OPTO 22

G4 DIGITAL DRY CONTACT OUTPUT MODULES

Features

> Used to switch low-voltage resistive loads
> Contact resistance of 200 milliohms maximum
> Mechanical life of 5 million cycles
> Coil 5 VDC at 14 mA
> Operating temperature: -30 °C to 70 °C
> Passes NEMA Showering Arc Test (ICS 2-230)
> Meets IEEE Surge Withstand Specification (IEEE-472)

DESCRIPTION

Opto 22's G4 family of modules includes two dry-contact, low-contact-resistance DC output modules, the G4ODC5R and the G4ODC5R5.

• The **G4ODC5R** is a single-pole, single-throw, normally open mechanical relay (Form A, SPST-NO).

• The **G4ODC5R5** is a single-pole, single-throw, normally closed mechanical relay (Form B, SPST-NC).

Typical applications for these modules include analog signal and communication line multiplexing.

Because of their low 10 VA rating, these modules are not recommended for inductive or capacitive loads (even very small loads), because the inrush current is likely to exceed the 10 VA rating.

IMPORTANT: Applications using 120 VAC are typically NOT suited to these modules. If you are considering using one of these modules for any application other than low-voltage purely resistive loads, see the detailed notes and rating curve on page 2, and call Pre-sales Engineering for specific guidance.


G4 Dry Contact
Output Modules

Part Numbers

Part	Description
G4ODC5R	G4 Dry Contact Output, 5 VDC Logic, Normally Open
G4ODC5R5	G4 Dry Contact Output, 5 VDC Logic, Normally Closed

MADE IN THE
USA

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SPECIFICATIONS

	Units	G4ODC5R	G4ODC5R5
Contact form		Form A SPST mechanical relay	Form B SPST mechanical relay
Normal position		Open	Closed
Contact rating	VA	10	10
Maximum switching voltage (see NOTE)	VDC	100	100
	VAC	130	130
Maximum switching current	A	0.5 (see NOTE)	0.5 (see NOTE)
Contact resistance	Milliohms	200	200
Turn-on time	microseconds	500	500
Turn-off time	microseconds	500	500
Contact bounce	microseconds	250	250
Mechanical life	cycles	5 million	5 million
Logic voltage range	VDC	4.8–6	4.8–6
Logic OFF voltage range	VDC	0.0–0.8	0.0–0.8
Logic ON voltage range	VDC	3.8–6	3.8–6
Indeterminate range	VDC	0.8–3.8	0.8–3.8
Logic input current at nominal logic voltage	milliamps	14	14
Isolation voltage (transient) input-to-output	VDC	1,500	1,500
Ambient temperature: Operating Storage	°C °C	0 to 70 -60 to +105	0 to 70 -60 to +105
Agency Approvals		CE, CSA, UKCA	CE, CSA, UKCA

* Obsolete parts, please contact Pre-Sales Engineering for more information.

NOTE: The application of the dry contact module must not exceed 10 VA under steady-state or momentary in-rush conditions.
For voltages at or below 20 volts, the current limit is 0.5 amps.
For voltages above 20 volts, the maximum allowable current is determined by the following equation:
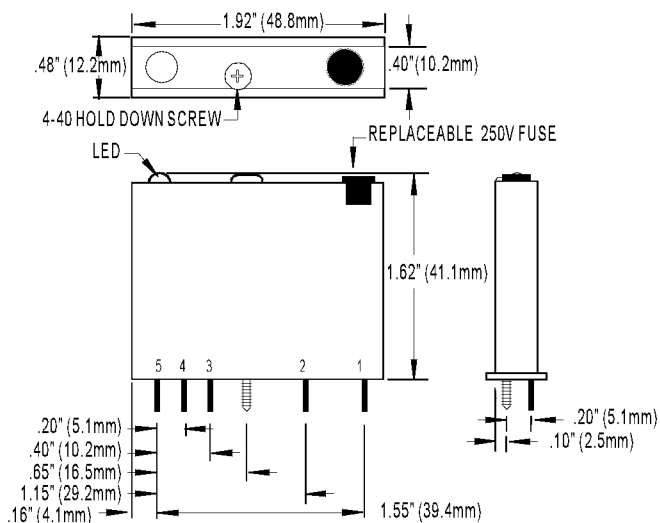Maximum Current = 10 VA / Voltage

10 VA Rating for Reed Relay (Dry Contact) Modules
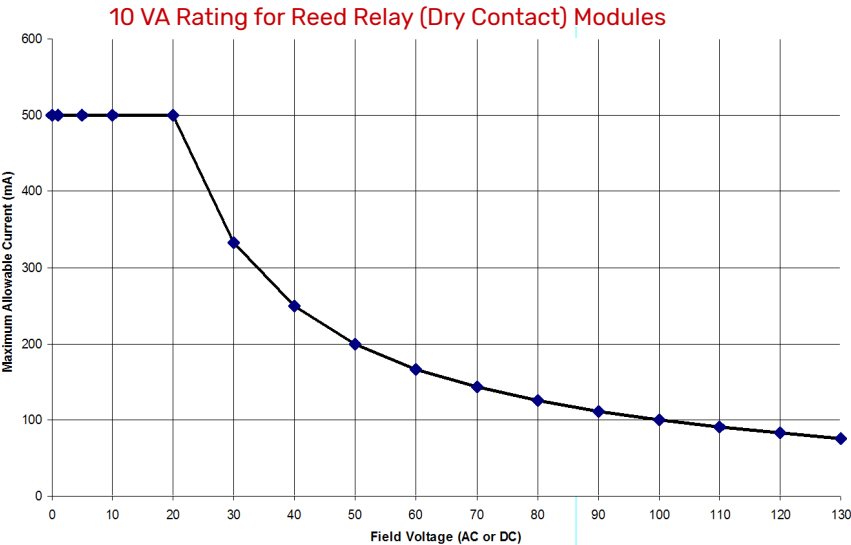
Current Limit at Key Voltages

V	mA
5	500
12	500
24	416
100[1]	100
120	83
130[2]	76

[1] Maximum DC voltage is 100 VDC.
[2] Maximum AC voltage is 130 VAC.

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DIMENSIONS

1.92" (48.8mm)

.48" (12.2mm)   .40" (10.2mm)

4-40 HOLD DOWN SCREW

REPLACEABLE 250V FUSE

LED

1.62" (41.1mm)

5 4 3   2 1

.20" (5.1mm)
.40" (10.2mm)
.65" (16.5mm)
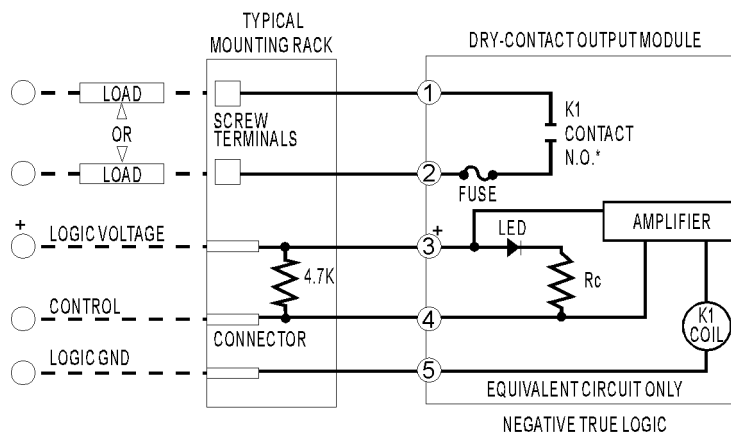1.15" (29.2mm)
.16" (4.1mm)

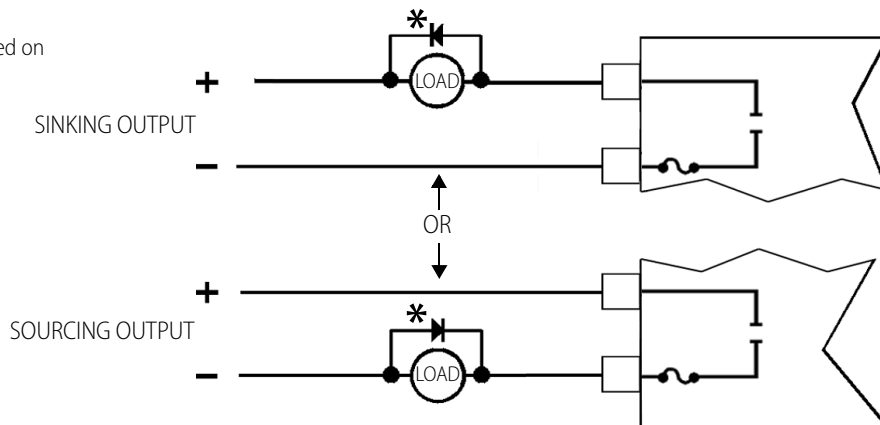.20" (5.1mm)
.10" (2.5mm)

1.55" (39.4mm)

SCHEMATICS

NOTE: Also compatible with Totem Pole or Tri-State Output. Will not plug into G4PB4R mounting rack.

*Normally open for G4ODC5R. Normally closed for G4ODC5R5.

TYPICAL MOUNTING RACK

DRY-CONTACT OUTPUT MODULE

LOAD
OR
LOAD

SCREW TERMINALS

① K1 CONTACT N.O.*

② FUSE

+ LOGIC VOLTAGE

③ + LED AMPLIFIER

4.7K

③ Rc

CONTROL

④ K1 COIL

LOGIC GND

CONNECTOR

⑤ EQUIVALENT CIRCUIT ONLY

NEGATIVE TRUE LOGIC

TYPICAL WIRING EXAMPLES

NOTE: Commutating diode* must be used on inductive loads (Typical: 1N4005)

*
LOAD

+

SINKING OUTPUT

−

OR

+

SOURCING OUTPUT

*
LOAD

−

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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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