Productivity3000®

Advanced control from AutomationDirect

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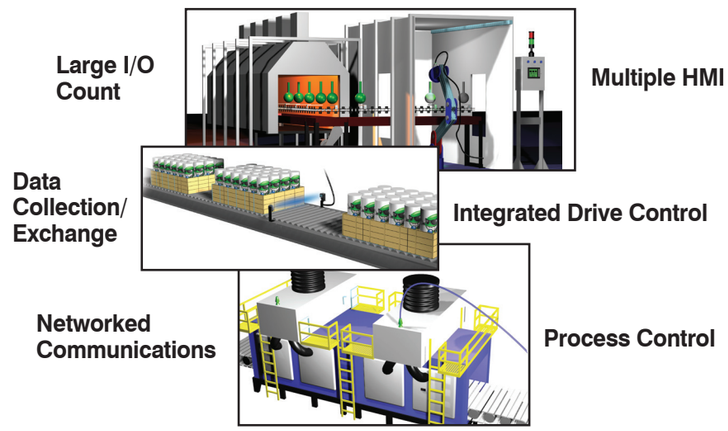
Productivity3000®

With Productivity3000, you can get all the power you need for advanced applications. The great thing is, even if you don't need every bell and whistle, you still get an easy-to-use, super-flexible machine that costs less than most traditional PLCs.

Who wouldn't want a controller that's a communications powerhouse with seven built-in communication ports, easy local and remote I/O connection, USB or Ethernet programming and an integrated LCD display - and that's just the CPU!

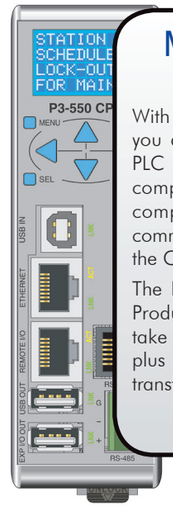
2 YEAR WARRANTY

Do these with ease



For the latest prices, please check AutomationDirect.com.

It's our job to make you more productive

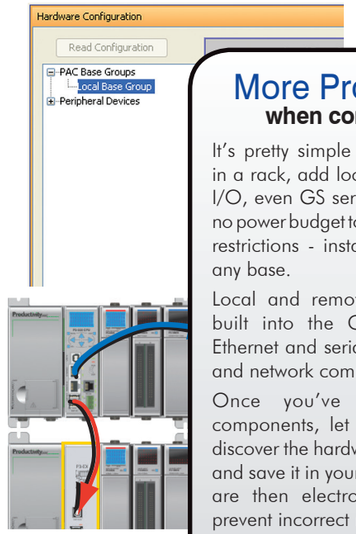


More Productive
when specifying

With Productivity3000, we're giving you advanced features in a rugged PLC frame at a fraction of the cost compared to similarly equipped competitive products. Expansive communications capability built into the CPU is standard.

The FREE ($495 value) full-featured Productivity Suite software lets you take a test drive before you buy, plus no licenses to register, track or transfer.

Practical prices



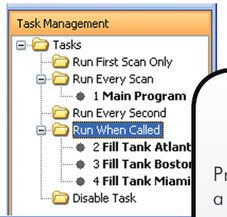
More Productive
when configuring

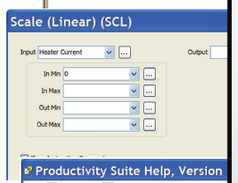
It's pretty simple - install the CPU in a rack, add local and/or remote I/O, even GS series drives. There's no power budget to calculate or other restrictions - install any module in any base.

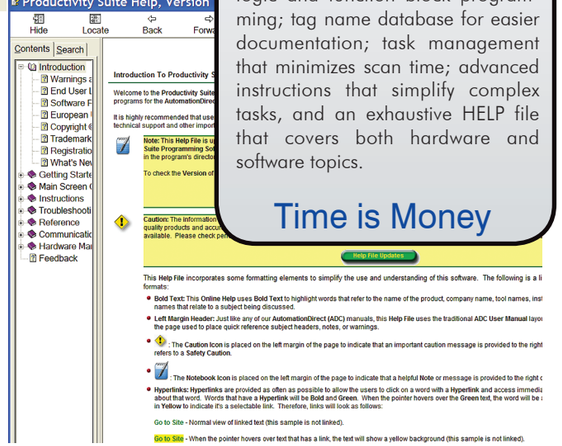
Local and remote I/O ports are built into the CPU, as well as Ethernet and serial ports for device and network communications.

Once you've connected the components, let the system auto-discover the hardware configuration and save it in your project. Modules are then electronically keyed to prevent incorrect replacement.

Simpler means fewer mistakes





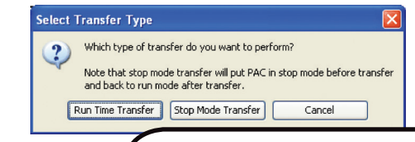


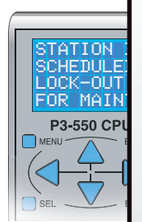
More Productive
when programming

Programming and commissioning a system with any type of automation controller is time consuming and can be a large part of your overhead. We've created powerful processes in the programming environment to reduce your development time.

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

Time is Money





More Productive
when troubleshooting

Run-time editing, hot-swappable I/O modules and onboard program documentation are tools that help you commission and troubleshoot your system more quickly and conveniently.

Use the built-in LCD display on the CPU and Remote Slave modules for system diagnostics, configuration and troubleshooting.

The LCD interface built into each analog module allows you to view field signal levels without the hassle of an external meter.

Advanced Diagnostics

For the latest prices, please check AutomationDirect.com.

Advanced control and communications

TOP 10 Hardware Highlights

- High-performance CPU (P3-550E) with **50MB memory**, fast scan time
- **Modular** rack-based footprint with 36 discrete and analog I/O option modules, up to 59K+ I/O.
- Unmatched **built-in communications** capabilities, including local & remote I/O ports, EtherNet/IP and networking
- Built-in EtherNet/IP Scanner and Adapter functionality (P3-550(E) CPUs)
- P3-550, same great features as the P3-550E, plus a the USB programming port
- **LCD on CPU** and Remote Slave for diagnostics
- **LCD on ALL analog modules** - helpful in troubleshooting and reading process values
- **Hot-swappable** I/O
- No module placement restrictions - **any module in any slot**, any base
- **No power budget** limitations
- Optional I/O terminal blocks or easy ZIPLink **plug-and-play wiring**

and a two-year warranty to boot!

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High-performance CPU $460.00, with 6 communication ports

The P3-550E has 50MB of memory and fast scan time (266MHz processor) - this CPU does the work of at least four or five pieces of hardware compared to other controllers. With its six built-in communication ports, it does the usual CPU stuff like storing and running the program, plus -

- Tag database and program documentation storage in CPU (Program pre-loaded on PC not necessary)
- USB local I/O expansion (no local I/O expansion master module needed)
- Ethernet remote I/O expansion (no Ethernet remote master module needed)
- High-speed Ethernet port for HMI and peer-to-peer or business system networking (no Ethernet communications module needed)
- Support for EtherNet/IP devices
- Two serial ports for peripheral device interface or controller networking
- USB data logging right from the CPU

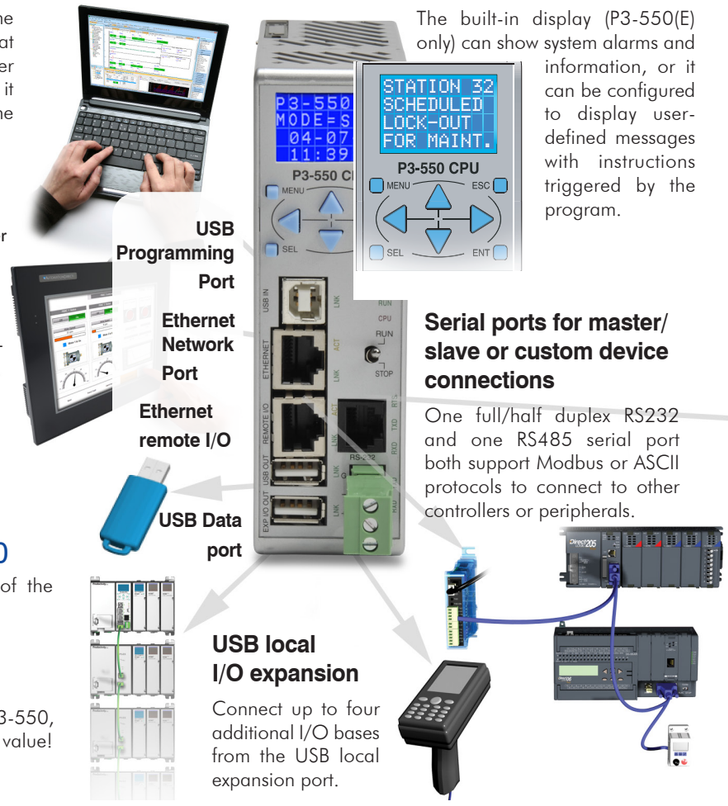
High-performance CPU at with 7 Comm ports, only $819.00

The P3-550 CPU provides all the performance of the P3-550E plus a USB type B programming port.

Basic CPU only $429.00 with 5 communication ports

The P3-530 CPU has a few less features than the P3-550, but it's a top performer in its own class and a great value!

- 25 MB memory, 266 MHz processor



LCD aids troubleshooting

The built-in display (P3-550(E) only) can show system alarms and information, or it can be configured to display user-defined messages with instructions triggered by the program.

Serial ports for master/ slave or custom device connections

One full/half duplex RS232 and one RS485 serial port both support Modbus or ASCII protocols to connect to other controllers or peripherals.

USB local I/O expansion

Connect up to four additional I/O bases from the USB local expansion port.

Let technology simplify your job

Field access with display on analog modules

The LCD on all analog modules gives you quick and easy access to field signal values - no need to drag out a multimeter or other measurement tool. Module and signal faults are also shown.

EtherNet/IP communication

With EtherNet/IP as a native protocol (P3-550 & P3-550E CPUs only), we make it easier to connect to your existing devices. Whether you are configuring a new application or looking to expand an existing one, we can get you connected for less.

Connect to existing EtherNet/IP enabled controllers, variable frequency drives and I/O.

Plenty of discrete and analog I/O modules

Over 35 I/O modules capture and control a wide range of field signals.

- Up to 64-point DC I/O
- Up to 16-point AC I/O, isolated or non-isolated
- Up to 16-point analog I/O; voltage, current or temperature

I/O modules can be placed in any slot, in any base - no need to remember special restrictions or calculate power budgets. And for critical systems, the hot-swap feature can save you from a downtime or worse.

To make I/O wiring fast and easy, use our ZIPLink cables and connector modules.

Compatible with ZIPLink Connection Systems

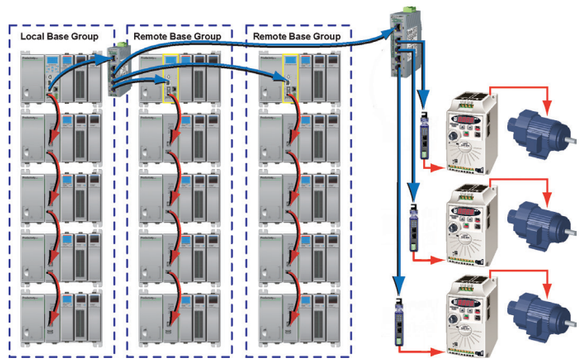
Ethernet remote I/O like you've never seen

Connect up to 16 remote base groups from the P3-550(E)'s Ethernet remote expansion port. Each remote group supports up to four additional local bases. You could end up with over 59,000 I/O!

The convenient USB port on the Remote Slave module lets you program and monitor (P3-RS only) from any remote I/O location; plus two serial ports support Modbus or ASCII devices.

Easy drive integration

Drive-intensive applications are a snap with this remote I/O network. Connect up to 32 AutomationDirect GS series AC drives on the Ethernet remote I/O network. Units are auto-discovered when configuration update is requested - it's that easy.



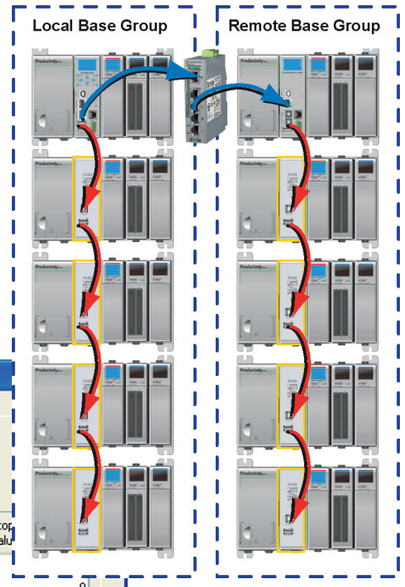
Let's start with the basics ...

Huge I/O capacity

Start with high-density I/O modules (up to 64 inputs or outputs per module) install those in an 11- slot base, and you've got over 700 I/O in a single rack! Add up to 4 local racks to your local base group, and the possible I/O total grows to over 3,500 I/O points.

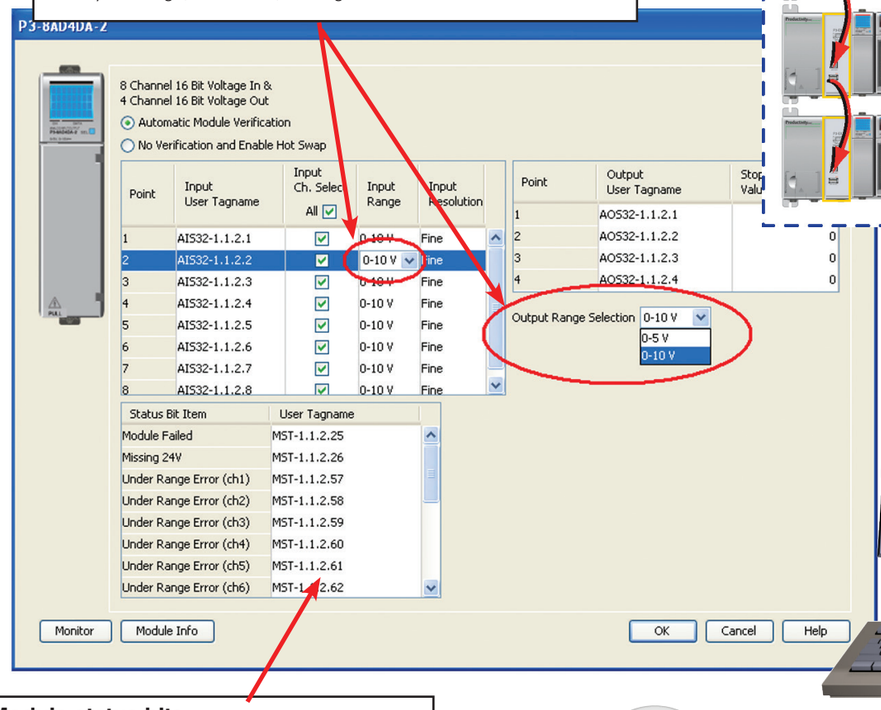
Still need more? Add up to 16 Remote Slave racks, each with its own set of four local expansion racks and the number is truly staggering - well over 59,000 I/O points.

Add up to 16 remote base groups!



Software configurable I/O modules

Most of the analog I/O modules allow software configuration - no dip switches to set! Just pull up the hardware configuration dialog box, and select your range, resolution, etc. right on the screen.



Module status bits

Module Status Bits (MST) are automatically created for each module when you select (or auto-discover) that module in your hardware configuration. These bits are added to your tagname database and you can change or augment the tagnames to be even more descriptive.

Use these MST bits for error checking and reporting, and to simplify the troubleshooting process.

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Plug-and-play programming

Have you ever felt unproductive configuring stop bits, parity, or baud rates in order to connect to a programmable controller? The Productivity3000 uses USB programming for true plug-and-play functionality. Plug in your USB cable and move on to more productive activities like configuration and programming. (not available on the P3-550E CPU)

You can program across Ethernet as well, but we wanted Productivity3000 to have a fast reliable way to get started. When combined with auto-discovery of I/O modules, the USB plug-and-play capability helps you be productive right away.

For the latest prices, please check AutomationDirect.com.

... Power AND Grace!

Tremendous processing power

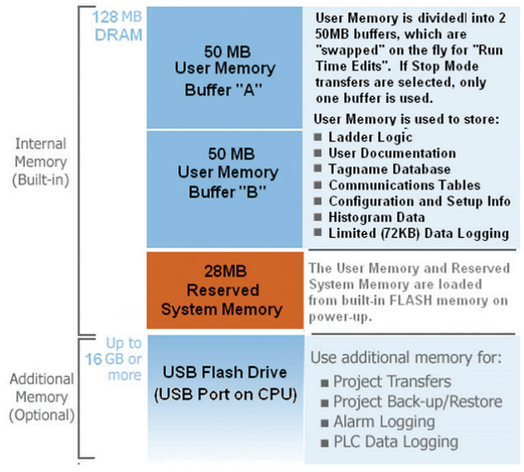
The P3-550(E) CPU's lightning fast processor executes your ladder code quickly and efficiently!

Sub-millisecond scan times

The performance benchmark used for testing the Productivity3000 includes 3 kbytes of Boolean logic, and 1k of I/O. The Productivity3000 CPUs consistently executes this test with a scan time of less than 650 microseconds.

Powerful and efficient

This processing power also means that there are practically no limits on the number of timers, counters, and PID loops for your application. And the powerful task management tools built in to the software help you streamline your ladder code for maximum efficiency.



Generous 50 MB of memory

Plenty of storage for your program AND...

Documentation stored on-board

Store your entire project with ALL documentation in the CPU, and never hunt for that old laptop again. You know, the only one that has the updated code from last year when you made all those changes. Sure, we recommend that you keep a backup of all your code and documentation, but who hasn't been burned by this classic PLC problem?

Place any module in any slot

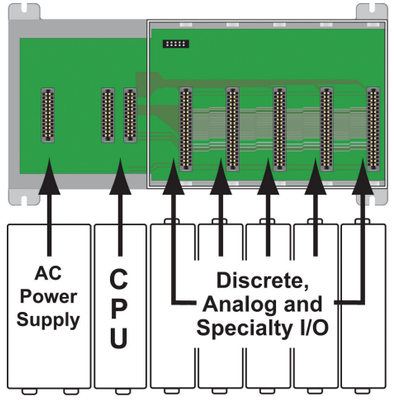
You can install any I/O module in any I/O slot of any base in a Productivity3000 system with no restrictions. The only fixed positions are shown in the figure below; a power supply must be in the power supply slot, and one of the three controllers must go in the CPU slot. Other than this, there are no special slots or rules governing placement of your discrete, analog, or specialty I/O modules.

No power budgeting required!

Both the AC and the DC power supply are powerful enough to power any combination of I/O modules in any size base.

Hot swap I/O modules

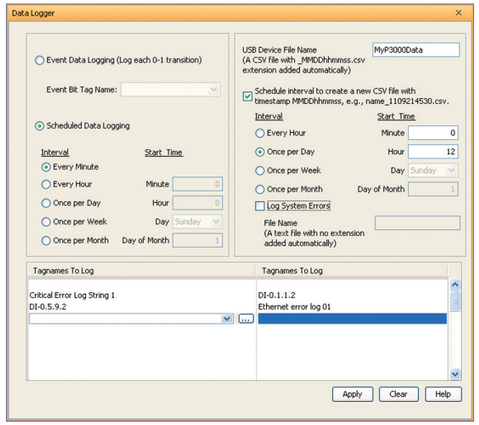
Save time and avoid long start-up operations or other down-time related inconveniences. All Productivity3000 I/O modules support hot-swap.



Electronic keying

Once you have determined the desired placement of the I/O modules in your Productivity3000 system, you can enable electronic keying to prevent inadvertent rearrangement or improper replacement of any I/O module.

Work smarter ...



Data logging

USB-FLASH

The Productivity3000 accepts USB-Flash drives and offers this easy-to-configure Data Logger dialog box shown at left. USB drives can be used to log system errors or any type of controller data. Log up to 64 tag values for up to 32GB of data storage. Capture data periodically or when certain events occur.

USB drives can also be used to upload or download a project to/from a Productivity3000 without having a PC present. This feature is great for updating remotely located CPUs - just send your project on a USB drive to any factory in the world, and the controller can be updated with the most current files.

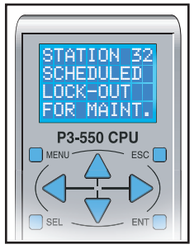
Advanced diagnostics

LCD on all analog modules!

All Productivity3000 analog modules have a four-line LCD on the front panel which provides a quick and easy way to troubleshoot many problems without needing a meter or a PC. Just as you can quickly check the front panel of a discrete module to determine the state of an I/O point, now you can check the status of your analog signals just as easily.

Non-invasive measurements

The LCD allows non-invasive measurements; no need to connect a multi-meter in line with the analog signal (which might even affect the signal being measured). View the signal in volts or milliamps (depending on the module) or view the resulting tag value - i.e. 0-65535 (Decimal or Hex) that is being processed by the CPU.



LCD on CPU aids troubleshooting

The built-in display on the CPU can show system alarms and information, or it can be configured to display user-defined messages with instructions triggered by the program.

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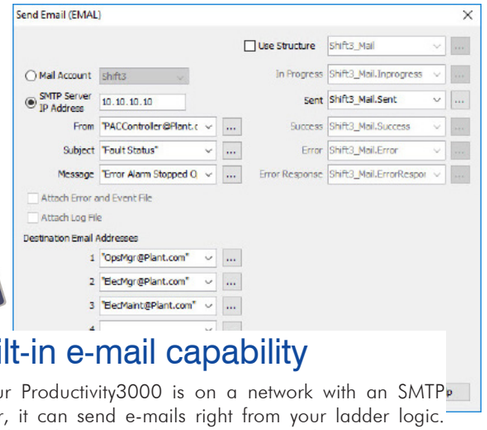
From: PACController@Plant.com
Sent: Thursday, January 21, 2010 4:30 PM
To: OpsMgr@Plant.com
Subject: Fault Status

Error Alarm Stopped Operation

Date: 1/21/2010
Time: 16:29:03



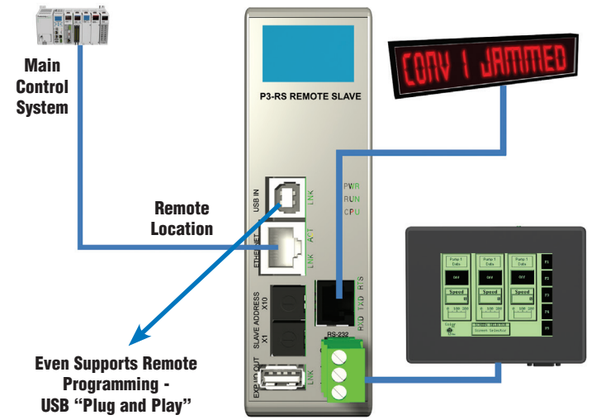
Built-in e-mail capability

If your Productivity3000 is on a network with an SMTP server, it can send e-mails right from your ladder logic. Embed tag data or attach the most current data file for even more informative messaging. The Send Email instruction makes it simple.

... with these intelligent strategies

Remote slave connectivity options

The Remote slave module installs in the CPU slot of the first base in each remote base group. It includes two serial communication ports (both supporting Modbus RTU Master/Slave and ASCII In/Out up to 115.2K baud rate): one (1) RS-232 port and one (1) RS-485 port. So each of your remote base groups can connect to additional serial devices. You can even program your P3-550(E) CPUs from the USB port on any remote slave; just plug in a USB cable and be productive - even in a remote location!



Affordable ZIPLinks save hours of wiring

We strongly recommend the use of ZIPLink cables and wiring modules, which eliminate the need for hand wiring of I/O modules to DIN rail terminals. In fact, many of the Productivity3000 I/O modules do not include the terminal block for direct connection of I/O. In particular, the high-density (32-point and 64-point) modules require the use of the ZIPLink cables (there simply isn't enough room on the front of these module to terminate that many I/O points).

Choose a *ZIP*Link module and cable...

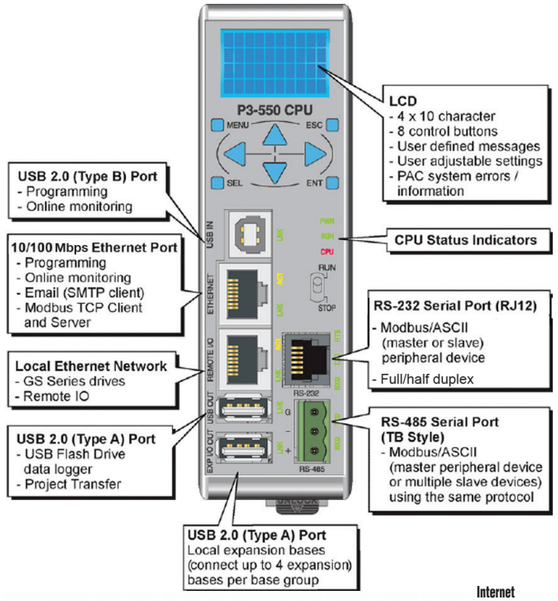
...or a *ZIP*Link pigtail

For the latest prices, please check AutomationDirect.com.

Incredible communications capabilities ...

Seven ports on the P3-550 CPU

The P3-550 CPU has seven ports available to handle a variety of communication needs. You shouldn't have to pay extra or take up valuable slots for each communication port required to solve your application. From plug-and-play programming to database connectivity, the Productivity3000 is designed to meet your communication needs.

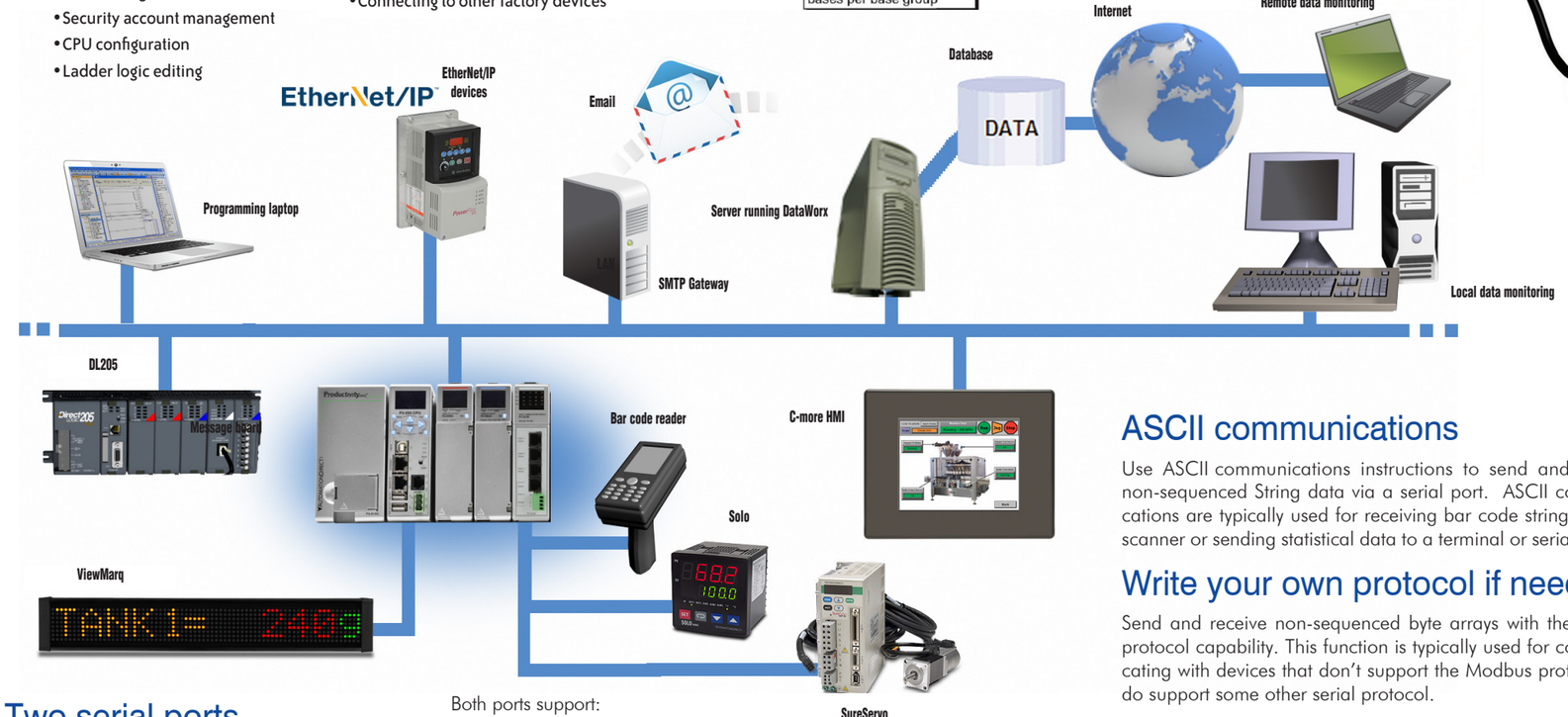


Two Ethernet ports

The P3-550(E) CPUs have two built-in Ethernet ports. One connects to Remote Slave I/O racks (up to 16) and up to 32 variable frequency drives. The other can connect the CPU to HMIs, other controllers, EtherNet/IP devices, and to your factory network.

CPU programming and monitoring including:
- Real-time data view
- Error history monitoring
- Task management
- Security account management
- CPU configuration
- Ladder logic editing

Ethernet capabilities include:
- Database/enterprise connectivity
- Connect to EtherNet/IP devices
- Sending e-mail
- Connecting to other factory devices



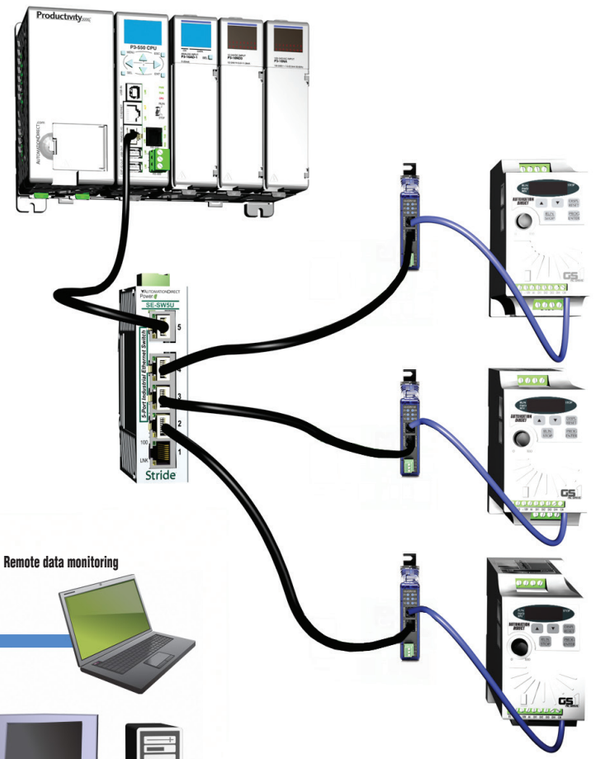
Two serial ports

The P3-550(E) CPU has two serial ports built in:
- One (1) full/half duplex RS-232 (RJ12)
- One (1) RS-485 (3-wire terminal block)

Both ports support:
- Modbus RTU Master connections
- Modbus RTU Slave connections
- ASCII incoming and outgoing communications
- Custom Protocol incoming and outgoing communications

Add up to 44 additional serial ports with SCM modules

... all built in to the CPU!



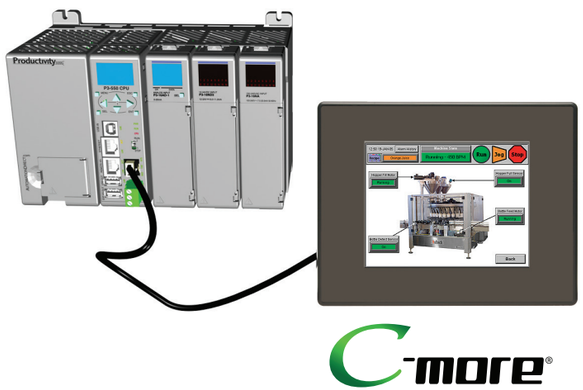
Connect up to 32 VFDs

Connecting your Productivity3000 to variable frequency drives couldn't be easier! Connect up to 32 of our GS series drives via Ethernet, and the Productivity3000 will automatically detect them. The auto-discovery process eliminates the configuration headaches - your drives are ready to program in just a few minutes.

After the auto-discovery process, the dedicated instructions "GS Drives Read" and "GS Drives Write" will prompt the programmer with all the available parameters (in both "run mode" and "stop mode") that can be configured for each model of drive - then it's a cinch to fill in the blanks and program your drives!

Perfect match for our C-more HMI

Export your tagname database from the Productivity3000 and import it into C-more software to jumpstart your HMI development. No more digging through your notes, or hunting through your ladder logic to find the right tagname.



C-more®

ASCII communications

Use ASCII communications instructions to send and receive non-sequenced String data via a serial port. ASCII communications are typically used for receiving bar code strings from a scanner or sending statistical data to a terminal or serial printer.

Write your own protocol if needed

Send and receive non-sequenced byte arrays with the custom protocol capability. This function is typically used for communicating with devices that don't support the Modbus protocol but do support some other serial protocol.

Simple motion control by design

P3-HSO

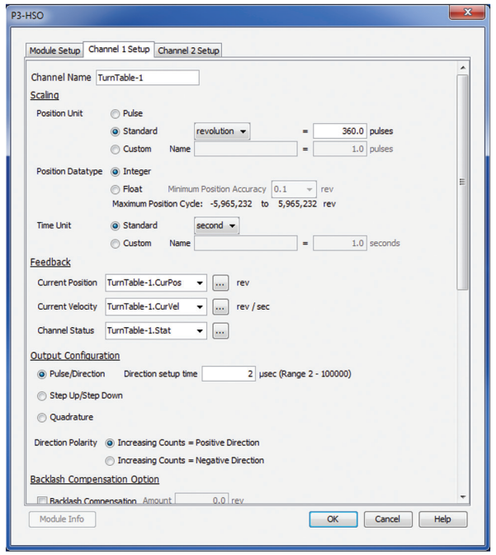
High-Speed Pulse Output Module 2 channels @ 1MHz/channel

P3-HSI

High-Speed Input / Counter 2 channels @ 1MHz/channel

ZL-CBL40-*S

3 ZIPLink Cables for the High-Speed modules

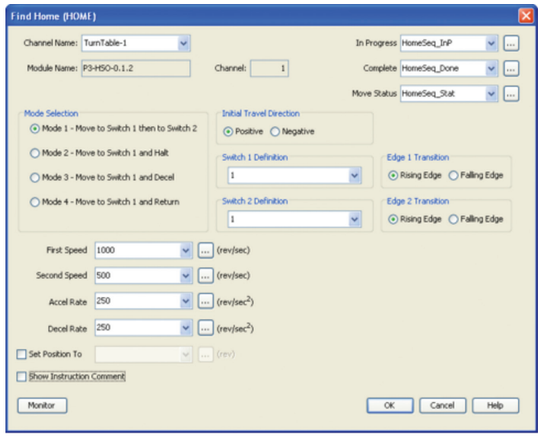


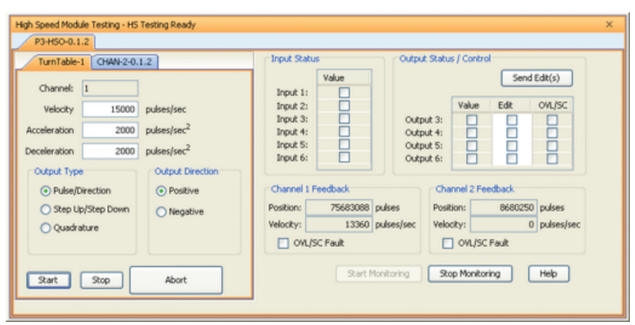
Drop-in hardware configuration

Module configuration is a snap with the Productivity3000 motion modules. Drop your P3-HSO (High-Speed Output module) or P3-HSI (High-Speed Input module) into the hardware configuration and define each channel's behavior, status bits, limits and scaling on-the-fly, all without the need for an external configuration utility or software.

Simple instructions

With straightforward instructions such as "Find Home", "Set Position", "Simple Move", to name a few, it's never been easier to get your simple motion application up and running.





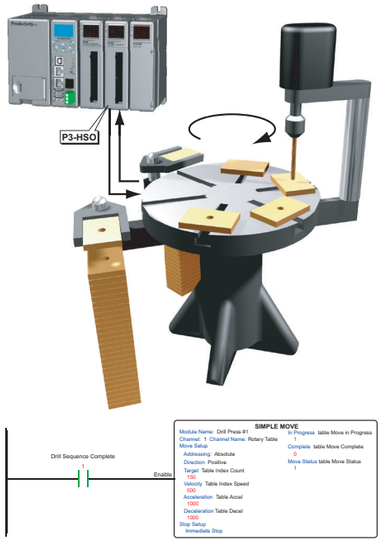
Integrated high-speed module testing

The integrated High-Speed module testing tool is a great way to test your hardware, including the module, module wiring, I/O operations and connected stepper or servo (if applicable). With this simple tool, no programming is necessary to see if you are getting pulse signals from your high-speed output module.

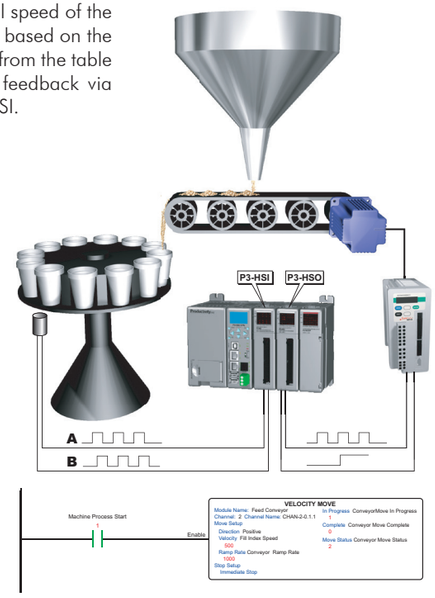
For the latest prices, please check AutomationDirect.com.

Application examples

In this example the Simple Move is used to index the table into position after each cycle. Simply specify the number of pulses to move (or scale it to inches, millimeters, revolutions, etc) and that's it!



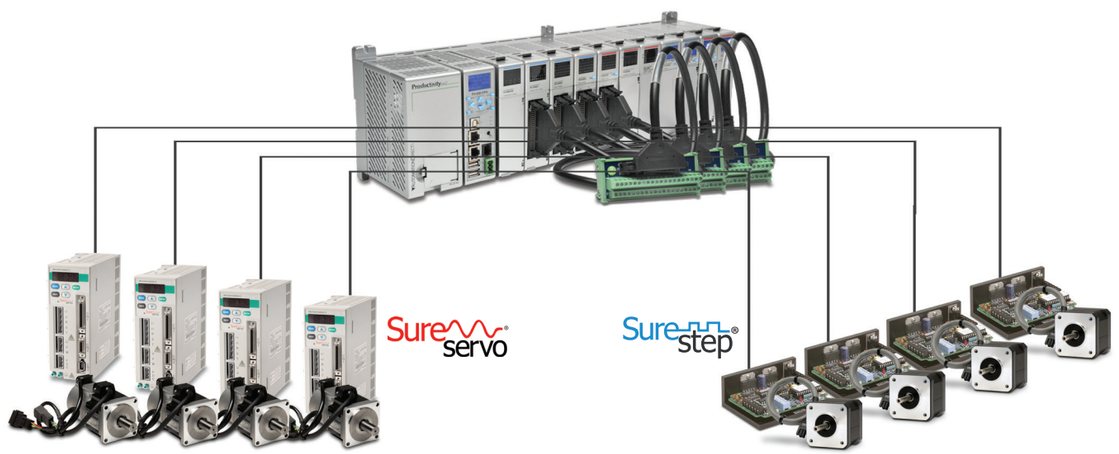
In this example the Velocity Move instruction is used with the P3-HSO module to synchronize the speed of the SureServo driving the fill conveyor. The conveyor is synchronized with the rotational speed of the turntable based on the signal(s) from the table encoder feedback via the P3-HSI.



Diverse application? No problem … we can handle it!

Add up to a maximum of eleven (11) P3-HSO or P3-HSI modules in any combination to any CPU and remote base group. That gives you up to 22 axes of motion or high speed counting capability in a single base group. These modules are supported and fully functional in the CPU base, local and remote expansion bases.

Our standard instructions were designed to make your everyday motion applications simpler; The Find Home, Set Position, Simple Move & Velocity Move instructions (to name a few) were created to get you up and running sooner. Features and capabilities such as Registration, Jerk Control, Channel Scaling were included to give you the flexibility to accomplish those jobs.



Fast programming with FREE software

Developed inhouse with customer feedback

Productivity Suite is our free programing software for the Productivity family of controllers. Our own software engineers developed this programming package 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 not only meets but exceeds the needs of our customers, and provides a quick, user-friendly way to efficiently program the Productivity family of PLCs.

Program your way! Tag name based control that's powerful and easy to use

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 need. With tag name based programming, there are no pre-defined, fixed memory maps and no wasted, unused memory allocations.

Tag name based control also offers the ability to descriptively identify the control elements 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.

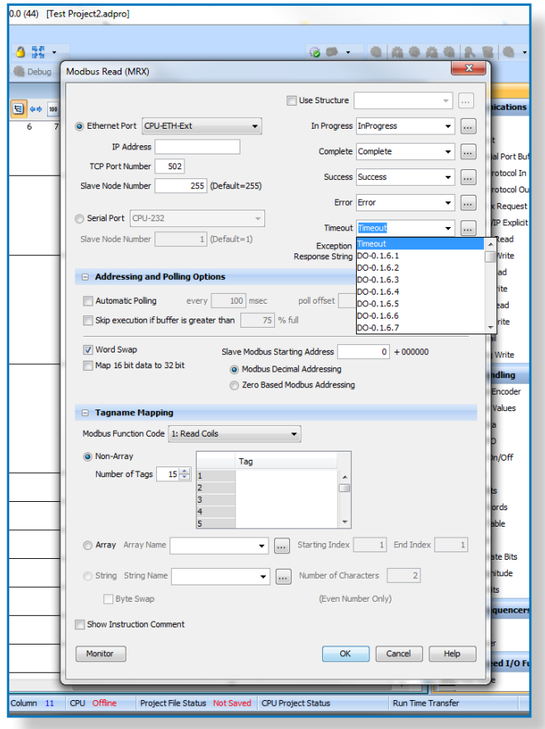
FREE SOFTWARE

FREE Software!
Download as often as you need.
No license or key needed.
Click here to download.

Productivity Suite

ONE SOFTWARE PACKAGE PROGRAMS ALL PRODUCTIVITY PLCS!

For the latest prices, please check AutomationDirect.com.

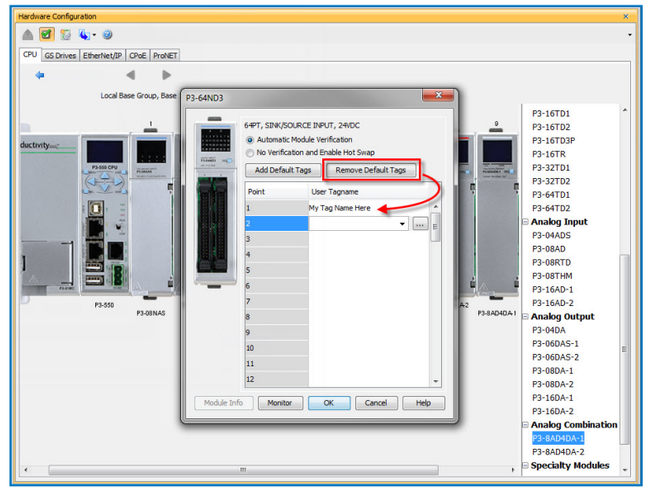


Convenient fill-in-the-blank style function blocks

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

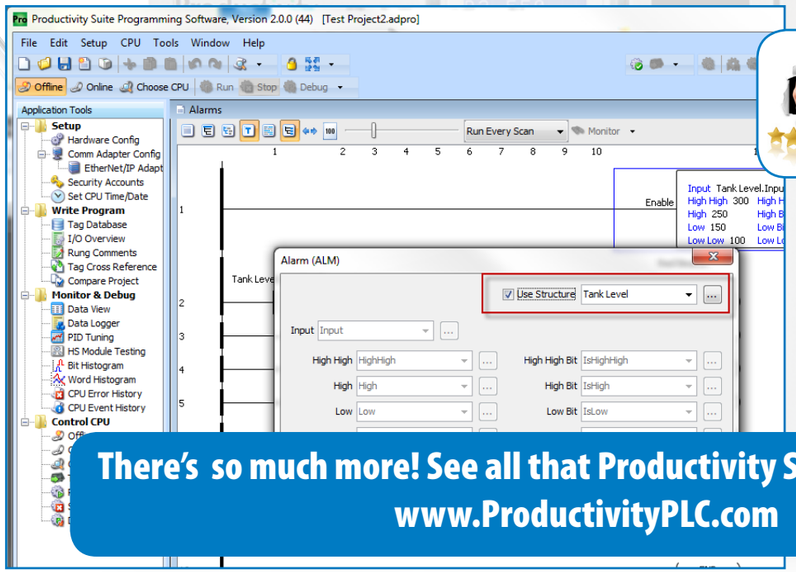
Tag I/O reassignment saves you time, and time is money

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.



Pre-defined structures make programming automatic

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



"Unbelievable performance and ease of use. Tag based addressing is wonderful..."
Matt in SPRINGFIELD, MO

There's so much more! See all that Productivity Suite has to offer at: www.ProductivityPLC.com

For the latest prices, please check AutomationDirect.com.

Increase your productivity in more ways than one!

The Productivity Series offers a scalable controls solution with three low-cost hardware platforms and one FREE, powerful programming package. No matter the application, big or small, Productivity has the I/O, communications and affordability you need.

Productivity® Series

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**FREE Software!
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Click on part number (in second row) to be taken directly to AutomationDirect.com to check current pricing, stock status, tech specs, industry approvals, videos, photos and more . . .

Feature	Productivity3000			Productivity2000	Productivity1000
	P3-550 CPU	P3-550E CPU	P3-530 CPU	P2-550 CPU	P1-540 CPU
User Display on CPU	✔	✔	---	✔	---
Built-in USB Programming Port	✔	---	---	✔	✔
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	$819.00	$460.00	$429.00	$261.00	$173.00

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