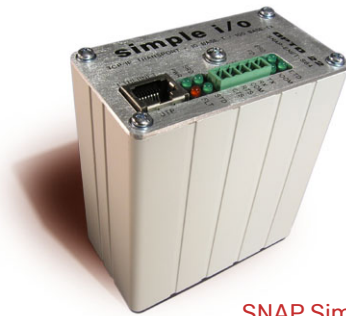


SNAP SIMPLE BRAIN

Features

- > 10/100 Mbps Fast Ethernet network connectivity
- > Use SNAP analog, digital, and serial modules in any position on a single 16-module mounting rack
- > Simultaneous communication using Modbus/TCP, OPC, and other applications you develop.



SNAP Simple Brain

DESCRIPTION

NOTE: Although fully supported and still in production, this is a legacy product and not recommended for new designs. For new designs, the SNAP-PAC-EB2 brain offers similar capabilities plus several additional features.

Opto 22 SNAP Simple I/O™ is a low-cost solution that brings you Ethernet/TCP communications as well as analog, simple digital, and serial capability on the same mounting rack.

Used for high-density commercial and industrial applications and for remote monitoring applications with high I/O point counts, a SNAP Simple I/O unit consists of a SNAP-ENET-S64 brain mounted on a SNAP M-series rack with SNAP I/O™ modules. These analog, standard digital, high-density digital, and serial modules can be mounted in any position on the rack (8 serial modules maximum).

SNAP Simple I/O can act as part of a SNAP control system, or it can act as an independent I/O unit. As a distributed I/O unit in a SNAP control system, SNAP Simple I/O is controlled by a SNAP PAC, SNAP-LCE, or SNAP Ultimate controller.

As an independent I/O unit, SNAP Simple I/O communicates using Modbus/TCP, OptoOPCServer, or applications you develop using the free OptoMMP Communication Toolkit. The brain also supports data streaming.

The SNAP-ENET-S64 brain provides both 10 and 100 Mbps Fast Ethernet compatibility, with automatic speed negotiation and a standard RJ-45 twisted-pair connector. The brain also includes a serial port for programming and diagnostics.

Simple I/O brain functions include the following:

- **Digital**—Input latching, on/off status, and watchdog timer.
- **Analog**—Thermocouple linearization (32-bit floating point for linearized values), minimum/maximum values, offset and gain, scaling, time-proportional output, filter weight, output clamping, and watchdog timer.
- **Serial**—Ability to send and receive ASCII strings to and from attached serial devices, such as chart recorders and barcode readers.

Each SNAP standard digital module contains four input or four output points. SNAP high-density digital modules provide 32 inputs or outputs per module. The number of points on each SNAP analog or serial module varies depending on the module.

Notes for legacy products: The SNAP Simple brain can be used with newer SNAP PAC racks as well as legacy M-series racks. It can be used with the current PAC Project or legacy ioProject software suites, although some features in PAC Project are not supported by this brain. For important information on mixing legacy and current products, see Opto 22 form 1688, [SNAP PAC System Migration Technical Note](#).

For a detailed comparison of SNAP Simple brains with other SNAP brains, see Opto 22 form 1693, [Legacy and Current Product Comparison and Compatibility Charts](#).

All documents are available on our website, www.opto22.com. The easiest way to find one is to search on its form number.

Part Numbers

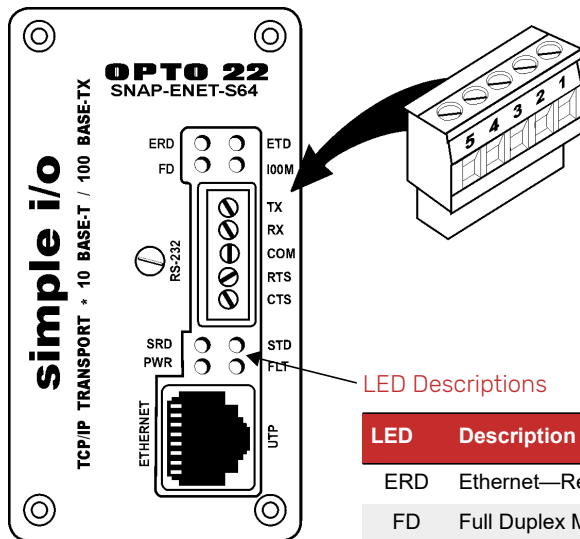
Part	Description
SNAP-ENET-S64	SNAP Simple Ethernet I/O Brain, Analog/Simple Digital/Serial

DESCRIPTION (CONTINUED)

SPECIFICATIONS

Power Requirements	5.1 VDC \pm 0.1 VDC at 1.2 A maximum (does not include module power requirements)
Operating Temperature	0 °C to 70 °C
Storage Temperature	-40 °C to 85 °C
Humidity	0–95% humidity, non-condensing
Network Interface	IEEE 802.3 network, 10Base-T and 100Base-TX
Serial Port	RS-232 (for programming and diagnostics only)
Serial Data Rates	Default is 19,200 kBd; baud rate is soft-selectable from 2400 to 115,200 kBd.
Maximum Ethernet Segment Length	100 meters with Category 5 or superior UTP. For 100 Mbps at this distance, use Category 5 or superior solid UTP.
Jumpers (Internal)	Boot to kernel/boot to loader Reset to factory defaults

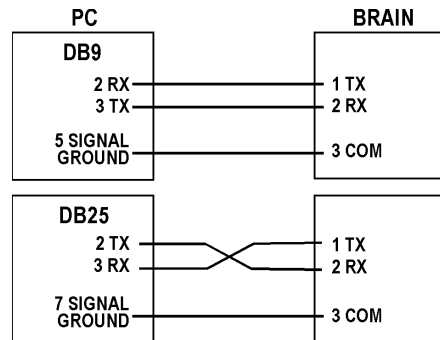
Serial Connector Pinouts



LED Descriptions

LED	Description
ERD	Ethernet—Receive Data
FD	Full Duplex Mode
SRD	Serial—Receive Data
PWR	Power On

RS-232 Serial Cable



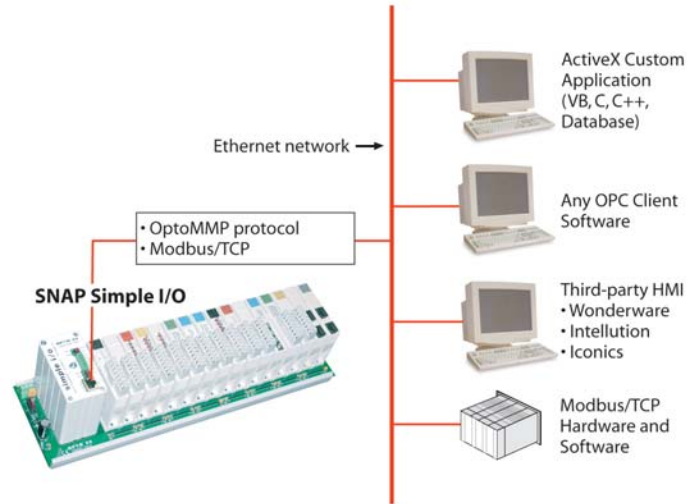
LED	Description
ETD	Ethernet—Transmit Data
100M	Ethernet Link Detection at 100 Mbps
STD	Serial—Transmit Data
FLT	Microprocessor Status or Fault

SYSTEM ARCHITECTURE

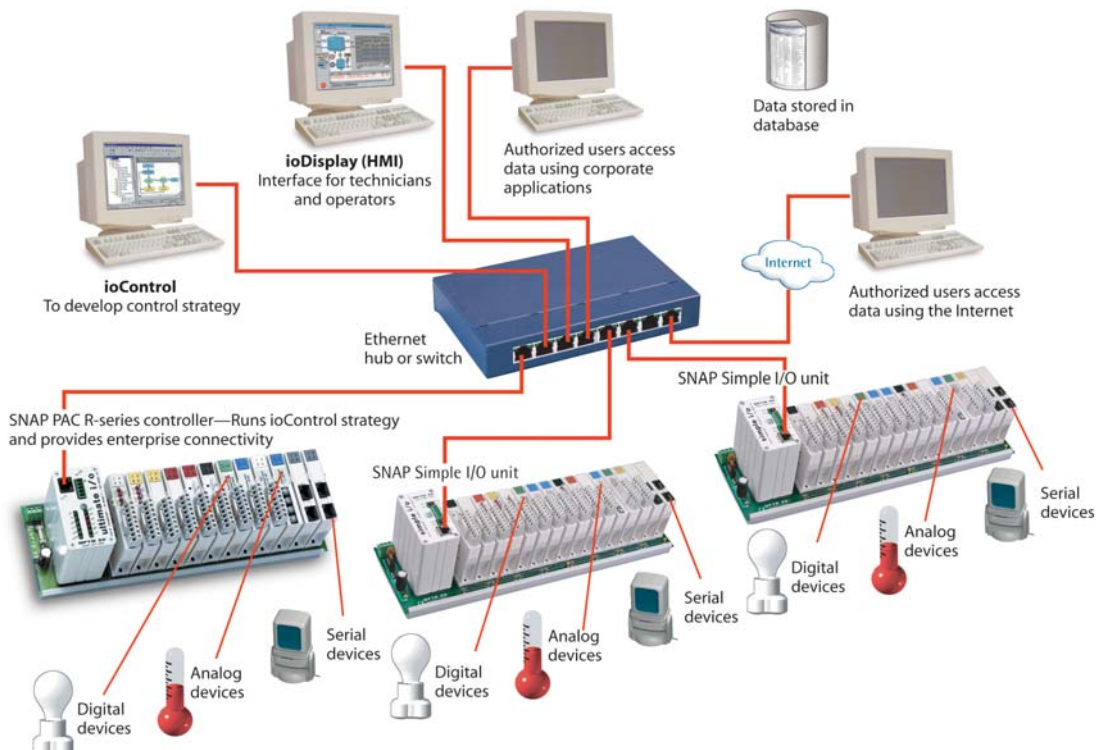
The SNAP-ENET-S64 is shown with a SNAP-M64 mounting rack and standard SNAP I/O modules (analog, digital, and serial).

See Notes for legacy products on [page 1](#).

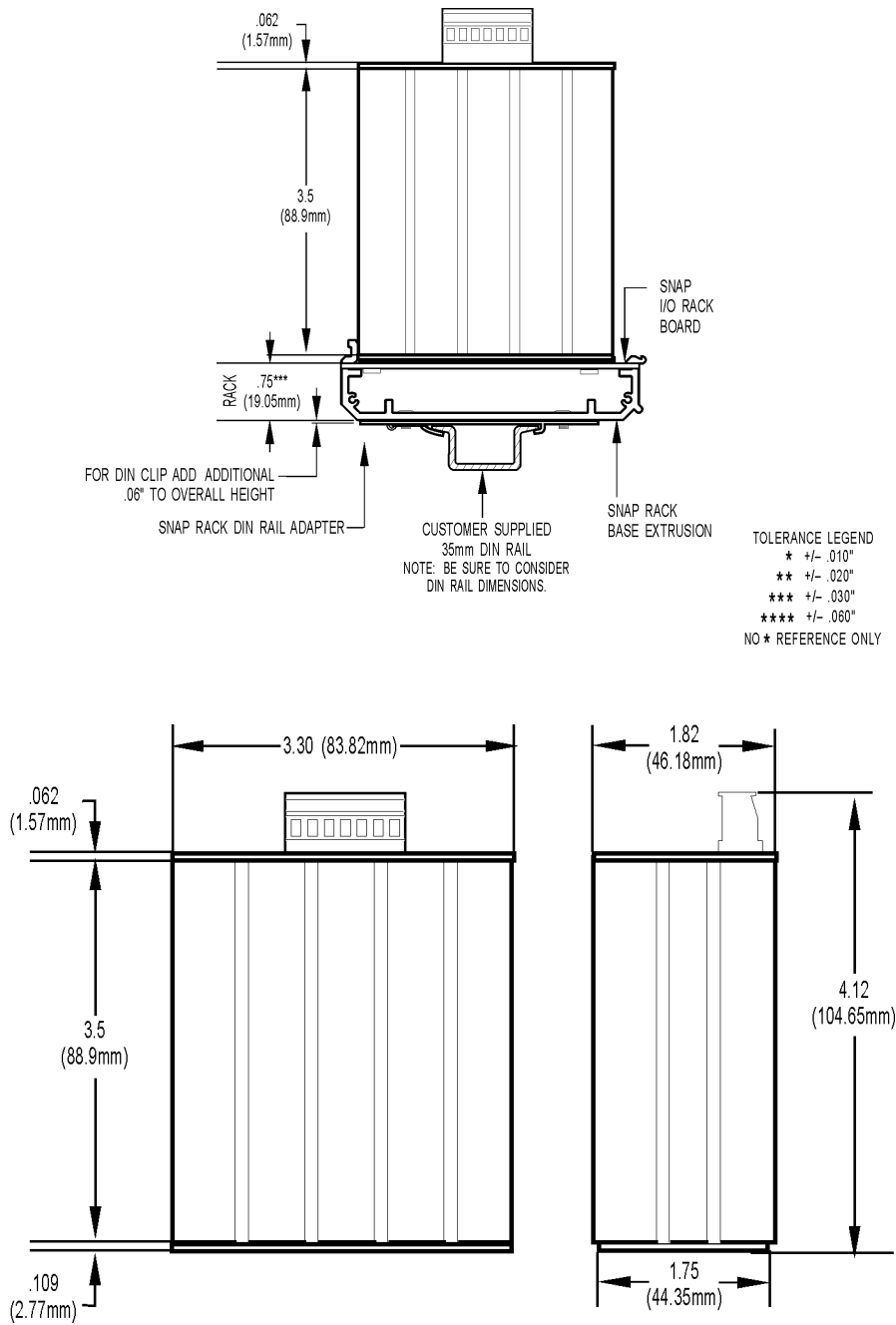
SNAP Simple I/O as an Independent I/O Unit



SNAP Simple I/O as Part of a SNAP PAC Control System



DIMENSIONAL DRAWING



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.