

## G4 DIGITAL DC OUTPUT MODULES

### Features

- > 4000 volts optical isolation (transient)
- > Built-in LED status indicator
- > Logic levels of 5, 15, and 24 VDC
- > Removable fuse
- > Ability to withstand one-second surge of 5 amps
- > Operating temperature: -30 °C to 70 °C
- > UL recognized, CSA certified, CE & UKCA approved
- > Passes NEMA Showering Arc Test (ICS 2-230)
- > Meets IEEE Surge Withstand Specification (IEEE-472)



G4ODC5

### DESCRIPTION

Opto 22's G4 DC output modules are used to control or switch DC loads. Each module provides up to 4000 volts of optical isolation (transient) between field devices and control logic.

The G4ODC5MA is a special module featuring a manual-on/manual-off/automatic switch, ideal for diagnostic testing of control applications.

Typical applications for DC output modules include switching loads such as DC relays, solenoids, motor starters, lamps, and indicators.

#### Compatible with Raspberry Pi

The following G4 digital DC output modules can be used with the Digital I/O Carrier Board for Raspberry Pi® (part number [OPTO-P1-40P](#)) to monitor and control industrial devices with your Raspberry Pi:

- G4ODC5
- G4ODC5A
- G4ODC5MA

### Part Numbers

Part	Description
G4ODC5*	G4 DC Output 5–60 VDC, 5 VDC Logic
G4ODC5A*	G4 DC Output 5–200 VDC, 5 VDC Logic
G4ODC5MA*	G4 DC Output 5–60 VDC, 5 VDC Logic with Manual/Auto Switch
G4ODC15	G4 DC Output 5–60 VDC, 15 VDC Logic
G4ODC24	G4 DC Output 5–60 VDC, 24 VDC Logic
G4ODC24A	G4 DC Output 5–200 VDC, 24 VDC Logic

\* Compatible with Raspberry Pi

Raspberry Pi® is a trademark of the Raspberry Pi Foundation.

## SPECIFICATIONS

	Units	G4ODC5*	G4ODC5A*	G4ODC5MA*	G4ODC15***	G4ODC24***	G4ODC24A***
Maximum line voltage	VDC	60	200	60	60	60	200
Output voltage range	VDC	5–60	5–200	5–60	5–60	5–60	5–200
Key feature	—	—	—	Diagnostic switch	—	—	—
Current rating:							
At 45 °C ambient	A	3	1	3	3	3	1
At 70 °C ambient	A	2	0.55	2	2	2	0.55
Isolation input-to-output (transient):							
1 ms	volts	4000	4000	4000	4000	4000	4000
1 minute		1500	1500	1500	1500	1500	1500
Off-state leakage at maximum voltage	mA	1	1	1	1	1	1
Control resistance (R <sub>C</sub> in schematic)	Ohms	220	220	220	1 K	2.2 K	2.2 K
One-second surge	A	5	5	5	5	5	5
Turn-on time	micro-seconds	100	100	100	100	100	100
Turn-off time	micro-seconds	750	750	750	750	750	750
Output voltage drop maximum peak	V	1.6	1.6	1.6	1.6	1.6	1.6
Nominal logic voltage	VDC	5	5	5	15	24	24
Logic voltage range	VDC	4–8	4–8	4–8	10.5–16	19.5–32	19.5–32
Logic pickup voltage	VDC	4	4	4	10.5	19.5	19.5
Logic dropout voltage	VDC	1	1	1	1	1	1
Logic input current at nominal logic voltage	mA	12	12	12	15	18	18
Temperature:							
Operating	°C	-30 to +70	-30 to +70	-30 to +70	-30 to +70	-30 to +70	-3- to +70
Storage	°C	-30 to +85	-30 to +85	-30 to +85	-30 to +85	-30 to +85	-30 to +85
Agency Approvals		UL, CE, CSA; UKCA	UL, CE, CSA; UKCA	UL, CE, CSA; UKCA	UL, CE, CSA; UKCA	UL, CE, CSA; UKCA	UL, CE, CSA; UKCA

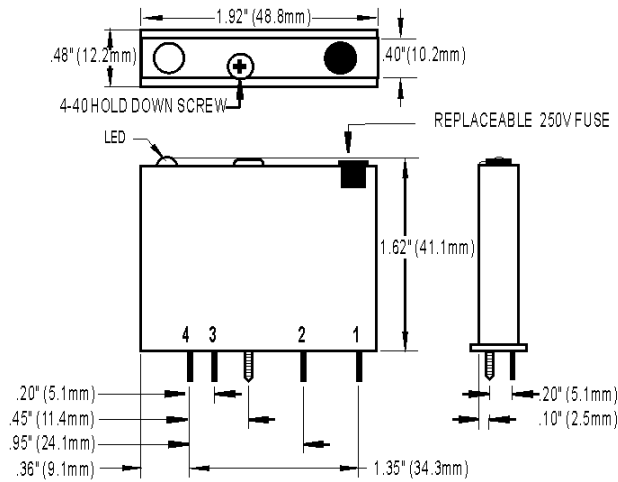
\* Compatible with Raspberry Pi

\*\* Obsolete, these parts are no longer available, please contact Pre-Sales Engineering for more information.

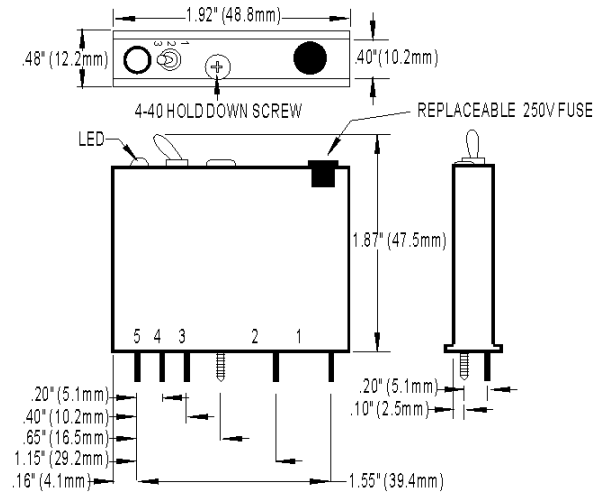
\*\*\* Not for use with Opto 22 brains

## DIMENSIONS

### All Models Except MA

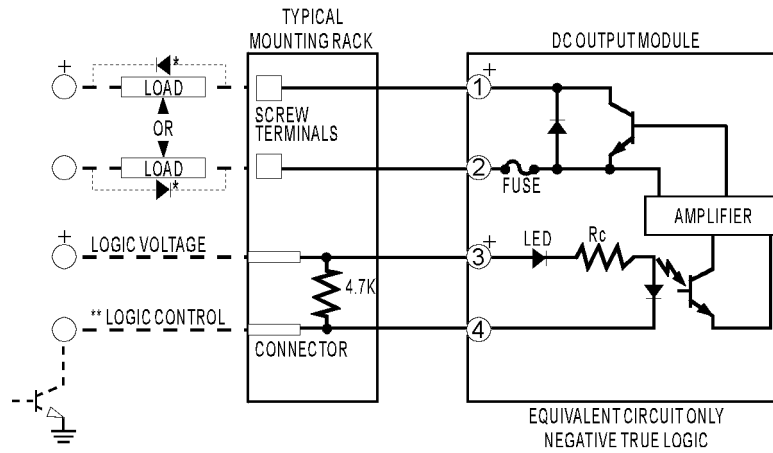


### MA Models



## SCHEMATICS

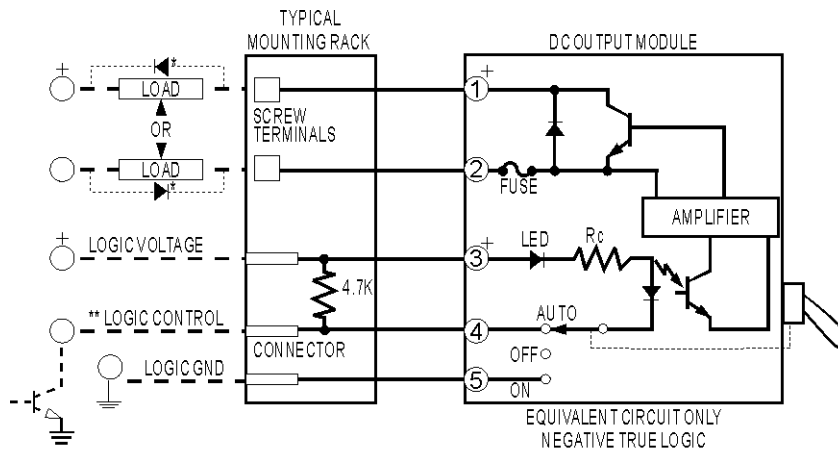
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\* Commutation diode must be used on inductive loads. Typically, use diode IN4005.

\*\* Control line is compatible with totem pole or tri-state output device.

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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](http://www.opto22.com).

