# Opto iPAC Quick Start Guide

## Opto iPAC™: Your Opto 22 control system in your hand

Use the Opto iPAC app to monitor all your Opto 22 SNAP I/O points and PAC Control variables, tables, and charts with your iPhone, iPod Touch, or iPad.

Authorized users have quick access to status and values, can change values or turn outputs on or off, can start or stop charts or strategies, all wirelessly.

Opto iPAC is ideal for commissioning, debugging, responding to alarms, and mobile connectivity to remote installations.

### Requirements

- iPhone, iPod Touch, or iPad (iOS 8.0 or newer)

- Opto 22 SNAP PAC controllers, Ethernet-based SNAP I/O units, and E1/E2 I/O units. Also serial I/O units and legacy *mistic* I/O only if they are connected to a SNAP PAC controller.

- A secured wireless LAN network with access to controller and I/O network. **Wireless versions of PACs and I/O are not required.** Passwords should be added to individual devices using PAC Manager (see "Security" on page 5). Compatible with wireless routers and VPNs.

**Online Demo.** No Opto 22 equipment? No wireless access to your Opto equipment? Try the "Opto iPAC online demo" on page 6.
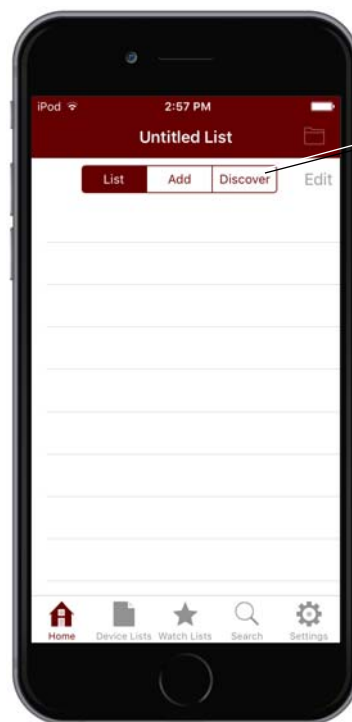
### Contents

## Quick Start

Requires wireless access to the network your Opto 22 system is on. *Does not require wireless SNAP PAC hardware.*

**1.** Go to the iTunes App Store and search for `Opto iPAC` or follow this link: http://op22.co/Opto-iPAC

**2.** Load the Opto iPAC app on your iPhone, iPod Touch, or iPad.

**3.** Tap the Opto iPAC icon.

Discover

**4.** Touch the Discover button.

The app finds all the Ethernet-based Opto 22 devices (controllers and I/O units) on your network and lists them in numeric order, based on their IP address.
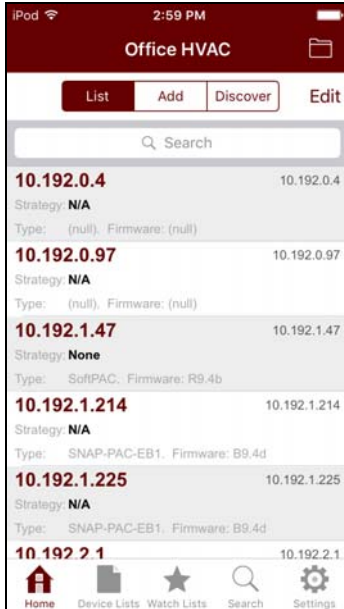
**5.** Tap a device you want to see.

**6.** When the red Retrieve Data button appears, tap it.
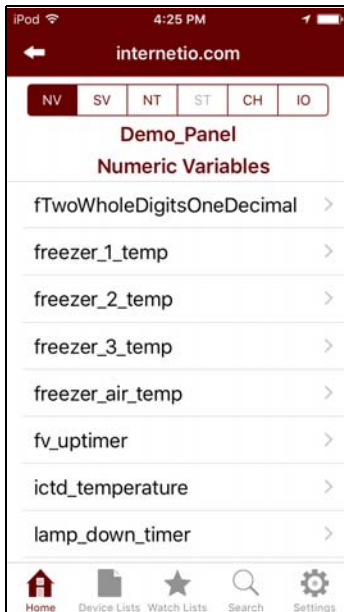


For a controller, buttons across the top give you access to strategy tags:

| NV | Numeric Variables |
|----|-------------------|
| SV | String Variables |
| NT | Numeric Tables |
| ST | String Tables |
| CH | Charts |
| IO | Inputs and Outputs (I/O) |

For an I/O unit, buttons across the top let you access the I/O:

| AI | Analog Inputs |
|----|---------------|
| AO | Analog Outputs |
| DI | Digital Inputs |
| DO | Digital Outputs |
| All | All I/O |

**7.** When you're viewing I/O, to list I/O based on its module/point location instead of its type, tap Sort in the upper right.

**8.** Tap an item to see more about it. Explore to see what you can find out and what you can change.

**CAUTION:** *Remember, it's all live data. If you turn an output on, it will really go on; if you stop a chart or strategy, it will actually stop.*

## Device Lists

When you Discover, you get all the Opto 22 devices on your network. You may not want them all; you may want separate lists for individual buildings or areas, for example. You can make as many device lists as you need.
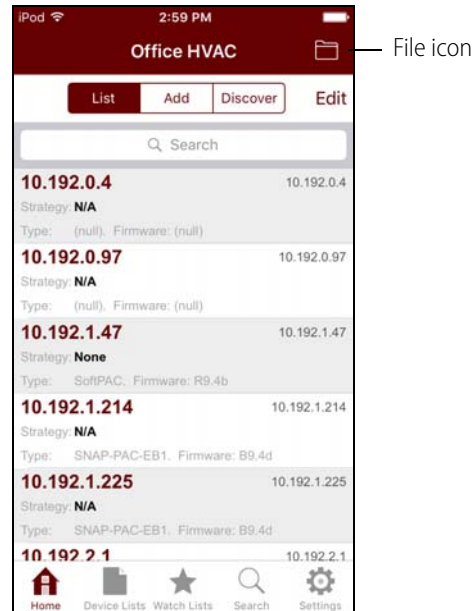


— File icon

**To save a list of devices** for future viewing—Touch the File icon in the upper right and name the list.

**To delete devices** from the list—Touch the Edit button. Tap the minus icon 🔴 next to the device and then tap Delete. Touch Done when you've finished deleting devices.

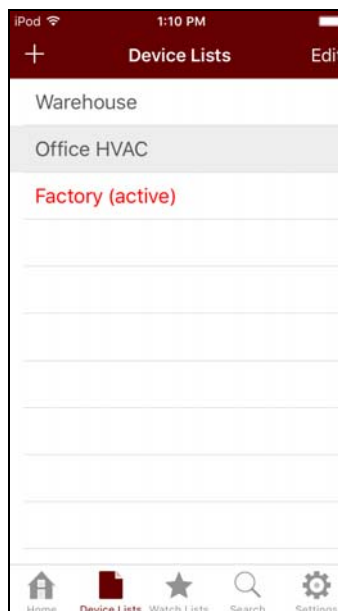**To add a device** to the list—Touch the Add button.



1. Enter Description (optional; will appear in the list instead of the device's IP address).
2. Enter IP address.
3. Change the default ports only if they were changed for the controller or I/O unit in PAC Manager.
4. To get I/O data from a serial brain (or a brain on a separate segment) connected to a controller, turn on I/O Via Controller.
5. Touch Done.

**To change a device** in the list—Tap the device in the list. Then tap the gray Edit button that appears. You can change the Description, IP address, and I/O and Host Ports.

**To see all your lists** of devices—Touch the Device Lists icon  in the bottom tab bar.



**To add a new list**—Tap the plus button in the upper left. Then tap Add to add devices or Discover to find them. To name the list, tap the folder icon.

**To delete a list**—(You cannot delete the active list.) Touch the Edit button. Tap the list name, tap the minus icon next to it, then tap Delete.

## Watch Lists

For any one strategy, you can put up to 20 tags (variables, charts, I/O) in a watch list in order to find them easily.

**To build a watch list**—You can build the watch list starting with the Watch List icon or add tags when you're looking at them, whichever is more convenient. The watch list contains tags from only one strategy.

*From Watch List icon:* Touch the icon  in the bottom tab bar.

1. Tap the plus button in the upper left and choose the device from the list.
2. Find the tag you want to put in the watch list and tap it. A check mark appears next to it. Add other tags the same way.
3. Tap Done to save the watch list.

***From tags:*** The watch list doesn't have to exist before you add tags to it. If you're looking at a tag and you want to put it in a watch list, just tap the star icon in the upper right. The tag is automatically added.



Add to watch list

**To see a watch list**—Touch the Watch Lists icon  in the bottom tab bar. Tap the list you want and tap the View Watch List button.
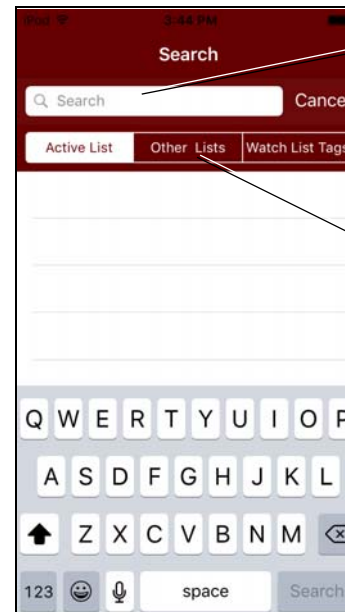
## Search

Search finds the following information only:

- IP addresses
- Strategy names
- Device types (part number, such as SNAP-PAC-R1)
- Firmware versions
- Device descriptions
- Tags in watch lists (Search will not find a tag unless it exists in a watch list.)

1. Touch the Search icon in the bottom tab bar.
2. To see results from lists other than the active one, tap Other Lists. To see results within your watch lists, tap Watch List Tags.
3. Touch the search box and use the keyboard to enter the search term.

   As you type in the search box, the list adjusts to show the devices *in the current list* that apply. Example:



Searches in active list

Tap for results in watch lists (searches tags)

Tap for results in other lists

**Two searches in device list**—In a device list you have two searches:

- Pull down on the device list, and the search box appears. This box searches within that list only and *does not search for tags*.

- Tap the Search icon at the bottom, and you can search in other lists and in watch lists.
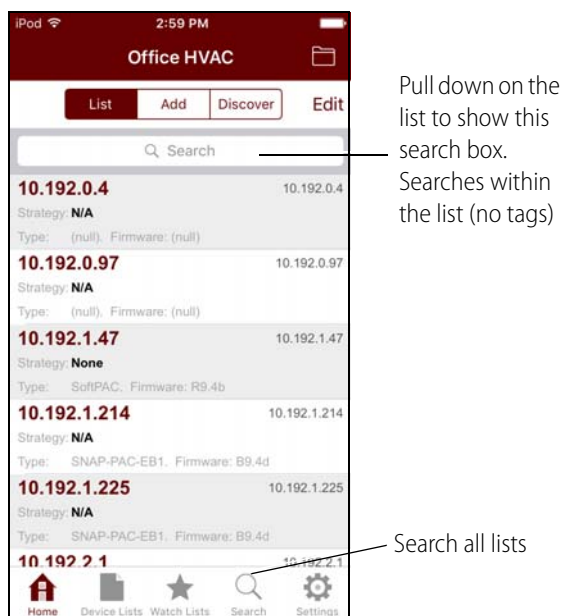


Pull down on the list to show this search box. Searches within the list (no tags)

Search all lists

## Notes about the App

**I/O point data vs. control strategy data—**The app directly contacts SNAP-PAC-EB brains in order to read and write their I/O point data. You do not need to have a SNAP PAC controller to get data from these I/O units.

If you have a SNAP PAC controller, the app shows control strategy data as well as point data. The strategy data comes from the controller, but the point data still comes directly from the I/O unit, unless the app cannot reach the unit.

**"Indirect" tags**—If a list of I/O shows the word *Indirect* in the list name, the point data is coming through the controller, not directly from the I/O unit. In these cases, some data is not available because the controller doesn't keep that information. For example, you won't see a range on analog inputs.

Getting data directly from an I/O unit is much faster than going through the controller, but in some cases the only way to get data is via the controller. For example:

- Legacy *mistic* I/O units

- Units using serial brains, such as SNAP-PAC-SB or B3000-B brains

- Units on a different network, for example a segmented I/O network through the controller's secondary interface

These I/O units won't be discovered; you need to add them individually and check I/O Via Controller.

**Scaled inputs**—Scaling *unit* information (like gallons per minute) for analog inputs is not stored on the controller or the I/O unit. If the scaling units are important to know, you'll need to incorporate the units in the point's name in PAC Control. For example: `Pump_rate_in_gpm`

**Long tagnames**—Similar long tagnames can be difficult to distinguish in the app because of space limitations. When building tagnames in PAC Control, put the unique part of the name near the beginning of the tagname instead of the end.

**If you change tagnames**—Before changing names in your PAC Control strategy, consider what other software is using the same shared tag database, for example PAC Display or OptoDataLink. If you change tagnames, make sure to update the other software as well.

**Device name/Description**—The Opto iPAC app finds devices based on their IP address and shows that as the device Description in the list. If you've assigned the device an SNMP sysName in PAC Manager, the sysName appears instead.

You can change the device Description in the app, for example to match the I/O unit's name in PAC Control. When you change the device description in the app, it is changed only there, not in the strategy or SNMP configuration.

## Security

Security is a concern for any control network. Security for the Opto iPAC app depends upon two things: your overall IT network security (firewalls, routers, etc.) and the security you have set up for individual devices in PAC Manager.

**Overall network security**—You can use a VPN (virtual private network) if your network is set up for you to do so. On your iPhone, go to Settings. When configuring an L2TP or PPTP network, set "Send all traffic" to ON.

Be sure you understand and set up overall network security so that unauthorized users cannot gain access to your control system using the app.

**Security set up in PAC Manager**—In addition, set up individual device security in PAC Manager. Although the app does not use FTP, it does use the FTP security settings you configure in PAC Manager:

1. Open PAC Manager and click the Inspect button. Enter the IP address or name of the device (controller or brain).
2. Choose Communications > Network Security, and enter values for FTP Username and FTP Password.

The app will require you to log in before allowing access to the device:
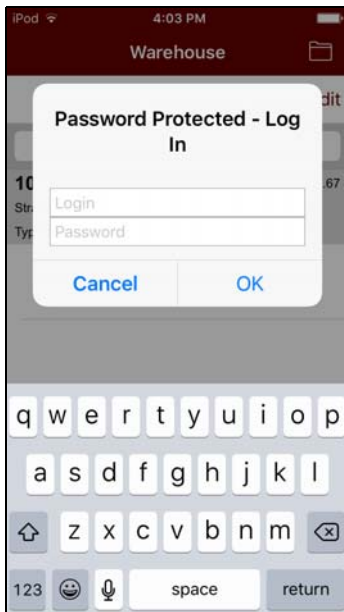


Once you have logged into the device using the correct username and password, you can continue to access it until the app is closed. If you try to add the device to another list, though, it will require you to log in again.

For more information on setting up FTP security, see the *PAC Manager User's Guide*, form 1704.

## Opto iPAC online demo

If you don't have Opto 22 devices or don't have wireless access to them, try our online demo.

**Requirements:** iPhone, iPod Touch, or iPad and a computer with Internet access. NOTE: This demo does not run on Internet Explorer; use Safari, Firefox, or Chrome.

1. Go to the iTunes App Store and search for `Opto iPAC` or follow this link: http://op22.co/Opto-iPAC
2. Load the Opto iPAC app on your iPhone, iPod Touch, or iPad.
3. Tap the Opto iPAC icon.
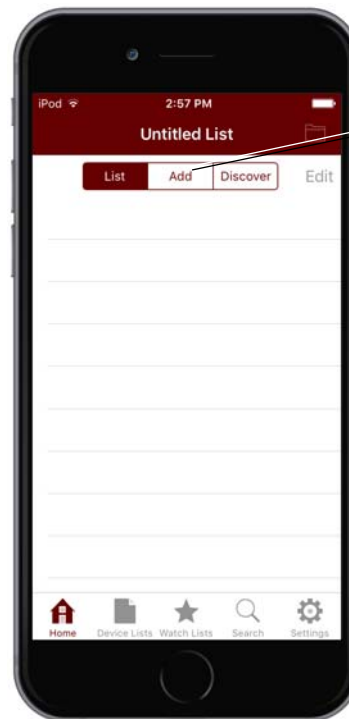


4. Tap the Add button.
5. Leave the Description field empty (it will be automatically filled in). In the Address field, enter: `internetio.com`

**6.** Leave everything else as is and tap Done.

**7.** Touch the file icon in the upper right and rename the list: `Internetio.com`



**8.** On the computer, open Safari (or another web browser) and go to:
`www.internetio.com/pc/demo`

*NOTE: If you see a security dialog box, click Continue to go to the webpage.*

You're looking at a live image of an Opto 22 SNAP PAC System in the upper left. This small system is controlling a light bulb and a spinner, and it's monitoring a temperature input (ICTD).

If the date/time stamp within the video stream isn't being updated, refresh the screen.

**9.** Back on the iPhone, iPod Touch, or iPad, tap Demo_Panel (the only device in the Internetio.com list).
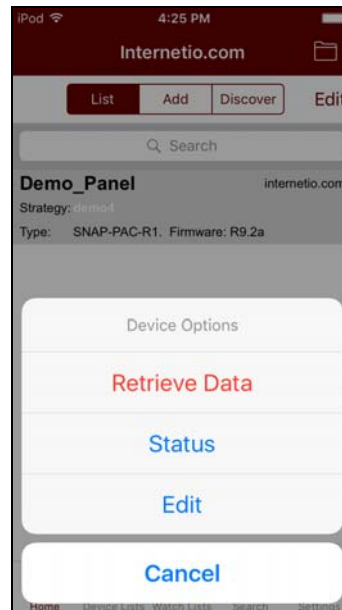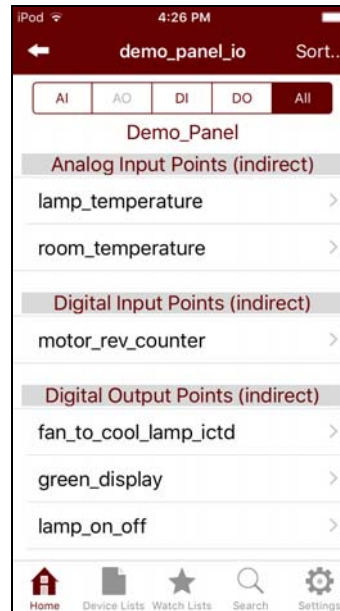
**10.** Tap Retrieve Data.
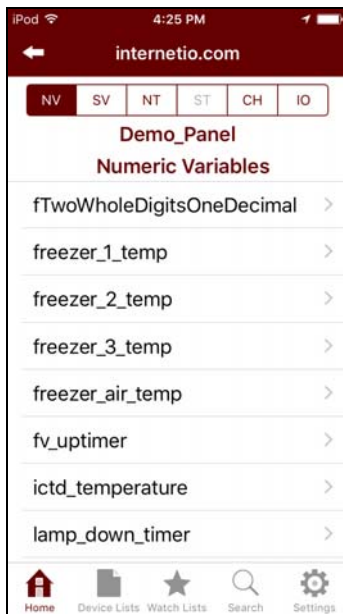


All the variables from the control program and all the inputs and outputs are now available for you to see and change. Buttons across the top give you access to:
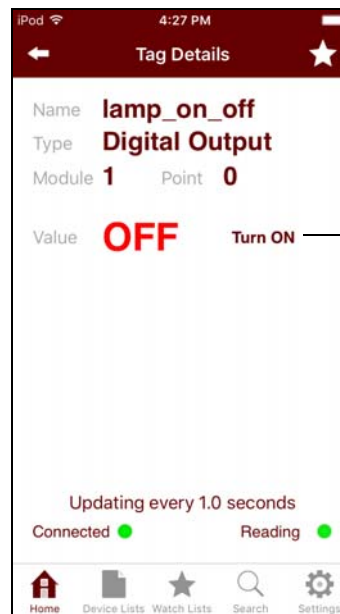
| NV | Numeric Variables |
|----|-------------------|
| SV | String Variables |
| NT | Numeric Tables |
| ST | String Tables |
| CH | Charts |
| IO | Inputs and Outputs (I/O) |

**11.** Touch the IO button and then tap demo_panel_io.

Now you can see all the I/O.



Tap Sort to list I/O by module/point position rather than type.

**12.** Touch the DO button (upper right, next to All).

**13.** In the Digital Output Points (indirect) list, tap lamp_on_off.
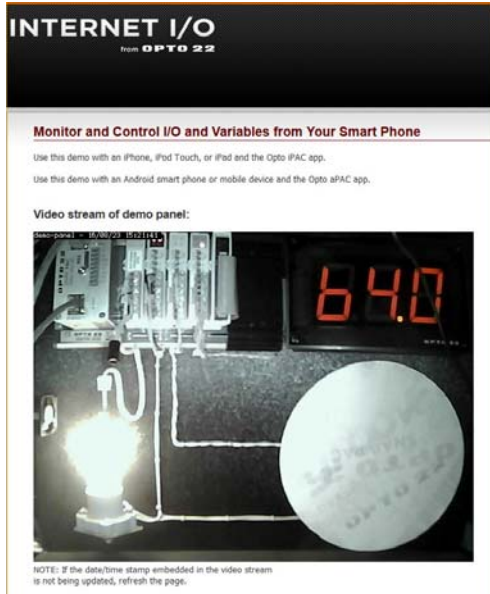


Tap the star to add this tag to a watch list.

Tap to change the tag's value.

You can see that the lamp (the light bulb) is off.

**14.** Tap the star in the upper right to put this output point in a watch list.

**15.** Tap the words Turn ON and then look at the demo on the computer.

You've turned the lamp on. Because the lamp is on, creating heat, the temperature sensor above it starts registering higher temperatures.

16. On the iPhone, touch the back arrow (upper left) to go back, then tap the AI button (upper left) to see the analog inputs. Tap lamp_temperature and watch the value increase.
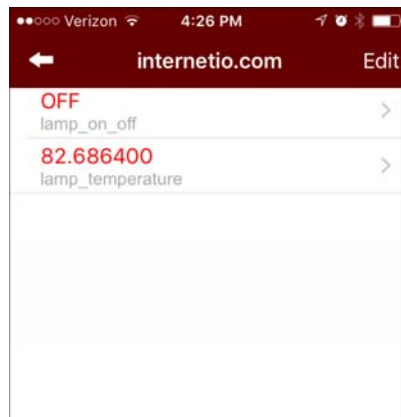


See watch lists

17. Tap the star in the upper right to add this input point to the watch list, too.

18. Tap the Watch Lists icon at the bottom. In the list, tap Demo_Panel.
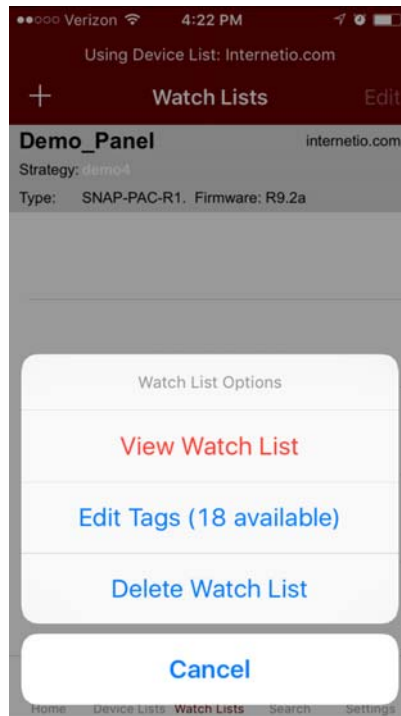


19. Tap View Watch List.

You see the two points you starred.



You can experiment with other tags in the demo, too. For example, you can turn on the motor (another digital output), and then watch the spinner move in the demo.

## Notes on the Demo

To save energy, the light bulb automatically turns off and the motor stops after a while.

Also note that the internetio.com demo panel is available online, so someone else may be using it at the same time you are. If you see something change and you didn't do it, that's probably why.

Because the demo is on the Internet and therefore subject to the vagaries of such a large system, you may experience timeouts or delays that would not occur in a local network.

## For Help

See .

If you're having problems and can't find the answer in this document, please contact Opto 22 Product Support.

**Opto 22 Product Support is free.**

| | |
|---|---|
| **Phone:** | 800-TEK-OPTO (800-835-6786  toll-free in the U.S. and Canada)<br>951-695-3080<br>Monday through Friday, 7 a.m. to 5 p.m. Pacific Time |
| **Fax:** | 951-695-3017 |
| **E-mail:** | support@opto22.com |
| **Website:** | www.opto22.com |