

FactoryFloor and SNAP Control System Overview

OptoControl • OptoDisplay • OptoServer • OptoConnect

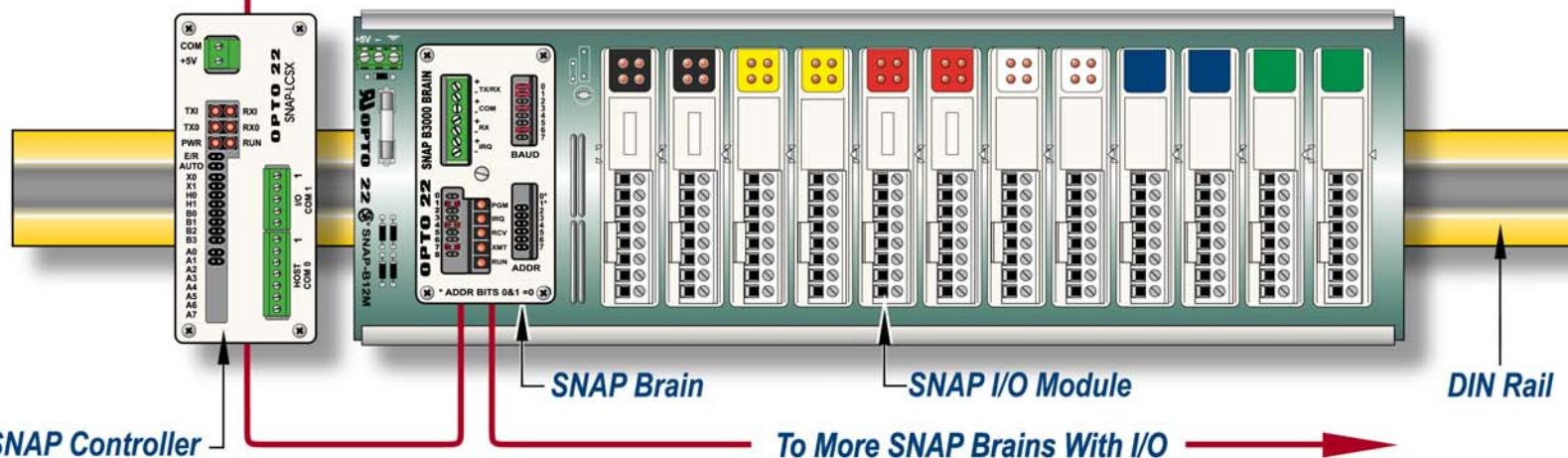
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PC with FactoryFloor

- One PC can communicate to as many as 255 controllers.

Role of the PC - The PC is used to run Opto 22's FactoryFloor suite of software containing four integrated software components. **OptoControl** is the flowchart software used to program the control strategy. Once the program is completed, it is downloaded to a controller. **OptoDisplay** then presents controller information graphically and transfers user instructions to the controller. OptoDisplay also performs alarming, trending, and data archiving. **OptoServer** gathers controller information and distributes it via OPC and DDE to clients on a PC network. **OptoConnect** performs bi-directional transfers of information between the controller database and a SQL or Access database. Additionally, for soft-logic control with OptoRuntimePC, the NT-based PC becomes the controller.



- One SNAP Controller can communicate to as many as 64 SNAP brains and I/O racks per serial port.

Role of the Controller - The controller accepts the finished control strategy from the OptoControl software and can pass distributed logic functions to the SNAP brains, such as event/reactions and PID loop control. Once the strategy is started, the controller executes the strategy in real-time and communicates to the SNAP brains when needed for control execution. The controller also has generic serial ports to interface to any serial devices and motion controllers. Controllers are available as soft-logic, ISA-based, RTU, or a family of external industrial controllers.

- One SNAP Brain Board controls as many as 16 SNAP I/O modules on a rack. The first 8 positions can be populated with digital modules, and all positions can be populated with analog modules.

Role of the SNAP Brain - The SNAP brain is the interface between the SNAP I/O modules and the controller. It can also provide basic control logic functions independent of the upstream controller, such as engineering unit conversions, thermocouple linearization, PID loop control, high-speed counting functions, frequency and pulse measurements, and much more. Some SNAP brains can also interrupt the upstream controller based on an event in the SNAP brain logic.

- One SNAP Digital Module includes 4 digital points. All four points are input or output, AC or DC. Output modules are fused.

- One SNAP Analog Module includes 2 analog points. Both points are input or output. Single channel outputs are available.

Role of the I/O Module - The I/O module provides isolated terminations for a wide variety of field instrumentation. Analog modules provide transformer isolation to eliminate ground loops. All Opto 22 I/O modules are guaranteed for life!

In Summary, one rack of I/O with a SNAP brain can accommodate as many as 32 analog channels, 32 digital channels, or a mix thereof.

Products

Opto 22 produces a broad array of reliable, flexible hardware and software products for industrial automation, remote monitoring, enterprise data acquisition, and machine-to-machine (M2M) applications.

SNAP Ethernet Systems

Based on the Internet Protocol (IP), SNAP Ethernet systems offer flexibility in their network connectivity and in the software applications they work with. The physical network may be a wired Ethernet network, a cellular wireless network, or a modem. A wide variety of software applications can exchange data with SNAP Ethernet systems, including:

- Opto 22's own ioProject™ suite of control and HMI software
- Manufacturing resource planning (MRP), enterprise management, and other enterprise systems
- Human-machine interfaces (HMIs)
- Databases
- Email systems
- OPC client software
- Custom applications
- Modbus/TCP software and hardware.



SNAP Ethernet system hardware consists of controllers and I/O units. Controllers provide central control and data distribution. I/O units provide local connection to sensors and equipment.

SNAP OEM Systems

Opto 22 SNAP OEM I/O systems are highly configurable, programmable processors intended for OEMs, IT professionals, and others who need to use custom software with Opto 22 SNAP I/O modules.



Linux® applications running on these systems can read and write to analog, simple digital, and serial I/O points

on SNAP I/O modules using easily implemented file-based operations. Applications can be developed using several common development tools and environments, including C or C++, Java, and shell scripts.

M2M Systems

Machine-to-machine (M2M) systems connect your business computer systems to the machines, devices, and environments you want to monitor, control, or collect data from. M2M systems often use wireless cellular communications to link remote facilities to central systems over the Internet, or to provide monitoring and control capability via a cellular phone.

Opto 22's Nvio™ systems include everything you need for M2M—interface and communications hardware, data service plan, and Web portal—in one easy-to-use package. Visit nvio.opto22.com for more information.

Opto 22 Software

Opto 22's ioProject and FactoryFloor® software suites provide full-featured and cost-effective control, HMI, and OPC software to power your Opto 22 hardware. These software applications help you develop control automation solutions, build easy-to-use operator interfaces, and expand your manufacturing systems' connectivity.



Quality

In delivering hardware and software solutions for worldwide device management and control, Opto 22 retains the highest commitment to quality. We do no statistical testing; each product is made in the U.S.A. and is tested twice before leaving our 160,000 square-foot manufacturing facility in Temecula, California. That's why we can guarantee solid-state relays and optically-isolated I/O modules *for life*.

Product Support

Opto 22's Product Support Group offers comprehensive technical support for Opto 22 products. The staff of support engineers represents years of training and experience, and can assist with a variety of project implementation questions. Product support is available in English and Spanish from Monday through Friday, 7 a.m. to 5 p.m. PST.

Opto 22 Web Sites

- www.opto22.com
- nvio.opto22.com
- www.internetio.com (live Internet I/O demo)

Other Resources

- OptoInfo CDs
- Custom integration and development
- Hands-on customer training classes.

Opto 22 manufactures and develops hardware and software products for industrial automation, remote monitoring, enterprise data acquisition, and machine-to-machine (M2M) applications. Using standard, commercially available Internet, networking, and computer technologies, Opto 22's input/output and control systems allow customers to monitor, control, and acquire data from all of the mechanical, electrical, and electronic assets that are key to their business operations. Opto 22's products and services support automation end users, OEMs, and information technology and operations personnel.

Founded in 1974 and with over 85 million Opto 22-connected devices deployed worldwide, the company has an established reputation for quality and reliability.



Opto 22
43044 Business Park Drive
Temecula, CA 92590
Phone: (951) 695-3000
(800) 321-OPTO
Fax: (951) 695-3095
www.opto22.com

Inside Sales: (800) 452-OPTO
Product Support:
(800) TEK-OPTO
(951) 695-3080
Fax: (951) 695-3017
E-mail: sales@opto22.com