

SNAP PAC RACKS

Features

- > Compatible with all SNAP PAC brains and R-series controllers
- > Secure mounting for SNAP I/O modules plus a SNAP brain or on-the-rack SNAP PAC controller
- > Analog, digital, and serial modules on the same rack
- > Panel or DIN-rail mounting
- > Modules snap into place



SNAP-PAC-RCK12

DESCRIPTION

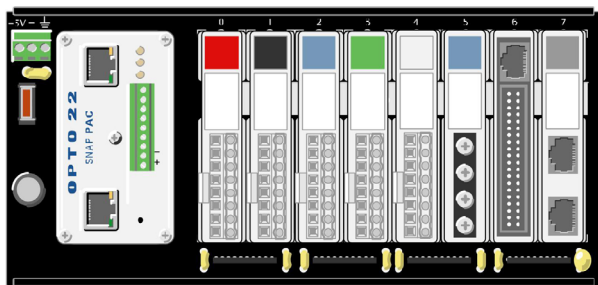
SNAP PAC I/O mounting racks are designed to hold an intelligent SNAP I/O processor—a SNAP PAC brain or a SNAP PAC R-series on-the-rack controller—and several I/O modules.

Since SNAP analog, digital, and serial I/O modules all have the same footprint, customers using SNAP PAC racks can mix all these modules on the same I/O mounting rack. Field devices are wired directly to the top-mounted connectors on the modules plugged into each rack, or through breakout boards when additional wiring space is required. (See form 1756, the *SNAP TEX Cables and Breakout Boards Data Sheet*, for more information.)

SNAP PAC racks can accommodate up to 4, 8, 12, or 16 I/O modules.

The module and rack design allows modules to simply “snap” on the mounting rack.

SNAP PAC racks require a 5 VDC power source. One power supply can usually power the rack, the I/O processor (controller or brain), and all modules on the rack. See form 1120, the *SNAP Power Supplies Data Sheet*, to choose a power supply.



SNAP-PAC-RCK8 (8-Module Position I/O Mounting Rack)

Shown with SNAP-PAC-R1 controller and SNAP modules (all purchased separately)

SNAP PAC racks use a retention rail locking system. Install two 4-40 by ½-inch standard machine screws to hold each module in position.

All SNAP PAC racks offer panel mounting and the option of DIN-rail mounting. DIN-rail adapter part numbers are shown in the table below. For more information, see form 1772, the *SNAP TEX Mounting/Wiring Tools and Spare Parts Data Sheet*.

Part Numbers

Part	Description
SNAP-PAC-RCK4	4-module SNAP PAC rack
SNAP-PAC-RCK8	8-module SNAP PAC rack
SNAP-PAC-RCK12	12-module SNAP PAC rack
SNAP-PAC-RCK16	16-module SNAP PAC rack
SNAP-FUSE7.5AB	7.5-amp fuse, 25 pack
SNAP-TEX-DRC10	SNAP rack DIN-rail adapter clip, 10-pack
SNAP-TEX-REC10W	Wide end cap for SNAP PAC racks DIN-rail assemblies, 10-pack

SPECIFICATIONS

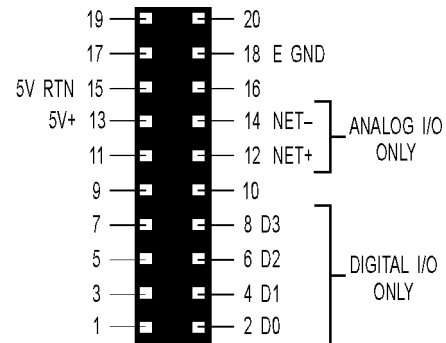
Power ¹ Requirements	5.0 to 5.2 VDC @ 4.2 Amps max	
I/O Processor ² Compatibility	SNAP-PAC-R1	SNAP-PAC-R2-W ³
	SNAP-PAC-R2	SNAP-PAC-EB1-W ³
	SNAP-PAC-EB1 ³	SNAP-PAC-EB2-W ³
	SNAP-PAC-EB2 ³	SNAP-PAC-R1-FM ³
	SNAP-PAC-SB1	SNAP-PAC-R2-FM ³
	SNAP-PAC-SB2	SNAP-PAC-EB1-FM ³
	SNAP-PAC-R1-W ³	SNAP-PAC-EB2-FM ³
Replacement Fuse	SNAP-FUSE7.5AB or Littelfuse 297 07.5	
Rack Power Terminals Wire Size	22 to 14 AWG	
Operating Temperature	-20 to 70 °C	
Storage Temperature	-40 to 85 °C	
Relative Humidity	95%, non-condensing	
Agency Approvals	Non -FM models: UL, CE, RoHS, DFARS; UKCA -FM models: CE, ATEX, RoHS, DFARS; UKCA	
Warranty	30 months from date of manufacture	

1 Power requirements shown are for a rack, a processor, and a full load of analog modules. Power requirements for SNAP serial and high-density modules are higher. See module data sheets.

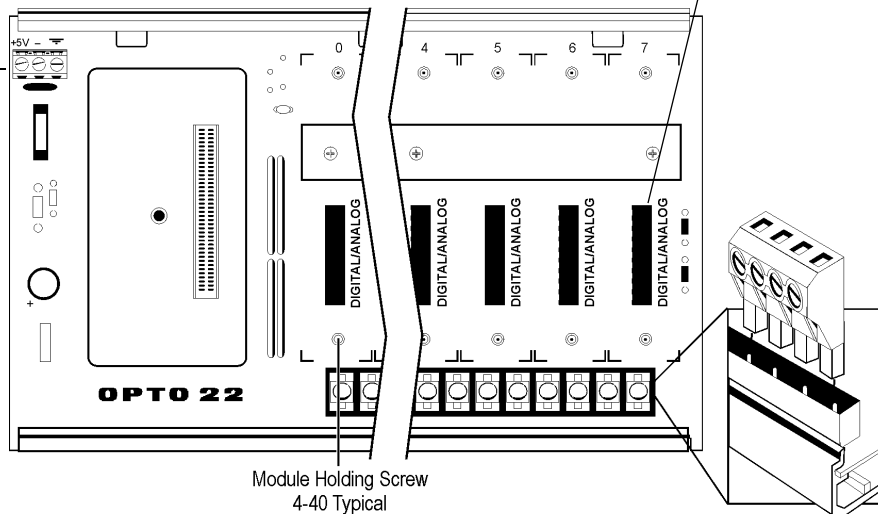
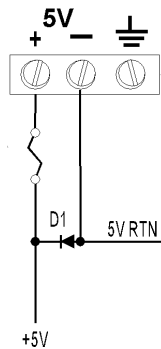
2 "I/O Processor" means a SNAP PAC brain or SNAP PAC on-the-rack controller. For compatibility with legacy Opto 22 products, see form #1693, *Legacy and Current Product Comparison and Compatibility Charts*.

3 Obsolete product; will be unavailable when current stock is depleted.

Module Mating Connector Pinout (female)



Power Schematic



Notes on Grounding

Pin 18 E GND on each module (see diagram above right) is connected to the rack's GND. Module hold-down screws are also connected to the rack's GND.

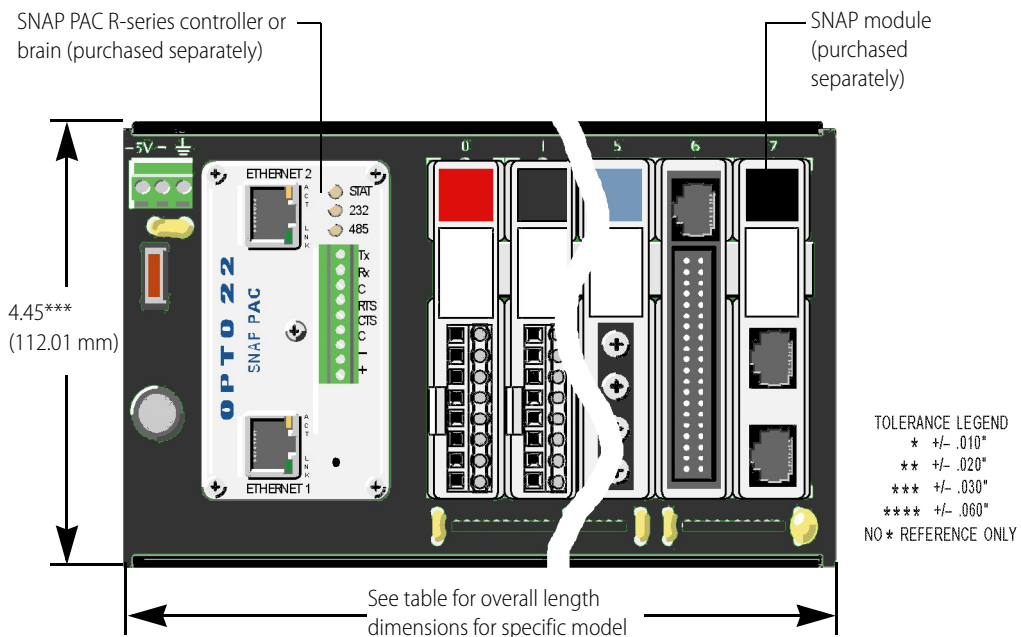
The brain or rack-mounted controller is connected to the rack's GND through its center hold-down screw.

WARNING: EXPLOSION HAZARD. DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.

AVERTISSEMENT: RISQUE D'EXPLOSION. NE PAS DÉBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, À MOINS QU'IL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX.

DIMENSIONAL DRAWINGS

Overall Dimensions

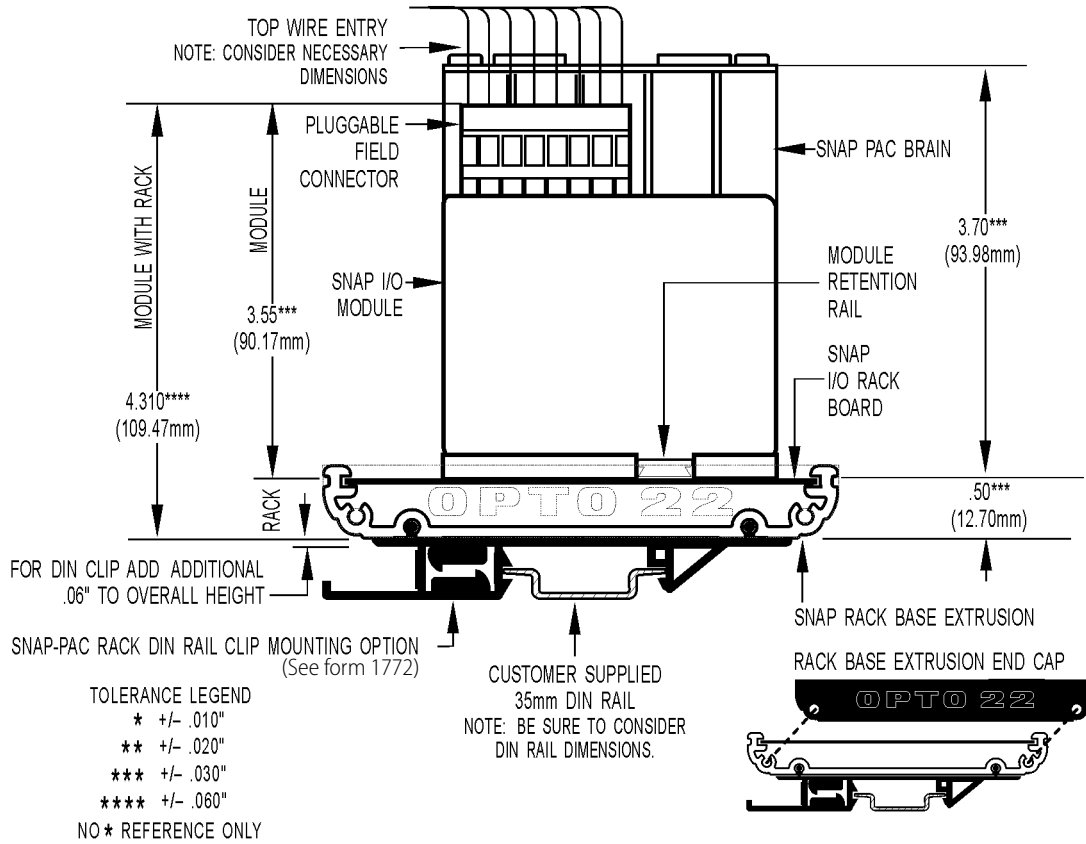


Overall Length Dimensions

Part Number	Description	Width (inches)	Width (mm)	Length (inches)	Length (mm)
SNAP-PAC-RCK4	4-module rack	4.45	112.01	6.25	158.75
SNAP-PAC-RCK8	8-module rack	4.45	112.01	9.25	234.95
SNAP-PAC-RCK12	12-module rack	4.45	112.01	12.25	311.15
SNAP-PAC-RCK16	16-module rack	4.45	112.01	15.25	387.35

DIMENSIONAL DRAWINGS (CONTINUED)

Right Side View with DIN-Rail Option Installed



For more information on DIN-rail mounting kits, see form 1772, the *SNAP TEX Mounting/Wiring Tools and Spare Parts Data Sheet*.

MOUNTING THE EXTRUSION ONTO A PANEL

Use the following steps to mount a rack onto a panel. For DIN-rail mounting, see [page 6](#).

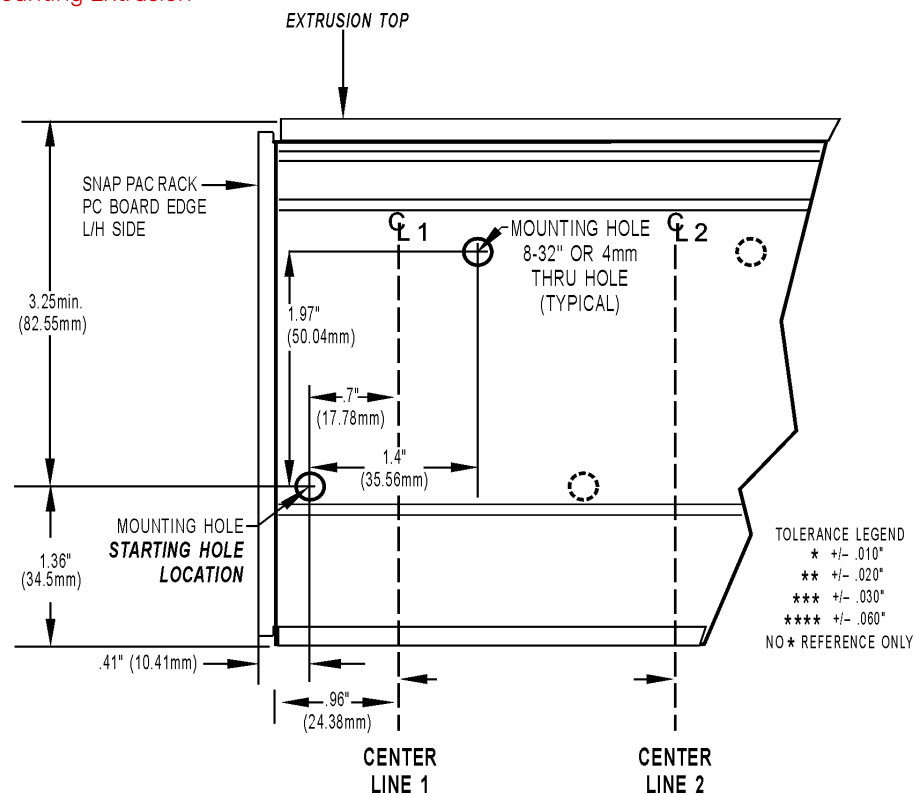
CAUTION: Do not let cutting fluids, cleaners, lubricants, or other chemicals contact the plastic extrusion, as they can cause cracking. If you use these chemicals before rack installation, be sure they are thoroughly cleaned off.

Preferred Method: Template

(Product on site)

1. Use SNAP PAC rack mounting extrusion as template.
2. Use the diagram below to determine required product and option clearances.

Typical Plain View of SNAP Mounting Extrusion



Alternate Method: Prefabrication of Panels

(No product on site)

Mounting holes are in sets of two, located on lower left and upper right with respect to a center line (CL).

1. Using the diagram below, determine CL1 mounting hole positions. (CL1 is located on the left side of all SNAP PAC rack mounting extrusions.)
2. Use the center-to-center length specification table below to determine the offset between center lines and the number of center line positions for each model.
3. Repeat the process for each center line position.

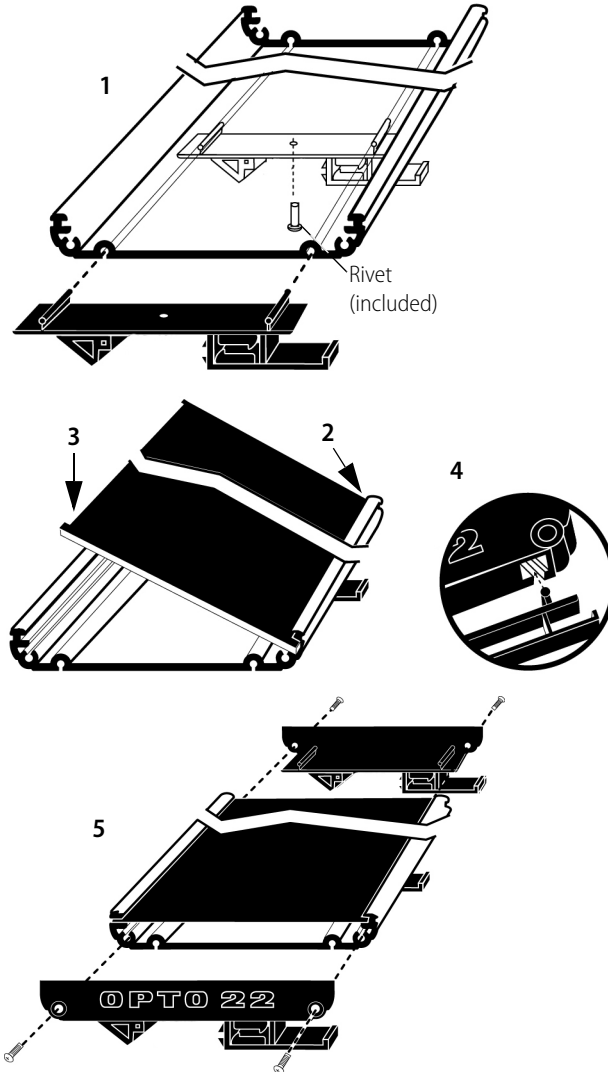
Center-to-Center Length (All Models)

Part Number	Description	Center-to-Center Length	Number of Center Positions
SNAP-PAC-RCK4	4-module rack	4.02 in.	2
SNAP-PAC-RCK8	8-module rack	3.51 in.	3
SNAP-PAC-RCK12	12-module rack	5.01 in.	3
SNAP-PAC-RCK16	16-module rack	4.34 in.	4

ASSEMBLING AND MOUNTING ON A DIN RAIL

For panel mounting, see [page 5](#).

1. (This step only for racks with three or more clips.) Slide one DIN clip to the middle position and secure with the rivet provided. For racks with four clips, add an additional middle clip.
2. Insert one edge of the circuit board into the extrusion.
3. Push down hard on the other edge to snap the board into place.
4. Attach one DIN clip to each end cap using the slots in the end caps as shown.
5. Using the screws provided, secure an end cap and DIN clip assembly to each end of the extrusion.

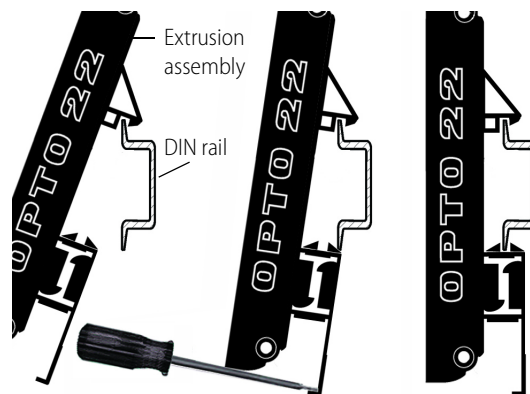


Removing the Circuit Board from the Rack Extrusion

If end caps are present, remove them. Then insert a flathead screwdriver in one of the circuit board release notches and pry up the board. Repeat in the other release notches until the board pops out of the extrusion.

Attaching the Adapter Clip to a DIN Rail

1. Hook the DIN-rail clip over the top of the DIN rail.
2. Using a screwdriver, pry open the DIN-rail clip flange at the bottom of the clip. Push the clip toward the DIN rail.
3. Snap the DIN-rail clip into place



PRODUCTS

Opto 22 develops and manufactures reliable, easy-to-use, open standards-based hardware and software products. Industrial automation, process control, remote monitoring, data acquisition, and industrial internet of things (IIoT) applications worldwide all rely on Opto 22.

groov RIO®

groov RIO edge I/O offers a single, compact, PoE-powered industrial package with web-based configuration and IIoT software built in, support for multiple OT and IT protocols, and security features like a device firewall, data encryption, and user account control.

Standing alone, groov RIO connects to sensors, equipment, and legacy systems, collecting and securely publishing data from field to cloud. Choose a universal I/O model with thousands of possible field I/O configurations, with or without Ignition from Inductive Automation®, or a RIO EMU energy monitoring unit that reports 64 energy data values from 3-phase loads up to 600 VAC, Delta or Wye.

You can even write an IEC 61131-3 compliant control program to run on groov RIO, using CODESYS. You can also use groov RIO with a Modbus/TCP master or as remote I/O for a groov EPIC system.

groov EPIC® System

Opto 22's groov Edge Programmable Industrial Controller (EPIC) system gives you industrially hardened control with a flexible Linux®-based processor with gateway functions, guaranteed-for-life I/O, and software for your automation and IIoT applications.

groov EPIC Processor

The heart of the system is the groov EPIC processor. 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, and online services, both on premises and in the cloud. No industrial PC needed.

Configuring and troubleshooting I/O and networking is easier with the EPIC's integrated high-resolution color touchscreen. Authorized users can manage the system locally on the touchscreen, on a monitor connected via the HDMI or USB ports, or on a PC or mobile device with a web browser.

groov EPIC I/O

groov I/O connects locally to sensors and equipment. Modules have a spring-clamp terminal strip, integrated wireway, swing-away cover, and LEDs indicating module health and discrete channel status. groov I/O is hot swappable, UL Hazardous Locations approved, and ATEX compliant.

groov EPIC Software

The groov EPIC processor comes ready to run the software you need:

- Programming: Choose flowchart-based PAC Control, CODESYS Development System for IEC61131-3 compliant programs, or secure shell access (SSH) to the Linux OS for custom applications
- Node-RED for creating simple IIoT logic flows from pre-built nodes
- Efficient MQTT data communications with string or Sparkplug data formats
- Multiple OPC UA server options
- HMI: groov View to build your own HMI viewable on touchscreen, PCs, and mobile devices; PAC Display for a

Windows HMI; Node-RED dashboard UI

- Ignition or Ignition Edge® from Inductive Automation (requires license purchase) with OPC-UA drivers to Allen-Bradley®, Siemens®, and other control systems, and MQTT communications

Older products

From solid state relays, to world-famous G4 and SNAP I/O, to SNAP PAC controllers, older Opto 22 products are still supported and working hard at thousands of installations worldwide. You can count on us for the reliability and service you expect, now and in the future.

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 afford to 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 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 [free online training](#) at OptoU, how-to [videos](#), [user's guides](#), the Opto 22 KnowledgeBase, and [OptoForums](#).

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.



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