# Quad DC Output I/O Modules

Features

- Four single channel I/O circuits in a single high-density package.
- Designed to plug into the Quad Pak high-density I/O mounting racks.
- Can be used with Optomux, Pamux, and *mistic* protocol brain boards and mounting racks as well as racks using a direct cable connection to a computer.
- Each module provides up to 4,000 Vrms of optical isolation between the field devices and the control logic.

Description

Quad Pak modules contain the equivalent of four single channel I/O circuits in a single high-density package. Each Quad Pak module is divided into two pairs of channels with each pair sharing a common connection. The Quad Pak modules are designed to plug into the Quad Pak high-density I/O mounting racks only and cannot be plugged into single channel racks. Quad Pak modules are designed to work with a 5 VDC logic voltage only and can be used with Optomux, Pamux, and Mistic protocol brain boards and mounting racks as well as racks using a direct cable connection to a computer.
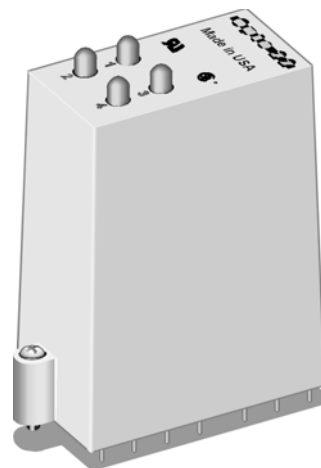
DC output modules are used for controlling or switching DC loads. Each module provides up to 4,000 Vrms of optical isolation between the field devices and the control logic.

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

- DC Relays
- DC Solenoids
- DC Motor Starters
- DC Lamps or Indicators

All Quad Pak DC outputs are current sourcing outputs. The module connection to the load is the positive connection.

Part Numbers

Part	Description
ODC5Q	4-Channel DS Output 5-60 VDC, 5 VDC Logic
ODC5AQ	4-Channel DS Output 5-200 VDC, 5 VDC Logic

Specifications

	Units	ODC5Q	ODC5AQ
Line Voltage - Maximum	VDC	60	200
Operating Voltage Range	VDC	5–60	5–200

Current Rating
  @ 20 °C Ambient
  @ 45 °C Ambient
  @ 70 °C Ambient
	Amps
	Amps
	Amps
		3
		2
		1
			1
			1
			0.55

Off-state Leakage @ Maximum Voltage	mA	1	2
Logic Voltage - Nominal	VDC	5	5
Logic Voltage Range (Vcc)	VDC	4–8	4–8
Logic Pickup Voltage	VDC	4.0	4.0
Logic Dropout Voltage	VDC	2.3	2.3
Logic Input Current @ Nominal Logic Voltage	mA	12	12
Control Resistance	Ohms	220	220
One-Second Surge Amps	5	5	
Operating Ambient Temperature	°C	-30 to 70	-30 to 70
Isolation Input-to-Output	Vrms	4,000	4,000
Turn-on Time	µs	100	100
Turn-off Time	µs	750	750
Output Voltage Drop Maximum	Volts	1.6	1.6

Quad DC Output I/O Modules

Dimensions

3.080"
(78.23mm)
MAX

2.880"
(73.15mm)

0.500" (12.70mm)

0.04 (1.0) DIA   4-40 PAN HD SCREW   0.25" (6.4mm)

0.12" (3.0mm)

13 12 11   10 9 8

6 5 4   3 2 1

0.200" (5.08mm)   1.06" (26.9mm)
0.450" (11.43mm)

0.300" (7.62mm)

0.200" (5.08mm)
0.400" (10.16mm)
0.900" (22.86mm)
1.100" (27.94mm)
1.300" (33.02mm)

2.10" (53.34mm)

Schematics

DC OUTPUT

OUT 1 — 1
COMMON — 2
OUT 2 — 3
+ Vcc — 4
IN 2 — 5   LED 2
IN 1 — 6   LED 1

8 — OUT 3
9 — COMMON
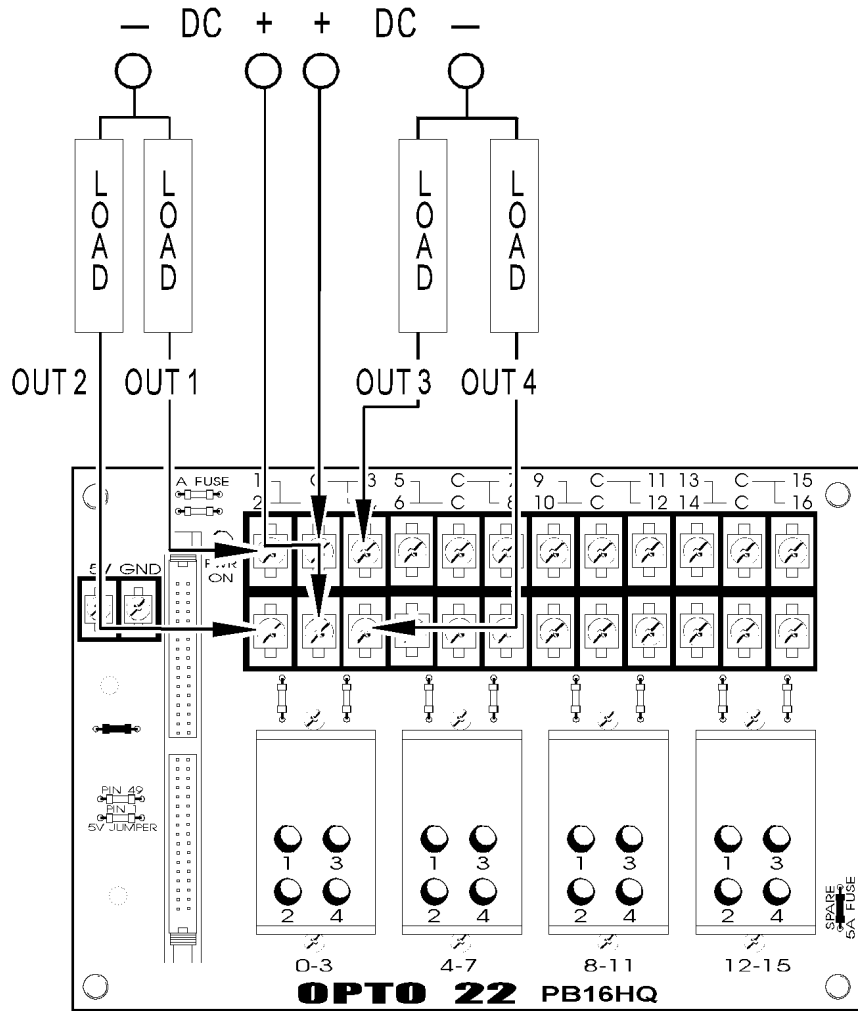10 — OUT 4
11 — + Vcc
12 — IN 4   LED 4
13 — IN 3   LED 3

Rc

TOP VIEW
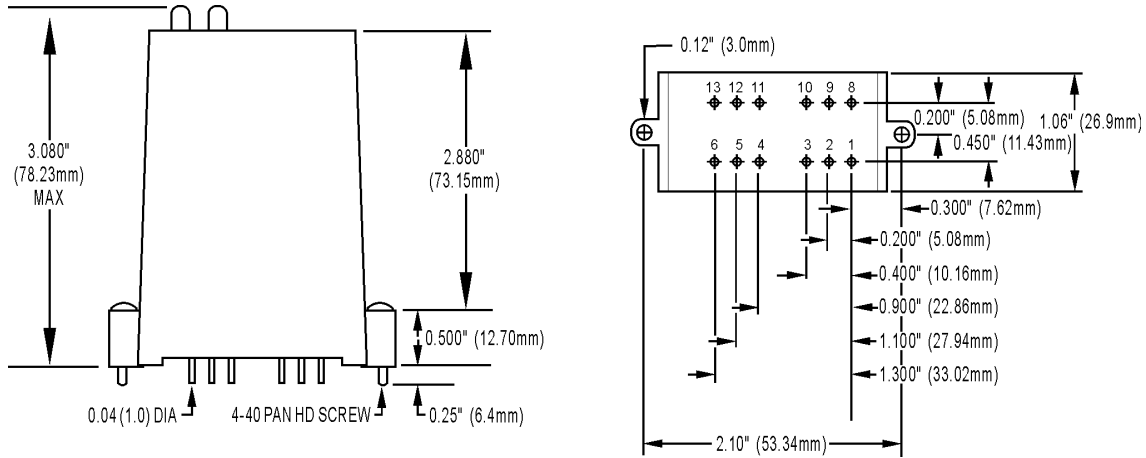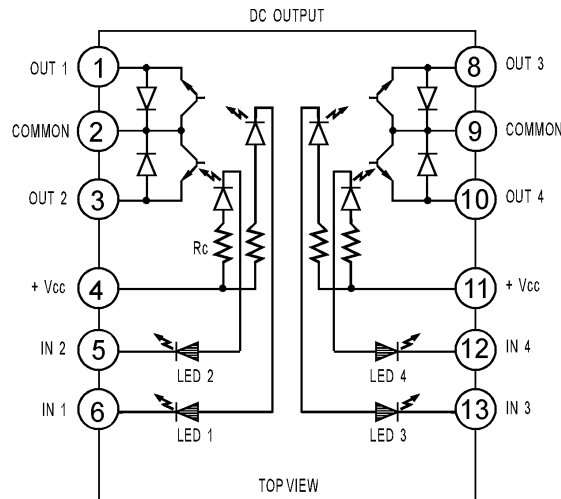
RED INDICATOR LED

INFRARED COUPLER LED

EQUIVALENT CIRCUIT ONLY

NEGATIVE TRUE LOGIC

INDUCTIVE LOADS MUST BE
DIODE SUPPRESSED

Quad DC Output I/O Modules

Connections

More About Opto 22

Products

Opto 22 develops and manufactures reliable, flexible, easy-to-use hardware and software products for industrial automation, energy management, remote monitoring, and data acquisition applications.

OptoEMU Energy Management System

The easy-to-use OptoEMU Sensor monitors electrical energy use in your facility and delivers detailed, real-time data you can see and analyze. The Sensor can monitor energy data from pulsing meters, electrical panels or subpanels, and equipment. View energy data online using a software service or incorporate the data into your control system for complete energy management.

SNAP PAC System

Designed to simplify the typically complex process of selecting and applying an automation system, the SNAP PAC System consists of four integrated components:

- SNAP PAC controllers
- PAC Project™ Software Suite
- SNAP PAC brains
- SNAP I/O™

SNAP PAC Controllers

Programmable automation controllers (PACs) are multifunctional, modular controllers based on open standards.

Opto 22 has been manufacturing PACs for over two decades. The standalone SNAP PAC S-series and the rack-mounted SNAP PAC R-series both handle a wide range of digital, analog, and serial functions for data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

SNAP PACs are based on open Ethernet and Internet Protocol (IP) standards, so you can build or extend a system easily, without the expense and limitations of proprietary networks and protocols.

PAC Project Software Suite

Opto 22's PAC Project Software Suite provides full-featured, cost-effective control programming, HMI (human machine interface) development and runtime, OPC server, and database connectivity software for your SNAP PAC System.

Control programming includes both easy-to-learn flowcharts and optional scripting. Commands are in plain English; variables and I/O point names are fully descriptive.

PAC Project Basic offers control and HMI tools and is free for download on our website, www.opto22.com. PAC Project Professional, available for separate purchase, adds

OptoOPCServer, OptoDataLink, options for controller redundancy or segmented networking, and support for legacy Opto 22 serial *mistic*™ I/O units.

SNAP PAC Brains

While SNAP PAC controllers provide central control and data distribution, SNAP PAC brains provide distributed intelligence for I/O processing and communications. Brains offer analog, digital, and serial functions, including thermocouple linearization; PID loop control; and optional high-speed digital counting (up to 20 kHz), quadrature counting, TPO, and pulse generation and measurement.

SNAP I/O

I/O provides the local connection to sensors and equipment. Opto 22 SNAP I/O offers 1 to 32 points of reliable I/O per module, depending on the type of module and your needs. Analog, digital, and serial modules are all mixed on the same mounting rack and controlled by the same processor (SNAP PAC brain or rack-mounted controller).

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 do no statistical testing and each part is tested twice before leaving our factory, 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. Our staff of support engineers represents 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.

Additional support is always available on our website: how-to videos, OptoKnowledgeBase, self-training guide, troubleshooting and user's guides, and OptoForums.

In addition, hands-on training is available for free 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 or 951-695-3000, or visit our website at www.opto22.com.

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