# STANDARD DC OUTPUT MODULES

## Features

- Rugged construction
- 4000 volts of optical isolation between the field devices and the control logic (transient)


ODC5 Module

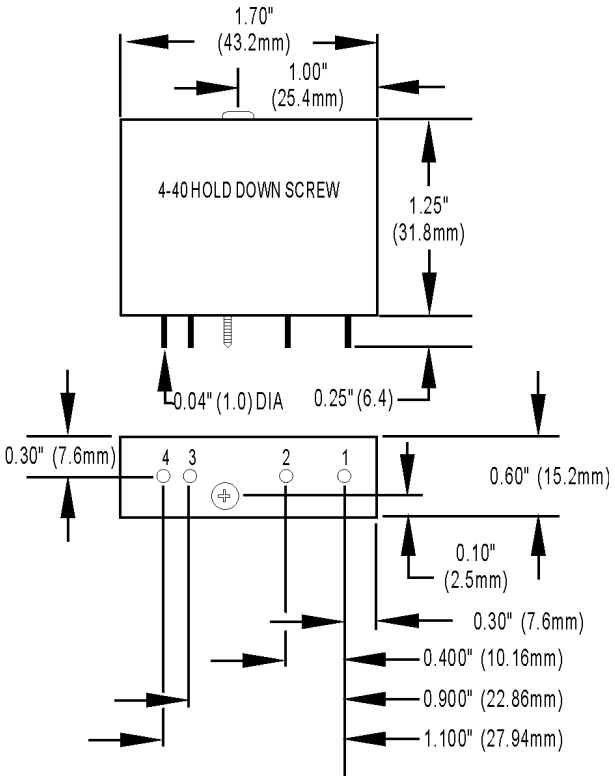
## DESCRIPTION

DC output modules are used for controlling or switching DC loads. Each module provides 4000 volts (transient) of optical isolation between the field devices and the control logic.

Typical uses and applications for DC output modules include switching the following loads:

- DC relays
- DC solenoids
- DC motor starters
- DC lamps or indicators
- PLC logic

## DIMENSIONS, ALL MODELS




## Part Numbers

| Part | Description |
|---|---|
| ODC5 | DC Output 5–60 VDC, 5 VDC Logic |
| ODC5A | DC Output 5–200 VDC, 5 VDC Logic |
| ODC15 | DC Output 5–60 VDC, 15 VDC Logic |
| ODC15A | DC Output 5–200 VDC, 15 VDC Logic |
| ODC24 | DC Output 5–60 VDC, 24 VDC Logic |
| ODC24A | DC Output 5–200 VDC, 24 VDC Logic |

# SPECIFICATIONS

## General Specifications

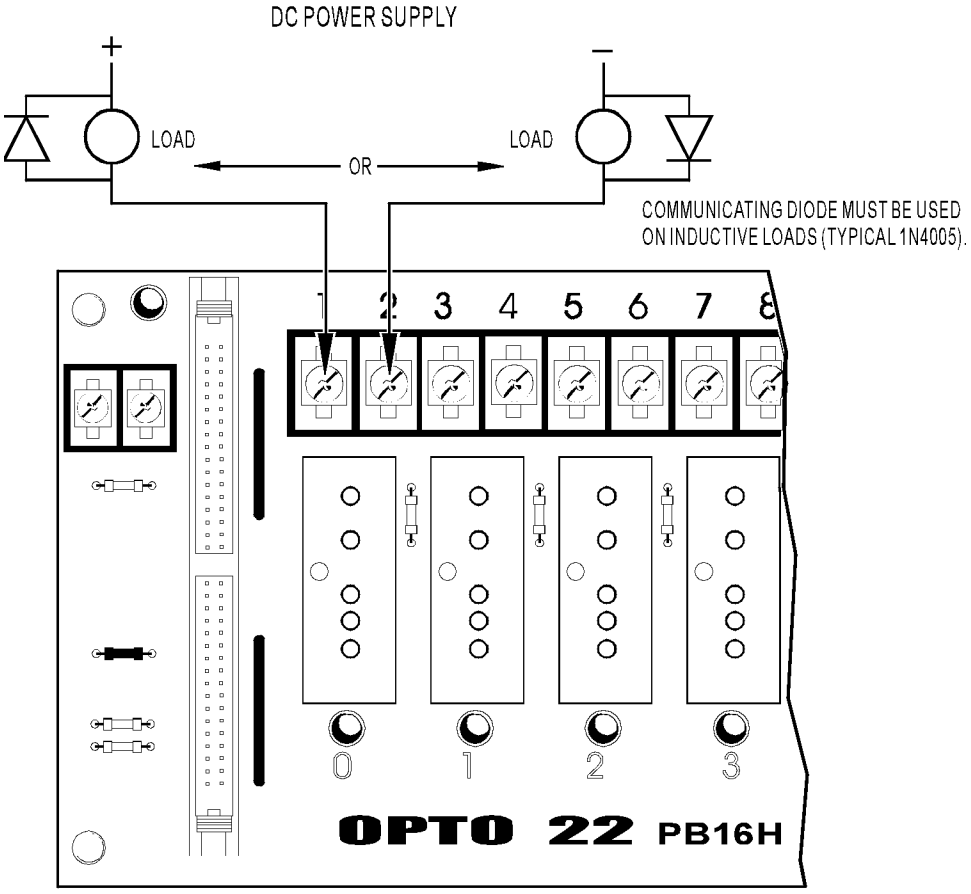
| | |
|---|---|
| One-second Surge | 5 A |
| Operating Ambient Temperature | -30 °C to 70 °C |
| Isolation, Input-to-Output (Transient) | 4000 volts |
| Turn-on Time | 100 µs |
| Turn-off Time | 750 µs |
| Output Voltage Drop Maximum Peak | 1.6 volts |

## Module Specifications

| | UNITS | ODC5 | ODC5A | ODC15* | ODC15A* | ODC24* | ODC24A* |
|---|---|---|---|---|---|---|---|
| Line voltage - max. | VDC | 60 | 200 | 60 | 200 | 60 | 200 |
| Operating voltage range | VDC | 5–60 | 5–200 | 5–60 | 5–200 | 5–60 | 5–200 |
| Current rating<br>@ 45 °C ambient<br>@ 70 °C ambient | <br>Amps<br>Amps | <br>3<br>2 | <br>1<br>0.55 | <br>3<br>2 | <br>1<br>0.55 | <br>3<br>2 | <br>1<br>0.55 |
| UL Motor Load rating | Amps | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 |
| Off-state leakage @ max. voltage | mA | 1 | 2 | 1 | 2 | 1 | 2 |
| Logic voltage - nominal | VDC | 5 | 5 | 15 | 15 | 24 | 24 |
| Logic voltage range (Vcc) | VDC | 2.5–8 | 2.5–8 | 9–16 | 9–16 | 18–32 | 18–32 |
| Logic pickup voltage | VDC | 2.5 | 2.5 | 9 | 9 | 18 | 18 |
| Logic dropout voltage | VDC | 1 | 1 | 1 | 1 | 1 | 1 |
| Logic input current @ nominal logic voltage | mA | 12 | 12 | 15 | 15 | 18 | 18 |
| Control resistance ($R_c$ in schematic diagram) | Ohms | 220 | 220 | 1K | 1K | 2.2K | 2.2K |

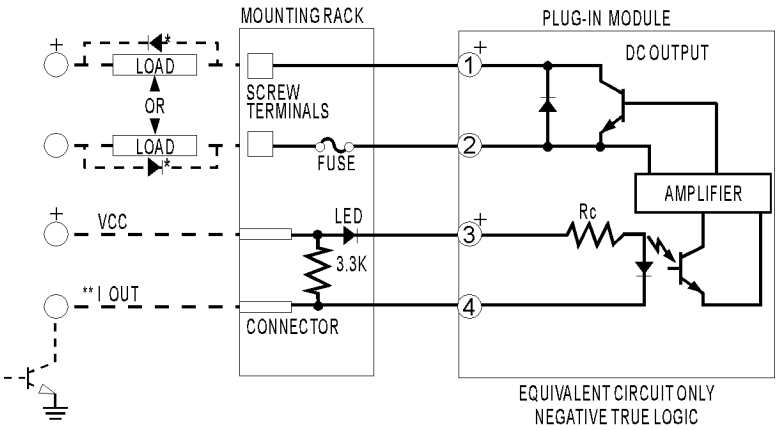
* Not for use with Opto 22 brains.

## CONNECTIONS




## SCHEMATIC

### Equivalent Circuit




* Commutating diode* must be used on inductive loads (Typical: 1N4005).
**Control line is compatible with totem pole or tri-state output device.

# More about Opto 22

OPTO 22

## PRODUCTS

Opto 22 develops and manufactures reliable, easy-to-use, open standards-based hardware and software products.

Industrial automation, process control, building automation, industrial refrigeration, remote monitoring, data acquisition, and industrial internet of things (IIoT) applications worldwide all rely on Opto 22.

### *groov* EPIC® System

Opto 22's *groov* Edge Programmable Industrial Controller (EPIC) system is the culmination of over 40 years of experience in designing products for the automation industry.

*groov* EPIC gives you an industrially hardened system with guaranteed-for-life I/O, a flexible Linux®-based controller with gateway functions, and software for your IIoT application or any application.

#### *groov* EPIC I/O

I/O provides the local connection to sensors and equipment. *groov* I/O offers up to 24 channels on each I/O module, with a spring-clamp terminal strip, integrated wireway, and swing-away cover.

Opto 22 I/O is so reliable, we can afford to guarantee it for life. *groov* I/O is hot swappable, UL Hazardous Locations approved, and ATEX compliant.

#### *groov* EPIC Controller

The heart of the system is the *groov* EPIC controller. 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, online services, and more, both on premises and in the cloud.

Configuring and troubleshooting I/O and networking is easier with the EPIC's integrated high-resolution touchscreen. Authorized users can see your *groov* View HMI locally on the touchscreen or on a monitor connected via the HDMI or USB ports.

#### *groov* EPIC Software

Software includes:

- Flowchart-based PAC Control for control programming, or build your own custom application with optional secure shell access
- *groov* View for building and viewing your own device-independent HMI
- Node-RED for creating simple logic flows from pre-built nodes
- Ignition Edge® from Inductive Automation®, with OPC-UA drivers to Allen-Bradley®, Siemens®, and other control systems, and MQTT/Sparkplug communications for efficient IIoT data transfer

### *groov* Edge Appliance


Visualization, data handling, and connectivity in a compact, industrial box: that's the *groov* Edge Appliance. Included are:

- *groov* View for building and viewing operator interfaces on PCs and mobile
- Node-RED for building simple logic flows
- Ignition Edge® from Inductive Automation®, for OPC-UA drivers and MQTT/Sparkplug IIoT communications

### Older products

From solid state relays (our first products) to world-famous G4 and SNAP I/O, to SNAP PAC controllers, Opto 22 products last a long time. You can count on us to give you the reliability and service you expect.

## 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 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, comprehensive 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 how-to videos, user's guides, the Opto 22 KnowledgeBase, troubleshooting tips, and OptoForums. In addition, free hands-on training is available at our Temecula, California headquarters, and you can register online.

## 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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