OPTO 22

These products are obsolete.

SNAP pH/ORP MODULE

Features

> Two differential inputs per module
> 250 V common mode operation
> Channel-to-channel isolation
> 10% over/underrange; out-of-range indication
> Rugged packaging
> Powered by a single 5 VDC supply
> Factory calibrated; no user adjustments necessary

DESCRIPTION

*** NOTE: This part is OBSOLETE and no longer available. *** Please contact Opto 22 Pre-Sales engineers for more information.

The SNAP-pH/ORP module provides two isolated channels of high-impedance voltage input, either -1.00 to +1.00 volts or -0.50 to +0.50 volts.

The module is ideal for differential voltage measurements and is used with pH or oxidation reduction potential (ORP) probes for monitoring bodies of water such as holding tanks, swimming pools, and cooling towers.

Input connections for the SNAP-pH/ORP are made through standard BNC connectors conveniently located on the top of the module. The two channels are isolated from each other; they do not share any field connection.

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.

SNAP-pH/ORP

Supported Opto 22 Systems

As part of the SNAP PAC System, the SNAP-pH/ORP module snaps into Opto 22 SNAP PAC mounting racks and works with all SNAP PAC brains and rack-mounted controllers, including Wired+Wireless™ models. SNAP-pH/ORP modules can be used in PAC Control strategies and can also be configured using PAC Manager.

Notes for legacy products. The SNAP-pH/ORP also works with SNAP Ultimate and SNAP Ethernet brains (firmware version 5.1 or newer required) and with serial B3000 and B3000-B brains. The module can also be mounted on a SNAP M-series or B-series rack. For more information, see Opto 22 form #1693, *Legacy and Current Product Comparison and Compatibility Charts*.

Part Numbers

Part	Description
SNAP-pH/ORP **[Obsolete]**	**[Obsolete]** Isolated two-channel high impedance -1.00 V to +1.00 V or -0.50 V to +0.50 V analog input module

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SPECIFICATIONS

*** NOTE: This part is OBSOLETE and no longer available. ***
Please contact Opto 22 Pre-Sales engineers for more information.

Input Range	-1.00 V to +1.00 V for ORP probes -0.50 V to +0.50 V for pH probes
Resolution	40 µV when configured -1.00 V to +1.00 V 20 µV when configured -0.50 V to +0.50 V
Data Freshness (Maximum)	126 ms (63 ms per channel) when configured -1.00 V to +1.00 V 251 ms (125.5 ms per channel) when configured -0.50 V to +0.50 V
Input Filtering	-3 dB @ 2.4 Hz
DC Common Mode Rejection	>-120 dB
AC Common Mode Rejection	>-120 dB at 60 Hz
Maximum Survivable Input	±100 VDC or peak AC
Maximum Operating Common Mode Voltage	250 VDC or peak AC
Accuracy (% full scale)	0.05% when configured -1.00 V to +1.00 V 0.05% when configured -0.50 V to +0.50 V
Gain Temperature Coefficient	30 PPM/°C
Offset Temperature Coefficient	15 PPM/°C
Power Requirements	5 VDC (±0.15) at 170 mA
Input Resistance (Differential)	>10 Tera Ohms (each channel)
Ambient Temperature: 　Operating 　Storage	 -20 to 70 °C -40 to 85 °C
Humidity	5-95%, non-condensing
Torque, hold-down screws	Not to exceed 1 in-lb (0.11 N-m)
Torque, connector screws	5.22 in-lb (0.59 N-m)
Agency Approvals	CE, RoHS, DFARS
Warranty	Lifetime

These products are obsolete.

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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 even write an IEC 61131-3 compliant control program to run on groov RIO, using CODESYS. 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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