Productivity 1000

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Productivity Series PLCs mP1-1

For the latest prices, please check AutomationDirect.com.

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see website for details
Need a compact PLC with powerful features?

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 series but housed in a smaller, slimmer design and with a CPU price starting at $180.00, the Productivity1000 PLC will deliver the time, space, and budget savings your project needs.

Built-in Communication:
The Productivity1000 comes with up to 5 built-in communication ports for easy connectivity to your PC or various industrial networks.

Serial RS-485
4-pin serial Modbus RTU/ASCII or custom protocol connection

Serial RS-232
RS12 serial Modbus RTU/ASCII or custom protocol connection

Ethernet 10/100Mbps
RJ45 Ethernet port for PLC programming and/or Modbus TCP, EtherNet/IP, custom UDP/TCP connections

Micro USB
Micro8 USB port for easy plug-and-play programming

Data Logging:
The Productivity1000 allows for up to 32GB of historical data to be saved to a removable micro SD card (sold separately).

Built-in Accessibility:
- The single top-side latch on every I/O module provides free and clear access to the latching mechanism when adding/removing I/O modules.
- The pivoting wire cover on each I/O module displays the wire label in any position so it's visible at all times.
- A fulcrum lever is designed into every I/O module for easy terminal block removal.

Slim Stackable Design:
The super slim form factor requires minimal panel space (approximately 8.9” for a 8 module system) and the stackable design allows for simple I/O expansion.

Micro SD
Local I/O Expansion:
You can stack up to 15 I/O modules onto the Productivity1000 CPU when using the P1-02AC power supply for a total of up to 240 discrete I/O points or 120 analog I/O channels. I/O expansion modules support:
- Discrete
- Analog
- Temperature
- Relay
- High Speed
- PWM

Multiple Wiring Options:
Choose from spring clamp, screw terminal or the popular ZipLink wiring solution for your I/O wiring needs.

Spring Clamp
Screw Terminal

A variety of input, output, specialty, and combination I/O modules available

I/O EXPANSION MODULES STARTING AT $36.50

Local I/O Expansion:
You can stack up to 15 I/O modules onto the Productivity1000 CPU when using the P1-02AC power supply for a total of up to 240 discrete I/O points or 120 analog I/O channels. I/O expansion modules support:
- Discrete
- Temperature
- High Speed
- Analog
- Relay
- PWM

Need more I/O?
Use the P1-550 CPU’s Remote I/O port with the Protos X field I/O system for hundreds of extra I/O points!

Motor Control:
The Productivity1000 can control up to 9.5 HP motors with the Protos X field I/O system.

CPU STARTING AT $180.00

For the latest prices, please check AutomationDirect.com.
Reliable, affordable, super-compact hardware

The Productivity1000 series PLCs hardware is built to last and designed for applications where panel real estate is a concern. With various low-cost expansion I/O modules to choose from and feature-rich CPUs all backed with a 2-year warranty and a 30-day money-back guarantee, you’ll never pay for overpriced hardware again!

**CPU Comparison**

<table>
<thead>
<tr>
<th>Feature</th>
<th>AutomationDirect P1-540</th>
<th>AutomationDirect P1-550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Memory</td>
<td>50MB</td>
<td>50MB</td>
</tr>
<tr>
<td>Built-in USB Programming Port</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Built-in Serial Ports (RS-232 &amp; RS-485)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Built-in Ethernet Ports (RJ45)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>EtherNet/IP, Modbus RTU &amp; Modbus TCP Protocols</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Remote Expansion Support</td>
<td>---</td>
<td>✓</td>
</tr>
<tr>
<td>Max Local I/O Capacity</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>Integrated GS Drive/Protos X Field I/O Support</td>
<td>---</td>
<td>✓</td>
</tr>
<tr>
<td>Data Port (Data Logging)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Price</td>
<td>$180.00</td>
<td>$203.00</td>
</tr>
</tbody>
</table>

**Full-featured CPUs**

With 50MB of user memory, up to five built-in communication ports, data logging and tag name programming, these CPUs offer big features in a small package.

- Plug-and-play USB programming (uses standard A-micro B cable)
- Tag database and program documentation storage in CPU (program pre-loaded on FC not necessary)
- Supports up to five built-in communications ports simultaneously
- High-speed Ethernet port for HMI and peer-to-peer or business system networking
- Support for EtherNet/IP devices
- Two serial ports for peripheral device interface or controller networking
- Micro SD data logging right from the CPU
- Remote I/O port (P1-550 only) for up to 16 GS series drive connection or hundreds of additional remote I/O points using the Protos X field I/O system

**Power Supplies**

Productivity1000 power supplies provide 16 or 26 W of output power with VDC or VAC input options.

- **P1-01DC** - 12-24 VDC input with 24 VDC, 0.67 A, 16 W output. Use with up to 8 I/O expansion modules
- **P1-01AC** - 100-240 VAC or 125VDC input with 24 VDC, 1.08 A, 26 W output. Use with up to 15 I/O expansion modules

For the latest prices, please check AutomationDirect.com.

**Overview Video:**
See what the Productivity1000 PLC has to offer!
ANALOG I/O

RELAY I/O

Discrete I/O Modules
Discrete input, output and combo input/output modules are available in 8 or 16-point versions with various DC/AC voltage ranges.

- **P1-08AD** - Input Module 8-pt, 0-20 mA
- **P1-08ADL-1** - Input Module 8-pt, 0-20 mA, 13-bit resolution
- **P1-08ADL-2** - Input Module 8-pt, 0-10 VDC, 13-bit resolution
- **P1-08DAL** - Output Module 8-pt, 4-20 mA, 12-bit resolution
- **P1-08DAL-1** - Output Module 8-pt, 4-20 mA, 12-bit resolution
- **P1-08DAL-2** - Output Module 8-pt, 0-10 VDC, 12-bit resolution
- **P1-08SIM** - Input Simulator Module, 8-pt
- **P1-08SIML** - Input Simulator Module, 8-pt
- **P1-08THM** - Thermocouple Input Module, 4-channel, 16-bit resolution
- **P1-08NTC** - Thermistor Input Module, 4-channel, 16-bit resolution
- **P1-08RTD** - RTD Input Module, 4-channel, 16-bit resolution

Analog/Temperature I/O Modules
Analog input and output modules are available to monitor and control pressure, temperature, flow, level or any other process signal your application requires.

- **P1-04AD** - Input Module 4-channel, ±5VDC, ±10VDC, 0-5 VDC, 0-10 VDC and 0-20 mA, 16-bit resolution
- **P1-04ADL-1** - Input Module 4-channel, 0-20 mA, 13-bit resolution
- **P1-04ADL-2** - Input Module 4-channel, 0-10 VDC, 13-bit resolution
- **P1-04DAL** - Output Module 4-channel, 4-20 mA, 12-bit resolution
- **P1-04DAL-1** - Output Module 4-channel, 4-20 mA, 12-bit resolution
- **P1-04THM** - Thermocouple Input Module, 4-channel, 16-bit resolution
- **P1-04NTC** - Thermistor Input Module, 4-channel, 16-bit resolution
- **P1-04RTD** - RTD Input Module, 4-channel, 16-bit resolution

Relay I/O Modules
Relay output modules support devices that operate with voltages up to 240VAC or 24VDC.

- **P1-08TR** - Output Module 8-pt, 6-24 VDC/24 VAC
- **P1-16TR** - Output Module 16-pt, 6-24 VDC/24 VAC
- **P1-16CD** - Combo Module 8-pt discrete 24 VAC/24 VDC, 8-pt 24 VAC/24 VDC relay out, 12/12 pt

For the latest prices, please check AutomationDirect.com.
We make PLC communication affordable!

Two serial ports included on CPU
Two serial ports are included on the Productivity1000 CPUs for communication to peripheral devices:
(1) RJ12 (6P6C) port for RS-232 devices
(1) 4-wire screw terminal for RS-485 multi-drop devices
These ports provide Modbus RTU Master/Slave capability, ASCII In and Out capability and Custom Protocol over Serial capability. The RS-485 port can support up to 50 multi-drop devices (more if repeater is added to network).

Built-in Ethernet on the CPU has got you covered!
Both Productivity1000 CPUs come standard with a general purpose Ethernet port and 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.

Ethernet ports:
10/100 Mbps multipurpose Ethernet port for programming, monitoring, firmware upgrades and a mixture of the following client/server connections:
- 16 Modbus TCP Client connections (CPU Master)
- 16 Modbus TCP Server connections (CPU Slave)
- 32 EtherNet/IP Scanners (CPU Master)
- 4 EtherNet/IP Adapters (CPU Slave)
A total of 128 EtherNet/IP connections and over 5000 EtherNet/IP messages per second! And unlike many controllers, the Productivity series CPUs support both Explicit and Implicit (I/O) messaging for greater functionality.

The Productivity1000 also provides a Custom Protocol over Ethernet (CPE) option which gives the user the ability to create their own communications protocol between the Productivity series CPU and a 3rd party Ethernet device via TCP or UDP.

The ProNET feature is also available and 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.

P1-550 only: Remote I/O, 10/100 Mbps Ethernet port (bottom) supports up to 16 GS series variable frequency drive connections and 4 distributed I/O racks using the Protos X field I/O system. GS Drive parameters and Protos X field I/O configurations are easily modified within ProductivitySuite and saved with the PLC project.

Direct access with the built-in Web Server
Get direct access to data files, system status and diagnostics with the integrated Web Server functionality of the Productivity1000.

PLUS! FREE PACData Mobile App for iOS Devices. Monitor your process anytime, from anywhere.
Productivity made easy

There are many features integrated into the Productivity1000 series PLCs and tools on our website that provide unmatched ease of use when selecting, expanding, configuring and wiring your hardware.

Expansion is a snap
The Productivity1000 requires no base or backplane and can easily be expanded with up to 15 snap-on I/O modules. The local P1000 system can support up to 240 discrete I/O points or 120 analog I/O channels total. The I/O modules can be easily added or removed using the single latch mechanism on the topside of each module. This stackable design allows you to purchase only the I/O required for your particular application. This versatility also means you can use the Productivity1000 CPU as a stand alone, low-cost data logger or protocol converter (no I/O modules).

Support information at your fingertips!
All Productivity1000 I/O modules have QR codes printed on the underside of their wire covers. Scan the code with your smart phone or tablet QR app to get the latest specifications/wiring diagrams for that module.

VFDs configured with ease!
The Productivity Suite software is designed to recognize any AutomationDirect GS series drive. Simply connect the drive to the Remote I/O port of the P1-550 CPU and it is discovered in the Productivity Suite software. No more searching through drive manuals to find the parameter you need, each parameter, with description, range, and value, is available in the software.

Get started in seconds with auto-discovered I/O modules
Once an I/O module is installed, the P1000 will automatically discover the module and create a realistic picture of your configuration in the free Productivity Suite software. Physical I/O tags will be generated based on each module’s position in the base and that’s it! You are ready to program with the auto-configured settings just seconds after power-up, or you can reconfigure the setup and assign new tags manually.

Integrated field I/O
The Productivity Suite software will auto detect the Protos X field I/O system (using a Modbus coupler) connected to the Remote I/O port of the P1-550 and automatically assign tags to the installed I/O terminals. The configuration can be manually changed and it is saved within the PLC project.

Interactive PLC Configurator Tool
Use the interactive PLC configurator tool on our website to quickly configure your Productivity1000 system to your specifications. Simply choose the CPU and I/O modules you prefer and send the selected parts right to the shopping cart.

See how easy it is at:
www.automationdirect.com/Productivity1000

For the latest prices, please check AutomationDirect.com.
BIG PLC features in a small package for a tiny price!

The Productivity1000 series PLCs are designed with features you’d expect to pay a whole lot more for. Built-in data logging, tag name programming, limitless PID, web server and mobile access, plus many other advanced features are packed into this budget and space-saving PLC series.

Up to 32GB of data!

Built-in Data Logging
Track up to 64 tags at a time and save the data to the removable micro SD card stored in the CPU. Capture up to 32GB of data either periodically (minute, hour, day, week, etc.) or when certain events occur. Scheduling and setup is done with the easy-to-use Data Logger configuration tool in the software. Log tag data, system errors and system events which can be used to track efficiency and performance, troubleshoot recurring or intermittent faults, and predict future breakdowns.

Web Server
With the P1000 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.

Apple iOS PACDATA app
The FREE PAC/PLC Data Remote Monitor App allows you to connect to remote P1000 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.

No-Limit PID
With 50MB of user memory, you have practically limitless PID functionality. The integrated PID function blocks make it easier to configure and control the process loops in your application.

The PID Monitor utility allows you to monitor your loops and tune them in real time. We also offer a built-in Auto-tuning algorithm (Ziegler-Nichols) to help give you a jump on fine tuning your loops.

The PID instruction supports either individual or cascade mode operation. It also includes a tab for configuring all of your process alarms, including Low-Low, Low, High, High-High Limits and Deviation Alarms.

Timesaving Tag Names!
Export your tag name database from the Productivity1000 and import it into C-more software to jump start your HMI development. No more digging through your notes, or hunting through your ladder logic to find the right tag name.

Connect up to 16 C-more HMIs to the Productivity1000 via Ethernet for control and visibility of your process/machine from anywhere in your factory.

CPU starting at $180.00 (P1-540)

For the latest prices, please check AutomationDirect.com.
Get the control you need for less with Productivity

Productivity1000 PLCs have low-cost specialty modules to tackle specific functions that are out of the realm of standard I/O modules. High-speed input counting and pulse width modulated outputs are capabilities provided by these modules for applications that require a little more than generic I/O.

Setup is a cinch!

ProductivitySuite makes it easy to configure your specialty modules. Simply use the convenient fill-in-the-blank GUI to pick the functions you desire, set the scaling (standard or custom), assign the appropriate tags or create them on the fly, it couldn’t be any easier.

High-speed Counter (HSC)

The P1-02HSC is capable of handling input pulse frequencies up to 100kHz. Easily count and/or calculate pulse rates from dedicated inputs or encoder signals that are used in many applications including package tracking and picking systems. Additionally, there are two general purpose inputs for use as 5-24 VDC inputs.

PWM Module priced at $72.00
(P1-04PWM)

Pulse Width Modulation (PWM)

The P1-04PWM pulse width modulation module provides four channels of sinking or sourcing 0–20 kHz, 0–100% duty cycle outputs. The varying pulse widths produced by the PWM module are seen as varying power levels to the end device and are ideally suited for running motors/pumps, controlling LED lighting, opening/closing solenoid valves and more.

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

30-day Money-Back Guarantee

Voted Best in Service - 15 Years Straight
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!
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Developed in-house with customer feedback
Productivity Suite is our free programming 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

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ONE SOFTWARE PACKAGE PROGRAMS ALL PRODUCTIVITY PLCs!

Advanced user defined structures
User defined structures (UDS) are a powerful tool that helps speed up program development and improve uniformity of your logic. A UDS is a group of data types (BOOL, FLOAT, INT, predefined structures, etc.) which are defined by the user and re-used at will.

Productivity Suite allows you to embed arrays within the UDS definition, as well as, create arrays of structured tags so that you can programmatically index through your tag variables.

For example, Mixing_Tank(1).Transfer_Pump(2).VFD.RUN_Command which contains two nested UDS arrays (Transfer_Pump and VFD) inside the Mixing_Tank UDS definition.

Convenient fill-in-the-blank style function blocks
Math, PID, array, communication, data handling, high speed and application instruction 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.

There’s so much more! See all that Productivity Suite has to offer at:
www.ProductivityPLC.com
Affordable automation for EVERYONE!

We want the opportunity to serve anyone in need of an affordable automation solution. Whether you’re dealing with tight budget constraints or you’re just tired of getting squeezed for every last dollar you have, the Productivity series of PLCs has a solution for you.

With a focus on customer satisfaction, the Productivity1000 PLC was designed to provide the advanced features you need at a price anyone, not just the big guys, but anyone can afford. On top of the low-cost hardware, you also get FREE software, FREE tech support for the life of the product, FREE training and many other goodies to help you smoothly and successfully complete your project.

Get affordable, reliable control, free downloadable software and free technical support!
Productivity from start to finish

Productivity soars when you have the tools you need to get the job done. The Productivity1000 starter kit and the FREE Productivity Suite programming software provide everything you need to get a jump start on your next application.

Don’t wait. Get started now for FREE!

The Productivity Suite programming software is available for download free of charge at www.ProductivityPLC.com. Take it for a test drive before you buy or get started on your project immediately. There are no licensing fees or maintenance charges to be concerned with and any subsequent upgrades are available for free download as well. If you need assistance, the embedded help file contains detailed information on over 260 topics; also check out our instructional videos at http://www.automationdirect.com/videos or give us a call at 770-844-4200 - we are here to help.

What’s in the Starter Kit?

✓ (1) P1-540 CPU
✓ (1) P1-01AC power supply
✓ (1) P1-08SIM input simulator module
✓ (1) P1-08TRS relay output module
✓ (1) P2-RTB screw type terminal block
✓ (1) P2-RTB-1 spring clamp terminal block
✓ (1) Power terminal block
✓ (1) RS-485 4-pin terminal block
✓ (1) ZL-1P-CBL-10 ZIPLink cable
✓ (1) ZL-RT-320-12 ZIPLink feedthrough connector module
✓ (1) USB-CBL-AMICB6 programming cable
✓ (1) PS-PGMSW USB Card w/ P1-USER-M manual
✓ (1) MICRO-160 microSD memory card
✓ (1) Mini torque screw driver
✓ (1) 3-wire power cable
✓ (1) Product inserts for Productivity1000 hardware items
✓ (1) Battery backup

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$306.00
(P1-START)

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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.

FREE Technical Support
Located in USA

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

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
--- | --- | --- | ---
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 | ✓ | ✓ | --- | ✓ | ✓ | ---
Total Productivity I/O Capacity | 59,840 (using P3-RX and P3-EX modules) | 59,840 (using P3-RX and P3-EX modules) | 3,520 (using P3-EX modules) | 4,320 (using P2-RS modules) | 240 | 240
Hot Swappable I/O Modules | ✓ | ✓ | ✓ | --- | --- | ---
Integrated GSDrive Support | ✓ | 32 max. | 32 max. | --- | 16 max. | 16 max.
Data Port (data logging & project transfer) | ✓ | USB | USB | ✓ | microSD* | ✓ | microSD*
Total Memory | 50 MB | 50 MB | 25 MB | 50 MB | 50 MB | 50 MB
Average Scantime (µsec) (1K boolean, 128 I/O) | 380 | 380 | 380 | 200 | 1500 | 1300
Price | $955.00 | $485.00 | $476.00 | $273.00 | $203.00 | $180.00

* Project transfer from the microSD card is not supported in the Productivity1000 CPUs.

For the latest prices, please check AutomationDirect.com.