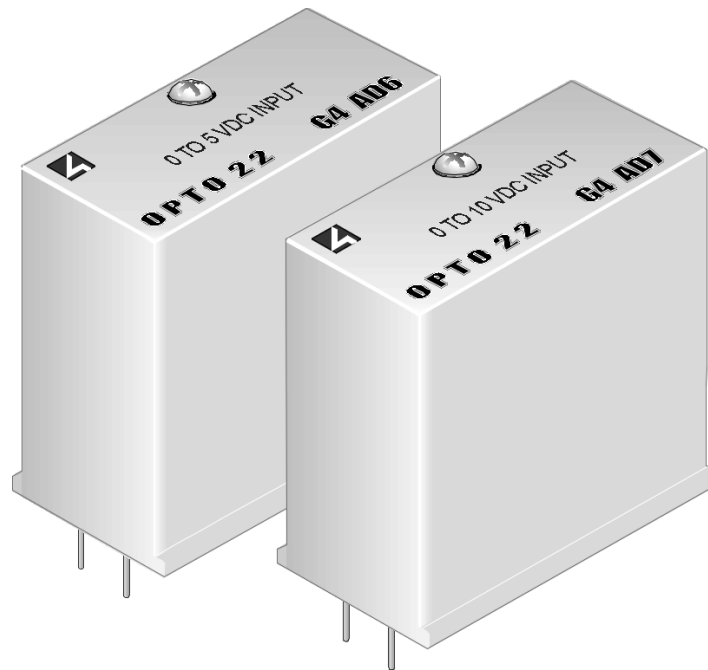# OPTO 22

DATA SHEET

Form 423-050809

Description

Opto 22's voltage input modules provide a single channel of transformer and optically- isolated voltage-to-digital conversion. The modules offer wide nominal input range and special over/under range capabilities. Complete electrical channel-to-channel isolation is provided, which eliminates troublesome ground loop problems. Modules plug into an Opto 22 Modular I/O controller or an analog I/O brick and are secured by a captive screw. Field connections are made via four terminals on the brick base or Modular controller.

NOTE: Any system using analog sensors and input modules should be calibrated annually for analog signals. To do so, use OptoControl commands "Calculate and Set Analog Offset" and "Calculate and Set Analog Gain."

Part Numbers	Description
G4AD6	0 to +5 VDC Input
G4AD6HS	0 to +5 VDC Input High Speed
G4AD7	0 to +10 VDC Input
G4AD7HS	0 to +10 VDC Input High Speed
G4AD9	0 to +50 MV Input
G4AD11	-5 to 5 VDC Input
G4AD12	-10 to 10 VDC Input
G4AD13	0 to 100 MV Input
G4AD22	0 to 1 VDC Input

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OPTO 22

DATA SHEET

Form 423-050809

Specifications

Part Numbers	Nominal Voltage Input	Over/Under Range	Accuracy*	Response Time % Of Scale Change	
				5%	63%
G4AD6	0 to 5 VDC	-0.3 to 11 VDC	± 5 mV	8.4 msec	165 msec
G4AD6HS	0 to 5 VDC	-0.3 to 11 VDC	± 5 mV	< 3 msec	< 3 msec
G4AD7	0 to 10 VDC	-0.6 to 22 VDC	± 10 mV	8.4 msec	165 msec
G4AD7HS	0 to 10 VDC	-0.6 to 22 VDC	± 10 mV	< 3 msec	< 3 msec
G4AD9	0 to 50 mV	-3.0 to 110 mV	± 100 µV	2 msec	36 msec
G4AD11	-5 to +5 VDC	-5.6 to 21 VDC	± 10 mV	8.4 msec	165 msec
G4AD12	-10 to +10 VDC	-11.2 to 42 VDC	± 20 mV	8.4 msec	165 msec
G4AD13	0 to 100 mV	-6 to 220 mV	± 100 µV	2 msec	36 msec
G4AD22	0 to 1 VDC	-60 mV to 2.2 VDC	± 1 mV	< 3 msec	< 10 msec

* Accuracy figure requires use of gain and offset commands.

Resolution	12 bits
Isolation (Transient) Input-to-output Input-to-analog supply	4,000 Vrms 4,000 Vrms
Ambient Temperature Operating Storage	-30° to 70° C -40° to 85° C

Connections

VOLTAGE IN

NOTE: PICTURE SHOWS CONNECTION FOR MODULE IN POSITION 1.
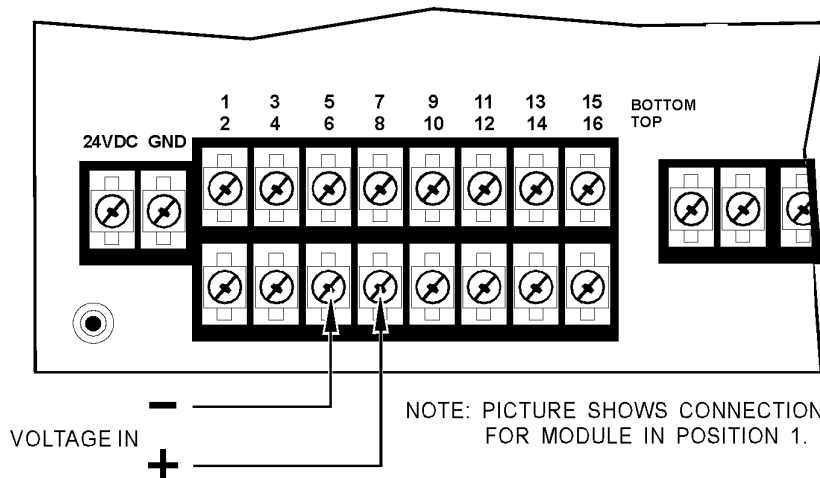
Products

Opto 22 produces a broad array of reliable, flexible hardware and software products for industrial automation, remote monitoring, enterprise data acquisition, and machine-to-machine (M2M) applications.

SNAP Ethernet Systems

Based on the Internet Protocol (IP), SNAP Ethernet systems offer flexibility in their network connectivity and in the software applications they work with. The physical network may be a wired Ethernet network, a cellular wireless network, or a modem. A wide variety of software applications can exchange data with SNAP Ethernet systems, including:

- Opto 22's own ioProject™ suite of control and HMI software
- Manufacturing resource planning (MRP), enterprise management, and other enterprise systems
- Human-machine interfaces (HMIs)
- Databases
- Email systems
- OPC client software
- Custom applications
- Modbus/TCP software and hardware.

SNAP Ethernet system hardware consists of controllers and I/O units. Controllers provide central control and data distribution. I/O units provide local connection to sensors and equipment.

SNAP OEM Systems

Opto 22 SNAP OEM I/O systems are highly configurable, programmable processors intended for OEMs, IT professionals, and others who need to use custom software with Opto 22 SNAP I/O modules.

Linux® applications running on these systems can read and write to analog, simple digital, and serial I/O points on SNAP I/O modules using easily implemented file-based operations. Applications can be developed using several common development tools and environments, including C or C++, Java, and shell scripts.

M2M Systems

Machine-to-machine (M2M) systems connect your business computer systems to the machines, devices, and environments you want to monitor, control, or collect data from. M2M systems often use wireless cellular communications to link remote facilities to central systems over the Internet, or to provide monitoring and control capability via a cellular phone.

Opto 22's Nvio™ systems include everything you need for M2M—interface and communications hardware, data service plan, and Web portal—in one easy-to-use package. Visit nvio.opto22.com for more information.

Opto 22 Software

Opto 22's ioProject and FactoryFloor® software suites provide full-featured and cost-effective control, HMI, and OPC software to power your Opto 22 hardware. These software applications help you develop control automation solutions, build easy-to-use operator interfaces, and expand your manufacturing systems' connectivity.

Quality

In delivering hardware and software solutions for worldwide device management and control, Opto 22 retains the highest commitment to quality. We do no statistical testing; each product is made in the U.S.A. and is tested twice before leaving our 160,000 square-foot manufacturing facility in Temecula, California. That's why we can guarantee solid-state relays and optically-isolated I/O modules *for life*.

Product Support

Opto 22's Product Support Group offers comprehensive technical support for Opto 22 products. The staff of support engineers represents years of training and experience, and can assist with a variety of project implementation questions. Product support is available in English and Spanish from Monday through Friday, 7 a.m. to 5 p.m. PST.

Opto 22 Web Sites

- www.opto22.com
- nvio.opto22.com
- www.internetio.com (live Internet I/O demo)

Other Resources

- OptoInfo CDs
- Custom integration and development
- Hands-on customer training classes.

About Opto 22

Opto 22 manufactures and develops hardware and software products for industrial automation, remote monitoring, enterprise data acquisition, and machine-to-machine (M2M) applications. Using standard, commercially available Internet, networking, and computer technologies, Opto 22's input/output and control systems allow customers to monitor, control, and acquire data from all of the mechanical, electrical, and electronic assets that are key to their business operations. Opto 22's products and services support automation end users, OEMs, and information technology and operations personnel.

Founded in 1974 and with over 85 million Opto 22-connected devices deployed worldwide, the company has an established reputation for quality and reliability.

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