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.
- Factory Mutual-approved versions available.
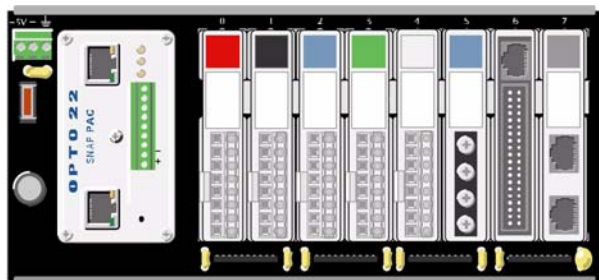
SNAP PAC Racks

Description

SNAP PAC I/O mounting racks are designed to hold an intelligent SNAP I/O processor—a SNAP PAC EB-series or SB-series 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 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 removable 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. Part numbers ending in -FM are Factory Mutual approved.
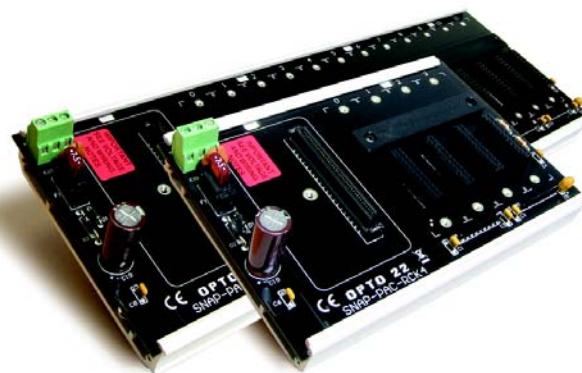
The module and rack design allows modules to simply "snap" on and off the mounting rack.

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 that holds modules securely to the rack. Normally, a hold-down screw is not required. However, for applications that require additional module security, SNAP PAC racks have provisions for 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*.

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.

Part Numbers

| Part	Description
SNAP-PAC-RCK4	4-module SNAP PAC rack
SNAP-PAC-RCK4-FM	4-module SNAP PAC rack, Factory Mutual approved
SNAP-PAC-RCK8	8-module SNAP PAC rack
SNAP-PAC-RCK8-FM	8-module SNAP PAC rack, Factory Mutual approved
SNAP-PAC-RCK12	12-module SNAP PAC rack
SNAP-PAC-RCK12-FM	12-module SNAP PAC rack, Factory Mutual approved
SNAP-PAC-RCK16	16-module SNAP PAC rack
SNAP-PAC-RCK16-FM	16-module SNAP PAC rack, Factory Mutual approved
SNAP-FUSE7.5AB	7.5-amp fuse, 25 pack
SNAP-RACKDIN	SNAP rack DIN-rail adapter clip
SNAPRACKDINB	SNAP rack DIN-rail adapter clip, 25-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-R1-FM SNAP-PAC-R2 SNAP-PAC-R2-FM SNAP-PAC-EB1 SNAP-PAC-EB1-FM SNAP-PAC-EB2 SNAP-PAC-EB2-FM SNAP-PAC-SB1 SNAP-PAC-SB2
Replacement Fuse	SNAP-FUSE7.5AB or Littelfuse 297 07.5
Rack Power Terminals Wire Size	22 to 14 AWG
Operating Temperature	0 to 70 °C
Relative Humidity	95%, non-condensing

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*.

Module Mating Connector Pinout (female)
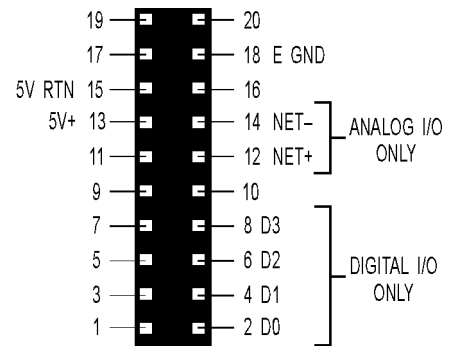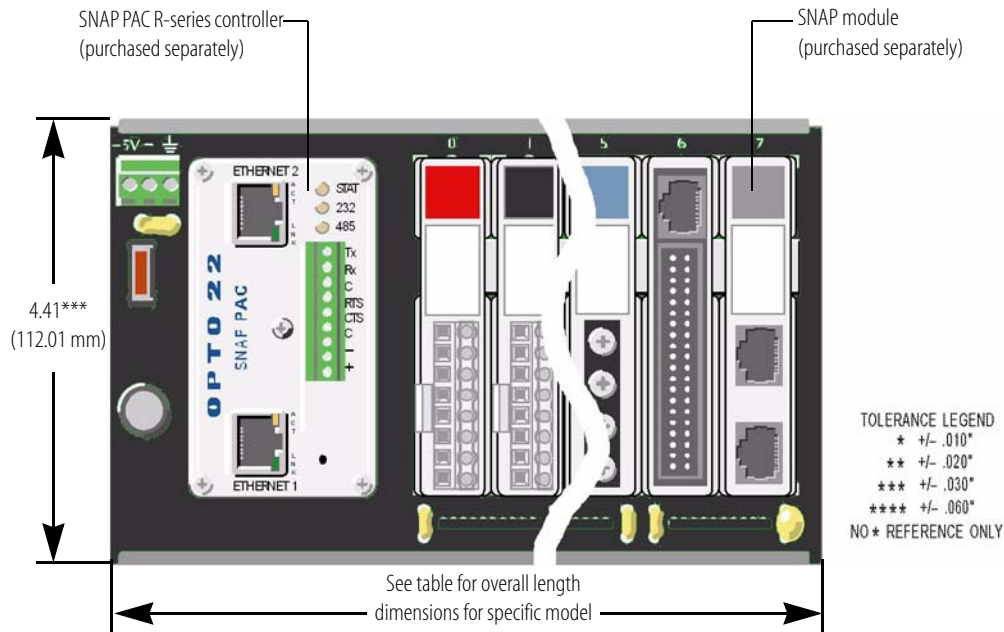

Power Schematic
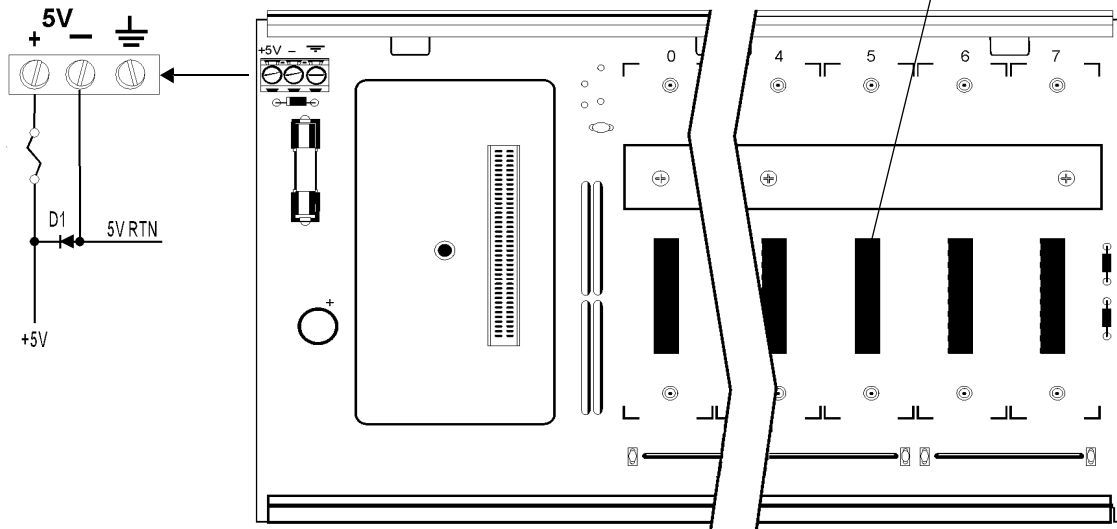
WARNING: EXPLOSION HAZARD. DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.

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.

SNAP PAC Racks

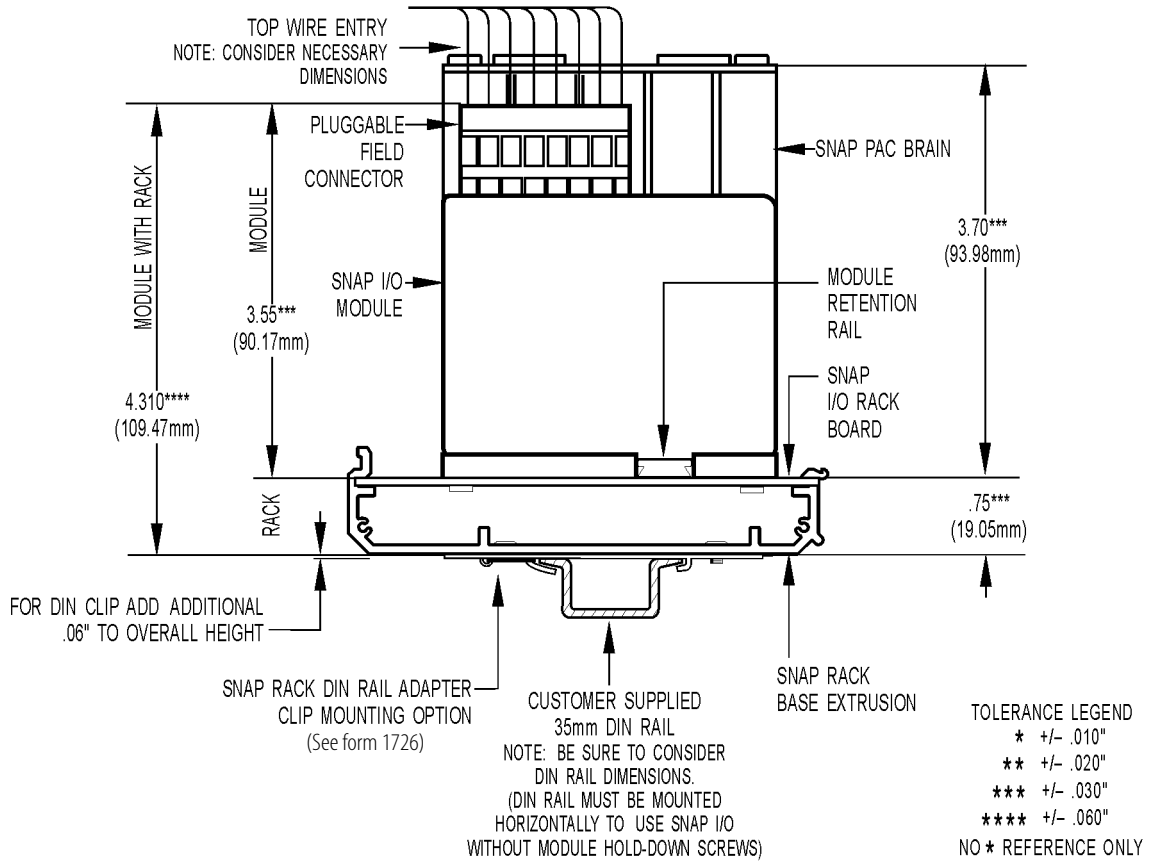## Dimensional Drawings

Overall Dimensions

SNAP PAC R-series controller (purchased separately)

SNAP module (purchased separately)

4.41*** (112.01 mm)

See table for overall length dimensions for specific model

TOLERANCE LEGEND
* +/- .010"
** +/- .020"
*** +/- .030"
**** +/- .060"
NO * REFERENCE ONLY

Overall Length Dimensions

Part Number	Description	Width (inches)	Width (mm)	Length (inches)	Length (mm)
SNAP-PAC-RCK4 SNAP-PAC-RCK4-FM	4-module rack	4.41	112.01	6.25	158.75
SNAP-PAC-RCK8 SNAP-PAC-RCK8-FM	8-module rack	4.41	112.01	9.25	234.95
SNAP-PAC-RCK12 SNAP-PAC-RCK12-FM	12-module rack	4.41	112.01	12.25	311.15
SNAP-PAC-RCK16 SNAP-PAC-RCK16-FM	16-module rack	4.41	112.01	15.25	387.35

Dimensional Drawings (continued)

Right Side View with DIN-Rail Option Installed

TOP WIRE ENTRY
NOTE: CONSIDER NECESSARY DIMENSIONS

PLUGGABLE FIELD CONNECTOR

SNAP PAC BRAIN

MODULE WITH RACK

MODULE

SNAP I/O MODULE

MODULE RETENTION RAIL

SNAP I/O RACK BOARD

3.55*** (90.17mm)

3.70*** (93.98mm)

4.310**** (109.47mm)

RACK

.75*** (19.05mm)

FOR DIN CLIP ADD ADDITIONAL .06" TO OVERALL HEIGHT

SNAP RACK DIN RAIL ADAPTER CLIP MOUNTING OPTION
(See form 1726)

CUSTOMER SUPPLIED 35mm DIN RAIL
NOTE: BE SURE TO CONSIDER DIN RAIL DIMENSIONS.
(DIN RAIL MUST BE MOUNTED HORIZONTALLY TO USE SNAP I/O WITHOUT MODULE HOLD-DOWN SCREWS)

SNAP RACK BASE EXTRUSION

TOLERANCE LEGEND
* +/– .010"
** +/– .020"
*** +/– .030"
**** +/– .060"
NO * REFERENCE ONLY

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

SNAP PAC Racks

Mounting the Extrusion onto a Panel

NOTE: If you are not using hold-down screws, the SNAP PAC rack assembly should be mounted horizontally.

Use the following steps to mount a rack onto a panel. For DIN-rail mounting, see form #0959, the *SNAP-PSDIN and SNAP-PSUDIN Installation Note*.

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.

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.

### Typical Plain View of SNAP Mounting Extrusion
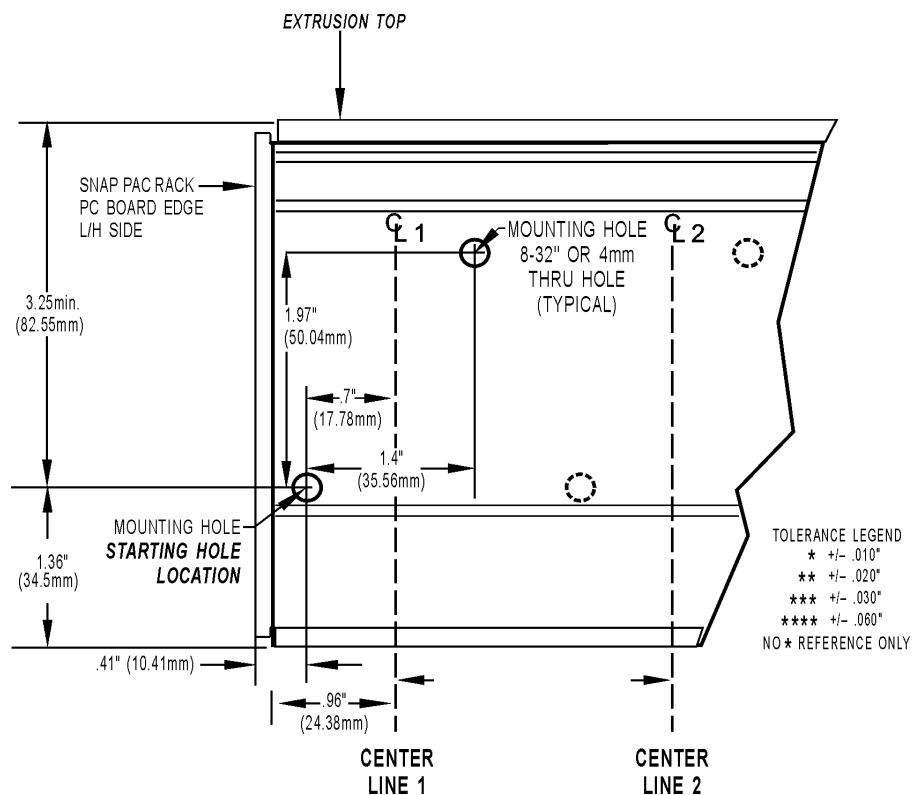
Center-to-Center Length (All Models)

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

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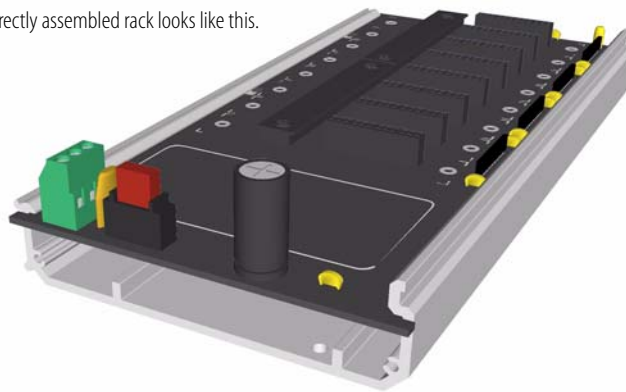
Installing the Circuit Board into the Rack Extrusion

Once the extrusion is attached to the panel or DIN-rail clips, follow these steps to install the circuit board.

1. Orient the circuit board so that the module connectors are at the bottom and the circuit board release notches are at the top.

2. Center the circuit board on the extrusion. Push the front of the circuit board into the top groove on the front of the extrusion.

3. Push the back of the circuit board down to snap it into the groove in the back of the extrusion. It's OK to push hard.

Circuit board

Circuit board release notches

Module connectors
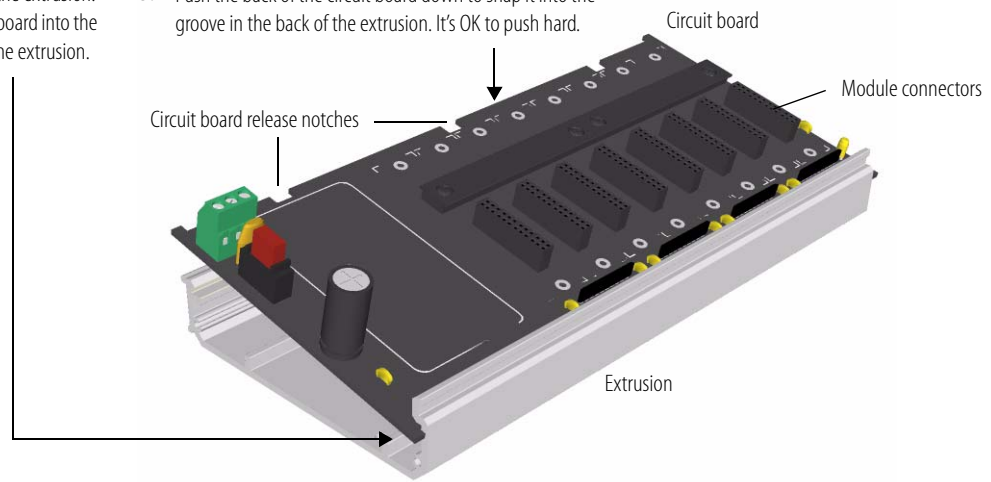
Extrusion

A correctly assembled rack looks like this.

Removing the Circuit Board from the Rack Extrusion

To remove the circuit board, inset 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.

More About Opto 22

Products

Opto 22 develops and manufactures reliable, flexible, easy-to-use hardware and software products for industrial automation, remote monitoring, and data acquisition applications.

SNAP PAC System

Designed to simplify the typically complex process of understanding, selecting, buying, and applying an automation system, the SNAP PAC System consists of four integrated components:

- SNAP PAC controllers
- PAC Project™ Software Suite
- SNAP PAC brains
- SNAP I/O™

SNAP PAC Controllers

Programmable automation controllers (PACs) are multifunctional, multidomain, modular controllers based on open standards and providing an integrated development environment.

Opto 22 has been manufacturing PACs for many years. The latest models include the standalone SNAP PAC S-series and the rack-mounted SNAP PAC R-series. Both handle a wide range of digital, analog, and serial functions and are equally suited to data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

SNAP PACs are based on open Ethernet and Internet Protocol (IP) standards, so you can build or extend a system without the expense and limitations of proprietary networks and protocols.

PAC Project Software Suite

Opto 22's PAC Project Software Suite provides full-featured and cost-effective control programming, HMI (human machine interface) development and runtime, OPC server, and database connectivity software to power your SNAP PAC System.

These fully integrated software applications share a single tagname database, so the data points you configure in PAC Control™ are immediately available for use in PAC Display™, OptoOPCServer™, and OptoDataLink™. Commands are in plain English; variables and I/O point names are fully descriptive.

PAC Project Basic offers control and HMI tools and is free for download on our website, www.opto22.com. PAC Project Professional, available for separate purchase, adds OptoOPCServer, OptoDataLink, options for Ethernet link redundancy or segmented networking, and support for legacy Opto 22 serial *mistic*™ I/O units.

SNAP PAC Brains

While SNAP PAC controllers provide central control and data distribution, SNAP PAC brains provide distributed intelligence for I/O processing and communications. Brains offer analog, digital, and serial functions, including thermocouple linearization; PID loop control; and optional high-speed digital counting (up to 20 kHz), quadrature counting, TPO, and pulse generation and measurement.

SNAP I/O

I/O provides the local connection to sensors and equipment. Opto 22 SNAP I/O offers 1 to 32 points of reliable I/O per module, depending on the type of module and your needs. Analog, digital, serial, and special-purpose modules are all mixed on the same mounting rack and controlled by the same processor (SNAP PAC brain or rack-mounted controller).

Quality

Founded in 1974 and with over 85 million devices sold, 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 do no statistical testing and each part is tested twice before leaving our factory, we can guarantee most solid-state relays and optically isolated I/O modules for life.

Free Product Support

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

Free Customer Training

Hands-on training classes for the SNAP PAC System are offered at our headquarters in Temecula, California. Each student has his or her own learning station; classes are limited to nine students. Registration for the free training class is on a first-come, first-served basis. See our website, www.opto22.com, for more information or email training@opto22.com.

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 or 951-695-3000, or visit our website at www.opto22.com.

www.opto22.com

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