I/O MODULE
G4 DIGITAL
DC INPUT

DATA SHEET

Form 253-011128

Part Number	Description
G4IDC5	G4 DC Input 10-32 VDC, 5 VDC Logic
G4IDC5B	G4 DC Input 4-16 VDC, 5 VDC Logic High Speed
G4IDC5D	G4 DC Input 2.5-28 VDC, 5 VDC Logic
G4IDC5G	G4 DC Input 35-60 VDC, 5 VDC Logic
G4IDC5K	G4 DC Input 2.5-16 VDC, 5 VDC Logic Very High Speed
G4IDC5MA	G4 DC Input 10-32 VDC, 5 VDC Logic With Manual/Auto Switch
G4IDC15	G4 DC Input 10-32 VDC, 15 VDC Logic
G4IDC24	G4 DC Input 10-32 VDC, 24 VDC Logic

Description

Opto 22's G4 DC input modules are used to detect on/off DC voltage levels. Each module provides up to 4,000 V_{rms} of optical-isolation between field inputs and the logic output of the circuit.

All DC input modules except the G4IDC5K and G4IDC5D are designed with filtering on the input and a hysteresis amplifier, providing high noise rejection and transient-free, "clean" switching. The G4IDC5K is a fast-switching module used to detect signals produced by photoelectric switches and TTL devices. The low-cost G4IDC5D is used for data acquisition.

The G4IDC5MA is a special module featuring a manual-on/manual-off/automatic switch, ideal for diagnostic testing of control applications.

Typical applications for DC input modules include sensing the presence or absence of voltage, and sensing contact closure from sources such as proximity switches, limit switches, selector switches, push buttons, photoelectric switches, and TTL-compatible devices.

Features

- 4,000 V_{rms} optical isolation
- Built-in LED status indicator
- Small footprint design, reducing mounting space by approximately 50 percent
- Built-in filtering for transient suppression and noise rejection
- Operating temperature: -30° C to 70° C
- UL recognized, CSA certified, CE approved
- Passes NEMA Showering Arc Test (ICS 2-230)
- Meets IEEE Surge Withstand Specification (IEEE-472)

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Specifications

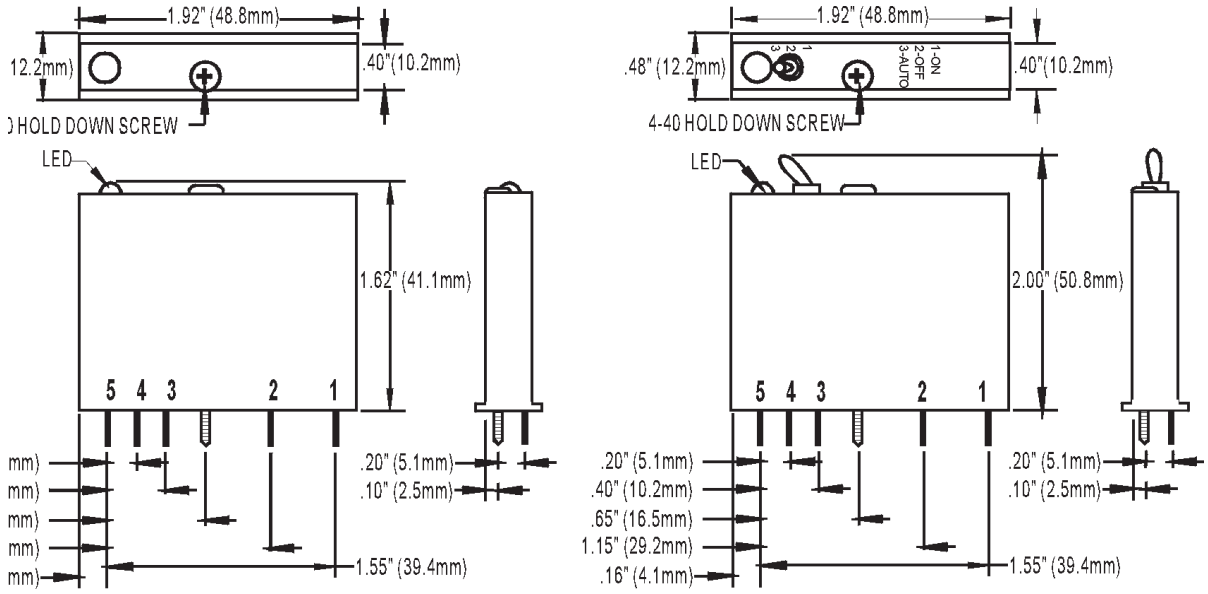
	Units	G4IDC5	G4IDC5B	G4IDC5D	G4IDC5G
Input Voltage Range	VDC VAC	10-32 12-32	4-16 4-16	2.5-28 ---	35-60 35-60
Key Feature		---	Higher speed	High speed	---
Input Current at Maximum Line	mA	25	45	30	6
Isolation Input-to-output	V_{rms}	4,000	4,000	4,000	4,000
Turn-on time	ms	5	0.05	1	10
Turn-off time	ms	5	.1	1.5	10
Input Allowed for Off-state	mA, V	1, 3	.7, 1	.2, 1	.7, 7
Nominal Output Voltage Supply	VDC	5	5	5	5
Output Supply Voltage Range	VDC	4.5-6	4.5-6	4.5-6	4.5-6
Output Supply Current at Nominal Logic Voltage	mA	12	12	12	12
Input Resistance (R1 in schematic)	Ohm	1.5K	300	900	10K
Control Resistance (Rc in schematic)	Ohm	220	220	470	220
Output Voltage Drop	V @ 50 mA	.4	.4	.4	.4
Output Current (sinking)	mA	50	50	50	50
Output Leakage with no Input	µA @ 30 VDC	100	100	10	100
Transistor	V breakdown	30	30	30	30
Temperature:	°C °C	-30 to +70 -30 to +85	-30 to +70 -30 to +85	-30 to +70 -30 to +85	-30 to +70 -30 to +85

Specifications (CONT.)

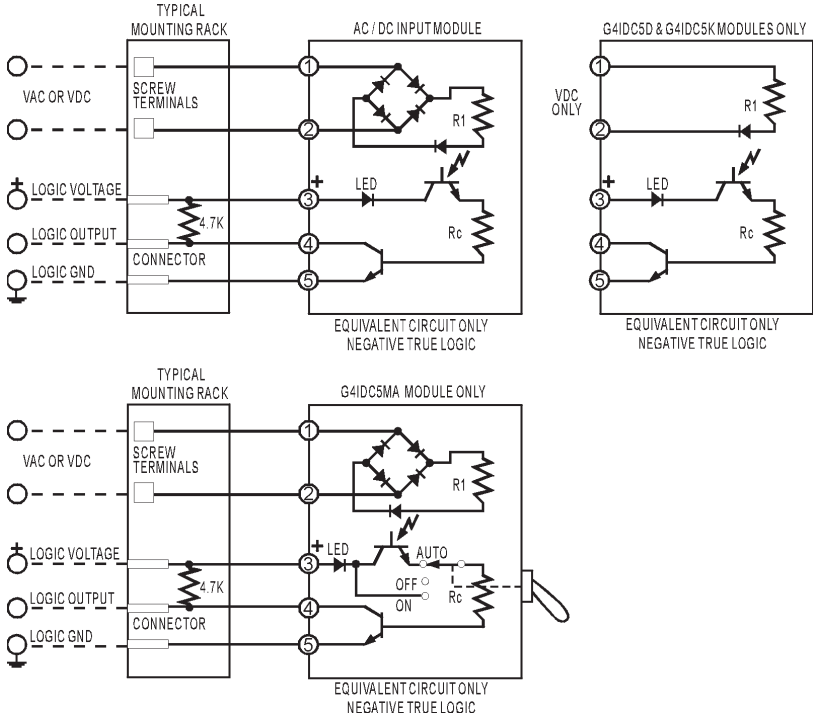
	Units	G4IDC5K	G4IDC5MA	G4IDC15	G4IDC24
Input Voltage Range	VDC VAC	2.5-16 ---	10-32 12-32	10-32 12-32	10-32 12-32
Key Feature		Highest speed	Diagnostic switch	---	---
Input Current at Maximum Line	mA	30	25	25	25
Isolation Input-to-output	V_{rms}	4,000	4,000	4,000	4,000
Turn-on time	ms	.025*	5	5	5
Turn-off time	ms	.025*	5	5	5
Input Allowed for Off-state	mA, V	.2, 1	1, 3	1, 3	1, 3
Nominal Output Voltage Supply	VDC	5	5	15	24
Output Supply Voltage Range	VDC	4.5-6	4.5-6	12-18	20-30
Output Supply Current at Nominal Logic Voltage	mA	12	12	15	18
Input Resistance (R1 in schematic)	Ohm	500	1.5K	1.5K	1.5K
Control Resistance (Rc in schematic)	Ohm	220	220	1K	2.2K
Output Voltage Drop	V @ 50 mA	.4	.4	.4	.4
Output Current (sinking)	mA	50	50	50	50
Output Leakage with no Input	µA @ 30 VDC	100	100	100	100
Transistor	V breakdown	30	30	30	30
Temperature: Storage	°C °C	-30 to +70 -30 to +85	-30 to +70 -30 to +85	-30 to +70 -30 to +85	-30 to +70 -30 to +85

*At 5Vp-p square wave input, 50% duty cycle.

Dimensions



Schematics



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Products

Opto 22 produces a broad array of reliable, flexible hardware and software for industrial automation and remote monitoring. Opto 22's diverse and complete product range allows you to buy in at any level, from solid-state relays to fully integrated control systems.

SNAP Ultimate I/O™

The most intelligent and powerful I/O system available, SNAP Ultimate I/O effectively combines I/O, control, networking, and enterprise connectivity into a single cohesive system.

SNAP Ultimate I/O has the ability to communicate *directly* with enterprise systems, eliminating the need for complex middleware and the significant investments associated with it. Software and utilities for use with SNAP Ultimate I/O include ioControl™ flowchart-based control programming software and ioDisplay™, a Windows-based HMI development package.

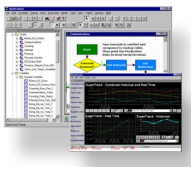
SNAP Ethernet I/O™

Using SNAP Ethernet I/O systems, you can connect a wide variety of electronic and mechanical devices such as lights, temperature and pressure sensors, motors, and serial devices to computers via a standard Ethernet network, wireless LAN, or even the Internet.

SNAP-IT™ Systems

A packaged solution that brings industry-proven SNAP Ethernet technology to your enterprise faster and easier than ever before, SNAP-IT is a Web-enabled hardware appliance that connects environmental, device, and other sensors directly to your enterprise applications. The connected devices can then be controlled and real-time operational data can be collected, monitored, and delivered via a standard Ethernet, wireless LAN, or dial-up network.

Opto 22 FactoryFloor™ Software



FactoryFloor is an integrated suite of industrial control software applications designed to help you develop control automation solutions, build easy-to-use operator interfaces, and expand your manufacturing systems' connectivity.

Other Software and Hardware

Software developer kits (SDKs), diagnostic utilities, support for the Linux operating system, and a full line of SNAP industrial controllers are also available from Opto 22.

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 all 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, 8 a.m. to 5 p.m. Pacific Standard Time.

Opto 22 Web Sites

www.opto22.com
www.ManageTheRealWorld.com
www.internetio.com (live Internet I/O demo)
www.ultimateio.com (SNAP Ultimate I/O information)

Other Resources

- OptoInfo CDs
- Integration support
- Ongoing, up-to-date training
- FaxBack service: (800) 474-OPTO

About Opto 22

Founded in 1974, Opto 22 is a leading manufacturer of high-quality hardware and software solutions for connecting real-world devices with computer networks. Customer applications include enterprise management, remote monitoring and control, industrial automation, and data acquisition. Opto 22 was one of the first companies to recognize and implement solutions involving networks, computers, and real-world equipment and devices. More than 65 million devices worldwide are reliably connected to Opto 22 systems.

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