

# SoftPAC Quick Start Guide

## Welcome to SoftPAC

SoftPAC™ is a software-based programmable automation controller (PAC) designed for PC-based control.

SoftPAC works just like a SNAP PAC hardware controller. You use PAC Control™, part of the PAC Project™ Software Suite, to develop your control program (called a *strategy*). You then download the strategy to an Opto 22 PAC (SoftPAC or a hardware PAC), and the controller runs it independently.

SoftPAC can run up to 64 flowcharts simultaneously; many more can be included in the control strategy. SoftPAC allows 8 MB non-volatile RAM for strategy flowcharts, variables, tables, subroutines, and so on. File operations are limited only by the size of your hard drive and the volumes available on your network.

For more information and a table comparing SoftPAC with SNAP PAC hardware controllers, see Opto 22 form 2020, [SoftPAC Data Sheet](#). For information on programming SoftPAC, see Opto 22 form 1700, the [PAC Control User's Guide](#).

## I/O Compatibility

You can use SoftPAC with SNAP Ethernet-based I/O units:

SNAP-PAC-EB1	SNAP-PAC-R1
SNAP-PAC-EB1-FM	SNAP-PAC-R1-B
SNAP-PAC-EB1-W	SNAP-PAC-R1-FM
SNAP-PAC-EB2	SNAP-PAC-R1-W
SNAP-PAC-EB2-FM	SNAP-PAC-R2
SNAP-PAC-EB2-W	SNAP-PAC-R2-FM
	SNAP-PAC-R2-W

All SNAP I/O modules can be used on these I/O units, including analog, digital, and serial modules.

SoftPAC can also be used with legacy SNAP Ethernet-based I/O units. It cannot be used with serial brains.

## SNAP PAC System Compatibility

SoftPAC includes Scratch Pad areas of the OptoMMP memory map and can communicate peer-to-peer with any SNAP PAC S-series or R-series controller on the network.

## System Requirements

SoftPAC and PAC Project 9.3 and higher are supported on the following Microsoft® operating systems only:

- Windows® 10 Professional (32-bit or 64-bit)
- Windows 8.1 Professional (32-bit or 64-bit)
- Windows 7 Professional (32-bit or 64-bit)
- Windows Vista® Business (32-bit only)

A minimum of 240 MB available disk space is required.

## How to Purchase SoftPAC

One SoftPAC is included in the PAC Project Professional Software Suite, or you can purchase it separately and use the free PAC Project Basic Software Suite to program it. (If you already own PAC Project Pro 9.0 or higher, you can get the upgraded suite including one SoftPAC for free.)

## Quick Start

Since SoftPAC is so similar to an Opto 22 hardware PAC, there are just a couple of things you need to know to get started:

- How to configure SoftPAC as a control engine (below)
- How to run SoftPAC—[page 2](#)

## Configuring SoftPAC as a Control Engine

You can use PAC Control or PAC Terminal to configure SoftPAC as a control engine for use with any PAC Project software.

1. Open PAC Control or PAC Terminal.
2. Add a control engine. (See the Opto 22 form 1700, the [PAC Control User's Guide](#), for instructions.)

When you assign an IP address to the new control engine, use one of the following addresses:

- If SoftPAC will run on the same PC that is running PAC Project software, use the loopback address: 127.0.0.1
- If SoftPAC will run on a different PC, use the IP address of the PC running SoftPAC. Note that this PC must have a fixed (static) IP address.

Only one instance of SoftPAC can be running per PC.

Once you've added SoftPAC as a control engine, you can select it like any other control engine in PAC Control, PAC Display, and other PAC Project software applications.

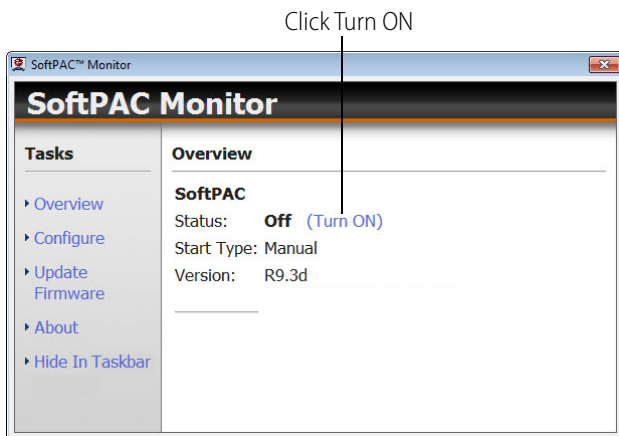
*Note for PAC Control: Make sure that all loops in your PAC Control strategy include a delay. Even a 1 ms delay can keep your PC running smoothly. Without a delay, a loop can consume PC capacity and slow performance.*

## Running SoftPAC

You run the SoftPAC controller just as you would power up a hardware controller. You turn on SoftPAC using SoftPAC Monitor, a utility installed with SoftPAC.

- To start SoftPAC Monitor, follow the instructions for the version of Microsoft Windows you are using.
  - For Windows 7 and Windows Vista, press the Windows Start key, and then click Programs > Opto 22 > PAC Project > SoftPAC Monitor.
  - On your Windows 8.1 or Windows 10 desktop, press the Windows Start key, type **SoftPAC Monitor 9.5**, and then press Enter.
- Click Overview, and then click Turn ON.

You can also turn off SoftPAC Monitor on this page. The Version will say "Unknown" until SoftPAC has been run at least once. After that the SoftPAC version number is displayed.



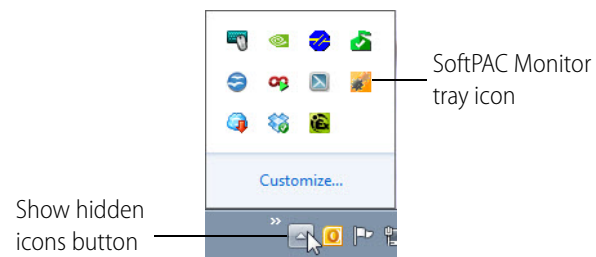
Once SoftPAC is turned on, you can download a PAC Control strategy to it, debug the strategy, and run it exactly as you would on a hardware controller.

*NOTE: When you stop SoftPAC, it's the same as turning off the power on a hardware controller; your strategy will be lost unless it has been saved to flash memory. When you have finished working on your strategy and have downloaded it to the controller, make sure to save it to flash. You can save it to flash just once, when needed, or save every time the strategy is downloaded. For more information, see Opto 22 form 1700, the PAC Control User's Guide.*

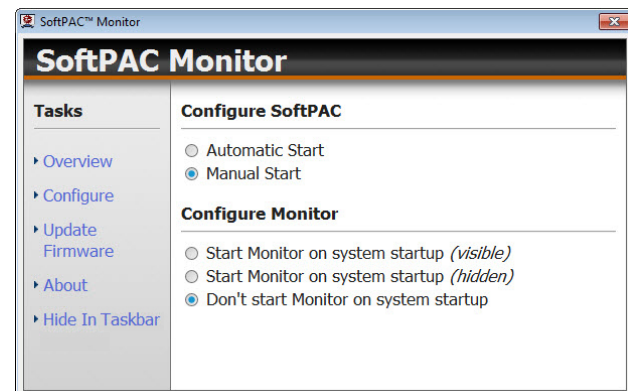
## Configuring How SoftPAC Runs

Once you've turned SoftPAC on you can leave SoftPAC Monitor open, hide it, or close it. SoftPAC Monitor is separate from the SoftPAC controller, so hiding or closing SoftPAC Monitor has no effect on SoftPAC.

**To hide SoftPAC Monitor**, click Hide in Taskbar. If SoftPAC is running, it will continue to run when it's hidden. If the SoftPAC Monitor is hidden and you want to see it, right-click the tray icon. If the tray icons are hidden, click the "Show hidden icons" button, then right click the tray icon.



**To change the way SoftPAC starts**, click Configure and choose the start type for SoftPAC.



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*Automatic Start*—SoftPAC runs automatically as a service whenever Windows is started.

*Manual Start*—SoftPAC runs as a service, but you must start SoftPAC manually using SoftPAC Monitor.

**To configure the way SoftPAC Monitor starts**, click Configure and choose one of the following start types:

*Start Monitor on system startup (visible)*

*Start Monitor on system startup (hidden)*

*Don't start Monitor on system startup*

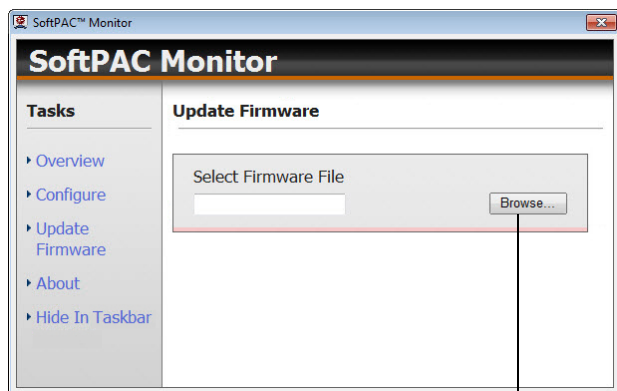
## Updating SoftPAC

*NOTE: Updating SoftPAC will erase the strategy and variables currently on the SoftPAC control engine.*

1. Download the SoftPAC firmware update file from the [Opto 22 Downloads](#) page to a directory on your computer's hard drive.

*NOTE: The update file cannot be installed from another computer on the network. It must be on your local drive.*

2. In SoftPAC Monitor, click Update Firmware.






Click Browse to locate the update file.

3. In the Update Firmware dialog box, click Browse to locate the update file on your hard drive.
4. Click Open and then Yes to install the update.  
A success message appears.
5. Click Start SoftPAC unless it has already restarted.
6. Download your strategy to the SoftPAC control engine and run it.

## Monitoring SoftPAC's Status

If you leave SoftPAC Monitor running (either open or hidden), you can monitor SoftPAC's status with an icon in the system tray (by default located at the bottom right of your screen). If SoftPAC Monitor is hidden, right-click the tray icon to see it. If the tray icons are hidden, click the "Show hidden icons" button, then right click the tray icon.

Here's what the icon colors mean:

	<b>Gray:</b> SoftPAC Monitor is open, but the SoftPAC controller is not running.
	<b>Orange:</b> The SoftPAC controller is running, but a strategy is not.
	<b>Green:</b> A strategy is running in SoftPAC.

If you close SoftPAC Monitor, you won't see the icon.

## For Help

If you have questions about using SoftPAC and you cannot find the answer you need in this document or in the *PAC Control User's Guide*, please contact Product Support.

**Phone:** 800-TEK-OPTO (800-835-6786 toll-free in the U.S. and Canada)  
951-695-3080  
Monday through Friday, 7 a.m. to 5 p.m.  
Pacific Time

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