STANDARD DIGITAL DC INPUT MODULES

Features

- Rugged construction
- Up to 4000 volts of optical isolation (transient)
- Most have a bridge-rectifier input, and accept AC or DC inputs.

IDC5 Input Module

DESCRIPTION

Input modules are used for sensing ON/OFF voltage levels. All AC and DC input modules, with the exception of the IDC5B and the IDC5D, have a bridge-rectifier input, and accept AC or DC inputs.

The IDC5B module is a fast-switching input module for signals produced by photoelectric switches or TTL level devices. The IDC5D is a low cost, DC only, input module for use in data acquisition applications.

Each module provides up to 4000 volts (transient) of optical isolation between the field inputs and the output side 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
- Selector switches
- Push buttons
- Photoelectric switches
- TTL-compatible devices

Part Numbers

Part	Description
IDC5	AC/DC Input 10–32, 5 VDC Logic
IDC5B	DC Input 4–16, 5 VDC Logic High Speed
IDC5D	DC Input 2.5–28 VDC, 5 VDC Logic
IDC5G	AC/DC Input 35–60 VDC, 5 VDC Logic
IAC5	AC/DC Input 90–140 VAC, 5 VDC Logic
IAC5A	AC/DC Input 180–280 VAC, 5 VDC Logic
IDC15	AC/DC Input 10–32 VAC, 15 VDC Logic
IAC15	AC/DC Input 90–140 VAC, 15 VDC Logic
IAC15A	AC/DC Input 180–280 VAC, 15 VDC Logic
IDC24	AC/DC Input 10–32 VDC, 24 VDC Logic
IAC24	AC/DC Input 90–140 VAC, 24 VDC Logic
IAC24A	AC/DC Input 180–280 VAC, 24 VDC Logic

MODULE SPECIFICATIONS

General

Operating Ambient Temperature	- 30 to 70 °C
Isolation, Input-to-Output (Transient)	4000 V
Output Voltage Drop: logic side	0.4 volts @ 50 mA
Output Current	50 mA
Output Leakage With No Input IDC5D Only	0.1 mA @ 30 VDC 0.01 mA @ 30 VDC
Transistor	30 volts breakdown
Agency Approvals	UL, CE, CSA, RoHS; UKCA

Input Module Specifications

	Unit	IDC5	IDC5B	IDC5D	IDC5G	IDC15*	IDC24*
Input Voltage Range	VDC	10–32	4–16	2.5–28	35–60	10–32	10–32
	VAC	12–32	4–16	—	35–60	12–32	12–32
Input Current @ Max Line	mA	25	45	30	6	25	25
Turn-on Time	msec	5	0.05	1	10	5	5
Turn-off Time	msec	5	0.1	1.5	10	5	5
Input Allowed for No Output	mA	1	0.7	0.2	0.7	1	1
	Volts	3	1	1	7	3	3
Output Supply Voltage-Nominal	VDC	5	5	5	5	15	24
Output Supply Voltage-Range	VDC	4.5–6	4.5–6	4.5–6	4.5–6	12–18	20–30
Output Supply Current @ Nominal Logic Voltage	mA	12	12	12	12	15	18
Input Resistance	Ohms	1.5k	300	900	10k	1.5k	1.5k
Control Resistance (Rc in schematic diagram)	Ohms	220	220	470	220	1k	2.2k

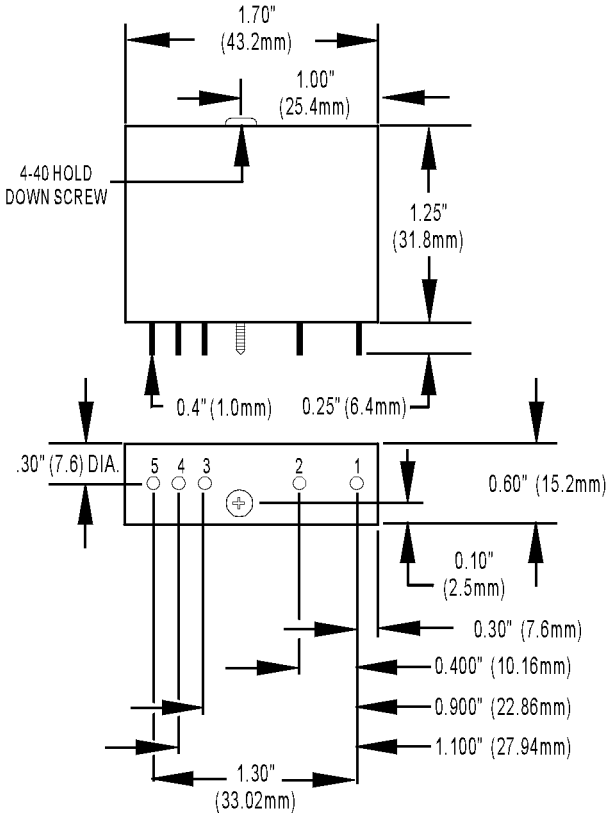
* Not for use with Opto 22 brains.

	Unit	IAC5	IAC15	IAC24	IAC5A	IAC15A*	IAC24A*
Input Voltage Range	VDC	90–140	90–140	90–140	180–280	180–280	180–280
	VAC	90–140	90–140	90–140	180–280	180–280	180–280
Input Current @ Max Line	mA	5	5	5	5	5	5
Turn-on Time	msec	20	20	20	20	20	20
Turn-off Time	msec	20	20	20	20	20	20
Input Allowed for No Output	mA	3	3	3	1	1	1
	Volts	45	45	45	45	45	45
Output Supply Voltage-Nominal	VDC	5	15	24	5	15	24
Output Supply Voltage-Range	VDC	4.5–6	12–18	20–30	4.5–6	12–18	20–30
Output Supply Current @ Nominal Logic Voltage	mA	12	15	18	12	15	15
Input Resistance	Ohms	28k	28k	28k	70k	70k	70k
Control Resistance (Rc in schematic diagram)	Ohms	220	1k	2.2k	220	1k	2.2k

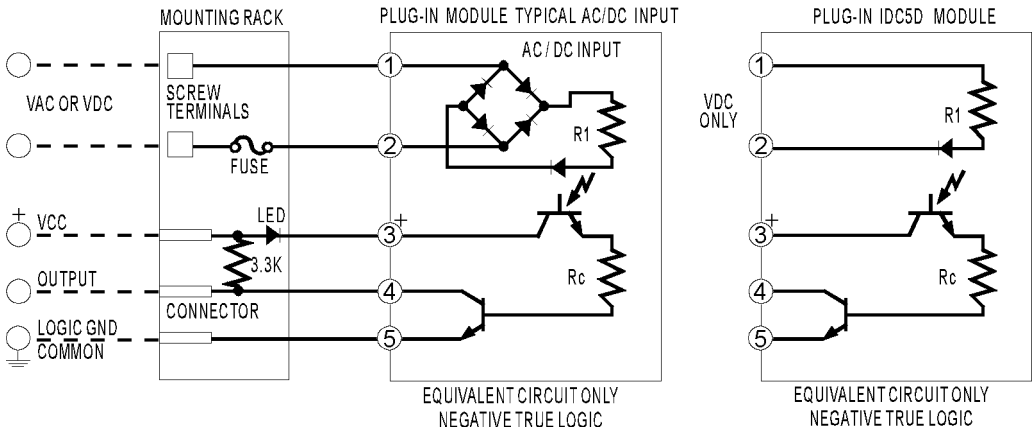
* Not for use with Opto 22 brains.

Dimensions

Typical, All Models

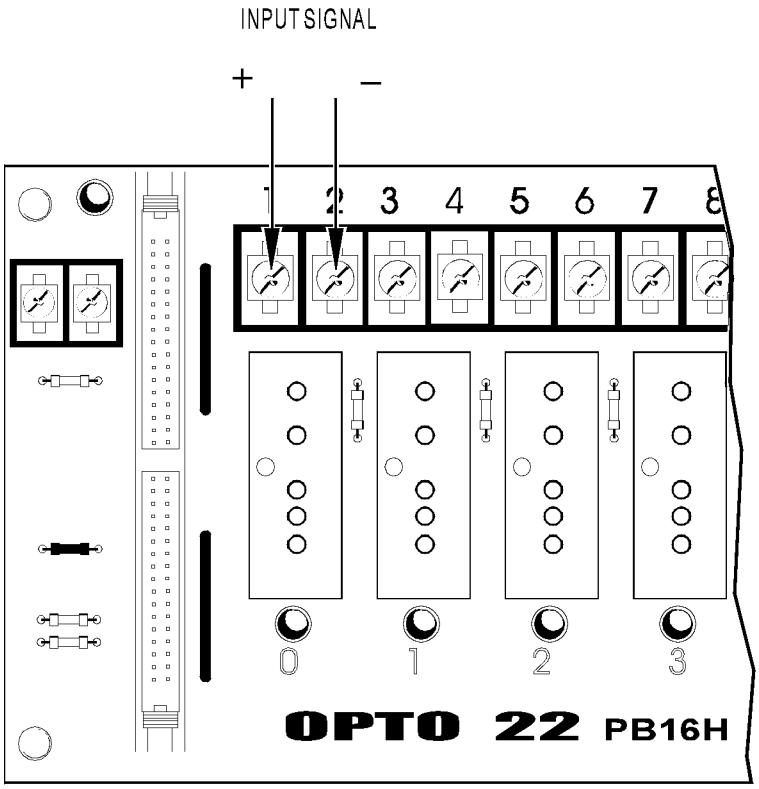


SCHEMATIC



CONNECTIONS

Field Connection Diagram



MADE IN THE USA

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, 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 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
- 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.

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

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

SUPPORT • support@opto22.com
800-835-6786 • 1-951-695-3080

MADE IN THE USA

Form 1335-220126