STANDARD AC INPUT MODULES

Features

> Rugged construction

> High noise rejection and transient-free *clean* switching

> 4000 volts of optical isolation between the field inputs and the logic output of the circuit (transient)

DESCRIPTION

AC input modules are used for sensing ON/OFF alternating current (AC) voltage levels. All AC input modules are designed with filtering on the input and a hysteresis amplifier for high noise rejection and transient-free *clean* switching.

Each module provides up to 4000 volts (transient) of optical isolation between the field inputs and the logic output of the circuit.

Typical uses and applications include sensing the presence or absence of voltage or sensing contact closures from sources such as:

• Proximity switches

• Limit switches

• Float switches

• Selector switches

• Push buttons

• Toggle switches

• Thermostats

IAC5 Module

Part Numbers

Part	Description
IDC5*	DC Input 10–32 VDC, 5 VDC Logic
IDC5G*	DC Input 35–60 VDC, 5 VDC Logic
IAC5	AC Input 90–140 VAC, 5 VDC Logic
IAC5A	AC Input 180–280 VAC, 5 VDC Logic
IDC15*	DC Input 10–32 VDC, 15 VDC Logic
IAC15	AC Input 90–140 VAC, 15 VDC Logic
IAC15A*	AC Input 180–280 VAC, 15 VDC Logic
IDC24*	DC Input 10–32 VDC, 24 VDC Logic
IAC24	AC Input 90–140 VAC, 24 VDC Logic
IAC24A	AC Input 180–280 VAC, 24 VDC Logic

* These DC input modules can be used for AC input signals.
  See table on page 2.

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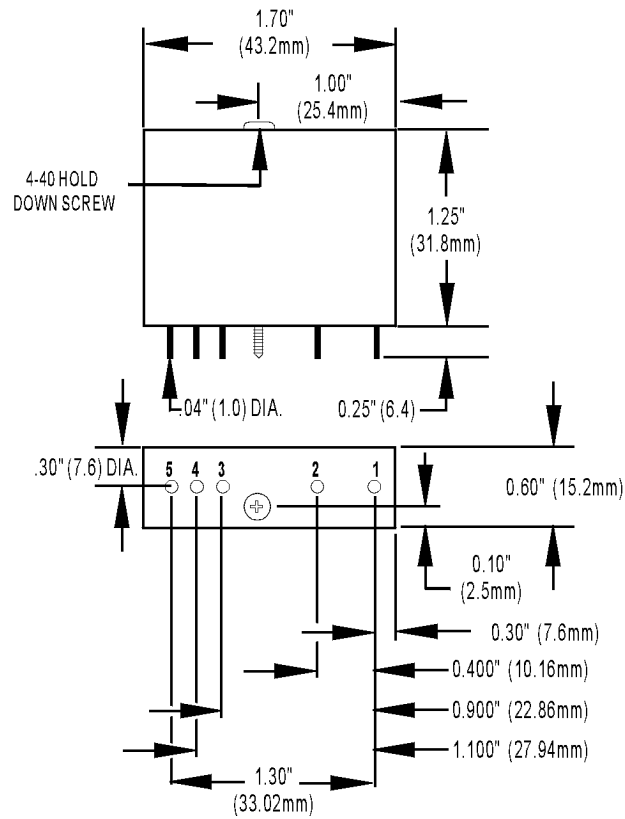**OPTO 22** • 800-321-6786 • 1-951-695-3000 • www.opto22.com • sales@opto22.com

OPTO 22

SPECIFICATIONS

General

Operating Ambient	-30 to 70 °C
Isolation, Input-to-Output (Transient)	4000 volts
Output Voltage Drop	0.4 volts @ 50 mA
Output Current	50 mA
Output Leakage With No Input	0.1 mA @ 30 VDC
Output Transistor	30 volts breakdown

AC Input Module Specifications

	Unit	IDC5	IDC5G	IDC15*	IDC24*	IAC5	IAC15*	IAC24*	IAC5A	IAC15A*	IAC24A*
Input Voltage Range	VAC	12–32	35–60	12–32	12–32	90–140	90–140	90–140	180–280	180–280	180–280
Input Current @ Max Line	mA	25	6	25	25	5	5	5	5.0	5.0	5.0
Turn-on Time	msec	5	10	5	5	20	20	20	20	20	20
Turn-off Time	msec	5	15	5	5	20	20	20	20	20	20
Input Allowed for No Output	mA, V	1, 3	0.7, 7	1, 3	1, 3	3, 45	3, 45	3, 45	1.7, 80	1.7, 80	1.7, 80
Output Supply Voltage-Nominal	VDC	5	5	15	24	5	15	24	5	15	24
Output Supply Voltage-Range	VDC	4.5–6	4.5–6	12–18	20–30	4.5–6	12–18	20–30	4.5–6	12–18	20–30
Output Supply Current @ Nominal Logic Voltage	mA	12	12	15	15	12	15	15	12	15	15
Input Resistance (R1 in schematic diagram)	Ohms	1.5k	10k	1.5k	1.5k	28k	28k	28k	70k	70k	70k
Control Resistance	Ohms	220	220	1k	2.2k	220	1k	2.2k	220	1k	2.2k
* Not for use with Opto 22 brains.											

Dimensions

SCHEMATICS

AC Input Schematic

MOUNTING RACK — PLUG-IN MODULE
AC/DC INPUT
VAC OR VDC
SCREW TERMINALS
FUSE
R1
VCC — LED
3.3K
OUTPUT — CONNECTOR
Rc
LOGIC GND COMMON

EQUIVALENT CIRCUIT ONLY
NEGATIVE TRUE LOGIC
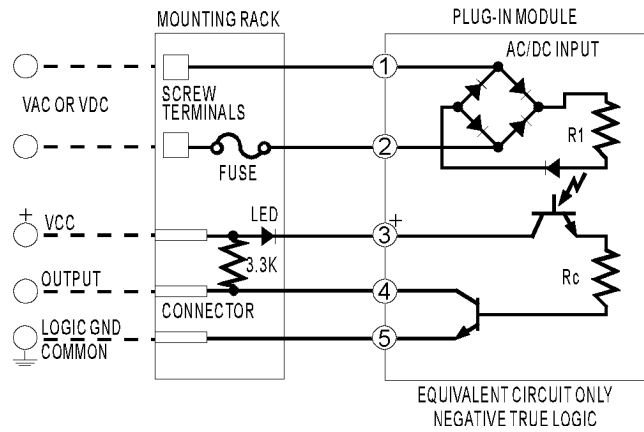
CONNECTIONS

AC Input Connection Diagram

AC POWER SUPPLY
L1 — OR — L2

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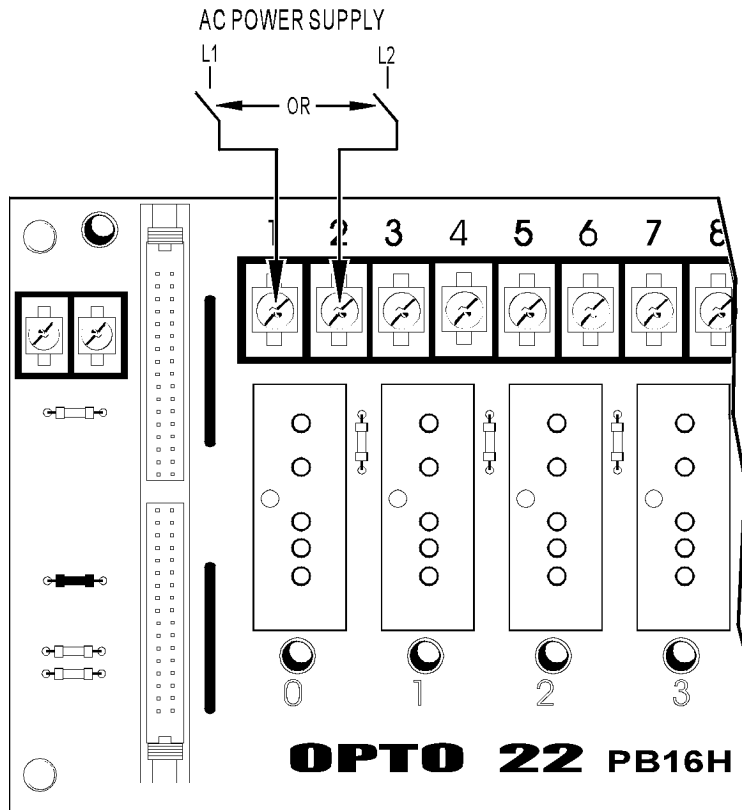
PRODUCTS

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

Industrial automation, process control, 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.

OPTO 22 · www.opto22.com
43044 Business Park Dr. Temecula, CA 92590-3614

SALES · sales@opto22.com
800-321-6786 · 1-951-695-3000

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