

Replacing a SNAP PAC Rechargeable Battery

INTRODUCTION

Several Opto 22 SNAP PAC controllers and brains have a rechargeable battery that receives charging current whenever the device has power. Because the battery is rechargeable and has a long data retention period with the power off, you should normally not have to change it.

Check your part number in the table below to see the normal data retention period and symptoms of battery failure.

Part number	Retention period	Notes	Battery failure symptoms
SNAP-PAC-S1 SNAP-PAC-S1-FM SNAP-PAC-S1-W	1 year	Serial numbers 625654 and higher*	When power to the controller is cycled, the Autorun flag is cleared, and variables configured as "Persistent" or "Initialize on strategy download" do not retain their values.
SNAP-PAC-S2 SNAP-PAC-S2-W		All models	
SNAP-PAC-R1 SNAP-PAC-R1-B SNAP-PAC-R1-FM SNAP-PAC-R1-W SNAP-PAC-R2 SNAP-PAC-R2-FM SNAP-PAC-R2-W	3 years	Manufactured after July 1, 2007**	
SNAP-PAC-EB1 SNAP-PAC-EB1-FM SNAP-PAC-EB1-W SNAP-PAC-EB2 SNAP-PAC-EB2-FM SNAP-PAC-EB2-W SNAP-PAC-SB1 SNAP-PAC-SB2	5 years	Manufactured after August 2007***	When power to the brain is cycled, the real-time clock does not retain its time.

* Serial numbers 625653 and lower have a 3.6-volt TL 5242 /W lithium battery, with 10-year minimum power-off data retention (replacement part number: G4BATT32).

** Models manufactured before July 1, 2007, have a 3-volt CR2032 lithium battery, available in retail stores.

*** Models manufactured before August 2007 have a 3-volt CR2032 lithium battery, available in retail stores.

If you notice these symptoms, follow the steps in this technical note to replace the battery. The replacement battery is a FDK Lithium ML2430-CJ1 or equivalent. Opto 22 part number is [SNAP-PAC-BATTERY-ML2430](#).

For Help

If you have difficulty with the battery or the R-series PAC and cannot find the information you need in this document or in the *SNAP PAC R-Series Controllers User's Guide* (form #1595, available on our website), contact Opto 22 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

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

Fax: 951-695-3017

Email: support@opto22.com

Opto 22 website: www.opto22.com

REPLACING THE RECHARGEABLE BATTERY

You can replace the battery if necessary using Opto 22 part number [SNAP-PAC-BATTERY-ML2430](#) or equivalent.

CAUTION: *On a controller, replacing the rechargeable battery erases archived strategies, persistent variables, the autorun flag, and variables initialized on download. Before replacing the battery, make certain any strategy archived on the controller is also archived somewhere else (for example, a PC). After the battery is replaced, archive the strategies again to the controller. See the [PAC Control User's Guide](#) for more information and instructions.*

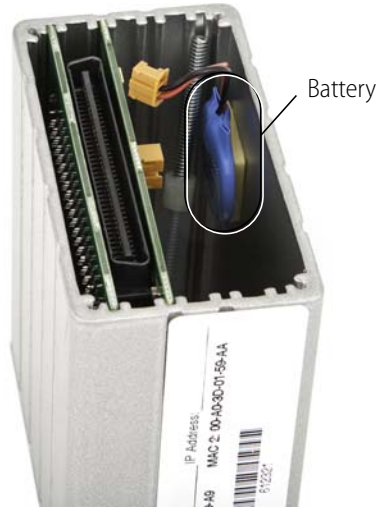
Strategy, firmware, and configuration files stored to flash memory are not erased.

1. Turn off power to the controller or brain. Remove the Ethernet cable(s) and any serial terminals, if used. Unscrew the center hold-down screw enough to remove the PAC from the mounting rack.
2. Turn the PAC over. Unscrew the four small screws holding the bottom plate and save them. Remove the bottom plate.
3. Pull the boards out carefully so you can see where the battery is connected to the board.
A SNAP PAC R-series controller is shown below. Position varies on other devices.

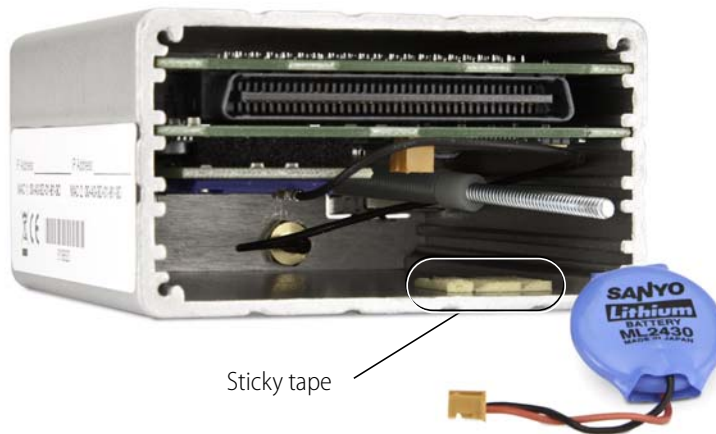


CAUTION: When working inside the can, make certain you do not damage the boards inside.

- Carefully unplug the battery from the connector on the board.
You can see the battery attached to the wall of the metal case.
The position of the battery varies depending on the device (an R-series PAC is shown here).



- Notice the battery's position. Carefully pry the battery off the wall.
(An R-series PAC is shown as an example.)



- Carefully scrape the remaining sticky tape off the metal wall.
- On the new battery, remove the paper backing on the sticky tape. With the wires toward you, stick the new battery to the wall of the case in the same position as the old one.
- Note the polarity of the battery's connector. Plug it into the connector on the board.
- Ease the boards back into the case and put the bottom plate back on, using the saved screws. Replace the device on the mounting rack, tighten the hold-down screw, and reattach cables.

The controller or brain is ready for use.

PRODUCTS

Opto 22 develops and manufactures reliable, easy-to-use, open standards-based hardware and software products.

Industrial automation, process control, building automation, industrial refrigeration, remote monitoring, data acquisition, and industrial internet of things (IIoT) applications worldwide all rely on Opto 22.

groov EPIC® System

Opto 22's *groov* Edge Programmable Industrial Controller (EPIC) system is the culmination of over 40 years of experience in designing products for the automation industry.

groov EPIC gives you an industrially hardened system with guaranteed-for-life I/O, a flexible Linux®-based controller with gateway functions, and software for your IIoT application or any application.

groov EPIC I/O

I/O provides the local connection to sensors and equipment. *groov* I/O offers up to 24 channels on each I/O module, with a spring-clamp terminal strip, integrated wireway, and swing-away cover.

Opto 22 I/O is so reliable, we can afford to guarantee it for life. *groov* I/O is hot swappable, UL Hazardous Locations approved, and ATEX compliant.

groov EPIC Controller

The heart of the system is the *groov* EPIC controller. It handles a wide range of digital, analog, and serial functions for data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

In addition, the EPIC provides secure data communications among physical assets, control systems, software applications, online services, and more, both on premises and in the cloud.

Configuring and troubleshooting I/O and networking is easier with the EPIC's integrated high-resolution touchscreen. Authorized users can see your *groov* View HMI locally on the touchscreen or on a monitor connected via the HDMI or USB ports.

groov EPIC Software

Software includes:

- Flowchart-based PAC Control for control programming, or build your own custom application with optional secure shell access
- *groov* View for building and viewing your own device-independent HMI
- Node-RED for creating simple logic flows from pre-built nodes

- Ignition Edge® from Inductive Automation®, with OPC-UA drivers to Allen-Bradley®, Siemens®, and other control systems, and MQTT/Sparkplug communications for efficient IIoT data transfer

groov Edge Appliance

Visualization, data handling, and connectivity in a compact, industrial box: that's the *groov* Edge Appliance. Included are:

- *groov* View for building and viewing operator interfaces on PCs and mobile
- Node-RED for building simple logic flows
- Ignition Edge® from Inductive Automation®, for OPC-UA drivers and MQTT/Sparkplug IIoT communications



Older products

From solid state relays (our first products) to world-famous G4 and SNAP I/O, to SNAP PAC controllers, Opto 22 products last a long time. You can count on us to give you the reliability and service you expect.



QUALITY

Founded in 1974, Opto 22 has established a worldwide reputation for high-quality products. All are made in the U.S.A. at our manufacturing facility in Temecula, California.

Because we test each product twice before it leaves our factory rather than testing a sample of each batch, we can guarantee most solid-state relays and optically isolated I/O modules for life.

FREE PRODUCT SUPPORT

Opto 22's California-based Product Support Group offers free, comprehensive technical support for Opto 22 products from engineers with decades of training and experience. Support is available in English and Spanish by phone or email, Monday–Friday, 7 a.m. to 5 p.m. PST.

Support is always available on our website, including how-to videos, user's guides, the Opto 22 KnowledgeBase, troubleshooting tips, and OptoForums. In addition, free hands-on training is available at our Temecula, California headquarters, and you can [register online](#).

PURCHASING OPTO 22 PRODUCTS

Opto 22 products are sold directly and through a worldwide network of distributors, partners, and system integrators. For more information, contact Opto 22 headquarters at **800-321-6786** (toll-free in the U.S. and Canada) or **+1-951-695-3000**, or visit our website at www.opto22.com.