

## SNAP SERIAL COMMUNICATION MODULES

### Features

- > SNAP-SCM-232: Two RS-232 serial ports with optional RTS/CTS flow control
- > SNAP-SCM-485-422: Two RS-485 2-wire serial ports or one RS-485/422 4-wire serial port
- > Individually isolated ports
- > Baud rates to 115 K Baud
- > Connection accessories provided
- > Works with the SNAP PAC System
- > Up to eight serial modules per rack
- > 30-month warranty
- > UL approved

### DESCRIPTION

The SNAP-SCM-232 and SNAP-SCM-485-422 serial communication modules are part of the SNAP PAC System. They conveniently provide two channels of serial data at a remote Ethernet location.

Many applications require digital, analog, and serial data to provide a complete solution. Traditionally, either separate serial network cabling is required for the serial devices, or an expensive data processor or PC must be used just to interface with the serial devices.

SNAP serial communication modules eliminate this problem by providing two channels of high-speed, isolated serial communications packaged in the compact SNAP module form.

- The **SNAP-SCM-232** interfaces to auxiliary serial equipment via two RJ-45 plug-in data connectors, providing two RS-232 serial ports. The module also supports optional RTS/CTS flow control.
- The **SNAP-SCM-485-422** uses the standard SNAP removable top-mounted connector for easy wiring of two 2-wire RS-485 ports or one 4-wire RS-485/422 port. The module has convenient top switches for termination and bias.

LED indicators are provided on each module to indicate Transmit and Receive on each port.

Both SNAP serial communication modules work with SNAP PAC Ethernet-based brains and rack-mounted controllers, both standard wired models and Wired+Wireless™ models. (They do not work with serial-based SNAP PAC brains.) These modules snap into Opto 22 SNAP PAC mounting racks right beside digital and analog modules, to provide the mix of analog, digital, and serial channels you need at any location.



**SNAP Serial Communication Modules**

Typical applications include interfacing with printers, scales, chart recorders, and barcode systems. Using the SNAP-SCM-232 or SNAP-SCM-485-422 as a converter, these non-Ethernet devices can be connected to an Ethernet network and be available for control, monitoring, or data acquisition by any authorized PC or other device on the network.

With the SNAP-SCM-232, two short (12-inch), unshielded twisted-pair cables and two DB9 (male) adapters are included for easy connection to all types of RS-232 devices.

SNAP racks have a retention rail locking system. Use two 4-40 by 1/2-inch standard machine screws to hold each module securely in position on the SNAP rack.

For details on using these modules, see Opto 22 form #1191, the *SNAP Serial Communication Module User's Guide*.

**Notes for legacy hardware:** These SNAP serial communication modules can also be used with SNAP Simple, SNAP Ethernet, and SNAP Ultimate brains on an M-series or B-series rack. SNAP-SCM-232 modules offering RTS/CTS flow control were manufactured in June 2003 or more recently and require I/O processor firmware version 5.0 or newer. The SNAP-SCM-485-422 also requires firmware 5.0 or newer. An older module part number, SNAP-SCM-485, supported 2-wire RS-485 only.

### Part Numbers

Part	Description
SNAP-SCM-232	Two-channel RS-232 serial communication module
SNAP-SCM-485-422	Two-channel RS-485 (two-wire) or one-channel RS-485/422 (four-wire) serial communication module

## SPECIFICATIONS

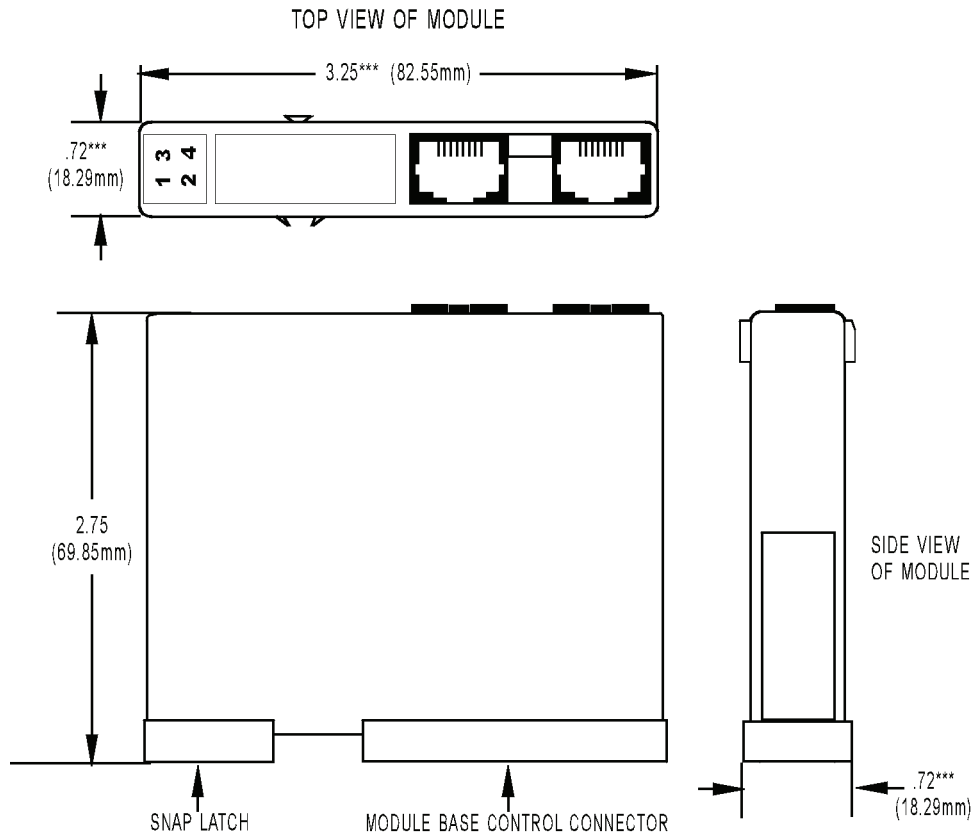
		LED	Indicates
Baud rates	300–115,200*		
Channel-to-channel isolation	750 V <sub>RMS</sub>	1	TX port A
Logic supply voltage	5.0 VDC	2	TX port B
Logic supply current	250 mA DC	3	RX port A
Number of ports per module	2 (1 if SNAP-SCM-485-422 in 4-wire mode)	4	RX port B
Max. number of modules per rack**	8		
Maximum cable length, point-to-point (SNAP-SCM-232)	50 feet		
Maximum cable length, multidrop (SNAP-SCM-485-422)	1,000 feet at 115,200 Kbd		
Processor compatibility	SNAP PAC R-series controllers and SNAP PAC EB brains, both standard wired and Wired+Wireless models. Also SNAP-B3000-ENET, SNAP-ENET-RTC, SNAP-ENET-S64, SNAP-UP1-ADS, and SNAP-UP1-M64.		
Operating temperature	-20 to 70 °C		
Storage temperature	-30 to 85 °C		
Torque, hold-down screws	4 in-lb (0.45 N-m)		
Torque, connector screws	5.26 in-lb (0.6 N-m)		
Agency Approvals	UL, CE, FM, RoHS, DFARS ATEX (SNAP-SCM-485-422 only)		
Warranty	30 months		

\* Module performance is limited by the number of serial modules on the SNAP rack. Each rack backplane provides approximately 2.5 Mbps of bandwidth.

\*\* Maximum number of modules per rack assumes a 4A power supply (for example, SNAP-PS5).

## DIMENSIONS

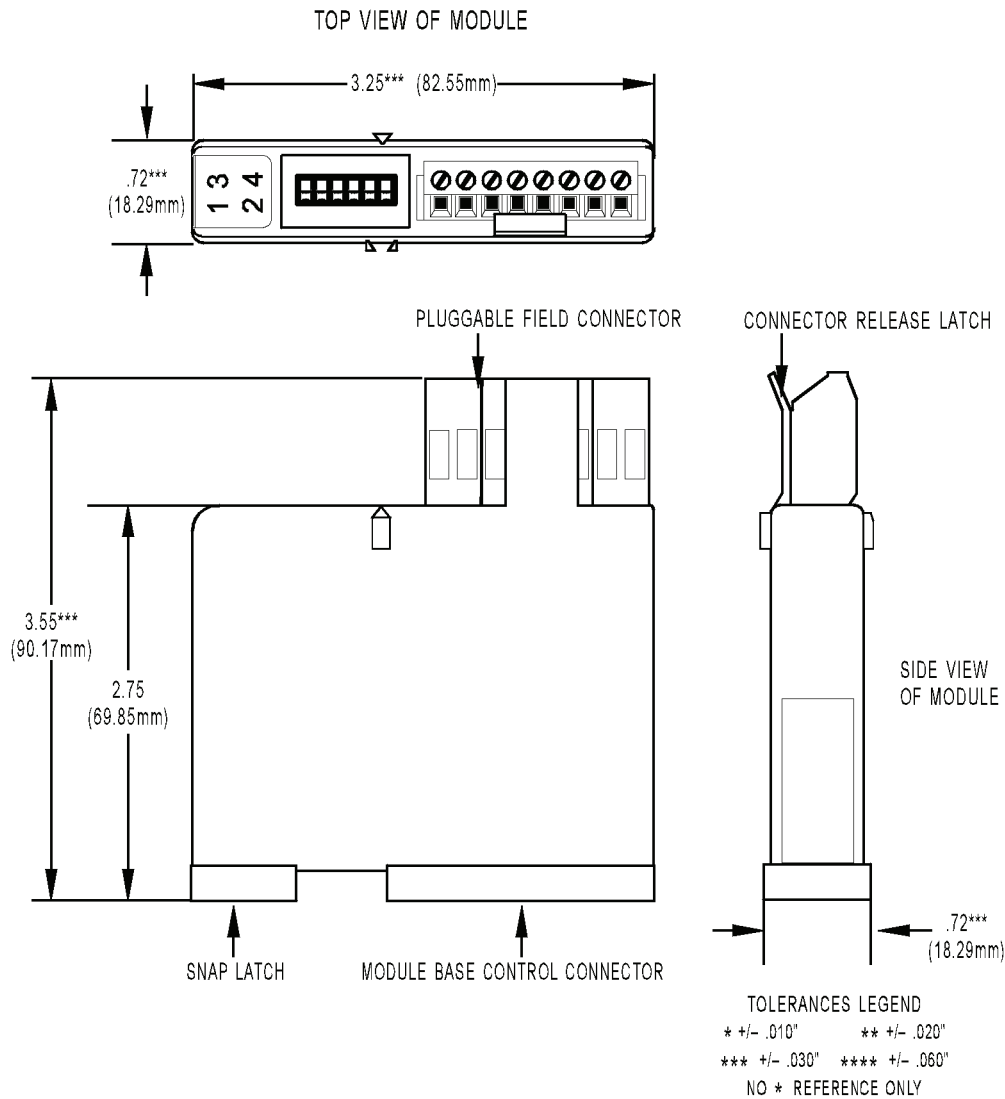
### SNAP-SCM-232 Serial Communication Module



TOLERANCES LEGEND  
\* +/- .010"      \*\* +/- .020"  
\*\*\* +/- .030"    \*\*\*\* +/- .060"  
NO \* REFERENCE ONLY

## DIMENSIONS

### SNAP-SCM-485-422 Serial Communication Module



## 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](http://www.opto22.com).