **Non-linear**.
- In this case a **Cascade Controlled System** can limit the effect of variations in the secondary system on the main control system's performance.

There are three modes of operation to consider when operating a Cascade Loop process:

- Manual Mode Operation** is when the PID Loop instruction is enabled (ladder input), but it is not in **Auto Mode** (ladder input) or **Cascade Mode** (Cascade Mode Enable control tag).
- In **Manual Mode** the algorithm is not calculated and the user can write values to the **Process Output** variable (Steam Control Valve) as shown in the diagram below.
- Set Point and Process Variables** are updated but not acted upon.
- Alarms** are active in **Manual Mode**.

**2. Auto Mode Operation** is when the PID Loop instruction is enabled (ladder input), set to **Auto Mode** (ladder input) but not set to **Cascade Mode** (Cascade Mode Enable control tag).

- In **Auto Mode** both the **Major** and **Minor** Loops are calculated as individual Loops. The **Minor Loop** set point is pulled from the **Auto Mode SP Tag** defined in the **Minor Setup Tab** of the instruction and not from the **Major Loops Output**, as shown in the diagram below.
- Set Point and Process Variables** are updated but not acted upon.
- Alarms** are active in **Auto Mode**.



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Domenic in GLOUCESTER, MA

"My go to PLC. The quality and performance is there. I have to use other brands of PLCs for one reason or another from time to time but this one is my favorite. Top 4 reasons I use this PLC... Small footprint, performance, great tech support and the software is by far the best out there. Everyone has a favorite and this one is mine. My second favorite is its bigger brother, but this one has so much hp, I don't have to call on him that often."

John in SIMPSONVILLE, SC

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John in SIMPSONVILLE, SC

[www.monde.com/productivityseries](http://www.monde.com/productivityseries)

Productivity Series PLCs PRS-19

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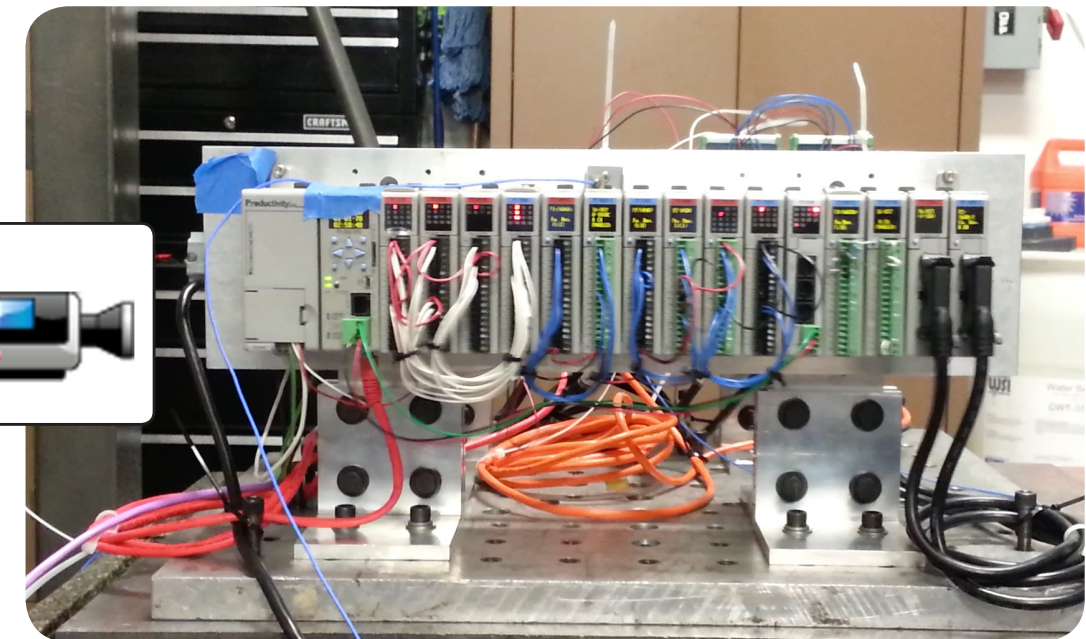


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Online video of Productivity2000 QC vibration testing: <http://bit.ly/QCshake>

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- Automatic tag creation with predefined tag structures
- Detailed Data view and histogram functionality
- Much, much more...

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User Display on CPU	✓	✓	---	✓	---
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Built-in Serial Ports (RS-232 & RS-485)	2	2	2	2	2
Built-in Ethernet Ports (RJ45)	2	2	1	2	1
EtherNet/IP Protocol	✓	✓	---	✓	✓
Modbus RTU (serial) & Modbus TCP (Ethernet)	✓	✓	✓	✓	✓
Remote Expansion Support	✓	✓	---	✓	---
Local Expansion Support	✓	✓	✓	---	---
Intelligent Module Support	✓	✓	✓	✓	---
Total I/O Capacity	59,840	59,840	3,520	4,320	128
Hot Swappable I/O Modules	✓	✓	✓	✓	---
Integrated GSDrive Support	✓ 32 max.	✓ 32 max.	---	✓ 16 max.	---
Data Port (data logging & project transfer)	✓ USB	✓ USB	✓ USB	✓ microSD	✓ microSD*
Total Memory	50 MB	50 MB	25 MB	50 MB	50 MB
Average Scantime (µsec) (1K boolean, 128 I/O)	380	380	380	200	1300
Price					

\* Project transfer from the microSD card is not supported in the P1-540 CPU

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