

Welcome to PAC Project 9.3

Welcome to version 9.3 of Opto 22's PAC Project™ software suite for industrial automation, remote monitoring, and data acquisition applications.

PAC Project comes in two forms: PAC Project Basic and PAC Project Professional.

PAC Project Basic

PAC Project Basic is included in your purchase of a SNAP PAC controller and can also be downloaded for free from our website, www.opto22.com. PAC Project Basic is all you need for most monitoring and control needs. It includes the following software applications:

- **PAC Control™** for developing control programs (*strategies*) to automate processes, monitor equipment, and acquire data from processes and equipment
- **PAC Display™** for creating HMIs (human-machine interfaces) for technicians and operators to use
- **PAC Manager™** for configuring hardware and troubleshooting

PAC Project Professional

PAC Project Professional is designed for more complex projects, especially those requiring OLE for Process Control (OPC), database connectivity, multiple networks, controller redundancy, or legacy hardware support.

PAC Project Professional can be purchased as a suite or as individual applications to suit your needs. The suite includes the following software applications:

- **PAC Control Professional** for developing control programs
- **PAC Display Professional** for creating HMIs
- **PAC Manager** for configuration
- **OptoOPCServer™**, an OPC 2.0-compliant server for serving SNAP PAC System I/O and variable data to OPC clients, including PAC Display. OptoOPCServer is strongly recommended for multiple seats of PAC Display.
- **OptoDataLink™** for exchanging SNAP PAC System data with databases (including Microsoft SQL Server, Microsoft Access, and MySQL), and text files
- **SoftPAC™**, software-based programmable automation controller (PAC) for PC-based control.

More Information on PAC Project Basic and Pro

Free product support is included with both PAC Project Basic and Professional. Free training and free pre-sales engineering help are also available. For product support,

see [“For Help” on page 6](#). For training, see our website under Support > Training or email training@opto22.com. For pre-sales engineering, call 1-800-321-6786 or 1-951-695-3000.

All PAC Project 9.3 software components run on Microsoft® Windows® XP, Vista, and Windows 7 workstations. See [“Installation Requirements” on page 4](#).

PAC Project works with all SNAP PAC controllers, SNAP PAC brains, SNAP PAC racks, and SNAP I/O modules.

For more information about PAC Project Basic and Professional, see the following documents. The easiest way to find a document on our website, www.opto22.com, is to search on its form number.

- [PAC Project Software Suite Data Sheet](#), Opto 22 form 1699
- [PAC Project Basic and Professional Comparison Chart](#), form 1681

Notes for Customers with Older Systems (ioProject and FactoryFloor)

PAC Project is very similar to older Opto 22 software, but there are important things to know **before you install** and use it. If you're moving to the SNAP PAC System from legacy systems, be sure to read these documents first:

- [PAC Project 8.0 Release Notes](#), form 1680. See the section, “Notes for ioProject and FactoryFloor Customers.”
- [SNAP PAC System Migration Technical Note](#), form 1688
- (FactoryFloor customers only) [FactoryFloor to PAC Project Migration Technical Note](#), form 1692

New Features and Enhancements for PAC Project Professional

The powerful new SoftPAC™ software-based controller has been added to PAC Project Professional. SoftPAC allows you to use your computer as a full-featured programmable automation controller (PAC).

A number of enhancements have been added to the OptoDataLink application including expanded support for databases using ODBC drivers. And, there are enhancements to PAC Display and PAC Manager.

SoftPAC

As a new component of PAC Project Pro 9.3 (and available as a separate download), SoftPAC is a software-based programmable automation controller (PAC) designed for PC-based control. SoftPAC gives you the choice of running your control strategy in a Microsoft Windows environment rather than on a standalone or rack-mounted hardware PAC.

SoftPAC is especially useful for applications requiring extended file storage, frequent access to files, math-intensive processes, or a large number of control flowcharts running at the

same time. Using SoftPAC, you can take advantage of a PC's ability to quickly read and write to files as well as its greater space for data storage. SoftPAC handles large amounts of data because file operations are limited only by the size of the PC's hard drives and the available network volumes.

Just as with S-series and R-series controllers, SoftPAC is programmed using PAC Control. Because the same PAC Control strategy can run on both software and hardware controllers, you can begin developing your strategy without hardware.

OptoDataLink

OptoDataLink now offers many more choices for database connectivity. Pre-9.3 support for popular databases such as Microsoft(R) SQL Server, Microsoft Access, and MySQL has been expanded to include Access 2007 & 2010, SQL Server 2008 & 2012, and MySQL 5.1. Also, OptoDataLink now allows you to connect to any database type that has an ODBC driver installed on your computer.

Additional OptoDataLink enhancements:

- Tag selection for Opto 22 devices has a new interface with support for multiple selection and reordering.
- Data links have a right-click menu that allows for duplication, renaming, and deletion.
- Whole or partial tables can be written to Opto 22 devices without being broken down into individual element tags.

PAC Display

The new View > Reset Dialog Positions menu item repositions the following dialogs to appear in the middle of the active display window: Alarm Points, Application Managers, Control Engines, Historic Logs, Event Log Viewer, Sounds, and Window Managers. This is particularly useful when multiple monitors are used to develop a project and the project is subsequently re-opened using just one monitor. Sometimes a dialog cannot be seen because it is off the edge of the viewing area, and this enhancement can help you find it.

The new option, Send +1 for Discrete Integer Writes, on the Configure > Runtime dialog's General tab, allows PAC Display Runtime to mimic OptoDisplay Runtime when sending Discrete Writes to integer variables that have no bit index specified. This is helpful when upgrading projects from FactoryFloor or OptoDisplay, or when there is incorrect logic in strategies that tests against *true* rather than *not false*.

If the bit index field is left blank when configuring a discrete write to an integer, a message says, "No Bit Index specified. All bits will be modified." By using this option, Runtime sets only the first bit of the integer to a 1, resulting in an actual integer value of +1 (the same as OptoDisplay). This option affects all the discrete write options: Set, Toggle, Direct, and Reverse.

PAC Manager

PAC Manager has been enhanced to support the SoftPAC, the PC-based controller. Also, now you can choose to view Scratch Pad Integers as binary values, in addition to hex and decimal.

Bug Fixes

For a complete list of bug fixes in the 9.3 version of PAC Project, see the PAC Project Readme file or the Readme file for individual products (PAC Control, PAC Display, and so on).

In addition, see the readme file for your control engine or brain firmware, available on our website at www.opto22.com. To find firmware, click Support > Downloads and filter by Firmware. When you locate the firmware file for your device, in addition to downloading the firmware, click the Related Documents tab and download the readme file, too.

Here are some other useful sources of bug information on our website:

- **OptoKB Article Search**—Click the Support tab on our website and then click OptoKnowledgeBase to find articles by Article Number, Title, Text, or Product.
- **OptoSubscriptions**—Use your my.opto22.com account to subscribe to updates on the Knowledgebase, products, downloads, and documents.

Installation

CAUTION: *If you are upgrading to version 9.3 from a version of ioProject older than 7.0, do NOT uninstall ioProject before running the PAC Project version 9.3 installation. If you uninstall first, you will lose all configured control engines.*

Installation Requirements

Here's what you need to install and run PAC Project 9.3 software:

- A computer with at least the minimum processor and memory required for your version of Microsoft Windows, and Ethernet capability. Additional memory may be required for some configurations.
- VGA or higher resolution monitor (Super VGA recommended). Minimum size: 800x600 with small fonts.
- Mouse or other pointing device
- Installed Windows printer (optional)
- Microsoft Windows 7 Professional (32-bit or 64-bit), Windows Vista® Business (32-bit), or Windows XP Professional (32-bit, with Service Pack 2 or higher), Windows Server 2008 R2 (OptoOPCServer and OptoDataLink only).

NOTE: Windows Server 2008 is supported only by OptoOPCServer and OptoDataLink. Other versions of Microsoft Windows server and embedded Windows operating systems are not supported.

- Available hard disk space as shown in the following table:

Application	PAC Project Professional	PAC Project Basic
PAC Control	75.9 MB	74.6 MB
PAC Display	90.1 MB	84.9 MB
OptoOPCServer	16.6 MB	(not included)
OptoDataLink	11.2 MB	(not included)
SoftPAC	4.3 MB	(not included)
PAC Manager	43.0 MB	43.0 MB
Tools	9.4 MB	9.4 MB
EtherNet/IP Configurator	10.0 MB	10.0 MB
Total	260.5 MB*	221.9 MB*

* Installing both Pro and Basic requires a total of 281 MB of hard disk space.

Important Note for Windows XP Users

Due to a Microsoft bug involving how Themes are handled in Windows XP (either with Service Pack 2 or with no Service Pack), a resource leak may eventually cause PAC Project applications to crash.

To resolve this problem, install Windows XP Service Pack 3. Or, you can set the Windows XP Desktop Theme to Windows Classic. For more information, see Opto 22 [KB49838](#), an OptoKnowledgeBase article on our website. Either click on the link here or search in the OptoKnowledgeBase on the article number, KB49838, including the KB without any spaces.

Important Notes on Firmware

Firmware version 9.3 is not available for the initial release of PAC Project 9.3. Until then use version 9.2, which is fully compatible with PAC Project 9.3. You can obtain firmware version 9.2 from our website, www.opto22.com. To find this firmware, click the Support tab, click Downloads, filter by Firmware, and enter the part number for your controller or brain in the search field. Look for "9.2" in the firmware filename, and choose the firmware file for your hardware. Opto 22 hardware is shipped with the most recent firmware, but you should check the website for additional updates that may be available.

For details on the features each firmware version includes, see the firmware README file for your device. To find the Readme, go to www.opto22.com and search on the PAC's or brain's part number. When you get to the product page, look under the Documents tab for the Readme. The Readme can also be found under the Related Documents tab on the firmware download page.

NOTE: If you are using a SNAP-LCE or Ultimate controller, do not upgrade to PAC Project 9.3. Instead, use either PAC Project 8.0 or ioProject. In order to use these controllers with PAC Project 8.0, use controller firmware version 7.2 and Ethernet brain firmware version 7.0 or newer. If you want to use PAC Project software version 8.1 or newer, you must use SNAP PAC controllers instead.

For additional compatibility information, see form 1693, the Legacy and Current Product Comparison and Compatibility Charts. To obtain this form, go to the Opto 22 website, www.opto22.com, and search on the form number, 1693.

PAC Project Examples Location

Starting in PAC Project version 9.1, and in order to comply with Microsoft's rules regarding directory structure, we placed all PAC Project application examples in a new location on your hard drive. You'll find PAC Project 9.3 examples here:

- For Windows 7 or Vista—C:\Users\Public\Public Documents\Opto 22\PAC Project 9.3
- For Windows XP—C:\Documents and Settings\All Users\Shared Documents\Opto 22\PAC Project 9.3

For Help

If you have any difficulty using software, documents, or firmware, contact Opto 22 Product Support by email or phone:

Phone: 800-TEK-OPTO
(800-835-6786)
951-695-3080
(Hours are Monday
through Friday,
7 a.m. to 5 p.m. Pacific
Time)

Fax: 951-695-3017

Email: support@opto22.com

Opto 22 website: www.opto22.com

NOTE: Email messages and phone calls to Opto 22 Product Support are grouped together and answered in the order received.

In addition, the OptoKnowledgeBase (OptoKB) provides the latest information on support issues and workarounds. Visit www.opto22.com and click on the Support tab and then click on OptoKnowledgeBase for more information.

Sign Up for My.Opto 22

We recommend signing up at [My.Opto22](#) to receive news about Opto 22 products. With a My.Opto22 account you can receive notification of software and firmware upgrades and new or revised documentation such as data sheets, OptoKB articles, and white papers.

Get Tech Tips and Find Out about New Products with OptoNews

An email newsletter that comes to you once every two weeks, OptoNews gives you tech tips plus news about new products, videos, and training. Sign up through your My.Opto22 account or on the [OptoNews subscription page](#).

Checking for Updates Manually

To manually check for new releases or patches for your Opto 22 software, firmware, or documentation, go to the Support > Downloads section of the Opto 22 website.

