SNAP-PAC-S1

01 / Product identity and system role

Opto 22 SNAP-PAC-S1 is a standalone programmable automation controller for Ethernet and serial I/O systems. It executes PAC Control strategies while separate SNAP PAC brains or compatible serial units provide the field I/O connections.

Strategy capture

Archive the current PAC Control project and controller settings

Network review

Record both IP addresses and connected switch paths

Serial inventory

Identify each RS-232 and RS-485 field device

Acceptance focus

Prove strategy startup and I/O communication after exchange

Installed-system boundary

SNAP-PAC-S1 runs the strategy and communicates with separate I/O units over Ethernet or a supported serial network.

Evidence scope

These core S1 specifications are from Opto 22 Form 1584-260513. MicroSD limits and backup-battery arrangements vary by manufacture date and serial number; confirm the available unit before asserting either variant-specific feature.

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02 / Technical characteristics

Processor	266 MHz 32-bit ColdFire 5475 with FPU	**Total RAM**	32 MB
Strategy RAM	16 MB for PAC Control strategies	**Battery-backed RAM**	8 MB
RAM file storage	2.5 MB	**Flash file storage**	4 MB
Ethernet interfaces	2 independent 10/100 Mbps RJ-45 ports	**Ethernet addressing**	Separate IP address and subnet per port
RS-232 ports	2; one DB-9 and one pluggable connector	**RS-485 port**	1 pluggable two-wire interface
Serial buffer	512 bytes each for RX and TX	**Power input**	8–32 VDC; serial numbers below 500,000: 8–24 VDC

Configuration detail

Opto 22 Form 1584-260513 lists SNAP-PAC-S1 with two 10/100 Mbps Ethernet ports, two RS-232 ports and one two-wire RS-485 port. Each Ethernet interface has its own IP address and subnet, supporting either separated networks or a planned redundant link in PAC Project Professional.

Which SNAP-PAC-S1 serial port can support a PPP modem?

The manufacturer describes PPP on RS-232 port 0. Record the original DB-9 cable and port configuration, then check the controller project before restoring a modem or substituting another serial device.

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03 / Interfaces and application

Maximum demand	11.3 VA	**Operating temperature**	−20 to +60 °C
Storage temperature	−40 to +85 °C	**Relative humidity**	0–95%, non-condensing
REST API requirement	Firmware R9.5a or higher		

The controller uses a 266 MHz 32-bit ColdFire 5475 processor and 32 MB total RAM, of which 16 MB is available for PAC Control strategies. Power is 8–32 VDC with an 11.3 VA maximum; units with serial numbers below 500,000 are limited to 8–24 VDC, so the unit label and serial range must be checked.

Distributed SNAP I/O

Operate compatible Ethernet SNAP PAC brains and racks under the downloaded controller strategy.

Legacy serial migration

Connect supported mistic or SNAP PAC serial I/O through the two-wire RS-485 interface using the required PAC Project Professional features.

Network segmentation

Place control and enterprise traffic on separately addressed Ethernet interfaces when the site network architecture requires that separation.

Serial equipment integration

Exchange application data with up to two RS-232 devices while maintaining the configured port roles and handshaking.

What must be retained when replacing SNAP-PAC-S1 in a live system?

Archive the PAC Control strategy, firmware and loader versions, both Ethernet settings, serial port roles, I/O-unit list and any network security settings. Restore only after an exact-unit compatibility review.

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04 / Installation and operating checks

Back up the strategy

Export the running PAC Control strategy and configuration before removing the original controller.

Check power and serial range

Verify the unit serial number before applying the 8–32 VDC limit; older S1 units require the 8–24 VDC range.

Preserve both networks

Record each Ethernet port’s IP address, subnet and connected switch; accidental cross-connection can disrupt I/O.

Check serial pinout

Identify RS-232 port 0, port 1 and the two-wire RS-485 terminals separately before reconnecting cables.

Review firmware dependencies

Check firmware before using the REST API or removable storage; availability and capacity vary with version and manufacture date.

Prove controller startup

After installation, confirm strategy state, I/O communications, time settings and expected fail-safe responses before returning the process to service.

Commissioning decisions

How can the two Ethernet ports of SNAP-PAC-S1 be used safely?

Give each interface its own IP address and subnet and map each switch connection to the original design. Confirm whether the site uses separate control and enterprise paths or PAC Project Professional link redundancy before moving cables.

Why does the serial number matter for SNAP-PAC-S1 power selection?

The Opto 22 sheet states 8–32 VDC for current S1 units but limits serial numbers below 500,000 to 8–24 VDC. Read the offered unit label and verify the installed supply before energizing.

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05 / Service and acceptance

Can SNAP-PAC-S1 use a RESTful API regardless of firmware?

No. Opto 22 specifies firmware R9.5a or later for the built-in RESTful API. Verify the actual firmware and PAC Project configuration rather than assuming a unit has the feature from its part number alone.

What should be checked before using a microSD card with SNAP-PAC-S1?

Read the manufacture date plus firmware and loader versions. The Opto 22 sheet gives different card capacities for units built from November 2008 to May 2014 and units built from June 2014 onward.

How is legacy RS-485 I/O integrated with SNAP-PAC-S1?

Use the two-wire RS-485 port for supported mistic or SNAP PAC serial I/O units and the appropriate PAC Project Professional strategy features. Check segment wiring, station addresses and termination against the existing network.

What is a useful acceptance test after installing SNAP-PAC-S1?

Verify power-up state, strategy execution, both Ethernet paths, every connected serial network, representative I/O points and the intended fail-safe behavior. Record firmware and as-left network settings for maintenance.

Handover evidence

The manufacturer sheet describes PAC Control strategies, Ethernet-based SNAP I/O and serial mistic/SNAP PAC I/O connectivity. RESTful API access requires firmware R9.5a or higher; microSD capacity and backup-battery type depend on manufacture date and serial number, so these features must be checked on the offered unit.

Technical enquiry

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