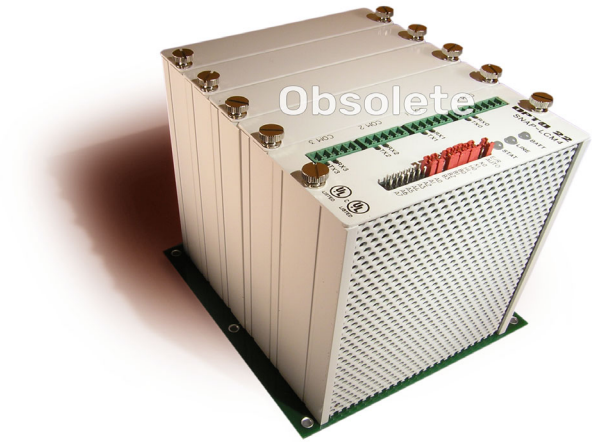
This product is obsolete.

SNAP-LCM4 CONTROLLER

Features

- 32-bit processor
- Built-in diagnostics
- One dedicated Opto 22 remote I/O port (2-wire RS-485 with interrupt capability)
- Three RS-232 or RS-485 (2-wire or 4-wire) serial ports, with baud rates up to 115.2 Kbaud.



DESCRIPTION

***** This product is obsolete and no longer available. *****

The SNAP-LCM4 is a powerful industrial controller that provides real-time control and communication to input/output (I/O) systems, serial devices, motion controllers, and networks.

Opto 22's fastest controller to date, the SNAP-LCM4 fits today's demanding, high-speed application requirements.

The SNAP-LCM4 modular controller features powerful communications capabilities, built-in diagnostics, a 32-bit processor, and a variety of expansion options. Opto 22 modular controllers are designed to take advantage of the Opto 22 intelligent distributed I/O architecture and provide a solid hardware foundation for the Opto 22 FactoryFloor® software suite.

The SNAP-LCM4 provides power and performance in a package that integrates seamlessly with other Opto 22 SNAP products. Designed specifically for industrial applications, the controller provides Ethernet, ARCNET, and serial communication options for flexibility. Serial ports provide an interface with Opto 22 I/O and also with radio modems, cellular modems, and even satellite communications equipment, as well as any third-party serial device.

The SNAP-LCM4 handles program control and host communications with a 32-bit Motorola microprocessor. This processor board is combined with a 4-slot Opto 22 expansion bus (M4BUS). Standard on-board communication ports include the following:

- One dedicated Opto 22 remote I/O port (2-wire RS-485 with interrupt capability)
- Three RS-232 or RS-485 (2-wire or 4-wire) serial ports, with baud rates up to 115.2 Kbaud

Software

The SNAP-LCM4 is designed to work with FactoryFloor, Opto 22's powerful suite of Microsoft® Windows® 32-bit software. FactoryFloor consists of four integrated components:

- OptoControl™, a graphical, flowchart-based development environment for machine control and process applications
- OptoDisplay™, an intuitive, shared database, human-machine interface (HMI) and trending package, including alarming
- OptoServer™, a robust, OPC-compliant data server that connects the controller network with the PC network
- OptoConnect™, a bidirectional link between the Opto 22 database in the controller and Microsoft's SQL Server and Access databases.

The SNAP-LCM4 is configured using OptoControl on a PC workstation. OptoControl is an easy to use, self-documenting control environment that uses a plain English command set and a long tagname database that is shared by all FactoryFloor components.

The SNAP-LCM4 controller also works with Opto 22's Classic 16-bit software: Cyrano®, Mistic™ MMI, and Mistic Data Server (MDS).

Interface Options (M4BUS Expansion Cards)

The M4BUS has four expansion slots to accommodate a variety of communication interface cards. The following modular interface cards provide I/O or network connectivity:

Interface Adapter Card	Use	Current Draw
M4SARC	High-performance coaxial ARCNET	200 mA
M4DUALARC	Dual twisted-pair ARCNET (for HA brains)	150 mA
M4SARCF	Fiber Optic ARCNET	250 mA
M4SARCFR	Fiber Optic ARCNET with repeater	350 mA
M4SENET-100	10/100 Mbps Ethernet (Category 5 UTP)	1.00 A

Part Number

Part	Description
SNAP-LCM4 **[Obsolete]**	**[Obsolete]** SNAP Modular M4 Controller

I/O Connectivity

Any of the built-in RS-485/422 ports can be used as a serial link to communicate with Opto 22 remote digital and analog I/O units. Up to 4,096 I/O points can be connected to each port.

Power Requirements

The SNAP-LCM4 requires only 5 VDC power, which can be supplied by the Opto 22 SNAP-PS5 power supply. The amount of current required depends upon the M4BUS expansion cards installed (see page 2); the controller itself requires 1.0 amp.

Memory

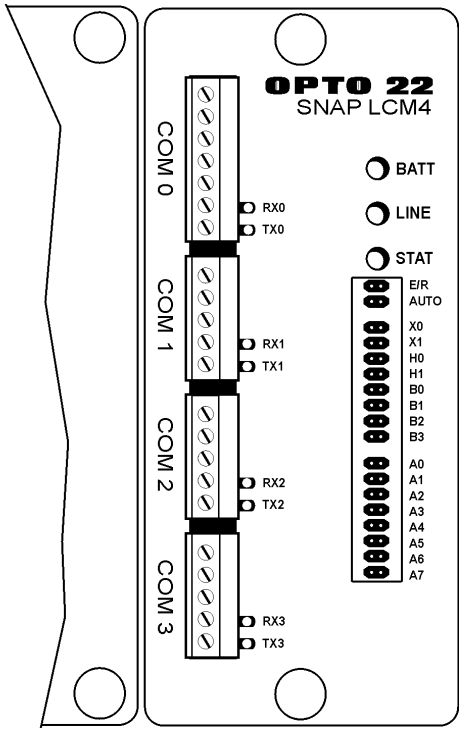
The RAM is used to store a user's control strategy (program) and data. The flash memory (EEPROM) stores the operating system firmware (kernel) and can also be used to store a control strategy. Memory is not expandable.

- RAM: 4 MB (not expandable)
- Flash EEPROM: 2 MB (not expandable)

Mounting

For DIN-rail mounting, also order a DIN clip package, part number SNAP-LCM4DIN.

SNAP-LCM4 Top



This product is obsolete.

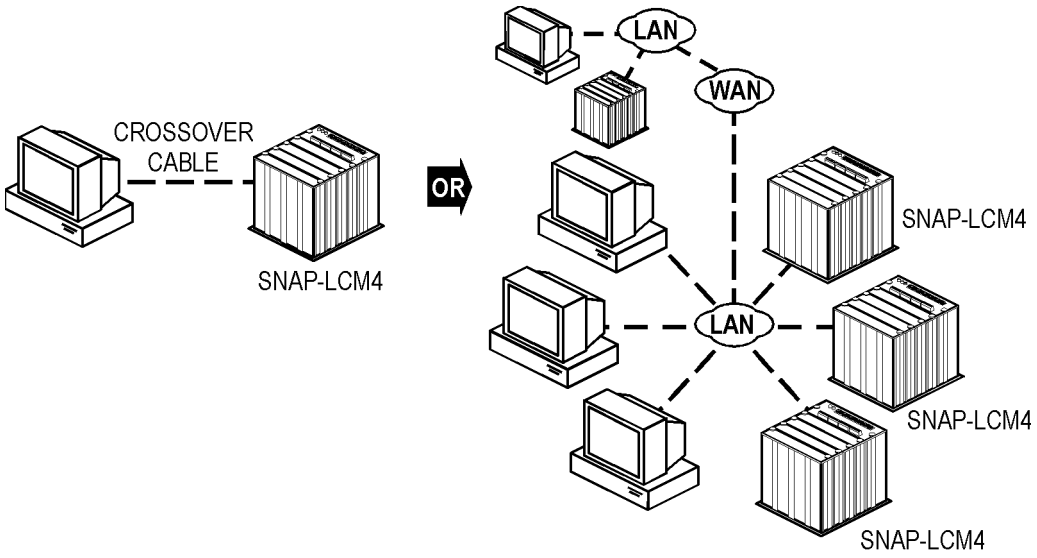
SPECIFICATIONS [OBSOLETE]

CPU	IEEE floating-point math co-processor
Memory: RAM Flash EEPROM	 4 MB with battery backup (user programs and data), not expandable 2 MB (controller firmware and user programs), not expandable
RAM/clock battery	3.6-volt lithium, non-rechargeable
Communication, base unit	Three RS-232 or RS-485 ports, one dedicated RS-485 remote I/O port with interrupt capability
Real-time clock	Clock/calendar, Epson 64613 with battery backup, Y2K compliant
Power requirements	5VDC ±0.1 VDC at 1 Amp (maximum) without expansion cards
Typical operating temperature	0 °C to 60 °C
Storage temperature	-40 °C to 85 °C
Humidity	5% to 95% relative humidity, non-condensing
Software	FactoryFloor (OptoControl, OptoDisplay, OptoServer, and OptoConnect) and Classic software (Cyrano, Mistic MMI, and MDS)
Hard system monitors (including watchdog timer and voltage monitor)	Detect main power supply operation and proper microprocessor operation
Soft system monitors	Program/data corruption Host and I/O communication

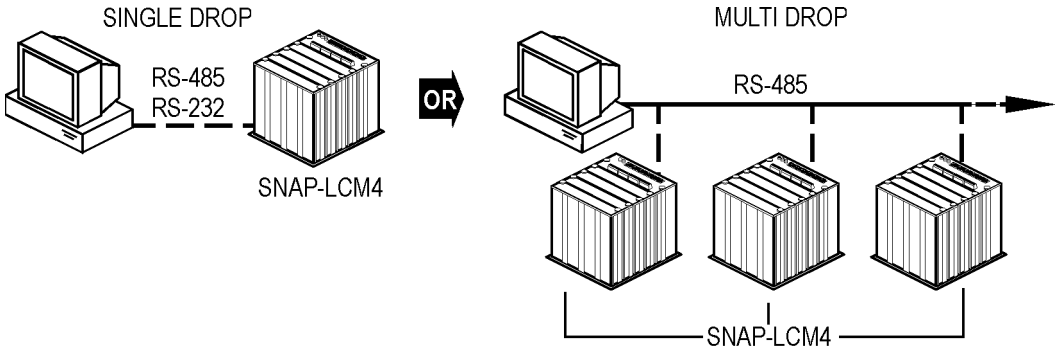
SNAP-LCM4 SYSTEM ARCHITECTURE

The SNAP-LCM4 provides a variety of communication options, shown in the diagrams on this and the following page.

Ethernet Network

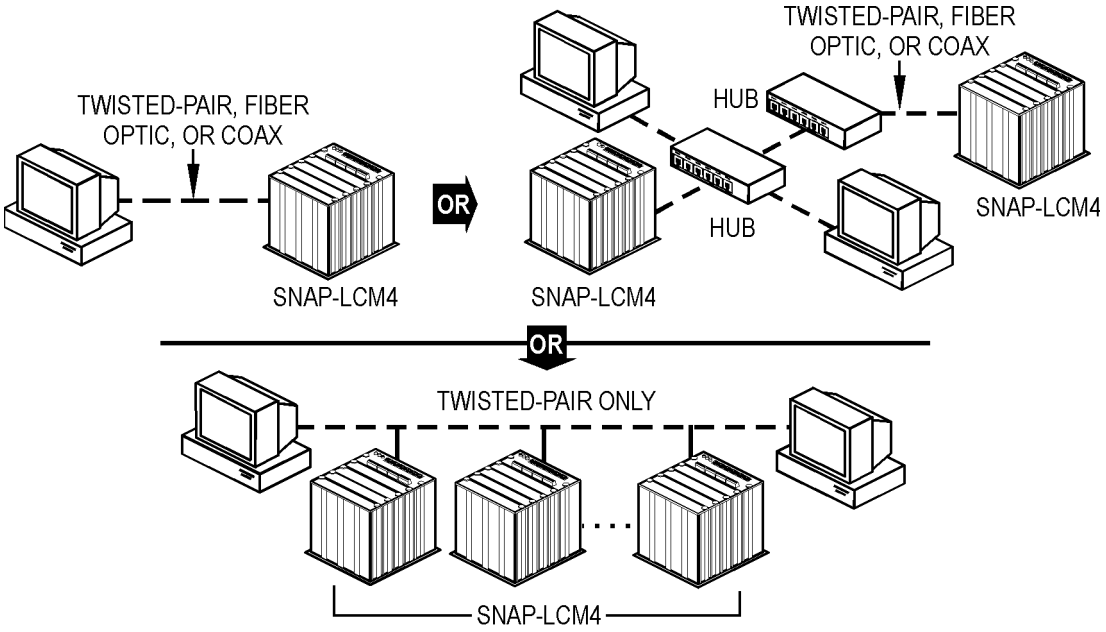


Serial Direct

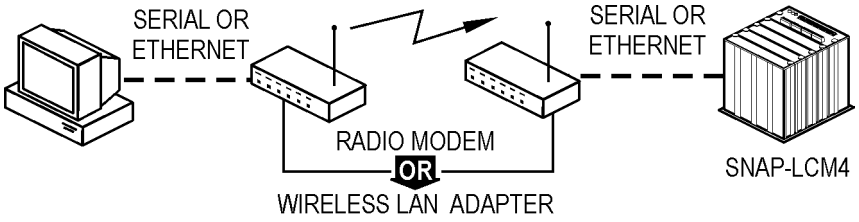


SNAP-LCM4 SYSTEM ARCHITECTURE (CONTINUED)

ARCNET Network



Remote Communication



This product is obsolete.

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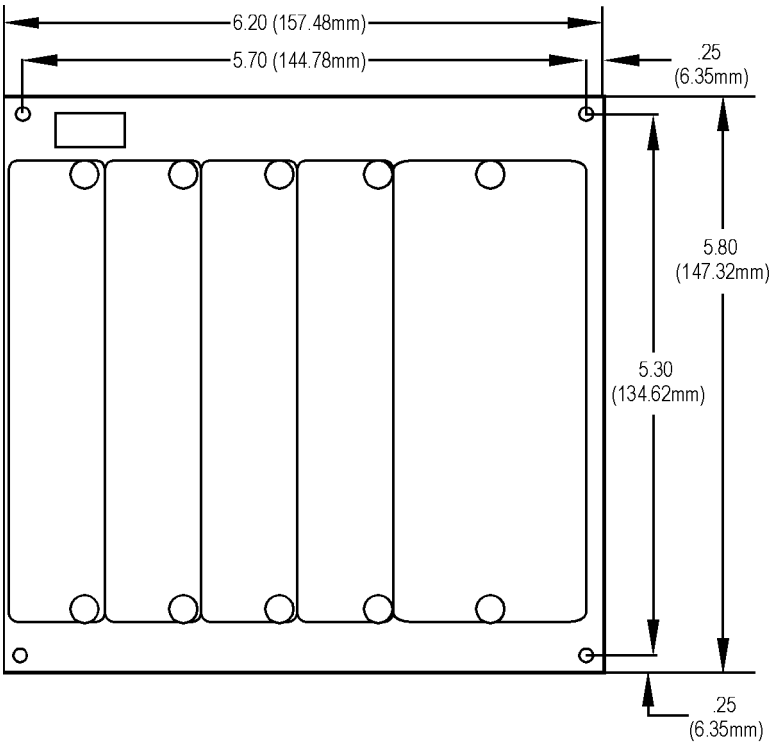
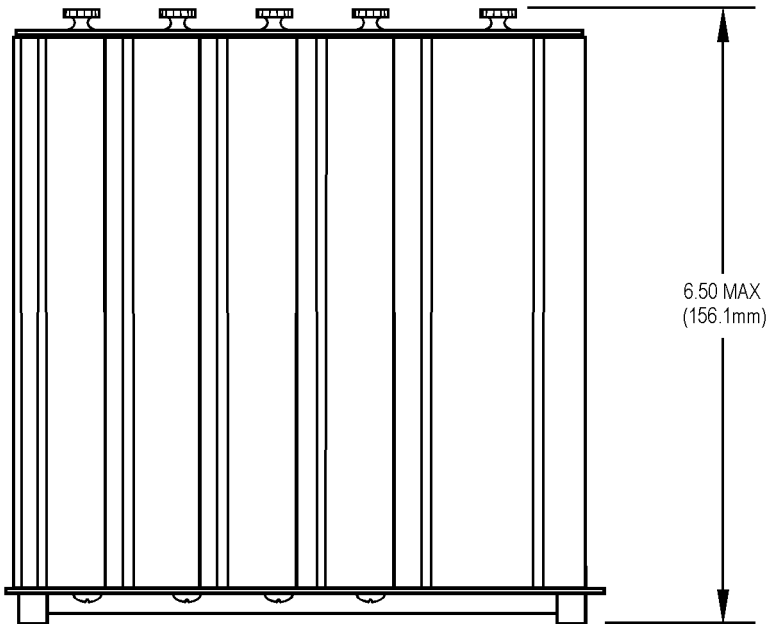
SNAP-LCM4 DIMENSIONS (PANEL MOUNTED)

Top View

For installation instructions, see form 1122, the *SNAP-LCM4 Installation*



Side A View

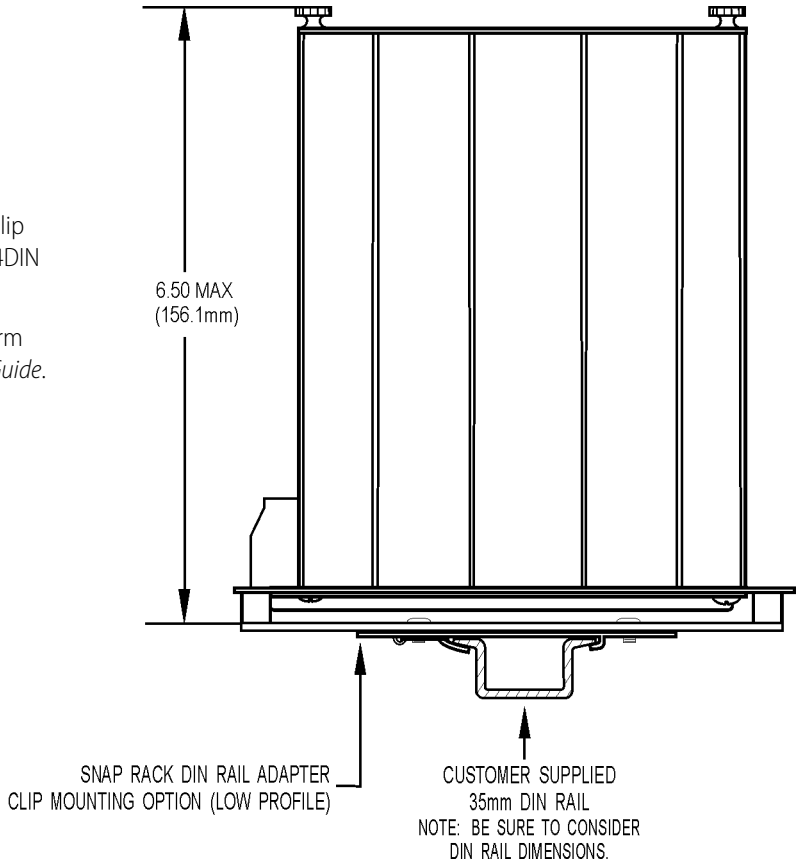


SNAP-LCM4 DIMENSIONS (DIN-RAIL MOUNTED)

Side B View

DIN-rail mounting requires a DIN clip package, part number SNAP-LCM4DIN (not included).

For installation instructions, see form 1122, the *SNAP-LCM4 Installation Guide*.



This product is obsolete.

More about Opto 22

OPTO 22

PRODUCTS

Opto 22 develops and manufactures reliable, easy-to-use, open standards-based hardware and software products. Industrial automation, process control, remote monitoring, data acquisition, and industrial internet of things (IIoT) applications worldwide all rely on Opto 22.

groov RIO®

groov RIO edge I/O offers a single, compact, PoE-powered industrial package with web-based configuration and IIoT software built in, support for multiple OT and IT protocols, and security features like a device firewall, data encryption, and user account control.

Standing alone, *groov* RIO connects to sensors, equipment, and legacy systems, collecting and securely publishing data from field to cloud. Choose a universal I/O model with thousands of possible field I/O configurations, with or without Ignition from Inductive Automation®, or a RIO EMU energy monitoring unit that reports 64 energy data values from 3-phase loads up to 600 VAC, Delta or Wye.

You can also use *groov* RIO with a Modbus/TCP master or as remote I/O for a *groov* EPIC system.

groov EPIC® System

Opto 22's *groov* Edge Programmable Industrial Controller (EPIC) system gives you industrially hardened control with a flexible Linux®-based processor with gateway functions, guaranteed-for-life I/O, and software for your automation and IIoT applications.

groov EPIC Processor

The heart of the system is the *groov* EPIC processor. 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, and online services, both on premises and in the cloud. No industrial PC needed.

Configuring and troubleshooting I/O and networking is easier with the EPIC's integrated high-resolution color touchscreen. Authorized users can manage the system locally on the touchscreen, on a monitor connected via the HDMI or USB ports, or on a PC or mobile device with a web browser.

groov EPIC I/O

groov I/O connects locally to sensors and equipment. Modules have a spring-clamp terminal strip, integrated wireway, swing-away cover, and LEDs indicating module health and discrete channel status. *groov* I/O is hot swappable, UL Hazardous Locations approved, and ATEX compliant.

groov EPIC Software

The *groov* EPIC processor comes ready to run the software you need:

- Programming: Choose flowchart-based PAC Control, CODESYS Development System for IEC61131-3 compliant programs, or secure shell access (SSH) to the Linux OS for custom applications
- Node-RED for creating simple IIoT logic flows from pre-built nodes
- Efficient MQTT data communications with string or Sparkplug data formats
- Multiple OPC UA server options
- HMI: *groov* View to build your own HMI viewable on touchscreen, PCs, and mobile devices; PAC Display for a Windows HMI; Node-RED dashboard UI
- Ignition or Ignition Edge® from Inductive Automation (requires license purchase) with OPC-UA drivers to Allen-Bradley®, Siemens®, and other control systems, and MQTT communications

Older products

From solid state relays, to world-famous G4 and SNAP I/O, to SNAP PAC controllers, older Opto 22 products are still supported and working hard at thousands of installations worldwide. You can count on us for the reliability and service you expect, now and in the future.

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 afford to 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 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 free online training at OptoU, how-to videos, user's guides, the Opto 22 KnowledgeBase, and OptoForums.

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.

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