

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

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.

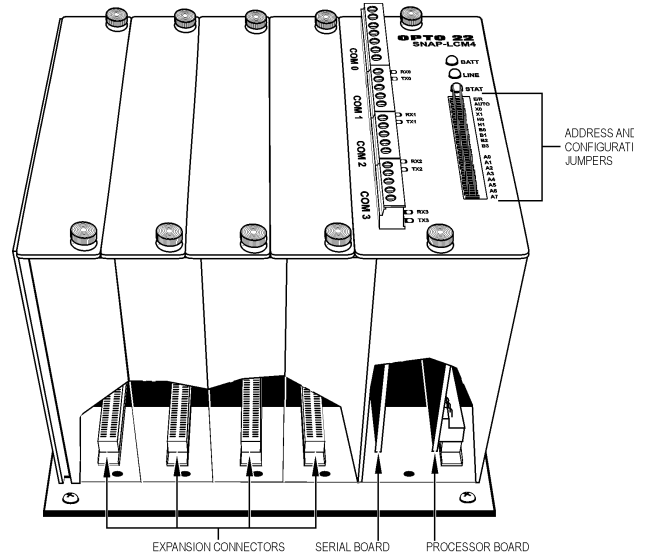
The SNAP-LCM4 handles program control and host communications with a 32-bit Motorola microprocessor. This processor board is combined with a 4-slot Opto 22 expansion bus (M4BUS). Standard on-board communication ports include the following:

- 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	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

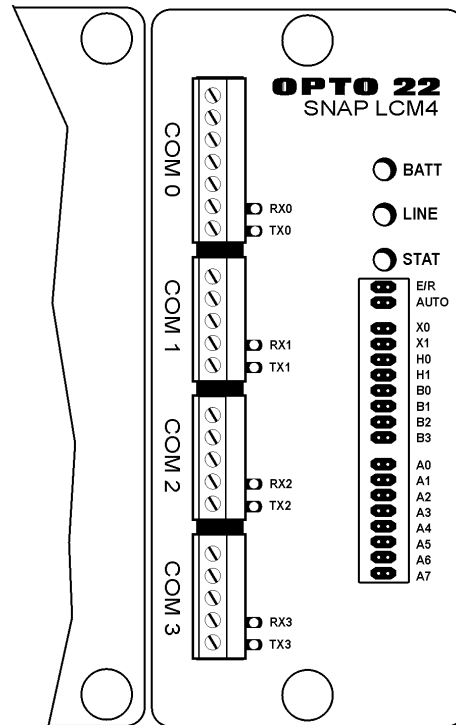
The RAM is used to store a user's control strategy (program) and data. The flash memory (EEPROM) stores the operating system firmware (kernel) and can also be used to store a control strategy. Memory is not expandable.

- 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



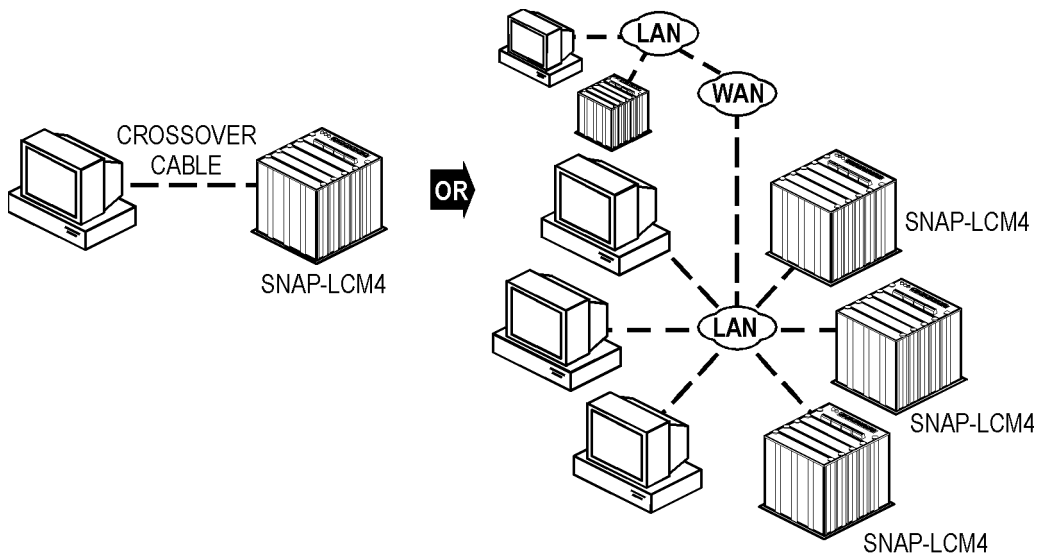
SPECIFICATIONS

CPU	IEEE floating-point math co-processor
Memory:	
RAM	4 MB with battery backup (user programs and data), not expandable
Flash EEPROM	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

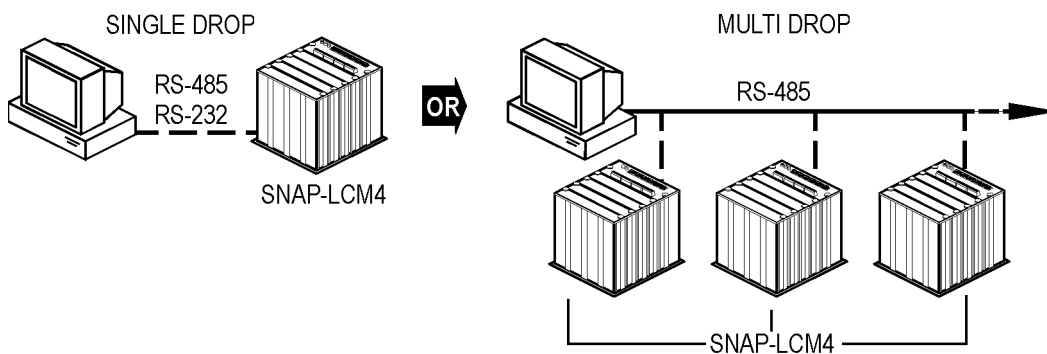
SNAP-LCM4 SYSTEM ARCHITECTURE

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

Ethernet Network

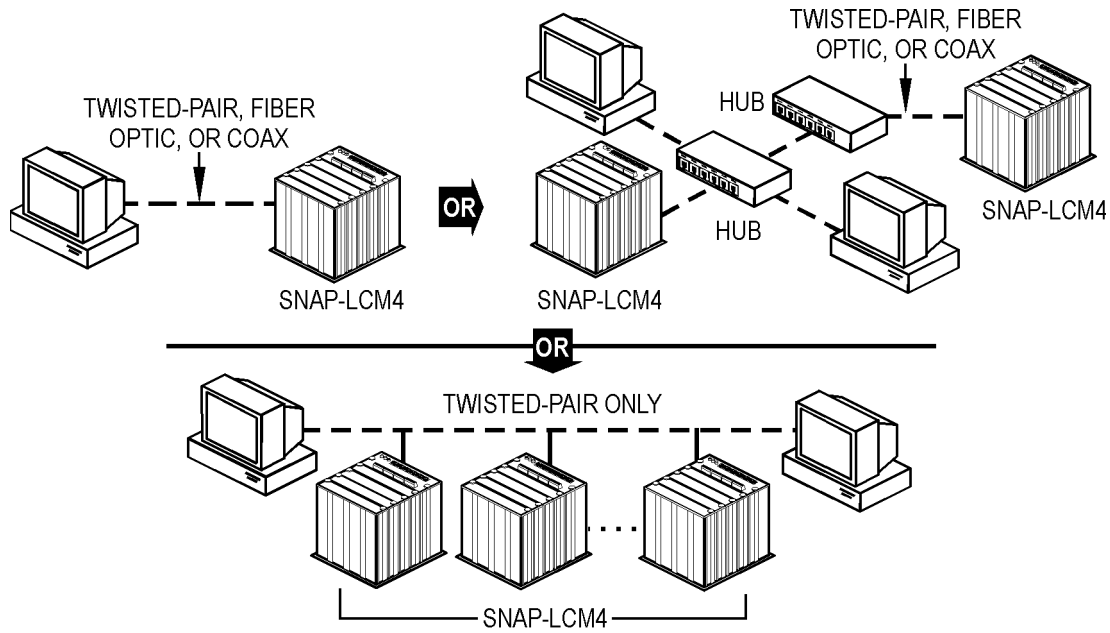


Serial Direct

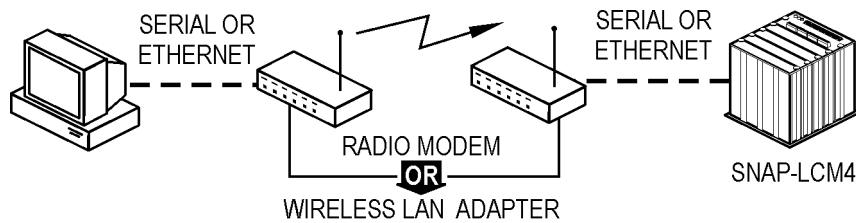


SNAP-LCM4 SYSTEM ARCHITECTURE (CONTINUED)

ARCNET Network

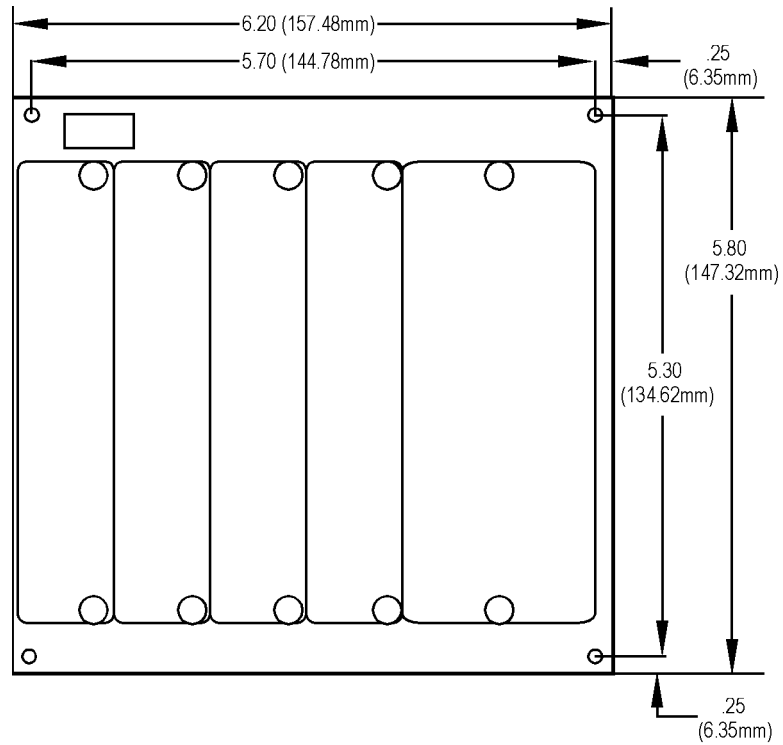


Remote Communication



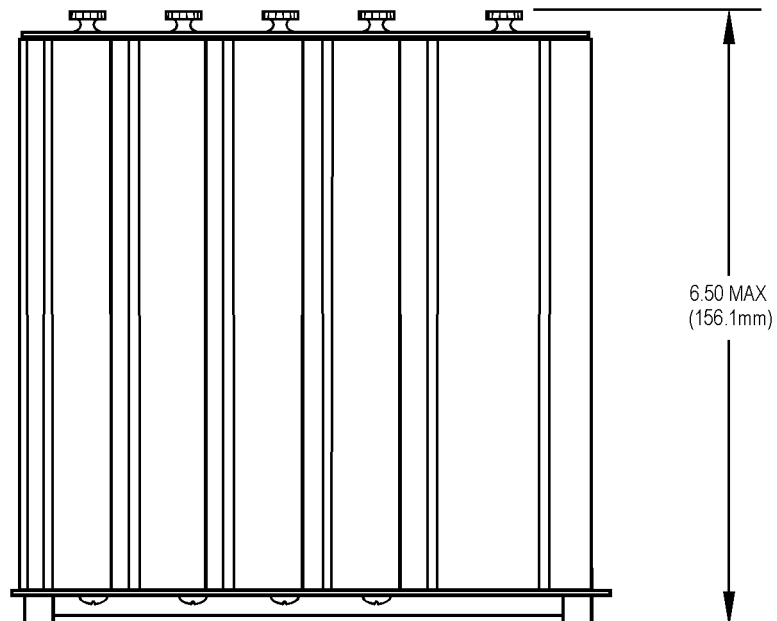
SNAP-LCM4 DIMENSIONS (PANEL MOUNTED)

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*.

