

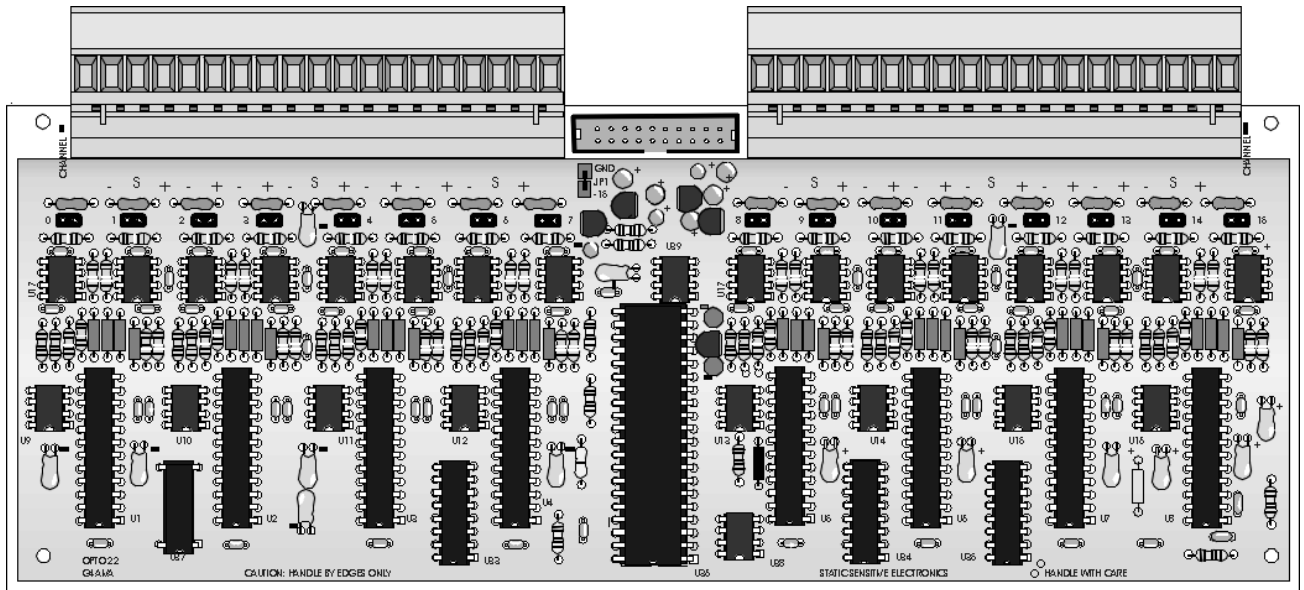
Description

The G4AIVA Voltage/Current Input Interface Card is designed to be used with the Opto 22 high-density analog line of Mystic 200 bricks. It can be used with either a Local or Remote brick enclosure.

The G4AIVA provides for up to 16 channels of voltage and/or current (milliampere) inputs. Each brick can accept two interface cards for a total of 32 I/O points in one compact unit. Five voltage

ranges are provided; -10 to +10VDC, 0 to +10VDC, -5 to +5VDC, 0 to +5VDC, and 0 to +1.25VDC. Two current ranges are provided, 0 to 20 mA and 4 to 20 mA. Any of the 16 I/O channels can be configured to accept any of the above voltage and/or current ranges. A jumper must be installed for each I/O point that is configured for current input. A fuse is provided to prevent resistor burn out in event the input current source is shorted or mis-wired.

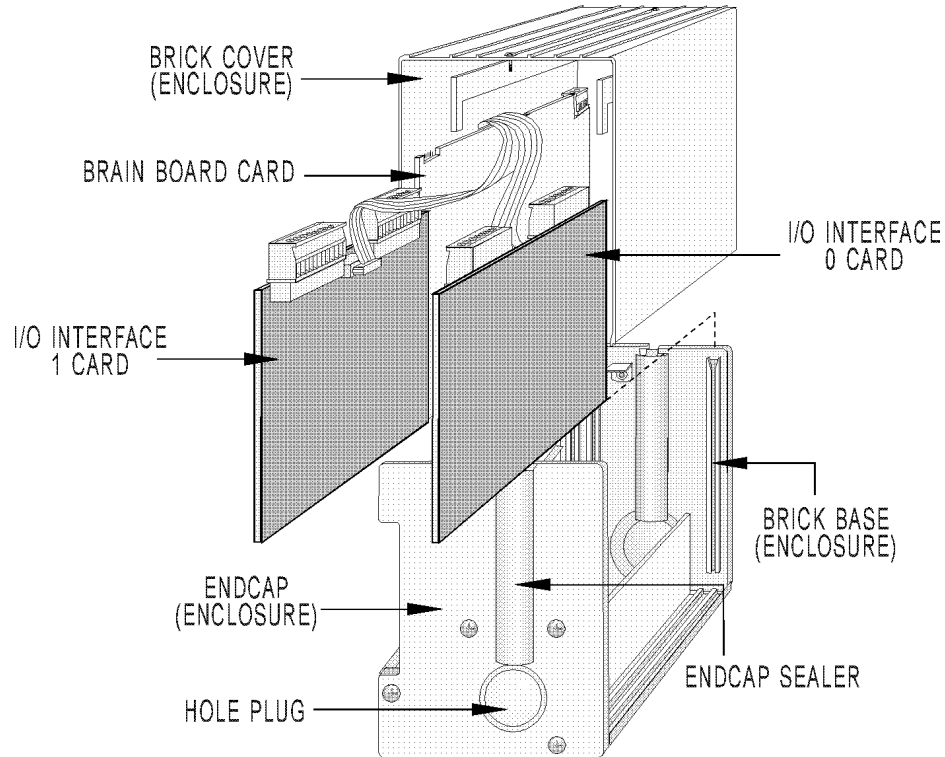
Part Number	Description
G4AIVA	16-Channel High-Resolution, High-Density Interface Card Voltage/Current Input



Features

- 16-bit resolution and high density
- 12-bit 0.025% accuracy
- Digital filtering
- Input fault protection
- Returns readings in volts, millivolt, or user defined engineering units
- No field calibration needed
- Low Cost Per Channel
- Instrumentation amplifier differential inputs
- High common mode rejection

Specifications



To install the G4AIVA into the HRD brick (G4HDAL Local or G4HDAR Remote), remove the two Phillip's head screws that secure the brick cover. Remove the cover. Install the G4AIVA I/O Interface Card as shown in the above illustration. It can be installed as I/O Interface Card 0 or as I/O Interface Card 1. Connect the 20 conductor flat ribbon cable from the Brain Card to the Interface Card. Make sure that the cable is connected to the proper

connector on the Brain Card. Use P1 for I/O Interface Card 1 and P2 for I/O Interface Card 0. For the Interface Card nearest to the Brain Card (I/O Card 1) use the short cable. For the Interface Card farthest from the Brain Card (I/O Card 0) use the long cable.

Connect your field wiring to the terminal strips on the interface card. Interface cards (types) can be mixed or matched within the brick.

Form 620-010129

Description

G4AIVA Description

The G4AIVA is a 16 channel, voltage/current input board that allows users to select on a point-by-point basis any voltage or current input in the range shown in the tables below.

An integrated ADC/DSP combination chip provides a programmable gain front-end and digital filtering. The proper gain setting is automatically selected based on the input type. The input types and range is selected by means

of software when the I/O points are configured. In addition to the software selection, a jumper must be installed for all I/O points that are configured as current inputs. The digital filters are optimized for 60 Hz or 50 Hz line noise rejection. A jumper is provided on the brain board for selecting the digital filter frequency. These features provide maximum signal accuracy over a given span.

Isolation is provided in groups of 16 inputs.

Input Voltage and Current Ranges

Input Voltage Range	Resolution @ 16 Bits	Polarity
-10 VDC to +10 VDC	0.305 mV	Bipolar
-5 VDC to +5 VDC	0.152 mV	Bipolar
0 to +10 VDC	0.152 mV	Unipolar
0 to +5 VDC	0.076 mV	Unipolar
0 to +1.25 VDC	0.019 mV	Unipolar

Input Current Range	Resolution @ 16 Bits	Polarity
0 to +20 mA	0.305 μ A	Unipolar
4 to +20 mA	0.305 μ A	Unipolar

Form 620-010129

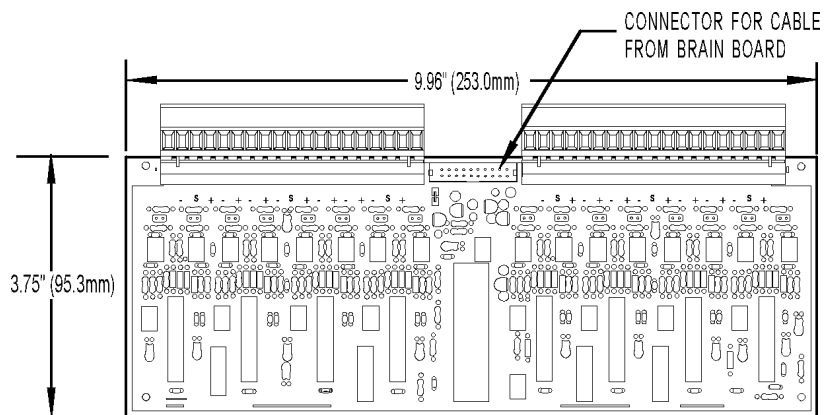
Specifications

Isolation: Input to Case or Input to Output or I/O Board to Other I/O Board	* 750 V _{rms}
Integral Nonlinearity:	± 0.0075 percent of FSR maximum
Common-Mode Voltage Range:	- 15 VDC to + 15 VDC
Full Scale Drift:	3 μV / °C typical
Input Response Time:	120 ms
Data Refresh Rate:	All 16 I/O points are updated every 120 ms
Common-Mode Rejection:	100 dB minimum at 50 or 60 Hz
Ambient Temperature: Operating Storage	0° C to + 70° C - 25° C to + 85° C
Resolution:	16-bits
Accuracy:	0.025 percent of range
Input Impedance:	1 M
System Power Consumption:	150 mA @ 24 VDC

* There is no channel-to-channel isolation.

Dimensions

G4AIVA Interface Card Dimensions

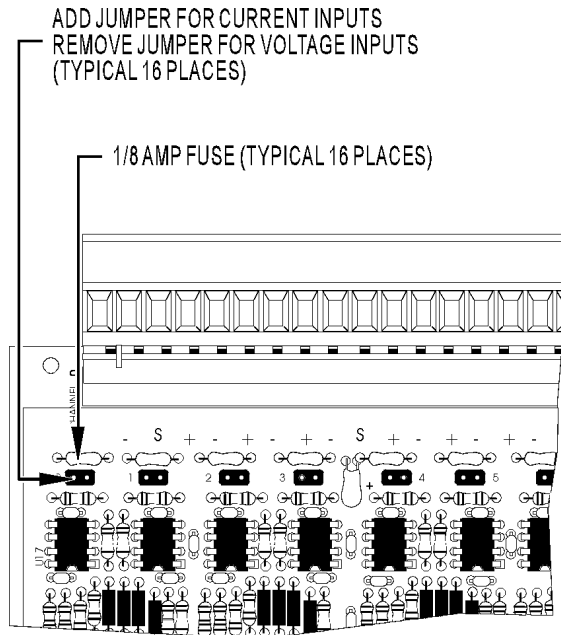


TOLERANCES: XX +/- .02 (.5) XXX +/- .010 (.25)
DIMENSIONAL UNITS: INCHES (MILLIMETERS)

Jumper Settings

For each I/O point that is to be configured as a current input, install a jumper as shown below. Omit the jumper for

all I/O points configured as voltage inputs. See diagram below.



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.