

DATA SHEET

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Form 1240-050801

Description

The Opto 22 SNAP-IT™ family of products gives you a packaged solution to bring industry-standard SNAP Ethernet I/O technology into your company, faster and easier than ever before.

With SNAP-IT-RM, you get a standard rack-mount housing with a SNAP Ethernet or SNAP Ultimate brain, a 16-module mounting rack, and a power supply, all built in and already wired. The SNAP Ultimate brain adds programming capability if you need it; ioControl™ software, an easy-to-use flowchart-based environment for developing machine and process control applications, is included with the SNAP-IT-RM-UADS.

Whichever model you choose, simply add the analog, digital, and special-purpose input/output modules you need for your specific application. Just snap the modules into the rack, wire them to your devices, and configure the I/O points using included software, and you're ready to monitor, control, and manage virtually any electrical, mechanical, or electronic real-world device.

Packaged in a 3U box for tabletop use or standard 19-inch

Part Number	Description
SNAP-IT-RM-ADS	Rack-mounted monitoring unit for analog, digital, and serial real-world devices
SNAP-IT-RM-D64	Rack-mounted monitoring unit for digital real-world devices
SNAP-IT-RM-UADS	Rack-mounted monitoring unit for analog, digital, and serial devices, with programming capability (SNAP Ultimate brain)
POWERCABLE-US	120 VAC power cord for use in the United States
POWERCABLE-UK	240 VAC power cord for use in the United Kingdom
POWERCABLE-INTL	240 VAC power cord for use worldwide

rack mounting, SNAP-IT-RM units are ideal for controlled environments. Typical applications include monitoring facilities, computer, and telecommunications equipment. For example, you can:

- Manage temperature, humidity, and security in server rooms
- Monitor equipment line voltage and current draw
- Control fans, lights, pumps, and compressors
- Monitor alarms and doors
- Remotely reboot servers.

If you need programming capability, choose the SNAP-IT-RM-UADS to easily build your own control software.



Features

- Comes complete with SNAP Ethernet or SNAP Ultimate brain, mounting rack, and power supply, already wired. Just add I/O modules for your application.
- Monitors and controls real-world devices through existing networks, without special programming
- Delivers data directly to databases, virtually eliminating special software, proprietary servers, or other middleware components
- Easy-to-use flowchart programming capability available
- Easy to configure using included ioManager utility program
- Ethernet and serial communication ports
- Compatible with any SNMP-based enterprise management software, such as Unicenter® from Computer Associates
- 30-month warranty.

Description (continued)

Each SNAP-IT unit comes with two communication ports:

- A 10/100 Mbps Fast Ethernet port for category 5 or better UTP cable with a standard RJ-45 connector
- An RS-232 serial port.

These physical communication methods support all popular LAN and WAN communication protocols, including SNMP, SMTP, Modbus/TCP, FTP, and OptoMMP over TCP/IP, UDP/IP, and PPP.

You can also communicate with the SNAP-IT using Modbus/TCP, OLE for Process Control (OPC), Linux® applications, or applications you develop in Visual Basic® or Visual C++® using our free OptoMMP Communications Toolkit. In addition, you can communicate with the unit using all of these methods simultaneously. For example, a SNAP-IT unit can respond to commands from a Modbus master, send an SNMP trap to an enterprise management system, and carry out instructions from a C++ application—all at once.

Certified for use with Computer Associates' Unicenter and

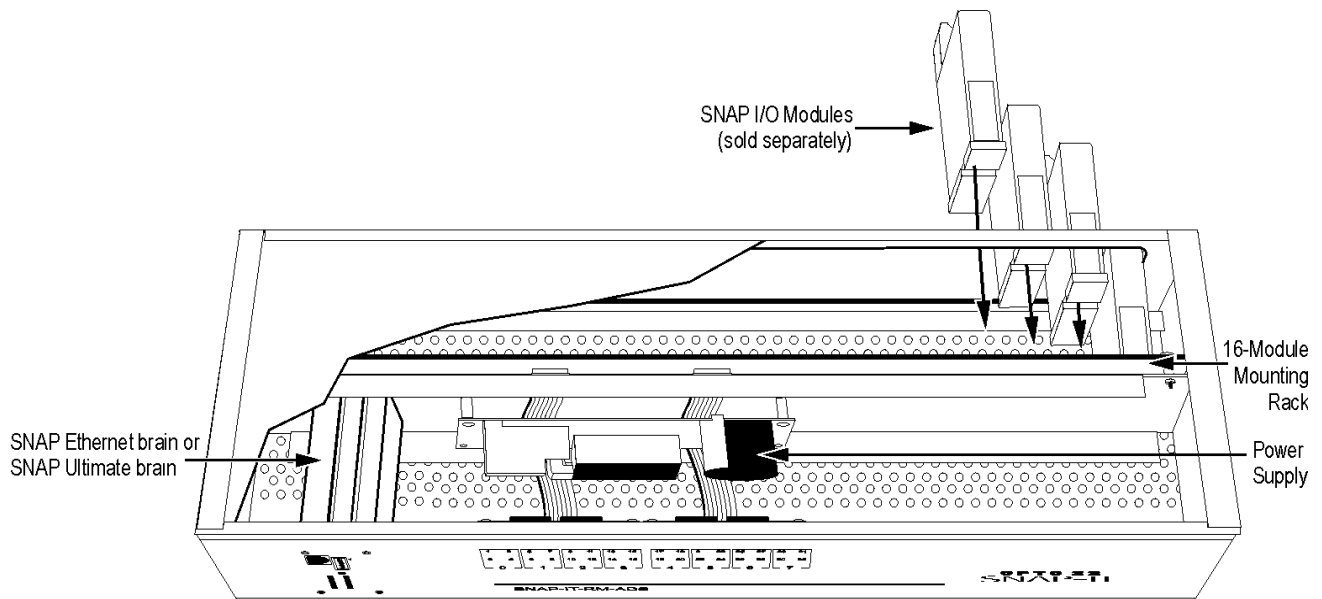
compatible with other enterprise management systems using SNMP, SNAP-IT lets you deliver critical data from industrial, real-world devices to your company's enterprise-wide management consoles and databases.

When you order your SNAP-IT unit, also order the AC power cord suitable for your location: United States, United Kingdom, or worldwide. Other power supplies, such as 48 VDC, are available by special order.

SNAP-IT products protect sensitive computer electronics from the potentially hazardous field signals of real-world devices with transformer and optical isolation.

NOTE: SNAP-IT units are also available in other enclosures: 1U rack mount (see Opto 22 form #1373) and a panel-mounted version suitable for industrial environments (form #1239).

If you need a SNAP-IT unit for use with a wireless LAN, see Opto 22 form #1269, the SNAP-IT Wireless LAN data sheet.



Description (continued)

Available Models

SNAP-IT-RM-D64 can monitor *digital* electrical, mechanical, and electronic devices. Digital devices are devices that can be in one of only two states: either on or off. Dry contacts and door sensors are examples of digital devices. SNAP-IT-RM-D64 can monitor and manage up to 64 points from digital devices, each point either an input that reports the device's on/off status or an output that turns it on and off remotely.

SNAP-IT-RM-ADS and **SNAP-IT-RM-UADS** can monitor

analog, digital, and serial electrical, mechanical, and electronic devices. Analog devices are devices that have a range of possible values, such as temperature or pressure sensors. Digital devices can be either on or off. Serial devices, such as chart recorders and barcode readers, communicate by sending ASCII characters via a serial port. SNAP-IT-RM-ADS and SNAP-IT-RM-UADS can also use SNAP-PID-V modules; each PID module monitors input signals and adjusts output signals to control one proportional-integral-derivative (PID) loop.

Specifications

Dimensions	
SNAP-IT-RM	19-inch rack-mount enclosure, 3U. 17.35" W, 5.22" H, 6.625" D (box only; 7.5" D with modules)
Communications	
Protocols	Modbus/TCP, SNMP, SMTP, FTP, and IEEE 1394-based protocols over TCP/IP, UDP/IP, and PPP
Ethernet Port	10/100 Mbps Fast Ethernet, using Category 5 or better solid UTP cable with RJ-45 connector
Serial Port	RS-232. Default rate is 19,200 Kbd; baud rate is soft-selectable from 2400 to 115,200 Kbd.
Other Specifications	
Power Supply	UL rated 120–250 VAC Manufacturer rated 100–250 VAC (48 VDC and other options available by special order)
Power Cord (order separately)	120 VAC United States, 240 VAC United Kingdom, or 240 VAC international
Power Consumption	30 W
Temperature	0° to 70° C operating -30° to 85° C storage
Humidity	0–95% humidity, non-condensing

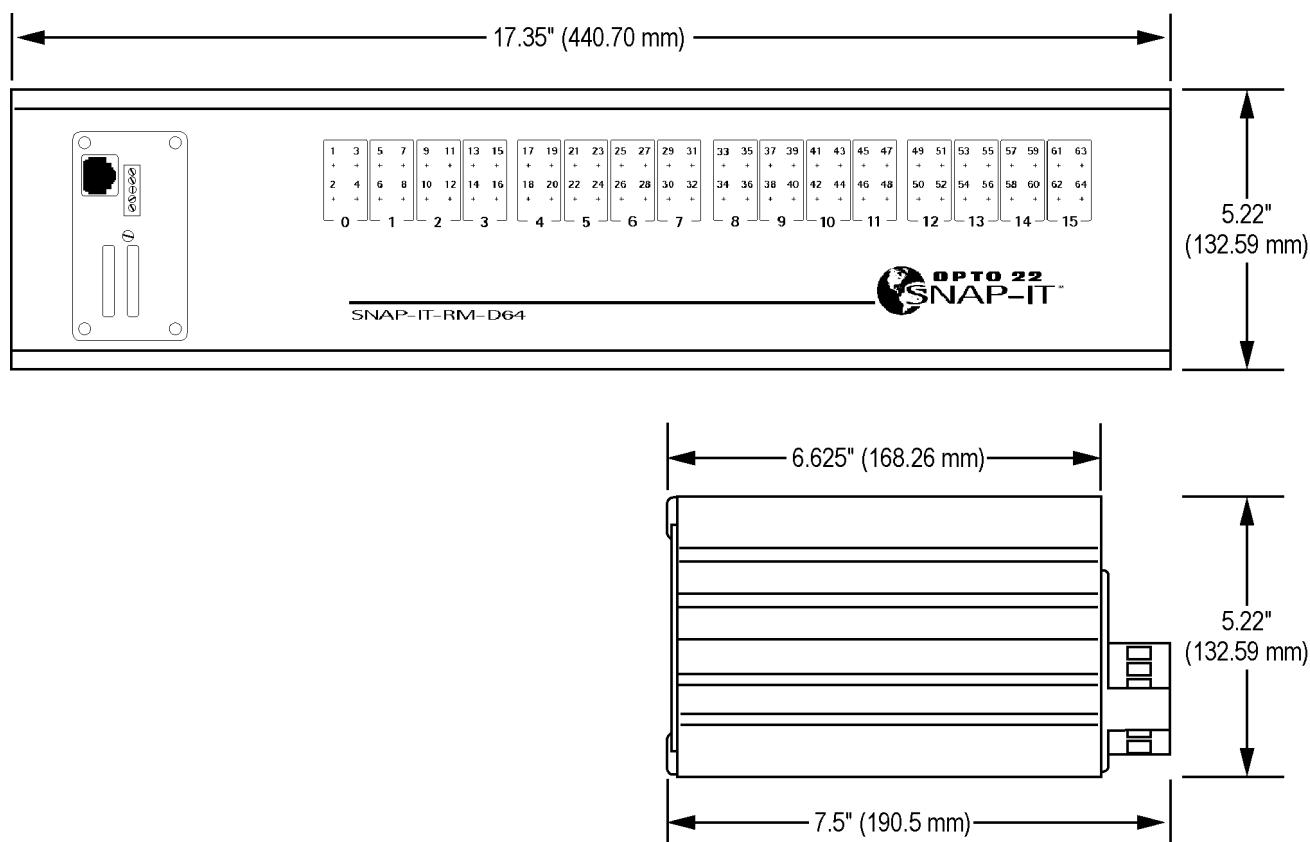
SNAP-IT Status LEDs

LED	Indicates
ACT	Network Activity
FD	Full Duplex Mode
ERD	Ethernet—Receive Data
ETD	Ethernet—Transmit Data
10MB	Ethernet Link Detection at 10 Mbps
100MB	Ethernet Link Detection at 100 Mbps
RUN	Normal Operation
3VF	3 Volt Fault
5VF	5 Volt Fault
FLT	Microprocessor Fault
SRD	Serial—Receive Data
STD	Serial—Transmit Data

Dimensions—SNAP-IT-RM (Rack Mount)

The SNAP-IT-RM-D64 model is shown as an example. I/O point LEDs on the front of the unit indicate digital point status (On or Off).

Dimensions for the SNAP-IT-RM-ADS and SNAP-IT-RM-U-ADS are identical, but I/O point LEDs are included only for the first eight modules (32 points). On the ADS models, the first eight modules can be digital, analog, or special-purpose; the last eight modules can be analog or special-purpose only.



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 Nvivo™ 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.



About Opto 22

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.