

SNAP SSI (Serial Synchronous Interface) Module

Features

- For motion control applications using linear or rotary transducers
- Dual, isolated serial synchronous interface (SSI) inputs
- Software configurable

Description

The SNAP-SCM-SSI module provides two individually isolated serial synchronous interface (SSI) inputs for acquiring data from linear or rotary transducers used in motion control.

The module can decode both binary and Gray Code, and is software configurable to set clock speed, frame length, delay time between data samples, and other parameters.

SNAP SSI modules mount alongside analog, digital, and other serial modules on any SNAP PAC rack with a SNAP PAC brain (EB or SB) or R-series controller. The brain or controller processes the data from the module and can communicate the data to other parts of an Opto 22 SNAP PAC System™ or to another system (such as a Modbus® system or an OPC client).

SNAP PAC racks accommodate up to 4, 8, 12, or 16 I/O modules, with a maximum of 8 serial modules (including SSI modules) on any one rack. Because the SNAP-SCM-SSI module is mounted on these standard racks with other SNAP I/O modules, you can use the combination of analog, digital, and serial modules required by your application at the location where they are needed.

SNAP racks have a retention rail locking system. Use two 4-40 by ½-inch standard machine screws to hold each module securely in position on the SNAP rack.

NOTE: SSI modules require a SNAP PAC brain (either EB or SB) or R-series controller with firmware version 8.5c or newer. These modules do not work with legacy brains or controllers.

Configuration

You use PAC Manager, a free software utility, to configure the SNAP-SCM-SSI. PAC Manager 9.0 or newer is required.

PAC Manager comes on a CD with every SNAP PAC brain and controller and is also available for download from the Support section of our website, www.opto22.com.

To install, configure, and use the SNAP-SCM-SSI, see form #1931, the *SNAP SSI (Serial Synchronous Interface) Module User's Guide*, available on our website.

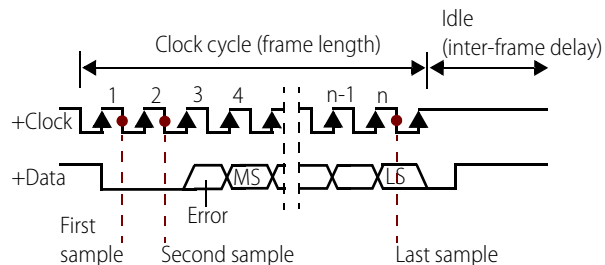


SNAP SSI Module

How the SNAP-SCM-SSI Samples Data

The SSI module outputs a high clock signal during idle, and it samples SSI data on falling edges of the clock, starting after the first rising edge. See the following diagram.

Example of data sample with out-of-range error bit



Part Numbers

Part	Description
SNAP-SCM-SSI	SNAP 2-Channel Serial Synchronous Interface Module

SNAP SSI (Serial Synchronous Interface) Module

Specifications

Maximum SSI clock frequency	2.5 MHz
Channel-to-channel isolation	1500 VAC
Logic supply voltage	5.0 VDC
Logic supply current	200 mA DC
Compatible I/O processors	SNAP PAC R-series controllers and SNAP PAC EB or SB brains with firmware 8.5c or newer
Number of ports per module	2
Max. number of modules per rack	8
Max. data resolution	24 bits
Maximum cable length	500 feet at 200kHz using twisted-pair, 24-gauge shielded cable with an additional pair for common (three pairs total)
Operating temperature	-20 to 60 °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	CE, RoHS, DFARS
Warranty	30 months from date of manufacture

Pins for Each Port

Pin	Use
1	Clock +
2	Clock –
3	Data –
4	Data +
5	Excitation common

See diagram on [page 3](#) for location of pin 1.

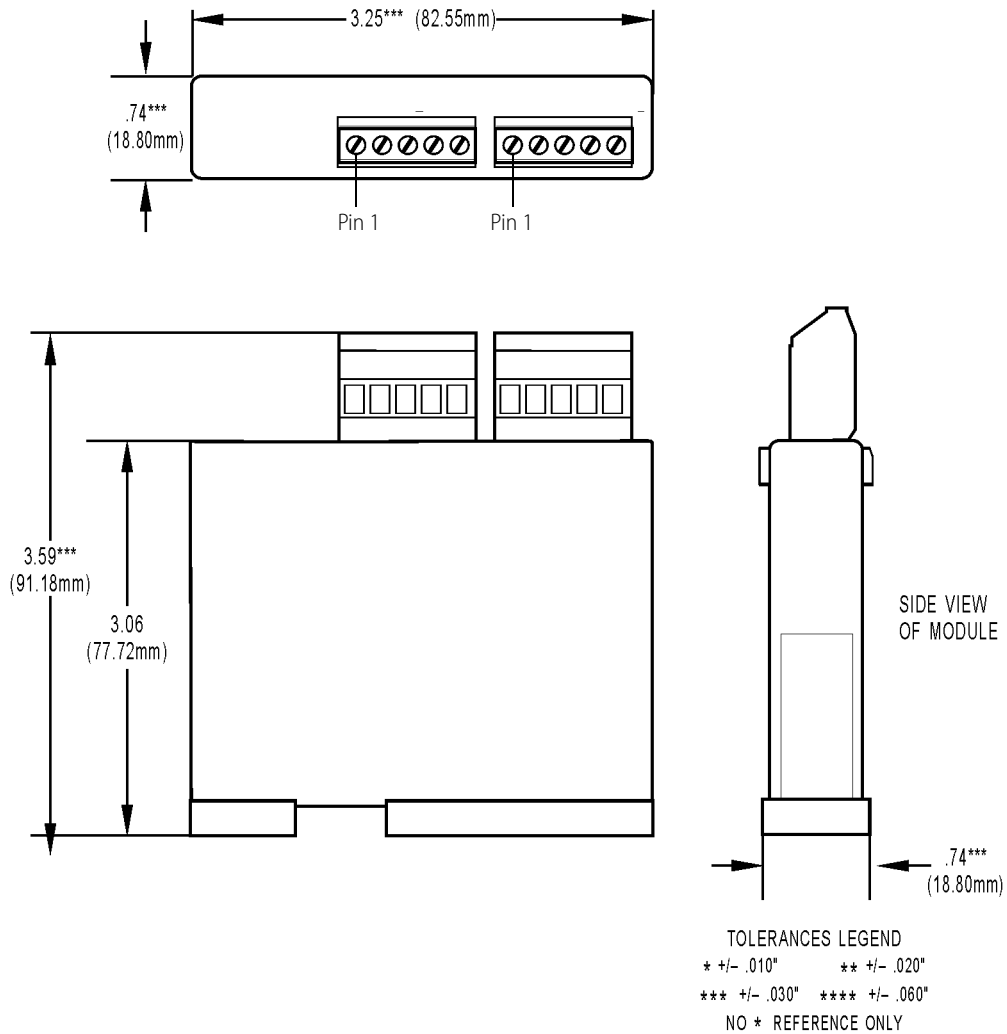
Use twisted-pair, 24-gauge shielded cable with an additional pair for common (three pairs total).

For complete installation information, see form #1931, the *SNAP SSI (Serial Synchronous Interface) Module User's Guide*, available on our website.

SNAP SSI (Serial Synchronous Interface) Module

Dimensions

SNAP-SCM-SSI Serial Synchronous Interface Module



More About Opto 22

Products

Opto 22 develops and manufactures reliable, easy-to-use, open standards-based hardware and software products deployed worldwide.

Industrial automation, process control, building automation, industrial refrigeration, remote monitoring, data acquisition, Industrial Internet of Things (IIoT), and information technology applications all rely on Opto 22.



groov

Monitor and control your equipment from anywhere using your smartphone or tablet with groov. Build your own mobile app easily—just drag, drop, and tag. No programming or coding. Visit groov.com for more information and your free trial.

SNAP PAC System

Developer- and IIoT-ready, the SNAP PAC System connects physical assets to databases and applications using open standards. The SNAP PAC System consists of four integrated components:

- SNAP PAC controllers
- PAC Project™ Software Suite
- SNAP PAC brains
- SNAP I/O™

SNAP PAC Controllers

SNAP PAC programmable automation controllers handle a wide range of digital, analog, and serial functions for data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

For IIoT applications and easier integration with company systems, standalone and rack-mounted SNAP PACs include a built-in HTTP/HTTPS server and **RESTful API** (application program interface). The REST API gives you secure, direct access to I/O and variable data using your choice of programming languages. No middleware, protocol converters, drivers, or gateways needed.

Based on open Ethernet and Internet Protocol (IP) standards, SNAP PACs make it easier to build or extend a system without the expense and limitations of proprietary networks and protocols.

PAC Project Software Suite

Opto 22's PAC Project Software Suite offers full-featured, cost-effective control programming, HMI (human machine interface), OPC server, and database connectivity software.

Control programming includes both easy-to-learn flowcharts and optional scripting. Commands are in plain English; variables and I/O point names are fully descriptive.

PAC Project Basic offers control and HMI tools and is free for download on our website, www.opto22.com. PAC Project Professional, available for separate purchase, adds one SoftPAC software-based controller, OptoOPCServer, OptoDataLink, options for controller redundancy or segmented networking, and support for legacy Opto 22 serial *mistic*™ I/O units.

SNAP PAC Brains

While SNAP PAC controllers provide central control and data distribution, SNAP PAC brains provide distributed intelligence for I/O processing and communications. Brains offer analog, digital, and serial functions, including thermocouple linearization, local PID loop control, watchdog, totalizing, and much more.

SNAP I/O

I/O provides the local connection to sensors and equipment. Opto 22 SNAP I/O offers 1 to 32 points of reliable I/O per module. Analog, digital, and serial modules are mixed on one mounting rack and controlled by a SNAP PAC brain or rack-mounted PAC.

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 only 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.

Additional support is always available on our website: how-to videos, OptoKnowledgeBase, self-training guide, troubleshooting and user's guides, and OptoForums.

In addition, hands-on training is available for free 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 951-695-3000, or visit our website at www.opto22.com.

{RESTful API}



www.opto22.com

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